CSIS BRIEFS

# Aligning Ambitions

## *State Strategies for Offshore Wind*

*By Allegra Dawes and Sophie Coste*

SEPTEMBER 2023

## THE ISSUE

*The Biden administration has outlined ambitious goals for the offshore wind sector, targeting 30 gigawatts (GW) of capacity by 2030. East Coast states have been eager to support this nascent industry, outlining ambitious targets for deploying offshore wind, decarbonizing state power supply, and capturing the economic benefits from this sector. Despite these ambitions, offshore wind is difficult to build, and policy environments vary dramatically across states. This brief will assess state strategies for capturing the economic benefits of the offshore wind industry focusing on efforts to increase in-state manufacturing and supply chain presence and develop a workforce for the offshore wind industry. While targets and ambitions are high, more work needs to be done to ensure that strategies align with industry and are sufficiently flexible to adapt to changing macroeconomic conditions. Regional collaboration on problems surrounding supply chain, labor, and regulation can help address emerging industry challenges.*

## INTRODUCTION

In March 2023 Maryland governor Wes Moore announced a fourfold increase in the state's offshore wind target that would make Maryland a leader among U.S. states. He declared, "We can have both a growing economy and lead the way in clean energy. . . . Our state will lead the country in offshore wind energy production." These two ambitions—economic gains and clean energy leadership—are deeply entwined in the United States' approach to offshore wind development. The target of **30 GW by 2030** set by the administration under President Joe Biden will create a projected 44,000 jobs in offshore wind and an additional 33,000 jobs in communities supported by offshore wind.

Many U.S. states see offshore wind both as a key technology to deliver reliable clean energy to large load centers and as an opportunity to capture significant economic benefits, especially in coastal states. Recent legislation including the **Infrastructure Investment and Jobs Act** (IIJA) and the **Inflation Reduction Act** (IRA) have also increased industry ambition, providing funding and incentives for investments throughout the offshore wind value chain.

Despite these ambitions, development has progressed at a much slower pace on the ground—or rather in the sea. The first utility-scale offshore wind project, Vineyard Wind, began construction in 2023, but the United States has a long way to go before its ambitions for offshore wind are met. Additionally, concerns have mounted over the state of the offshore industry as high interest rates, supply chain constraints, and increasing costs have **threatened projects' viability**.

While the federal strategy has gained momentum under the Biden administration, the landscape across coastal states varies significantly in terms of offshore wind ambitions and strategies. This variation in policy can have both positive and negative effects on industry. Ideally, states will experiment with different policies and compete constructively to speed offshore deployment and ensure local communities most affected by developments see increased economic opportunities. Alternatively, diverse offshore wind strategies at the state level could complicate the investment landscape environment. Restrictive in-state supply requirements could discourage regional cooperation on supply chain development and compound the impact of increased costs for components and materials. Ensuring policymakers, industry, and local stakeholders have a clear understanding of the different policy regimes could minimize delays and facilitate better regional cooperation and policy formation.

This paper assesses state strategies for capturing the economic benefits of the offshore wind industry, focusing on efforts to increase in-state manufacturing and supply chain presence and to develop a workforce for the offshore wind industry. While targets and ambitions are high, more work needs to be done to ensure strategies align with industry and are sufficiently flexible to adapt to changing macroeconomic conditions. Regional collaboration on problems surrounding supply chain, labor, and regulations can help address emerging industry challenges.

## STATE OFFSHORE WIND GOALS

### *STATE AMBITIONS AND TARGETS*

Prior to the Biden administration, East Coast states provided the main demand signal for offshore wind. For many, offshore wind will play a large role in achieving their net-zero electricity goals. Table 1 shows the offshore wind capacity targets of nine East Coast states. In states like New York and Massachusetts, offshore wind targets are part of state law as utilities are directed to procure clean electricity to meet 2030 and 2050 goals. Other states have less ambition toward decarbonizing the power sector.

States with significant ambitions for the offshore sector like New York, New Jersey, Massachusetts, Maryland, and Virginia exhibit some of the positive aspects of competition. Often states have increased offshore wind capacity targets to keep pace with regional rivals and partners. For instance, Maryland's new offshore wind target would put the state in line with New York and New Jersey as leaders in capacity targets and development timelines.

New York and New Jersey remain the two most ambitious states in the offshore wind sector. Beyond the two states goals for offshore wind capacity, they are also targeting

Table 1: Offshore Wind Capacity Targets for Nine East Coast States

| State | Current capacity (MW) | Capacity under development (MW)* | Capacity target (MW)** | Capacity target year | Target as a percentage of states' electricity demand |
|---|---|---|---|---|---|
| Massachusetts | 0 | 3,200 | 5,600 | 2027 | — |
| Connecticut | 0 | 1,100 | 2,000 | 2030 | — |
| Rhode Island | 30 | 500 | 600–1,000 | 2030 | 30% |
| Noth Carolina | 0 | 0 | 2,800 | 2030 | — |
| Maryland | 0 | 2,200 | 8,500 | 2031 | — |
| Virgina | 12 | 2,500 | 5,200 | 2034 | — |
| New York | 0 | 4,300 | 9,000 | 2035 | 30% |
| Louisiana | 0 | 0 | 5,000 | 2035 | — |
| New Jersey | 0 | 3,700 | 7,500 | 2035 | 50% |
| Total | 42 | 17,500 | 46,200 | 2035 | — |

*Projects under development have either begun construction or secured offtake.
**Total capacity target calculation uses 600 MW as Rhode Island's target.
Source: Data from *Wind Market Reports: 2022 Edition* (Washington, DC: U.S. Department of Energy, August 2022), https://www.energy.gov/eere/wind/wind-market-reports-2022-edition#offshore, and *2023 Offshore Wind Market Report* (Washington, DC: American Clean Power Association, May 2023), https://cleanpower.org/resources/offshore-wind-market-report-2023/#download.

significant in-state supply chain and infrastructure investment. New York has allocated **$700 million** in offshore wind port infrastructure and manufacturing; five offshore wind ports are currently under development including the Port of Albany, the Port of Coeymans, and the South Brooklyn Marine Terminal. New Jersey has also paired deployment ambitions with supply chain and infrastructure development. The state started construction of the nation's first purpose-built **offshore wind marshaling port** in 2021, with access to more than 50 percent of U.S. offshore wind lease areas. Building and expanding ports is a key strategy in attracting in-state supply chain investment.

While the East Coast has been the primary center of offshore wind development, states along the Gulf of Mexico are also looking to capture industry opportunities. For instance, in 2022, Louisiana set a **climate target** of reaching net-zero greenhouse gas emissions by 2050 and installing 5 GW of offshore wind by 2035. Louisiana views offshore wind as an opportunity to deploy preexisting industry capability and experience in offshore energy. The state's **Climate Action Plan** notes Louisiana has the potential to become the nation's manufacturing and servicing hub for offshore wind. Offshore wind remains at a much earlier stage of development with the first lease auction occurring in August 2023.

Neighboring states often show similar levels of ambition, opening the door to effective regional collaboration. New York and New Jersey joined with the Bureau of Ocean Energy Management to announce a **collaboration** to support the development of offshore wind in both states. Similarly, Virginia, Maryland, and North Carolina formed the SMART-POWER partnership to cooperate and develop offshore wind across the three states. Sharing similar levels of ambition provides a good basis for cooperation and competition.

## *STATE INSTITUTIONS*

**Previous CSIS research** has investigated the strategies states employ to capture economic opportunities from climate action. The institutions that states leverage can shape strategies for clean energy build-out and economic development. States like New York and Massachusetts have ambitious offshore wind goals and relatively developed project pipelines. Both states have large, centralized institutions that drive energy transition policies and offshore wind strategies. In New York, the **New York State Energy Research and Development Authority** (NYSERDA) oversees the entirety of the state's offshore wind strategy including solicitations and permitting requirements, supply chain and economic development, workforce development, and transmission and grid expansion. The **Massachusetts Clean Energy Center** oversees the development and execution of the state's offshore wind strategy. Like NYSERDA, the Clean Energy Center is a centralized body that collaborates with other state agencies, industry partners, and local communities to achieve offshore wind deployment and economic development goals.

These centralized bodies employ different strategies, funding mechanisms, and partnerships to advance in-state offshore wind development. Critically, these centralized bodies tend to play a coordinating role by developing avenues for different stakeholders to communicate opportunities and challenges facing their operations. NYSERDA leads a variety of **working groups** in jobs and supply chain, commercial fishing, the environment, and maritime commerce. These serve as a platform to encourage collaboration and generate cross-sector perspectives.

State institutions can also play a significant role in technological development. The Massachusetts Clean Energy Center takes a hands-on approach to technological development and testing. The agency owns the **Wind Technology Testing Center**, which offers certification, testing, and development opportunities for turbine blades. The center partners with turbine manufacturers (GE, Vestas, and Siemens Gamesa), blade manufacturers (LM WindPower and Blade Dynamics), and researchers (National Renewable Energy Laboratory, Sandia National Laboratories, University of Massachusetts, Georgia Institute of Technology, City College of New York). Funding and grant opportunities for technology and innovation can support the long-term future of the industry.

Some states use multiple agencies and departments to develop offshore wind strategies and economic development goals. For example, the **Maryland Department of Labor** has taken the lead in organizing and implementing Maryland Works for Wind, a

collaborative workforce development program. In New Jersey, the **Economic Development Authority** oversees workforce development and supply chain development efforts for offshore wind.

While not every state will form large organizations with the funding and breadth of NYSERDA or the Massachusetts Clean Energy Center (MassCEC), key takeaways can help guide other states looking to develop the industry. A central institution that coordinates a state's offshore wind deployment and economic development goals can be effective. The "one-stop shop" model creates space for coordinating industry players, local representatives, labor unions, individuals, and other stakeholders. Both institutions maintain supply chain directories and coordinate workforce development programs.

### *POWER PROCUREMENT*

States have employed two dominant models to procure and price offshore wind energy: power purchase agreements (PPAs) and offshore wind renewable energy credits (ORECs). PPAs are long-term contracts for the purchase of power between an offshore wind project developer and a customer. States like **Massachusetts**, **Rhode Island**, and **Connecticut** have mandated utilities to enter PPAs with offshore wind developers to reach the targeted capacity. Alternatively, ORECs represent the environmental attributes of 1 megawatt-hour of electricity generated from offshore wind projects. Project developers use ORECs to comply with state requirements for offshore wind procurement. Utilities in states like **New York**, **New Jersey**, and **Maryland** use ORECS to procure offshore wind energy. Both procurement instruments award project developers based on a competitive auction and other factors, including in-state economic development. Project developers receive a fixed price for the power delivered to the customer rather than face fluctuating wholesale market prices.

## DOMESTIC AND LOCAL CONTENT REQUIREMENTS

Short supply chains are needed for offshore wind, and ports are needed to stage and launch projects. The United States needs more ports capable of meeting the staging and installation requirements for offshore turbines. Moving large turbines over land is unfeasible, and shipping turbines can add additional cost, making local manufacturing attractive. **Estimates** for a supply chain that would support demand in 2030 would require 34 manufacturing facilities, eight marshaling ports, and new installation and heavy lift vessels. A domestic supply chain is also the foundation of the economic potential offshore wind proponents promise. The **majority of long-term jobs** and investments are linked to different value chain segments rather than project construction and operation alone.

The IRA incentivizes investment in domestic manufacturing of components for offshore wind through the Investment Tax Credit (ITC) and the Production Tax Credit (PTC). The full value of the PTC and ITC depends on wages and apprenticeship labor requirements. Both credits **qualify** for a domestic content bonus if 100 percent of the steel and iron components and at least 20 percent of the manufactured products for offshore wind facilities are produced in the United States. The domestic requirement for manufactured products is lower for offshore wind than for other energy projects, as few U.S. facilities produce offshore wind components. Through the Advanced Manufacturing Credit, the law also grants a credit worth **10 percent** of the sale price of offshore wind vessels produced domestically. The IIJA increased funding for several programs that can benefit domestic offshore wind infrastructure development. The **law** expanded a loan program to include offshore wind vessels and increased funding for a port development program. It also clarified that offshore wind on the Outer Continental Shelf can produce green hydrogen.

States have taken a variety of approaches to encourage local content in offshore wind projects through their role in power procurement. As discussed, U.S. states procure offshore wind power through competitive auctions that award ORECs or PPAs to the winning bidder. States like New Jersey and New York have used the process of procuring power from offshore wind to incentivize investment in local supply chains. In the competitive bidding process for ORECs, developers are required to submit **economic development plans** outlining commitments to invest in supply chains and in-state workforce development. For example, New York's auction in July 2022 **required** all bidders to submit at least one bid with a supply chain investment plan (SCIP) and one without a SCIP. SCIPs demonstrate bidders'

commitment to developing a strong local supply chain. Through the solicitation, NYSERDA distributed $300 million of state funding for investments in offshore wind ports, manufacturing facilities, and supply chain projects that localize offshore wind supply chain components. The solicitation also set a purchase requirement for all projects awarded to encourage domestic production.

In-state and local supply chain development is also an area where competition between high-ambition states is intense. New Jersey and New York offer a good example of competition over placement of large manufacturing facilities or development of port infrastructure to meet the needs of offshore wind.

## *COSTS OF DOMESTIC AND LOCAL CONTENT*

Policies aimed at promoting domestic and in-state production of offshore wind components are common across states. While a domestic supply chain is needed, domestic and local content requirements could prove overly restrictive, particularly over the short term, as companies struggle to find cost-competitive local suppliers. Two major risks come with unduly strict domestic and local content requirements: (1) lack of supply and (2) increased costs.

### 1. Lack of Supply: The Jones Act Warning

The domestic offshore wind industry has not yet taken off, in part, due to lack of infrastructure needed to support its development. Some supply chain estimates hold that the industry must invest over **$11 billion** in ports and large installation vessels by 2030 to achieve deployment goals. When supply is low, overly strict domestic or local content requirements can bottleneck development.

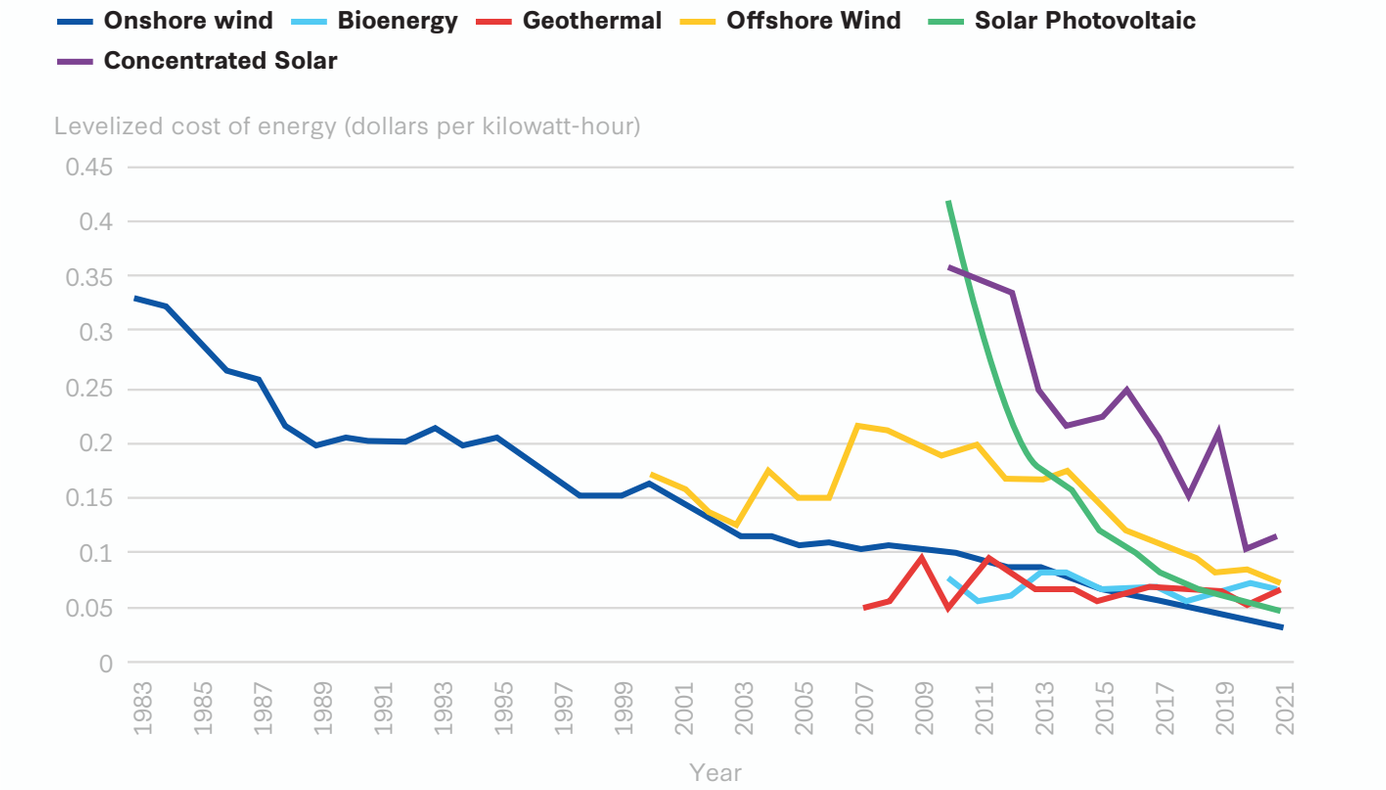
The **Jones Act** is one example. The act requires ships transporting goods between U.S. ports to be built, owned, and crewed in the United States, meaning that wind turbine installation vessels (WTIVs), which transport wind turbine components from U.S. ports to the installation site, must comply with the Jones Act. While the Department of Energy **estimates** the United States needs five WTIVs to meet President Biden's goal of 30 GW by 2030, there are no U.S.-built, U.S.-owned, and U.S.-crewed WTIVs (Dominion Energy's **$500 million** WTIV *Charybdis* is set to be finished by **2024**). Another method for offshore wind installation bypasses this requirement: U.S. feeder vessels can transport components from U.S. ports to stationary foreign-owned-and-operated WTIVs at the installation site. The only two operational wind farms in the United States—Block Island Wind Farm and Coastal Virginia Offshore Wind—have used the feeder method.

However, existing feeder vessels and port infrastructure cannot accommodate the growing pipeline of domestic offshore wind projects. Few feeder vessels can support the larger wind turbines coming to market, and the current supply of WTIVs is limited. In a 2020 report, the Government Accountability Office estimated there were **50 foreign-flag WTIVs** in operation or under construction globally. This supply could come under strain as demand for offshore wind ramps up around the world. The report further notes that securing financing to build domestic WTIVs faces several obstacles, including permitting uncertainty and delays as well as shipyard and port limitations. Jones Act-compliant WTIVs will likely not be competitive **overseas**, as their daily leasing rate will be too high. To meet state offshore wind goals, more WTIVs will be required, but the Jones Act is a barrier to construction and deploying offshore wind at the required pace and scale. Thus, policies aimed at protecting domestic industry can inadvertently stifle the development of offshore wind.

### 2. The Risk of Increased Supply Chain Costs

As shown in Figure 1, the cost of offshore wind has declined over the past 10 years. However, since 2021, supply chain cost inflation has emerged as a **significant challenge** for project developers. In Massachusetts, Avangrid, the project developer, and two electric distribution companies, Eversource Energy and National Grid, agreed to **terminate their PPAs** for electricity from the 1.2 GW **Commonwealth Wind** project. Avangrid cited increased supply chain costs and the higher cost of capital as challenges for the project to reach profitability and attain financing at the agreed-upon PPA price. The incident is hardly isolated: SouthCoast Wind is attempting to renegotiate or cancel PPAs for the 1.2 GW project, and in New York, Sunrise Wind and Equinor-BP requested a price increase in their contracts with the **Public Service Commission**. Internationally, increased costs in the offshore wind supply chain also contributed to offshore wind setbacks. Vattenfall AB paused the development of a

Figure 1: Levelized Cost of Energy Across Technologies




Source: "Levelized Cost of Energy by Technology, World," Our World in Data, https://ourworldindata.org/grapher/levelized-cost-of-energy.

UK offshore wind project after costs surged.

Utilities, and states with offshore wind goals, are placed in a difficult position in these circumstances. Canceling a contract with a project developer would require a new round of bidding. The new bids would likely reflect the higher costs and challenging macroeconomic environment that led to the cancellation. The initial project developer could also participate in the new auction and would be in a strong position to rewin the contract given the stage of planning the development had reached. The result would likely be a longer development timeline to achieve power delivery and a higher agreed-upon price for electricity. The other option would be to rework the agreed price with the project developer, as some developers are asking regulators to include inflation adjustment mechanisms in contracts, which would again result in a higher price for electricity.

How do local content requirements affect this landscape? To some degree, local content contradicts the logic of sourcing materials and components from the lowest-cost provider, irrespective of the manufacturing placement. This tension is present, in particular, if local content requirements are restrictive. In **Taiwan**, local content requirements are high (proposed at 60 percent), and price ceilings for procured electricity complicate the project development outlook for offshore wind. When supply chains are at an early stage of development, project developers may have difficulty finding competitive suppliers in every locality. In the United States, a narrow focus on in-state economic benefits could also preclude regional cooperation. The potential for regional supply clusters is discussed later in this brief, but it is worth noting that supply chain decisions made at the state level are not independent of larger cost challenges facing project development and utilities.

There is no escaping the impacts of higher costs on offshore wind projects. BloombergNEF cut its 2032 forecast for offshore wind capacity by 11 percent, expecting the United States to reach **23.1 GW of capacity by 2030**. States are placed in the difficult position of balancing offshore wind goals with the need to ensure affordable and reliable electricity. They can

work to ensure local content requirements are flexible and that regulatory requirements are streamlined to ensure project timelines are transparent at the state level.

## STATE STRATEGIES FOR WORKFORCE DEVELOPMENT

As with many clean energy technologies and supply chains, the Biden administration has tied the expansion of offshore wind to the creation of new well-paying jobs. Meeting the administration's target of deploying 30 GW of offshore wind by 2030 is projected to **create thousands of new jobs**, including 44,000 positions in offshore wind and 33,000 jobs in communities supported by offshore wind activity.

Prior to 2022, there was no national assessment of the workforce needs and skills gaps that would emerge as the U.S. offshore wind industry grows. The National Renewable Energy Laboratory published a **report** assessing the current and future workforce needs of the industry and the potential gaps in workforce skills. The demand for domestic workers depends on development of a domestic supply chain. The report found that meeting the 30 GW goal by 2030 would require average annual employment levels of 15,000 for the 25 percent domestic content scenario and up to 58,000 for the 100 percent domestic content scenario. These roles will come across all levels of the industry, including siting and project development, component manufacturing, maritime construction, and operations and maintenance of projects.

The federal and state governments have deployed a variety of tools aimed at supporting the creation of good jobs. The IRA includes prevailing wage and apprenticeship requirements that would apply to the PTC, ITC, and Advanced Energy Project Credit.

### *HOW STATES ARE ADDRESSING WORKFORCE NEEDS*

Workforce development is also a priority for coastal states. Several states regularly publish studies on specific in-state workforce needs and challenges to address skills gaps and worker shortages. For example, New York State has published an **Offshore Wind Workforce Gap Analysis** and a **workforce skills analysis**. The skills assessment profiles careers in offshore wind occupations including average wages, education and training requirements, and other skills. The workforce gap assessment provides the state's projected job growth across different segments of the industry. Massachusetts also published a **workforce assessment** in 2018 estimating the growth in offshore wind jobs and recommended training and policy decisions. These assessments serve as a strong basis for developing an in-state workforce.

In-state collaboration between state and local governments, industry, educational institutions, and labor organizations is an important component of workforce development. States like Massachusetts and New York have created training program directories for job seekers and employers. Both **New York** and **Massachusetts** maintain databases with in-state training and certification programs, career pathways, and job listings. These initiatives are aimed at creating a pipeline of workers for the offshore wind industry.

States have also played a role in creating training programs and regional workforce training consortiums. For example, with around $23 million dollars from the Department of Labor's Good Jobs Challenge grant program, Maryland formed the Maryland Works for Wind regional consortium to form partnerships of employers, unions, local workforce development areas, business alliances, and training providers. Virginia created the Mid-Atlantic Wind Training Alliance in partnership with New College Institute, Mid-Atlantic Maritime Academy, and Centura College to offer a variety of training courses for offshore wind. In New York, the Offshore Wind Training Institute is a $20 million effort in partnership with State University of New York at Farmingdale and Stony Brook University. The institute will develop training curricula and create partnerships across the state with universities, industry, and community representatives. The Rhode Island government has similarly established the **Global Wind Organization** training certificate program at a local community college in partnership with developers Ørsted and Eversource. Through MassCEC, Massachusetts has awarded over **$11 million** in grants to labor unions, nonprofit organizations, and businesses to support workforce training and development programs.

Coordinating with industry and labor unions is an important role for state governments as challenges

can arise over how good jobs should be defined and protected. In Maine, Governor Janet Mills (D-ME) **vetoed** a **bill** that would have set environmental standards for ports that support the manufacturing, construction, and operation of offshore wind farms due to disagreements on labor standards. Lawmakers added provisions to the bill that would have required project labor agreements (PLAs) for companies working on port projects. PLAs would require companies to pay a prevailing wage and meet apprenticeship requirements. The governor argues such a requirement could prevent nonunionized Maine workers from participating in the offshore wind industry and could favor "out-of-state unions in the region, over Maine-based companies and workers." While there is debate over the impact a PLA requirement would have, concerns over in-state versus out-of-state workers could prove a challenge for project developers.

## WHERE SHOULD STATES GO FROM HERE?

Across East Coast states and at the federal level, ambitions for the role of offshore wind in the power sector and economy are high. There are significant challenges in unlocking the energy and economic potential of this sector in the United States: local content requirements aimed at supporting a domestic supply chain can stifle industry advancement in the short term, rising costs may be more than a temporary challenge, and the domestic workforce is still nascent.

### *SUPPLY CHAIN*

- Local content requirements should be flexible to allow for supply chain development.

Local content requirements are aimed at in-state economic development. As development of a domestic supply chain ramps up, states should take a moderate and flexible approach toward incentivizing in-state investment. First, states in regional clusters or across the East Coast should work to improve the transparency and consistency of local content requirements. Clearly communicating these standards to project developers and establishing consistent requirements across states would help companies streamline supply chain planning and compliance.

States can also offer resources to aid project developers in connecting with local suppliers. States like New York, New Jersey, and Massachusetts offer databases of in-state companies that participate in segments of the supply chain. For newer entrants in the market, identifying preexisting manufacturing and industrial strengths that can be used in offshore wind can be an effective strategy. Louisiana is a good example as the state looks to build off existing capability in offshore oil and gas to offer maintenance and servicing for the offshore wind industry.

- Regional collaboration can speed offshore wind supply chain development.

Encouraging in-state investment can help build support for offshore wind in coastal communities and ensure jobs and investment are distributed in energy communities. Often, regional supply chain clusters allow for a more efficient supply chain and share the economic benefits of the industry more broadly. Regional supply clusters can build off preexisting manufacturing and industry strengths. Local content requirements can be designed to support regional supply chain growth. Solutions include a hierarchical approach toward domestic content and prioritizing state investment, followed by regional- and national-level investment.

Regional consortiums are a good place to start building regional supply clusters. Both the New Jersey–New York **Shared Vision** collaboration and the **SMART-POWER initiative** between Virginia, Maryland, and North Carolina have emphasized the importance of supply chain cooperation and include pledges to collaborate on supply chain development. The Biden administration's **Federal-State Offshore Wind Implementation Partnership** is a promising effort to increase coordination and collaboration between states and the federal government.

- States should develop strategies to manage short- and long-term cost pressures.

One of the most significant challenges facing the offshore wind sector is the impact of increased costs that erode developers' revenues. The impacts of inflation across materials, labor, and logistics are a significant contributor to developers' costs and make it difficult to finance and construct projects. State regulators and utilities are then put into a difficult position: while achieving offshore wind goals often requires project developers to renegotiate contracts, such renegotiations could lead to increased electricity costs for consumers and set

damaging precedents for future projects.

There are no easy fixes to this challenge. Including some inflation mechanisms in contracts could preemptively factor in potential cost pressures. There have been a few approaches to renegotiations. In Massachusetts, utility companies agreed to allow Commonwealth Wind out of its contract and imposed a $48 million penalty on the project developer, Avangrid. This would allow Avangrid to attempt to secure a higher price in the re-bidding process. In New Jersey, a bill passed by the State Legislature would allow Ørsted to **keep federal tax credits** the company would otherwise return to ratepayers. While there are different approaches, it seems clear that in the short term, offshore wind will cost more for developers, governments, and eventually customers. The degree to which state governments subsize or redistribute costs from developers could determine the speed of offshore wind deployment.

### *WORKFORCE*

States can implement programs to increase the pipeline of trained workers for offshore wind.

State support for offshore wind training can create regional hubs for the development of the industry. Coordinating workforce development efforts both in state, regionally and nationally can also play an important role in effectively ramping up the industry. There are multiple models states can use to effectively coordinate workforce development. In New Jersey, the **Wind Institute for Innovation and Training** will be launched by their economic development authority to coordinate and support efforts across the state supporting offshore wind deployment and supply chain development. Collaborations with industry and academic institutions can deliver adaptable training programs that are responsive to the sector's workforce needs.

States can also support the alignment of supply and demand for skilled workers in offshore wind. Funding apprenticeship programs for high school students can help build a local pipeline of workers for the industry. Offering scholarships or other incentives to students entering offshore wind training programs can also be effective tools to increase the number of skilled workers in this sector.

- Regional cooperation can bridge skills gaps and align training standards.

Creating regional working groups on workforce development can pool resources across universities, industry, and government. Increasing collaboration between stakeholders at all levels can support alignment between supply of skilled labor and demand for skills and capabilities. Regional working groups like **SMART-POWER Partnership** and the **NY-NJ Shared Vision** agreement should prioritize regional training opportunities. These initiatives could also partner with industry players to develop standardized training and safety requirements for jobs across the offshore wind value chain.

- Identifying opportunities to retrain skilled workers can speed up workforce development.

Retraining workers and reusing existing infrastructure and manufacturing capabilities can simultaneously advance offshore wind and equity goals. There have been early examples of companies using existing infrastructure and talent pools to accelerate offshore wind deployment. For instance, Attentive Energy One announced it would **retrain around 100 union workers** from a New York City natural gas-fired power plant to support its proposed 1.4 GW wind farm. State workforce assessments can help to identify retraining opportunities to support the industry.

States with a developed offshore oil and gas industry can also leverage their existing workforce and expertise to deploy offshore wind. Several Louisiana-based offshore oil contractors played a key **role** in installing the turbines for Block Island Wind Farm in 2016. In March 2023, Shell and Gulf Wind Technology announced a **partnership** to establish a research, training, and technology demonstration program in Louisiana. The accelerator will build on Shell's decades of experience in the Gulf of Mexico and Gulf Wind Technologies' expertise in wind technology to build turbines suited to the Gulf of Mexico and train the local workforce. While the development of offshore wind in the Gulf of Mexico is at an early stage, there are opportunities for nearby states to participate in the offshore wind industry and use preexisting skills to speed the development of offshore projects.

## CONCLUSION

Offshore wind remains a largely undeveloped resource in the United States. The Biden administration has injected new ambition into the sector, targeting 30 GW

of capacity by 2030 and expanding subsidies for wind farms and supply chain development. Federal leadership is essential for a successful launch of the offshore wind sector; however, states are important actors in deploying offshore wind and capturing domestic economic benefits from the sector.

This brief has reviewed state strategies for developing offshore wind, capturing job growth, and supporting efforts to build in-state supply chains. In executing strategies for offshore wind, states are often focused within their borders. To date there have been limited avenues for regional cooperation as states often do not incorporate the strengths of their neighbors into offshore wind planning and strategy. Although there is some competition between states, particularly for large investments, in many cases the economic and energy interests of states could be better served with stronger communication and collaboration. ■

***Allegra Dawes*** *is an associate fellow with the Energy Security and Climate Change Program at the Center for Strategic and International Studies (CSIS) in Washington, D.C.* ***Sophie Coste*** *is an intern with the Energy Security and Climate Change Program at CSIS.*

*This brief was made possible by funding from the Hewlett Foundation.*