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**Assembly Bill 3 (2023)
Offshore Wind Advancement Act:
Literature Assessment**

Prepared for:



**CALIFORNIA
ENERGY COMMISSION**

Prepared by:



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AB 3 LITERATURE ASSESSMENT

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1. INTRODUCTION

In 2024, the California Energy Commission (Energy Commission) approved the Offshore Wind Energy Strategic Plan, as required by Assembly Bill (AB) 525, which was enacted in 2021. AB 3, the Offshore Wind Advancement Act, was enacted in 2023 and requires the Energy Commission, in consultation with the State Lands Commission, the Ocean Protection Council, the Department of Fish and Wildlife, the Governor’s Office of Business and Economic Development, the Office of Planning and Research, and the California Coastal Commission, to prepare two reports. The first report (Report 1) will address seaport readiness and cultural and natural resources, including the marine and onshore environments, sensitive species, and habitats, and the second (Report 2) will address in-state manufacturing, supply chain and workforce development. This literature assessment was completed in order to identify existing information available to support preparation of these reports and to define data gaps that need to be filled.

2. LITERATURE ASSESSMENT PROCESS

The process for literature assessment was as follows:

- **Identify and Collect Documents:** The first step of the literature assessment was assembly of all potentially relevant data sources. Over 170 published documents were found; they are all listed in Section 4 (at the end of this report), with hyperlinks to each report.
- **Review Documents for Relevance:** The second step in the literature assessment was to evaluate each of the 170 reports for their relevance to the specific AB 3 requirements. The relevance review was intended to identify the most relevant existing documents out of the 170 documents found. In this process, each document was evaluated for its relevance to the topics defined in AB 3 and for the California-specific information provided.
- **Define Data Gaps:** The final step of the literature assessment was the review of the most relevant documents in order to define data gaps that may need to be filled as part of public process and to inform writing the two required reports. Section 2 presents a summary of data gaps.

2.1. AB 3 Requirements Evaluated in Literature Assessment

For Report 1 (Seaport Readiness), 7 criteria are evaluated. For Report 2 (In-State Manufacturing, Supply Chain, and Workforce), 9 criteria are evaluated. These 16 criteria are listed below. Note that requirements of the law that relate to process (e.g., requirements to consult or collaborate) for implementation of AB 3 are not included.

Requirements for Report 1: Seaport Readiness

1. Identify feasible seaport locations for offshore wind turbine assembly to serve Central Coast and North Coast offshore wind energy projects. **(Criterion 1-1)**
2. Recommend and prioritize only port alternatives where site control can be obtained by a port authority or state agency within five years. **(Criterion 1-2)**
3. Recommend and prioritize alternatives only with sufficient landside and water acreage or capacity to support maximum in-state assembly and manufacturing of offshore wind energy components. **(Criterion 1-3)**
4. Recommend and prioritize port locations that minimize impacts to cultural and natural resources, including the marine and onshore environments, sensitive species, and habitats. **(Criterion 1-4)**

5. Identify and prioritize ports that maximize in-state workforce opportunities, including workforce opportunities for low-income and environmental justice communities. **(Criterion 1-5)**
6. Consider transportation and other infrastructure investments needed to develop the identified seaports and waterfront facilities needed for offshore wind energy activities. **(Criterion 1-6)**
10. Assess the estimated cost and identify potential funding and financing strategies for necessary port development and redevelopment that support offshore wind energy activities, including the potential to leverage federal funding. **(Criterion 1-10)**

Requirements for Report 2: In-State Assembly, Supply Chain, and Manufacturing

1. Assess current manufacturing capabilities within California that are potentially suitable to support the offshore wind energy supply chain and identify the Tier 1, Tier 2, and Tier 3¹ components of the offshore wind energy supply chain that are best suited to in-state manufacturing of offshore wind energy projects. **(Criterion 2-1)**
2. Identify gaps in the current supply chain and workforce for achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a), including identifying the facilities and infrastructure required to meet these in-state assembly thresholds and the estimated geographic distribution of these facilities, and estimating the number, geographic distribution, and types of jobs that will be created. **(Criterion 2-2)**
3. When estimating the number and types of jobs required for achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a), include roles in related and supporting activities, including, but not limited to, environmental monitoring, research and development, construction, engineering and design, and manufacturing, operations, and maintenance. **(Criterion 2-3)**
4. Identify supply chain and workforce investments needed by the state to support achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a). **(Criterion 2-4)**
5. Identify available federal and state funds to support bringing or retaining jobs related to the manufacturing and assembly of offshore wind projects in the state. **(Criterion 2-5)**
6. Study and estimate the potential impacts on economic activity and job growth, and resulting state tax revenues, resulting from achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a). **(Criterion 2-6)**
7. Study and evaluate any potential impacts to project development timelines and costs as a result of achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a). **(Criterion 2-7)**
8. Study and estimate potential impacts to electric ratepayers as a result of achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a). **(Criterion 2-8)**
9. Develop recommendations for incorporating equity and environmental justice in economically and environmentally sustainable supply chain development. **(Criterion 2-9)**

¹ **Tier 1** companies are the original equipment manufacturers that assemble the wind turbines, while **Tier 2** companies provide specific components and subassemblies needed to build wind turbines, such as blades, nacelles, towers, and gearboxes. **Tier 3** companies supply the raw materials and processed components needed to create the Tier 2 components. Examples include steel, fiberglass, and rare earth metals used in turbine construction.

3. DATA GAPS IDENTIFIED

Sections 3.1 and 3.2 summarize the data gap findings for each of the 16 criteria described above. Based on the literature review process defined in Section 2, the clearest data gaps relate to the following:

- **Report 1:** Insufficient data is available to report on seaport readiness with respect to:
 - **Criterion 1-4**, understanding potential conflicts with California commercial and recreational fisheries
 - **Criterion 1-5**, identification of ports that maximize in-state workforce opportunities
 - **Criterion 1-6**, defining transportation and other infrastructure needed to support port development
- **Report 2:** Considerable data gaps for AB 3 requirements related to in-state manufacturing and workforce development are identified with respect to:
 - **Criterion 2-4**, identify supply chain/workforce investments needed
 - **Criterion 2-7**, impacts on development timelines resulting from achieving in-state assembly and manufacturing timelines
 - **Criterion 2-8**, defining potential impacts to electric ratepayers
 - **Criterion 2-9**, defining how to incorporate equity and environmental justice in supply chain planning

3.1. Data Gaps for Seaport Readiness (Report 1)

Following is a summary of most relevant reports and data gaps associated with the required contents of Report 1 for each criterion defined above. Tables in Section 4 present all reports identified, and the following presents data gaps for each criterion above.

3.1.1. Identify Feasible Seaport Locations

(Criterion 1-1) Identify feasible seaport locations for offshore wind turbine assembly to serve Central Coast and North Coast offshore wind energy projects.

Information for the criterion is provided by AB 525 reports (Section 4.1). There are no data gaps.

3.1.2. Prioritize Port Alternatives where Site Control can be Obtained within 5 Years

(Criterion 1-2) Recommend and prioritize only port alternatives where site control can be obtained by a port authority or state agency within five years.

Information for the criterion is provided by AB 525 reports (Section 4.1). There are no data gaps.

3.1.3. Prioritize Port Alternatives with Sufficient Landside and Water Acreage

(Criterion 1-3) Recommend and prioritize alternatives only with sufficient landside and water acreage or capacity to support maximum in-state assembly and manufacturing of offshore wind energy components.

Information for the criterion is provided by AB 525 reports (Section 4.1). There are no data gaps.

3.1.4. Prioritize Port Locations that Minimize Impacts to Cultural and Natural Resources

(Criterion 1-4) Recommend and prioritize port locations that minimize impacts to cultural and natural resources, including the marine and onshore environments, sensitive species, and habitats.

There are 57 documents defined as highly relevant for this criterion. These documents address species distribution, mitigation and monitoring strategies, and exposure criteria.

No documents provide information on specific port locations, but they do provide information on broader areas surrounding port locations. More information is needed on impacts and mitigation strategies to cultural and historical resources.

Additional data gaps exist regarding potential conflicts with California commercial and recreational fisheries. There is a lack of reliable spatial data on commercial and recreational fishing occurring in ports. For example, in Humboldt Bay there is a small commercial fishery for coastal pelagic species like Pacific sardine, northern anchovy, and Pacific Herring. Due to confidentiality rules, this fishery is often overlooked. Document #173, the [North Coast Fisheries Mapping Project](#) (see Table 4-4), shows this fishery at a high level. An understanding of fishing effort in ports and harbors will be important when evaluating potential impacts of port development.

Because there are so many highly relevant documents for this criterion, these highly relevant documents for this criterion are further sorted into “Most Important” and “Less Important” categories.

Cultural and Natural Resources – Most Important Documents

- #52: Incidental Harassment Application for the Long Beach Cruise Terminal Improvement Project - could provide guidance on format and content of a similar permit for any port redevelopment projects.
- #53: Only relevant to federal listing of longfin smelt in San Francisco Bay, so affecting only SF Bay ports.
- #54: Environmental analysis for maintenance dredging in Crescent City Harbor - could be useful for examining the potential impacts of a port redevelopment project in the area. The report does include discussion of affected cultural and historical resources which could be helpful context for requirements related to collaboration with tribal governments.
- #62: Good example of a monitoring study for osprey and bats; relevant for assessing potential port improvements in Humboldt Bay.
- #84: Longfin smelt are a listed species and are found in bays and estuaries, including Humboldt Bay and San Francisco Estuary, where they breed. This study examines the density and rearing habitats of smelt larvae in the San Francisco Estuary, providing helpful background information. Protection and mitigation for impacts on smelt are likely to be an issue for port development wherever they occur.
- #88: Provides background information on a species that could be affected by port redevelopment activities: harbor seals. Study area was in California.
- #93: Provides background information on a species that could be affected by port redevelopment activities: harbor porpoise. Study area was in California.
- #97: Provides background information on a species that could be affected by port redevelopment activities: harbor seals. Study area was in California.
- #107: Longfin smelt are a listed species and are found in bays and estuaries, including Humboldt Bay and San Francisco Estuary, where they breed. This study examines the abundance and distribution of smelt in the San Francisco Estuary, providing helpful background information. Protection and mitigation for impacts on smelt are likely to be an issue for port development wherever they occur.
- #108: Activities related to port redevelopment (e.g., dredging) will resuspend sediment in the water column, and consequently, could lead to harmful diatom blooms. Therefore, it will be important to understand existing concentrations of these blooms in each of the candidate ports. This paper describes the abundance of the diatoms in Los Angeles and Orange County.

- #109: Describes the movement and habitat use of tagged green sturgeon, which are a listed fish species in California. Understanding habitat requirements and use within the San Francisco Estuary will be important for assessing potential impacts to the species.
- #112: Similar to the California Department of Transportation document on pile driving (Document #71), this document is a helpful resource for understanding the effects of dredging on fish species. Dredging is likely required for the redevelopment of some ports.
- #113: This thesis presents results of fish collecting efforts in 2000-2001, generating a good sample of the species assemblage in Humboldt Bay. A resource for background information and finding additional references. Particularly relevant to potential port improvements made in Humboldt Bay.
- #119: Provides background information on the ecology of the San Francisco Bay Estuary, including descriptions of commonly collected species of fish, their life histories, and abundance trends.
- #125: Provides background information on Humboldt Bay. Paper is dated, but it provides a comprehensive overview of the ecology of the area.
- #126: Provides background information on pinnipeds in Humboldt County that could be affected by port redevelopment activities in Humboldt Bay. Study is dated, so the accuracy of the results is uncertain. Could still provide background information, especially on potential work windows for minimizing impacts on pinnipeds.

Cultural and Natural Resources – Less Important Documents

- #49: Document provides most sensitive species requiring additional permitting and potential mitigation considerations. It is relevant because it is current, as species become listed or delisted.
- #50: Document provides information on species distribution, timing and habitat use for cetaceans along the west coast.
- #51: Provides guidance on how to evaluate noise impacts on marine mammals, important for evaluating potential impacts of port improvement activities.
- #55: Document presents an evaluation of the relative vulnerability of marine species on the U.S. West Coast (California included) to disturbance associated with all forms of offshore alternative energy development. Though the focus is offshore wind, the report could provide a good framework to follow for evaluating vulnerability to protected marine species to activities related to port redevelopment, increased activity in ports, as well as some helpful references for writing background information on affected species.
- #56: Document provides more context for the 2024 update (Document #50) to the 2015 paper on Biologically Important Areas (BIAs) for cetaceans (Document #89). It includes a new scoring regime that considered the intensity of cetacean use and the uncertainties regarding the scores. This document is an example of reporting uncertainties; and it provides more context for the identified BIAs. This information could be used to assess impacts of port improvements on natural resources.
- #57: Provides information on the subpopulation of fin whales that occupies the Southern California Bight (SCB) year-round, which, according to the study, tends to prefer the nearshore waters of the SCB - potentially bringing them into contact with vessels using the ports considered for this study.
- #58: Document is a brief description of an ongoing BOEM-funded study documenting seabird and marine mammal occurrence along the coasts of Central and Southern California. The final report is pending; therefore, it would be worth following up with BOEM to see when the report will be available. The information gleaned from the aerial surveys will provide insight on current species composition, distribution, and abundance, which will be helpful for determining impact of port activities.

- #59: Longfin smelt are a listed species and are found in bays and estuaries, including Humboldt Bay and San Francisco Estuary, where they breed. This study examines the occurrence and abundance of smelt larvae in estuaries north of San Francisco Estuary, providing helpful background information. Protection and mitigation for impacts on smelt are likely to be an issue for port development wherever they occur.
- #60: Tool for estimating the zone of impact for pile driving, which is an important consideration for protected fish, marine mammals, and birds. The tool is used for preparing take permits.
- #63: Update on noise exposure criteria, specifically thresholds for responses/injury for marine mammals. Important background information for permitting (Marine Mammal Protection Act Incidental Harassment Authorization and Letter of Authorization). See also Document #79.
- #64: Resource is the homepage for the Coastal Pelagic Species Management Plan, which among other details, specifies essential fish habitat along the California coast. Several fisheries stocks are managed under this plan, including nearshore coastal species that may be impacted by port redevelopment. Provides helpful context for understanding fisheries regulations in the state.
- #65: Artificial light at night (ALAN) is a concern for salmon species and is relevant both for the construction of ports as well as operation. The results of this study suggest that ALAN at night increases predator density and provides important background information for evaluating ALAN-related impacts for potential port redevelopment projects. Study area analyzed was the Sacramento–San Joaquin Delta.
- #67: Provides background information on the California sea otter, which could be affected by port redevelopment activities.
- #71: Chapter 4 presents a framework for analyzing the impact of pile driving on fish, though the entire document is a helpful resource. It provides information on construction activities and sound produced, potential minimization methods, and analytical methods for evaluating impacts.
- #72: Results in this 2020 report would be helpful for describing the occurrence and density of various cetacean species near the selected ports. Maps of predicted densities for select species are presented (beginning on p. 31 of the report). Increased ship traffic related to the new port developments could impact these species. This is similar to Document #95, which was prepared in 2014 so is less recent.
- #73: Describes existing conditions for the Humboldt Wind Energy Area. Some of the species' descriptions and background information is applicable to Humboldt Bay.
- #79: Update on noise exposure criteria, specifically thresholds for responses/injury for marine mammals. Important background information for permitting (MMPA IHA/LOA). See also Document #63.
- #80: Provides background information on a species that could be affected by port redevelopment activities: California sea otters.
- #82: Provides background information on a species that could be affected by port redevelopment activities: harbor porpoise. Study area was in California.
- #86: Results would be helpful for describing species occurrence near the selected ports. Similar to Documents #72 and 95.
- #87: Results would be helpful for describing species occurrence near the selected ports.
- #90: Provides background information on a species that could be affected by port redevelopment activities: harbor seals. Study area was in California.

- #94: Results presented in this report would be helpful for describing the seasonal occurrence (summer and winter) and densities of marine mammal and seabird species near the selected ports. Increased ship traffic due to new port activities could impact these species.
- #95: Results presented in this 2014 report would be helpful for describing species occurrence near the selected ports. It is similar to Document #72, but that document includes more species and is more recent (2020).
- #96: Document provides guidelines for eelgrass mitigation, which will be an important part of port improvement evaluation (wherever eelgrass occurs). Minimizing impacts to eelgrass is a priority because it plays a vital role in the health and stability of coastal ecosystems.
- #98: The abstract explains that the report developed a metric for cumulative utilization and impact on marine predators by combining electronic tracking data of 8 protected predator species in the California Current Ecosystem with data on 24 anthropogenic stressors. This study provides a framework for understanding and quantifying cumulative effects.
- #100: Results in this report would be helpful for describing the occurrence and densities of cetaceans offshore of the selected ports. Similar to Documents #72, #94, and #95; this report provides information for the entire coast of California so would be less useful for study of detailed effects within port areas.
- #103: Provides background information on a species that could be affected by port redevelopment activities: harbor porpoise. Provides a population abundance for California (dated, but still helpful background).
- #104: Resource on fishery management plans, which could be useful in gaining a background understanding of the topic. Website includes a section on offshore wind correspondence which could be helpful for summarizing concerns among California's fisheries and can provide context for analyzing impacts to economic interests of Native American tribes.
- #105: Results would be helpful for describing species occurrence near the selected ports.
- #106: Provides background information on a species that could be affected by port redevelopment activities: leatherback sea turtles. Study area is California specifically, however this species mostly occurs offshore, so it may not be impacted by nearshore activities.
- #110: Provides background on fish assemblages within harbors in California and would be a helpful resource for describing conditions in each of the ports.
- #111: Provides background information on California sea lions, which could be affected by port redevelopment activities. Study area was in California; however, the study is dated, and abundance estimates are likely no longer accurate. Could still provide helpful background information though as sea lion rookeries and established haul out sites have been used for years.
- #117: Provides background information on bottlenose dolphins, which could be affected by port redevelopment activities. Study area was in California, however study is dated, so the accuracy of the distributions is uncertain. Could still provide background information.
- #118: Provides background information on bottlenose dolphins, which could be affected by port redevelopment activities. Study area was in California, however study is dated, so the accuracy of the results is uncertain. Could still provide background information.
- #120: Results would be helpful for describing species occurrence near the selected ports.
- #121: Provides background information on northern elephant seals, which could be affected by port redevelopment activities. Study area was in California, however study is dated, so the accuracy of the results is uncertain. Could still provide background information.

- #122: Provides background information on bottlenose dolphins, which could be affected by port redevelopment activities. Study area was in California, however study is dated, so the accuracy of the results is uncertain. Could still provide background information.
- #123: Results would be helpful for describing species occurrence near the selected ports.
- #124: Provides background information on bottlenose dolphins, which could be affected by port redevelopment activities. Study area was in California, however study is dated, so the accuracy of the results is uncertain. Could still provide background information.
- #127: Provides background information on pinnipeds in California. Paper is dated but still provides background information.

3.1.5. Prioritize Ports that Maximize In-State Workforce Opportunities

(Criterion 1-5) Identify and prioritize ports that maximize in-state workforce opportunities, including workforce opportunities for low-income and environmental justice communities.

There is one document that was found to be highly relevant (#156). This report provides instructions in the bidding credits for bidders to enter into community benefits agreements. Through these agreements, the bidders will prioritize and maximize opportunities for Tribes, or stakeholder groups that are expected to be affected by the impacts on the marine, coastal, and/or human environment (such as impacts on visual or cultural resources) from activities resulting from lease development that are not otherwise addressed by the Lease Area Use Community Benefits Agreements. Additional studies focusing on environmental justice and disadvantaged communities would be necessary.

More information is needed on strategies to maximize in-state workforce opportunities, including Tribes, low-income, and environmental justice communities.

3.1.6. Consider Transportation and Infrastructure Investments

(Criterion 1-6) Consider transportation and other infrastructure investments needed to develop the identified seaports and waterfront facilities needed for offshore wind energy activities.

No documents were found to be highly relevant. One document was found to be somewhat relevant (A 2030 European Vision for European OSW Ports, Document #37); it provides information on the vessel requirements, production volumes for turbine components, and investments needed to support European OSW ports to reach the EU's OSW goals.

More information is needed to determine what transportation and other infrastructure investments are required to support port development for OSW activities.

3.1.7. Assess Cost and Identify Funding and Financing Strategies

(Criterion 1-10) Assess the estimated cost and identify potential funding and financing strategies for necessary port development and redevelopment that support offshore wind energy activities, including the potential to leverage federal funding.

There are nine documents that were found to be highly relevant. These documents address cost estimates of port development. Document #11 summarizes how various US ports have received funding through state funding and grants. Document #21 identifies funding gaps and potential strategies for funding.

- #11: The report summarizes how various ports like Humboldt and those on the East Coast have received some funding through state funding and/or grants. However, it does not provide further strategy of how port projects get fully funded if state/grant funding does not cover the full cost. This funding strategy is missing and needs to be covered in AB 3.
- #21: Identifies funding gaps and potential strategies for funding.

- #13, #15, #19, #25, #30, #38: Provides cost estimate of port development for OSW but does not identify funding strategies.

More information is needed on funding strategies for port development, specifically on financing strategies and the potential to leverage federal funding.

3.2. Data Gaps for In-State Manufacturing, Supply Chain, Workforce, Electricity Rates, and Environmental Justice (Report 2)

Following is a summary of most relevant reports and data gaps associated with the required contents of Report 2 for each criterion listed above. Tables in Section 4 present all reports identified, and the following presents data gaps for each criterion.

3.2.1. Assess Current Manufacturing Capabilities

(Criterion 2-1) Assess current manufacturing capabilities within California that are potentially suitable to support the offshore wind energy supply chain and identify the tier one, tier two, and tier three components of the offshore wind energy supply chain that are best suited to in-state manufacturing of offshore wind energy projects.

There are four documents that were found to be highly relevant. These documents provide a simplified overview of California's strengths that could support the offshore wind industry, highlight potential regional contributions to labor and general contractor capabilities, an analysis of a percentage of market share for Tier 2 and Tier 3 opportunities based on economic census data. These documents do not provide a detailed evaluation of California's manufacturing capabilities and supply chain analysis, and they require updated data.

- #145: The report does not provide a comprehensive assessment of California's current manufacturing capabilities that could support the offshore wind supply chain. It lacks a detailed evaluation of Tier 1, Tier 2, and Tier 3 components that may be suitable for in-state production. While the report mentions potential regional contributions to labor and highlights a few general contractor capabilities, this is not part of a structured supply chain analysis. A more robust review of existing manufacturers, their capacities, and alignment with specific offshore wind components is needed to fully understand California's readiness to support each tier of the supply chain.
- #148: The report provides a simplified assessment of certain strengths in California that can be leveraged to supply the offshore wind industry. The assessment provides a general finding of what California may be able to currently supply, however does not provide a detailed analysis of manufacturing capabilities for each supply chain component, including Tier 1, Tier 2, and Tier 3 components.
- #155: This analysis provides a percent of the market share for Tier 2 and Tier 3 opportunities in California based on economic census data by aligning floating offshore wind needs with industries defined in the economic census data. This assessment does not provide a mapping of the companies that are capable which will be necessary for providing the geographic distribution for Criterion 2-2.
- #163: This report is from 2019, and all data will be slightly outdated. The study provides a general overview of the opportunity for wind turbine supply in the state, highlighting the importance of the state working with the industry to identify and develop both ports and manufacturing facilities. A detailed assessment of the supply chain capabilities is required as this study alone is not sufficient.

3.2.2. Identify Gaps in Supply Chain and Workforce

(Criterion 2-2) Identify gaps in the current supply chain and workforce for achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a), including identifying the facilities and infrastructure required to meet these in-state assembly

thresholds and the estimated geographic distribution of these facilities, and estimating the number, geographic distribution, and types of jobs that will be created.

There are six documents that were found to be highly relevant. The documents provide a high-level overview of port development and workforce requirements to meet California's offshore wind goals. They address workforce needs under various local content scenarios and assess port infrastructure needs, but do not analyze existing supply chain and workforce capabilities or gaps in relation to in-state assembly thresholds. Additional study is needed to incorporate in-state assembly and manufacturing requirements.

- #129: The presentation summarizes the port development and workforce requirements needed to meet California's offshore wind goals. While this report does not directly analyze the existing supply chain capabilities or gaps, it does address coastal workforce needs under several local content scenarios. Port infrastructure needs were assessed at a high level, outlining general capabilities. However, a more detailed analysis—including engagement with landowners—will be required to fully understand site potential and interest.

The report does not quantify local content percentages as outlined in AB 3. This will need to be addressed through the development of realistic port buildout and local activity scenarios, which will inform estimates for achieving 50–65% in-state manufacturing and assembly. Using these scenarios, supply chain and workforce gaps can be more accurately assessed. While this version of the report includes a preliminary workforce gap analysis, an updated assessment will be necessary once new scenarios are developed.

- #145: A full supply chain and workforce gap analysis—comparing projected demand against existing capacity—is not included in the report. Current supply is addressed at a high level, but a more detailed inventory of capabilities and resources will be required, followed by a structured gap analysis. While the study includes full-time equivalent (FTE) staffing projections for the Central Coast, it does not offer specific details on job functions, skills, or qualifications, nor does it evaluate the full California coastline. A more comprehensive and geographically inclusive approach is needed to accurately assess infrastructure requirements, job types, and facility distribution needed to meet in-state assembly and domestic content goals.
- #147: This study analyzed the workforce gaps given varying levels of local content. A supply chain analysis was not conducted to inform the study of how “realistic” the scenarios would be. An assumption was made on the geographic distribution of the workforce needs based on the port build out. Based on the in-state assembly thresholds, a revised version of this study needs to include a supply chain gap analysis and an update to the workforce needs based on that scenario.
- #148: The report does not cover gaps in the current supply chain; however, it does provide an analysis of the potential workforce needs and gaps in California. The assessment did not look at the geographical distribution of the jobs, nor did it consider the buildout scenario for the supply chain which will impact the workforce numbers. For Criterion 2-2, it is important that the numbers reflect the supply chain buildout to meet the in-state domestic content goals, as well as consider the geography of where each activity might take place.
- #155: A gap analysis was conducted for workforce planning using input-output modelling, which provides an indication of where there is sufficient supply, however the results were statewide, and not provided per geography. Specific job roles and training requirements for the outputs were not defined.
- #163: The study analyzes previous workforce studies done and provides a qualitative analysis of the workforce impacts and benefits. A study for a California scenario with specific in-state manufacturing capabilities is required.

3.2.3. Estimate Number and Type of Jobs Required

(Criterion 2-3) When estimating the number and types of jobs required for achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a), include roles in related and supporting activities, including, but not limited to, environmental monitoring, research and development, construction, engineering and design, and manufacturing, operations, and maintenance.

There are seven documents that were found to be highly relevant. These documents do provide broadly defined estimates of job requirements. These are general categories such as construction, operations, and maintenance. Document #147 did provide the appropriate level of detail regarding workforce estimates. The documents do not consider the in-state assembly and manufacturing targets.

- #129: The workshop did consider supporting and related services such as environmental monitoring, research and development, construction, engineering, and operation and maintenance (O&M). However, once Criterion 2-2 is finalized and scenarios are clearly defined, the scope and roles of these supporting services will need to be refined and expanded accordingly.
- #145: Total FTEs were categorized into two project phases and 3 impact categories- Construction and operations, and the impact categories of onsite, supply chain, and induced. Detailed information on job roles was not provided.
- #146: In general, this report served as a literature review of studies for supply chain and workforce opportunities and related economic impact. The report describes an outline of what the port needs are for the offshore wind industry; however, it is not an analysis of which ports or investment required at existing ports. The economic benefits section served as a literature review of other reports that analyzed economic benefits of offshore wind in the country and specific to California. This report is a summary of outputs from other studies, without defining the specific parameters and inputs.
- #147: This study provided the appropriate level of workforce information; however, the data will need to be revised to align with the updated supply chain assumptions from Criterion 2-2.
- #148: The report does provide an analysis of the potential workforce needs and gaps in California. The assessment did not look at the geographical distribution of the jobs, nor did it consider the buildout scenario for the supply chain which will impact the workforce numbers.
- #163: The workforce outputs are not analyzed in detail, rather FTE numbers in each supply area for a given deployment scenario. The analysis is qualitative based on other studies' data.
- #167: Estimates of California offshore wind project local content under two buildout scenarios and calculation of the associated economic impacts in terms of FTE jobs, earnings, output, and gross domestic product (GDP). Study proposes annual construction FTE jobs ranging from 2,000 to 26,000 could be supported in California from 2025 to 2050. Between 135,000 and 327,000 operations phase FTE jobs are estimated over the same timeframe. The study provides local content estimates for broadly defined labor categories (including for development services, construction, and O&M) but no further detail qualifying or quantifying specific job roles. No explanation or supporting evidence for how local content estimates under each scenario are derived.

3.2.4. Identify Supply Chain and Workforce Investments Needed

(Criterion 2-4) Identify supply chain and workforce investments needed by the state to support achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a).

There are two documents that were found to be highly relevant. These documents include an analysis of the investments required to upgrade port infrastructure and recommendations to the state in working

with the OSW industry. These documents do not provide a comprehensive supply chain analysis or investment requirements.

- #129: While the report includes an analysis of the investments required to upgrade port infrastructure, it does not yet include a detailed assessment of the broader investments needed for supply chain and workforce development. To address this, a comprehensive supply chain gap analysis must first be conducted, followed by an assessment of infrastructure needs to support the supply chain buildout. Investment scenarios—reflecting different levels of state support—will then need to be developed to ensure California is prepared for a range of offshore wind buildout pathways.
- #163: The report makes recommendations on the state working with industry; however, it does not outline or quantify the investment required.

The following documents were found to be somewhat relevant:

- #128: Louisiana Supply Chain/Workforce Roadmap
- #135: OSW Pathways to Commercial liftoff
- #137: Wind Energy Supply Chain Deep Dive
- #139: South Carolina Supply Chain Study
- #158: 30 GW by 2030

3.2.5. Identify Available Funds to Support Jobs

(Criterion 2-5) Identify available federal and state funds to support bringing or retaining jobs related to the manufacturing and assembly of offshore wind projects in the state.

There are six documents that were found to be highly relevant. These documents do provide information on federal and state grant programs leveraged in other states. However, the documents lack information on California-specific programs. The documents do discuss financial incentives for manufacturers in California and policy recommendations.

- #129: This report focuses primarily on long-term workforce needs, job creation potential, and the associated economic benefits (with and without supportive state policy). However, it currently lacks an inventory or analysis of available federal and state funding to support workforce development or to attract and retain offshore wind manufacturing and assembly jobs in California.
- #140: Chapter 5, Federal and State OSW Farm Support Funds and Programs, includes a summary table of key federal and state grants and programs that support domestic job creation and supply chain development in the U.S. offshore wind sector. It highlights multi-state working groups as well as programs specific to states like New Jersey that aim to bolster local content.

The report does not provide an in-depth analysis of broader state and federal initiatives that could be leveraged beyond those designed exclusively for offshore wind. It lacks a focused assessment of programs available in California, which will be critical for understanding the full range of funding mechanisms applicable to workforce development, supply chain growth, port upgrades, and innovation. A more comprehensive review of relevant grants, incentives, and funding pathways will be necessary to inform future planning and strategic investment.

- #148: The study mentions various federal and state level mechanisms to fund offshore wind projects that have been leveraged in other regions.
- #155: The assessment provides financial incentives for manufacturers in California and provides recommendations for attracting supply chain manufacturing to California.

- #163: In Exhibit 3.2, this study reports mechanisms other states have used to impose labor standards and local content requirements. The report further extrapolates this information and applies it to how California can implement policy (under the section *Tools that can be used in California climate policy*). Case studies are also provided for Community Benefits Agreements.
- #164: This report includes a section on Policy Recommendations, which highlights actions the State should take to develop the offshore wind industry. The policies suggest allocating funds at a state and federal level and the creation of new funding programs. Some of the recommendations include using tax abatements deals or tax increment financing for port upgrades, revolving loan funds for offshore wind manufacturing facility upgrades, and a multi-asset renewable fund. The recommendations in this report are not specific to workforce development or to existing funds.

3.2.6. Estimate Impacts on Economic Activity and Job Growth

(Criterion 2-6) Study and estimate the potential impacts on economic activity and job growth, and resulting state tax revenues, resulting from achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a).

There are 10 documents that were found to be highly relevant. These documents do provide estimates on economic activity and job growth. The documents do not provide estimates on state tax revenues. The conclusions on economic activity and job growth are not based on achieving in-state assembly and manufacturing targets.

- #129: The report estimates the direct, indirect, and induced economic impacts of port development and offshore wind workforce expansion based on projected job roles and salary data. However, it does not include analysis of the additional economic activity generated by supply chain development or increased in-state spending from local content requirements. These impacts have not yet been quantified. The full economic potential, including job growth and state tax revenue will depend on the selected buildout scenario that aligns with California's target of 50–65% in-state manufacturing and assembly. Once that scenario is developed, its unique impacts will need to be modeled and analyzed.
- #145: The report considers the job growth from both a proposed demonstration project (CADEMO) and the impact on the Central Coast a result of the Morro Bay Wind Energy Area (WEA) OSW projects, where workforce numbers were identified and resulting economic impact measured. While this provides valuable insight into localized impacts, it does not include an estimate of resulting state tax revenues, nor does it evaluate the broader economic effects of achieving California's in-state assembly and manufacturing targets. Furthermore, the geographic scope is limited and does not account for potential impacts across the state. A more expansive, statewide economic and fiscal impact analysis will be required to understand the full benefits of meeting domestic content thresholds.
- #146: In general, this report served as a literature review of studies for supply chain and workforce opportunities and related economic impact. The report describes an outline of what the port needs are for the offshore wind industry, however not an analysis of which ports or investment required of the existing reports. The economic benefits section served as a literature review of other reports that analyzed economic benefits of offshore wind in the County and specific to California. This report cannot be used as a deep analysis as it just provides a summary of outputs from other studies, without defining the specific parameters and inputs.
- #147: This study did not include the economic impact of the industry being built out, and it is suggested to fill gaps in data that an IMPLAN economic impact analysis model be run for the supply chain buildout and workforce demand to measure the state tax revenues and GDP.
- #148: This report covers the economic impacts of offshore wind, as it pertains to workforce and seaport development. A new analysis will need to be conducted considering the impacts from the supply chain development and corresponding workforce development.

- #153: This was a very general presentation to the public, giving a background of the AB525 study and it highlights that there will be economic benefits, but does not detail out the benefits.
- #155: The job growth was analyzed using the JEDI model with specific local content percentages. An analysis aligning with the in-state manufacturing thresholds and an analysis of the economic impact of developing new manufacturing facilities, or the impact of the additional spend from local content in California will need to be considered.
- #159: The assessment was conducted for the port development and resulting workforce in the Central Coast. Further analysis on the wider California impacts and regional assessment will be necessary.
- #163: A qualitative analysis of previous workforce studies was conducted in this report. An independent analysis aligned with in-state manufacturing thresholds will be required.
- #167: Estimates of California offshore wind project local content under two buildout scenarios and calculation of the associated economic impacts in terms of FTE jobs, earnings, output, and GDP. Study estimates California economic impacts between \$8.7M-\$2.6B in Earnings, \$3.4B-\$8.6B in Output, and \$1.5B-\$4.0B in GDP from projects' construction phase. The JEDI economic impact model in used in the analysis does not account for the impacts on consumers, such as changes in utility or tax rates or other purchase prices.

3.2.7. Evaluate Impacts to Development Timelines and Costs

(Criterion 2-7) Study and evaluate any potential impacts to project development timelines and costs as a result of achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a)

There are no documents that were found to be highly relevant. Two documents were defined as somewhat relevant and are summarized below. No studies have been conducted which highlight the impact of cost and timeline of projects to meet the in-state assembly and manufacturing requirements. Additional study is needed to quantify the economic and timeline impacts of in-state domestic content thresholds. These documents do not address impacts to project development timelines and costs as a result of local content requirements for OSW.

There are two documents that were found to be somewhat relevant:

- #135: Pathways to Commercial Liftoff: The report includes information on deployment forecasts, market trends, cost reduction strategies.
- #141: UK & Poland Local Content: The report analyzes the policy of local content requirements for renewable energy in the UK and Poland.

3.2.8. Estimate Impacts to Electric Ratepayers

(Criterion 2-8) Study and estimate potential impacts to electric ratepayers as a result of achieving the in-state assembly and manufacturing targets and domestic content thresholds described in subdivision (a).

There are two documents that were found to be highly relevant. These documents model CAPEX, OPEX, and LCOE of OSW in California. These documents utilized outdated data and would need to be updated to reflect in-state assembly and manufacturing targets. Neither document provides information on the impact to ratepayers.

- #161: NREL conducted a study to analyze the cost of floating offshore wind in California over a range of different scenarios.

Potential missing data: Capital expenditures (CAPEX) will need to be updated to reflect in-state manufacturing percentages. It appears in this study, general assumptions around global FOW

component costs were used, rather than costs for components to be manufactured in-state. A further rate impact study will need to be conducted to analyze how the levelized cost of energy (LCOE) will impact rate payers (using a refined LCOE based on in-state manufacturing CAPEX).

For a complete study, first the increased in CAPEX, operating expenditures (OPEX) and LCOE will need to be analyzed based on the 50-65% domestic content thresholds analyzed for the State of California. Then the LCOE will need to be used to conduct a rate impact study.

- #163: The calculated LCOE costs are outdated for floating offshore wind, when compared with industry standard. An updated study running the LCOE given the in-state assembly and manufacturing targets will need to be produced. Furthermore, this study provides an analysis of the avoided cost of offshore wind and LCOE, but a further study for grid impact will need to be conducted.

3.2.9. Develop Recommendations for Equity and Environmental Justice

(Criterion 2-9) Develop recommendations for incorporating equity and environmental justice in economically and environmentally sustainable supply chain development.

There are two documents that were found to be highly relevant. These documents include a workforce development analysis on geographic regions with a focus on environmental justice designations and interviews with stakeholders from Humboldt County on their perceptions of a community benefits package. Neither document specifically address supply chain development nor provide recommendations for incorporating equity and environmental justice.

- #129: While this study did not include a dedicated analysis of supply chain development and therefore does not contain specific recommendations on equity and environmental justice within that context, the workforce development analysis did evaluate geographic areas with respect to their designation as environmental justice communities. These insights can serve as a foundation for incorporating equity considerations into future studies focused on sustainable supply chain development.
- #162: The Schatz Energy Research Center research conducted a series of interviews with stakeholders to capture their perceptions on the offshore wind industry in Humboldt County. The interview provides insight on stakeholder perceptions for community benefits package. This report will be useful in forming recommendations that align with the needs of the community. Recommendations still need to be developed.

The following two documents were found to be somewhat relevant:

- Challenges and Opportunities in the Central Atlantic (#134).
- Supply Chain Roadmap for the US (#149).

4. LITERATURE ASSESSMENT DOCUMENTS

The Energy Commission's Offshore Wind Strategic Plan documents are presented in Section 4.1. The results of the document assembly for the literature assessment are presented in Section 4.2.

4.1. Offshore Wind Strategic Plan

The AB 525 Offshore Wind Energy Strategic Plan was adopted by the Energy Commission on July 10, 2024. Some of these documents are also included in Tables 4-1, 4-2, and 4-3, but they are listed here separately due to their importance.

Final Commission Report

- [Commission Adopted Final Strategic Plan Volume I: Overview](#)
- [Commission Adopted Final Strategic Plan Volume II: Main Report](#)
- [Commission Adopted Final Strategic Plan Volume III: Appendices](#)

AB 525 Interim Reports

- [Offshore Wind Energy Development off the California Coast Maximum Feasible Capacity and Megawatt Planning Goals for 2030 and 2045](#)
- [Preliminary Assessment of the Economic Benefits of Offshore Wind Related to Seaport Investments and Workforce Development Needs and Standards](#)
- [AB 525 Offshore Wind Energy Permitting Roadmap - Final Report](#)

Consultant Reports

- [Analytical Guidance and Benefits Assessment for AB 525 Strategic Plan Seaport and Workforce Development for Floating Offshore Wind in California](#)
- [OSW Transmission Technologies Assessment](#)
- [California State Lands Commission AB 525 Port Readiness Plan - Final Report](#)
- [California State Lands Commission Alternative Port Assessment to Support Offshore Wind](#)
- [California State Lands Commission AB 525 Workforce Development Readiness Plan - Final Report](#)

4.2. Literature Assessment Documents Assembled

Table 4-1. Seaport Readiness Documents (Report 1)

Doc #	Report 1: Seaport Readiness Documents Report Title & Link (The most relevant reports are in rows shaded blue)	Year
1	Ports of Opportunity: Risks, Benefits & Approaches to OSW Port Development in Our Region https://rpa.org/work/reports/ports-of-opportunity	2024
2	BOEM California OSW Draft Programmatic EIS Volume 1: Programmatic EIS https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/2024_1021_CA_PEIS_Vol_I_508c_0.pdf	2024
3	BOEM California OSW Draft Programmatic EIS Volume 2: Appendices https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/2024_1021_CA_PEIS_Vol_II_Appendices_508c_0.pdf <ul style="list-style-type: none"> • Appendix A: Representative Project Design Envelope for Floating Offshore Wind Energy in California • Appendix C: Planned Activities Scenario • Appendix E: Programmatic Mitigation Measures • Appendix F: Seascape, Landscape, and Visual Impact Assessment, • Appendix G: NHPA Section 106 Summary 	2024
4	Port of Hueneme 10-Year Strategic Plan (OSW addressed on Pg. 17) https://www.portofhueneme.org/wp-content/uploads/2024/08/POH24_Hueneme_Strategic_Plan_Proof7-002-8.27.2024.pdf	2024
5	The Cost of OSW Energy in the US from 2025 to 2050 https://www.nrel.gov/docs/fy24osti/88988.pdf	2024
6	Richmond Green-Blue New Deal https://www.ci.richmond.ca.us/DocumentCenter/View/71981/Green-Blue-New-Deal-Opportunities-Report-with-Appendices	2024
7	Hawai'i Floating OSW Regional Ports Assessment https://www.boem.gov/sites/default/files/documents/regions/pacific-ocs-region/environmental-science/BOEM_2024-039.pdf	2024
8	Ports and Waterfront Infrastructure Presentation https://efiling.energy.ca.gov/GetDocument.aspx?tn=255194&DocumentContentId=90877	2024
9	OSW Ports and Workforce Workshop (Full Slide Deck of Presentations) https://efiling.energy.ca.gov/GetDocument.aspx?tn=250399&DocumentContentId=85141	2024
10	Alternative Port Assessment to Support Offshore Wind State Land Commission's 2023 Alternative Port Assessment to Support Offshore Wind Final Report	2023

Report 1: Seaport Readiness Documents		
Doc #	Report Title & Link (The most relevant reports are in rows shaded blue)	Year
11	Preliminary Assessment of Economic Benefits Related to Seaport Investments and Workforce Development (CEC) Commission Report Preliminary Assessment of Economic Benefits of Offshore Wind	2023
12	Analytical Guidance and Benefits Assessment for AB 525 Strategic Plan Seaport and Workforce Development for Floating Offshore Wind in California Study for the May 23, 2023 AB 525 Workshop	2023
13	CSLC AB 525 Port Readiness Plan California State Lands Commission AB 525 Port Readiness Plan	2023
14	The Impacts of Developing a Port Network for Floating Offshore Wind Energy on the West Coast of the US https://www.nrel.gov/docs/fy23osti/86864.pdf	2023
15	California Floating Offshore Wind Regional Ports Assessment https://www.boem.gov/sites/default/files/documents/renewable-energy/studies/BOEM-2023-010.pdf	2023
16	Assessment of OSW Opportunities & Challenges in US Gulf of Mexico https://www.nrel.gov/docs/fy24osti/88195.pdf	2023
17	Pier Wind Conceptual Study (Port of Long Beach) https://polb.com/download/547/pier-wind/17042/2023-04-20-pier-wind-concept-report-final.pdf	2023
18	Green Ports: Possibilities on the North Coast https://humboldtbay.org/sites/humboldtbay.org/files/Green Ports Possibilities on the North Coast BLR.pdf	2023
19	Pier 94/96 Concept Phase (Port of San Francisco) https://www.sfport.com/files/2024-01/2023-09-15_posf_pier_94-96_osw_final_concept_report.pdf	2023
20	A measure of port-level resilience to shocks in commercial fisheries https://doi.org/10.1016/j.marpol.2023.105575	2023
21	Building a National Network of Offshore Wind Ports https://oceanic.org/building-a-national-network-of-offshore-wind-ports/	2023
22	Representative Project Design Envelope for Floating Offshore Wind Energy: A Focus on the California 2023 Federal Leases https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/RDPE_Final.pdf	2023
23	OSW Vessel Needs https://cleanpower.org/wp-content/uploads/2021/09/OffshoreWind_Vessel_Needs_230104.pdf	2023

Report 1: Seaport Readiness Documents		
Doc #	Report Title & Link (The most relevant reports are in rows shaded blue)	Year
24	Approach for Installation and Logistics of a Floating Offshore Wind Farm https://doi.org/10.3390/jmse11010053	2023
25	California FOSW Regional Ports Feasibility Analysis https://www.boem.gov/sites/default/files/documents/regions/pacific-ocs-region/BOEM-2023-038.pdf	2023
26	Identification and Assessment of Additional Potential OSW Ports in New Jersey https://www.njeda.gov/wp-content/uploads/2024/02/NJEDA-2023-Ports-Assessment-1.pdf	2023
27	Coos Bay OSW Port Infrastructure Study https://simplybluegroup.com/wp-content/uploads/2022/03/Coos-Bay-Offshore-Port-Infrastructure-Study-Final-Technical-Report.pdf	2022
28	Port of Coos Bay Port Infrastructure Assessment for OSW Development https://www.boem.gov/sites/default/files/documents/renewable-energy/studies/BOEM-2022-073.pdf	2022
29	Redwood Multipurpose Marine Terminal Project: Preliminary Basis of Design https://humboldtbay.org/sites/humboldtbay.org/files/Basis%20of%20Design%20-%20Preliminary%20BOD%20-%2020221007_opt.pdf	2022
30	Central Coast Emerging Industries Waterfront Siting & Infrastructure Study https://reachcentralcoast.org/wp-content/uploads/Waterfront-Infrastructure-Report-121522.pdf	2022
31	California Supply Chain Needs Summary https://efiling.energy.ca.gov/GetDocument.aspx?tn=242928&DocumentContentId=76513	2022
32	Massachusetts OSW Ports and Infrastructure Assessment: North Shore https://files-cdn.masscec.com/research/wind/MA%20OSW%20Ports%20%26%20Infrastructure%20Assessment%202022%20-%20North%20Shore_0.pdf	2022
33	West Coast Ports Strategy Study Presentation https://efiling.energy.ca.gov/GetDocument.aspx?tn=247108&DocumentContentId=81517	2022
34	Humboldt Bay Wind Port Presentation https://efiling.energy.ca.gov/GetDocument.aspx?tn=247106&DocumentContentId=81515	2022
35	California Port Studies Presentation https://efiling.energy.ca.gov/GetDocument.aspx?tn=246362&DocumentContentId=80558	2022
36	OSW Port Infrastructure Feasibility Study https://www.maine.gov/mdot/ofps/docs/port/MaineDOT%20OSW%20Port%20Infrastructure%20Feasibility%20Study-Concept%20Design%20Report%2011-17-2021.pdf	2021

Report 1: Seaport Readiness Documents		
Doc #	Report Title & Link (The most relevant reports are in rows shaded blue)	Year
37	A 2030 Vision for European OSW Ports https://windeurope.org/intelligence-platform/product/a-2030-vision-for-european-offshore-wind-ports-trends-and-opportunities/	2021
38	Humbolt Bay OSW Port Infrastructure Assessment Report https://schatzcenter.org/pubs/2020-OSW-R19.pdf	2020
39	The Cost of FOSW Energy in CA between 2019 and 2032 https://www.nrel.gov/docs/fy21osti/77384.pdf	2020
40	Coastal Infrastructure CO-Benefits Linked to OSW Development https://schatzcenter.org/pubs/2020-OSW-R11.pdf	2020
41	Guide for Building and Classing Floating OSW Turbines https://ww2.eagle.org/content/dam/eagle/rules-and-guides/current/offshore/fowt-guide-july20.pdf	2020
42	Improving logistics scheduling and operations to support offshore wind construction phase https://www.econstor.eu/bitstream/10419/297175/1/1691908754.pdf	2019
43	New York State OSW Master Plan Assessment of Ports and Infrastructure https://www.nyserda.ny.gov/All-Programs/Offshore-Wind/About-Offshore-Wind/Master-Plan	2017
44	Determining the Infrastructure Needs to Support Offshore Floating Wind and Marine Hydrokinetic Facilities on the Pacific West Coast and Hawaii https://www.boem.gov/sites/default/files/environmental-stewardship/Environmental-Studies/Pacific-Region/Studies/BOEM-2016-011.pdf	2016
45	Assessment of Ports for OSW development in the US https://www.energy.gov/sites/prod/files/2014/04/f14/wind_offshore_port_readiness.pdf	2014
46	Seismic Design of Piers and Wharves https://ascelibrary.org/doi/book/10.1061/9780784413487	2014
47	The California Coastal Act and Ports: The Unintended Environmental Justice Implications of Preserving California's Coastline https://doi.org/10.1080/08920753.2013.784888	2013
48	The Vulnerability of Crescent City, California, to Tsunamis Generated by Earthquakes in the Kuril Islands Region of the Northwestern Pacific https://doi.org/10.1785/gssrl.79.5.608	2008

Table 4-2. Cultural and Natural Resources Documents (Report 1)

Doc #	Report 1: Cultural and Natural Resources Documents Report Title & Link (The most relevant reports are in rows shaded blue; somewhat relevant reports are shaded green)	Year
49	State and Federally Listed Endangered and Threatened Animals of California https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109405	2025
50	Biologically Important Areas II for cetaceans within U.S. and adjacent waters - West Coast Region https://doi.org/10.3389/fmars.2024.1283231	2024
51	Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0): Underwater and In-Air Criteria for Onset of Auditory Injury and Temporary Threshold Shifts https://www.fisheries.noaa.gov/s3/2024-11/Tech_Memo-Guidance_-3.0-_OCT-2024-508_OPR1.pdf	2024
52	Final monitoring report for the incidental harassment authorization issued to Carnival Cruise Line https://www.fisheries.noaa.gov/s3/2024-01/Carnival-Cruise-Line-Final-IHA-2024-Monitoring-Report-OPR1.pdf	2024
53	Endangered and threatened wildlife and plants; Endangered species status for the San Francisco Bay-Delta distinct population segment of the longfin smelt https://www.fws.gov/species-publication-action/endangered-and-threatened-wildlife-and-plants-endangered-species-127	2024
54	Final Environmental Assessment for Crescent City Harbor Maintenance Dredging Crescent City, Del Norte County https://www.spn.usace.army.mil/LinkClick.aspx?fileticket=1_sQkTGrTPA%3d&portalid=68	2024
55	Vulnerability index to scale effects of offshore renewable energy on marine mammals and sea turtles off the U.S. West Coast (VIMMS) https://espis.boem.gov/Final%20Reports/BOEM_2023-057.pdf	2023
56	Biologically Important Areas II for cetaceans within U.S. and adjacent waters – Updates and the application of a new scoring system https://doi.org/10.3389/fmars.2023.1081893	2023
57	Movements and residency of fin whales (<i>Balaenoptera physalus</i>) in the California Current System https://doi.org/10.1007/s42991-022-00298-4	2022
58	Seabird and Marine Mammal Surveys Near Potential Renewable Energy Sites Offshore Central and Southern California https://www.boem.gov/pc-17-01	2022
59	Estuarine recruitment of longfin smelt (<i>Spirinchus thaleichthys</i>) north of the San Francisco Estuary https://doi.org/10.15447/sfews.2022v20iss3art3	2022
60	Multi-Species Pile Driving Calculator Tool https://www.fisheries.noaa.gov/resource/data/multi-species-pile-driving-calculator-tool	2022

Report 1: Cultural and Natural Resources Documents		
Report Title & Link		
Doc #	(The most relevant reports are in rows shaded blue; somewhat relevant reports are shaded green)	Year
61	Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery https://www.fisheries.noaa.gov/management-plan/pacific-coast-groundfish-fishery-management-plan	2022
62	Preliminary Osprey and Bat Survey Results Report, Redwood Multipurpose Marine Terminal, Samoa, California https://humboltdbay.org/sites/humboltdbay.org/files/Upland%20Biology%20-%20Birds%20and%20Bats%20-%2020220902_opt.pdf	2022
63	Marine mammal noise exposure criteria: Assessing the severity of marine mammal behavioral responses to human noise https://doi.org/10.1578/AM.47.5.2021.421	2021
64	Pacific Coast Coastal Pelagic Fishery Management Plan https://www.fisheries.noaa.gov/management-plan/coastal-pelagic-species-management-plan	2021
65	Effects of artificial lighting at night on predator density and salmonid predation https://doi.org/10.1002/tafs.10286	2021
66	The biological effects of light pollution on terrestrial and marine organisms https://doi.org/10.26607/ijsl.v24i1.121	2021
67	Southern Sea Otter (<i>Enhydra lutris nereis</i>) Stock Assessment Report https://www.fws.gov/media/southern-sea-otter-stock-assessment-report	2021
68	Ecological impact of artificial light at night: effective strategies and measures to deal with protected species and habitats https://doi.org/10.3390/su13115991	2021
69	Substrate vibrations and their potential effects upon fishes and invertebrates https://doi.org/10.1121/10.0004773	2021
70	How to set sound exposure criteria for fishes https://doi.org/10.1121/10.0000907	2020
71	Technical Guidance for the Assessment of Hydroacoustic Effects of Pile Driving on Fish https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/hydroacoustic-manual-a11y.pdf	2020
72	Habitat-Based Density Estimates for Cetaceans in the California Current Ecosystem Based on 1991–2018 Survey Data. NOAA Technical Memorandum https://doi.org/10.25923/3znq-yx13	2020
73	CA North Coast OSW Studies: Existing Conditions and Potential Environmental Effects https://schatzcenter.org/pubs/2020-OSW-R13.pdf	2020

Report 1: Cultural and Natural Resources Documents		
Report Title & Link		
Doc #	(The most relevant reports are in rows shaded blue; somewhat relevant reports are shaded green)	Year
74	Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery https://www.fisheries.noaa.gov/management-plan/pacific-coast-groundfish-fishery-management-plan	2020
75	Attraction of nocturnally migrating birds to artificial light: The influence of colour, intensity and blinking mode under different cloud cover conditions https://doi.org/10.1016/j.biocon.2019.02.029	2019
76	Bright lights in the big cities: Migratory birds' exposure to artificial light https://doi.org/10.1002/fee.2029	2019
77	Draft Proposed Guidelines for Providing Information on Lighting and Marking of Structures Supporting Renewable Energy Development https://boem.gov/sites/default/files/documents/renewable-energy/Lighting-and-Marking-Guidelines.pdf	2019
78	Pile driving noise reduction approaches https://tethys.pnnl.gov/publications/pile-driving-noise-reduction-approaches	2019
79	Marine mammal noise exposure criteria: Updated scientific recommendations for residual hearing effects https://doi.org/10.1578/AM.45.2.2019.125	2019
80	Annual California sea otter census—2018 spring census summary: U.S. Geological Survey data release https://doi.org/10.5066/P98012HE	2018
81	High rates of vessel noise disrupt foraging in wild harbour porpoises (<i>Phocoena phocoena</i>) https://doi.org/10.1098/rspb.2017.2314	2018
82	Return of Harbor Porpoises (<i>Phocoena phocoena</i>) to San Francisco Bay https://doi.org/10.1578/AM.43.6.2017.691	2017
83	Harbor Seal (<i>Phoca vitulina</i>) Tolerance to Vessels Under Different Levels of Boat https://www.academia.edu/47233813/Harbor_Seal_Phoca_vitulina_Tolerance_to_Vessels_Under_Different_Levels_of_Boat	2017
84	Sampling uncharted waters: Examining rearing habitat of larval longfin smelt (<i>Spirinchus thaleichthys</i>) in the upper San Francisco Estuary https://doi.org/10.1007/s12237-017-0255-9	2017
85	Cetacean acoustic detections from free-floating vertical hydrophone arrays in the southern California Current https://pubs.aip.org/asa/jasa/article/140/5/EL399/679287/Cetacean-acoustic-detections-from-free-floating	2016

Report 1: Cultural and Natural Resources Documents		
Report Title & Link		
Doc #	(The most relevant reports are in rows shaded blue; somewhat relevant reports are shaded green)	Year
86	Moving towards dynamic ocean management: How well do modeled ocean products predict species distributions? https://doi.org/10.3390/rs8020149	2016
87	Cetacean abundance in the California current estimated from ship-based line-transect surveys in 1991-2014 https://archive.iwc.int/pages/download_progress.php?ref=6491&size=&ext=pdf&k=	2016
88	Seasonal Changes in the Distribution and Abundance of Pacific Harbor Seals (<i>Phoca vitulina richardii</i>) in South Humboldt Bay, California and Its Newly Enacted Marine Protected Area https://digitalcommons.humboldt.edu/etd/1356/	2015
89	Biologically important areas for selected cetaceans within U.S. waters – west coast region https://dx.doi.org/10.1578/AM.41.1.2015.1	2015
90	Southern California Bight marine mammal density and abundance from aerial surveys, 2008–2013 https://www.researchgate.net/publication/278157343_Southern_California_Bight_marine_mammal_density_and_abundance_from_aerial_surveys_2008-2013	2015
91	Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish https://tethys.pnnl.gov/publications/technical-guidance-assessment-mitigation-hydroacoustic-effects-pile-driving-fish	2015
92	A review of impacts of marine dredging activities on marine mammals https://doi.org/10.1093/icesjms/fsu187	2015
93	Patterns of habitat use by harbor porpoise (<i>Phocoena phocoena</i>) in central San Francisco Bay https://scholarworks.calstate.edu/downloads/n583xw91q?locale=en	2015
94	Aerial Seabird and Marine Mammal Surveys off Northern California, Oregon, and Washington https://pubs.usgs.gov/publication/70100431	2014
95	Predicting seasonal density patterns of California cetaceans based on habitat models https://www.semanticscholar.org/paper/Predicting-seasonal-density-patterns-of-California-Becker-Forney/7bd3347331b572397c7967cafea9a65ac939861b	2014
96	California Eelgrass Mitigation Policy and Implementing Guidelines https://media.fisheries.noaa.gov/dam-migration/cemp_oct_2014_final.pdf	2014
97	Foraging behavior of the Pacific harbor seal (<i>Phoca vitulina richardsi</i>) in Humboldt Bay https://scholarworks.calstate.edu/downloads/3197xp40t	2013
98	Cumulative human impacts on marine predators https://doi.org/10.1038/ncomms3688	2013

Report 1: Cultural and Natural Resources Documents		
Report Title & Link		
Doc #	(The most relevant reports are in rows shaded blue; somewhat relevant reports are shaded green)	Year
99	Data Collection Methods to Characterize Underwater Background Sound Relevant to Marine Mammals in Coastal Nearshore Waters and Rivers of Washington and Oregon https://media.fisheries.noaa.gov/dam-migration/characterize_background_sound_guidance_memo.pdf	2012
100	Habitat-based spatial models of cetacean density in the eastern Pacific Ocean https://doi.org/10.3354/esr00393	2012
101	Large-scale movements and high-use areas of western Pacific leatherback turtles, <i>Dermochelys coriacea</i> https://doi.org/10.1890/ES11-00053.1	2011
102	Communication towers, lights, and birds: Successful methods of reducing the frequency of avian collisions https://doi.org/10.1890/07-1708.1	2009
103	Preliminary Estimates of Harbor Porpoise Abundance in California Waters from 2002 to 2007 https://repository.library.noaa.gov/view/noaa/4487	2009
104	Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery as Amended through Amendment 19 https://www.pcouncil.org/actions/groundfish-fmp-amendment-19-essential-fish-habitat/	2008
105	Abundance and population density of cetaceans in the California Current ecosystem https://spo.nmfs.noaa.gov/content/abundance-and-population-density-cetaceans-california-current-ecosystem	2007
106	Abundance, distribution, and habitat of leatherback turtles (<i>Dermochelys coriacea</i>) off California, 1990–2003 https://spo.nmfs.noaa.gov/sites/default/files/pdf-content/2007/1053/benson.pdf	2007
107	Population dynamics and distribution patterns of longfin smelt in the San Francisco Estuary https://doi.org/10.1577/T06-148.1	2007
108	Blooms of Pseudo-nitzschia and domoic acid in the San Pedro Channel and Los Angeles harbor areas of the Southern California Bight, 2003–2004 https://doi.org/10.1016/j.hal.2006.11.004	2007
109	Movements of green sturgeon, <i>Acipenser medirostris</i> , in the San Francisco Bay estuary https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/exhibits/nmfs/spprt_docs/nmfs_exh4_kelly_etal_2007.pdf	2007
110	Surf Zone, Coastal Pelagic Zone, and Harbors https://doi.org/10.1525/california/9780520246539.003.0006	2006

Report 1: Cultural and Natural Resources Documents		
Report Title & Link		
Doc #	(The most relevant reports are in rows shaded blue; somewhat relevant reports are shaded green)	Year
111	Abundance and distribution of California sea lions (<i>Zalophus californianus</i>) in central and northern California during 1998 and summer 1999 https://spo.nmfs.noaa.gov/sites/default/files/pdf-content/2005/1032/lowry.pdf	2005
112	Framework for Assessment of Potential Effects of Dredging on Sensitive Fish Species in San Francisco Bay https://www.spn.usace.army.mil/Portals/68/docs/Dredging/LMTS/S%20and%20S/5%20-%20rpt-USACE-SciencePlan-Final-Aug04-09170.pdf	2004
113	Distribution of Fish Species in Humboldt Bay, Humboldt County, California, USA: A GIS Perspective https://www.krisweb.com/biblio/hum_hsu_cole_2004_thesis.pdf	2004
114	Movements and population structure of humpback whales in the North Pacific https://doi.org/10.1111/j.1748-7692.2001.tb01298.x	2001
115	Distribution and abundance of marine mammals at San Clemente Island and surrounding offshore waters: Results from aerial and ground surveys in 1998 and 1999 https://repository.library.noaa.gov/view/noaa/3183	2000
116	Migratory destinations of humpback whales that feed off California, Oregon and Washington https://www.jstor.org/stable/24855733	2000
117	Occurrence, distribution, site fidelity and school size of bottlenose dolphins (<i>Tursiops truncatus</i>) off San Diego, California https://doi.org/10.1111/j.1748-7692.1999.tb00807.x	1999
118	Range characteristics of Pacific coast bottlenose dolphins (<i>Tursiops truncatus</i>) in the Southern California Bight https://doi.org/10.1111/j.1748-7692.1999.tb00808.x	1999
119	Report on the 1980–1995 Fish, Shrimp, and Crab Sampling in the San Francisco Estuary, California https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/cmnt091412/sldmwa/hieb_and_fleming_1999_iep.pdf	1999
120	Seasonal patterns in the abundance and distribution of California cetaceans, 1991–1992 https://doi.org/10.1111/j.1748-7692.1998.tb00737.x	1998
121	Counts of northern elephant seals, <i>Mirounga angustirostris</i> , from large-format aerial photographs taken at rookeries in southern California during the breeding season https://spo.nmfs.noaa.gov/sites/default/files/pdf-content/1996/941/lowry.pdf	1996
122	Pacific coast bottlenose dolphins (<i>Tursiops truncatus</i>) in Monterey Bay, California https://scholarworks.calstate.edu/concern/theses/000005176?locale=zh	1996
123	The abundance of cetaceans in California waters - Part II: Aerial surveys in winter and spring of 1991 and 1992 https://spo.nmfs.noaa.gov/sites/default/files/pdf-content/1995/931/forney.pdf	1995

Report 1: Cultural and Natural Resources Documents		
Report Title & Link		
Doc #	(The most relevant reports are in rows shaded blue; somewhat relevant reports are shaded green)	Year
124	The behavior and feeding ecology of the Pacific coast bottlenose dolphin, <i>Tursiops truncatus</i> https://www.aquaticmammalsjournal.org/wp-content/uploads/2009/12/19-03_Hanson.pdf	1993
125	The Ecology of Humboldt Bay, California: An Estuarine Profile https://www.coastalecosystemsinstitute.org/wp-content/uploads/2021/09/Ecological-History-of-Humboldt-Bay.pdf	1992
126	Seasonal occurrence and haul-out use in pinnipeds along Humboldt County, California https://doi.org/10.2307/1380334	1980
127	The Pinnipeds of the California Current https://calcofi.org/downloads/publications/calcofireports/v21/Vol_21_Antonelis_Fiscus.pdf	1980

Table 4-3. Workforce and In-State Manufacturing Documents (Report 2)

Doc #	Report 2: Workforce and In-State Manufacturing Report Title & Link (The most relevant reports are in rows shaded blue)	Year
128	Louisiana Comprehensive Wind Roadmap Supply Chain and Workforce Phase 1 Report https://static1.squarespace.com/static/669559a0c4497647cd7aed37/t/67cf0e6833cfb2184e0037ca/1741622890091/B-400095-S00-R-REPT-001-A01.pdf	2025
129	OSW Ports and Workforce Workshop (Full Slide Deck of Presentations) https://efiling.energy.ca.gov/GetDocument.aspx?tn=250399&DocumentContentId=85141	2024
130	OSW Workforce Safety Standards & Training Resource https://windexchange.energy.gov/offshore-workforce-safety-training#overview	2024
131	BOEM California OSW Draft Programmatic EIS Vol 2: Appendices https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/2024_1021_CA_PEIS_Vol_II_Appendices_508c_0.pdf Appendix A: Representative Project Design Envelope for Floating Offshore Wind Energy in California, Appendix C: Planned Activities Scenario Appendix D: Consultation and Coordination Appendix E: Programmatic Mitigation Measures Appendix G: NHPA Section 106 Summary	2024
132	The Cost of Offshore Wind Energy in the United States From 2025 to 2050 https://www.nrel.gov/docs/fy24osti/88988.pdf	2024
133	Offshore Wind Guide https://www.nrel.gov/docs/fy25osti/88620.pdf	2024
134	Challenges and Opportunities for Floating Offshore Wind Energy in Ultradeep Waters of the Central Atlantic https://www.nrel.gov/docs/fy24osti/90608.pdf	2024
135	Pathways to Commercial Liftoff: Offshore Wind https://liftoff.energy.gov/wp-content/uploads/2024/08/LIFTOFF_Offshore-Wind_Updated-2.6.25.pdf	2024
136	Floating Offshore Wind Outlook https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2024/Jul/IRENA_G7_Floating_offshore_wind_outlook_2024.pdf	2024
137	Wind Energy Supply Chain Deep Dive Assessment https://www.energy.gov/sites/default/files/2024-12/Wind%2520Supply%2520Chain%2520Report%2520-%2520Final%25202.25.22%5B1%5D.pdf	2024
138	Global Offshore Wind Report 2024 https://www.gwec.net/reports/globaloffshorewindreport	2024

Report 2: Workforce and In-State Manufacturing		
Doc #	Report Title & Link (The most relevant reports are in rows shaded blue)	Year
139	South Carolina Offshore Wind Supply Chain Study https://static1.squarespace.com/static/66cfb95976b4485886596748/t/670808b8aff36a408436e920/1728579772714/South+Carolina+Offshore+Wind+Supply+Chain+Study+2024.pdf	2024
140	U.S. Federal and State Local Content Requirements for Offshore Wind Projects https://dai-assets.s3.amazonaws.com/ows-updated.pdf	2023
141	The Issue of Local Content in Offshore Renewables: Aspirational, Legally-Binding or Missing the Mark? A Comparative Analysis of the UK and Poland https://www.eupublishing.com/doi/epub/10.3366/gels.2022.0069	2023
142	Advancing Offshore Wind Energy in the United States, U.S. Department of Energy Strategic Contributions Toward 30 Gigawatts and Beyond https://www.energy.gov/sites/default/files/2023-03/advancing-offshore-wind-energy-full-report.pdf	2023
143	Review of Feasibility and Cost Drivers for Floating Offshore Wind Energy in Washington State https://www.nrel.gov/docs/fy25osti/90770.pdf	2023
144	Guide to a Floating Offshore Wind Farm https://guidetofloatingoffshorewind.com/wp-content/uploads/2023/10/BVGA-16444-Floating-Guide-r2.pdf	2023
145	Trial Run for CA OSW Workforce: Lessons Learned from the CADEMO High Road Training Partnership https://drive.google.com/file/d/1AIf9sKEGO-xxYe78og-5QvNwnkBKh5pC/view?usp=drive_link	2023
146	Preliminary Assessment of Economic Benefits Related to Seaport Investments and Workforce Development Commission Report Preliminary Assessment of Economic Benefits of Offshore Wind	2023
147	AB 525 Workforce Development Readiness Plan California State Lands Commission AB 525 Workforce Readiness Plan	2023
148	Analytical Guidance and Benefits Assessment for AB 525 Strategic Plan Seaport and Workforce Development for Floating Offshore Wind in California Study for the May 23, 2023 AB 525 Workshop	2023
149	A Supply Chain Roadmap for Offshore Wind in the US https://www.nrel.gov/docs/fy23osti/84710.pdf	2023
150	OSW Development off the CA Coast: Maximum Feasible Capacity and Megawatt Planning Goals for 2030 and 2045 https://efiling.energy.ca.gov/GetDocument.aspx?tn=244285	2022
151	The Demand for a Domestic Offshore Wind Energy Supply Chain https://www.nrel.gov/docs/fy22osti/81602.pdf	2022

Report 2: Workforce and In-State Manufacturing		
Doc #	Report Title & Link (The most relevant reports are in rows shaded blue)	Year
152	US Offshore Wind Energy Workforce Assessment https://www.nrel.gov/docs/fy23osti/81798.pdf	2022
153	Preliminary Assessment of Economic Benefits from OSW Presentation https://efiling.energy.ca.gov/GetDocument.aspx?tn=248152&DocumentContentId=82468	2022
154	Offshore Wind Supply Chain & Workforce Opportunity Assessment: Task 1 - Assessment of OSW Supply Chain Opportunity https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/Maine%20Offshore%20Wind%20Supply%20Chain%20Assessment%202022.pdf	2022
155	California Supply Chain Needs Summary https://efiling.energy.ca.gov/GetDocument.aspx?tn=242928&DocumentContentId=76513	2022
156	Bidder's Financial Form Addendum Bidding Credits – Requirements and Restrictions https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/PACW-1%20BFF%20Addendum.pdf	2022
157	Advancing Policy Measures to Drive Development of the Domestic Offshore Wind Supply Chain https://laborenergy.org/wp-content/uploads/2022/06/5-BNOW-FINAL.pdf	2022
158	Power Sector, Supply Chain, Jobs, and Emissions Implications of 30 Gigawatts of Offshore Wind Power by 2030 https://www.nrel.gov/docs/fy21osti/80031.pdf	2021
159	Economic Impact of OSW Farm Development on the Central Coast of CA https://reachcentralcoast.org/wp-content/uploads/Economic_Value_OS_W_REACH.pdf	2021
160	Building North Carolina's Offshore Wind Supply Chain https://www.commerce.nc.gov/report-building-north-carolinas-offshore-wind-supply-chain/open	2021
161	The Cost of FOSW Energy in CA between 2019 and 2032 https://www.nrel.gov/docs/fy21osti/77384.pdf	2020
162	CA North Coast OSW Studies: Stakeholder Benefits and Concerns https://schatzcenter.org/pubs/2020-OSW-R21.pdf	2020
163	CA OSW: Workforce Impacts and Grid Integration https://laborcenter.berkeley.edu/pdf/2019/CA-Offshore-Wind-Workforce-Impacts-and-Grid-Integration.pdf	2019
164	[repeated document; numbering retained]	
165	The CA OSW Project: A Vision for Industry Growth http://americanjobsproject.us/wp/wp-content/uploads/2019/02/The-California-Offshore-Wind-Project-Cited-.pdf	2019

Report 2: Workforce and In-State Manufacturing		
Doc #	Report Title & Link (The most relevant reports are in rows shaded blue)	Year
166	U.S. Job Creation in OSW: A Report for the Roadmap Project for Multi-State Cooperation on OSW https://tethys.pnnl.gov/sites/default/files/publications/NYSERDA-Report-2017-OSW-Jobs.pdf	2017
167	The Workforce Opportunity of OSW in New York https://www.nysenda.ny.gov/All-Programs/Offshore-Wind/About-Offshore-Wind/Master-Plan	2017
168	Floating OSW in CA: Gross Potential for Jobs and Economic Impacts from Two Future Scenarios https://www.boem.gov/sites/default/files/environmental-stewardship/Environmental-Studies/Pacific-Region/Studies/BOEM-2016-029.pdf	2016
169	Methodology for measuring the UK content of UK offshore wind farms https://bvgassociates.com/wp-content/uploads/2016/07/BVGA-uk_content_methodology-1505.pdf	2015

Table 4-4. Reports Added After Evaluation Was Completed

Reports Added After Evaluation was Completed		
Doc #	Report Title & Link	Year
170	Louisiana Offshore Wind Supply Chain Assessment https://www.xodusgroup.com/media/40oopk55/louisiana-osw-supply-chain-assessment-study-report.pdf	2024
171	Building Offshore Wind in Ireland: Industry and Workforce Opportunities https://offshore-wind.ie/jobscape/	2024
172	California Floating Offshore Wind: Evaluating Workforce Analyses and Assessing Professional Labor https://schatzcenter.org/docs/2025-OSW-R1-workforce-SchatzCenter.pdf	2025
173	North Coast Fisheries Mapping Project https://storymaps.arcgis.com/stories/ec90562aada545acb6bb1bf6f3c8f228	2025
174	Winds of Change: Transforming California's Ports to Improve Public Health and Support Equitable Offshore Wind (May 2025) https://www.nrdc.org/resources/winds-change	2025
175	Permitting for Port Infrastructure to Support Offshore Wind in California (May 2025) https://schatzcenter.org/2025/05/new-permitting-report-for-california-offshore-wind-port-development/	2025
176	West Coast Perspectives on Ocean Renewable Energy (February 25, 2025) https://schatzcenter.org/2025/02/west-coast-perspectives-on-ocean-renewable-energy/	2025
177	Port Infrastructure and Manufacturing Investment Models (November 2024) https://fowcoe.co.uk/industry-insights/reports/port-infrastructure-and-manufacturing-investment-models/	2024