

VIA FEDERAL E-RULEMAKING PORTAL

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October 25, 2023

**RE: Comments on Draft Environmental Impact Statement and Draft Management Plan for Proposed Chumash Heritage National Marine Sanctuary, NOAA-NOS-2021-0080**

Dear Mr. Michel:

Invenenergy California Offshore LLC (“Invenenergy”) appreciates the opportunity to comment on the draft environmental impact statement (“DEIS”) and draft management plan (“Draft Management Plan”) for the proposed Chumash Heritage National Marine Sanctuary (“Proposed Sanctuary”).<sup>1</sup>

**I. INTRODUCTION**

In 2021, the Biden-Harris Administration set an ambitious goal of deploying 30 gigawatts of offshore wind electricity generation by 2030,<sup>2</sup> enough to power 10 million homes with clean energy, support 77,000 jobs, and spur private investment up and down the supply chain. The issuance of three leases in the Morro Bay Wind Energy Area (“WEA”) represented the Administration’s direct action in furtherance of this critical goal.

Invenenergy appreciates and shares the Biden-Harris Administration’s “holistic approach to advancing offshore wind in concert with other priorities.”<sup>3</sup> Invenenergy is the largest privately held global developer, owner and operator of sustainable energy solutions and has driven innovation in energy for more than 20 years. Indeed, throughout Invenenergy’s history of development of more than 30 GW of clean energy projects, we have been committed to ensuring all our projects coexist with their surrounding environments through responsible development, construction, and operations.<sup>4</sup> Additionally, Invenenergy deeply values the communities where we develop, work, and

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<sup>1</sup> In addition to this letter, Invenenergy has signed onto a separate letter with Equinor Wind US LLC and Golden State Wind LLC (together with Invenenergy, the “Leaseholders”) (“Leaseholder Comment Letter”).

<sup>2</sup> White House, FACT SHEET: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs (March 29, 2021), available at: <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/>.

<sup>3</sup> *Ibid.*

<sup>4</sup> As just one recent example, Invenenergy signed onto a historic agreement with a diverse set of stakeholders to advance large-scale solar development while championing land conservation and supporting local community interests. *See* Collaboration Agreement on Large-Scale U.S. Solar Development: Integrating Climate, Conservation and Community (October 12, 2023), available at: [https://woods.institute.stanford.edu/system/files/publications/Solar\\_Uncommon\\_Dialogue\\_Agreement\\_-\\_101223.pdf](https://woods.institute.stanford.edu/system/files/publications/Solar_Uncommon_Dialogue_Agreement_-_101223.pdf).

operate and have an established track record of supporting and engaging with project host communities across our portfolio. Our comments here reflect this collaborative approach. At the outset, we want to make clear that our comments are not premised on the idea that offshore wind projects are inherently incompatible with a national marine sanctuary. In fact, we are committed to minimizing impacts on the Proposed Sanctuary resources. Instead, our comments are premised on the idea that offshore wind projects need regulatory and project development certainty in order to progress successfully, efficiently, and in the most environmentally responsible way.

As has been recognized since the Morro Bay WEA was first proposed, the most likely points of interconnection with the grid are at Morro Bay and Diablo Canyon. At this stage, the Leaseholders are just beginning the submarine cable routing analysis process, which will eventually determine the appropriate paths to those points of interconnection.

Given the unknowns in the marine environment between the lease areas and shore, any final Sanctuary boundary must provide ample space to accommodate route adjustments and micro-siting to sufficiently avoid and minimize impacts to marine resources and users. Adopting a Sanctuary boundary that constrains the space for the Leaseholders to site the cables could ultimately create less flexibility to avoid marine resource and other impacts. If a larger area for siting cables is provided, Invenergy would welcome a subsequent review of further protections once paths for the submarine cables are established and more is understood about the marine environment in the area.

Because of the substantial unknowns regarding potential submarine cable paths and other constraints in the area, at this stage, it is also imperative that the Leaseholders get additional certainty that a practical and transparent process will be implemented to permit submarine cables within the Proposed Sanctuary, if warranted, in the future.

The most straight forward approach to adequately addressing these concerns is adopting a revised alternative that gives the Morro Bay Leaseholders a practical path to interconnect at both Morro Bay and Diablo Canyon. Invenergy would support a revised alternative conceptually similar to what is shown in the Leaseholder Comment Letter and that was proposed by the American Clean Power Association (“ACP”) in earlier comments on the NOI for the Proposed Sanctuary. See Appendix A.

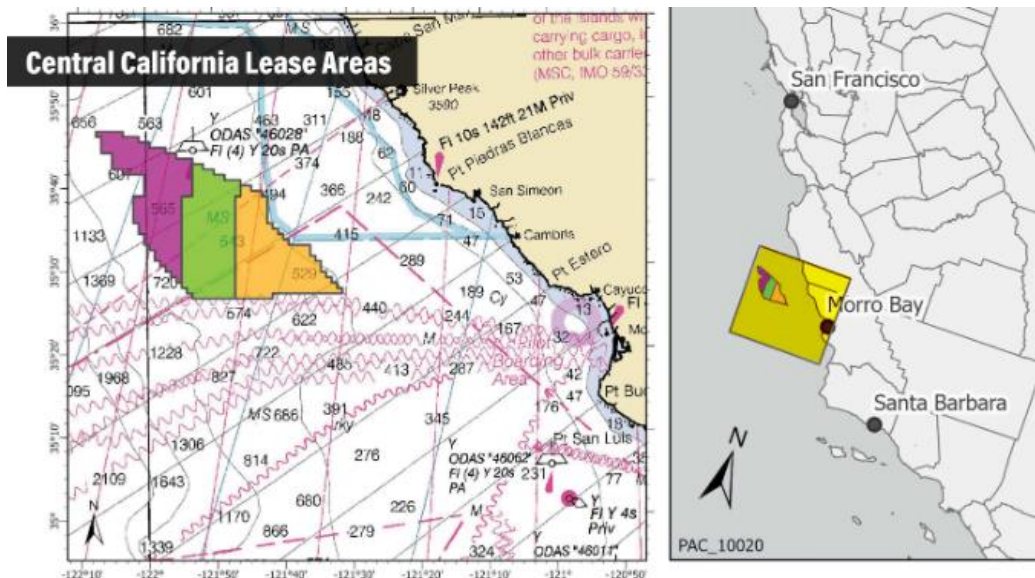
We believe that this approach appropriately recognizes the importance of advancing clean energy in concert with advancing the Proposed Sanctuary.

## **II. BACKGROUND ON INVENERGY AND THE EVEN KEEL WIND PROJECT**

Invenergy drives innovation in energy. Invenergy, founded in 2001 in Chicago, and its affiliated companies develop, own, and operate large-scale renewable and other clean energy generation and storage facilities in the Americas, Europe and Asia.

Invenergy’s Even Keel Wind (“EKW”) project will be located in the Central Coast (Morro Bay) Wind Energy Area, about 20 miles off the coast of California. See orange lease area in **Figure 1**, below. Invenergy secured this lease in the December 2022 lease sale, with a winning bid of \$145,300,000. It is the only American-owned winner of an offshore wind lease off the coast of California. Together with the other Morro Bay Leaseholders, more than \$425,000,000 has already been invested in these projects. As BOEM recognized, the “close proximity to existing

transmission infrastructure” at Morro Bay and Diablo Canyon was a key consideration in Invenery investing in this lease area.<sup>5</sup>



**Figure 1. Central California Lease Areas**

Once built out, the EKW project will generate ~2,000 MW of clean electricity, enough to power up to 800,000 homes.

Following the December 2022 lease sale, Secretary of the Interior, Deb Haaland, recognized the milestone:

“The Biden-Harris administration believes that to address the climate crisis head on, we must unleash a new era of clean, reliable energy that serves every household in America. Today’s lease sale is further proof that industry momentum – including for floating offshore wind development – is undeniable. A sustainable, clean energy future is within our grasp and the Interior Department is doing everything we can to ensure that American communities nationwide benefit.”<sup>6</sup>

Invenery is excited to be at the forefront of this sustainable, clean energy future and provides these comments to advance efforts for the deployment of offshore wind in California.

<sup>5</sup> Commercial Leasing for Wind Power Development on the Outer Continental Shelf (OCS) Offshore California—Call for Information and Nominations (Call) 83 Fed. Reg. 53099, Oct. 19 2018.

<sup>6</sup> U.S. Department of the Interior, Biden-Harris Administration Announces Winners of California Offshore Wind Energy Auction (Dec. 7, 2022), available at: <https://doi.gov/pressreleases/biden-harris-administration-announces-winners-california-offshore-wind-energy-auction>.

### **III. THE PROPOSED SANCTUARY AND THE AGENCY-PREFERRED ALTERNATIVE**

The National Oceanic and Atmospheric Administration’s (“NOAA”) Agency-Preferred Alternative for the Proposed Sanctuary would stretch along 134 miles of coastline from Montaña de Oro State Park in San Luis Obispo County to Naples, California, along the Gaviota Coast in Santa Barbara County and would encompass 5,617 square miles.

NOAA stated that the Agency-Preferred Alternative excludes an area that:

could serve as a corridor for the industrial development associated with offshore wind energy production (specifically subsea electrical transmission cables and substations from the Morro Bay Wind Energy Area to shore) ....<sup>7</sup>

We appreciate NOAA’s effort to identify areas for the advancement of offshore wind alongside the Proposed Sanctuary boundary. But respectfully and as described further below, NOAA’s presumption that the Agency Preferred-Alternative could allow for responsible development of all of the required submarine electrical transmission cables within its self-described “corridor” is flawed. First, the Agency Preferred-Alternative does not provide a sufficient path to interconnect the submarine cables to the existing onshore transmission infrastructure at both Morro Bay and Diablo Canyon—transmission infrastructure that BOEM highlighted as a reason to develop central coast call areas in the first place.<sup>8</sup> Second, it does not account for the many constraints and technical requirements for routing and siting the submarine cables. While Invenergy appreciates that NOAA recognized the importance of offshore wind energy production, we believe that adopting the Agency-Preferred Alternative would undermine the ability to bring that energy production to fruition. This is why we are requesting a revised Sanctuary boundary that results in a practical path for submarine cables to reach both Morro Bay and Diablo Canyon in the least impactful way.

### **IV. POINTS OF INTERCONNECTION AND CABLE ROUTING**

The Leaseholders received executed leases less than six months ago and planning for the projects is still in early stages. There are many variables and inputs that Invenergy is considering and analyzing as we assess how to most effectively and responsibly develop the projects to deliver clean energy to California. Two of the most important inputs are (1) points of interconnection (“POIs”) and (2) cable routes.

A POI to the grid holds paramount significance for offshore wind projects due to its pivotal role in harnessing and distributing the clean energy generated at sea. This connection serves as the critical bridge between the offshore wind farms and the terrestrial electrical grid, enabling the transfer of electricity to meet the energy demands of communities. In turn, and equally vital, is

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<sup>7</sup> NOAA, Proposed Chumash Heritage National Marine Sanctuary, available at: <https://sanctuaries.noaa.gov/chumash-heritage/>.

<sup>8</sup> Commercial Leasing for Wind Power Development on the Outer Continental Shelf (OCS) Offshore California—Call for Information and Nominations (Call) 83 Fed. Reg. 53099, Oct. 19 2018.

the ability to responsibly route and site both offshore and onshore transmission cables between the project site and the POI.

#### A. Presumed Points of Interconnection

As described in the Leaseholder Comment Letter, the Leaseholders need certainty that our projects will have optionality for interconnecting to the grid as envisioned when the WEAs were designated by this Administration. The Agency-Preferred Alternative appears to assume that all the Leaseholders will connect at Morro Bay. This assumption is incorrect. Morro Bay includes only one 230 kV substation at the retired Morro Bay power plant, which cannot support the expected 5.5-6.0 MW of energy from the three Central California Lease Area projects. Thus, it is almost certain that multiple Leaseholders will need to connect to the grid at Diablo Canyon, which has a 500 kV substation that will become available upon the retirement of the Diablo Canyon Power Plant, expected in 2030. Indeed, as explained below, both the California Independent System Operator (“CAISO”) and the Department of Energy (“DOE”) National Renewable Energy Laboratory (“NREL”) presume that Leaseholders will use Diablo Canyon for interconnection. NOAA should defer to these expert agencies and presume the same.

Just last year, months before the Central California Lease Area auction, NREL published the “Assessment of Offshore Wind Energy Leasing Areas for Humboldt and Morro Bay Wind Energy Areas, California,” and acknowledged that “the availability of bulk transmission will play a large role in establishing the value of [California] lease areas.”<sup>9</sup> It then stated that “Morro Bay has much better access to existing transmission infrastructure due to the retirements of the Morro Bay power plant and Diablo Canyon Power Plant.”<sup>10</sup> In other words, NREL recognized that the existence of *two* interconnection points was a key driver in establishing the value of the Morro Bay WEA.

“Two potential points of interconnection that have been identified near the Morro Bay WEA are substations at Morro Bay and Diablo Canyon. The Morro Bay substation is located at the site of a former thermal generation power plant. The Diablo Canyon substation is approximately 20 km south of Morro Bay and currently serves the 2.2-GW Diablo Canyon nuclear power plant that is scheduled to be retired in 2025.<sup>11</sup> Both substations are close

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<sup>9</sup> NREL, Assessment of Offshore Wind Energy Leasing Areas for Humboldt and Morro Bay Wind Energy Areas, California (April 2022), available at: <https://www.nrel.gov/docs/fy22osti/82341.pdf>, p. xvi.

<sup>10</sup> *Ibid.*

<sup>11</sup> While SB 846 extended Diablo Canyon’s expected closure date to 2030, the extension was not meant to change the expectation that Diablo Canyon would be closed in time to meet the offshore wind’s interconnection needs. SB 846’s preamble states that “During the time the Diablo Canyon powerplant’s operations are extended, the state will continue to act with urgency to bring clean replacement energy online to support reliability and achieve California’s landmark climate goals. *The state is accelerating efforts to bring offshore wind and other clean energy resources online*, including action to streamline permitting for clean energy projects.” Senator Laird was even clearer about why the extension was only to 2030: “That timing is not accidental. It was intended to bridge the gap between Diablo operations — which produces about 8.5% of the state’s energy — and the implementation of offshore wind.” (<https://www.courthousenews.com/once-feared-diablo-canyon-now-key-to-california-clean-energy-goals/>).



to the coast, are connected to high-voltage transmission lines, and are likely to have available capacity to accept new generation.”<sup>12</sup>

See also Table 3 from NREL that shows both the Morro Bay Substation (230 kV) and Diablo Canyon Substation (500 kV) as “relevant infrastructure for offshore wind development” with a classification of “grid interconnection points.”

**Table 3. Relevant Infrastructure for Offshore Wind Development Near Morro Bay WEA**

<b>Infrastructure</b>	<b>Classification</b>	<b>Distance</b>
Port Hueneme	Assembly port Operations/service port	290–350 km
Ports of Los Angeles / Long Beach	Assembly ports	390–450 km
Morro Bay Harbor	Operations/service port	60–120 km
Morro Bay Substation (230 kV)	Grid interconnection point	60–120 km
Diablo Canyon Substation (500 kV)	Grid interconnection point	75–135 km

Besides the DOE’s expert agency (“NREL”), the California grid operator, CAISO, is planning for and expecting to use Diablo Canyon as a POI for offshore wind. Each year, CAISO publishes a Transmission Plan “as part of its core responsibility to identify and plan the development of solutions to comprehensively meet the future needs of the ISO-controlled transmission grid.”<sup>13</sup> In other words, the yearly Transmission Plan includes the most up-to-date assumptions that CAISO is using to plan for California’s clean energy future.

In its 2022-2023 Transmission Plan issued in May 2023, CAISO states the following:

In the Morro Bay area, the base portfolio included 1,588 MW and the sensitivity portfolio included 3,100 MW of offshore wind. For the interconnection of the offshore wind, the existing Diablo 500 kV substation has been identified and is where current offshore wind interconnection requests in the ISO queue are primarily located.<sup>14</sup>

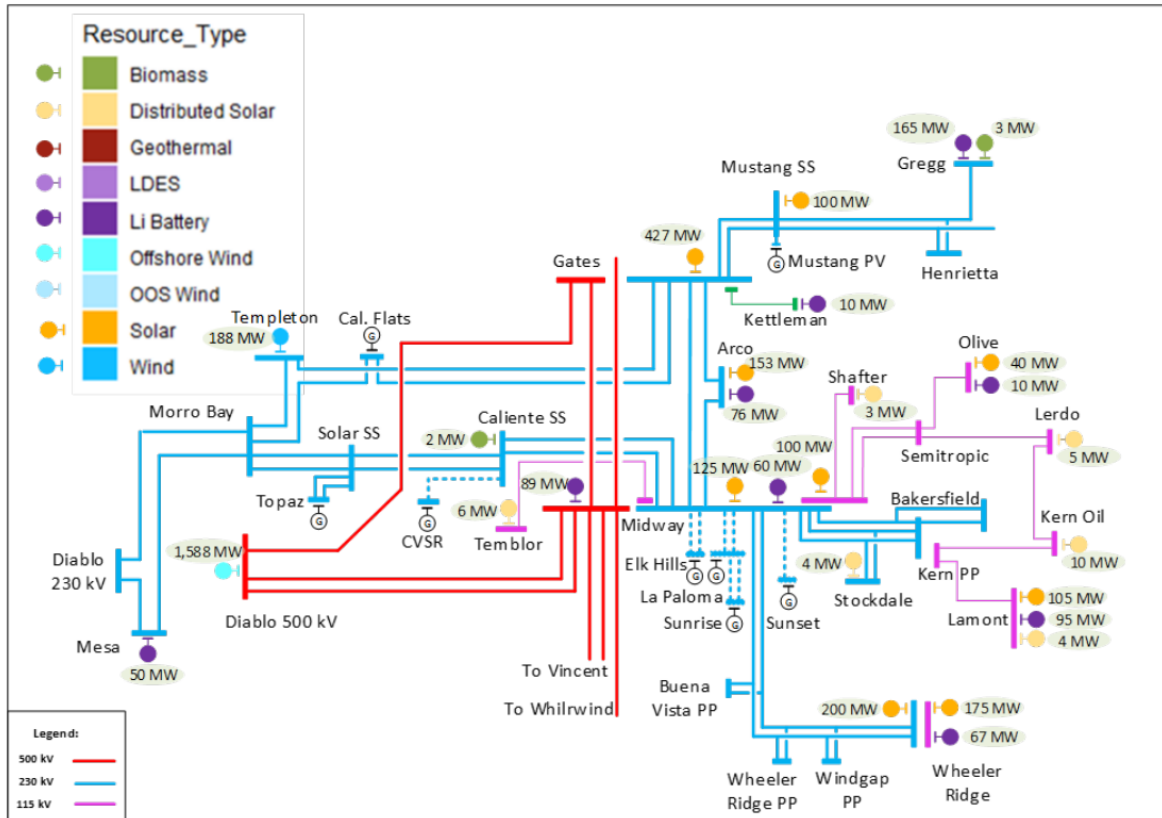
See Figure 3.5-5 from the 2022-2023 Transmission Plan, below, that shows 1,588 MW of Offshore Wind Generation interconnecting to the 500 kV substation at Diablo Canyon.

<sup>12</sup> *Id.* p. 6.

<sup>13</sup> CAISO, 2022-2023 Transmission Plan (May 10, 2023), available at: <http://www.caiso.com/InitiativeDocuments/Revised-Draft-2022-2023-Transmission-Plan.pdf>, p. 1.

<sup>14</sup> *Id.*, pp. 102-103.

Figure 3.5-5: PG&E East Kern Interconnection Area – Mapped Base Portfolio



The offshore wind industry has also been consistent in explaining that Diablo Canyon would be the expected and preferred POI. In a comment letter on the 2022-2023 Transmission Planning Process at CAISO, an industry trade group, Offshore Wind California stated the following:

“Regarding interconnection, CPUC Busbar mapping indicates offshore wind from Morro Bay, which NREL estimates can generate 4,875 MW at the probable 5 MW/KM2 power density scenario, is planned to come ashore at Diablo Canyon to utilize excess transmission capacity and the availability of a 500 kV system. Offshore Wind California agrees it is logical to interconnect Morro Bay offshore wind at Diablo Canyon, and further underscores the need for Morro Bay offshore wind—as a geographically constrained resource—to receive preference in the interconnection queue at Diablo Canyon.”

The Administration itself had identified Diablo as a POI in its Call for Information and Nominations for Commercial Leasing for Wind Power Development on the OCS offshore California. In describing why it chose certain areas for potential wind energy development BOEM stated “[it] gave preference to areas within close proximity to existing transmission infrastructure

that could provide for potential integration into California’s existing electrical grid. These are ... on the central coast, Morro Bay and Diablo Canyon substations.”<sup>15</sup>

It is critical to the success of offshore wind deployment in central California that leaseholders have the opportunity to reach *both* Morro Bay and Diablo Canyon to interconnect with the electrical grid. If there is uncertainty in the ability to do so it will imperil the ability to build out the Morro Bay WEA as BOEM intended and as is contemplated in California’s transmission planning process.

## **B. Submarine Cable Considerations**

One often overlooked but critical element to this infrastructure buildout is the complexity of and need for submarine cable systems to export the offshore energy generation to land. Submarine cable systems serve as a single point of failure for such large infrastructure projects and require significant technical and engineering analysis to help de-risk projects from their inception. The export cables serve as subsea transmission lines to bring clean wind power from the oceans to shore.

As detailed below, there are many important technical factors to consider related to submarine cable siting and routing including the type of submarine cable technology that will be implemented and the number of submarine cables that will be required. Other technical requirements and/or considerations must also be considered, such as cable engineering requirements and interactions with existing infrastructure. Offshore wind energy developers undertake a robust, iterative process to route submarine cables to minimize impacts to marine resources and users. As part of this process, it is imperative that developers retain flexibility in siting submarine cables to minimize impacts to resources, existing uses, and marine users of the area while also considering technical considerations.

### **1. Limitations of Available Submarine Cable Technology**

Floating offshore wind will introduce a layout of floating units with wind turbines and electrical substations, secured to the seabed through independent mooring systems and interconnected with dynamic submarine cables designed to withstand the dynamic loads induced by metocean conditions. The export cable system will be comprised of static submarine cables that will be buried or laid on the seabed, dynamic submarine cables that will connect to the floating substation, and a specialized cable joint between the two.

The technology exists today for static High Voltage Alternating Current (“HVAC”) submarine cables and is being developed for dynamic HVAC submarine cable connections on a timeline that is expected to be in alignment with the project timelines for the Central California Lease Areas.

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<sup>15</sup> Commercial Leasing for Wind Power Development on the Outer Continental Shelf (OCS) Offshore California—Call for Information and Nominations (Call) 83 Fed. Reg. 53099, Oct. 19 2018. *See also* Central California Area Identification Memo (Nov. 11, 2021) (“BOEM and California state agencies gathered data and information along the entire California coast beginning in 2017 with a special emphasis on areas off Central California because of commercial interest, existing transmission infrastructure, and wind energy resources.”).



Conversely, High Voltage Direct Current (“HVDC”)<sup>16</sup> cable technology development is lagging in relation to HVAC technology advancements. Based on discussions with the industry, technologists, and Original Equipment Manufacturers, it is unknown if this technology will be ready within the Central California Lease Areas’ project timelines. Therefore, it must be anticipated at this time that HVAC submarine cable technology will be used to interconnect the Central California Lease Areas, which will result in a greater number of cables than if HVDC cables were available.

## **2. Expected Number of Submarine Cables due to Technology Readiness**

Given the estimated energy generation capacity of the Central California Lease Areas (approximately 2,000MW per Lease Area depending on final layouts and configurations), it can be expected that each lease will require approximately up to eight HVAC submarine export cables. The number of cables per Lease Area will vary depending upon the total number of wind turbines and their capacity, length of each run, and selected voltage based upon technology readiness. This would signify that the total number of export cables for all three leases is approximately up to 24 HVAC cables, less than the 30 cables the DEIS assumes.

## **3. Adequate Space Needed for Submarine Cable Repairs**

In addition to assessing the number of submarine export cables required for each project, it is critical to consider the required spacing amongst the cables. Typical industry standards require three times (3x) the water depth for submarine cable spacing to allow adequate space to repair/recover a submarine cable without compromising its neighboring cables or existing floating infrastructure. In some situations, a two times (2x) water depth spacing can be pursued, if it is understood and accepted that adequate spacing for a cable repair may be compromised for all parties.<sup>17, 18</sup>

During the lifespan of a submarine cable system(s), mechanical or electrical faults could occur along with external aggression caused cable faults, meaning anchor drops, demersal fishing (bottom-contact) gear, geohazards (e.g., slump failure, earthquakes, liquefaction, subduction, diapirism, shallow gas, etc.) or other risks due to hydrodynamic forces (e.g., tsunamis, seabed mobility and other coastal processes). When a cable fault occurs, sufficient physical seabed space

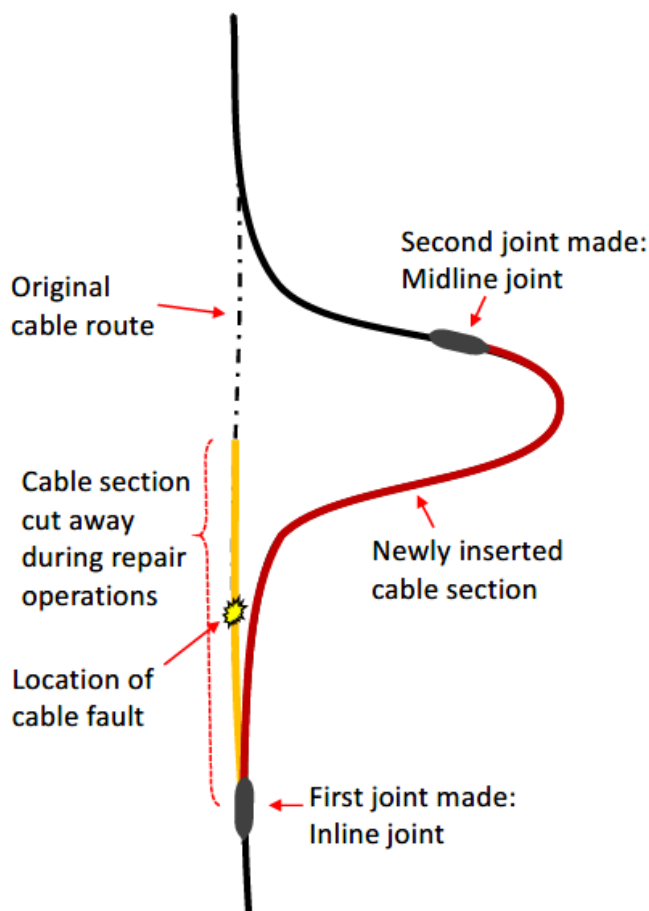
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<sup>16</sup> High Voltage Alternating Current (HVAC) substations use more traditional power transmission equipment such as breakers, transformers, and reactors. High Voltage Direct Current (HVDC) offshore substations use this equipment plus the power electronics which convert power from AC to DC, often referred to as HVDC valves. Although HVDC offers several benefits such as reduced electrical losses and increased power capacity per cable, the HVDC valves are unproven for floating conditions.

<sup>17</sup> ICPC Recommendation No. 2, Recommended Routing and Reporting Criteria for Cables in Proximity to Others, International Cable Protection Committee (ICPC), 2014.

<sup>18</sup> It is possible to reduce spacing for a short length of a submarine cable route, especially in areas identified as “pinch points.” Extra cable can be added to the repair bight so that the Omega repair bight is laid down away from the pinch point. If this is pursued, then the required spacing could be driven by installation method and avoiding mutual heating, which could be significantly less than three times (3x) water depth in deep-water locations. This process is not ideal and adds complexity to a cable repair process and can possibly cause more impacts to the marine environment than a three times (3x) water depth spacing approach which would not require additional cable.

is necessary to not only recover the cable via a grapnel, remotely operated vehicle (“ROV”), and/or mass-flow excavation, but sufficient physical seabed space is required for the cable repair bight (omega splice) (**Figure 2**).<sup>19</sup>

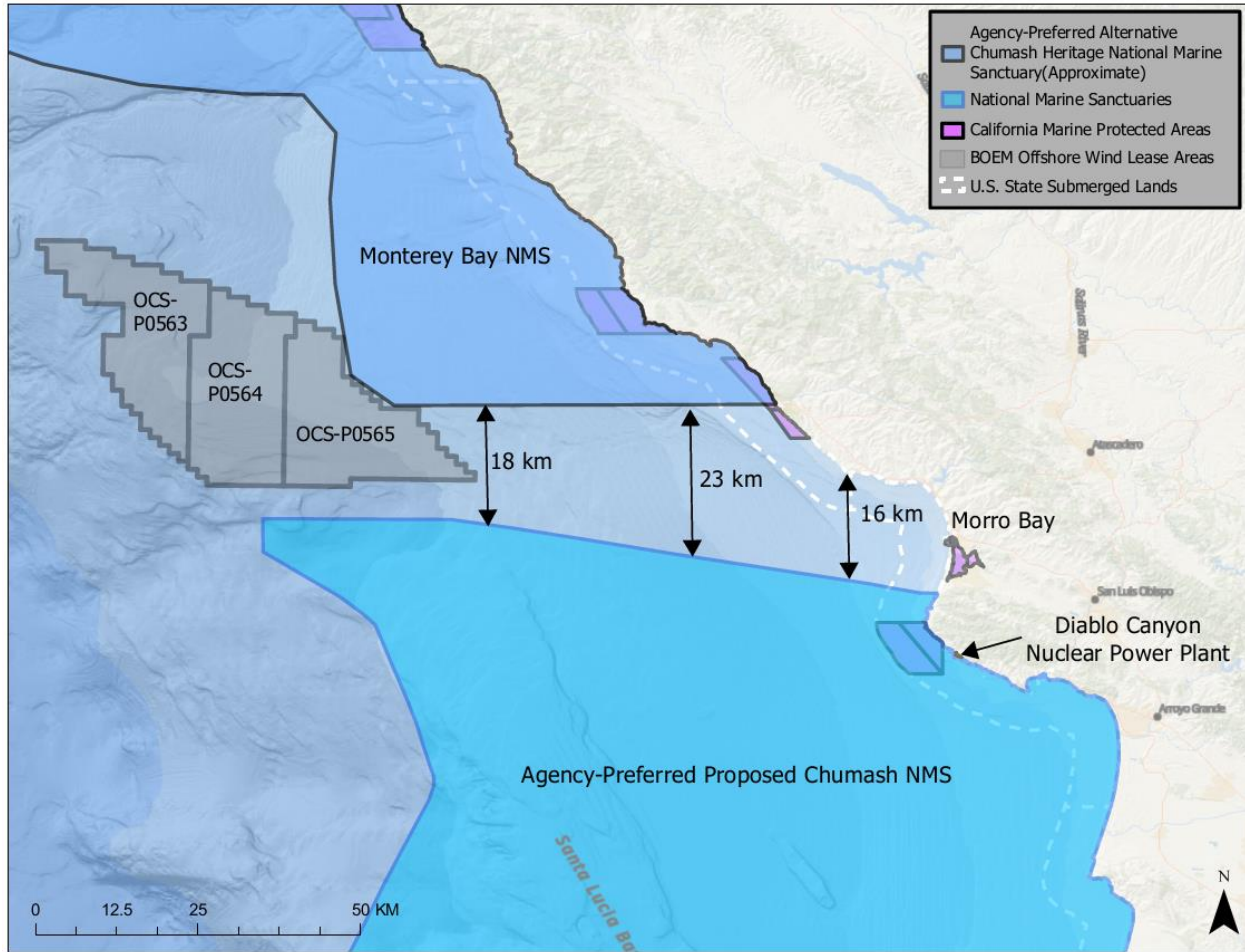


**Figure 2: Schematic Drawing of a Cable Repair Bight that is also referred to as an Omega Repair—A final splice bight looks like an “Omega,  $\Omega$ ” (Source: CIGRE TB 883, p. 38)**

Off the Central California coast, within and adjacent to the Central California Lease Areas, the average water depths range from 900 to 1,300 meters. Significant water depths persist relatively close to shore, requiring significant physical cable spacing amongst export cables to allow for sufficient space to accommodate future cable repairs. Given industry standards for cable spacing, there may need to be areas offshore wider than 13-15 km *per lease area* to accommodate export cables. **Figure 3** depicts the amount of available ocean space between the southern boundary of the Monterey Bay NMS and the northern boundary of the Agency-Preferred Proposed Sanctuary

<sup>19</sup> ICPC Recommendation No. 2, Recommended Routing and Reporting Criteria for Cables in Proximity to Others, International Cable Protection Committee (ICPC), 2014.

and highlights the insufficient proposed ocean space available to accommodate all three projects' submarine export cable systems.



**Figure 3: Proposed Ocean Space for cables landing at Morro Bay given Agency-Preferred Proposed Boundary, illustrating the limited width of ocean space outside sanctuaries**

#### 4. Submarine Cable Crossings and Parallels Affect Routing

Specific standards and requirements must be met for submarine cable crossings.<sup>20</sup> On the Central California Coast, there are two major submarine fiber optic cable landing locations, including just south of Morro Bay (as mentioned above) and Grover Beach. There are at least 14 submarine fiber optic cable systems that are either in-service, out-of-service, or planned that land at these two locations. Following industry guidelines will require crossing existing cables as close to 90 degrees as possible and entering into formal crossing agreements with the impacted asset owner(s). In addition, special protection measures are typically utilized for such crossings to make sure adequate vertical spacing exists between the fiber optic cable and the HVAC cable and protection

<sup>20</sup> International Cable Protection Committee (ICPC) Recommendation No. 3, Criteria to be Applied to Proposed Crossings of Submarine Cables and/or Pipelines, International Cable Protection Committee (ICPC), 2014.

is given to the newly laid asset on top (e.g., rock berm, concrete mattress, etc.). Further, it is industry practice to maintain at least 500 meters distance from parallel cables, however three times (3x) the water depth is always preferred for the same reasons described above with respect to cable repair and recovery.

## **5. Submarine Cable Engineering Considerations Affect Routing**

Numerous submarine cable and electrical engineering principles must be considered when designing and routing submarine cables including the maximum bending radii of cables, slopes, and limitations of marine installation equipment and capabilities. In addition, consideration must be given to the presence of areas with high risk of experiencing a geohazard, which includes more common seabed risks like slope instability or liquefaction (due to grain size) and other more complicated risks like seismic events or massive submarine slides. Submarine cable engineering must also consider potential geohazards as well as localized marine characteristics such as marine geology, metocean processes, human uses, and environmental characteristics and/or sensitivities.<sup>21</sup>

## **6. Submarine Cable Routing Process: Minimizing Impacts to the Marine Environment**

In an effort to minimize impacts on the marine environment and users, Invenergy will go through an extensive, iterative process to route submarine export cables. As part of that process, Invenergy will undertake desktop analyses and stakeholder engagement to identify marine resources, characteristics, and uses. Major areas of analysis will include examining the marine geologic setting and geohazards, met-ocean conditions (e.g., currents, sea state conditions, storm seasons, etc.), human uses (e.g., existing submarine cable/pipeline infrastructure, fishing, artificial reefs, shipwrecks, cultural resources), environmentally sensitive areas or resources (e.g., marine protected areas, Essential Fish Habitat, coral reefs, sensitive benthic habitats), among other characteristics. These topics will be examined individually and in aggregate to ascertain areas of least impact for submarine cable routing while maintaining and implementing submarine cable engineering principles, as described above. In addition, Invenergy will engage in extensive agency and stakeholder outreach to receive input and feedback on areas for preferential cable routing or areas to avoid.

As the submarine cable routing process evolves, field surveys will be conducted along preliminary cable route(s) to further ascertain specific in-situ characteristics. The data collection process includes the collection and completion of geophysical data, geotechnical data, benthic data, historic resource analyses, Navigation and Safety Risk Assessments, fishing analyses, among other data. These data will be used to make adjustments to preliminary submarine cable route(s) to further minimize impacts to marine resources and users with more detailed information that goes

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<sup>21</sup> It is possible to reduce spacing for a short length of a submarine cable route, specifically in areas identified as “pinch points.” Extra cable can be added to the repair bight so that the Omega repair bight is laid down away from the pinch point. If this is pursued, then the required spacing would be driven by installation method and avoiding mutual heating, which would be significantly less than 3x water depth in deep-water locations. This process is not ideal and adds complexity to a cable repair process and can possibly cause more impacts to the marine environment than a three times (3x) water depth spacing approach which would not require additional cable.

beyond desktop research. Invenergy will refine the routes through micro-siting based on data collection, cable requirements, engineering constraints, and agency and stakeholder input.

### **C. Potential Constraints for Submarine Cable Routing From Morro Bay WEA**

The Leaseholders are still in the *very* early stages of the submarine cable routing analysis. Given the unknowns in the marine environment between the lease areas and shore, ample space is needed to accommodate route adjustments and micro-siting to sufficiently avoid impacts to marine resources and users. In the area between Monterey Bay National Marine Sanctuary and the Agency-Preferred Alternative, Invenergy has undertaken an early assessment of existing data and identified a number of potential constraints that will require further consideration through the forthcoming cable routing process.

Based on our preliminary assessment, some of these potential constraints and existing uses include the following, which are depicted in **Figure 4** (please note this list is not exhaustive):

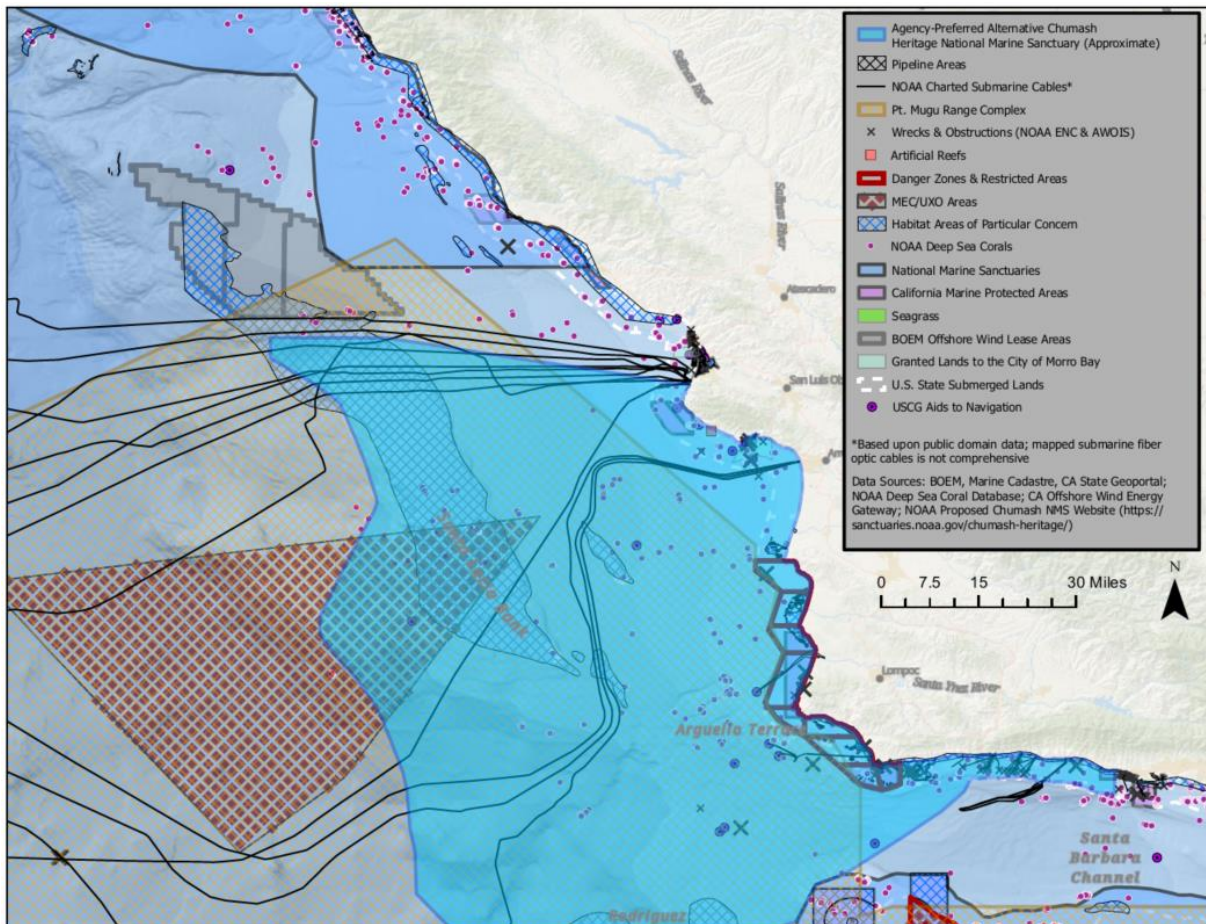
- An Essential Fish Habit, Habitat Area of Particular Concern (“HAPC”) with Rocky Reefs that also overlaps with all three Central California Lease Areas.
- A large HAPC along the coast from Cambria to Estero Bay for the Canopy Kelp.
- Steep slopes in the complex canyon system that is adjacent to the three Central California Lease Areas to the west-southwest.
- Numerous deep-sea corals as noted in NOAA’s Deep-Sea Coral Database.
- Multiple California Marine Protected Areas, including the Cambria State Marine Conservation Area, White Rock State Marine Conservation Area, Morro Bay State Marine Recreational Management Area, and the Point Buchon State Marine Conservation Area and State Marine Reserve. The existence of state marine protected areas along the California coastline further limits submarine cable routing and landing options.
- The Monterey Bay National Marine Sanctuary’s southern boundary, which could restrict submarine cable routing from the north.<sup>22</sup>
- At least fourteen existing submarine fiber optic cable systems have landings in Morro Bay and Grover Beach, as discussed above, causing further routing and spacing restrictions.
- At least eight existing pipelines that extend from Morro Beach area into Estero Bay, which further restricts landing options and coastal approaches.
- Numerous shipwrecks and obstructions as noted in NOAA’s Electronic Navigational Chart (ENC) database, Automated Wreck & Obstruction Information System database, and Raster Nautical Charts (“RNCs”) (e.g., RNC #18703, 18700). All of these obstructions and shipwrecks are typically given a wide buffer for safety of navigation reasons.
- At least two artificial reefs, one of which is situated within Estero Bay (Atascadero) and the second of which is just south of the Diablo Canyon Nuclear Power Plant.

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<sup>22</sup> Note that the Monterey Bay National Marine Sanctuary’s regulations prohibit the issuance of permits for activities with impacts on sanctuary resources that are greater than short-term and negligible. 15 C.F.R. §922.133(b).



- A Security Zone around Diablo Canyon Nuclear Power Plant.
- Numerous Aids to Navigation located along the coastline which the U.S. Coast Guard requires certain setbacks from.
- The Granted Lands marine extension to the City of Morro Bay which extends seaward from the city boundaries to nearly the 3 nautical mile California State Waters Boundary.
- A Disused Chemical Munitions Dumping Area, which lies within the Agency-Preferred Chumash NMS Boundary.
- The Point Mugu Range Complex, which also overlaps with two of the Central California Lease Areas.



**Figure 4: Map of initial Offshore Constraints that may affect submarine cable routing**

Given how nascent the Central California Lease Area projects are, it is premature to identify precise target POIs for the projects. As such, as discussed above, it is presumed, during this stage of project development, that two areas of focus for the Central California Lease Areas would be Morro Bay and Diablo Canyon. Given the numerous technical considerations with respect to submarine cable routing and marine resources and users in this area, as described above, flexibility

in submarine cable routing is imperative. Such flexibility will allow for the lowest-impact submarine cable routes to be developed, regardless of where the target landing locations are.

## V. THE IDENTIFIED PERMITTING PATHWAY IS TOO UNCERTAIN

As contemplated by the Outer Continental Land Shelf Act and its implementing regulations, as well as the express terms of the Leaseholders' leases, BOEM's approval of the projects' Construction and Operation Plans also grants the required easements necessary for the project's submarine transmission cables. But as recognized by NOAA, if the submarine transmission cable needs to traverse a national marine sanctuary, BOEM is prohibited from issuing such easement for that portion of the cable's route and the project would need to seek a special use permit and authorization from NOAA's Office of National Marine Sanctuaries ("ONMS").

The DEIS and NPRM both discuss a permitting pathway for siting submarine cables within the Proposed Sanctuary. While Invenergy agrees that NOAA has the authority to permit submarine cables within the Proposed Sanctuary, the Proposed Sanctuary would add an additional permitting regime and therefore additional project uncertainty, raising the cost of the project and the cost of the energy the project will produce, while also introducing uncertainty for financiers seeking to de-risk these projects. Our concerns do *not* stem from a belief that submarine cables are inherently inconsistent with protection of marine resources. Instead, Invenergy believes that NOAA's recognition of the "direct, localized, short-term, moderate adverse impacts"<sup>23</sup> of a separate permitting process should not be ignored.

The special use permit that ONMS could issue to allow the continued presence of the submarine cables is statutorily limited to a five-year term. As a result, Leaseholders would need to seek a reissuance of the special use permit every five years. Thus, every five years, ONMS could deny permit reissuance or prescribe more onerous or costly conditions or obligations associated with each renewal. Having certainty that a project can operate for the expected useful life of the project is a key consideration for project financing. As the submarine cables are the only way to deliver the energy onto the grid, Lenders will likely be unwilling to provide billions of dollars in funding without certainty that the project can operate beyond five years' time.

Besides the financing risk of needing to site a submarine transmission cable through a sanctuary, there are also risks associated with the increased regulatory burden of needing to obtain two more permits from an agency that would otherwise not have any regulatory authority over the project. ONMS sits in a different federal Department from BOEM, has different goals and objectives from BOEM, and may not align with BOEM on certain issues, requiring leaseholders to coordinate approval of its submarine cables between BOEM, NOAA, and the Army Corps of Engineers.

The timeline and financial impacts of a separate, additional, regulatory process to site submarine cables could be significant. As the Biden-Harris administration has made clear through its actions, there is no time to waste in bringing clean energy to the American people. Requiring the Leaseholders to site submarine cables through the Proposed Sanctuary would conflict with the administration's goals to quickly bring renewable energy projects online and fight climate change.

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<sup>23</sup> DEIS, p. 184.

Invenergy agrees with the detailed comments in the Leaseholder Comment Letter regarding revisions to the proposed regulations and draft Management Plan to support a clear permitting pathway.<sup>24</sup>

## **VI. NOAA SHOULD ADJUST THE PROPOSED SANCTUARY BOUNDARY TO ENSURE LEASEHOLDERS CAN REACH MORRO BAY AND DIABLO CANYON**

As discussed above, the offshore wind projects in the Morro Bay WEA must be able to access the transmission infrastructure at Diablo Canyon and Morro Bay. There is simply not enough transmission capacity at Morro Bay for all three projects, and there are too many constraints that would make it impossible to route all of the projects' submarine cables to that one location. And as discussed above, the proposed permitting pathway *through* the Proposed Sanctuary is not practical.

Thus, as ACP and Offshore Wind California commented on the Notice Of Intent ("NOI"), the area outside the Proposed Sanctuary "must be wide enough to provide siting flexibility and access to both likely onshore interconnection points: at Morro Bay and near the former Diablo Canyon power plant."<sup>25</sup>

Invenergy has conducted an initial, high-level analysis of the routing that would permit the Leaseholders to reach both Morro Bay and Diablo Canyon, taking into account known constraints and submarine cable technical requirements, and concluded that the Agency-Preferred Alternative boundary would not be sufficient. This analysis also identified areas outside the Agency-Preferred Alternative that would most likely *not* be optimal to site the submarine cables (given existing natural resources and conservation designations) and therefore could remain within the sanctuary boundary, such as an area adjacent to the Monterey Bay National Marine Sanctuary ("MBNMS"). Thus, we believe that a boundary of the Proposed Sanctuary that is conceptually similar to what is shown in the Leaseholder Letter and that was proposed by ACP in earlier comments on the NOI for the Proposed Sanctuary is the best path forward at this time.<sup>26</sup> See Appendix A. That approach would better align with the Administration's "holistic approach to advancing offshore wind in concert with other priorities" by ensuring that the submarine cables can be responsibly routed into the identified POIs.

Invenergy also strongly supports the concept outlined in detail in the Leaseholders Comment Letter to convene a working group to discuss potential opportunities for future expansion of the Proposed Sanctuary, once there is more certainty as to the precise location and future operational needs of

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<sup>24</sup> See Leaseholder Comment Letter, Section VIII.

<sup>25</sup> ACP/OWC Comment Letter on NOI (Jan. 31, 2022), p. 11.

<sup>26</sup> This approach was also expressly considered by NOAA. "Another option involved shifting the northern boundary of the proposed sanctuary far enough south so that there would be a corridor between the existing MBNMS and proposed CHNMS, wide enough to provide offshore wind developers with onshore interconnections at both Morro Bay and DCPD without having to route cables through national marine sanctuaries. NOAA believes that the environmental implications of these potential configurations are covered in the impact analysis of several other alternatives in Chapter 4 of this EIS." DEIS, p. 48.

the submarine cables. This approach, which NOAA has successfully implemented in the past,<sup>27</sup> will ensure that informed decisions can be made about how to advance the goals and protections of the sanctuary in concert with responsible offshore wind development.

## **VII. CONCLUSION**

Thank you for the opportunity to comment on the Proposed Sanctuary. We are optimistic that the stakeholders can continue to work together to advance solutions that will ensure the growth of a vibrant offshore wind energy while simultaneously protecting key ocean resources. Thank you for your time and attention to these comments.

Sincerely,

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<sup>27</sup> Flower Garden Banks Final Management Plan, 3.2 at 30 (April 2012), available at: <https://nmsflowergarden.blob.core.windows.net/flowergarden-prod/media/archive/doc/management/fmp2012/fmp2012.pdf>.



**Appendix A**



**CHNMS Map previously proposed in ACP letter to NOAA during the NOI process. See ACP letter to NOAA dated October 31, 2022.**