Before
BUREAU OF OCEAN ENERGY MANAGEMENT
Washington, D.C.

In the Matter of Request for Interest in Commercial Leasing for Wind Energy Development on the Gulf of Maine Outer Continental Shelf	Docket No. BOEM-NOS-2022-0040

COMMENTS OF
THE NORTH AMERICAN SUBMARINE CABLE ASSOCIATION

The North American Submarine Cable Association ("NASCA"), the premier U.S. submarine telecommunications industry organization, submits these comments to urge the Bureau of Ocean Energy Management ("BOEM") to address more comprehensively the concerns of submarine telecommunications owners, operators, and maintenance providers in developing and implementing BOEM's proposals for renewable energy projects on the Outer Continental Shelf ("OCS"), including the recent request for interest and comments on commercial wind energy leasing on the Gulf of Maine OCS.[1] As NASCA has explained in a number of BOEM proceedings, the submarine telecommunications industry is a key OCS stakeholder, with dozens of submarine cables deployed on the OCS on both the West and East Coasts, including two in the Gulf of Maine—with more planned. It is thus essential that

[1] *Request for Interest (RFI) in Commercial Leasing for Wind Energy Development on the Gulf of Maine Outer Continental Shelf (OCS)*, 87 Fed. Reg. 51,129 (Aug. 19, 2022) ("Gulf of Maine RFI").

BOEM's leasing proposals reflect the importance of this critical infrastructure, ensuring that potential lease holders are required to coordinate with submarine cable operators from the earliest stages of project evaluation, and that they have the resources available to do so.

In part I of these comments, NASCA provides background information on NASCA, the submarine telecommunications cables that its members own and operate, including submarine telecommunications cables that transit the Gulf of Maine, and the economic, societal, and governmental importance of such cables. In part II of these comments, NASCA explains (a) submarine cable installation, operation, and repair activities; (b) the risks posed to these activities by uncoordinated wind energy activities; and (c) the well-established spatial separation guidelines and recommendations that, if implemented, would mitigate such risks. In part III of these comments, NASCA explains the importance—for both the submarine cable industry and the renewable energy industry—of coordinating infrastructure projects as early as possible in the leasing process, and of taking a comprehensive approach to such coordination to the benefit both industries.

I. SUBMARINE CABLES ARE VITAL TO LOCAL AND U.S. NATIONAL INTERESTS

A. NASCA Represents Significant Submarine Cable Infrastructure Landing on the Atlantic Coast

NASCA is the principal nonprofit trade association for submarine cable operators, submarine cable maintenance authorities, and prime contractors for submarine cable systems operating in North America.[2] NASCA serves both as an advocacy organization and a forum for

[2] NASCA's members include Alaska Communications System; Alaska United Fiber System Partnership; Alcatel Submarine Networks; AT&T Corp.; C&W Networks; Edge Network Services; EXA Infrastructure; Global Cloud Xchange; Global Marine Systems Ltd.; GlobeNet; Lumen Technologies UK, Ltd; OPT French Polynesia; PC Landing Corporation; Rogers Communications; Southern Caribbean Fiber; Southern Cross Cable Network;

its members' interests. NASCA's members own and operate the vast majority of active submarine cable systems landing in the United States and support thousands of jobs in the United States, including in the mid-Atlantic and Northeast. NASCA's members currently own and operate trans-Atlantic submarine cables terminating on the East Coast—including in Massachusetts—which provide significant connectivity between the United States and both Canada and Europe. Licensed systems transiting in or near the Gulf of Maine (and depicted in Exhibits A and B, respectively) are:

- ***EXA System****:* (formerly Hibernia Atlantic) connects Massachusetts, Canada, Ireland, and the United Kingdom; and
- ***Amitié***: (under construction) will connect Massachusetts, France, and the United Kingdom.

NASCA notes that while both systems are licensed, as Amitié is not yet constructed, unlike EXA North and South, it does not yet appear on NASCA charts (Exhibit A). Accordingly, the Amitié system is depicted on the route map submitted with the FCC application in 2019 (Exhibit B).[3]

B. Submarine Cables Are Vital for the U.S. Economy, Society, and National Security

Submarine telecommunications cables are not akin to "disposal areas[] and unexploded ordinance" present on the floor (with which they are lumped in the Gulf of Maine RFI).[4] Even

TampNet Group; Tata Communications (Americas); SubCom; Verizon; Vodafone; and Zayo Group Ltd.

3 The FCC application is available here: https://licensing.fcc.gov/cgi-bin/ws.exe/prod/ib/forms/reports/swr031b.hts?q_set=V_SITE_ANTENNA_FREQ.file_numberC/File+Number/%3D/SCLLIC2020080700036&prepare=&column=V_SITE_ANTENNA_FREQ.file_numberC/File+Number

4 Gulf of Maine RFI at 51,131.

before the onset of the COVID-19 pandemic (and as recognized by the Proposal), submarine cables—not satellites—carried approximately 99 percent of the world's Internet, voice, and data traffic.[5] Submarine cables provide higher-quality, more reliable and secure, and less expensive communications than do communications satellites. Submarine cables have long been known for their backhaul of mobile network traffic and carriage of data for credit card and electronic payments. During the pandemic, however, demand for submarine cable capacity has increased considerably and highlighted the full range of activities dependent on submarine cable connectivity, including:

- Internet connectivity and electronic commerce;
- Global payment networks supporting credit card payments, ATM cash withdrawals, and financial transactions;
- Backhaul of mobile wireless communications (as mobile phones use radio spectrum only to connect to the nearest tower, using fiber-optic networks thereafter);
- Government and military communications (as the U.S. Government does not own and operate its own submarine cables for connectivity purposes);
- Remote work and video conferencing;
- Telemedicine;
- Distance education (particularly with school and university campus closings);
- Transmission of large amounts of data by research and educational organizations (which helps to explain why the U.S. National Science Foundation is interested in developing a submarine cable system to provide data connectivity for the McMurdo and Scott Bases in

[5] Doug Brake, *Submarine Cables: Critical Infrastructure for Global Communications*, Info. Tech. & Innovation Found., at 1 (Apr. 2019), https://www2.itif.org/2019-submarine-cables.pdf.

Antarctica);[6]

- Communications with family members and friends by voice, video, photos, and messages; and
- Entertainment to ease the stresses of home quarantine and self-isolation.[7]

Many businesses, non-profit organizations, and governments innovated during the COVID-19 pandemic to facilitate delivery of services over the Internet while protecting the health of recipients, and the shift to electronic delivery of such services is expected to continue even as the pandemic wanes. The global nature of the Internet and the networks that operate over it mean that even communications within a domestic or local area (such as communications up and down the Eastern seaboard) rely on submarine cable infrastructure to deliver communications and services.

Because of the importance of submarine cables to U.S. commercial and national security interests, submarine cables have long been designated as critical infrastructure by the U.S. Government.[8] Damage and disruption to submarine cables can pose grave risks to U.S. national

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6 *See* Peter Neff *et al.*, *Antarctic Subsea Cable Workshop Report: High-Speed Connectivity Needs to Advance US Antarctic Science* 4–8 (Oct. 21, 2021), https://drive.google.com/file/d/1Ao4Hz6-bBheFMpGSR4nMvSZJ9kHpjj0o/view.

7 *See* International Cable Protection Committee, *ICPC Calls on Governments and Industry to Facilitate and Expedite Submarine Cable Installation and Repair During the COVID-19 Pandemic in Order to Protect Internet Connectivity and Critical Communications* 1 (Apr. 3, 2020), https://www.iscpc.org/documents/?id=3299.

8 Presidential Policy Directive – Critical Infrastructure Security and Resilience, PPD-21 (Feb. 12, 2013), http://www.whitehouse.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil; s*ee* Department of Homeland Security, Communications Sector-Specific Plan 12–14 (2010), http://www.dhs.gov/xlibrary/assets/nipp-ssp-communications-2010.pdf. *See also* Michael Matis, The Protection of Undersea Cables: A Global Security Threat (Jul. 3, 2012) (M.S.S. Strategy Paper, U.S. Army War College: Carlisle, PA), https://apps.dtic.mil/sti/pdfs/ADA561426.pdf.

security and the U.S. economy, given (a) the U.S. Government's reliance on such cables to communicate with its civilian and military personnel worldwide and with other governments and to deliver services to U.S. residents; and (b) the dollar-value of commerce conducted using submarine cables. The freedoms to install and maintain submarine cables are well-established by treaty and customary international law,[9] and are protected under U.S. law.[10]

II. SUBMARINE CABLE ACTIVITIES REQUIRE SPATIAL SEPARATION FROM OTHER CABLES AND ACTIVITIES; WITHOUT COORDINATION, RENEWABLE ENERGY ACTIVITIES POSE SERIOUS RISKS

Submarine telecommunications cable installation, operation, and repair activities require spatial separation from other cables and other marine activities, including renewable energy activities. Without early and comprehensive coordination, renewable energy projects pose serious risks to submarine cable infrastructure. Fortunately, the submarine cable industry and the renewable energy industry have developed recommendations for spatial separation that should be the starting point for developing BOEM guidelines for coordinating submarine cable activities and renewable energy activities on the U.S. OCS.

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9 *See, e.g.*, United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397 ("UNCLOS") (entered into force on Nov. 16, 1994) arts. 58(1) ("[I]n the exclusive economic zone, all States . . . enjoy, subject to the relevant provisions of this Convention, the freedoms referred to in article 87 of . . . the laying of submarine cables and pipelines.") and 79(1) ("[A]ll States are entitled to lay submarine cables and pipelines on the continental shelf, in accordance with the provisions of this article."). Although the United States is not a party to UNCLOS, it has recognized UNCLOS (other than the original deep seabed mining regime) as customary international law since 1981. Presidential proclamations by two different U.S. presidents expressly stated that the establishments of an Exclusive Economic Zone ("EEZ") and a contiguous zone, respectively, did not infringe on the high-seas freedoms to lay and repair submarine cables. *See* Proclamation No. 5030, 48 Fed. Reg. 10,605 (Mar. 10, 1983) (establishing the U.S. EEZ); Proclamation No. 7219, 64 Fed. Reg. 48,701 (Aug. 2, 1999) (establishing the U.S. contiguous zone).

10 U.S. law provides that damaging a submarine cable—whether deliberately or through negligence—is a federal offense punishable by fine, imprisonment, or both. 47 U.S.C. §§ 21 (willful damage), 22 (negligent damage). *See also* 47 U.S.C. § 28.

A. Submarine Cable Installation, Operation, and Repair Activities

In the deep ocean, submarine cables rest on the surface of the ocean floor. At shallower depths, submarine cables are buried up to a depth of three meters, depending on seafloor conditions. For maintenance and repair purposes, submarine cable operators seldom need access. However, when new cables are installed, or maintenance or repair is required, cable ships must have sufficient space to maneuver in order to lay the cable or retrieve and repair it.

1. Vessel and Equipment Access

Cable ships—used for both installation and repair activities—are large vessels that consequently require adequate maneuvering space to accommodate operations and adjust to the effects of bad weather on the ocean in order to ensure the safety of the vessel, the crew, the submarine cables, and the wind energy infrastructure. They frequently operate in less-than-perfect weather and ocean conditions, which necessitate additional maneuvering room. They operate in such conditions given (a) the significant running costs of a cable ship (more than US $100,000 per day), which make delays costly; (b) commercial imperatives to minimize the time to market for new systems; and (c) the commercial and security imperatives to minimize the delay in repairing damaged systems and restoring communications.

2. Installation Activities

During an installation, a cable ship will pay out cable from the ship's tanks, maintaining tension to ensure that the cable does not throw loops, which can result in transmission failures if pulled tight and render a cable more susceptible to physical damage due to greater exposure above the seabed. Cable installers use various slack management techniques and software to minimize these outcomes. In shallow areas, cable is generally buried using a sea plow (typically to a depth of up to three meters) to protect it from hazards such as commercial fishing and anchoring. In limited shallow areas where there are no significant fishing or anchoring risks or where the seabed does not permit burial, it will be laid on the surface of the seafloor.

3. Cable Retrieval

To recover a cable from the seafloor for repair purposes, a ship can either deploy a remotely operated vehicle ("ROV"), or it can grapple for the cable. ROV use is limited to shallower depths between 50 and 2000 meters. ROV use is generally limited to cable laid or exposed on the surface of the seafloor, although an ROV can be used for retrieval of shallow-buried cable depending on the sediment type. To retrieve a surface-laid cable in deeper water, a cable ship uses grapnels. And to retrieve a buried cable at any depth, a cable ship uses a detrenching grapnel, the size and weight of which increases with the depth of water.

The grapnel (whether for surface-laid or buried cable) is lowered to the seafloor from lines on the cable ship and dragged in a direction perpendicular to the cable. This allows the grapnel to dig into the seabed and under the cable, maximizing the chance that the grapnel will hook the cable (rather than graze or accidentally release it) and bring it to the surface of the seabed. Current ship positioning technology allows for extremely accurate placement of this gear and for controlled cable retrieval. Nevertheless, bad weather, heavy seas, or strong currents can decrease the accuracy of these operations—a situation which poses a greater risk to other submarine cables or seafloor installations in the vicinity of the target cable.

A damaged submarine cable must be repaired onboard a cable ship. But a cable (whether tensioned or not) that is resting on, or buried in, the seabed will lack sufficient slack to reach the surface for repair. Unless a cable is already severed, therefore, it must first be cut in order to be brought to the surface. This retrieval operation takes at least three passes with the grapnel—one to cut the cable, a second to bring up and buoy one end of the cable, and a third to bring up and bring onboard the second end. After the ends are repaired and tested, a section of cable must be spliced in between the two ends in order to have them meet at the surface and restore connectivity. This additional section is typically two and a half times the depth of water in length. This length permits what was previously a cable lying flat on the seafloor to reach up to the cable ship, provide length for manipulation and repair activities on board, and reach back down to the seafloor.

This final configuration (known as the final bight) must be carefully placed back on the seabed. The ship uses additional rope to pull the bight in a direction perpendicular to the line of the original cable and then lower it to the seabed. Only with this careful placement can the repair ship have any chance of laying the cable flat. It is critical that the cable lay flat. If the cable has loops or is elevated above the seafloor, it is virtually impossible to bury the repaired section. Loops are undesirable for a variety of reasons: they can result in transmission failures if pulled tight, they can stand upright on the seabed, and they are more susceptible to physical damage due to greater exposure above the seabed. Elevation of the cable above the seafloor is undesirable, as it exposes the cable to greater risk of damage by external events. Either cable looping or above-the-seafloor elevation exposes even more of the cable to the risk that caused the damage or fault in the first place.

B. Uncoordinated Renewable Energy Activities on the Gulf of Maine OCS Pose Risks of Damage to Submarine Telecommunications Cables

As noted in a 2014 report adopted unanimously by the FCC's Communications Security, Reliability, and Interoperability Council ("CSRIC") (and reflecting input from both FERC and BOEM), "[u]ncoordinated renewable energy development poses numerous risks to submarine cables."[11] The consequences of such harm are significant: longer, costlier outages resulting

[11] *See* Communications Security, Reliability and Interoperability Council, Working Group 8 Submarine Cable Routing and Landing Final Report—Protection of Submarine Cables

from impeded access for maintenance and repair purposes, as well as future route foreclosure resulting in clustering of cables in closer proximity to each other, magnify the risk that a single event could damage multiple cables, thereby reducing network resilience.

1. Potential Impacts of Wind Energy Activities on Submarine Cables

a. Direct Physical Disturbance

Renewable energy activities risk disturbing the seabed and damaging existing submarine telecommunications cables.[12] Direct physical disturbance can result from anchoring, seafloor scouring, and power transmission cable crossings, regardless of whether the cable is resting on the surface of the seabed or buried. Anchoring alone accounts for approximately 15 percent of cable faults worldwide.[13] Both the vessels necessary to construct a renewable energy facility, and sometimes the renewable energy facility itself, will rely on anchors. Improperly stowed anchors that release or fall overboard can be dragged for great lengths across the seafloor, damaging cables along their paths. Even properly anchored vessels can, depending on sea conditions, drag anchors across the path of submarine cables.

Placing renewable energy facilities near submarine cables increases the risk of harm through seafloor scouring. Seafloor scouring occurs when "currents erod[e] sediment in the areas around a structure on the sea floor."[14] Scouring can cause submarine cables, which are typically laid either directly on or trenched into the seafloor, to become suspended. Suspended cables are at risk of abrasion caused by strumming of the suspended span, and are more exposed

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Through Spatial Separation 36 (2014); https://transition.fcc.gov/pshs/advisory/csric4/CSRIC_IV_WG8_Report1_3Dec2014.pdf ("CSRIC Spatial Separation Report").

12 *Id.* at 33.

13 *Id.* at 32.

14 *Id.* at 39.

to external threats, such as from fishing operations. The risk of scouring could lead submarine cable operators to bury cables more deeply, which is more costly and time consuming both at the time of installation and the time of retrieval for repairs. Scouring can also redeposit sediment above a cable in a manner that increases the risk of erosion and abrasion.[15]

Most, if not all, renewable energy facilities rely on one or more power transmission cables. The installation, operation, and maintenance of those cables all pose a risk of direct physical disturbance to submarine cables in close proximity—particularly if the power transmission cable crosses the submarine cable—and also increase the complexity, time, and cost of submarine cable repair.[16]

b. Impeded Access—at Both the Ocean Surface and Seafloor—for Installation and Maintenance

In addition to the risk of direct physical disturbance, large renewable energy projects can also impede access to submarine cables for maintenance and repair activities. Such projects may attempt to build directly over or very near to existing submarine cables, impairing access to those portions of the cable under or in close proximity to the marine renewable energy facility. The installation of an energy project can also force new cables into de facto "cable corridors," as all new cables must work around such facilities but may have limited routing options, forcing cables to be placed in closer proximity with each other.[17]

It is more difficult for repair ships and personnel to retrieve and repair damaged cables when in close proximity to other marine activities like renewable energy facilities or other submarine cables. Moreover, forcing cables into these "cable corridors" greatly increases the

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[15] *Id.* at 40.

[16] *Id.* at 40–41.

[17] *See id.*

odds that one damaging mishap could disrupt multiple cables, resulting in prolonged and wide-ranging outages. Where close proximity between cables and other infrastructure exists—especially without prior agreement or coordination—cable faults will be repaired less quickly, communications system outages will last longer, and the costs to cable operators and the customers they serve could increase considerably.

Coordination of renewable energy activities and submarine cable activities is thus essential to minimize the risks to submarine cable infrastructure and ensure that submarine cable activities on the OCS are not impeded by renewable energy activities. Such coordination should be predicated on well-established spatial separation recommendations.

C. Well-Established Spatial Separation Recommendations Exist to Guide Coordination Between the Submarine Cable and Renewable Energy Industries

Well-established spatial separation recommendations exist to guide coordination between the submarine cable and renewable energy industries. The submarine cable industry has developed these recommendations to protect submarine cables from other marine activities, including wind energy projects. The key recommendations of the International Cable Protection Committee ("ICPC") are summarized in Table 1 below and are available at www.iscpc.org. ICPC's recommendation for proximity with respect to wind energy projects stems from collaboration from both the submarine cable and renewable energy industries.

Table 1: ICPC Spatial Separation Recommendations

ICPC Spatial Separation Recommendations		
No.	**Issue**	**Recommendation**
1	14A	Recovery of Out of Service Cables This document provides the ICPC's recommendations in relation to recovery of a submarine cable system that is redundant or has been taken out of service. Taken into

ICPC Spatial Separation Recommendations		
		consideration are legal requirements, environmental concerns, salvage, and proximity to adjacent infrastructure (other cables, oil and gas facilities, etc.)
2	11B	Cable Routing and Reporting Criteria This Recommendation provides generalized cable routing and notification criteria that the ICPC recommends be used when undertaking cable route planning activities where the cable to be installed crosses, approaches close to or parallels an existing or planned cable system. For parallel submarine cables, this Recommendation recommends a separation distance of the lesser of 3 times depth of water, or where not achievable, 2 times the depth of water following consultation and agreement between affected parties.
3	10C	Telecommunications Cable and Oil Pipeline / Power Cables Crossing Criteria The continued increase in both the numbers of submarine cables and the exploitation of oil and gas from the seabed inevitably means that there will be more cases of crossings between telecommunications cables, power cables, and pipelines. The purpose of this document is to give guidance to those who are faced with this situation and to provide some basic questions that need to be asked as the first step in considering any proposed crossing so that areas of concern can be identified and mutually acceptable solutions developed.
4	8C	Co-ordination Procedures for Repair Operations Near In-Service Cable Systems This document provides recommended procedures with respect to any repair operations that are undertaken near active cable systems. The procedures apply to the repair operations of active cable systems in the vicinity of any cable crossing or cables that are closely parallel. Considerations to be addressed include proximity to each other, ship operations, cable retrieval options, repair scheduling, establishing points of contact, and other non-site specific guidelines.

ICPC Spatial Separation Recommendations		
6	10A	Actions for Effective Cable Protection (Post Installation) This recommendation concerns post-installation measures to mitigate the risk of cable faults caused by human activities such as fishing and vessel anchoring. Such measures are often referred to as marine liaison, offshore liaison, or cable awareness. Different measures may be appropriate in different areas, even when a single cable system is involved. Such measures must take into account the characteristics of the different mariners active in each area, such as fishermen, merchant mariners, pilots, port authorities, military officers, marine traffic control officials, operators of resource extraction vessels, etc. These conditions and risks may change over time.
7	6D	Offshore Civil Engineering Work in the Vicinity of Active Submarine Cable Systems This document recommends the procedure to be followed when civil engineering or offshore construction work is undertaken in the vicinity of active submarine cable systems. The construction company responsible for the civil/structural work should discuss their plans with the responsible cable owner in order to determine operational and maintenance issues and liabilities that may impact on the submarine cable or the planned structure. The construction company should work with the cable owner to accurately identify the physical location of the cable systems in the vicinity of the planned civil works. Depending on the circumstances, the location work could require either divers or a Remotely Operated Vehicle (ROV) to assist in the cable locating work.
8	9A	Offshore Seismic Survey Work in the Vicinity of Active Submarine Cable Systems An active submarine cable system includes electro-optic devices that are required to manage the signal at intervals along its route. If the internal components of these submerged devices are subjected to acceleration greater than specification there is a risk of serious damage. This document recommends the procedure to be followed while offshore seismic survey work is undertaken in the vicinity of active submarine cable systems where these are installed in water depths of 200 meters or less.
13	2C	The Proximity of Offshore Renewable Wind Energy Installations and Submarine Cable Infrastructure in National Waters This document provides guidance on the considerations that

ICPC Spatial Separation Recommendations		
		should be given in the development of projects requiring proximity agreements between offshore wind farm projects and submarine cable projects within national waters. The document addresses installation and maintenance constraints related to wind farm structures, associated cables and other submarine cables where such structures and submarine cables will occupy proximate areas of seabed.

ICPC Recommendation No. 13, which establishes principles for proximity of offshore renewable wind energy installations and submarine cable infrastructure, is instructive for determining spatial separation needs between the two. The recommendation fully adopts and implements the European Subsea Cables Association ("ESCA") Guideline No. 6, which was created with input from the submarine cable industry, the offshore renewable energy industry, and the United Kingdom's Crown Estate.[18]

To prepare ESCA Guideline No. 6, industry stakeholders and the Crown Estate commissioned a proximity study to determine the needs for spatial separation between submarine cables and offshore renewable energy projects.[19] ESCA Guideline No. 6 used the evidence-based proximity study to make specific recommendations for marine spatial planning that address the need for safety, access, and maintenance for both submarine cables and wind

[18] *See* ESCA, *ESCA Guideline No. 6, The Proximity of Offshore Renewable Energy Installations & Submarine Cable Infrastructure in UK Waters* (Issue 5, Mar. 2016) ("ESCA Guideline No. 6"). The Crown Estate, a property manager overseeing property and holdings making up the Sovereign's public estate, manages the seabed out to the 12-nautical-mile limit. *See*, *e.g.*, *Cables and Pipelines*, The Crown Estate, https://www.thecrownestate.co.uk/energy-minerals-and-infrastructure/cables-and-pipelines/.

[19] *See* Red Penguin Associates Ltd, *Submarine Cables and Offshore Energy Installations – Proximity Study Report*, The Crown Estate (2012), https://www.thecrownestate.co.uk/media/1784/submarine-cables-and-offshore-renewable-energy-installations-proximity-study.pdf.

energy projects. ESCA Guideline No. 6 is summarized in a letter, attached hereto as Exhibit C, that ESCA sends to European regulators and authorities to explain the justification for spatial separation needs.[20]

ICPC fully adopted ESCA Guideline No. 6 and the associated proximity study. ICPC Recommendation No. 13 is therefore "based upon the combined broad experience and knowledge base contained within the submarine cable industry, the offshore renewable energy industry and the Crown Estate."[21]

ICPC Recommendation No. 13, consistent with ESCA Guideline No. 6, indicates that the ideal distance between submarine cables and offshore energy projects is 1 nautical mile (approximately 1852 meters).[22] For projects in closer proximity, ICPC Recommendation No. 13 recommends the need for a working zone of 500 meters on either side of an in-service submarine cable to enable access for cable maintenance and repair operations, as well as an additional hazard area with a minimum radius of 250 meters *in addition to* the working zone, to address the potential need for a vessel undertaking cable operations to work at the limit of the working zone. Accordingly, for renewable energy projects in water depths up to 75 meters, a minimum default

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20 *See* Letter from European Subsea Cables Association to European Marine Authorities & Regulators, et al. (Aug. 1, 2017) (regarding the ESCA position on clear sea-room distances required to properly support subsea cable installation and maintenance in Offshore windfarms, in water depths up to approximately 75m) ("ESCA Letter"), attached as Exhibit C.

21 International Cable Protection Committee, *ICPC Recommendation No. 13, The Proximity of Offshore Renewable Wind Energy Installations and Submarine Cable Infrastructure in National Waters* 6 (Issue 2A, 2013) available by request at www.iscpc.org or secretariat@iscpc.org ("ICPC Recommendation No. 13").

22 *Id.* at 7; *see also* ESCA Letter at 4 ("The ideal minimum distance (for waters up to 75m deep) as detailed in [ESCA Guideline No. 6] is somewhat larger than" the minimum recommended distance. "This ideal distance [is] +/- 1 Nautical Mile.").

separation of 750 meters on either side of a cable is recommended.[23] ICPC Recommendation No. 13's separation recommendations are the minimum recommended separation, to be used as a starting point for project-specific proximity agreements between renewable energy projects and submarine cable operators for any infrastructure that will be located within 1 nautical mile of each other.

ESCA Guideline No. 6 and ICPC Recommendation No. 13 do not address separation for renewable energy projects in water depths greater than 75 meters, but ICPC Recommendation No. 2 can be instructive for these purposes. ICPC Recommendation No. 2 establishes principles for submarine cables located adjacent to each other, recognizing that cables can be placed only so close to each other until they endanger other cables during installation and maintenance, or until they impede access for installation and maintenance—particularly if there are multiple installation and maintenance companies operating in the same vicinity above or below the ocean surface. Accordingly, in water depths greater than 75 meters, submarine cable operators follow a guideline according to which two parallel cables are to be separated by a distance equal to the lesser of three (3) times the depth of water or nine (9) kilometers, though actual placement may vary on a case-by-case basis.[24] Similarly, if both operators of parallel cables agree, cables in deeper water may be separated by a distance equal to the lesser of two (2) times the depth of water, or (6) six kilometers.[25]

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[23] *See* ICPC Recommendation No. 13, at 7; ESCA Letter at 4.

[24] *See* International Cable Protection Committee, *ICPC Recommendation No. 2, Recommended Routing and Reporting Criteria for Cables in Proximity to Others* 12 (Issue 11, 2015), available by request at www.iscpc.org or secretariat@iscpc.org ("ICPC Recommendation No. 2").

[25] *Id.* While the submarine cable operators may agree to place the cables as little as 200 meters apart—either because the length of the parallel is short or the probability of damage and repair is low—most operators take a more conservative approach to cable separation

Similarly, the CSRIC Report also discusses and makes recommendations regarding spatial separation. In particular, the CSRIC Spatial Separation Report urges the FCC and submarine cable operators to "work with other U.S. Government agencies and other stakeholders to consult with and among each other at the earliest possible time to address spatial requirements for submarine cables and their relationship to other proposed marine activities and infrastructure."[26] The CSRIC Spatial Separation Report also recommends that the FCC explore with other government agencies the creation of exclusion zones around existing submarine cables, based on well-established spatial requirements for submarine cable installation and maintenance activities, "that would exclude on a categorical basis activities within a defined distance of a submarine cable absent agreement with the submarine cable owner."[27] Additionally, CSRIC recommends that the FCC endorse a default separation distance of 500 meters in water depths of less than 75 meters and the greater of 500 meters or two times the depth of water in greater water depths, that would govern in the absence of agreement among agencies and affected stakeholders.[28]

These recommendations and guidelines should form the basis for a more comprehensive approach to submarine cable coordination than BOEM has adopted to date.

distances. The "three-times-the-depth-of-water" standard allows the repair ship to lay the repaired cable back flat on the seabed without laying it over the adjacent cable.

26 *See* CSRIC Spatial Separation Report at 57.

27 *Id.* at 12.

28 *Id.* at 57–58.

III. BOEM SHOULD IDENTIFY SUBMARINE CABLES AS CRITICAL INFRASTRUCTURE, REQUIRE COORDINATION BASED ON ACCEPTED SPATIAL SEPARATION PRINCIPLES, AND FACILIATE COORDINATION

As amply demonstrated above, submarine telecommunications cables are critical infrastructure serving vital needs, and uncoordinated activities on the OCS pose serious risks to this infrastructure. Yet, despite the existence of well-established spatial separation recommendations, as stated in the CSRIC Spatial Separation Report, "submarine cable operators, offshore renewable energy developers, and regulators have yet to develop systematic risk-minimization strategies and consultation and coordination mechanisms, which has resulted in some unresolved conflict."[29] It is increasingly imperative that they do so, given the increasing demands on the OCS and BOEM's increased drive to promote wind energy. Coordination between the two industries early and often in the leasing process will minimize the risk of damage to submarine cables and minimize complications with offshore wind energy activities.

NASCA appreciates that BOEM has made some progress date to address this gap: BOEM is more regularly identifying existing submarine telecommunications infrastructure in its documentation and identifying submarine cable operators as stakeholders with whom a lessee will need to make reasonable efforts to coordinate.[30] Additionally, in BOEM's Guidelines for Information Requirements for a Renewable Energy Construction and Operations Plan issued by BOEM's Office of Renewable Energy Programs, BOEM directs lessees of renewable energy programs to coordinate with the owners and operators of existing submarine cables "as early as practicable in the project planning process," as well as with all "potential owners and operators

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29 *See* CSRIC Spatial Separation Report at 36.

30 *See, e.g.*, *Pacific Wind Lease Sale 1 (PACW-1) for Commercial Leasing for Wind Power on the Outer Continental Shelf in California—Proposed Sale Notice*, 87 Fed. Reg. 32,443, 32,446 (May 31, 2022).

of any telecommunications cables that are planned for installation in the lease area."[31] BOEM also directs renewable energy project developers to NASCA's mapping resources as a first step in coordination, and encourages lessees to gain familiarity with existing guidelines and recommendations for coordination, including those published by the ICPC.[32]

However, BOEM can and should do more to recognize the submarine cable industry as a key OCS stakeholder with which prospective lessees must coordinate, and to facilitate the development of the necessary systematic risk-minimization strategies and consultation and coordination mechanisms—as it has done with other key OCS stakeholders, such as the commercial and recreational fishing industries. This more comprehensive approach to coordination will benefit not only the submarine cable industry, but also the renewable energy industry, as it will ensure that industry participants have access to vital information needed to develop the operational and financial plans that inform their bids.

A. BOEM Should Recognize Categorical Exclusion Zones Around Existing Submarine Cables and Exclude Areas Transited by Cables from Call Areas in its Lease Proposals and Lease Documentation

If BOEM proceeds with a competitive lease sale in the Gulf of Maine, NASCA urges BOEM to recognize categorical exclusion zones around existing submarine cables and to withdraw from leasing any lease blocks or portions of lease blocks within any Call Areas that are traversed by existing submarine cables, consistent with the CSRIC Spatial Separation Report.[33]

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31 See BOEM, Information Guidelines for a Renewable Energy Construction and Operations Plan (COP), attach. G at 60 (May 22, 2020), https://www.boem.gov/sites/default/files/documents/about-boem/COP%20Guidelines.pdf ("COP Guidelines").

32 *Id.*

33 CSRIC Spatial Separation Report at 57 (recommending that the FCC explore with other government agencies the creation of exclusion zones around existing submarine cables, based on well-established spatial requirements for submarine cable installation and maritime

At a minimum, BOEM should incorporate spatial separation from submarine cables as a requirement in its leasing documents.

As explained above, effective cable protection requires spatial separation between submarine cables and other marine activities. With sufficient separation, the risks of direct disturbance via equipment or anchors, or impeded access for establishment of diverse routes or timely maintenance are minimized. In addition, while the focus of ICPC Recommendation No. 13 is on proximity agreements, it also notes that "[b]efore decisions are made regarding proximity and cable crossings, other solutions should be considered to potentially mitigate or reduce the impact."[34] These solutions include "[c]onstruction of a wind farm in a different area."[35] Accordingly, BOEM can reduce the risks posed by wind energy facilities and submarine cable infrastructure located too close together by incorporating the spatial separation recommendations into the site selection phase.

BOEM should therefore consider the default minimum separation distances established in ESCA's and ICPC's recommendations in establishing exclusion zones and in identifying lease blocks or portions thereof ineligible for leasing. Specifically, BOEM should account for a default separation distance of a minimum of 750 meters on either side of the cable in water depths of less than 75 meters (i.e., 1500 meters total) and the greater of 750 meters or three times the depth of water on either side of the cable in greater water depths.[36] BOEM should recognize this minimum default separation distance as a buffer, or categorical exclusion zone, around

activities "that would exclude on a categorical basis activities within a defined distance of a submarine cable absent agreement with the submarine cable owner").

[34] ICPC Recommendation No. 13, at 14.

[35] *Id.*

[36] CSRIC Spatial Separation Report at 57–58.

submarine cable infrastructure to serve as a basis for case-by-case proximity agreements.

At a minimum, BOEM should require nominations—and the leases themselves—to incorporate the default separation distances into their projects, and to further coordinate with submarine cable stakeholders.

B. BOEM Should Actively Promote Coordination with Submarine Cable Operators at the Planning and Implementation Phase

NASCA encourages BOEM to continue to promote actively the renewable energy industry's awareness of existing submarine cables and coordination with submarine cable operators in project planning and implementation. Even if OREP creates the recommended exclusion zones to account for the minimum separation recommendations of 750 meters on either side of the cable (or the greater of 750 meters or three times the water depth for projects in water depths greater than 75 meters), proximity agreements between wind energy projects and submarine cable operators are still necessary on a case-by-case basis where projects are within 1 nautical mile of submarine cable infrastructure.[37] In addition to establishing the proximity of wind energy projects and cables, these agreements need to establish case-specific details such as procedures to follow for potential cable repairs (e.g., turning off turbines or turning them in a different direction for a repair), insurance requirements, and protections for cable crossings.

To promote awareness and coordination, NASCA urges BOEM to take as comprehensive an approach to coordination and mitigation for submarine telecommunications cables as it does with the commercial and recreational fishing industry. In addition to directing industry stakeholders to the COP Guidelines, and notifying renewable energy project developers of the need to involve submarine cable operators as early as possible in project planning to develop

[37] ICPC Recommendation No. 13, at 7.

project-specific proximity agreements, NOAA should facilitate coordination through the development of recommended best practices and guidelines, to be made available on BOEM's website—together with key industry, BOEM, and other agency contacts. Key nautical mapping tools should also be available—although industry should be aware that these tools are not always up-to-date and in any event do not reflect planned submarine cable systems that do not yet appear on nautical charts. Such a comprehensive approach is not only essential to protecting submarine cables, but benefits the renewable energy industry by ensuring that lessees and potential lessees have the information they need to avoid delays and unexpected expenses due to poor information as they bid, plan, develop, and operate their projects.

C. NASCA Urges BOEM to Coordinate with Expert Agencies

As part of BOEM's coordination with other federal and regional bodies for ocean planning,[38] NASCA urges BOEM to develop interagency coordination measures with those federal agencies engaged in regulation of submarine cables or having submarine cable expertise, particularly the FCC. In particular, the CSRIC Spatial Separation Report (which was drafted with input from BOEM) urges the FCC and submarine cable operators to "work with other U.S. Government agencies and other stakeholders to consult with and among each other at the earliest possible time to address spatial requirements for submarine cables and their relationship to other proposed marine activities and infrastructure."[39]

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38 *See Call for Information and Nominations for Commercial Leasing for Wind Power on the Outer Continental Shelf in the New York Bight*, 83 Fed. Reg. 15,602, 15,603 (Apr. 11, 2018).

39 *See* CSRIC Spatial Separation Report at 57; *see also* Communications Security, Reliability and Interoperability Council, *Working Group 4A Submarine Cable Resiliency Final Report—Interagency and Interjurisdictional Coordination* 45 (2016), https://transition.fcc.gov/bureaus/pshs/advisory/csric5/WG4A_Report-Intergovernmental-Interjurisdictional-Coordination_June2016.pdf (encouraging the FCC to take an active role in marine spatial planning activities, including those of BOEM).

First, BOEM can make better use of the interagency coordination procedures established by the National Environmental Policy Act ("NEPA"), including the provisions for lead agencies and coordinating agencies.[40] NASCA urges BOEM to treat the FCC, Team Telecom, and the U.S. Army Corps of Engineers as cooperating agencies in its future area identification process. These agencies are qualified agencies with "special expertise",[41] and can provide invaluable information on the economic and social impact on submarine cable infrastructure associated with renewable energy activities. As part of the development of its area identification process, NASCA urges BOEM to seek information from these agencies and coordinate with them to protect existing submarine cable infrastructure and ensure the ability to develop and protect future submarine cable infrastructure.

Second, BOEM should negotiate a memorandum of understanding with the FCC to establish formal consultation and coordination procedures to minimize potential conflicts between submarine cables and renewable energy projects—including those in the Gulf of Maine area. The adoption of both measures would provide BOEM with valuable and relevant information necessary for the area identification process for future commercial wind projects on the OCS in the Gulf of Maine.

[40] 40 C.F.R. § 1506.2(b)–(c); *see also* 42 U.S.C. § 4332 (requiring the lead agency to "consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved").

[41] 42 U.S.C. § 4332(C)(v); 40 C.F.R. §§ 1501.6, 1508.5.

CONCLUSION

For the reasons stated above, NASCA urges BOEM to adopt measures to protect existing and planned submarine cable systems and to address the unique legal protections afforded to such systems as part of BOEM's leasing process for commercial wind leases on the Gulf of Maine OCS.

Respectfully submitted,

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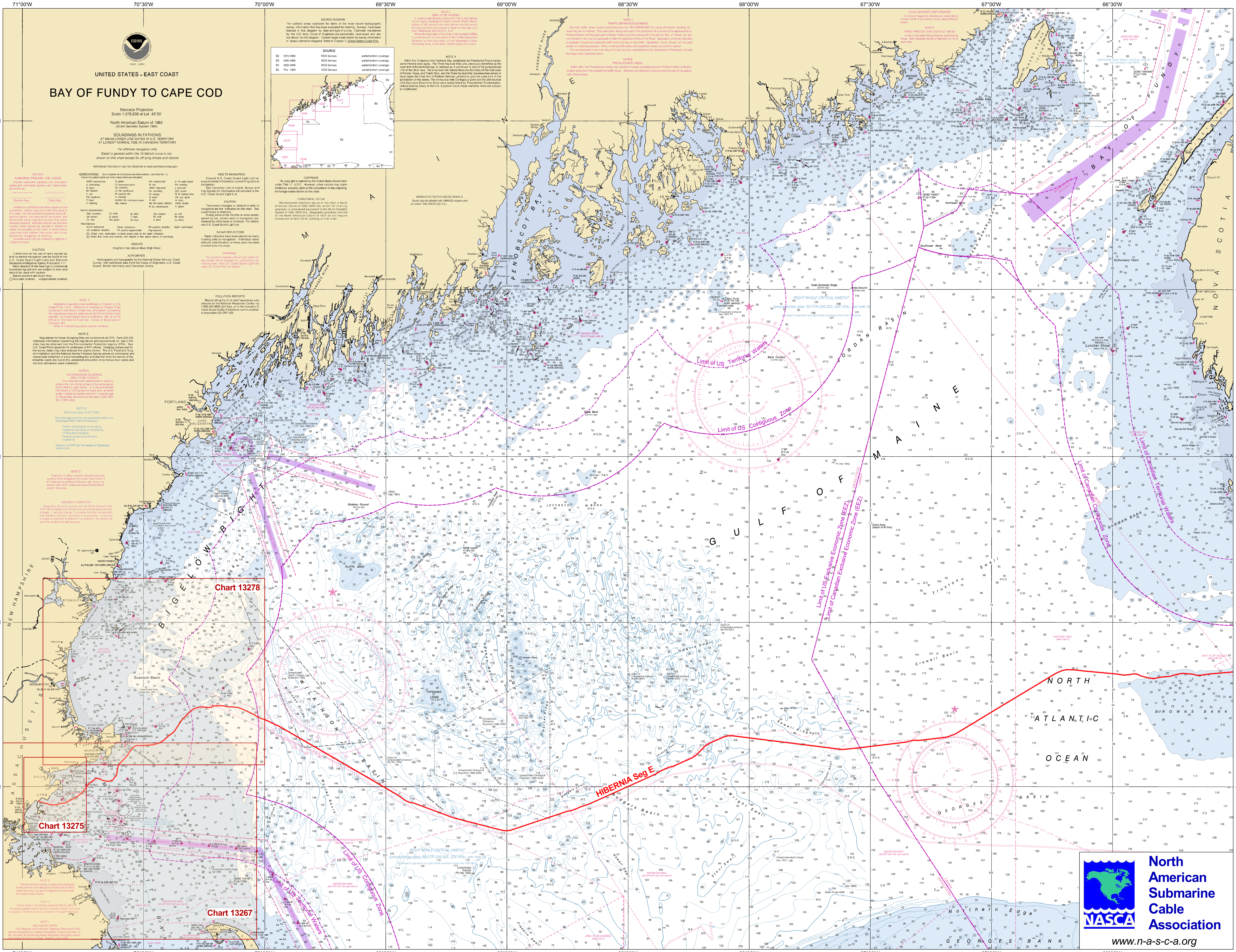
Counsel for the North American Submarine Cable Association

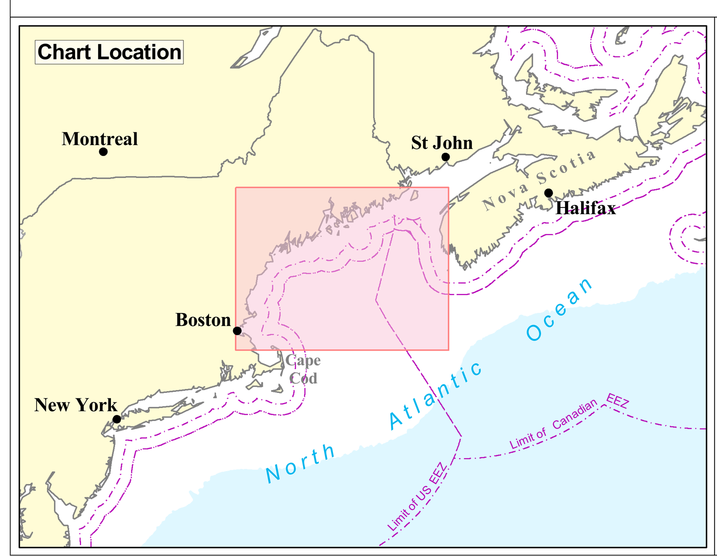
October 3, 2022

EXHIBIT A:

EXA SYSTEM

(formerly Hibernia Atlantic)





LEGEND

- NASCA Member Cables In Service
- NASCA Member Cables Out of Service
- Maritime Boundaries

General Note

These cables are plotted based on the best available data from cable owners and members of the North American Submarine Cable Association (NASCA) at the time of production.

Please be aware that there may be other cables in the area that are not depicted on this chart.

CABLE & CONTACT INFORMATION

Cable System	Status	Owner	Emergency Contact No.
HIBERNIA Segment E	*In Service*	EXA Infrastructure	1-800-409-4471

Emergency Contact Information

In the event you one become entangled in one of the submarine cables shown on this chart please contact the relevant owner listed on this chart 24 hours a day, seven days a week.

For General Information

For non-emergency information regarding any of the cable systems shown on this chart, or for marine planning purposes, please contact:
cableinfo@N-A-S-C-A.org

NATURAL SCALE 1 : 378,838 at 43°30' N

Miles: 0 5 10 15 20 25 30

Nautical Miles: 0 5 10 15 20 25

SPHEROID & DATUM : WGS84

PROJECTION : MERCATOR

Notes:

This chart is intended for general reference only and **NOT FOR NAVIGATION PURPOSES.**

Please be aware that other cables may exist in addition to those shown on this chart.

SOUNDINGS IN FATHOMS

CHART HISTORY

Produced by Charting Services
Global Marine Systems Limited, Chelmsford, United Kingdom

EDITION No. 5 November 2021

CHART BACKGROUND:

NOAA Chart 13260. 44th Edition, November 2021

For more information see:
www.nauticalcharts.noaa.gov

Global Marine
Global Marine Group
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1 Winsford Way
Chelmsford
Essex
CM2 5PD
Tel: +44 (0) 1245 702000
www.globalmarine.group

NASCA Cable Awareness Chart

Mid-Atlantic Region

Chart no. 13260

BAY OF FUNDY TO CAPE COD

EXHIBIT B:

AMITIÉ SYSTEM


Lynn
Bude
BU 1
Le Porge

EXHIBIT C:

EUROPEAN SUBSEA CABLES ASSOCIATION POSITION LETTER

To:

European Marine Authorities & Regulators
European Wind Energy Developers
European Wind Energy Operators
Other interested parties

European Subsea Cables Association
39 Nightingale Road
Guisborough
North Yorkshire
TS14 8HA
United Kingdom

01st August, 2017

To whom it may concern

The ESCA position on clear sea-room distances required to properly support subsea cable installation and maintenance in Offshore windfarms, in water depths up to approximately 75m

Marine Spatial Planning and the successful co-existence of a number of seabed and sea area users is of paramount importance in the current climate of safe development of our seas as one of the major resources in modern times.

The current drive to deliver greater volumes of environmentally friendly sustainable renewable energy, has resulted in a major acceleration of the planning and development of offshore wind farms, and perhaps soon to be followed by a similar expansion of wave and tidal energy schemes. All of these are currently focussed in shallow shelf seas and the highest concentration is in the waters around Northern Europe which represent one of the finest such areas for these resources.

At the same time, there has never been a greater demand for communications connectivity around the globe, and the demand is increasing near exponentially over time. Internet access is rapidly being considered in the same context as water, electricity supply, heating, lighting and food in developed countries. The world's greatest growth in demand of mobile device data is in the developing countries of the world, such is the desire for reliable connectivity to drive change and improvement in society and future prospects.

The European Subsea Cables Association (ESCA) is a not-for-profit organisation which represents the subsea cable industry sector across Europe. It was formed in 2015 out of Subsea Cables UK, to better reflect the number of European cable owners already involved in SCUK.

With this in mind, ESCA (then known as SCUK) in 2010 updated a guideline first authored in 2003, in conjunction with renewable energy development stakeholders and UK government regulators. The guidance was produced to assist any interested parties in setting out the needs and requirements associated with cables of any type, in relation to fixed structure offshore construction in shallow shelf seas, focusing on offshore wind farms. This was ESCA Guideline No.6, The Proximity of Offshore Renewable Energy Installations & Submarine Cable Infrastructure in UK Waters. (http://www.escaeu.org/guidelines/ select the guideline to download).

This document is currently being updated to change the title to reflect applicability to European waters. It originally referred to UK as the organisation was UK focussed at that time. The remit has now been extended to cover all of Europe and the advice and justification remains unchanged.

The International Cable Protection Committee (ICPC) represent the cable industry on a global level, focussed on the primary aspect of cable safety and awareness. The ICPC have also generated a Recommendation document of global coverage, which includes the same guidance as the ESCA document.

In this document, Section 7 details the Guidance for indicative separation distances. It details the concepts of:

- Working Zone – typically $^{+}/_{-}$ 500m, applied either side of the subsea cable in water depth up to 250m. A Working Zone is required either side of an in-service submarine cable to enable access for cable maintenance and repair operations by a suitable vessel; and
- Hazard Area – a minimum of $^{+}/_{-}$ 250m applied around the cable repair vessel.
    - The Hazard Area is independent of, and in addition to, the Working Zone.
    - It is required, where there are fixed structures near to a vessel undertaking cable operations, close to the limit of the expected or planned Working Zone.
    - It provides amelioration of risks to personnel, vessels and structures in working in close proximity to a structure.
    - A Hazard Area should be considered as a trigger radius around the vessel for planning, and any structure potentially within the Hazard Area will trigger the need for additional risk assessment and identification of pre-planned risk mitigation, such as constraints on operational conditions.

More detailed definition is included in the Guideline.

Figures 5, 6 and 7 in the Guideline document show how these apply to a cable work vessel.

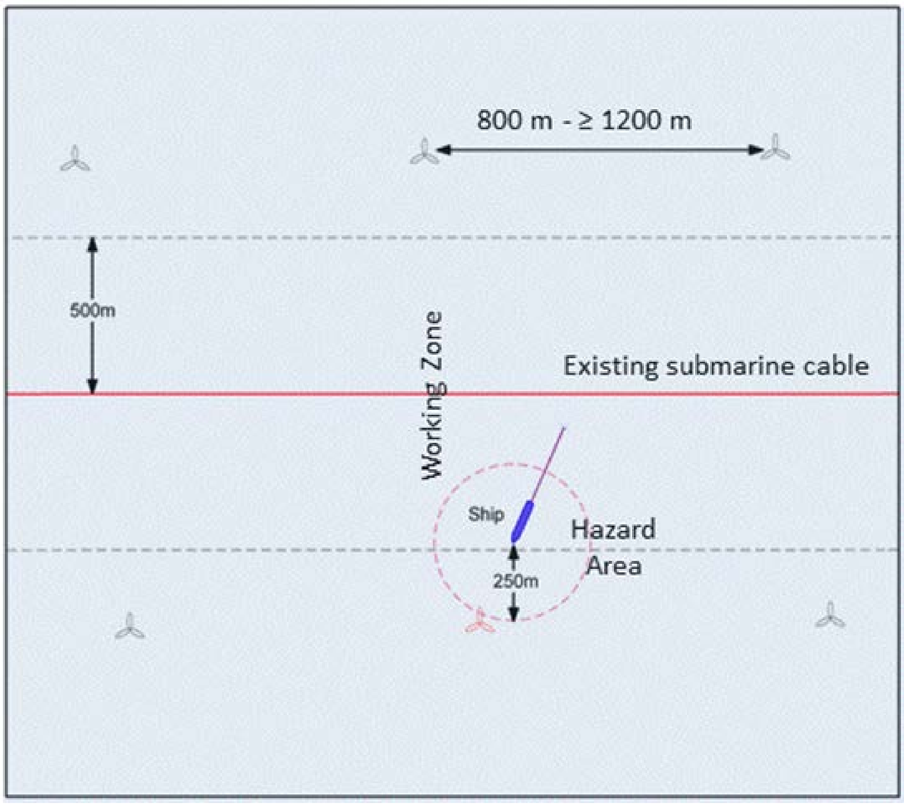

Figure 6 from Guideline 6

The areas and the distances indicated are agnostic of cable type and can be applied equally to telecom and power cable operations.

As can be seen from the diagram, the key requirement for safe cable working in line with existing maintenance agreement contract operational constraints is this overall distance either side of the cable position.

From the diagram above (which represents the minimum acceptable condition that can generally be agreed without extended discussion and assessment) this distance is Working zone plus hazard area radius.

This means the minimum distance is $^{+}/_{-}$ 750m

This can be applied to telecommunications or power cables that are already in situ and over which a wind farm is to be developed.

Or it can be applied to any planned cable installation to be conducted as part of the wind farm development.

Or it can be the guidance for leaving space for a future cable to cross a wind farm development that is being planned.

If this level of space is not provided for in terms of spatial planning, either due to perceived legislation issues, or refusal to collaborate effectively in successful seabed co-existence, then the impacts are several and potentially significant.

For the cable that is already present or planned and is then restricted in the ability to be repaired, will be subject to increase cost of repair as well as increased time to complete repair. The cost has to be covered by some party, and in this instance, any proximity agreement would indicate that the responsibility for any future cost lies with the wind farm developer or operator as applicable.

Loss of connectivity or risk of extended outage, means that connection to internet information hubs for communications cables needing repair may be unacceptably delayed. The impact of this might be that cable owners look to plan their cables to land elsewhere in the longer term. In the shorter term, the cable owners may reduce their traffic to hubs served by cables with this risk.

If these constraints are imposed by a failure to adopt pragmatic distances to allow for co-existence, then major internet hubs in some countries may become isolated as a result of offshore energy development, and so reduce in importance and status where internet connectivity is concerned.

Certainly this would be an issue and for the "over the top" providers like Google and Facebook, for whom the internet connectivity is paramount.

This is why these Guidelines detail the distances and why $^{+}/_{-}$ 750m is the minimum recommended distance around subsea cables for marine spatial planning in co-existence with Offshore Renewable energy developments

The ideal minimum distance (for waters up to 75m deep) as detailed in the Guideline is somewhat larger than this minimum. This ideal distance **$^{+}/_{-}$ 1 Nautical Mile (equivalent to $^{+}/_{-}$ 1852m).**

At this distance in these water depths, it is accepted that neither party even needs to consult the other for undertaking their construction or operations and maintenance activities, as there is no constraint placed by either party on the other.

It is of course prudent for each party to be aware of the other and their plans but this can be informal. Even for a cable through a planned windfarm development, in this instance the courtesy of advising the other party of planned or active operations is all that would be expected, if the separation distance is 1 nautical mile.

This statement is provided in support of cable owners undertaking to make clear to relevant authorities, regulators, offshore energy developers and any other interested party, the industry recommended clear distances needed around cables, based on input from expert seabed stakeholders from the same sectors.

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