OFFSHORE WIND PROJECTS AND FISHERIES

Conflict and Engagement in the United Kingdom and the United States

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> "A just energy transition requires agency as well as treating fishers with dignity and respect, as their places and livelihoods feel to them to be at risk from offshore wind projects—not to mention from overfishing and climate change."

ABSTRACT. A just transition to renewable energy requires accounting for the effects of offshore wind projects (OWPs) on the fishing industry. Research on the interaction of OWPs with coastal communities and fisheries in the United Kingdom and the United States offers insights into minimizing conflict and enhancing constructive engagement between fishers and wind energy developers. Recent innovations include earlier and more meaningful inclusion of fisheries representatives in planning and decision-making, involving fisheries liaisons in the process, and conducting more cumulative studies and taking collaborative approaches to considering the effects of OWP on fishing.

INTRODUCTION

Increasing evidence of global climate change and the depletion of fossil fuel stocks has led to greater pursuit of clean energy. Offshore wind is one such clean-energy source, and offshore wind projects (OWPs) promise social benefits in terms of decarbonizing energy supplies and hence mitigating climate change and pollution. OWPs also create risks and uncertainties. A "just" or fair energy transition means addressing several challenges that include taking account of how the burdens and benefits of energy systems are distributed, identifying and recognizing who is affected, and instituting procedural principles to remediate concerns (Sovacool, 2014; Jenkins et al., 2016; Friedman et al., 2018; Jasanoff, 2018).

In this paper, we outline how research on OWPs and their effects on coastal communities and fisheries offers insights into how to minimize conflicts and how to promote constructive engagement between fishers and wind energy developers as society transitions to greater use of clean energy. We review such efforts mainly from the perspectives and experiences of the United Kingdom (UK) and the United States. The UK is a valuable case study for several reasons. The OWP sector is championed as a "success story" by the government of the United Kingdom, which emphasizes "clean growth" and claims the largest installed offshore capacity in the world (UK Government, 2020; Figure 1). In addition, the Scottish government has passed "world-leading" climate change legislation, aiming to generate 50% of overall energy consumption from renewable sources (Scottish Government, 2017). At the same time, fishing is a key industry: marine fish worth almost a billion pounds were landed in the UK in 2019, with Scottish vessels accounting for nearly two-thirds of this catch (Marine Management Organisation, 2020). The socioeconomic importance of the commercial fishing sector in Scotland and on England's northeast coast is well established, and coastal communities historically and culturally shaped by fishing remain dependent upon it now (Brookfield et al., 2005; Stead, 2005).

The United States also provides a useful case, boasting substantial offshore wind resources (Musial et al., 2016), though OWPs have been slow to develop there (Figure 2). Prior to 2005, the United States had no formalized legal structure for offshore wind and no implementing regulations until 2009. Moreover, early plans, including Cape Wind in Massachusetts and Bluewater Wind in Delaware, were unsuccessful, while others were delayed. The US Bureau of Ocean Energy Management (BOEM) regulates offshore wind development in federal waters and has made considerable progress in leasing sites off the East Coast to offshore wind developers (see Figure 2), with further potential evidenced by recent participation of European companies. But, the US OWP sector lags considerably behind that of the UK, with only 42 megawatts (MW) operational as of October 2020 from two sources, the Block Island Wind Farm in Rhode Island state waters and a small pilot project in federal waters off the coast of Virginia. Commercial and recreational fishing are of sociocultural and economic importance to fishers and the communities in which they reside along the US East Coast (BOEM, 2018). The sessile Atlantic surf clam (*Spisula solidissima*), ocean quahog (*Arctica islandica),* and Atlantic sea scallop (*Placopecten magellanicus*) fisheries of this region are among the most valuable in the United States (NOAA Fisheries, 2020a), and fisheries for mobile species like Atlantic cod (*Gadus morhua*) are iconic along this coast.

FACING PAGE. Members of the Holderness Fishing Industry Group, Bridlington, UK, study shellfish in the Westernmost Rough Offshore Wind Farm, May 2020. *Photo credit: Mike Roach*

WIND PROJECT SITES

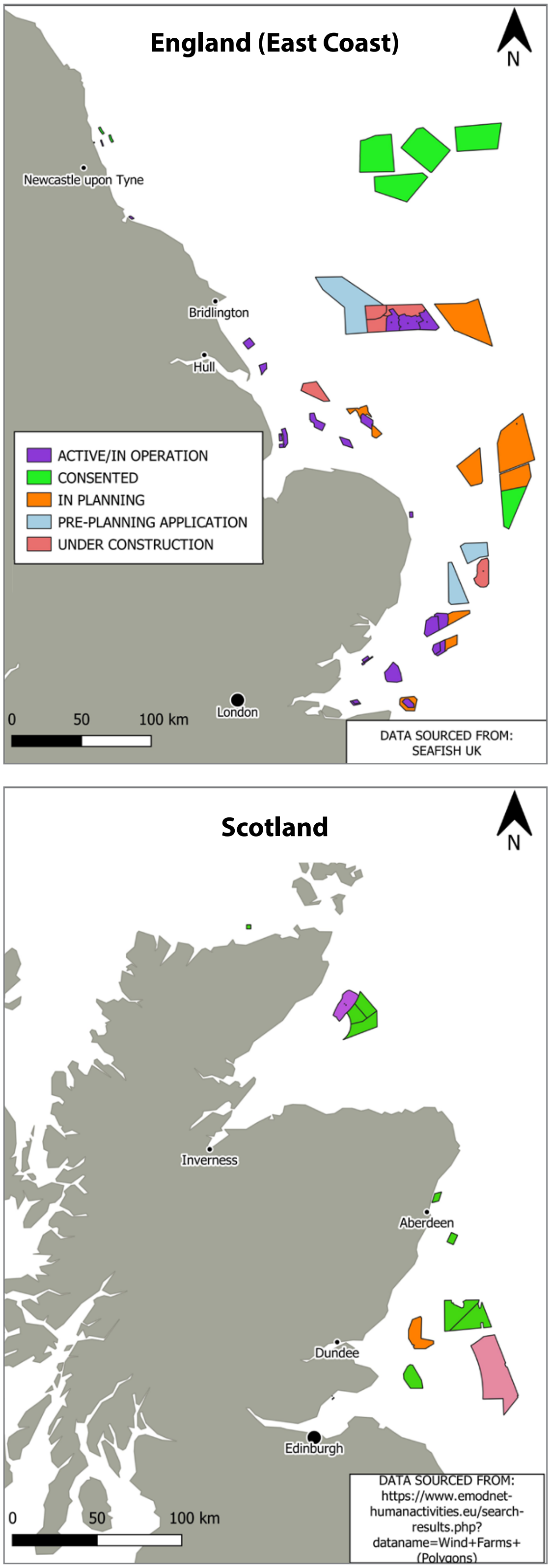

FIGURE 1. Offshore wind projects near the east coast of England (top panel) and Scotland (bottom panel).

UNDERSTANDING SUPPORT FOR AND RESISTANCE TO WIND ENERGY

A central question in research is why planning and construction of wind energy is often slow and costly, despite high levels of public support and backing by policymakers. A common explanation for this apparent "social gap" (Bell et al., 2005) is NIMBY (not in my backyard), but social scientists have shown this interpretation ignores complex factors that shape people's assessments of energy projects, both on- and offshore (Devine-Wright, 2005, 2009; O'Keeffe and Haggett, 2012; Bell et al., 2013).

For example, values and beliefs affect people's connections with the ocean, and their attitudes toward proposed changes (Bidwell, 2013). In research about citizen responses to a proposed project off Cape Cod, Massachusetts, it became clear that seas are considered to be special places (Kempton et al., 2005). Consequently, wind development is often perceived as disruptive to people's relationships with "place" (Devine-Wright, 2009). From a social science perspective, place is not the physical environment alone, but rather a space imbued with meaning (Cresswell, 2014), which may be "something intangible, where all [one] sees is the ocean" (Firestone et al., 2018a).

The character of a particular place can matter greatly. Bates and Firestone (2015) compared responses of residents of Atlantic City, New Jersey, with those of coastal towns in the neighboring state of Delaware to proposed small-scale nearshore OWPs. Although wildlife/environmental issues were most frequently cited in both places, for Delawareans they were causally related to positive attitudes toward the project, but for Atlantic City residents they were not. For Delaware residents—many of whom were recent retirees to the coast—the project symbolized clean energy, consistent with values of nature and stewardship. For Atlantic City residents—many of whom were involved in ocean activities such as boating and fishing—it represented further industrialization of the ocean, conflicting with traditional uses of the ocean.

Place is therefore an important social construct in controversies about wind energy (Pasqualetti, 2011). The expectation that valued landscapes should not change ("immutability"), combined with limited space, reduces negotiating flexibility over project siting and design. For example, along the US East Coast, land-based wind resources are poor, leaving states with fewer options for decarbonizing electricity generation and improving health outcomes. Choosing alternatives that are a greater distance from shore and in deeper waters (Samoteskul et al., 2014), and perhaps have larger spacing among turbines to allow vessel movement, increases project costs and hence narrows the options. Such "immobility" runs head long into existing cultural, social, and economic aspects of the region, raising concerns about the way in which impacts and benefits of projects are apportioned.

OFFSHORE WIND PROJECTS AND FISHERIES

For people who work at sea, the idea of place is more complex. They have a multidimensional relationship with the ocean that extends to deeper and more distant waters, while for those who visit or live near the ocean, place often only incorporates the nearshore (McLachlan, 2009). Furthermore, the ocean, like seemingly undeveloped land, is

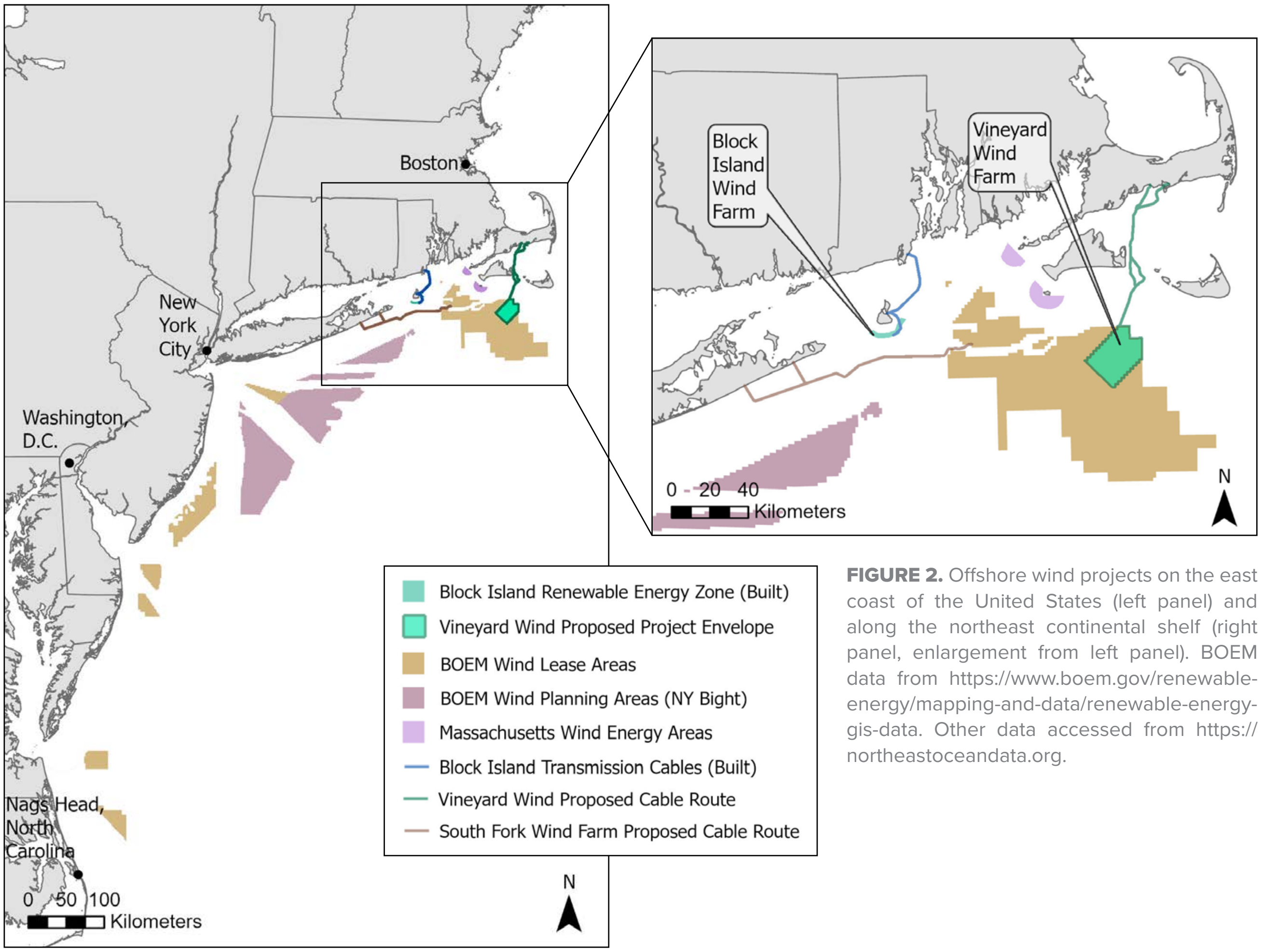

FIGURE 2. Offshore wind projects on the east coast of the United States (left panel) and along the northeast continental shelf (right panel, enlargement from left panel). BOEM data from https://www.boem.gov/renewable-energy/mapping-and-data/renewable-energy-gis-data. Other data accessed from https://northeastoceandata.org.

more than "unoccupied swaths of nature" (Pasqualetti, 2011, p. 914); rather, it is a place where work is done and identities are fashioned. The people who fish for a living are not only defined by the communities where they reside, store their boats and gear, and sell their fish but also by where they spend much of their time working: at sea. The notion of "communities at sea" (St. Martin and Olson, 2017) is thus relevant for understanding the potential impacts of offshore energy facilities on the activities of fishers. It also highlights the knowledge and values they bring from and to the sea and to negotiations over offshore wind projects.

Surveys conducted in the early stages of planning for OWPs show highly variable levels of fisher support. In Ireland, 40% of fishers surveyed backed the development of OWPs and marine energy projects, while 45% did not (Reilly et al., 2015). In Scotland, most fishers expressed positive or neutral attitudes toward wave and tidal energy extraction (Alexander at al., 2013b). Support varies in part due to differences of scale, methods, and other factors within the fisheries (Chen et al., 2015; Kularathna et al., 2019) and to experience. Scottish fishers who knew of nearby developments were five times more likely to have a negative attitude (Alexander et al., 2013b, p. 241). Likewise, Soma and Haggett (2015) found familiarity with projects and concerns about impacts can breed discontent and opposition to OWPs. Another concern is how OWPs will affect the quality of fisheries science used for managing stocks where the footprint of the OWP and of a managed stock overlap in ways that may limit monitoring and hence the reliability of data for stock assessment (Lipsky and Gabriel, 2019). This issue can have short-term economic effects on fisheries in systems where managers are required to take scientific uncertainty into account when determining allowable catches.

CO-LOCATION AND COEXISTENCE OF FISHERIES AND OWPs

To address these issues, studies have explored the potential of "co-location" of fisheries with OWPs, particularly passive gear fisheries (Stelzenmueller et al., 2016), aquaculture (Gimpel et al., 2015, Lacroix and Pioch, 2011), and recreational fisheries (Fayram and de Risi, 2007). For example, cooperation during planning processes has led to successful co-location of specific types of fisheries (especially those using static gear) and OWPs (Kafas, 2017; European Commission, 2019). However, there are barriers to co-location, including commercial fishers' resistance to setting gear within OWPs because of safety, legal, and insurance issues; developers' demands for licensing; and concerns about losing access (Hall and Lazarus, 2015; Hooper et al., 2015). Recreational fishers have expressed similar concerns, especially related to navigational safety (Hooper et al., 2017; ten Brink and Dalton, 2018). Commercial and recreational fishers may also have different perspectives. Many recreational fishers were attracted to the environs around the Block Island Wind Farm, off the Rhode Island coast, for increased fishing (ten Brink and Dalton, 2018), especially spearfishing. However, commercial fishers were pushed into less productive areas due to crowding around the turbines and their placement along their route.

A recurring idea is to establish exclusion zones during or after construction. Such marine protected areas will potentially benefit fish stocks, and recreational fishers are more likely to be able to fish close to the structures (e.g., Hooper and Austen, 2014). Through restrictions on mobile gear (Vandendriessche et al., 2015; Bergman et al., 2015), creating these "no-take zones" during different phases of construction and operation can have ecological benefits, providing refugia for target fish species. During the latter phase of construction, when there is no disturbance to the benthos, an exclusion zone will allow recovery of macrobenthic species (Coates et al., 2014, 2016). A collaborative study involving the Holderness Fishing Industry Group (HFIG, based in Bridlington, UK), the local fishery, and the developer identified some positive benefits of temporary closures of European lobster (*Homarus gammarus)* fishing areas during construction (Roach et al., 2018), and as yet unpublished long-term monitoring indicates lobster population ecology similar to conditions prior to construction. There are also documented benefits from introducing hard structures; artificial reefs provide surfaces for colonization of sessile benthic species (Bergström et al., 2014; De Mesel et al., 2015; Degraer et al., 2020, in this issue). These benefits are enhanced in areas not characterized by hard substrata; for example, Krone et al. (2017) observed that scour stone protection offered additional habitat for juvenile brown crab (*Cancer pagurus)*, up to 5,000 juveniles per turbine, contributing significantly to the regional population.

Not all studies find benefits to co-location, however. Haraldsson et al. (2020) emphasize that socio-ecological complexity can provide unexpected outcomes, such as a decline in perceived environmental quality despite increases in biological productivity in situations where improved productivity increases predation on valuable species.

COMPENSATION AND PARTICIPATION

There are two key aspects to a just energy transition. First, ensuring distributional justice requires a fair accounting of the impacts and benefits from new projects. Accordingly, potential disruption to fishing effort and fish stocks has led to calls for compensation to commercial fishers (Hooper et al., 2015; Reilly et al., 2015; ten Brink and Dalton, 2018). In response, Vineyard Wind in the United States established fisher compensation funds to address losses, a trust fund to support fisher navigational and safety equipment and to deflect any increases in insurance costs, and an innovation fund with program and research project grants (BOEM, 2020). In the UK, several OWPs contributed to a fund to support fisheries in everything from research to a hatchery, life-saving equipment, and new tractors. HFIG has a developer's agreement to fund collaborative research projects and has used community funding for matching grants to help fisheries (Roach et al., 2018).

OWPs can also provide opportunities for fishers to diversify or supplement income. Some US projects have preferentially hired fishers displaced by oil and gas development or required developers to create plans to recruit local residents or businesses (Reilly et al., 2015). Scottish fishers noted that OWPs could provide alternative employment for fishers to guard devices or exclusion zones or to provide survey assistance during construction (Alexander et al., 2013a,b).

There might also be entrepreneurial opportunities. For instance, a fishers' association in Ireland set a up a company that sold fuel to the developer (Reilly et al., 2016). In both the UK and the United States, fishers have either retrofitted or purchased new vessels to conduct work for the wind sector. Also, in the United States, fisheries business owners created a company, Fishermen's Energy Inc., for the express purpose of developing offshore wind. Moreover, while the effects of wind turbines on coastal tourism are uncertain, boat tours, with charter-fishing boat captains as nature guides, may prove popular as more projects become operational (Lilley et al., 2010; ten Brink and Dalton, 2018).

Focusing solely on economic opportunities and costs, however, limits understanding of fishers as individuals who ascribe meaning to their time at sea (Russell et al., 2020) and their identification as members of occupational and place-based communities on land and at sea. Studies in the UK document concerns about trade-offs for local communities where fisheries are strongly embedded in the local economy, including potential loss of skills, heritage, and ways of life due to OWPs (Brookfield et al., 2005; Gray et al., 2005; Mackinson et al., 2006; Reilly et al., 2015). Indeed, collaboratively negotiated community benefits were key to discussions about the Block Island OWP (Klain et al., 2017). It may be that fishers can find meaning in the work of building and maintaining OWPs; the Fishermen's Energy Inc. initiative may demonstrate such a possibility, even though it did not successfully complete an OWP project.

ENGAGING FISHERIES AND DEVELOPERS

The second key aspect to a just transition is procedural justice—ensuring that those affected are recognized and can participate in decision-making. As demonstrated, the coexistence of fisheries and OWPs is not straightforward but rather challenges developers to integrate their industry into crowded offshore spaces (Marine Scotland, 2011; Hooper et al., 2015; Wright, 2016; Weir and Kerr, 2019). Effective engagement in the processes, with interaction between fishers and developers, can help (Alexander et al., 2013b; Reilly et al., 2015; Klain et al., 2017) when there are compromises (Wright, 2016) as well as clear protocols and communication (Hooper et al., 2015).

There are three points to make about this. First, discussions of fisheries and offshore energy are often in the context of marine spatial planning (MSP). This is particularly so in the European Union (Stelzenmueller et al., 2016) but also increasingly in the United States where MSP may need to follow formal requirements, such as the US National Environmental Policy Act's (NEPA) environmental assessment process. When designed to fully engage fishers and other stakeholders, MSP can advance trust and communication, as in the Block Island case (Dwyer and Bidwell, 2019). Broader questions of scale and cumulative effects from OWPs can be raised in MSP in addition to examining impacts (and conflicts) for specific projects and sites. A German study suggested that the cumulative effects on fisheries from OWPs are far greater than revealed in project-specific studies (Berkenhagen et al., 2010). BOEM has also begun to examine impacts more holistically, considering the environmental and social impacts from large-scale OWP (22 GW) buildout and differentiating between the impacts to sessile and mobile fisheries and gear (BOEM, 2020). MSP can therefore provide a way to consider and address impacts and benefits, moving beyond an "announce and defend" strategy. Indeed, when individuals perceive their community as having been able to influence the outcome (Firestone et al., 2018b), perceptions of process fairness and attitudes toward a project are enhanced.

The benefit of MSP has been demonstrated in practice. For example, based partly on a series of workshops conducted within an MSP process (Smythe and McCann, 2019), a Rhode Island state-based council developed a Special Area Management Plan (SAMP) that successfully outlined a location for the Block Island OWP. The US federal government runs the OWP leasing process for federal waters through BOEM. States run the leasing process in state waters and take the lead in determining renewable energy goals (Woods, 2019) and approving contracts and permitting for transmission, coastal impacts, and cable easements that come ashore (NYSERDA, 2020). Similarly, the outputs of participatory fisheries mapping work sponsored by the Scottish Government were successfully used to inform MSP (Kafas et al., 2017).

Second, fisheries-led initiatives and "fisheries liaisons" can be key in effective engagement. For example, in 2002, the Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) was established by UK fishing groups to improve engagement between developers and fishers. Its guidance calls for an effective liaison to help identify potential impacts and co-existence opportunities, and guide mitigation (FLOWW, 2014, p. 1). A "fisheries liaison" is therefore someone hired by a developer to provide information to fishers, convey their concerns and issues to the developer, and convene meetings as appropriate.

The experiences of FLOWW and other groups in the UK have contributed to adoption of fisheries liaisons in the United States (Moura et al., 2015). In 2013, the inclusion of fisheries liaisons was adopted as part of "best practices" by BOEM and the state-based council that planned the Block Island OWP (McCann et al., 2013). It is now part of other US projects in the US Northeast. Although similar in many respects to fisheries representatives or extension and outreach officers in fisheries and agriculture, the position is paid by the developer rather than by government or affected industries.

Those who serve as fisheries liaisons are usually well known within the fishing community even if they are not actively fishing. They are likely to seize opportunities for more collaborative processes, as was the case for the early days of the UK's Westermost Rough OWP (see Klain et al., 2017). For Block Island, the developer employed a respected local fisher as a fisheries liaison during the planning process, and then, as stipulated by the state of Rhode Island, a third-party fisheries liaison was used for communication during construction and operation phases. The wind project layout was altered by the developer in response to fisher feedback (Klain et al. 2017; Firestone et al., 2020). Block Island community members described a related community liaison as "critical" and making "all the difference" (Firestone et al., 2020, p. 7).

Third, the need to help fisheries engage effectively with OWPs has led to a range of new social arrangements of people, authorities, and organizations. For example, in the United States, the Responsible Offshore Development Alliance (RODA)—a coalition of approximately 170 fishing industry associations and fishing companies up and down the Atlantic coast—formed in early 2018 to interface with developers; regional fishery management councils; the National Oceanic and Atmospheric Administration (NOAA), a federal agency with a fisheries management oversight; and BOEM to ensure that OWP development is compatible with their members' businesses (Chase, 2020). RODA has worked for improved OWP layouts, increased spacing between turbines, and vessel transit zones (Barnes, 2020). It also partnered with the relevant regional ocean planning bodies to incorporate fishers' interests into their data portals (RODA, 2020). It is a founding partner of the Responsible Offshore Science Alliance (ROSA), which functions as a science forum designed to enhance understanding of the impact of OWPs on fisheries and to fill knowledge gaps. RODA brings the concerns, voices, and ideas of fishers to OWP development and helps to address many issues raised above, such as collection of data, compensation, trust, power, and mitigation. In 2020–2021, it is partnering with NOAA and BOEM to synthesize knowledge pertinent to OWPs in US waters.

Such coalitions also operate in the UK. HFIG has developed an inclusive approach by creating a single point of contact for different offshore projects, enhancing consistency, and making it easier for these projects to get essential information disseminated. HFIG is also represented at planning meetings to ensure, where possible, minimum disruption to the fishery. Coexistence plans have also been developed for operational phases of different OWPs to enhance future viability of both industries.

Participation of all relevant stakeholders matters, and existing fisheries research and management organizations play important roles in this. In the United States, NOAA has established an internal working group (NOAA Fisheries, 2020b), and NOAA's Northeast Fisheries Science Center is conducting several research studies that include investigating habitats in OWP development areas, effects on port and fisheries revenue, and impacts on cod stocks (NOAA Fisheries, 2020b). These investigations will contribute to comprehensive environmental impact analyses of how OWPs will interact with fish, fisheries, and coastal communities and regions.

TOWARD MEANINGFUL ENGAGEMENT

Key lessons for effective engagement have emerged from UK and US experiences. Input from fishers at the early stages is more likely to result in their active participation (Reilly et al., 2016) and to capture their specialist knowledge (Alexander et al. 2013b). Moreover, engagement should be maintained throughout the environmental evaluation process and consent application (FLOWW, 2014; Aitken et al. 2016). Face-to-face meetings and personal interactions are preferred (Gray et al., 2005), and channels of communication may need to be adapted, depending on local fishing community preferences (Reilly et al., 2016). Port visits by developers are often the best way to establish local relationships, gain insights into the local fishing industry, and identify fishers to engage (FLOWW, 2014, p. 26). Few fishers are likely to read long technical reports, so outputs must be easily available and understandable (de Groot et al., 2014, p. 13).

Moreover, action matters (Aitken et al., 2016). Many of the fishers in Gray et al.'s (2005) study believed there was little *meaningful* discussion between fishing and energy representatives, that is was merely a box-ticking exercise. Alexander et al. (2103b, p. 8) highlight fishers describing consultation as "lip-service" and saying that "nobody listens," often assuming decisions having already been made. It is therefore crucial that engagement be effective (Reilly et al., 2015). Developers would best use two-way communication and methods of "suggesting, not telling" fishers (Alexander et al., 2103b), and deliver on promised outputs (de Groot et al., 2014). The Block Island experience shows that MSP, if designed carefully, can be considered more broadly to secure early fishery input, build trust, and facilitate dialogue (Klain et al., 2017; Dwyer and Bidwell, 2019). Another fascinating example, from Maine, concerns participatory mapping work undertaken to help coastal and island communities document community fishing areas and tell the story of their relationship with the ocean; it suggests that time and effort invested in high-quality engagement can yield rich and valuable resources on which to base decisions (Island Institute, 2009).

Although early, ongoing, and meaningful engagement has been found to be effective in attempts to reach mutually beneficial outcomes, their achievement is not straightforward. For instance, fishers are often hard to reach (Gray et al., 2005), and it can be difficult to identify who forms the "relevant community" (Rudolph et al., 2017)—seasonal island residents were not part of early outreach efforts for Block Island even though they were powerful stakeholders (Dwyer and Bidwell, 2019).

Facilitating collaborative consensus requires considerable time and commitment and may not be possible for all developers (Reilly et al., 2016) and fishers (de Groot et al., 2014). Fishers are not homogeneous; they engage in different types of activity and use various kinds of equipment, which may engender differing concerns about energy projects (Alexander et al., 2013b; Pita et al., 2013). Accurate and up-to-date information is key for effective engagement (Reilly et al., 2016) and evidence-based decision-making (FLOWW, 2014). Data gaps have been identified (Shields et al., 2009; de Groot et al., 2014) in such areas as effort and spatial displacement, economic losses, species impacts, social impacts, and cumulative effects. In addition, some available data may be commercially sensitive (Reilly et al., 2016), and fishers may be divided about data sharing (de Groot et al., 2014).

Other barriers to meaningful engagement relate to issues of compensation, trust, and power. Alexander et al. (2013b) found compensation raised questions about whether payments should be one-off or spread out, and, most importantly, how to prove or disprove claims (see also Gray et al., 2005). Alexander et al (2013b) revealed fishers' lack of trust in developers, government, and other authorities. Mackinson et al. (2006) suggest that fishers' mistrust was partly a result of previous negative experiences with offshore planning, leaving fishers alienated. In the US Block Island case, Dwyer and Bidwell (2019) document the importance of informal as well as formal processes in iterative development of "chains of trust." This concept is amplified by Firestone et al. (2020), who find perceptions of developer openness and trustworthiness to be the most important determinant of process fairness (see also Klain et al., 2017). In the UK, Gray et al. (2005) found evidence of some opportunities for fishers to influence the process but that power ultimately remained with developers, while de Groot et al. (2014) noted fishers' feelings of powerlessness. In interviews with local residents about the Block Island OWP, Firestone et al. (2020) found a similar power differential, with an interviewee referring to the wind project as a "done deal." Institutions such as FLOWW, and organizations like HFIG and RODA, may exemplify innovations designed to help address such problems, but they are not necessarily always absolved from them.

CONCLUSION

The ocean commons is full of activity, supporting wildlife as well as human endeavors and needs such as transportation, fishing, energy production, and solitude (Russell et al., 2020). In this sphere, fishers should neither be privileged nor marginalized. They do, however, have unique interests. Offshore wind energy projects have a very direct and palpable relationship with those who fish in the region being developed. Reasons for conflict and resistance are clearly fear and uncertainty about the loss of income and livelihoods due to competition for important marine space and resources. Place, aesthetics, and identity are important as well.

A just energy transition requires agency as well as treating fishers with dignity and respect, as their places and livelihoods feel to them to be at risk from OWP—not to mention from overfishing and climate change. Meeting that challenge involves establishing the kinds of institutions and processes discussed here that move beyond a model of consultation with stakeholders and toward one premised on dialogue among cohabitants. It is evident that fisheries, both commercial and recreational, have developed considerable heft in engagement with OWP developers and the authorities empowered to make policy decisions. More inclusive approaches will allow relationships among different interests to develop, ensuring a greater understanding of and accommodation to the needs and concerns of fisheries.

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