
LIVE SMART

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Stakeholder Engagement for Marine Renewable Energy

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Stakeholder engagement is a critical piece of any new development project that affects public or private interests. Effective, thoughtful engagement and participatory activities early in the planning process of a project can help planners and project developers understand local concerns, adjust designs to avoid negative environmental impacts, select the best site for a project, answer questions, reduce delay, enhance opportunities and benefits, and build support for a project (Cuppen et al. 2016; Portman 2009; Wiersma & Devine-Wright 2014). On the other hand, cursory or inadequate engagement that is viewed as "checking the box" or tokenism is unlikely to be effective, and can result in project failures, diminished trust, strong opposition, or costly, drawn-out processes (Butcher & MacLennan 2020; Garard & Kowarsch 2017; Gill & Rand 2022; Jolivet & Heiskanen 2010; Pizzi et al. 2021; Sterling et al. 2017).

Marine renewable energy (MRE) projects are no different. Stakeholder concerns can drive decisions around siting, environmental monitoring, and what happens with the energy generated (Dvarioniene et al. 2015; Han et al. 2024; Heuninckx et al. 2022; Standal et al. 2023). Stakeholders may also initiate projects with developers or fill the role of a community advocate for MRE to get projects implemented (e.g., Ruggiero et al. 2014; Simpson 2018), especially in the early phases of the industry. Freeman (2020) briefly explored stakeholder engagement for MRE, highlighting several factors that make for successful engagement for MRE. These include having a well-designed, participatory approach starting early on in or prior to the planning phase, that incorporates partnerships; understanding community context and the legacy of past developments (both MRE and from other industries); transparent communication with two-way learning and information exchange; and building trust (Delvaux et al. 2013; Kerr et al. 2015; Simas et al. 2015; Wahlund & Palm 2022; Yates & Bradshaw 2018).

Several guides exist to aid project developers in conducting stakeholder engagement for MRE (Baulaz et al. 2023; Delvaux et al. 2013; ETIP Ocean 2023; Isaacman & Colton 2013; Seafood/ORE Working Group 2023), as well as many from other industries such as energy planning (Natural Resources Canada 2014; REScoop.eu 2021; Ross & Day 2022; Skill et al. 2020), resource management (Betley et al. 2018; Brill et al. 2022; Haddaway et al. 2017; Poetz et al. 2016; Slater et al. 2020), and more. While there are vast resources and guides for stakeholder engagement, the goal of this chapter is to summarize the recent literature around MRE, identify approaches used for MRE developments, and amplify the lessons learned from past MRE projects. Based on the literature and examples, the chapter offers recommendations for improving MRE stakeholder engagement that can result in better experiences and outcomes for local communities and for MRE.

5.1. STAKEHOLDER ENGAGEMENT ACROSS INDUSTRIES

The goal of stakeholder engagement is to provide opportunities for participatory decision-making, community empowerment, and co-design where appropriate. Building on the ladder of public participation developed by Arnstein (1969) as well as the spectrum of public participation (Figure 5.1) (IAP2 2018), opportunities for public participation occur along a spectrum from one-way information transfer designed to inform or educate to two-way dialogue and collaborative partnerships (e.g., involve, collaborate, empower). A ladder of participation specific to marine spatial planning has also been developed by Morf et al. (2019). In all cases, moving up the ladder or along the spectrum represents an increase in participation in decision-making processes and a resulting increase in stakeholder influence on outcomes (Coy et al. 2021).

In contrast to outreach and education (see Chapter 7), stakeholder engagement goes beyond telling the public what they should know ('Inform') and moves toward two-way communication that includes opportunities for input ('Consult' and beyond). Education and raising awareness are often key components of engagement efforts such as community meetings but are not the only goals and should not come at the expense of listening to the community. The assumption that providing scientific or project information alone will drive acceptance of MRE or other renewable energy projects is based on the knowledge-deficit model (lack of scientific understanding alone, leads to lack of public support), a concept that has been refuted in many contexts, mainly due to its oversimplification of often complex issues (Brunk 2006; Cook & Melo Zurita 2019; Grant 2023; Seethaler et al. 2019; Simis et al. 2016; Sturgis & Allum 2004; Suldovsky 2017). However, familiarity with MRE remains low as MRE is an up-and-coming industry, which will factor into how stakeholders and community members are engaged—needing to start from a place of learning about technologies, potential effects, and uncertainties, and addressing misconceptions or misunderstandings (Dalton et al. 2015; Stokes et al. 2014). While the MRE industry is not yet mature and there

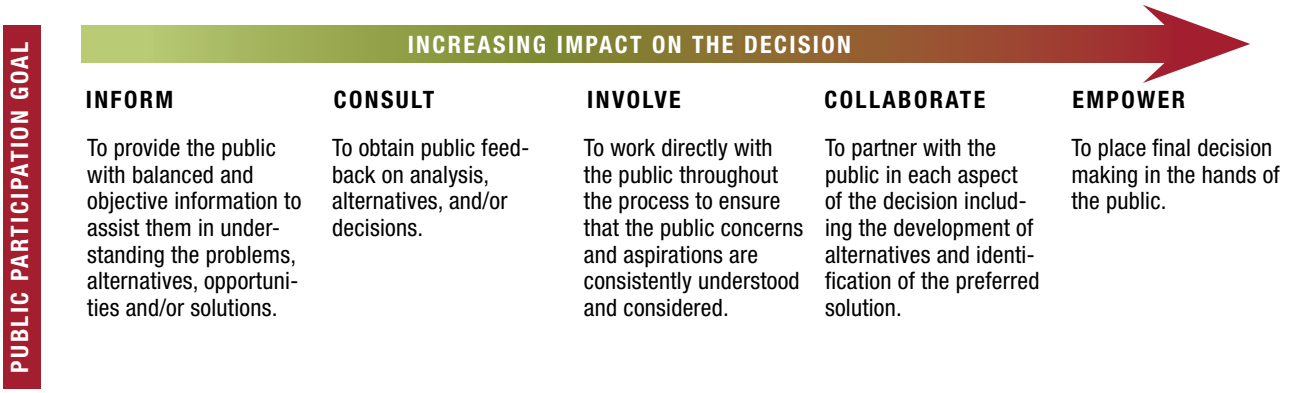

Figure 5.1. International Association of Public Participation (IAP2) Spectrum of Public Participation. Adapted from IAP2 (2018).

is limited documentation of stakeholder engagement processes, as it continues to grow, it will be important to share more information related to steps higher on the spectrum of public participation.

Lastly, stakeholder engagement is a critical piece of just energy transitions and is of particular importance in the unique coastal regions where MRE is likely to be developed (Bennett 2022; Caballero et al. 2023). Discussions of equity and energy justice in project planning emphasize the need to identify barriers to justice throughout planning, development, and implementation (Cisneros-Montemayor et al. 2022; Jenkins et al. 2018; Sankaran et al. 2022; Withouck et al. 2023) and include aspects of recognition justice, procedural justice, and distributional justice (see Chapter 4). As an emerging industry, MRE has the opportunity to intentionally advance social justice and avoid or repair (via restorative justice) some of the pitfalls of previous energy transition or infrastructure projects (Cisneros-Montemayor et al. 2022; Desvallées & Arnauld de Sartre 2023; Duff et al. 2020; Dutta et al. 2023; Fouquet 2010; Hoffman et al. 2021; Kouloumpis & Yan 2021; Lockwood et al. 2017; Sankaran et al. 2022; Skjølsvold et al. 2024; Watts 2018).

5.2. APPROACHES TO STAKEHOLDER ENGAGEMENT FOR MRE

Legal and regulatory frameworks have been identified as playing a key role in establishing requirements for engaging local stakeholders in the decision-making process around specific projects (Lange et al. 2018; Salvador & Ribeiro 2023; Sorman et al. 2020). Examples of requirements related to engagement activities in several OES-Environmental countries are described in supplementary material. These frameworks vary by jurisdiction and can include formal or informal requirements for public participation in development processes or impact assessments (Dunphy et al. 2021), development and distribution of community benefits (Cisneros-Montemayor et al. 2022), or consideration of environmental and energy justice (Paslawski 2023; United Nations Economic Commission for Europe 2014). Many countries do not yet have clear guidance for comprehensive stakeholder engagement related to MRE projects due to the status of the industry (Delvaux et al. 2013; Freeman 2020; Simas et al. 2015). The variability of national policies in different countries and the lack of uniformity in procedures is considered as one of the main non-technological difficulties of MRE development (Apolonia et al. 2021).

Most projects are required to carry out some level of public consultation (Vasconcelos et al. 2022), and in many cases, engagement activities hosted by project developers go beyond what is legally required for consultation (Baulaz et al. 2023). These types of early, continued, and authentic engagement are the most successful across renewable energy development projects (Salvador & Ribeiro 2023). Several resources, guides, and publications offer suggestions for MRE

and how best to engage with stakeholders around developments to increase project success and achieve social license (Baulaz et al. 2023; Delvaux et al. 2013; ETIP Ocean 2023; Isaacman & Colton 2013; Kelly et al. 2017; Norwood et al. 2023; Seafood/ORE Working Group 2023).

Key aspects of stakeholder engagement include identifying who is responsible and will carry out engagement and outreach, who the stakeholders are, and what approaches will best fit a project and the associated community or stakeholder group. In most cases, the project proponent or developer will be responsible for engagement as the lead for development. There are some instances, particularly when required by law, where a government agency or entity considered to be neutral and independent, may be responsible for engagement with stakeholders. In other cases, it may be a third-party group that a project proponent has brought in to carry out the engagement or who fills the role of a trusted third party to help objectively facilitate engagement and negotiations (Bessette et al. 2024; Jami & Walsh 2017). There may also be instances where a community has initiated engagement—considered a bottom-up approach—which changes the responsibility. In any of these scenarios, it is important to clearly define who is responsible for each aspect of stakeholder engagement.

Identifying the stakeholders for a particular project is key to any engagement and outreach effort. In general terms, stakeholders have been defined as anyone who has an interest in the MRE development and who can either affect or be affected by the development itself or associated actions, objectives, and policies (Isaacman & Colton 2013). It can be incredibly difficult for MRE projects to define who exactly the stakeholders or affected communities may be, due to the wide range of potential environmental, spatial, social, and economic effects. The public should also be included in engagement, though they may not be directly affected. Stakeholders may change throughout the different stages of a project or may differ by MRE technology or project location (Johnson et al. 2015), and may include government agencies, supply chain businesses, employees, unions, local residents, business owners and operators, fishers, tourism operators, non-governmental organizations, community groups, and more.

Indigenous groups are important to include for engagement, but they are not merely stakeholders and this should be acknowledged through meaningful, appropriate engagement, for instance as partners, beneficiaries, and/or stewards (Hunter et al. 2023; Kerr et al. 2015; Lyons et al. 2023) (see Chapter 4). While some Indigenous groups have statutory rights and formal consultation in many countries, these have been noted as inadequate, ineffective, or generally lacking in practice (Adeyeye et al. 2019; Bacchiocchi et al. 2022; Hedge et al. 2020; Maxwell et al. 2020; Parsons et al. 2021). Working with Indigenous groups requires relationship building; respecting cultures, traditions, and histories; being adaptable and flexible; and ideally, inclusion by way of full participation and consent (Hunter et al. 2023; Richardson et al. 2022). Indigenous knowledge and perspectives are unique and important, and Indigenous peoples should be involved throughout decision-making processes, including project design and siting, consenting, and benefits agreements (Duff et al. 2020; Richardson 2021). Hunter et al. (2023) provide a cultural license to operate a framework that centers industry partnering with Indigenous groups and maximizing co-benefits, and which can be applied to blue economy sectors like MRE. MRE project developers must explore how each Indigenous group wants to participate and be engaged.

Throughout engagement efforts, it is imperative to have diversity in representation from stakeholder groups and that meetings, forums, and resources are accessible in a variety of ways (Dunphy et al. 2021; Isaacman & Colton 2013). This also means assuring that the loudest voices in a community are not the only ones heard, and that hard-to-reach or typically marginalized groups are included. For stakeholders who do not choose to engage, information can be made readily available through a variety of formats (e.g., local newspapers, bulletins, resources at local businesses) to allow for anyone to remain informed or engage at a later date. A few examples of successful approaches for identifying stakeholders that have been used or recommended for MRE include community profiles (Dunphy et al. 2021), a stakeholder salience framework (Johnson et al. 2015; Mitchell et al. 1997), and comprehensive stakeholder mapping (Baulaz et al. 2023; Bennett 2022). Beginning with key informants, community leaders, or project champions can help to define the breadth of stakeholders surrounding a development. In addition

to defining stakeholders, it is important to acknowledge how each group may affect or be affected by an MRE development (see Chapter 4), how they want to be engaged, and their desired level of participation (Baulaz 2023; Johnson et al. 2015). The identification of stakeholders may also elucidate intermediate or representative actors who are trusted by and part of the community to relay information about the MRE project or represent stakeholder groups as part of a project steering or advisory committee (Baulaz et al. 2023). Specifying stakeholders and target audiences at the beginning of project conception and reevaluating throughout the life of a project is necessary for any successful engagement effort (Johnson et al. 2015).

Determining the engagement formats and sequencing approaches that work best for a particular project, location, or stakeholder group is another important aspect of planning stakeholder engagement for MRE (Baulaz et al. 2023; Bennett 2022). While there are numerous approaches and methods, a few examples from MRE are provided here. Dunphy et al. (2021) recommend moving toward a "consult-consider-modify" model rather than making decisions ahead of time and informing stakeholders too late in the process, and allowing the motivations for engagement to define method and scope. Delvaux et al. (2013) recommend the use of participatory approaches to engagement to increase accessibility of the process. Isaacman and Colton (2013) provide a guide for community engagement for tidal energy in Nova Scotia, Canada, that details a step-by-step approach to develop and implement an engagement plan.

Sharing specific examples of community engagement plans from past and current MRE developments can be useful for MRE developers and project proponents to learn from one another. For example, BioPower Systems (2015) created a community consultation plan for their Port Fairy, Australia, pilot wave energy project that follows the inform, consult, and involve steps of public participation (Figure 5.1). The plan lays out the stakeholders affected and their desires, attitudes, and values; associated risks from the project and responses; and clearly states how BioPower Systems will communicate with and notify the community, and how the community can provide feedback. The EnFAIT project provides another example of documenting specific stakeholder engagement efforts from Nova Innovation's Shetland Tidal Array in the United Kingdom, with the intent to benefit other tidal energy projects (Norwood et al. 2023). Under this project, a local community engagement strategy was implemented that followed the inform, consult, and involve steps of public participation, including engaging with the community through a mail survey, participation at a local fair, and several rounds of focus group discussions with the public and in local schools with youth. They also had a goal to evaluate the effectiveness of these local engagements so that lessons learned could be shared with other developers. Because MRE is a developing industry with frequent changes to technologies and consenting processes, it will be necessary to continue to evaluate these shared approaches and strategies for effectiveness (Johnson et al. 2015).

5.3. GOALS OF STAKEHOLDER ENGAGEMENT FOR MRE

Key to stakeholder engagement for MRE is gaining input and reflecting the values of stakeholders and communities to understand if a project is suitable for a particular location from a technical, social, economic, environmental, and regulatory perspective. Then, and only if appropriate, the project can be developed considering the specific context of that location to assure community support, beneficial social and economic outcomes, and reduced socioeconomic and environmental impacts. Several goals or functions of stakeholder engagement have been identified through a review of the recent literature for MRE.

Sharing information between a developer or project proponent and the community is a typical early goal of stakeholder engagement. From the developer, this could be in the form of education or sharing informational materials about the project or technology to increase public awareness, though strategies for information sharing may vary with local contexts due to preferences, existing mechanisms for engagement within a community, and technology (e.g., computers, internet) availability (DeSanti 2020; Isaacman & Colton 2013; Kallis et al. 2021; Ramachandran et al. 2020, 2021). The community may share information that includes: potential environmental or socioeconomic effects, spatial or temporal data and information about potential project sites (Reilly et al. 2016), local and traditional knowledge (Dunphy et al. 2021; Molnár et al. 2023; Noble et al. 2020), suggestions for deployment methods (Baker 2021), feedback on the proposed project (Slater et al. 2020), and local supply chain and workforce capacity and opportunities (Norwood et al. 2023). Information can also be provided and collected by third parties, through strategic government efforts (Department of Fisheries and Oceans Canada 2022; RPS Group 2010; Welsh Government 2022b, 2022a) or research (Garrett et al. 2022; Gunn et al. 2022). A key aspect of information sharing is that it should be started as soon as possible, ideally before any critical project decisions are made (Delvaux et al. 2013; Gopnik et al. 2012; Isaacman & Colton 2013).

Understanding the unique opportunities or barriers for MRE within a specific context, including stakeholder values, perceptions, and key social, economic, environmental, or cultural features is another goal of stakeholder engagement (Axon 2022; Boudet et al. 2020; Choi et al. 2022; de Groot & Bailey 2016; DeSanti 2020; Elrick-Barr et al. 2022; Hooper et al. 2020; Howell 2019; McMaster et al. 2024; Theodora & Piperis 2022). Establishing effective venues and formats for engagement with a community allows for opportunities for two-way communication, which can enable understanding of local values and context as well as barriers and opportunities for MRE development. This could be through direct solicitation of values or priorities in a structured engagement process, research study, or framework (Bonnevie et al. 2023; Custodio et al. 2022; de Groot & Bailey 2016; Devine-Wright & Wiersma 2020; Dreyer et al. 2019; Kazimierczuk et al. 2023; Richardson et al. 2022; Trifonova et al. 2022), or informal avenues like community dinners, open houses, or social media (Leal Filho et al. 2022; Melnyk et al. 2023). Meeting people where they are by aligning engagement activities to familiar community formats and ongoing community-based efforts (e.g., existing organizations) acknowledges community structures and allows for more fruitful discussions to address barriers and strengthen opportunities throughout the planning process (Apolonia et al. 2021; Borges Posterari & Waseda 2022; Friedrich et al. 2020; Howell 2019; Kallis et al. 2021; O'Hagan et al. 2016).

In addition to gaining information about community values, stakeholder engagement can aid in the design and siting of MRE projects to select the most appropriate technologies and locations. This includes collecting spatial information from current users of the marine environment (e.g., fisheries, tourism, navigation, etc.) and regulatory stakeholders for identifying co-use opportunities, conflict, culturally important areas, optimal locations (with grid connection, if applicable), energy end-uses, and deployment and maintenance considerations (Bakker et al. 2019; Dvarioniene et al. 2015; Kallis et al. 2021; Maisondieu et al. 2014; Pollard et al. 2014; Reilly et al. 2016; Xavier et al. 2022). Some of these activities may have already been conducted as part of marine spatial planning processes to designate larger regions for energy use (Janssen et al. 2015; Quero García et al. 2019, 2020; San Filippo 2013; Yates & Bradshaw 2018). However, some additional stakeholder engagement will likely be required before selecting an MRE site, even if the project is developed within areas designated for MRE (Alexander et al. 2012; Johnson et al. 2016; Pisacane et al. 2018; Quero García et al. 2021). Considering stakeholder preference on project visual design elements (surface expression, shape, paint color, markers, or associated land-based infrastructure) as well as input on operational design (seasonality of deployment or operation, maintenance needs, plans to scale up, grid interconnection) and business strategy (local partnerships for labor, supply chain, or distribution infrastructure) in the early phases of project planning can save developers time and money by not investing in technical decisions that may not be considered acceptable (Bucher et al. 2016; Cavagnaro et al. 2020; Freeman et al. 2022; Haslett et al. 2018; Jenkins et al. 2018; Kujanpaa 2020; Peplinski et al. 2021). Flexibility on the part of the MRE developer and the community is more likely to result in a successful project; this includes incorporating community input on design and siting in project planning and decision-making when possible, as well as understanding technical or resource limitations that may require compromise (Gram-Hanssen 2019; Li et al. 2022).

Another primary goal of stakeholder engagement is to build trust between the developer and stakeholders. In many locations, some level of stakeholder support or social license is required as part of obtaining consent for a project. Renewable energy projects—regardless of the technology—in which a community has a high level of trust in the developer to comply with regulatory requirements, to provide accurate and timely communication, and to execute on promised benefits are much more likely to be successful (Delvaux et al. 2013; Dwyer & Bidwell 2019; Firestone et al. 2020; Heras-Saizarbitoria et al. 2013; Kallis et al. 2021; Lange et al. 2018; Liu et al. 2019; Segreto et al. 2020). On the other hand, projects where the developer is considered untrustworthy and lacks community support more often face significant barriers and opposition, including protests or legal actions, and are unlikely to move forward regardless of their purported benefits or economic/technical feasibility (Comeau et al. 2022; Fleming et al. 2022; Grosse & Mark 2023; Jørgensen 2020; Park et al. 2022). Social license is not always stable or constant and can be lost at any time during project planning, development, or implementation, so developers need to plan for transparency and consistency, as well as build and maintain long-term relationships (Kelly et al. 2017; LaPatin et al. 2023; Lyons et al. 2023; Uffman-Kirsch et al. 2020).

Lastly, stakeholder engagement activities are a key way to identify and plan for benefits with community members as well as define potential negative impacts and associated mitigation needed for project activities. This can be formalized in a community benefits agreement as an output, or more informally agreed upon between stakeholders and the developer (Glasson 2017; Kerr et al. 2017; Rudolph et al. 2018). Emphasizing benefits in community discussions has been recommended to maximize the potential for MRE adoption, as opposed to only focusing on negative impacts (Howell 2019). There are numerous ways to develop and equitably distribute financial and nonfinancial benefits from MRE, such as exploring ownership models, feed-in tariffs to support community-scale investments, data sharing, coastal protection, and community development funds for additional projects (Cisneros-Montemayor et al. 2022; Isaacman & Colton 2013; Kularathna et al. 2019; Regen 2022; Suda et al. 2021; Tarr & Lionais 2012). Preferences for benefits or mitigation will vary by community context, and weaving these discussions into stakeholder engagement activities enables the identification of appropriate options or the generation of novel solutions to fit the place and project (Kallis et al. 2021; Tyler et al. 2022).

5.4. EXAMPLES AND LESSONS LEARNED FOR MRE

There are many examples from MRE and other industries to draw upon for successful stakeholder engagement. Sharing lessons learned is becoming a key practice in the MRE industry as well as for other coastal development sectors. As the industry evolves, there will be less need to rely on learning from other industries, such as offshore wind, in planning MRE projects—though it will still be important to consider the context of particular places and the various projects that are being discussed in shared marine spaces in order to successfully navigate stakeholder conversations.

Several case studies for MRE are described by Dunphy et al. (2021) and Delvaux et al. (2013). Dunphy et al. (2021) offer insights from stakeholder engagement at MRE projects in Europe including Wave Hub (England), Mutriku (Spain), Pentland Firth and Orkney Waters Pilot (Scotland), Biscay Marine Energy Platform (BiMEP, Spain), SEM-REV Test Site (France), and Aguçadoura Test Site (Portugal). Delvaux et al. (2013) also provide information from several MRE projects or potential areas for development in Europe, including at Paimpol-Bréhat (France), Bay of Saint Brieuc (France), Fromveur-Ouessant (France), and the European Marine Energy Centre (Scotland). The examples below illustrate stakeholder engagement activities from around the world that demonstrate lessons learned for MRE.

ENGAGEMENT ACTIVITIES AROUND THE EFFECTIVE LIFETIME EXTENSION IN THE MARINE ENVIRONMENT FOR TIDAL ENERGY (ELEMENT) PROJECT

Project description and location: The ELEMENT project was developed from 2020 to 2023 with funding from the European Union to bring together tidal energy partners for community engagement activities in Brittany, France. Partners included Nova Innovation, IDETA, ORE Catapult, Chantier Bretagne Sud, Guinard Énergies Nouvelles, France Énergies Marines, and InnoSea (hereafter ELEMENT team). The ELEMENT team identified stakeholders within four communities – Belz, Etel, Plouhinec, and Sainte-Hélène – near the tidal test site in the Etel estuary (Figure 5.2).

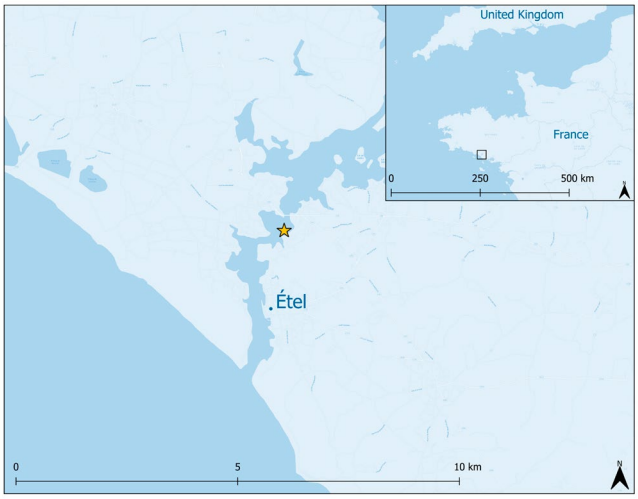

Figure 5.2. Location of the ELEMENT tidal energy deployment in the Etel estuary in France (yellow star).

Approach: The ELEMENT team participated in three stakeholder engagement events before the tidal turbine was placed in the water for testing. All information and materials were made available in French to be widely accessible to the community.

1. In June 2022, the Nautical Commission (consultative commission of local community marine users) met with members of the ELEMENT team to discuss the project, view the test site, and share their observations and recommendations.
2. In October 2022, the ELEMENT team presented the project information to the local community at Belz Town Hall and feedback was requested via survey.
3. In February 2023, the ELEMENT team organized a site visit to display the Nova Innovation RE50 tidal turbine before deployment. The site visit was attended by local authorities, interest groups, businesses, and the press.

Key findings: Participants at each event showed interest in the project and wanted to understand the tidal technology. These events resulted in:

1. The Nautical Commission considering the risk to recreational fishing and pleasure boating for the project as low, and therefore did not need to be restricted. Overall, the Nautical Commission was in favor of the tidal turbine deployment (Lehnertz 2023).
2. Findings from the town hall meeting with 75 attendees and 15 surveys completed; 100% of surveys were in favor of tidal technology and 87% of respondents believed that the ecological footprint of an electricity source is the most important aspect to understand (Lehnertz 2023).

3. The site visit, which was attended by 17 participants, being covered by the press through a variety of news articles (Lehnertz 2023).

The four local communities near the Etel estuary showed strong support for the ELEMENT project and did not trigger any opposition.

Lessons learned: Relaying information from the Nautical Commission to stakeholders in the area was important for understanding the potential impacts of the project on recreational uses. The successful outcomes and support achieved for the project were due to communication early in the development process and hosting multiple community outreach events with a variety of stakeholder groups tailored to the local area of interest (Lehnertz 2023).

RESEARCH ON COASTAL COMMUNITY PERCEPTIONS IN THE CHANNEL ISLANDS (ALDERNEY)

Contributed by Emily Wordley (Huddersfield University)

Project description and location: The France-Alderney-Britain (FAB) Link is a proposed electricity interconnector cable between France and the United Kingdom, originally planned via Alderney (Figure 5.3). While it would not directly deliver electricity to Alderney, a project objective was to provide a potential export route to market for the future development of tidal energy in Alderney's territorial waters. This option would have included a cable route and converter station located in Alderney. Significant local opposition occurred, including anti-FAB protests and anti-FAB propaganda during the height of project discussions in 2016 and 2017. In July 2022, the project announced that it would not make landfall in Alderney and would pursue another route around the island.

Approach: A research study was conducted, using qualitative research methodologies to explore individual experiences and perceptions toward the FAB project and to understand the role of trust and perceived fairness within the planning process. This data collection was not required as part of any regulatory or licensing process but was undertaken for academic purposes. Semi-structured interviews were undertaken with Alderney residents, government, and industry-development representatives during site visits in May and October 2022. The research included elements of ethnography and observation, with the researchers engaging in informal conversations with local business owners and attending community events and government-led public engagement events. It is important to note that this approach to data collection was guided by the principles of a constructivist framework (where researchers are active participants and as such construct their understanding based on their own experiences) with an emphasis on understanding the meaning behind individual experiences and perceptions of fairness and trust. Therefore, knowledge gleaned is a subjective interpretation of participant descriptions and explanations of experiences and perceptions.

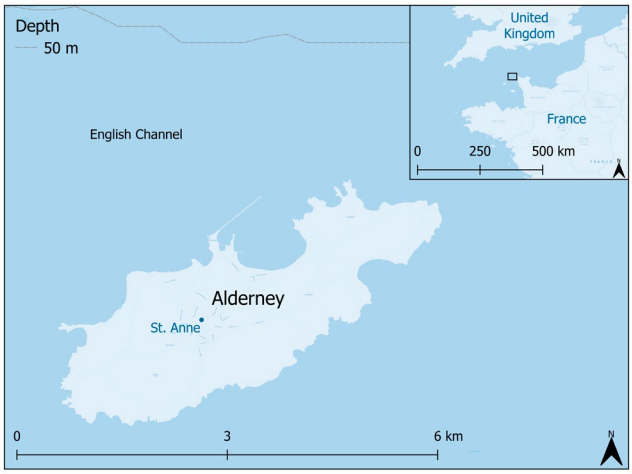

Figure 5.3. Alderney located in the English Channel between the United Kingdom and France.

Key findings: The social impact of FAB was evident through resistant behaviors, including community protests, formation of an opposition group, and ongoing intra-community conflict. Low levels of community trust were observed toward FAB Link project objectives and project decision-makers, attributed to a perceived lack of transparency and community power within the planning process (procedural justice), alongside perceived unfairness in the distribution of benefits (distributive justice). There was also local skepticism toward the motives and authenticity of individuals leading the community engagement due to a lack of knowledge and understanding of local impacts, combined with the timing of engagement, which occurred after critical project decisions were already made by the local government.

Lessons learned: Local experience with the FAB project eroded trust toward project decision-makers, including external and local industry developers, as well as the local government. This loss of trust threatens the successful implementation of future renewable energy projects and policies. Failure to rebuild and maintain

trust may lead to further local resistance to energy development projects, resulting in additional costs and delays to achieving island decarbonization. Rebuilding trust starts with early, transparent meaningful engagement, sustained from planning to decommissioning of a project (Cvitanovic et al. 2021). Any engagement must be a two-way partnership process, assuring community power within the decision-making process.

MARINE SPATIAL PLANNING SUPPORTING MRE DEVELOPMENT IN BRITISH COLUMBIA, CANADA

Project description and location: The Marine Plan Partnership for the North Pacific Coast (MaPP) is a marine spatial planning initiative developed in partnership with the Province of British Columbia of Canada with 18 member First Nations to implement marine use plans. These plans encompassed four sub-regions: Haida Gwaii, North Coast, Central Coast, and North Vancouver Island (Figure 5.4). Advisory committees for each sub-region representing marine stakeholders from multiple sectors were formed, beginning in 2011 and meeting approximately every two months through 2014. Public input was solicited in spring 2014 and the final plans were released in 2015. It should be noted that none of the plans are legislated or legally binding at this time.

Approach: The approach to stakeholder engagement utilized in the MaPP was based on five principles clarified in a letter of intent to collaborate that was agreed to by all partners: openness, transparency, inclusiveness, responsiveness, and informed input. The signed letter of intent also outlined engagement tools such as advisory committees, open houses, bilateral sessions, and a website to support the planning process. The advisory committee included the province, partner First Nations, and other stakeholders representing a wide range of sectors and interests. Spatial plans were co-developed by First Nations and the provincial government as Indigenous knowledge and co-governance were integral to the plan (Diggon et al. 2021). Following this, stakeholder and public engagement activities were carried out to achieve broad engagement throughout the planning process (McGee et al. 2022).

Key findings and lessons learned: The MaPP is considered a successful example of a collaborative planning process that balances economic development with the protection of ecological and cultural values. A key

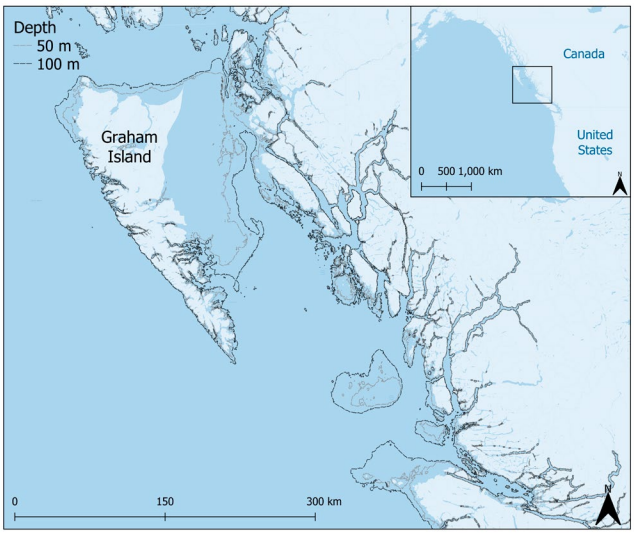

Figure 5.4. Location of the Marine Plan Partnership for the North Pacific Coast marine spatial planning initiative in British Columbia, Canada.

factor in this success was that the process was preceded by First Nations territorial marine planning, allowing First Nations' priorities to drive further planning as a "step zero" in marine spatial planning, before the public engagement began (Diggon et al. 2021). First Nations were able to build capacity within communities, compile robust spatial datasets while protecting sensitive information, link specific goals to implementation structures at the regional scale, and secure and protect key values and areas within their territories from external stressors (Diggon et al. 2021). In addition, extensive early and sustained engagement with MaPP partners led to success, with high levels of stakeholder influence and input on the final plans. Factors contributing to this effective engagement approach, as described by McGee et al. (2022), include:

- Sufficient funding for engagement activities with advisory committee members,
- Inclusive representation of stakeholders and ocean user groups,
- Accountability of leaders that built trust in the planning process,
- Providing clear definitions of terms across plans,
- Third-party consultants that provided unbiased meeting and stakeholder support,
- Opportunities to build relationships, and
- Commitment to engaged stakeholders to maintain the advisory process throughout the planning activities to implementation.

MaPP project team members regularly share their experience and lessons learned at workshops and conferences internationally to support others in collaborative marine planning efforts.

Application to MRE: Richardson et al. (2022) conducted a study that built on the established marine spatial planning within MaPP to investigate the practical tidal energy resource that could be extracted in the region. Their holistic framework used the previously determined marine plans, coupled with local values and acceptability of tidal energy, to identify potentially suitable locations for tidal energy development. They suggested that identified sites could be used to update and further refine Special Management Zones within the MaPP regional plans for tidal energy. This approach to siting for MRE enabled the identification of low-conflict areas based on previously collected spatial data and stakeholder engagement processes to aid siting, reduce concerns over particular projects, and streamline the remaining engagement needed at the project level.

5.5. RECOMMENDATIONS AND CONCLUSION

Stakeholder engagement is a key piece of any development project. With MRE still in early stages, it is especially important to carry out responsible, comprehensive, and equitable engagement to aid project development and to move toward positive public perceptions of the industry.

5.5.1. ENGAGEMENT APPROACH

Planning for and designing a comprehensive approach to stakeholder engagement is integral for successful developments. This includes considering the broader context of engagement as well as the practical aspects of a specific MRE project. Recommendations for developing engagement approaches for MRE include:

- **Tailoring engagement for each project based on different contexts, communities, or locations.** To identify what the needs are, stakeholders and target audiences should be defined from the beginning of project planning and reevaluated throughout the different project phases.
- **Clarifying responsibility and setting expectations, including defining who is responsible for which aspects of engagement and setting goals and ideal outcomes of engagement efforts.** This includes communicating expectations as well as possible limitations, particularly to avoid negative outcomes – such as disappointment or frustration from stakeholders – and creating and implementing an engagement plan based on human and financial resources. It is best to identify who will be most successful to lead engagement activities within a community, ideally someone with specific expertise and training (facilitation, community outreach, public participation, communications, etc.). This could be the project developer or a third party, such as a facilitator/mediator, local representative, or other honest broker.
- **Conducting stakeholder engagement and information sharing activities early and regularly, ideally prior to key decisions being made to allow for stakeholder input to be incorporated, or changes made based on suggestions or concerns.** Taking this approach shows commitment to creating a project that works with and for a community, allowing

communities and stakeholders to feel listened to and heard, to indicate the value of their feedback and influence on the project. Engagement or consultation fatigue should be acknowledged and efforts should be made to reduce burdens on stakeholders, such as coordinating activities with other engagement processes, learning from past development projects to avoid repeating what has already been done, and assuring that people feel their time engaging is well spent.

- **Moving beyond informing to participatory approaches that build trust and listen to stakeholders and communities.** There is a need to familiarize the public with MRE technologies and the project, but the priority should be listening and understanding perspectives. A well-planned approach should include transparency and consistency, as well as building and maintaining long-term relationships, and seeking to move toward incorporating stakeholders in decision-making, co-design, and community empowerment. Aiming for openness, collaboration, and the use of participatory methods in stakeholder engagements results in an empowered community that can actively take part in local energy transitions.
- **Including equity and social and energy justice considerations throughout engagement and in all project phases—planning, development, implementation, operation, and decommissioning.** This includes identifying barriers to justice, equity, and accessibility at each phase and implementing adequate solutions to mitigate the barriers.

5.5.2. IMPLEMENTATION OF GUIDANCE FOR MRE

There is a plethora of guidance available on stakeholder engagement, though studies have shown that even when good practices are identified, they are not always followed (Cronin et al. 2021). Guidance from across industries on stakeholder engagement should be applied to MRE, but there is a need for more complete guidance specific to MRE. Regulations established at the national level often include requirements for consultation but lack guidance for comprehensive stakeholder engagement and consideration for the uniqueness of local contexts and project details. Many of these regulations apply to large-scale infrastructure projects broadly, or offshore renewable energy in general (typically focusing on offshore wind), and as such may not be the best fit for MRE. Having regulatory-based guidance for MRE that goes beyond consultation will help provide industry-specific information on the best approaches for specific jurisdictions. Revisiting and expanding this guidance as the industry moves to larger-scale developments will become increasingly important, as will learning from industries like offshore wind that deploy at larger scale. This will require significant coordination across sectors of industry, government, and research.

5.5.3. INCREASE KNOWLEDGE BASE FOR MRE AND SHARE LESSONS LEARNED

As more MRE projects are deployed, the stakeholder engagement knowledge base is growing, incorporating learning from other marine-based engagement processes such as offshore wind, aquaculture, or marine spatial planning. As MRE-specific knowledge and insight are gathered, moving to recommendations specific to the MRE industry will help develop an engagement that best fits this unique context.

Although the knowledge base of successful engagement efforts is growing, there is a noticeable gap in the literature describing post-deployment efforts and ongoing assessments. Much of the available literature for MRE focuses on identifying stakeholders or guidance and information from the perspectives of developers. To be able to truly analyze stakeholder engagement within the MRE industry, there is also a need for ongoing and post-engagement research on stakeholder and community perspectives. This will inform whether engagement efforts can be deemed successful from all standpoints and point towards improvements and increased understanding of how engagement should be carried out for MRE. This research could best be carried out by researchers and is likely to require government support by way of directives and/or funding.

The recommendations listed in this section will help progress MRE stakeholder engagement. As examples of engagement efforts continue to be shared and further insights gathered and documented, improvements can be made to the approaches used and best practices for the MRE industry can be identified. Working across institutional or national boundaries toward successful, inclusive, and collaborative stakeholder engagement will provide benefits for individual projects, for the MRE industry as a whole, and for communities and stakeholders surrounding those projects.

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