Encouraging effective co-location of marine renewables projects with other marine uses & interests
– Lessons and recommendations from the Celtic Seas

(Draft for Consultation)

1. Introduction and background

The development of new marine renewable energy projects in increasingly crowded waters in ways which command the support of local communities and other users of the same or neighbouring sea space poses a major challenge for developers. Whilst the global need to reduce carbon emissions to protect our climate becomes ever more urgent, marine renewables developers continue to battle significant opposition from other stakeholders and lengthy delays which threaten the viability of their projects.

The Celtic Sea Partnership Project\(^1\) was established to help marine authorities, users and interests from across the EU MSFD Celtic Seas sub-region (see fig. 1 below) work harmoniously together across borders and sectoral boundaries, in ways which avoid conflict and support the EU Marine Strategy Framework Directive’s target of achieving ‘Good Environmental Status’ (GES) in its seas by 2020\(^2\). To support this aim, the project has developed best practice guidelines for: Transboundary Marine Governance, Co-location of Marine Renewables and other Marine Interests, and Marine Sectoral Interaction and Conflict Resolution which can be found at [www.celticseaspartnership.eu](http://www.celticseaspartnership.eu).

\(^1\) Funded by the EU Life+ Programme, project no. LIFE11 ENV/UK/392

\(^2\) Achieving ‘Good Environmental Status’ is defined as achieving acceptable levels of 11 indicators or ‘descriptors’ namely: biological diversity, non-indigenous species, commercial fish/shellfish populations, marine food webs, eutrophication, sea floor integrity, hydrographical conditions, contaminants, contaminants in fish & seafood, marine litter, noise (energy)
Purpose and focus of guidelines

These best practice guidelines for the co-location of marine renewables projects with other marine uses and interests are specifically designed to help those seeking to develop new projects; those seeking to regulate them; and those impacted by these developments such as other marine industries and conservation interests. They aim to help these parties benefit from the knowledge and experience gained by sea users in the Celtic Seas in how to encourage projects which command widespread support. Their content has been informed by extensive consultation with marine stakeholders from across a wide range of sectors in all of the countries and administrations in the Celtic Seas Region. This has included a total of 12 country workshop events (see www.celticseaspartnership.eu for workshop reports) held in Scotland, England, Wales, Northern Ireland, the Republic of Ireland and France, and two international workshop events in Liverpool and Paris. In addition, four, more detailed Case Study investigations were carried out to capture stakeholders’ experiences and lessons from four examples of different approaches taken to working with stakeholders in developing marine renewables projects across the Celtic Seas in French, Northern Irish and Welsh Waters. (SEAGEN - Northern Ireland, DeltaStream – Wales, Sabella D10 – France, Fécamp Windfarm, France)

The Celtic Seas Partnership project is particularly concerned with understanding the most effective ways in which marine stakeholders and interests can be engaged and brought together to encourage constructive collaboration that delivers healthy, sustainable seas. The consultations and investigations undertaken to inform these guidelines and the recommendations and resources highlighted in them are therefore focussed particularly on addressing this challenge.
2. **Recommendations for Effective Approaches, Tools and Mechanisms to Meet the Challenge of Co-locating Renewables with other Marine Uses and Interests**

From the stakeholder consultations, discussions, meetings and interviews carried out by the Celtic Seas Partnership project the following emerged as the key recommendations for effective approaches, tools and mechanisms to meet the challenge of co-locating renewables with other marine uses and interests –

**Project Data, Information and Communication**

- **Information about the wider area** and the practical, physical and technical compatibility of the project with other sector’s activities needs to be assembled **at the outset** of planning the project.

- **Data needs to be captured in a format** that both developers and regulators can use.

- **Use should be made of data provided by local organisations** and not solely left to government.

- **A central research fund** is needed to resource the collection (and sharing) of sufficient good quality data that will benefit the design and implementation of future projects.

- **Governments need to carry out extensive environmental studies** so as to have defined the constraints within which developers can then work and to provide a common framework.

- **A cross-border, OSPAR-scale approach to data-gathering** and environmental monitoring is required, in order to develop the necessary tools for proper monitoring and management.

- **Further research is required on the issue of energy storage**.

**Stakeholder Engagement and Relationship-Building**

- **Early engagement and regular communication** with the local community and affected sectors is essential. Engagement with the local community and affected sectors should begin before the design stage and a willingness to listen and take other stakeholders’ knowledge and opinions into consideration must be demonstrable. It is vitally important not patronise or ignore the public. Building up trust early is key.
• Engagement with stakeholders needs to go above and beyond that required by statutory consultation processes and reach out to the wider public giving clear information about the impacts of renewables projects and allow open channels of communication.

• Proper debate and consultation should be held at the time of identifying potential project sites not further down the line when it is too late

• Consultation should be comprehensive and encompass the relevant sea areas and coastline

• Consultation arrangements could be made part of the requirement for licence applications and/or approvals

• Developers should provide regular updates and information about the project which should include details about both the potential impacts and benefits of the project. This will help to minimise irrational reactions to the project, avoid misperceptions and highlight positive opportunities. It is also important that the regulators share their plans and policies on renewables development with stakeholders so that they understand what is coming down the track and the see the project in context.

• The potential multiple benefits of the project should be considered and identified at the early planning stage of the project. Examples could include: seed mussel deposition/growth or increased breeding of fish/shellfish at the project site, or the opportunity to use renewable sites for scientific research (e.g. to replace Marine Conservation Zone (MCZ) reference areas which have been dropped). Developers need to engage early with other industries and sectors to discuss and identify such win-win opportunities.

Project design, development and impact assessment

• Staying at a small scale/local level can be a key element for success. A small scale allows developers to keep good links with the community and highlight local social and economic benefits. It is important not to try and rush the development of a project and to keep to a structured development process. Large projects can be developed incrementally in order to ensure adequate engagement at each stage of the project.

• It is important to consider, and demonstrate consideration of alternative options for projects in terms of location and technology and their relative impacts. There is a need to consider the differing impacts of a project depending on the scale and size and also the cumulative effects on a particular area if there are multiple projects in the same area. Different evaluations need to be carried out for the different scales and scenarios.
• **It is important to have a long-term programme of monitoring and evaluation** of the project’s impacts in place, carried out by an independent evaluator to produce unbiased findings.

• **Project promoters should define their project lifecycle** to enable monitoring before during and after the project.

• **Strategic Environmental Assessment** is a clear and inclusive process which can identify potential impacts and inform the siting of projects, providing a lot of clarity at the outset. The Environmental Impact Assessment process can also help.

• **There may be value in involving local experts** in renewable energy co-location and bringing these experts in early, engendering a proactive approach.

• **A scientific observer board** can make an important contribution to any development.

Financial

• **Consideration should be given to resourcing** better marine management solutions through financial incentives/taxation.
3. The Challenges of Marine Renewables Development and Co-location/Existence with Other Interests

From the stakeholder consultations, discussions, meetings and interviews carried out by the Celtic Seas Partnership project to capture experiences and perspectives on the co-location of marine renewables projects with other marine uses and interest, the following emerged as the key recurring challenges and issues faced –

Project Data, Information and Communication

- Having sufficient research and knowledge in the planning stages
- Having sufficient understanding and data/information on the local economic and social impacts of proposals and being able to answer stakeholders questions about these
- Understanding the knock on impacts of renewables projects on other marine sectors both negative (e.g. displacement of fishing, recreational boating) and potentially positive impacts, benefits or opportunities (e.g. boat-based work for fishermen, commercial and conservation benefits to fish stocks from exclusion zones around wind/tidal facilities)
- Being able to communicate the potential benefits of projects to local communities and other stakeholders
- Having a clearly thought out set of proposed measures to mitigate any negative social or economic impacts
- Reaching out to and engaging with all stakeholders and local communities affected (some of whom may not live near the development)
- Ensuring stakeholders are proactive in bringing issues to the attention of developers and not assuming the developers will know them

Stakeholder Engagement and Relationship-Building

- Overcoming suspicion and mistrust, perhaps made worse by lack of previous or regular contact between developers and other stakeholders/sectors
- Ensuring that stakeholders understand how their views will be incorporated from consultations and what scope there is for changes to be made to projects
- Engaging with a fishing industry which feels under pressure and potentially threatened by other new marine uses in ways which encourage the industry to see opportunities rather than threats from renewables
- Dealing with varying levels of resistance to renewables on wildlife conservation grounds

Technical and Legislative Challenges

- Understanding and negotiating multiple (and not necessarily joined-up) parallel licensing processes for different marine activities in the same space
• Understanding the practical, physical and technical compatibility of different marine sectors operating in the same space
• Considering options against a constantly moving picture of changing and developing technologies
• Negotiating different consenting regimes which apply different requirements and are also subject to the influence of different politics/political priorities and availability of funding – the lack of level playing field, even just within the UK administrations
• Ensuring standardised approaches to data collection against a background of continually changing data collection methods
• Having the time to test ideas

4. Summary of existing guidance and other useful resources, contacts and information

Below is a summary of existing policies relating to, and guidance to inform the process of, developing marine renewables alongside other marine uses and interests across the Celtic Seas Region –

Northern Ireland  Please note that from 09/05/16, new reformed Northern Ireland Government Departments will operate. The references below include documents produced by the pre-reform Departments. For details of the new Departments and the responsibilities transferred from these pre-reform departments see https://www.nidirect.gov.uk/articles/changes-government-departments
• Department of Environment Northern Ireland:
  o Strategic Guidelines
  o Strategic Planning Policy Statement
  o All Planning Policy Statements (PPS) for the coastal zone
  o (Draft) Northern Ireland Marine Plan
  o AECOM data gathering for the Northern Ireland Marine Plan
  o Integrated Coastal Zone Management (ICZM) Strategy for Northern Ireland

• Department for Regional Development
  o Harbour legislation

• Renewables
  o Northern Ireland Department for Enterprise Trade and Investment (DETI) Strategic Environmental Assessment for Marine Renewable Energy Development http://www.offshoreenergyni.co.uk/
  o Final report of the Marine Current Turbines SEAGEN tidal pilot project (Strangford Lough). See Case Studies section below
Scotland

- Scottish government licensing manual
  http://www.scotland.gov.uk/Publications/2012/12/1868/downloads
- Survey Deploy and Monitoring Licensing Policy -
  http://www.scotland.gov.uk/Topics/marine/Licensing/marine/Applications/SDM
- Scottish National Marine Plan and the Draft Sectoral Marine Plans for offshore wind, wave and tidal technologies
- Scottish Offshore Renewables Research frAmework (SpORRAn)
- SAMS-NERC are currently writing a proposal for funding to look at the co-location of oyster farming and offshore wind and record the benefits of co-location
- Chartered Institute of Ecology and Environmental Management (CIEEM) – guidance on ecological impacts assessment in coastal and marine areas
- RYA 22m clearance
- MCA guidance – navigational standards
- Northern Lighthouse board
- Kingfisher, fish maps – guidance for fishing industry
- JNCC implementation of eco-system approach

UK

- FLLOW – Fishing Offshore Windfarm guidance. See
- Precedent (case law) from the Planning inspectorate, The Crown Estate
- The Nautical and Offshore Renewable Energy Liaison (NOREL) group:
- Offshore Renewables Joint Industry Programme for Offshore Wind and the Offshore Renewables Joint Industry Programme for Ocean Energy (ORJIP see -
EU

- Kingfisher map link (KIS_ORCA) - http://www.kis-orca.eu/

Wales

- Welsh National Marine Plan
- Environment (Wales) Act 2016
- Well-being of Future Generations (Wales) Act 2015
- Marine Renewable Energy Strategic Framework: Approach to Sustainable Development
- Marine and Fisheries Strategic Action Plan
- The Planning (Wales) Act 2015
- Planning Policy Wales
- Natural Resources Wales (NRW) Marine Mammal Guide – compiled with help of SMRU
- Co-location examples: Maren – European project (Cardiff University was a partner); Combined aquaculture and wind farm development (Danish study undertaken. See https://www.researchgate.net/publication/265275142_Offshore_wind_farms_and_their_potential_for_shellfish_aquaculture_and_restocking); Swansea bay tidal lagoon plans for lobster fishing within project area

France

- Impact studies: IUCN, DGEC (on wind energy)
- Eolien-Biodiversité Programme (programme and resources to encourage wind power developments which do not impact upon biodiversity). See www.eolien-biodiversité.com (in French)

5. Detailed Case Studies

From an initial long list (see Appendix 1), four examples of approaches to co-locating marine renewables developments with other marine uses and interests from across the Celtic Seas were selected as Case Studies for further investigation, in order to identify useful experience, lessons and recommendations for effective marine renewables co-location. These were as follows –

I. SEAGEN Tidal Energy Pilot Project, Strangford Lough, Northern Ireland
II. Sabella D10 Tidal Turbine – Fromveur Passage, Brittany, France
III. Fécamp offshore wind farm, Normandy, France
IV. Tidal Energy Limited – DeltaStream, Pembrokeshire, Wales
I. SEAGEN Tidal Energy Pilot Project, Strangford Lough, Northern Ireland

Background

SEAGEN is a 1.2MW tidal energy device and the world’s first grid connected commercial scale tidal device, located at the entrance to Strangford Lough, Northern Ireland, the UK’s first and largest Marine Nature Reserve with multiple conservation designations (SPA, SAC, Ramsar) and extensive fishing/marine recreational activities.

After extensive environmental studies, the SEAGEN pilot project was awarded a 5yr (FEPA) licence by the Northern Ireland government in 2008. Following installation the environmental impact of SeaGen was continuously monitored for 3 years as part of an Environmental Monitoring Programme (EMP) which included marine mammal monitoring, bird/benthic ecology surveys. Decisions related to the EMP were made by a Science Group and a Stakeholder Liaison Group that continuously reviewed the findings of the studies over the three year period after installation. The EMP completed in 2011 concluding that no significant environment impacts associated with the project had been identified. The success of SeaGen led to an application to extend the licence to continue operating until 2018.

Stakeholders Involved and Challenges Identified

Reflecting the wide range of conservation, fisheries, and recreational interests and activities in the area, stakeholders included a significant number of statutory and government agencies and departments, industry representatives, non-governmental organisations, and academic and research institutions, as well as local residents. Below is a full list of all those stakeholders who were invited to join the SEAGEN Liaison Group established to enable stakeholder input into the project. (See also section below on ‘mechanisms’)

Statutory Government Organisations (NI)
EHS (Dept of Environment)  
Dept of Environment - Policy division  
Department of Agriculture and Rural Development (DARD)  
DARD - Fisheries Division  
JNCC  
CNCC - The Secretariat  
Dept of Trade and Investment (inc. energy)  
NIAER/regulator  
Department of Culture Arts and Leisure  
Northern Ireland Office  
The Commissioner of Irish Lights  
Maritime and Coastguard Agency  
DUP MP for Strangford  
SDLP MP  
UUP MP  
Sinn Fein MP  
Ards Borough Council  
Down District Council  

Statutory Government Organisations (rest of UK)  
Defra  
Scottish Executive  
Welsh Government  
Natural Resources Wales  

English Nature  
Scottish Natural Heritage  
Highlands and Islands Enterprise  
Crown Estate  
Renewable Energy Association  
Northern Ireland Electricity  
Northern Ireland Authority for Energy Regulation  

Non Government Organisations (NGOs)  
Action Renewables  
Friends of the Earth NI  
Wildfowl and Wetlands Trust  
Ulster Wildlife Trust  
National Trust - Strangford lough Wildlife Scheme  
WWF  
Royal Society for the Protection of Birds  
Northern Ireland Environment Link (NIEL)  
Marine Conservation Society  
Strangford Lough Management Advisory Committee (SLMAC)  
Whale and Dolphin Conservation Society  
Royal National Lifeboat Institution (RNLI Ireland)  
Royal Yachting Association (NI)
Other Stakeholders

Northern Ireland Fish Producers Association  
DV Diving  
BSAC NI  
Northern Ireland Federation of Sub Aqua Clubs  
Portaferry Sailing Club  
Strangford Sailing Club  
Association of Strangford Lough Yachts Club  
Queen's University Belfast  
University of Ulster  
Sea Mammal Research Unit, St. Andrews University  
National Federation for Biological Recording  
Exploris, Portaferry  
Tara Seal Research Centre  
Canoe Association of Northern Ireland

The key challenges of the SEAGEN project included:

- Understanding and mitigating the impacts of a new marine technology in one of Europe’s, if not the world’s most important marine ecosystems
- Operating in an area with extensive fishing, marine recreational, and conservation interests, many of whom were initially opposed to the project. This included opposition from those responsible for implementing the layers of protection legislation and from NGOs who had fought long and hard to achieve the designations.
- Working on a project within the remit of at least three government departments (Environment, Enterprise (Energy) & Agriculture (Fisheries))
- Potential challenges posed by the possible restriction of navigation access through the ‘narrrows’ (the opening to Strangford Lough where the SEAGEN device was located – see map on report cover), an area with much recreational use and a significant amount of commercial traffic
- Use of the area by commercial fishermen did not appear to be significant but ‘potting’ for crabs and lobsters both commercial and casual were elements which were required to be examined for potential conflict.
- Visual amenity and potential noise disturbance during the installation process and subsequently were potential conflict areas with the local population.

Mechanisms, activities and approaches adopted to address challenges and deliver positive outcomes

The developer (initially Marine Current Turbines Ltd (MCT), later taken over by SIEMENS then by Atlantis Resources) initially approached a locally respected independent marine expert, Dr David Erwin, who had a long history of working on issues relating to Strangford Lough, to advise them on developing the project. Following further discussion with Dr Erwin, the developer agreed to his proposals to establish a nested group of consultative bodies to enable stakeholder involvement and input into the development and operation of the pilot project.

A small ‘Science Group’ consisting of the developer, the regulator, those carrying out the monitoring, and a small number of independent scientists was nested within a much larger inclusive ‘Liaison
Group’ consisting of all bodies and individuals with a stake or interest in the project. Many Liaison Group public meetings were held, particularly in the early stages of development. The original invitation letter to the Liaison Group and the list of original invitees is attached at Appendix 1 along with the Terms of Reference for the Liaison Group the Science Group. The original list of invitees to the Liaison group was added to inclusively rather than exclusively, meaning that if someone showed interest or were felt to be a stakeholder they were brought in or invited to participate.

Timing and order of engagement with the stakeholders

The first stakeholders approached were those with statutory responsibilities or ownerships in the area. Initial contacts were made with Government Departments at a very early stage in 2003 and 2004 when the possibility of using the site for project was being examined. NI Department of the Environment (DOE), Department of Enterprise Trade & Investment (DETI – with its remit for energy), The Crown Commission and the Maritime and Coastguard Agency were early contacts to determine their initial views and positions on the project. The National Trust was also contacted at an early stage because of their ownership of sea bed in the area. Contacts with this grouping were maintained during the development of consent and licence applications with the DoE (NI) and The Crown Commission. A number of public meetings were held during this period in Portaferry and Strangford to determine local views. In 2005 Dr David Erwin was approached to set up suitable consultative bodies and bring together a wider range of stakeholders, leading to setting up of the Science and Liaison Groups detailed above. Many Liaison Group public meetings were held, particularly in the early stages of development and other opportunities to engage included meetings with stakeholders/interest groups, and individuals either on site or in a venue of their choice, media interviews, responses to press questions either specifically or by writing contributions for individual outlets.

Communications Strategy

No formal communication strategy was drawn up or written. However following early discussions between senior personnel of MCT and David Erwin it was agreed that honest openness as a basic strategy/tactic would be applied at all times except where releasing information would give a business competitor unreasonable access to, for example, engineering information. Environmental information was not seen as being in commercial confidence except where releasing environmental data meant also releasing (e.g. information on the performance or efficiency of the installation). All environmental conclusions were circulated to the Liaison Group in the form of resolutions as soon as possible following the Science Group meetings. Detailed background data would be made available when it was not sensitive in commercial terms. The Science Group sought to be frank and open about all issues at all times. The Liaison Group was informed by Science Group resolutions where the issue was not in commercial confidence. The Chair was available to all members and to the press and media as required.

Views of stakeholders on mechanisms, approaches and lessons to be drawn

Independent Liaison Group Chair view:
Barriers to engagement

The key barrier to engaging stakeholders was lack of trust, both of the proposed development per se and of Government, in the broad sense. Many groups and individuals supported the development of tidal energy but did not think that a Natura 2000 site, one of the first two Marine Reserves in the UK, was the place to take it forward. They did not trust the developer or believe assurances that all environmental precautions would be taken as required. They did not trust the Government departments to maintain their positions with the overt political pressure coming from politicians, both at NI and at UK levels. They did not trust the politicians who were driving targets for renewable energy and who needed to see the development of tidal technologies. In a number of cases stakeholders set the needs they represented far above all other stakeholders and sometimes frustrated progress by supporting that position to the exclusion of everything else. A few groups of stakeholders and individuals came to the discussions with their minds already firmly made up. Initially, nothing seemed to be able to change that position. In most cases time and the building of trust overcame the problem. In the case of a few individuals they remain where they started.

What helped engagement

Openness, honesty and availability were the major contributors. The involvement as Chair of the groups of David Erwin, who had a long established reputation of environmental research, support and defence in the area helped. As trust was built with stakeholders they themselves became part of the communication programme, extending the network and engaging others.

Effectiveness of different engagement mechanisms

The Science and Liaison Groups proved to be extremely effective. From an initial position of an ‘independent’ scientific forum, the Science Group became the group which was seen as authoritative advisors both to the developer and to the Dept. of the Environment. The developer and government became secure enough to be absolutely open within the commercial confidence of the group. Issues were discussed freely which in the public arena might have been very controversial.

From a group initially viewed with suspicion, the Liaison Group became a trusted conduit of information to the wider body of stakeholders, interested bodies and individuals. Openness was seen as essential and whenever information was not in direct commercial confidence it was made available as soon as possible, either at meetings or through email circulation. The Chair always made himself available to members to answer questions whenever possible. People quickly recognised that if they had a problem an answer would quickly be obtained for them. Attendance at meetings at the start of the project was high. There was a lot of doubt and suspicion about the project and those involved. Fast cycling of information and openness led to a building of trust in the membership. Attendance at meetings fell but always rose again when controversial issues arose.

Large open public meetings are less effective. People attending often do not have sufficient background to fully understand the issues. Personal interest can often dominate to the exclusion of the matters under discussion. Popular publications and booklets are useful to have available for visitors or newcomers to the concepts. Scientific publications of research findings are vital in the long term.
Impact of engagement on development

Engagement with stakeholders from within the Liaison Group brought their wide range of knowledge, interest and experience ‘to the table’. Some issues which were determined as potential problems were either dismissed or quickly solved through the contribution of stakeholders. For example, issues involved in navigation in ‘the narrows’ during installation and operation were quickly solved with the involvement of the Yacht Clubs and the Maritime and Coastguard Agency. This helped particularly to develop support within the local yachting community where they recognised their concerns would be taken seriously and that their views would be taken into account when solutions were being sought. Issues which were not seen as potentially problematic were brought to attention and given the consideration they required. For example, disturbance effects on birds was not initially seen as a problem but was brought to attention by the RSPB. A full programme of observation and study was carried out, finally demonstrating that the effect was not significant. This enabled the RSPB to fully support the project and to become constructively involved in other aspects.

Direct and open engagement with the Northern Ireland Environment Agency (NIEA – part of DOE), the Marine Agency and other Government bodies within the Science Group led to many difficult issues being tacked and solved which might have been very difficult without such a structure. At times issues were confronted ‘head on’ with all bodies laying out their position and attempting to reach a position which could be agreed. This never subsumed the position of ‘The Regulator’ who clearly has an absolute right to make decisions. However it did ease the recognition on either side of the ‘real’ problems and the route to real solutions. As trust built within the group speedy solution of difficult problems became much easier. All sides recognised the constraints upon and the needs of other members.

Stakeholder views (NGO, Fisheries):

NGO representative:

“I engaged mostly through email and Science Group (confidential Information) / Liaison Group (open to any interested parties) meetings. These meetings were held roughly quarterly and accessible via teleconference (to facilitate participation of wider UK stakeholders). I learnt the most during the science group meetings normally – although there were occasions where due to commercial confidentiality something we had not been told yet came out in the press before we knew about it - which can lead to break down in the levels of trust between the stakeholders in the group if they had been told something would not happen prior. Through the Science group I believe that we did have influence over decision making into steps in mitigation measures and evaluation of risks so it was useful to be on that group and to have your points taken into consideration and acted upon.”

Fisheries representative:

“[The developer contacted and communicated with me] both through direct contact and membership of Steering (Liaison) Group. Direct contact was the most appropriate, effective and useful means of communication.”
Recommendations for Effective Marine Renewables Co-location

Developer/Independent Liaison Group Chair recommendations

- Political, statutory and purely scientific discussions which must be carried out in commercial confidence should be carried forward within a suitable confidentiality structure but any decisions taken should be communicated widely if at all possible.
- The base of any consultative programme should be as wide as possible. Stakeholders and interest groups should not be ‘scoped out’ as not having a significant contribution to make. If a group or an individual feels they want to be involved they should be included.
- The consultative process should be as open as possible with responses to problems and queries being handled as quickly as possible.
- Conflict resolution should be handled sympathetically and openly. Where resolution to a problem cannot be achieved when it first appears (often in a public arena) it should be handled expeditiously and the conclusions communicated as soon as possible to the wider group. The complainant will most often have been involved in determining the solution.
- Long gaps of time where no information is emerging should be avoided wherever possible. Failure to communicate leads to mistrust and often to widespread rumours.
- Stakeholder engagement co-location and conflict resolution are essential precursors to the achievement of the foci of the 11 descriptors. The concept ensures that no one aspect of any proposed project can go forward without considering its implications to other aspects.
- By having as wide a consultative base as possible (political, scientific, users and interest groups) the needs of achieving the aspirations of the descriptors will be represented. Without them, political pressure, developmental pressure or other focused interest group pressure may over-ride the requirements for ‘Good Environmental Status’.
- At present we do not have a ‘level playing field’ with some parts of the UK being much less restrictive and demanding in relation to environmental requirements than others. This of course leads to many developers resisting mitigation requirements that may be required elsewhere.
- A major requirement for future marine renewable project is to ensure that we build on the lessons learnt from other equivalent projects in order to understand the major risks associated with tidal technology so that the tidal sector can advance towards commercialisation.
- Much of the environmental research carried out on individual projects is funded by the developer. This means that they are resistant to sharing what is their intellectual property with other projects and potential competitors. A great deal of persuasion is required to circumvent this. If a way could be found to fund this research centrally, either by developers contributing to a central research fund or through direct Government funding sharing of information and data would be enormously enhanced. Developers would not require to re-invent the environmental wheel for every project and would be able to concentrate on development of the technologies. This would encourage much shorter delays and speed initiation and deployment of new projects.
- A single national equivalent to the SeaGen Science Group where all projects could be examined could be a way forward.
- Locally based project Liaison Group equivalents would still be essential.
Stakeholder recommendations (NGO, Fisheries)

NGO representative:

- “I think the biggest areas of conflict were around misunderstandings through times of a lack of communication in particular with the wider liaison groups on this and other similar projects. Seagen did invest heavily in trying to investigate any potential problems and work with stakeholders directly who had issues – however small. They also did provide a small number of employment opportunities locally. Other larger projects often offer to fund community/environmental projects in the local areas and offset this through tax relief.”
- “For Seagen, mostly rather than contributing positively it was about mitigating impact and therefore doing least harm. As the technology was very new, restrictions on their permits were high at the beginning of the project and as they demonstrated that their actions were not impacting, mitigation measures were altered through an adaptive management approach.”
- Open and transparent stakeholder meetings with professional facilitators who are separate from the companies involved help greatly in the initial stages of projects as well as being open about answering any questions stakeholders ask and publishing the results.
- Have all the stakeholders in the same room at the same time with real time decision making – for example over locations and density of turbines.
- “At the moment in Northern Ireland the licensing process still involves multiple departments and sub sections of departments and as the licencing process is not the same across the UK never mind for developers who have multinational projects this can lead to long delays while trying to understand the system as well as delays within Government as parts of the application are not decided in sync with each other.”
- “Seagen has provided a test bed for renewable technological developments and since installation has generated over 8GWh of tidal electricity which is important in terms of Northern Ireland and UK commitments to increase the proportion of renewably generated energy. It has also increased local employment opportunities directly and indirectly as there is now more research into renewables running at the Queens University Marine Lab in Portaferry in conjunction with other renewable companies and there are visits from all over the world in order to see the turbine in action bringing in money to the local economy.”

Fisheries representative:

- “Early identification of impact on Fisheries BEFORE any siting decisions are made”
- Identify & Evaluate impact on Fisheries
- “Get it right before project development”
II. Sabella D10 Tidal Turbine – Fromveur Passage, Brittany, France

Background

In 2008, Sabella, a marine energy engineering and project management company, put the first French underwater tidal turbine, Sabella D03, in the water next to Bénodet, at the mouth of the Odet river. The experience acquired and the results obtained from this project enabled the company to think about a full-scale pre-industrial tidal turbine, Sabella D10, with a diameter of 10 m for a power output level of 1 MW.

The construction of this tidal turbine started in June 2012 and its submersion in the Fromveur Passage, between Ushant island and the Molène archipelago, is planned for the end of June 2015 at a depth of 55 metres. It will be connected to the ERDF Ushant electricity grid, which should make it the first tidal turbine connected to the electricity grid in France. It will remain in place for one year and will be fully monitored and fitted with instruments to provide detailed information about production, performance, resistance, environmental impact and social acceptance of the installation.

The Fromveur Passage is a strait lying between the Molène archipelago and Ushant Island, to the north of the Iroise Sea, in Finistere. It is a site with very strong currents that can reach up to 9 knots locally, and nearly 7 knots in mid-spring tide (mean of high and low tides during a period of spring tides) in the whole strait. It is extremely dangerous to navigate when the wind is against the current, creating a considerable swell. It is marked by the two best-known lighthouses in Brittany: Jument lighthouse and Kéréon lighthouse.

A pilot farm project in the Fromveur Passage, called Eussabella, is being studied by Sabella. This would comprise a few machines (fewer than 10) and would supply Ushant Island, without being connected to the continental grid network. Combined with an energy storage system ensuring continuity of the electricity supply during slack water periods (with current technologies and taking account of spatial and economic constraints, it is impossible to store energy during the weaker ‘neap’ tide periods), the pilot farm would allow the island to save 70% of its heating oil consumption, as electricity is currently produced by four generators.

Some of the Ponant Islands have an energy problem because they are quite cut off and not connected to the intercontinental grid network (irregular sea beds and currents do not always allow
cables to be laid). Located fifteen kilometres from the mainland, Ushant Island has generators to supply its electricity. In addition to the polluting effect of this carbon-based electricity production in particularly fragile microenvironmments that should be preserved, this leads to production costs about 4 times greater than for mainland France. Since Ushant is located in an area with strong currents, installing tidal turbine infrastructures should significantly reduce the carbon-footprint of its energy production.

**Stakeholders Involved and Challenges Identified**

The main stakeholders involved in the Sabella D10 project are:

- Fishermen
- Local Authorities (e.g. Ushant Council and the Ponant Islands Association)
- Iroise Marine Natural Park
- Maritime Prefecture
- The general public
- Environmental Protection Associations (e.g. Ushant Environment Study Centre, CEMO)

Renewable Marine Energy (RME) projects are often very controversial due to the lack of knowledge about the different impacts they may have on the environment, or because of their significant visual impact (e.g. wind turbine). Hence social acceptability is one of the major issues in the success of such projects. The Sabella D10 project has not met with major opposition. This is due to two main reasons: the absence of conflicts of use of the Fromveur zone and the proactive approach adopted by Sabella regarding consultations and communications.

As part of developing RME, conflicts of use arise with the fishing, navigation and tourism sectors, and with the defence of natural heritage.

1. **Fishing**

Fishing activity is poorly developed on Ushant island. Fishing is done mainly using a line or net, and the Sabella D10 tidal turbine will not interfere with these activities due to its placement depth (at 55 meters). In addition, as a result of the very strong currents in the Fromveur Passage, fishermen prefer to avoid the area.

2. **Navigation**

The main risk of RME installations for navigation is interference with free passage. However, navigation is extremely dangerous in the Fromveur Passage due to the strong currents; some vessels have to pass by the north of Ushant island through the Ushant Traffic Separation Scheme, which is a maritime traffic separation scheme prohibiting cargo vessels from navigating the Fromveur Passage. Vessel traffic is therefore very moderate in the Fromveur Passage, which is used mainly by ferries between the islands. Just as for fishing, the navigation of these vessels will not be impeded by the tidal turbine, as there is sufficient depth of water above the machine (tidal turbine 17 metres high placed 55 metres deep). The technological choice of sea bed tidal turbine as opposed to partially-submerged or floating tidal turbines is an advantage in terms of acceptability because it allows vessels to pass if necessary.
3. Natural heritage and tourism

The tidal turbine will be installed in an area included in 2 Natura 2000 sites and it is also part of the Iroise Marine Natural Park. The environmental impact study carried out in March 2011 showed that the project had limited risk for the physical and living environment (flora and fauna), which led the Brittany prefecture to give the go-ahead for development of the project. The impact study also showed that the tidal turbine presented no risks for deterioration of the landscape. The installation will not actually be visible. The Fromveur area is subject to strong currents and has no appeal for boating and nautical leisure pursuits. Some amateur divers use the Fromveur for diving (but not in the deepest part) where there are wrecks.

Given this favourable background with no major conflicts of use, it has been easier to agree installation of the Sabella D10 tidal turbine demonstrator.

Mechanisms, activities and approaches adopted to address challenges and deliver positive outcomes

Four main factors enabled the Sabella D10 project to receive a favourable reception from the public and the decision-making authorities:

• Proactive consultation at the start of the project
• Constant attention to communication with stakeholders and the general public
• Appropriate technological choices
• A local economic development strategy at human scale

1. Consultation

Consultation with stakeholders began very early in the project. This included consultations with the general public as well as with key institutional players:

• Several public information meetings were held at Ushant and Brest from 2010 (so well before the beginning of the impact study).
• Field surveys (street interviews) of the general public were started in 2010.
• Collaboration was established with the French Research Institute for Exploitation of the Sea (IFREMER) to take advantage of their scientific expertise in the marine field (e.g. acoustic studies).

• The Iroise Marine Natural Park (PNMI) was also involved very early in the project: institutionally due to the involvement of the Management Committee, but also through a scientific collaboration (marine studies).

  o The governance of the PNMI is based on consultation. The Park’s Management Committee comprises representatives of regional authorities, State departments, users (fishermen, yachtsmen, etc.), environmental protection associations and scientists (49 members in all). All its members are consulted when setting up a project with significant impact on the marine environment. The Management
Committee met on 7 June 2011 and gave the go-ahead to install Sabella D10. The method of governance allowed civil society to be very early in the project.

- The Park also undertook specific work in collaboration with Sabella, such as developing habitat maps, used to gain a better understanding of species (e.g. tags put on marine mammals) and environments (e.g. collected sediments, measured currents and depths, using tools such as sounders and sonar). These field studies were done from 2009 to 2014.

2. Communication

Sabella’s communication strategy was proactive and open from the beginning of the project.

- A great deal of information is available on the company’s web site, www.sabella.bzh, as well as on the site dedicated to the Sabella D10 project www.sabella-d10.bzh.
- Progress on the project is communicated using Twitter https://twitter.com/sabellatidal and Facebook https://www.facebook.com/SabellaTidal?fref=ts
- The project is regularly covered by articles in the local press and the company willingly responds to requests from journalists.
- Since 2011, presentations have been given at different colloquia, festivals, business trade shows, and at schools and sixth-form colleges.

3. Adapting the technology

The choice of technology was adapted in response to suggestions from the Iroise Marine Natural Park. The base was originally rectangular, ‘flat’, placed on the sea bed. Following recommendations from the Iroise Marine Natural Park and the impact study, it was decided to raise this base: it was then planned to have a base of the same dimensions but sitting on six feet. After engineering the detail, this base finally became triangular, so sitting on three feet. This base is now about 20 m x 20 m, and its three feet are now no longer 'solid' but pointed, the surface area on the sea bed has therefore been further reduced.

The machine will include a gravity base (280 tonnes), with an area of 600 m², anchoring it to the sea bed and making it stable in the current. The base will support a load-bearing structure receiving the turbine (100 tonnes). In addition to raising it relative to the sea bed, adding feet will reduce the area in contact with the sea bed to less than 20 m² instead of 600 m², so reducing environmental impacts. Gravity foundations offer advantages compared to bored single piles, due to the simplicity of dismantling and completely reversing the site.

4. Local strategy

Sabella stresses the local character of the project. The company’s head office is based in Quimper, and this human-scale company (12 employees) facilitates exchanges with people involved in the project, as well as being highly responsive and flexible. The tidal turbine is assembled in the port of Brest, and the involvement of Ushant islanders is preferred as soon as possible (diver, civil engineering, local surveillance, etc.). The engineering and construction of the tidal turbine are all done in France.
Views of stakeholders on mechanisms, approaches and lessons to be drawn

- The consultative approach adopted by Sabella was appreciated by the stakeholders, particularly because this process was started very early on.
- The strategic choice of the sea bed tidal turbine option, compared with a partially-submerged or floating version also played in favour of the project being accepted.
- The company is not only content to promote its technological innovation, Sabella has also supported an awareness process to explain energy efficiency and reducing the carbon footprint of Ushant Island.
- However, one of the concerns of some fishermen related to the number and routes of electric cables that will be needed in the future if the Eussabella tidal turbine farm project sees the light of day. These cables actually pose risks for the hooks of fishermen using trailing lines that scrape the sea bed, while on the face of it a single cable will carry electricity to the coast from the pilot farm on a cable route not currently trawled.

Recommendations for Effective Marine Renewables Co-location

- The MERIFIC project (INTERREG IV A France – Manche, England project) aimed to advance the adoption of marine energy sources in the two regions of British Cornouaille and Finistere, and by the island communities of the Iroise Marine Natural Park and the Scilly Isles. The partners in the project (Brittany Development Innovation, Finistere Regional Council, Cornwall Council, Cornwall Marine Network, IFREMER, Iroise Marine Natural Park, Brittany Sea Centre, Brest-Iroise Technical Cluster, University of Exeter, University of Plymouth) have worked together to identify opportunities and problems encountered by the coastal regions and island communities in making use of renewable marine energy, with the aim of developing a tool box for use by other similar communities.

- One of the results of the project was to share best practices and test new engagement methods, in order to promote and gain broader acceptance by the general public for the agenda of renewable marine energy.

- According to the conclusions of the MERIFIC project, to involve stakeholders in the development of RME projects assumes consideration of six key aspects:
  - Engaging the stakeholders as early as possible.
  - Ensuring that relevant information is accessible to all stakeholders.
  - Developing a solid platform for exchange at the right moment: a need going beyond regulatory requirements.
  - Illustrating as clearly as possible the potential impacts and advantages of the project and creating realistic expectations. In fact, those involved can expect many new technologies - and sometimes too many or conversely nothing at all, if the benefits are not appropriately expressed.
  - Creating direct opportunities for local businesses by linking them to the project, from design to operation.
  - Ensuring financial participation of local stakeholders in RME projects: changing stakeholders into shareholders.
• These conclusions seem to be in line with most of the recommendations that have so far come out of the Sabella D10 project.

III. Fécamp offshore wind farm, Normandy, France

Background

In April 2012, a consortium consisting of EDF Energies Nouvelles, Dong Energy, and WDF offshore was named the winner of a call for proposals by the French government for the construction of 3 offshore wind farm projects along the French coasts: Fécamp (Seine-Maritime), Courseulles-sur-Mer (Calvados) and Saint-Nazaire (Loire-Atlantique).

Between 2007 (start of the project) and 2012 (call for proposals by the State) the developer of the offshore wind farm near Fécamp was WPD offshore France, but since the call for proposals and the creation of the consortium, the project manager is the company ‘Eoliennes Offshore des Hautes Falaises’, which has 3 shareholders: EDF Energies Nouvelles, DONG Energy and WPD offshore.

EDF Energies Nouvelles, subsidiary of the EDF group, brings its know-how concerning the development of renewable energy projects and the expertise of the EDF group in terms of large-scale energy projects. DONG Energy is a Danish energy production company with 30 years' experience in the field of wind energy and 20 years' experience in offshore wind farms. WPD Offshore, producer of renewable electricity, is a developer and major operator of offshore wind farms in Europe. In France, since 2007, WPD has carried out important study and consultation work with local parties in Fécamp. The Alstom group is a world leader in the field of industrial equipment for the production of energy and whose mission is to develop the Haliade 150, a new generation wind turbine specifically developed for offshore wind farms.
• The offshore wind farm project near Fécamp will consist of 83 turbines separated by a distance of approximately 0.6 miles (1 km).
• The unit capacity of each turbine will be 6 megawatts (MW) for a total power of 498 MW.
• The planned production is for 1800 gigawatt-hours/year, which is tantamount to the average yearly electricity consumption of 770,000 inhabitants.
• The turbines will be located between 8 and 13.6 miles (13 and 22 km) off the coast of Fécamp, on an overall surface area of 25.8 sq mi (67 km²). The average wind speed off the coast is around 19.9 mph (32 km/h) (at a height of 100 meters).
• The total investment cost of the project will be 2 billion euros, and the estimation of the operational cost of the farm is 60 million euros per year. At least 10 years are needed to recoup the investment costs of an offshore project.
• The schedule will depend on all the authorisations being obtained in time. The land work would start in 2016, will continue in the sea until 2020, and the gradual commissioning of the farm is planned between 2018 and 2020.

Stakeholders Involved and Challenges Identified

The stakeholders involved in the consultation consisted of: the local authorities (15 coastal communities, 3 communes: Haute-Normandy Regional Council, Seine-Maritime General Council, the Pays des Hautes Falaises), the fishing representative bodies (Regional fisheries committee, local fisheries committee, commercial fishermen), representatives of economic interests (the Fécamp Bolbec Chamber of Commerce and Industry, Fécamp technology platform, tourism sector), local associations (the Harbour users' associations, Fécamp association of regatta societies), and environmental NGOs (ECOREFE association).

At the time of its creation in 2007, the developer, WPD, placed consultation with the local stakeholders at the heart of the project development. The aim was, on the one hand, to study the different development possibilities for an offshore wind farm project, and on the other hand to define the optimum criteria for the siting of the project with regard to the characteristics of the local area from both an economic and tourism, as well as landscape and environmental perspective.

The characteristics of the maritime area off the coast of Fécamp are favourable to the development of the offshore wind farm, particularly the high level of wind, the shallowness of the water, and the proximity of the electricity network.

But as with all projects of this size, major issues had to be taken into account: the marine biodiversity, particularly the ornithology, respect for the landscape heritage, particularly Etretat, and respect for the users of the sea, notably the commercial and sport fishermen.

• Taking into account the natural environment of the project

Approximately twenty expert assessments of the project were carried out in the preparation of the impact study. These were carried out by two specialised consultancy firms, in partnership with local environmental protection associations. These were specifically concerned with hydrodynamism, the water quality, sediments, the fish fauna and fishing resources, marine mammals, birds, chiroptera (bats), the landscape, the acoustics, and marine security. More generally, the impact study also considered the wider natural, physical, and human environments.
• The introduction of the project near to a sensitive heritage

From the point of view of the landscape, the project is located in a particularly sensitive area due to the presence of the emblematic chalk cliffs of Haute-Normandy, particularly at Etretat.

• Taking into account human activities

The region is historically very industrialised (petrochemical industry, port facilities, but also tourism). However, the economic situation in Fécamp and its area is nevertheless difficult: the fishing sector has difficulties that are in addition to high de-industrialisation. The practices of the local commercial fishermen were taken into account in the project (e.g. for each type of fishing and technique (net, dredging, trawling net, etc.), the areas the most visited by boats and/or presenting the richest fishing resources were identified and kept separate from the siting area for the wind farm).

Mechanisms, activities and approaches adopted to address challenges and deliver positive outcomes

A proactive consultation initiated in advance by the developer

Since 2007 the project has been the subject of a consultation with local parties (elected representatives, associations, institutional stakeholders). This proactive consultation process initiated by WPD has been highlighted by many of the stakeholders as being the key to the current acceptability of the project. From the start, the project stakeholders were conscious of the need to reach a consensus, particularly in view of the history of opposition during the installation of 5 onshore wind turbines at Cap Fagnet at the start of the 2000s.

• Between September 2007, the date of the first meeting with the elected representatives of Fécamp, and June 2008, WPD organised more than 50 meetings with the local stakeholders (local government, associations, fishery committees, and State services). This first consultation phase allowed WPD to define the study zone.
• At the end of the first quarter 2008, WPD proposed the creation of a specific body in order to continue the consultation for the development of the project: the local Consultation Committee (COPIL) consisted of 28 parties with a total of nearly 50 members. Six public meetings were held: 2 in 2008, 3 in 2009, and 1 in 2011.

A formal consultation initiated by the State

• From March 2009 the State initiated its own national consultation process with the aim of identifying areas along the whole coastline conducive to the development of off-shore wind farms, with respect to technical, regulatory, environmental, and socio-economic issues.
• On 11th July 2011, the government launched a call for proposals regarding a maximum power of 3000 megawatts split over 5 area, including Fécamp. On 23rd April 2012, the consortium consisting of EDF Energies Nouvelles, Dong Energy, and WDF offshore was named as the winner for the Fécamp site. Having won this call for proposals, the consortium then proceeded to follow the regulatory processes concerning consultations, while in parallel maintaining the dialogue already started.
• This required consultation phase was formalised by:
The creation; in 2012, of a consultation body and monitoring of the off-shore wind farm project at Fécamp by the Commissioner of the Haute-Normandy region and the English Channel-North Sea maritime commissioner. Working groups were formed within this body to take better account of local issues.

A public debate was held on the project between 20th March and 20th July 2013 following the decision by the independent administrative authority, the French national public debate commission (Commission nationale du débat public – CNDP), on 4th July 2012. During the 4 months of the debate, more than 1000 people came to the 9 meetings and thematic workshops for information and to ask questions.

From 1st September to 8th October 2015, 4 public inquiries were simultaneously held in the communities concerned: one on the off-shore wind farm, one concerning its electrical connection, one on the Fécamp base for maintenance operations, and one on the manufacturing of the foundations at Le Havre. These four projects were part of the same work programme and were part of a common impact study. It was therefore important that their public inquiries took place during the same period.

A process of co-development of the project

From 2008, this process was carried out by the setting up of:

- A local consultation committee (COPIL) composed of 50 members (consisting of: 15 coastal communities, 3 community of communes, The Regional Fisheries committee, local fisheries committee, the Regional Council, General Council, the Pays des Hautes Falaises, Fécamp Bolbec Chamber of Commerce and Industry, Fécamp technology platform, local associations), whose objective was to consensually define the area and the best project by taking into account local issues.
- A "Technical committee": body consisting of all the on-shore and off-shore administrations (quarterly presentations).
- Working groups: Fishing group and Landscape group.

For the COPIL, the aim was to progressively understand the project by using an approach that could be considered "funnel-shaped", by initially defining the big issues of the project, then the exclusion zones, then the most favourable zones, and finally the best project in the zone. An area of 34 sq mi (88 km²), described as "having fewer constraints" when all the issues were taken into account, was identified within the study zone. The State consultation held between 2009 and 2011 to identify areas suitable for the development of the wind farm confirmed the interest of this area, which was selected for the governments call for proposals in 2012. The COPIL gave several recommendations, notably concerning the distance of the wind turbines from the coast and their positioning following specific alignments:

- The landscape working group used an optical simulation approach (photomontage of visual landscapes of the future project) to identify the possible visual impacts. This process was well received by the stakeholders. The solution selected was designed to optimise the insertion of the project into the landscape, notably from Etretat where the influence on the horizon has been reduced as much as possible.
- The fishing working group worked on the technical aspects of the alignment and connection of the turbines based on the tidal currents at spring tides, in order to limit the impact on
commercial fishing. The layout of the turbines and the electrical cables linking them were discussed to accommodate fishing practices: the wind turbines are separated by more than 0.62 miles (1 kilometre) and the cables are aligned in the direction of the current. From a technical point of view, the trawling and dredging for shellfish could thus continue between the rows of wind turbines and cables. Moreover, as observed on the artificial reefs submerged a few miles from the implantation site of the wind farm, the same "reef effect" is expected on the turbines' foundations, which will allow the development of the biodiversity and in particular a concentration of fish and a sheltering effect for the young.

Additionally, the project presents multiple opportunities for the economic development of the territory and has encouraged the parties to work together:

- 4 factories for the manufacturing of the wind turbines are located in France: 2 factories at Saint-Nazaire for the production of the generators and the nacelle assemblies and 2 factories at Cherbourg for the production of the masts and the blades. This corresponds to approximately 1000 direct and 4000 indirect relevant jobs.
- For the manufacturing of the foundations: the factory is located at Le Havre with the planned creation of more than 600 jobs.
- For the exploitation and maintenance: Fécamp port was chosen because of its proximity (8 miles (13 km) to the first wind turbine). The maintenance base will allow the creation of around 100 permanent jobs for 25 years.
- For the creation of appropriate professional training: the region and National Education are involved in order to develop courses appropriate to the needs of the project (e.g. creation of a HND in the maintenance of wind turbine equipment).

Views of stakeholders on mechanisms, approaches and lessons to be drawn

- From the start of the project the consultation was very open. WPD offshore, as the initiator of the process, should be recognised for the quality of its discussions. The relationship with the inhabitants was very good and there was no "double talk": all the questions asked were answered. This atmosphere of trust and transparency was even recognised by those opposing the project.

- One of the fears of some stakeholders was that this process of communication had the potential of not being maintained during the new phase of the project, following the call for proposals in 2011. However, this worry has not materialised as the discussion continued in the form of the public debate, then the public inquiry. The population and all the stakeholders had the opportunity to be informed and to express their opinions. For several parties the continuity of the process is largely due to the fact that the person responsible for the project at WPD remained involved to this day. As sole representative, the project leader created relationships of trust on a human level with the stakeholders. This human aspect should not be underestimated.

- At the beginning of the consultation in 2007, the fishermen were not necessarily in favour of the project. This initial reluctance was identified before the consultation. A study trip with the Haute-Normandy fishermen was therefore organised to England in April 2010 to the Kentish Flats wind farm (30 wind turbines 5.5 miles (8.8 km) from the coast, in operation since 2005) and
the Thanet wind farm (100 wind turbines 7.4 mile (12 km) from the coast, in operation since September 2010). A discussion meeting was also organised with the Ramsgate Fisherman’s Association. During this trip, the Normandy fishermen could talk with their English counterparts and benefit from their feedback concerning the compatibility of the offshore wind farms with fishing activities and on the state of the fishery resources in the offshore wind farms; in the construction phase as in the exploitation phase.

- This proactive discussion process with the fishermen has proven its worth, particularly when the projects at Fécamp and Tréport are compared. In the case of the Tréport project, the fishermen are very hostile to the project, and this hostility was relayed by the local council because their concerns were not taken seriously. "What is the reasoning that has led the State to persist with its idea of siting a project in an area where there are fish when the fishermen have proposed alternatives? Between 2010 and today, 5 years have passed, why have you not made use of this time?" A question that summarises the lack of understanding of one part of the public and all of the fishermen, and to which the State did not provide an answer during the debate.

- The concept that is reflected in this major difference between the 2 projects (Fécamp and Tréport) is that it is essential to involve all the parties beforehand by encouraging discussions, without taking a stance from the beginning but remaining open to all possible options for the project’s study area.

- It is important to begin the consultation as early as possible, but without the involvement of the press at the start, in order to reduce the risk of pressure and premature commitments. However, to initiate a very early consultation can lead to frustration for the population, particularly when there are high expectations with regards to the creation of jobs and economic opportunities. Eight years after the start of the consultation at Fécamp, some feel that the project seems to be losing speed and the population is beginning to lose interest. Consequently very few people spoke during a public inquiry in October 2015. It is possible that, when the project moved to a consortium level, it reduced the level of local interest and diluted citizen participation. The complex process for obtaining consents in France represents a major inconvenience that slows down the implementation of projects.

**Recommendations for Effective Marine Renewables Co-location**

- The benefits of consultation at the earliest possible stage of the project are recognised by the vast majority of parties. A well-conducted consultation, particularly with the fishermen, is essential to the acceptability of an off-shore wind farm project.

- The compensatory measures of the MRE projects have been better thought-out than for the nuclear projects. There is a national framework that determines compensations, which are geographically better distributed, and not focussed on a single community, as is the case for the nuclear plants. With respect to the special tax on offshore wind farms, the amount and allocation are defined by the general tax code. This tax is currently fixed at 15,094 €/MW installed, and it is allocated as follows: 50% for the coastal communities situated at least 12 nautical miles from the production site, 35% to the National Fisheries Committee, and 15% to sustainable development projects on the Eastern English Channel – North Sea coastline.
However, the question of the use of this tax and its allocation between communities has been asked. The allocation of this exclusively to coastal communities, and not to the communities in the wider communes, for example, could lead to inequalities.

- For each steering body put in place as part of the consultation for an off-shore wind farm project, certain questions must first be asked:
  - What role does this body have? Consultative, decision-making? On what subjects will it intervene?
  - Does it address a need expressed by local bodies on a specific subject?
  - At what moment in the project’s lifetime will it be involved?
  - Who will be part of it? How many people and what are their profiles?
  - What are the organisational arrangements? Frequency and format of the meetings, representatives, place, etc.

- The reactivity of the project leader to adapt the consultation to the project and the bodies present is a key to the success of the consultation. One ought to be able to adapt one’s strategy and organisation as and when necessary in order to best respond to the needs of the public concerned.

- One of the people interviewed as part of this case study mentioned an interesting point that deserved to be studied in greater detail for the Guide to Best Practice in the Celtic Seas. According to this person, in England, it appears that off-shore wind farm projects pose less of an acceptability problem because the zonings are already used for other purposes, it is therefore more a question of site conversion rather than a creation on a pristine area. It is a different planning process from that applied in France.

- Marine Spatial Planning, which, it should be noted, is to be introduced in France, is different: rather than privatising the marine areas and putting certain areas under protection, it promotes the placing of activities alongside one another in a common marine area. Planning in this way allows for a coordinated, integrated and cross-border approach; a general strategy for the allocation of maritime areas. This planning of marine areas is required to be in place by March 2021 at the latest and, it appears, will be a critical factor in enabling the growth of the marine economy whilst taking into account environmental issues and other users of the sea.
Tidal Energy Limited – DeltaStream, Pembrokeshire, Wales

Background

DeltaStream is a tidal stream energy device which has been developed by Tidal Energy Limited (TEL) and was successfully deployed in Ramsey Sound, Pembrokeshire in December 2015. A separate TEL project intends to install a commercial array of DeltaStream devices at St David’s Head, also in Pembrokeshire.

At Ramsey Sound, the DeltaStream device sits on the seabed and is connected to the local distribution network at an onshore site. A Lease Agreement has been signed with The Crown Estate for a test development programme for up to seven years, although preliminary tests of the DeltaStream unit are scheduled for twelve months, after which the device will be removed from the site. TEL has received the Marine Licence necessary to proceed with the offshore part of the project in Ramsey Sound, and planning permission has been granted for the temporary onshore works.

Ramsey Sound was one of 24 potential sites initially identified across the UK and was selected from a shortlist due to local conditions, which include shelter from prevailing wind and wave conditions, good water depths and proximity to the mainland and grid connections. The site is advantageous in that there are no subsea structures such as pipelines or cables and no commercial shipping or trawling.

The selection of this project as a case study is primarily due to the process of site selection within a heavily designated area. It has been recognised that Ramsey Sound is sensitive in terms of its
ecology and is designated for a number of international and national conservation designations including Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Sites of Special Scientific Interest (SSSI). The project also affects the activities and livelihoods of a number of sea users including fishermen, divers, charter boat owners, the RNLI and recreational boat owners.

**Stakeholders Involved and Challenges Identified**

Given the need for a number of consents and licences, the principal stakeholders engaged with in the early stages were the Department of Energy and Climate Change, Marine Fisheries Agency (replaced by the Marine Management Organisation in 2010) Welsh Government and Pembrokeshire Coast National Park. Other appropriate statutory and non-statutory bodies as well as local interest groups and the public were also contacted in 2008. They were sent a copy of the scoping report and asked for feedback. See separate document TEL questionnaire – Appendix 1_V3 for further details.

Due to the nature of the development there were a number of potential challenges arising from stakeholders’ perceptions of the likely impacts arising from development of the project. They included ecological impacts (subtidal, intertidal, birds, marine mammals, fish, terrestrial), impacts on navigation and safe passage through Ramsey Sound, impacts on the tourism and recreation sectors, and impacts on the cultural heritage.

**Mechanisms, activities and approaches adopted to address challenges and deliver positive outcomes**

Since the outset of the project and early consultation the developers have maintained a database of interested parties, and regularly social media and issue emails to nearly 400 organisations and interested parties with project updates.

Regular meetings were held with regulators and statutory consultees followed by public consultation meetings prior to consent application. The main public meeting was held in St Davids over two days and was advertised throughout the local area. The event was run as an exhibition, with display boards set up detailing the project aims and objectives and the current stage of development. TEL personnel and independent specialists were available for informal discussions with any member of the public who had concerns or additional questions.

A more formal consultation process continued following consent application. Key consultees were invited to join the project’s Environmental Management Committee, with quarterly meetings held to discuss progress and any issues. As part of this process and discharging consenting conditions, the developers were able to liaise with interested parties and take on board their concerns and identify mitigation where possible.

**Views of stakeholders on mechanisms, approaches and lessons to be drawn**

Developer’s view:

Renewable energy projects inevitably have some form of impact (positive or negative) on the direct local environment and it is the balance between the broader provision of sustainable energy, economic prosperity and the reduction in discharge greenhouse gases to the atmosphere that need to be considered in assessing acceptability.
Formal and informal engagement structures have been vital in communicating with statutory bodies and local stakeholders alike.

Stakeholder engagement is important to ensure that all parties are clear as to what effect a project may have on their particular interest. With regard to TEL’s tidal stream project development we have made every effort to ensure that a number of the descriptors in the MSFD are maintained or improved where possible. The Environmental Statement has reviewed most of the descriptors with no significant effect predicted.

**Recommendations for Effective Marine Renewables Co-location**

- Face to face meetings with key organisations and groups are essential to find common ground and ways of working that best meet the needs of multiple stakeholders.

- The DeltaStream project is driven by Government policy which seeks to provide environmental, economic and social betterment, but the developer recognised importance of factoring in the needs and activities of existing users and ambassadors of the local area.

- Investing in timely consultations and one to one discussions with interested parties is vital. Formal engagement structures like the Environmental Management Committee allow for two way dialogue. Public consultations in the form of exhibitions give individuals an opportunity to discuss the proposal with the developer as opposed to public meetings where sometimes some views and voices cannot be heard.