**Title: Barriers to stakeholder engagement in the Welsh Marine Renewable Energy Sector**

**Authors:** Dr Jeanette Reis\*, Dr Rachel Mason-Jones, Dr Raja Sreedharan V

\*Senior Lecturer, School of Management, Cardiff Metropolitan University. JReis@cardiffmet.ac.uk.

**Keywords:** marine renewable energy, stakeholders, Wales, Welsh waters, cross border

**Introduction:**

The requirement to achieve net zero by 2050 (UK Government, 2022[[1]](#endnote-1)) is widely accepted by UK energy policymakers and the industry sector. In order to achieve this, there is a need to reduce energy consumption and rapidly upscale the deployment of marine renewable energy (MRE) technologies. Wales is currently lagging behind rest of UK in terms of energy generation (BEIS[[2]](#endnote-2)), despite having the second highest tidal range in world, large fetch and strong winds. The natural resources are in place to produce vast amounts of offshore wind, wave and tidal energy (Lewis, 2015[[3]](#endnote-3); James, 2018[[4]](#endnote-4)). However, effective use of human resources is also necessary in order to tap into these natural resources.

Stakeholder networking is critical to this process because it supports knowledge creation and sharing, encourages innovation and reinforces the capacity of organisations to jointly address complex issues (Dalton, 2020[[5]](#endnote-5)). A fundamental understanding of the roles and functions of organisations within the marine renewable energy sector is therefore important to developers as they need to know how best to engage. It is argued that current stakeholder network and consenting regimes of the MRE sector in Wales are complex, disjointed and at times contradictory with wider UK regimes. This paper will aim to identify MRE stakeholders operating in Wales, with a focus on the developers’ perspective. It will then go on to discuss barriers to engagement and opportunities to overcome barriers.

**Research approach:**

A desk-based literature review was undertaken between November 2022 and December 2023, using Scopus. Search terms included “marine renewable energy” AND “Wales”; “offshore renewable energy” AND “Wales”; “marine renewable energy” AND “UK”; “offshore renewable energy ”AND “UK”. A range of peer reviewed academic papers, conference papers, books and policy documents were identified, published between 2002 and 2023. 511 sources were originally identified. This was reduced to 44 following a review of abstracts in order to identify Welsh marine renewable energy policy documents. The 2023 AMI conference presentation focussed on the barriers to marine renewable energy which came from early stages of that research. This paper will build upon that foundation by updating policy documents and focussing on specific issues associated with stakeholder engagement, namely identification of key stakeholders, identification of barriers to stakeholder engagement and consideration of measures to overcome the barriers identified.

**Results:**

1. **Identification of Key MRE stakeholders**

Stakeholder co-operation is a critical element of the marine renewable energy scheme development process and is a mandatory aspect of both Welsh Government and UK Government consenting processes (Greaves, 2022[[6]](#endnote-6)). Stakeholders are involved at all stages of project proposal, planning, deployment, maintenance and decommissioning, as illustrated in Figure 1.

A diagram of a diagram of a local

Description automatically generated with medium confidence

Figure 1. Overview of marine renewable energy stakeholder engagement with developers at local, national and international level in Wales and England.

At present, marine renewable energy developers working in Welsh or Welsh-English cross border areas such as the Celtic and Irish Seas are required to work with at least 10 statutory organisations and dozens of non-statutory organisations, operating at local, regional, national and international levels.

Statutory organisations include port authorities, local authorities, community councils, Welsh and UK government, Natural Resources Wales, Environment Agency, the UK Marine Management Organisation, Crown Estate, National Infrastructure Planning Inspectorate, National Grid and the Offshore Wind Industry Council. Non statutory organisations include tier 1, tier 2 and tier 3 suppliers, investors, decommissioners, surveyors, academia and marine user groups such as fisheries and conservation groups. Networking groups such as Marine Energy Wales and RenewableUK aim to facilitate engagement although have their own priorities and limitations. The context is complicated to say the least.

1. **Barriers to Engagement**

Different organizations have different priorities, legislative and policy requirements, resources and operating timescales, therefore engaging with all at the appropriate stages can be time consuming and prove difficult (Ramos, 2021[[7]](#endnote-7)). With reference to Figure 1, it can be seen that there are a vast number of public and private sector organisations. The confusion is amplified as there are differing public sector consenting regimes between Wales and England, which can be particularly problematic for cross-border development sites, and conflicting Welsh/ UK government guidance about who to engage with.

For example, UK Government states that offshore wind projects of more than 100MW should be examined by the UK Planning Inspectorate (UK Government, 2008[[8]](#endnote-8)), who then make a recommendation to the UK Secretary of State for the Department for Business, Energy and Industrial Strategy (BEIS) (Crown Estate, 2019[[9]](#endnote-9)). Conversely, Welsh Government guidance states that energy schemes below 350MW in Welsh waters up to 12Nm from the baseline or 50-350MW between 12Nm and 200NM from the baseline should be consented by Welsh Government and Natural Resources Wales (Welsh Parliament, 2023[[10]](#endnote-10)).

Partnerships have been cited as effective tools for developing the sector, although these are particularly difficult to create in complex working environments (Celtic Sea Cluster, 2022[[11]](#endnote-11)). Support mechanisms in the form of networking groups such as Marine Energy Wales, Celtic Sea Alliance, Celtic Sea Cluster, Maritime UK, the Marine Knowledge Exchange, Renewable UK and Catapult have gone some way to bridge the gap, although arguably, a lot more needs to be done as some of these have generalised scopes, are limited to certain geographical areas and are mostly reliant on short-term public-sector funding (Celtic Sea Cluster, 2022[[12]](#endnote-12)). Sector specific local and national networking mechanisms as well as long-term public-sector funding of networking activities is essential (MacKinnon, 2019[[13]](#endnote-13)).

In addition, it is recognised that champions play an important role as recognisable figureheads for networking activities and help raise the profile of public and private sector development activities. While a UK offshore wind champion currently exists (UK Government, 2023[[14]](#endnote-14)), there is no Welsh equivalent and other forms of marine energy such as wave and tidal technologies are not represented at either Wales or UK level. Clear leadership is lacking.

**Conclusions/ Implications:**

It is recognised that the stakeholder map for the Welsh marine renewable energy sector is complex and disjointed. Efforts are being made to streamline consenting processes and reduce inconsistencies between consenting processes, although this has not yet been achieved. A Welsh Infrastructure Consenting Bill is currently (December 2023) being debated and is expected to be published in Spring 2024 (Welsh Government, 2022 [[15]](#endnote-15)). This should help avoid further confusion and simplify the consenting process.

In addition, we can learn a lot from “one -stop consenting shops” as delivered in Scotland (Scottish Government, 2023[[16]](#endnote-16)) which involve a single authority handling all consenting application processes, resulting in a reduction in consenting time from 2 years to 12 weeks. Ireland and Portugal have recently implemented similar measures (Ramos, 2021[[17]](#endnote-17)).

It is also recognised that long-term public-sector funding needs to be provided for networking organisations. Governments don’t necessarily need to directly invest in marine renewable energy schemes as is the case in Norway and Germany (MacKinnon, 2019[[18]](#endnote-18)), although they should certainly be supporting networking activities. This would provide certainty for developers and ensure long term relationships between stakeholders are maintained. This would also support new entrants to the sector.

The significance of clear leadership cannot be underestimated. While it is recognised that one UK level offshore wind champion role does exist, this model should be extended to either include or replicate wave and tidal technologies. Wales should not be forgotten and should have its own marine renewable energy champion too. This might take the form of a Commissioner role, perhaps similar in nature to the Future Generations Commissioner role. This would certainly raise the profile of the sector and help provide a focal point for future developments.

While it is accepted that some of these measures are implicit within existing networking activities, much more needs to be done if we are to achieve our ambitious net zero targets. This paper has identified key stakeholders, identified engagement barriers and considered measures to overcome those barriers. The future of MRE in Wales is challenging although we can and should learn lessons from other countries and adapt as quickly as possible. Speed is of the essence.

References

1. HM Government (2022) British energy security strategy. Downloaded from <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1069969/british-energy-security-strategy-web-accessible.pdf> on 8th December 2022. [↑](#endnote-ref-1)
2. BEIS (2022) Energy Trends April to June 2022. Statistical Release 29 September 2022. Downloaded from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/1107456/Energy\_Trends\_September\_2022.pdf . Downloaded 23rd November 2022. [↑](#endnote-ref-2)
3. Lewis, M., Neill, S., Robins, P., Hashemi, M. (2015) Resource assessment for future generations of tidal-stream energy arrays. Energy. Volume 83, 2015, Pages 403-415. [↑](#endnote-ref-3)
4. James, R.; Martins, E. (2018) Future Potential for Offshore Wind in Wales. The Carbon Trust Prepared for the Welsh Government. Available at <https://gov.wales/sites/default/files/publications/2019-07/future-potential-for-offshore-wind.pdf> Downloaded 24th November 2022. [↑](#endnote-ref-4)
5. Dalton, K., Skrobe, M., Bell, H., Kantner, B., Berndtson, D., Gerhardinger, L and Christie, P. (2020) Marine Related Learning Networks: Shifting the Paradigm Toward Collaborative Ocean Governance. Frontiers in Marine Science. Vol. 7. Pp1-16. Doi 10.3389/fmars.2020.595054 [↑](#endnote-ref-5)
6. Greaves, D.; Jin, S.; Wong, P.; White, D.; Jeffrey, H.; Scott, B; Wigg, R. (2022) UK perspective research landscape for offshore renewable energy and its role in delivering Net Zero. Progress in Energy, 4(4). Available at: https://doi.org/10.1088/2516-1083/ac8c19. [↑](#endnote-ref-6)
7. Ramos, V.; Giannini, G.; Calheiros-Cabral, T.; Rosa-Santos, P.; Taveira-Pinto, F. (2021) Legal framework of marine renewable energy: A review for the Atlantic region of Europe. Renewable & Sustainable Energy Reviews. 137, p. 110608–. Available at: https://doi.org/10.1016/j.rser.2020.110608. [↑](#endnote-ref-7)
8. UK Government (2008) Planning Act 2008. Available at [https://www.legislation.gov.uk/ukpga/2008/29/contents](about:blank) . Downloaded on 4th August 2023. [↑](#endnote-ref-8)
9. Crown Estate (2019) Guide to Offshore Wind Farms. Published by Crown Estate. Available at [https://www.thecrownestate.co.uk/media/2861/guide-to-offshore-wind-farm-2019.pdf](about:blank) . Downloaded on 4th August 2023. [↑](#endnote-ref-9)
10. Welsh Parliament (2023) The Planning Series. 17- Consenting Energy Infrastructure. Published by Senedd Research. Available at [https://research.senedd.wales/media/t0mlrrol/23-09-consenting-energy-infrastructure.pdf](about:blank) . Downloaded on 4th August 2023. [↑](#endnote-ref-10)
11. Celtic Sea Cluster (2022) [CELTIC-SEA-REGIONAL-STRATEGY. Published by the Celtic Sea Cluster](https://celticseacluster.com/wp-content/uploads/2022/11/CELTIC-SEA-REGIONAL-STRATEGY-21-11-2022-LQ.pdf). Downloaded from <https://celticseacluster.com/wp-content/uploads/2022/11/CELTIC-SEA-REGIONAL-STRATEGY-21-11-2022-LQ.pdf> . Downloaded 25th November 2022 [↑](#endnote-ref-11)
12. Celtic Sea Cluster (2022) [CELTIC-SEA-REGIONAL-STRATEGY. Published by the Celtic Sea Cluster](https://celticseacluster.com/wp-content/uploads/2022/11/CELTIC-SEA-REGIONAL-STRATEGY-21-11-2022-LQ.pdf). Downloaded from <https://celticseacluster.com/wp-content/uploads/2022/11/CELTIC-SEA-REGIONAL-STRATEGY-21-11-2022-LQ.pdf> . Downloaded 25th November 2022 [↑](#endnote-ref-12)
13. MacKinnon, D.; Dawley, S.; Steen, M.; Menzel, M.; Karlsen, A.; Sommer, P.; Hansen, G.; Normann, H. (2019) Path creation, global production networks and regional development: A comparative international analysis of the offshore wind sector. Progress in Planning, 130, pp. 1–32. Available at: https://doi.org/10.1016/j.progress.2018.01.001. [↑](#endnote-ref-13)
14. UK Government (2023) Independent Report of the Offshore Wind Champion. Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/1148888/independent-report-of-the-offshore-wind-champion.pdf](about:blank) . Downloaded on 5th August 2023. [↑](#endnote-ref-14)
15. Welsh Government (2022) Plenary Transcription. Available at [https://record.senedd.wales/Plenary/12900#A73258](about:blank#A73258). Downloaded 30th November 2022. [↑](#endnote-ref-15)
16. Scottish Government (2023) Marine Environment: Licensing and Consenting Requirements. Published by Marine Directorate. Downloaded from <https://www.gov.scot/collections/marine-licensing-and-consent/> on 5th August 2023. [↑](#endnote-ref-16)
17. Ramos, V. et al. (2021) Legal framework of marine renewable energy: A review for the Atlantic region of Europe. Renewable & sustainable energy reviews, 137, p. 110608–. Available at: https://doi.org/10.1016/j.rser.2020.110608. [↑](#endnote-ref-17)
18. MacKinnon, D. et al. (2019) Path creation, global production networks and regional development: A comparative international analysis of the offshore wind sector. Progress in planning, 130, pp. 1–32. Available at: https://doi.org/10.1016/j.progress.2018.01.001. [↑](#endnote-ref-18)