



# Marine Renewable Energy Supply Chain Development Report

April 2018



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## 1. Introduction

The global marine energy sector is set to be worth £76 billion by 2050 and with €100.4 million of EU Structural Funds prioritised for marine energy in Wales, two array scale Demonstration Zones, seabed agreements in place for 3 separate tidal projects and a number of proposals for tidal range projects, Wales has the potential to be a world leader. £68.3 million has been invested into the sector in Wales (Jan 2017), which now supports 137 FTE jobs and 350 person years of employment. Current developers actively involved in Wales have indicated an expected investment of £1.4 billion in the next 5 years, provided market and development incentives are in place<sup>1</sup>.

Given Pembrokeshire's excellent wave and tidal stream resource, a large amount of this funding and technology developer interest is currently focused on the region. Over the past 8 years, there have been a large number of site visits from companies looking at Pembrokeshire as a potential deployment location for their devices and there are now a significant number of wave and tidal developers both considering and actively relocating to Pembrokeshire as both an operational and manufacturing base for their projects. 3 devices have been fabricated in the region to date and deployed from Pembroke Port. Wales recognises that the marine energy sector has a crucial role to play in supporting peripheral economies. In taking a lead in this new maritime sector Wales sees the low carbon global opportunity in terms of exportable skills, knowledge and IP. It is for these reasons that Wales has prioritised **€100,428,444M of EU Structural Funding** for marine energy, which has led to:

- Minesto has set up its UK headquarters in Anglesey and has up scaled plans to develop an 80MW project in North Wales.
- Eight tidal power developers from around the world have been awarded berths at the Morlais Demonstration Zone off the coast of Anglesey, and the zone has recently been awarded £4.5 million of EU and Welsh Government funds.
- DP Energy and Floating Power Plant have announced the establishment of a joint venture to evaluate and, dependent on the outcomes of that work, develop a site in Wales for offshore floating wind.
- A £17m SEACAMS2 project has been launched, which aims to expand Wales' marine energy sector over the next four years using Welsh university research skills.
- Wave-tricity is currently testing its Ocean Wave Rower device in the Milford Haven Waterway, and the build in Pembroke provided supply chain diversification for local companies.
- Similarly Marine Power Systems has recently unveiled its WaveSub device in Pembroke Dock have commenced sea trials in the Haven Waterway.

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<sup>1</sup> Marine Energy Wales (2017) [Marine Energy in Wales – Investment, Jobs, Supply Chain](#)

- A feasibility study is underway for the world’s largest wave energy seabed lease off the south Pembrokeshire coast.
- Bombora, an Australian wave developer have recently set up their EU headquarters in Wales to develop their £17M wave project
- A £76 million ‘Pembroke Dock Marine’ project has been signed off by the Prime Minister and First Minister as part of the Swansea Bay City Deal, which includes a UK Catapult led Marine Energy Engineering Centre of Excellence based in Wales as well as Marine Energy Test Area.
- There are of course significant tidal range plans in Wales, strongly supported by MPs and the Hendry Report.

The marine renewable energy (MRE) sector will provide supply chain diversification and clustering opportunities which will support Pembrokeshire’s economy, providing jobs and growth. Pembrokeshire has excellent marine energy resource and the supporting supply chain and infrastructure are already skilled in ‘traditional’ energy sectors. However there currently seems to be a gap in specific sector knowledge and a lack of awareness of the significant opportunities provided by the MRE industry.

This supply chain development project was designed to provide a baseline understanding of the MRE supply chain in Pembrokeshire, identifying companies already working in the sector and those with a strong potential to diversify. The project was Pembrokeshire-focused due to the regional funding requirements, however due to the levels of interest and feedback from project developers it was decided to expand the scope of the project to include South Wales, whilst also making the decision not to exclude any relevant interested parties who wished to partake.

The key questions to be answered were:

- To what extent are relevant companies in Pembrokeshire:
  - Knowledgeable about the marine energy sector and potential opportunities?
  - Capable or have the potential capability to supply into the offshore energy sector?
- What is the current:
  - Level of commercial activity and engagement?
  - Baseline in terms of jobs, skills and economic value?
- Where are the perceived gaps and barriers preventing growth in the sector?

The project was split into 4 work packages:

#### **WP1 – Scoping and Supply Chain Directory Creation**

Information gathering about potential MRE companies, categorising their level of sector engagement from 1 – high to 3 – low, to be gathered into a directory alongside relevant information.

#### **WP2 – Stakeholder Engagement**

- Initial networking event to present on proposal, delivery and offer
  - Include speakers for existing supply chain companies such as Leask, Aquatera, BVG and Tidal Lagoon
  - Include ‘Meet the Buyer’ opportunity for potential supply chain companies to investigate what opportunities are available in the sector

- Mid-point stakeholder engagement event to update on progress, provide networking opportunities and answer questions between partners that will arise
- Final event to report back on key findings and provide recommendations going forward to the sector

### **WP3 – Supply Chain Assessment**

Assessment, identifying trends, undertaking SWOT, developing case studies to be included final report, understanding gaps and barriers to market

### **WP4 – Supply Chain Report**

Full report on outcomes and recommendations on future actions for the development of the Supply Chain

This report will outline the work undertaken in each of above work packages.

## **1.1. Pembrokeshire Coastal Forum & Marine Energy Wales**

Pembrokeshire Coastal Forum (PCF) is a multi-award winning coastal partnership that has been developing ground-breaking collaborative best practice in coastal management since 2000. Coastal partnerships are uniquely placed to engage relevant stakeholders from local community members through to national policy makers. PCF is frequently asked to advise and assist with national and international discrete project delivery as well as leading on wide ranging stakeholder engagement, market research, curriculum linked marine education and facilitation at all levels.

*'The successful PCF model should be applied more widely across the coastal areas of the National Landscapes'*

### **The Independent Review of Designated Landscapes in Wales**

PCF established Marine Pembrokeshire in 2009 after carrying out a coastal economic survey for Welsh Government to identify sustainable economic opportunities in the “Pembrokeshire Havens” Wales Spatial Plan Area. After industry feedback and a Marine Energy Ministerial task and finish group recommendation Marine Energy Wales was launched in Brussels in 2016.

Marine Energy Wales (MEW) brings together technology developers, the supply chain, academia and the public sector to establish Wales as a global leader in sustainable marine energy generation, making a significant contribution to a low carbon economy. The benefits of this industry are being felt throughout the country with the creation of green sustainable jobs, growth and skills providing significant development opportunities for Wales.

### **Marine Energy Wales objectives:**

To create a thriving and diverse sustainable marine energy industry in Wales, by:

- Providing support and guidance for the marine energy sector
- Enabling the development of a commercially viable marine energy industry in Wales

- delivering local economic benefits
- Encouraging learning and collaboration through regular working group meetings
- Raising awareness of the country's key development opportunities
- Providing a conduit for information between industry, public sector agencies and government
- Encouraging wide participation in the marine energy industry
- Promoting wider public understanding of the benefits of marine energy

### Current work streams:

Marine Energy Wales promotes Welsh marine renewable capability, attracting businesses to Wales through:

- Supporting marine energy policy development and leadership
- Promoting Welsh capability and attracting inward investment
- Developing Welsh supply chain to promote jobs & growth
- Collaboration, sector networking & sector representation
- Education work with developers, teachers and schools to inspire future generations about marine energy
- Facilitating the streamlining of consenting processes
- Supporting the two Welsh Demonstration Zones
- Developing a Marine Energy Testing Area in the Haven Waterway
- Facilitating research in Wales

### Marine Energy Wales members



## 2. Project Management

### 2.1. Work Package 1 - Scoping and Supply Chain Directory Creation

Initial scoping for this project commenced in May with meetings conducted with Welsh Government, Business Wales, Tidal Lagoon Power, ORE Catapult, RegenSW and Buoygues. The aim of these meetings was to raise awareness of the aims of this project, and to ensure that these aligned with the needs of the industry, complimenting work that has already been completed on supply chain development. Supply chain databases already exist through Tidal Lagoon Power, ORE Catapult and RegenSW, but a gap was identified in the need for a Wales-specific database that could be used to promote Wales, supply chain businesses and aid technology developers.

When initially planning this project the goal was to create a supply chain directory that was Pembrokeshire-focused (which was a requirement due to the regional focus of LEADER funding) in order to promote the area and the skilled companies residing here. However, it soon became evident through the amount of information gathered and the number of companies interested, that limiting it to just Pembrokeshire was not possible, nor would it be useful to potential developers looking at the area. Existing developers such as Wave-tricity and Marine Power Systems who have built and tested their devices in Pembrokeshire have used predominantly local supply chain (cira 50-60%), but some parts and components have been fabricated elsewhere out of necessity. Because of this, it was decided early on to increase the scope of the directory to include South Wales-based companies, whilst also making the decision not to exclude any relevant interested parties who wished to partake.

The directory was created using the existing MEW mailing list which contains 1000+ MRE industry contacts, combined with desk based research conducted by the MEW team, existing databases from ORE Catapult, Business Wales and RenewableUK and the contacts made in WP2 (stakeholder engagement). The initial plan was to categorise the companies by level of sector engagement, but after speaking to project developers it was found to be of more use to categorise the directory by sector and specialty. Industry feedback suggested that experience in MRE was less important than the transferable skills and expertise that companies could offer to projects.

The directory contains 286 companies categorised into the following specialities:

- Coatings/Paint
- Composites
- Consultancy
- Control Systems



- Developer
- Electronics
- Fabrication
- Hydraulics
- Legal
- Machining
- Marine Operations
- Media
- Mooring
- Other
- Safety
- Seals and Parts
- Small Components
- Subsea

Approximately 70% of the directory is made up of companies in South or West Wales and work has begun on defining the size of the companies (employees and turnover), to provide a greater understanding of capacity. As this particular information was beyond the scope of the original project plan further research is now required to complete this. MEW will continue to develop this moving forward. New contacts can sign up to be listed here [www.marineenergywales.co.uk/supply-chain](http://www.marineenergywales.co.uk/supply-chain) and the directory will be promoted through Marine Energy Wales communications channels as yet another reason why Wales is the destination for MRE.

The full directory can be found in Appendix A.

	A	B	C	D	E	F	G	H	I	J
1	Category	Company	Address	Website	Email	Phone	Specialty	Industry		
2	Electronics	<b>3D Automation</b>	Brecon Rd, Swansea SA3 1GH			01639 7300	Electrical, electronic engineering, engineering services, electrical infrastructure	Electricity Transmission		
3	Other	<b>A&amp;A Scaffolding Limited</b>	15 Springfield Road Pembroke Dock	<a href="http://www.aandascaffolding.co.uk">http://www.aandascaffolding.co.uk</a>	<a href="mailto:aandascaffolding@hotmail.com">aandascaffolding@hotmail.com</a>	078154213	Provision of scaffolding including planning, erection and dismantling. Auxiliary equipment and device access	General		
4	Control Systems	<b>A&amp;M Generators Ltd</b>	Kidwelly Industrial Estate Pembroke	<a href="http://www.amgenerators.com">http://www.amgenerators.com</a>	<a href="mailto:neil@amgenerators.com">neil@amgenerators.com</a>	015548917	Supply, Installation, Service and Repair of all types of Generators and Associated Systems and Controls.	Electricity Transmission		
5	Other	<b>AAA Wide Load Escorts Ltd</b>	Twin Oaks, Bangeston, Pembroke	<a href="http://www.handshipping.co.uk">http://www.handshipping.co.uk</a>	<a href="mailto:enquiries@wideloads.co.uk">enquiries@wideloads.co.uk</a>	016468065	Heavy haulage, abnormal loads, pilot car, LOGISTICS	General		
6	Consultancy	<b>Aberystwyth University – Institute of Marine and Coastal Research</b>	Aberystwyth University, Llandinafenniog	<a href="https://www.aber.ac.uk/ier">https://www.aber.ac.uk/ier</a>	<a href="mailto:mvm@aber.ac.uk">mvm@aber.ac.uk</a>	(0)1970 62	Academic and research, training, environmental consultants	General		
7	Safety	<b>Abtech Safety</b>	Unit 18/2 Parkway Business Centre, Llanelli	<a href="http://www.abtechsafety.co.uk">http://www.abtechsafety.co.uk</a>	<a href="mailto:sales@abtechsafety.co.uk">sales@abtechsafety.co.uk</a>	124E+09	Ropes, Height Safety and confined space equipment	General		
8	Seals and Parts	<b>Acorn Industrial Services Ltd</b>	Unit 10, Penmaen Business Centre, Llanelli	<a href="http://www.acorn-ind.co.uk">http://www.acorn-ind.co.uk</a>	<a href="mailto:english@acorn-ind.co.uk">english@acorn-ind.co.uk</a>	01244 281	marketing, communications	General		
9	media	<b>Acer Marketing Communications</b>	28 Church Street, Llanelli	<a href="http://www.acercomms.co.uk">http://www.acercomms.co.uk</a>	<a href="mailto:enquiries@acercomms.co.uk">enquiries@acercomms.co.uk</a>	012487225	Bearings, linear motion, belts, power transmission	General		
10	Control Systems	<b>Acoustic1</b>	Overdale Cwmifor Manor, Llanelli	<a href="http://www.acoustic1.co.uk">http://www.acoustic1.co.uk</a>	<a href="mailto:sales@acoustic1.co.uk">sales@acoustic1.co.uk</a>	01550 777	noise and vibration measurement	Maritime		
11	Legal	<b>Acuity Legal Ltd</b>	3 Assembly Square, Llanelli	<a href="http://www.acuitylegal.co.uk">http://www.acuitylegal.co.uk</a>	<a href="mailto:info@acuitylegal.co.uk">info@acuitylegal.co.uk</a>	0845 266	LEGAL. Provide a full range of legal services within a wide range of sectors including renewable energy.	Renewables		
12	Consultancy	<b>ADAS UK Ltd</b>	Unit 100, Cefn Llan Science Park, Llanelli	<a href="http://www.adas.co.uk">http://www.adas.co.uk</a>	<a href="mailto:enquiries@adas.co.uk">enquiries@adas.co.uk</a>	0333 0142	largest independent provider of environmental consultancy, rural development services and policy advice.	Renewables		
13	Fabrication	<b>Alam Vision Ltd</b>	Unit 5, Penmaen Business Centre, Llanelli	<a href="http://www.alamvision.co.uk">http://www.alamvision.co.uk</a>	<a href="mailto:sales@alamvision.com">sales@alamvision.com</a>	01495 221	CCTV, fire, access control, intruder, fabrication services using a wide variety of materials including sheet stainless steel.	General		

Figure 1: Screenshot of Supply Chain Directory

## 2.2. Work Package 2 - Stakeholder Engagement

Although there are a significant number of companies in Pembrokeshire and across Wales that have the capabilities to service the MRE sector (as identified through WP3), what has become obvious

through the work of MEW over the past 2 years is the current lack of awareness of the opportunities MRE presents as a new, low carbon, maritime sector. Supply chain clustering is essential in order to support our peripheral economies and so the purpose of WP2 was to raise awareness of the developments being made in the sector, as well as highlighting future opportunities and potential challenges.

In order to assist in the promotion of this project and also of MRE as a whole, a short film was commissioned and featured representatives from MEW, Port of Milford Haven, Wave-tricity, Marine Power Systems, Ledwood Mechanical Engineering, Leask Marine and Mainstay Marine Solutions. The purpose of the film was to highlight the positive collaborations that have been formed in Pembrokeshire through MRE and to also to promote the industry in the area. This video can be viewed [here](#) and is also available to view on the Marine Energy Wales website. It has been used at all of the events within this work package and has also been shown at several other MRE conferences and is used by Welsh Government to promote the local supply chain with positive feedback.

### 2.2.1. Event 1 - September

The first event was held on 14<sup>th</sup> September 2017 and was promoted as an opportunity to understand the opportunities available in Pembrokeshire and beyond, to learn from companies that already have industry experience and to “meet the buyer” by connecting with project developers. The programme for the day was as follows:

Marine Energy Supply Chain Engagement Event, 14 <sup>th</sup> September 2017, The Pavilion, Haverfordwest	
<b>7.30am</b>	Coffee and Networking
<b>8am</b>	Welcome and Introduction - Johnny Gowdy, RegenSW
<b>8.10am</b>	The Opportunity in Wales - Martin Murphy, Marine Energy Wales
<b>8.20am</b>	Panel 1 - UK Supply Chain Success Stories <ul style="list-style-type: none"> <li>• John Griffiths, European Marine Energy Centre</li> <li>• Claire Palmer, Leask Marine</li> <li>• Gaynor Jones, Aquatera</li> <li>• Steve Jermy, James Fisher Marine Services</li> </ul>
<b>9.30am</b>	Panel 2 - Local Experiences <ul style="list-style-type: none"> <li>• Tim James, Port of Milford Haven</li> <li>• Nick Revell, Ledwood Mechanical Engineering</li> <li>• Charlotte Wood, Mainstay Marine Solutions</li> </ul>
<b>10.15am</b>	Coffee and Networking
<b>10.45am</b>	Panel 3 - Meet the Buyers <ul style="list-style-type: none"> <li>• Gareth Stockman, Marine Power Systems</li> </ul>

	<ul style="list-style-type: none"> <li>• Joseph Kidd, Nova Innovation</li> <li>• Madeline Cowley, Wave Hub</li> <li>• Ioan Jenkins, Tidal Lagoon Power</li> </ul>
<b>11.30am</b>	Advice from Business Wales - Geraint Williams
<b>11.35am</b>	Supply Chain Project Next Steps - Ceri Crichton, Marine Energy Wales
<b>11.40am</b>	Summary and Close - Johnny Gowdy, RegenSW
<b>11.45am</b>	Coffee and Networking

MEW originally planned for circa 40 attendees and a suitable venue. Due to the reputation MEW has developed in delivering 9 annual conferences and a numerous other events it became clear that the level of interest had been underestimated and plans had to scaled up significantly. 143 people attended the event, representing 105 different companies from across the UK including: fabricators; boat builders; consultancies; legal advisors; electrical engineers; alongside technology developers, local authorities, Welsh Government and academic institutions. Each technology developer had an exhibition stand in order to showcase their projects and discuss the skills and services they required. Post event feedback was very positive, with 100% of those who completed the survey stating they found the event useful.



**Figure 2 - Delegates at September Event**

### 2.2.2. Event 2 - November

Due to the diverse mix of UK experts delivering the agenda post event feedback indicated that further networking opportunities would be beneficial in order to build on the information learned and connections made. A follow up event was planned in November to focus solely on delivering this aim. A networking dinner was organised in St. Bride's Hotel in Saundersfoot on the evening of 22<sup>nd</sup> November, however, due to the relatively low level of interest compared the first event (30 delegates registered) MEW decided to cancel. An evaluation revealed that evening events are not popular among delegates, as this requires them to work outside of normal hours. In addition to this, although networking is the key reason for attending any event there also needs to be commercial/strategic incentives to attending i.e. learning opportunities, in order to justify time away from the office. Due to MEW track record of delivering successful MRE events over a number of years the team focused on an event that would highlight the final project findings.

### 2.2.3. Event 3 - March

The final engagement event was designed to combine the networking opportunities requested after the first event, as well as presenting the findings of WP3 - the supply chain assessment (section 2.3). The event was held on 27<sup>th</sup> March 2018 in the Hotel Mariners in Haverfordwest and was fully booked with 40 delegates travelling from across the UK. The first half of the day consisted of a panel of speakers selected to highlight the opportunities available for the supply chain to diversify and to provide a detailed overview of the supply chain assessment

Marine Energy Supply Chain Engagement Event, 27 <sup>th</sup> March 2018, Hotel Mariners, Haverfordwest	
9.30am	Coffee and Networking
10am	Welcome and Introduction - David Jones, Marine Energy Wales
10.15am	Pembrokeshire MRE Supply Chain Assessment Report - Gaynor Jones, Aquatera
10.45am	Supply Chain in the South West - Kerry Hayes, Regen
11.15am	Pembroke Dock Marine Future Opportunities - Tim James, Port of Milford Haven
11.35am	ASTUTE2020: A University Partnership Working With the Manufacturing Industry Across Wales - Dr Fawzi Belblidia & Jibran Haider, Swansea University
12.00pm	Lunch and Networking

60% of the delegates at this event were supply chain companies with local (Pembrokeshire) based developers in attendance including Wave Hub, Bombora Wavepower and Marine Power Systems. There was a great deal of interest in the supply chain assessment work that had been undertaken and the findings from this report, and discussions continued throughout the networking lunch.



**Figure 3 - Delegates at March event**

### **2.3. Work Package 3 - Supply Chain Assessment**

The purpose of work package 3 was to assess the capabilities and potential of local the supply chain by undertaking a SWOT analysis and identifying trends. The main aim was to understand gaps and barriers to market, and to provide recommendations to overcome these.

Environmental and energy consultancy Aquatera were commissioned to assist MEW with this work due to their experience with supply chain assessment and development in Orkney. Aquatera's role comprised of the following activities:

- Supply chain capacity assessment including face to face interviews with a range of companies including those that have successfully penetrated the sector
- SWOT analysis (strengths, weaknesses, opportunities, threats)
- Consideration of local supply chain and capacity further afield
- Identification of trends and areas for development with an understanding of the gaps and barriers to market

18 supply chain companies were interviewed as part of this process between September and December 2017:

1. Aquatera
2. Austwel
3. Barlett Engineering
4. Blackfish Engineering
5. C&P Engineering
6. Eversheds
7. Jee Ltd.

8. Jenkins & Davies Engineering
9. Leask Marine
10. Ledwood
11. Mainstay Marine
12. MarineSpace
13. Mott MacDonald Group
14. Port of Milford Haven
15. Renewable Risk Advisors
16. SAM Geo Systems Ltd.
17. Simon Safety
18. Williams Shipping

The following results were obtained from a report written by Aquatera for MEW. The full report can be found in appendix B.

Of the 18 participating companies (26%) were already firmly established in the MRE sector, (42%) had some level of experience in the MRE sector and were looking to increase their involvement and (32%) were new to the sector and looking to diversify into this sector from other backgrounds.

All of the companies were able to identify opportunities within MRE for diversification including; Swansea Bay Tidal Lagoon, Morlais, Pembroke Dock Marine, Wave Hub and the Port of Milford Haven, but there were mixed views on the capacity of the local supply chain to deliver these projects. Uncertainty around CfDs, Brexit and local skills shortages were cited among reasons for this.

There was a diverse range of responses regarding barriers to accessing the MRE market. They included:

- UK Government policy/ lack of political support
- Uncertainty/ vagueness surrounding the industry
- Uncertainty surrounding value of projects / projects reducing in value from initial plan
- Funding
- Insurance costs
- Lack of Contract for Difference (CfD) agreement
- Access to technology developers
- Lack of continuity of workload
- High deployment costs
- High infrastructure costs of flow devices
- Lack of convergence in terms of a standard design for devices

The following table illustrates a SWOT analysis of the Pembrokeshire supply chain:

Strengths	Opportunities
<ul style="list-style-type: none"> <li>• Established transferable skills and experience in Pembrokeshire</li> <li>• Diverse range of skills and resources</li> <li>• Ideal location with harbour facilities and engineering hub</li> <li>• Strong culture of collaborative/ partnership working and networking</li> <li>• MEW supply chain events and sector support</li> <li>• UK MRE industry well suited to dealing with small projects</li> <li>• Local Marine Energy Hub</li> <li>• Strong Welsh Government Support</li> <li>• Excellent infrastructure</li> <li>• Strong ethos of local content, local knowledge and resilience</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunity for many companies to diversify into emerging MRE sector</li> <li>• Offshore sea area available for marine renewable energy technologies including test site (Wave Hub)</li> <li>• Opportunities for specific MRE collaboration/ partnership working and networking</li> <li>• Many MRE projects across Wales including: Morlais, Swansea Bay Tidal Lagoon, Pembroke Dock Marine, Wave Hub, DYFED Energy Park, META, Greenlink, Deltastream and infrastructure development (Port of Milford Haven and Holyhead Port)</li> <li>• Development of a Supply Chain Cluster which is the clear 'go to' point for developers</li> </ul>
Weaknesses	Threats
<ul style="list-style-type: none"> <li>• Industry is overly bespoke with every device being different. Strong need for convergence in order to make the industry viable</li> <li>• Many technological advances still needed</li> <li>• Lack of clearly accessible information and advice for the sector i.e. information directory</li> <li>• Vagueness surrounding sector</li> <li>• Supply chain is collectively a little unfocused and in need of industry information</li> <li>• Sometimes unable to see the benefit/ opportunity/ way in</li> <li>• Industry has been slow to take off. Some companies unable to commit to investing for this reason</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of political support from Westminster</li> <li>• Skilled workforce might be occupied by other big projects such as Hinkley Point and the Tidal Lagoon Project</li> <li>• Uncertainty surrounding CfD outcomes</li> <li>• BREXIT</li> <li>• Potentially restrictive insurance costs</li> <li>• Competition from other MRE industries overseas</li> </ul>

On completion of this assessment, Aquatera came to the following conclusion:

Supply Chain companies in Pembrokeshire and across Wales are actively engaged in the emerging MRE sector. Given the level of MRE activity across the whole of Wales and the desire of the Supply Chain to be further reaching in its activity, it is difficult to focus solely on Pembrokeshire. The Supply Chain has capability, capacity and ambition to deliver and sees the scale of the opportunity that currently presents itself in Wales. It is clear that there is a commitment to work in partnership for mutual benefit and to help accelerate the progress of the sector as a whole. However, there are challenges around a lack of information and cohesion amongst the Supply Chain in its current position.

It would welcome support and focus in order to maximise its potential and build capacity. It is important that the MRE Supply Chain is viewed as an essential part of sector development in Wales in order to maximise local content in local and national developments. It is noted that other geographies have placed considerable emphasis on technology development and inward investment. However, for the MRE sector to be successful, equal emphasis is required to be placed on the capacity of the Supply Chain to deliver the ambitions of technology development.

## **2.4. Work Package 4 - Supply Chain Report**

The full report by Aquatera can be found in appendix B. The following recommendations were included in this document as a result of the supply chain assessment and the conclusions drawn:

1. Creation of a Supply Chain Information Directory to be used as a marketing tool in the UK and overseas (including online directory), in order to maximise the Welsh Offer.
2. Develop standalone database of supply chain companies to service the MRE sector in Pembrokeshire and across Wales (an extension of Information Directory 1. above). This should be done in consultation with supply chain companies to agree the scope of such a database to ensure it is fit for purpose and relevant.
3. Provide opportunities for supply chain companies to collaborate and deliver in partnership. i.e. Build local capacity.
4. Develop confidence in the sector and create focus and visibility of opportunities in the sector for the Supply Chain to win new business.
5. Supply Chain to have opportunities to network, share lessons learned and build effective partnerships. This includes B2B introductions, meetings and events.
6. Expand supply chain potential for the MRE sector to include all Wales, UK and worldwide opportunities i.e. not only Pembrokeshire focused. e.g. Undertake a similar piece of work in North Wales and link regions together.



7. Create a Cluster model for the region including a Supply Chain Cluster of businesses, academia, community organisations with government support. This could also act as a consortia for large scale tendering opportunities; thus tackling the capacity issues faced by smaller companies.
8. Support for smaller companies with procurement processes.
9. Address the gaps in supply chain provision to enable Pembrokeshire companies to work with others to create a turnkey solution for the sector.
10. Assist supply chain companies that are new to the sector to find a 'way in' to this market.

Progress has already been made on a number of these recommendations by MEW.

Within this project under WP1 a directory has been created of Welsh supply chain, and although it is not yet available online the aim will be to upload it onto the Marine Energy Wales so that it is freely available to developers and other interested parties. It is provided to developers on request and has had positive feedback. Although there are no plans currently to create a standalone MRE database as in recommendation 2, the one that has been created does categorise company by sector and there is the option to sort by maritime or wave and tidal specialisms.

Recommendations 3 and 5 are delivered by MEW through quarterly working group meetings, annual conferences and other events throughout the year. Collaboration is key to building a successful industry and stakeholder engagement and partnership working is one of Pembrokeshire Coastal Forum's core attributes - throughout all of its projects. The primary purpose of MEW is to bring technology developers, supply chain, academia, government and the public sector together to discuss challenges and ways of overcoming them, as well as promoting Wales as a whole as a destination for MRE. Recommendation 4 (alongside recommendation 10) links to MEW membership where new members receive business advertisement and access to a variety of services from the MEW team. There are opportunities on the MEW website here - [www.marineenergywales.co.uk/supply-chain](http://www.marineenergywales.co.uk/supply-chain) for businesses to further promote themselves, and the MEW team are frequently asked to assist in B2B introductions.

Recommendation 6 is currently underway as the original proposal submitted to Leader and also this report has been shared with the Menter Môn team in North Wales, who are currently developing their own supply chain project for Anglesey.

Recommendation 7 MEW have created a cluster of businesses at the Marine Energy Hub which include Bomborra, Marine Space, Leask Marine, Artemis, Wave Hub and Element Power. Feedback from businesses located here is very positive. Further funding would be required to enable the establishment of a formal cluster. A Cluster model would likely address the issue raised in recommendation 9.

Although MEW highlight tender opportunities to our members through our regular communications, the resource is not currently available to offer support with procurement processes as suggested in recommendation 8. This could be a service offered by Welsh Government and Business Wales.

### 3. Conclusion

This supply chain development project aimed to provide a baseline understanding of the MRE supply chain in Wales, identifying companies already working in the sector and those with potential to diversify, alongside identifying some of the perceived gaps and barriers preventing growth in the sector.

Work package 1 has resulted in the creation of an extensive supply chain directory specific to Wales, categorised by sector which will now be used to promote Welsh industry and enable technology developers to find the services and skills they need. This will continue to be developed as more supply chain companies are added to it. Work package 2 resulted in a large number of companies becoming more interested in MRE and aware of the opportunities it presents, and directly influenced the database as all of these new contacts have been added. Stakeholder engagement is a core function of MEW and opportunities will continue throughout the year through regular meetings and events.

Work packages 3 and 4 demonstrated the significant capabilities the Welsh supply chain industry has to offer, and also highlighted some of the barriers preventing diversification into the sector. These barriers included uncertainty over revenue support, political support and infancy of the sector.

MEW has been extensively involved in work to build UK Government's confidence in the sector and will continue to do so, alongside its English and Scottish counterparts to ensure that the MRE industry is able to grow and develop. The recommendations outlined in this report will be taken forward in order to work with Welsh supply chain and ensure that they are ready to service this new, low carbon sector.