



YNNI MOROL CYMRU



Bringing together technology developers, the supply chain, academia and the public sector to establish Wales as a global leader in sustainable marine energy generation.

“By combining supportive policy with the allocation of €100.4 million of EU Structural Funds, alongside a £76 million City Deal for marine energy, Wales has created one of the most attractive global sector landscapes in the world. Diverse natural resources, array scale Demonstration zones, seabed leases and significant tidal range proposals have driven the development of this new low carbon sector in Wales. Considering our skilled maritime supply chains, world class research and port facilities alongside our new carbon reduction targets, it all adds up to make Wales a key location for marine energy development.”

David Jones, Project Director, Marine Energy Wales



What is Marine Energy Wales?

Marine Energy Wales brings together technology developers, the supply chain, academia and the public sector to promote Wales as a global leader in sustainable marine energy generation.

Through the development of the regional supply chain, Marine Energy Wales is making a significant contribution to a low carbon economy with sustainable green jobs, growth, skills and development opportunities.

The Marine Energy Wales Working Group



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

"The Marine Energy Wales team has done a fantastic job helping to push forward sustainable marine energy in Wales, bringing together all of the key players, and getting marine energy up the political agenda. Having been involved in consenting and environmental assessment for marine energy projects in Wales for over 10 years now, I have certainly appreciated the support they have provided, and this active support network is clearly something that sets Wales apart."

Kate Smith, Environmental Manager, Nova Innovation

Become a Member

Marine Energy Wales supports developers, the supply chain and relevant organisations in a number of ways:

- **Work Together** - Input into industry coordinated consultation responses, receive assistance in arranging meetings with key parties and stakeholder engagement activities
- **Stay Connected** - Quarterly Working Group meetings, access to members-only information, newsletter subscription, industry intelligence and tender alerts
- **Raise Your Profile** - Listing in Members' Directory and logo on website home page as well as the opportunity to promote job vacancies and relevant news
- **Get Discounts** - Reduced price for events, first option on exhibition space and event sponsorship and preferential rates for virtual office space



"The Marine Energy Wales team is a pleasure to work with. It is well run, open, positive, informative, responsive and inclusive. It is an extremely useful point of contact for the development of our interest in Wales."

Robert East, UK Development Manager, OpenHydro

Why Wales?



The country has a number of factors that make it an ideal location for marine energy development with up to 6.4GW (over 10GW including the Severn Estuary) of estimated generating capacity:

- €100.4 million of funding prioritised for marine energy in Wales
- £76 million Pembroke Dock Marine project, part of the Swansea Bay City Deal, which aims to develop a world class centre for marine energy development
- Long term, dedicated political support from Welsh Government
- An indicative wave capacity of up to 5600MW
- Tidal streams of up to 4ms^{-1}
- 400kV transmission lines and substations located coastally within reach of resources areas
- Array scale Demonstration Zones in Anglesey and Pembrokeshire
- Eight strategically located ports sited along the North, West and South coast
- Established energy sector supply chains and workforce with transferable skill opportunities
- Local supply chains that have constructed and deployed wave and tidal devices
- Dedicated, government backed Enterprise Zones with business development incentives
- £17 million SEACAMS project, a partnership between Bangor and Swansea universities, to assist the development of opportunities in marine energy
- Marine Energy Wales providing a single point of access for marine energy developers interested in Wales

"It is too difficult to build a new industry on your own. Developers, supply chain and public actors in marine energy have to work closely together to secure the path towards commercial breakthrough. Marine Energy Wales is the driver and enabler of such collaboration and thus plays a vital role for us to succeed in our number one market - Wales."

Dr Martin Edlund, CEO, Minesto

► EU Structural Funds

For the period 2014–2020, Wales was allocated European Structural Funds investment worth some £2 billion for the following programmes:

- West Wales and the Valleys programmes
- East Wales programmes, which include the European Social Fund and European Regional Development Fund

€100,428,444 EU structural funds are prioritised for marine energy in Wales, with a maximum intervention rate of 69.43%. These funds are administered by the Welsh European Funding Office (WEFO). The strategic objective (3.1) is to increase the number of wave and tidal energy devices being tested in Welsh waters and off the Welsh coast, including multi-device array deployments, thereby furthering Wales as a centre for marine energy production.

► Horizon 2020

Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020) – in addition to the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market. Despite the transition from the EU, the UK will still be able to participate in Horizon 2020.

► Welsh Government Funding

The Welsh Government has a number of business funding programmes which operate alongside private investment, which have the potential to fill ‘funding gaps’. Contact Welsh Government on 0300 060 3000 to find out more about the individual funding programmes.

“Our Welsh centre of operations and the associated development activity is part funded by the European Regional Development Fund which will continue to support us over the next two years as we progress to sea trials in the Milford Haven Waterway. The combination of an excellent maritime trials environment, a good supply chain, and a willing professional community, allied to the significant government backing for offshore renewables, makes Pembroke Dock an ideal place for renewable enterprises. It’s why we are here and it’s why we see a great future ahead for Welsh marine renewables.”

Simon Hewitt, Managing Director, Wave-tricity

Government Support

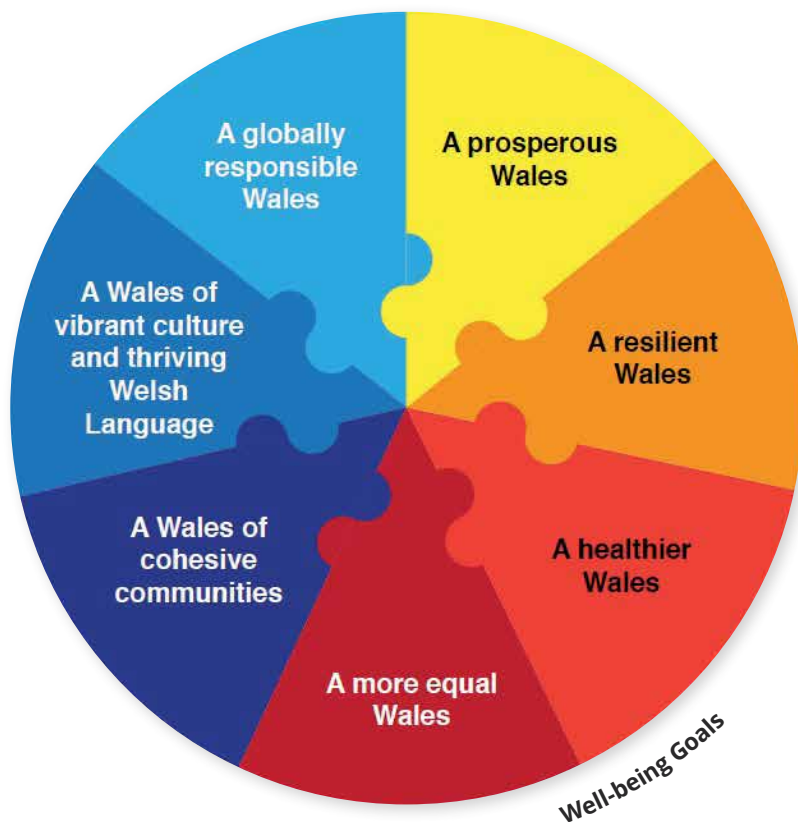
Welsh Government is working towards delivering an ambitious 70% renewable energy generation target by 2030. Marine energy is amongst the technologies that are being targeted to make a real difference to Wales. As a result partners are working closely across industry, government and academia to make this a reality.

Wales was one of the first countries in the world to develop and enact its own sustainable development legislation. The Well-being of Future Generations (Wales) Act 2015 sets out seven well-being goals to improve the social, economic, environmental and cultural well-being within Wales and underpins Welsh values and future focus.

From a sector perspective, Welsh Government supports all marine technology types including tidal stream, tidal range and wave. It is understood that the marine sector is in an early developmental phase and as such long term strategic support is key in developing the sector for the future. To underpin this, Welsh Government continues to support a wide range of marine energy technology developers via the £100m Welsh European Funding Office Marine Energy Fund.

Alongside marine energy generation, Welsh Government is passionate about developing a sustainable future for Wales' marine environment which will benefit both its citizens and businesses. To bring this ambition to fruition, Welsh Government, alongside a wide variety of partners, is in the process of building Wales' first Welsh National Marine Plan.

The Marine Plan will achieve a balance between maintaining and enhancing Welsh marine biodiversity and providing a sustainable economic opportunity to help support vibrant local communities in Wales.



Resource

The Welsh coastline has a significant wind, wave and tidal stream climate as well as huge opportunities for tidal range.

In 2011, the £1 million Marine Renewable Energy Strategic Framework (MRESF) concluded that Wales has the potential to deliver 6.4GW installed capacity from marine renewables.

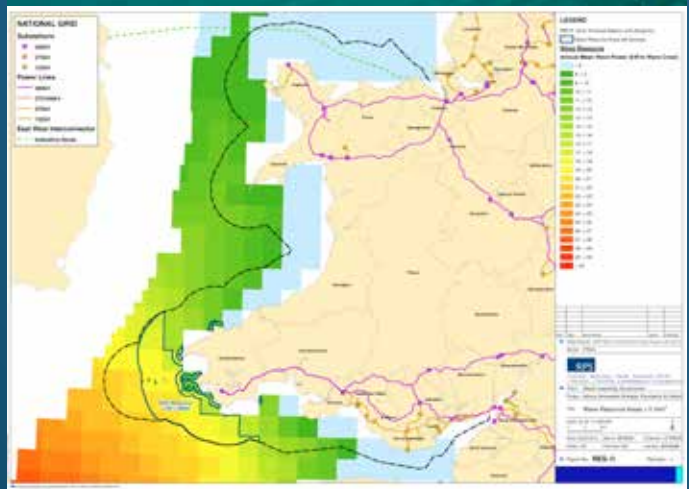
The project provided a development tool, focused on Wales, illustrating areas of resource and potential constraint for wave and tidal technology.

Anglesey's potential tidal stream energy was highlighted as among the best in the EU with peak spring velocity over 3ms^{-1} , in suitable water depths with favourable seabed topography.

Pembrokeshire has the highest concentration of wave resource in Wales equating to an indicative capacity of up to 5.6 GW, providing a significant opportunity for development of the industry.

Tidal range resource is also abundant around Wales. Tidal Lagoon Power aim to deliver up to 9 GW installed capacity through four proposed tidal lagoon projects.

Further studies have identified abundant opportunities for floating wind in the deeper waters around Wales, where annual wind speeds are in excess of 10m/s at 100m ASL.



Demonstration Zones



► Morlais Demonstration Zone

The Morlais Demonstration Zone (MDZ) is a world leading, technology neutral, tidal stream site, being developed with ERDF funds.

It aims to encourage collaboration, accelerate technology development and enable the emerging tidal stream market. Menter Môn is developing the project through obtaining planning consents and securing grid access and infrastructure on behalf of prospective tenants of the MDZ.

- The Site Offers:**
- 37 km² seabed
 - 240MW capacity
 - 45 year lease until 2059
 - Strong tidal resource
 - Long revenue prospects
 - Future-proofed grid potential

"The Welsh Government is committed to unlocking this potential and putting Wales firmly on the marine energy industry's global map. The benefits for Wales could be significant - not only for industrial and economic regeneration, but also in terms of reducing carbon emissions and promoting sustainable energy. The announcement is an important step which helps to define Wales as a key location for marine energy deployment and leads the way for commercial renewable energy ventures."

The Rt Hon Carwyn Jones AM, First Minister for Wales on the announcement by The Crown Estate



Pembrokeshire Demonstration Zone

Managed by Wave Hub Ltd



LINDŷ PŴR/CFFAIDD
EUROPEAN UNION



Llywodraeth Cymru
Welsh Government

**Cronfa Datblygu
Rhanbarthol Ewrop
European Regional
Development Fund**

► Pembrokeshire Demonstration Zone

The Pembrokeshire Demonstration Zone is located off the South Pembrokeshire coast and is the largest seabed lease for wave energy in the world. Management of the zone is provided by Wave Hub Ltd, the operating company of Wave Hub in Cornwall. The zone aims to accelerate wave energy technology development with the potential for the deployment of three wave arrays of up to 30MW generating capacity for each project. There is also potential to demonstrate floating wind technology.

The Site Offers:

- 90 sq km site with 60m water depth
- 19 kW/m wave resource
- 10 m/s wind resource
- Potential generating capacity of 180 MW
- Deep water port facilities and support services

Enterprise Zones

Enterprise Zones are areas that have been identified to support new and expanding businesses by providing a first class business infrastructure and compelling incentives. They offer competitive operating costs for businesses, reduced business rates and enhanced capital allowances.

➤ Anglesey Enterprise Zone

Anglesey Enterprise Zone and the existing Energy Island Programme have been set up to bring high skilled jobs to the area through major energy investments. They will help to establish the island as a world renowned centre of excellence in low carbon energy generation.

Anglesey has an established reputation for low carbon energy generation including nuclear, wind and biomass. Given its natural resources (wind, solar and marine), skilled workforce (especially nuclear related skills), supply chain and research and development capability, the island already attracts major interest from the low carbon energy sector.

➤ Haven Waterway Enterprise Zone

The Haven Waterway Enterprise Zone offers renewable and traditional energy companies an experienced industry base and supply chain with a skilled workforce, an established distribution infrastructure, a variety of sites to suit a range of needs and a network of universities with expertise in a range of energy-related fields.

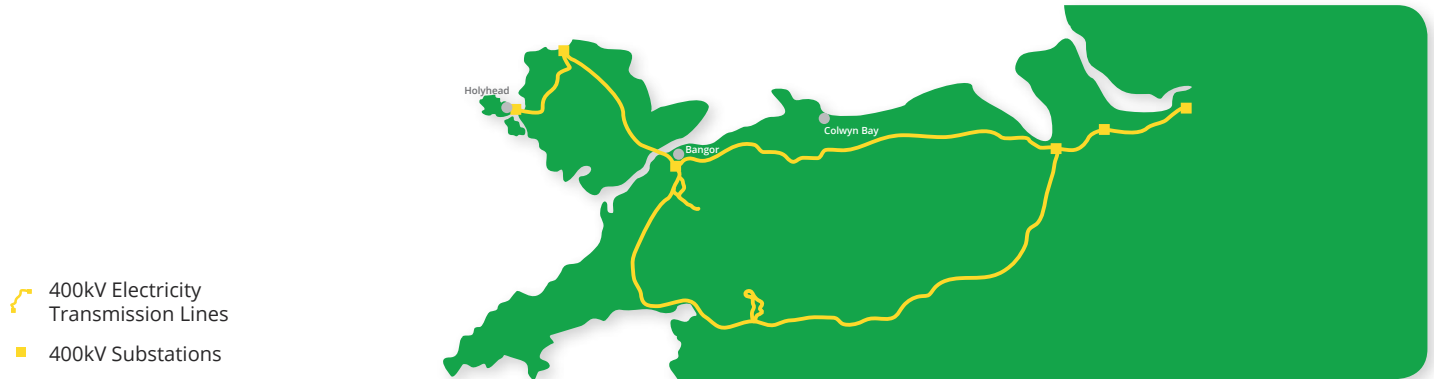
The availability of a deep sea port combined with marine conditions suited to both wave and tidal technologies plus the added benefit of having grid access makes Haven Waterway Enterprise Zone an especially attractive location for marine energy companies as they move to demonstrate small and larger arrays.



Grid Connection

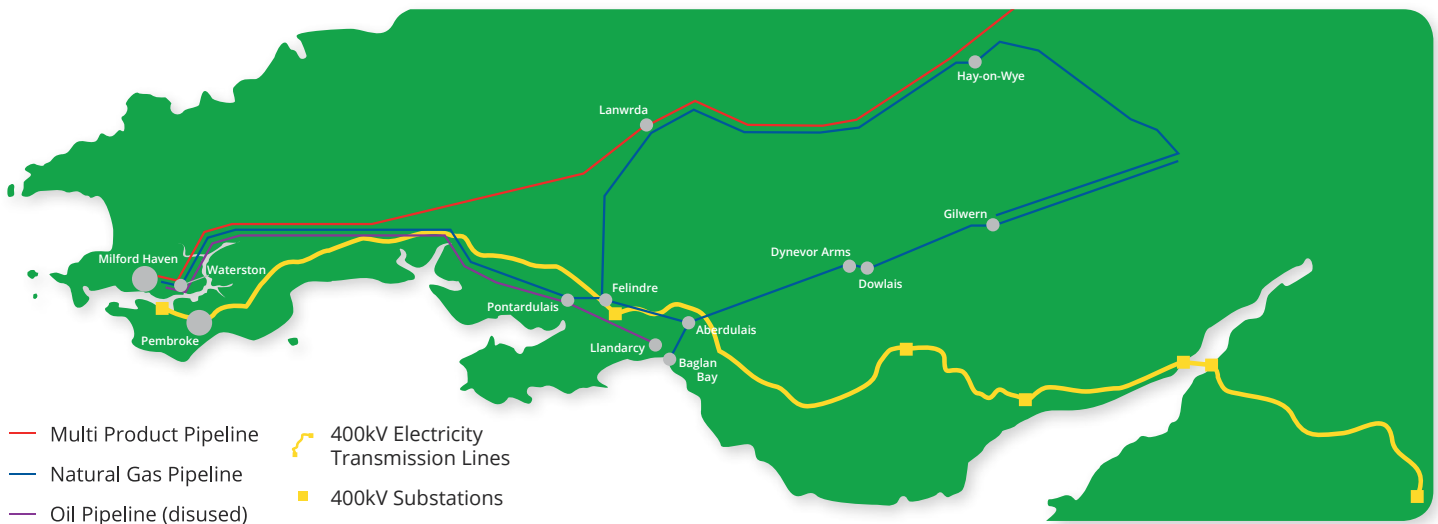
▶ Anglesey

North Wales already has an established energy generating network through the Wylfa Nuclear Power Station, Dinorwig and Maentwrog hydroelectric power stations and several offshore wind farms. A 400 kV double circuit overhead line runs between Wylfa and Pentir and this could be utilised by the emerging marine energy companies. The current national grid connections offer a suitable gateway to connect the energy production to the rest of Wales and the rest of the UK.



▶ Pembrokeshire

In comparison to other UK coastal sites, the region has a 400kV National Grid connection at Pembroke Power Station, located on the Milford Haven Waterway. The region is also close to large population centres along the M4 corridor with high electricity demand and has gas pipeline connections with the UK.



Ports

► Port of Barry

The Port of Barry, nine miles west of Cardiff, is a key facility for the region's chemical industry, handling liquid bulks for major companies including Dow Corning. Barry also has considerable expertise in the handling of steel, scrap metal, containers, dry bulks, coal, and aggregates.

► Port of Cardiff

Located on the north side of the Severn Estuary, connected to the rail network and within easy reach of the M4 motorway, the port has expertise in the handling of containers, steel, forest products, and bulk cargoes.

► Port of Holyhead

The Port of Holyhead is located on the Isle of Anglesey, North Wales. Holyhead is a 24 hour, deep water, lock-free port, centrally located on the Irish Sea coast within easy reach of several major conurbations both in the UK & Ireland.

► Port of Mostyn

The Port of Mostyn has a long history of handling cargoes including steel, timber and woodpulp as well as bulk cargoes of coal and woodchip for the region's heavy industries. More recently Mostyn has become one of the main centres in Europe for the assembly and installation of wind turbines; a large portion of its business is now dedicated to the offshore renewable energy sector.



➤ Port of Milford Haven

The Port of Milford Haven is a deep water port and a major service provider for the UK's energy industry. Their southerly site, Pembroke Port, has been instrumental in delivering the needs of the marine renewables sector with the capacity and potential to take developers from device development through to operations and maintenance.

➤ Port of Newport

Newport has excellent links to the nearby M4 and direct rail connections. The port occupies a prime location to service the UK's main industrial and commercial regions. The Port of Newport is a steel, metals, recycling and renewable energy hub.

➤ Port Talbot

Port Talbot is one of few ports in the UK capable of handling vessels of up to 170,000 dwt. The port comprises of the Tidal Harbour, which handles cape-size bulk vessels, and the docks which can accommodate smaller heavy-lift, project and general cargo vessels.

➤ Port of Swansea

Swansea is ideally located to serve both the assembly and O&M needs of wind and tidal projects being developed in the Bristol Channel. The port has established expertise and resources required to handle renewable energy project components from smaller heavy lift vessels through to general cargo vessels.



Supply Chain

From consultancy and advisory services through to build, operational and decommissioning services, Wales offers a complete supply chain for developers.

Wales has the potential to be a world-leader in the marine energy market – as a significant generator and, importantly, as an exporter of marine energy knowledge, technologies and services. Lagoon and nuclear opportunities for supply chain businesses across Wales are already encouraging companies to collaborate, to compete for contracts. An alliance of supply chain companies has recently been formed by engineering companies based in and around Pembroke Dock. Their combined capabilities will enhance their competitiveness when bidding for larger contracts.

Pembrokeshire is already home to an energy sector supply chain and workforce which supplies 25% of the UK's petrochemicals, 30% of the UK's gas requirements and includes steel fabricators marine and other engineering specialisms, boat builders and ship repairers. These skills are transferable and will be of immediate benefit to the renewables industry looking to base their project close to an abundant marine energy resource.

Anglesey has an established energy sector with the Wylfa Nuclear Power Station operational from 1971 to 2015. A second plant (Wylfa Newydd) has been proposed. North Wales is home to several hydroelectric power stations and offshore wind farms including Gwynt y Môr - the second largest operating offshore windfarm in the world.

Local construction companies have benefited from these energy projects, and have diversified their skills which will suit marine energy developers targeting the area.



» Marine Centre Wales

Marine Centre Wales is a new centre for innovation in applied marine science developed during the SEACAMS project. Situated on the shore of the Menai Strait, it is a new national resource for Wales to meet the need for integration of research, commerce and policy in the marine sector.

The Centre has been designed to facilitate interactions between researchers undertaking blue skies research, businesses requiring answers to specific and pressing research questions and policy makers working on rapidly evolving legislation. It provides businesses with access to expertise (in data gathering and numerical modelling) and facilities (e.g. high performance computing, laboratories and research vessels).



» Marine Energy Hub

The Marine Energy Hub, managed by Marine Energy Wales, is located in Pembrokeshire on the doorstep of one of the world's best marine energy resources. It is a dynamic worksite where marine energy companies can come together and share space, facilities and knowledge to unlock the sector's full potential. It is currently home to a number of world leading developers and supply chain companies.

The hub is located within the Marine Energy Wales offices in Pembroke Dock, overlooking the Milford Haven Waterway and is owned by the Port of Milford Haven.

"MarineSpace has established itself as one of the leading companies in Wales providing development and consenting support to the marine energy sector, with key clients including Mentor Mon, Wave Hub Limited and Tidal Energy Limited. Having an office in Pembrokeshire has been a key part of that success so we are delighted to have moved into the new Marine Energy Hub. We see it as a great opportunity for us to work even more closely with developers and other organisations involved in marine energy to help push the sector forward."

Jonny Lewis, Director, MarineSpace

Economic Impact

➤ Marine Energy in Wales: Investment/Jobs/Supply Chain

In 2017 Marine Energy Wales conducted a survey of the marine energy industry in Wales, aiming to assess the economic contribution of the sector. Since 2015, there has been an increase in investment into the Welsh marine energy sector of over £23 million, with current investment totalling £68.3 million. The sector directly supports 137 full time equivalent 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. This demonstrates that marine energy is fast becoming a dynamic and exciting part of the Welsh economy.

➤ The Economic Potential

Welsh Government commissioned an assessment of the potential economic contribution of marine energy to Wales. The study, based on three potential scenarios highlighted the huge impact the wave and tidal stream sector could bring.

Scenario 1:

A 30MW wave installation and a 30MW tidal stream installation has the potential to support over £70m of GVA across Wales, based on total investment of £150m. It could also provide 2,000 person-years of employment associated with development and installation, with a further £2m in GVA and 50 FTE jobs per annum throughout the period of generation.

Scenario 2:

300MW in marine energy capacity (two 30MW wave installations and eight 30MW tidal stream installations) would deliver just over £300 million of GVA for Wales. It could provide 8,500 person-years of employment during development and installation phases. The operational phase would support £7.8 million in GVA and 180 jobs per annum across Wales.

Scenario 3:

A substantial roll out of 1GW in wave and tidal energy could deliver £840 million of GVA impact to Wales (based on a total investment in Wales of the order of £1.5bn in 2013 prices) and deliver 24,000 person-years of employment. For this scenario, it is estimated that £20 million of GVA and 440 FTE jobs per annum would be supported across Wales through generation activities.

Research

World class research is being carried out throughout Wales providing developers with excellent resources in the research sector.

› SEACAMS2

SEACAMS2 is a £17 million collaborative project between Bangor and Swansea Universities to assist in the development of opportunities in marine energy. It is part-funded by European Regional Development Funds until July 2019. The aim of SEACAMS2 is to promote economic activity in Wales through collaborative research and development projects with marine renewable energy developers and allied businesses.

› Natural Resources Wales (NRW)

NRW have carried out research on marine mammals, seabirds, seascapes, benthic species as well as providing natural heritage evidence to support strategic planning for marine renewable energy. NRW have also produced draft advice on scoping an EIA for marine renewable energy developments. Along with Welsh Government and The Crown Estate, NRW are members of the steering group for the UK Offshore Renewables Joint Industry Programme for Ocean Energy (ORJIP OE), which aims to coordinate UK marine energy research.

› Marine Renewable Energy Strategic Framework (MRESF)

The MRESF project investigated the potential marine renewable energy resource of Welsh Territorial Waters and considered potential scenarios for development of that resource. All of the data and evidence collated through the MRESF are now available through the Welsh Government's Marine Planning Portal.

› Marine Energy Infrastructure Study (MEIS)

To follow on from MRESF, MEIS was commissioned to investigate the options for marine energy development, in particular the associated marine infrastructure required to support energy developers. The study recommended projects within specified deployment zones to be taken forward to more detailed feasibility studies.

Pembroke Dock Marine

Pembroke Dock Marine aims to create a world-leading centre for the development and testing of wave and tidal energy devices in Pembrokeshire. The project will expand the region's capacity to deliver a fully comprehensive offer, whether at design, fabrication and test phases or at full scale construction, deployment and operational phases.

The Pembroke Dock Marine project is made up of 4 pillars:

➤ Marine Energy Test Area (META)

META will create consented areas within the Milford Haven Waterway, close to operational base complete with licences and enabling infrastructure. META will allow device developers to quickly and cheaply perform tests on components, sub-assemblies and complete devices, and practice installation and O&M methodologies.

➤ Marine Energy Engineering Centre Of Excellence (MEECE)

MEECE will see the creation of a knowledge centre with on-site practical test and learning opportunities. MEECE will be a resource for developers helping them identify solutions that maximise efficiency and reduce costs whether still at design stage or during the multiple test phases.

➤ Pembroke Port Upgrades

Pembroke Port will redevelop its Gate 4 site to significantly increase fabrication and laydown spaces, expand the site's heavy lift capacity, create a new super-structure slipway and establish new commercial office spaces in renovated heritage facilities.

➤ Pembrokeshire Demonstration Zone

Wave Hub Ltd. will develop the 90km² leased site for connection to the grid of up to 180 megawatt capacity of marine energy. The zone aims to accelerate wave energy technology development with the ability to deploy three wave arrays of up to 30MW for each project. There is also potential to demonstrate floating wind technology.

Pembroke Dock Marine is a £76million project. As part of the Swansea Bay City Deal it seeks to drive the Welsh economy forward, increasing productivity, supporting jobs and increasing investment in the Swansea Bay City Region.



META

Marine Energy Wales has been awarded £1.9 million funding through from the European Regional Development Fund through the Welsh Government, the Coastal Communities Fund and the Swansea Bay City Deal to develop a Marine Energy Test Area (META) in the Milford Haven Waterway.

META will be a series of pre-consented, non-grid connected test areas in the Milford Haven Waterway suitable for a range of component, sub assembly and marine renewable energy device tests including deployment and recovery and O&M methods in areas that are sheltered and accessible, yet still representative of, real sea environments.

» META Aims

- To provide early stage device developers based in Wales, with a local, easy access facility for testing components, subassemblies, operational procedures and devices, which will de-risk future deployments.
- To support global marine energy device developers, supply chain companies and universities, in developing new products and services, and to provide a showcase for the commercialisation of these products and services.
- In combination with the current existing energy sector supply chain and the Offshore Renewable Energy Catapult's Marine Energy Engineering Centre of Excellence, META will provide added value to the current UK test centre network.

» Funders



Development Highlights

The significant marine energy resource in Wales, combined with excellent support services, grid networks, research and collaboration has generated wide development interests across the country.

► **Bombora Wavepower**

Australian developer Bombora Wavepower have recently expanded its European operations with new headquarters in Pembroke Dock, South Wales. The Welsh team will focus on a two and a half year, €20 million project to design, fabricate and test the first 1.5 MW mWave prototype. Bombora is working with Marine Energy Wales and the Port of Milford Haven to secure both construction and test sites.

► **Marine Power Systems**

MPS has completed two phases of the development of the technology, with a third phase underway. Phase 1 delivered a proof of principle prototype device that has undergone successful sea trials and energy generation tests at the world renowned National Renewable Energy Centre (NaREC). Phase 2 was a detailed desk engineering project to fully understand the cost of energy that the WaveSub was likely to deliver. Phase 3 has seen the completion of the design and construction of a 1:4 scale prototype. With initial sea trials complete in Pembrokeshire, the WaveSub is ready to demonstrate operational ability and energy generating capacity of the device in open sea conditions.



► **Minesto**

Minesto develops a unique 'tidal kite' technology called Deep Green which is the only known, verified technology that can operate cost-effectively in low-flow tidal streams and ocean currents. Off the coast of Anglesey, the company holds an 'Agreement for Lease' from the Crown Estate for a commercial demonstration array in the Holyhead Deep, where Minesto is set to launch the first 0.5MW commercial-scale demonstrator in 2018. The site in Holyhead Deep, which is the first low-flow tidal energy project in the world, will gradually be scaled up to a 10MW array which will generate enough clean electricity to supply approximately 8,000 households. The long-term ambitions for the Holyhead Deep site are to expand it to a commercial 80MW tidal energy array, which would see Minesto taking the Deep Green technology from demonstrator to full industrial roll-out in Welsh tidal streams.

➤ Nova Innovation

Nova Innovation is currently developing two tidal energy projects in Wales – at Enlli (Bardsey Sound) on the Llyn peninsula, where the company is working closely with community group YnNi Llŷn, and at the Morlais Demonstration Zone w Anglesey. In 2016 Nova was the first company in the world to deploy a fully operational grid-connected offshore tidal array at their site in Shetland.

➤ Tidal Lagoon Swansea Bay

At 320MW installed capacity, Swansea Bay Tidal Lagoon will be the largest marine energy development in the world and will be the pathfinder for a new industry based here in Wales. It is estimated that it will power 155,000 homes for 120 years – that’s about 90% of Swansea Bay. Although the Lagoon is the first of its kind, all component parts of the project have been proven elsewhere in the world, keeping technology challenges and risks low. Furthermore, because the tidal water levels are entirely predictable, it is possible to compute the expected energy output for years to come.



➤ Wave-tricity

Wave-tricity is current undertaking sea trials of its “Ocean Wave Rower” and the robust, low maintenance device that can produce clean electricity for all, is being put through its paces. The device will underpin a wide range of product capabilities that will not only provide energy to homes across the globe, but is aimed also at nations/islands principally where the cost of generation and energy security are of national importance. It will also be utilised to offer a desalination solution and to assist Disaster Relief providing a rapidly deployable and robust platform from which to generate clean water and energy to disaster hit regions across the world.

