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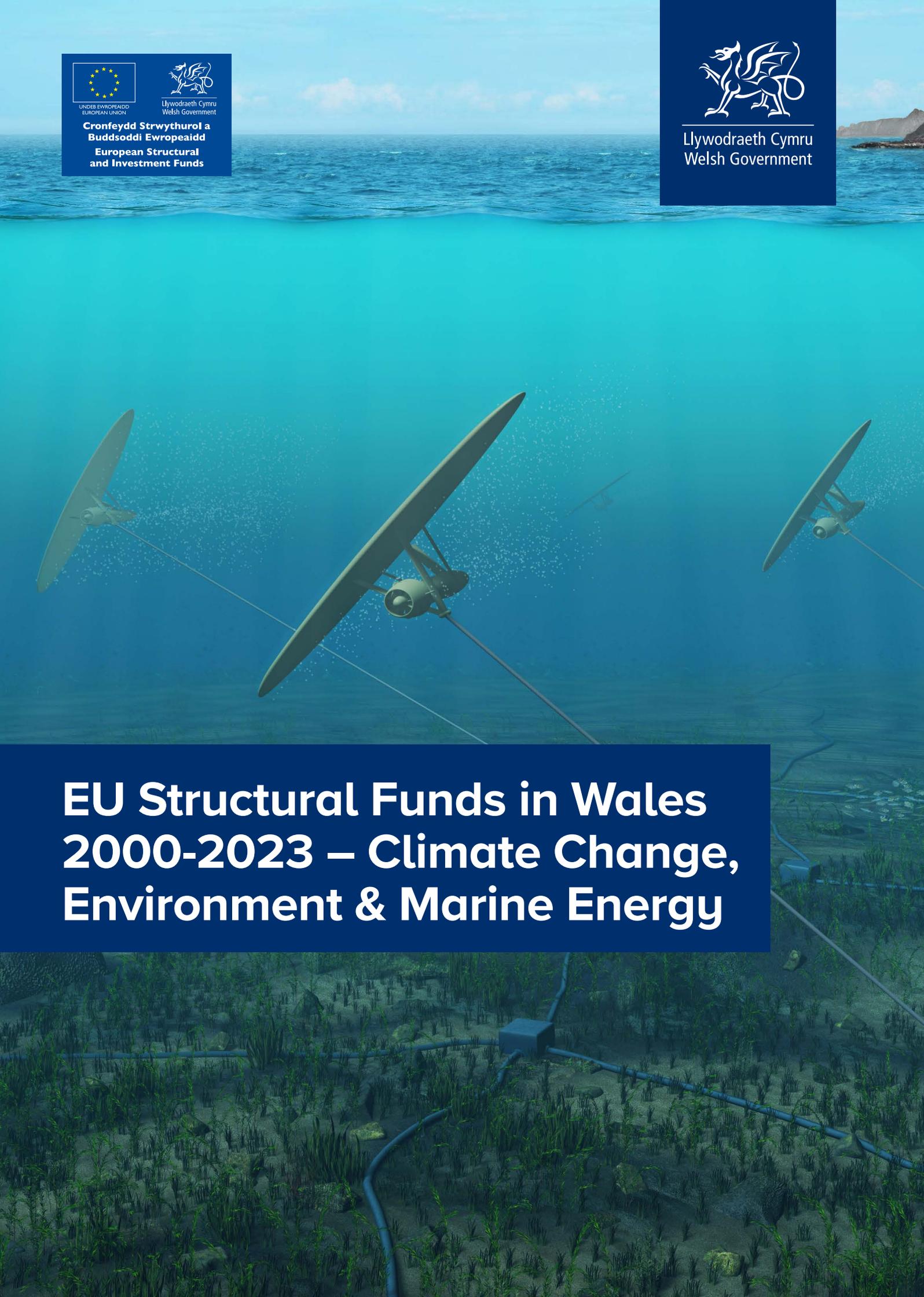


Llywodraeth Cymru
Welsh Government

**Cronfeydd Strwythurol a
Buddsoddi Ewropeaidd**
**European Structural
and Investment Funds**



Llywodraeth Cymru
Welsh Government



EU Structural Funds in Wales 2000-2023 – Climate Change, Environment & Marine Energy

Introduction

EU funds have been instrumental in the research and development of cleaner, green energy sources, ensuring Wales is at the forefront of new environmental energy technologies and reducing carbon emissions in its drive towards net-zero.

EU funds have also helped tackle fuel poverty by supporting small scale energy schemes, improving energy efficiency in housing for the most fuel poor, and helping to establish Wales as a centre for marine energy production.

3 Climate change, environment & marine energy

In North Wales, the **Morlais** tidal energy project off the coast of Anglesey benefited from £31m of EU funds. Led by social enterprise Menter Môn, the project is developing tidal power generation technologies with the potential to provide enough electricity to power around 180,000 typical households. As well as developing the tidal stream sector in north Wales, the project is bringing a number of economic benefits to the region with the proactive use of a local supply chain and support and promotion of apprenticeships for local people. An additional £1.2million investment from The Crown Estate is also supporting the delivery of the MCRP, to safeguard the marine environment and wildlife.

Menter Môn were also awarded £4.7m EU funds for their data gathering Marine Characterisation Research Project (MCRP), which will allow for the deployment of tidal stream energy devices in Welsh water.



4 Climate change, environment & marine energy

Helping establish the region as a global centre of excellence for marine energy, **Deep Green** is the first low-velocity tidal energy project in the world, involving underwater kites generating energy from tidal streams off the coast of Anglesey. Based in Holyhead and backed by £22m of EU funds, this ground-breaking tidal energy technology has been developed by Swedish company, Minesto, which set up its headquarters in Wales due to its excellent tidal resources and growing marine energy sector. Minesto also plans to develop an assembly plant in Anglesey to produce more devices for export around the world, paving the way for the creation of more jobs and prosperity in North Wales. The project is part of a longer-term plan to expand the Holyhead Deep site into an 80 megawatt commercial tidal energy array with the potential to generate enough energy to power some 60,000 homes.



Minesto's Deep Green project

5 Climate change, environment & marine energy

In South West Wales, Swansea Bay City Deal's **Pembroke Dock Marine Project** has seen large scale works to develop it for renewable energy businesses. This has included the creation of a new super-structure access slipway and berthing facilities mainly for use by marine energy technology developers and marine operations contractors and the regeneration of listed buildings of high historic importance at the site for private, public, academic and business use.



Pembroke Dock Marine

The **Marine Energy testing Area (META)** at Pembroke Dock has also enabled testing of various marine energy devices, allowing for trialling of deployment, design adaptation, components in a low-risk environment, close to port infrastructure. As such, EU funds have helped to put Wales firmly on the global map for world-leading neuroimaging research.”

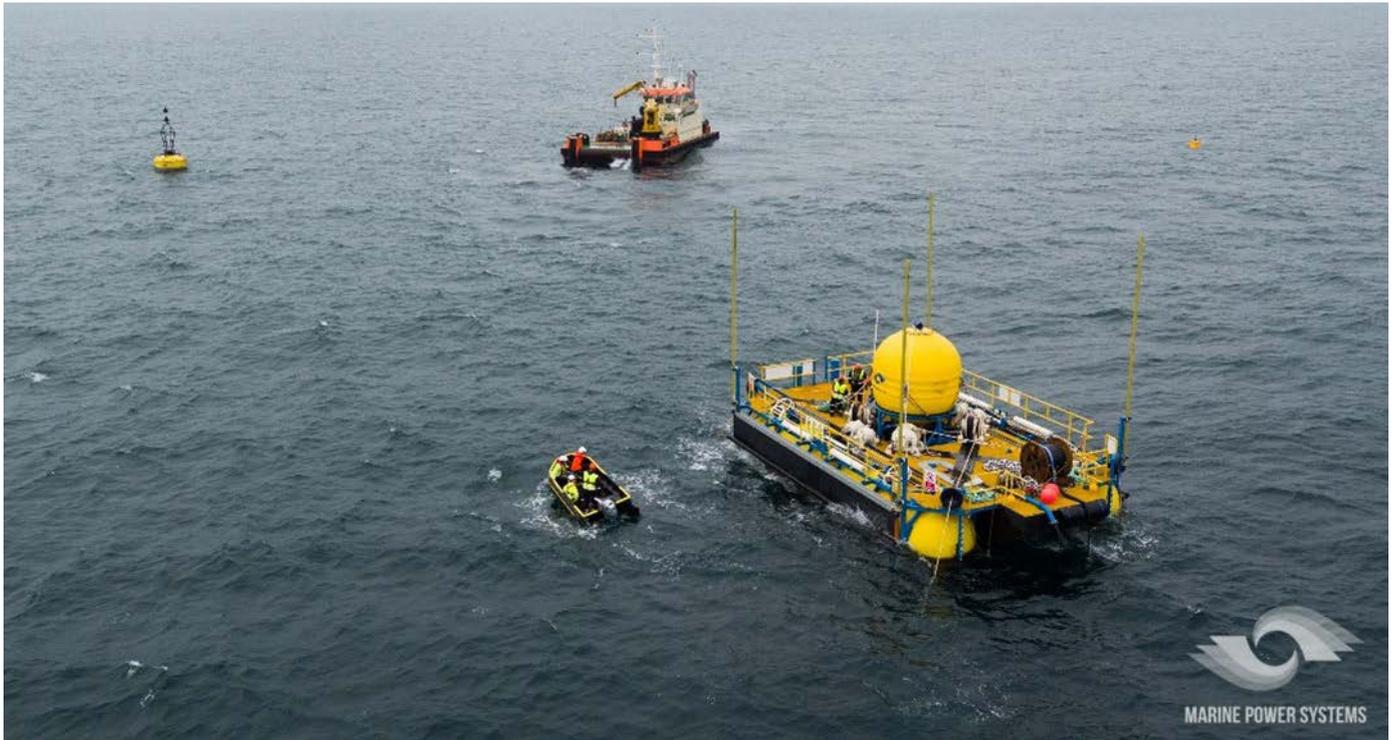


Milford Haven Waterway, Pembrokehire

6 Climate change, environment & marine energy

Utilising the opportunities within the marine energy sector in Wales and drawing on the academic strength and support of Welsh universities, the **Marine Energy Engineering Centre of Excellence (MEECE)** based around Pembroke Dock is one part of the UK's Offshore Renewable Energy (ORE) Catapult. It is advancing the research and development of marine energy technology in the supply chain in Wales.

Swansea-based Marine Power Systems secured £16m EU funds to develop and test an underwater device capable of generating clean, affordable and reliable energy in Wales and around the world. The **WaveSub** device operates under the surface of the sea by capturing the high-power density of ocean waves. A 1:4 scale WaveSub prototype was designed, manufactured, and tested at the Haven Waterway Enterprise Zone.



Marine Power Systems' WaveSub project



Marine Power Systems' WaveSub project

7 Climate change, environment & marine energy

The aim of **SPECIFIC2 (The Sustainable Product Engineering Centre for Innovative Functional Industrial Coatings)** has been to create Active Buildings through the integrated solar technologies for generation, storage, and release of energy, both as electricity and heat. The project has brought together world leading research in solar PV, electrical and thermal storage to generate clean, renewable energy from coatings that can be used in building materials. SPECIFIC has three energy positive buildings; an Active Classroom, which is also being used as a model for rural power generation in India, an Active Office and a gigantic, retrofitted steel shed (the SHED [Solar Heat Energy Demonstrator]) that has been able to run without gas for seven years using a solar thermal collection 'wall'. The project has also supported the development and build of 12 primarily solar powered social houses, which it is hoped can eventually eliminate fuel poverty in Wales. SPECIFIC is continuing its work into low carbon and renewable energy post EU funding with NØW SWITCH, three interlinked elements covering capital, revenue and training needs.

EU funding for cleaner energy has not been limited to large scale infrastructure projects either. Many homes in Wales were supported by the **Arbed** scheme, part of the Welsh Government's Warm Homes programme, providing home energy efficiency improvements to low-income households across Wales that faced fuel poverty. With an investment of £33m of EU funds, the scheme carried out hundreds of housing energy efficiency retrofits, working with social housing providers and other partners, including local authorities, to make deprived communities of Wales more energy efficient. This was achieved by retro-fitting homes with measures including solid wall insulation, solar panels and heat pumps. These improvements will help ensure long-term solutions are being put in place to future proof Welsh homes.



Welsh Government's Arbed project

8 Climate change, environment & marine energy

Led by Pobl Group housing association, the **Penderi** project retrofitted houses as part of the overall plan to regenerate Blaenymaes, Swansea with the installation of state-of-the-art renewable energy generation, energy storage and smart energy management technology in over 600 of their homes. Pobl Group has now succeeded in securing a £100m loan from Lloyds Bank to continue the programme.



Pobl Group's Penderi project

9 Climate change, environment & marine energy

Generating renewable energy and implementing cost-effective and energy/resource efficient technologies, the **AMMV** operation is transforming communities in Aberfan, Mount Pleasant, Merthyr Valley and beyond into exemplary green, sustainable communities. It is enabling the cost-effective installation of renewable technologies to help with the decarbonisation of Wales. This was an opportunity for social enterprises to convert a significant proportion of the energy consumed by their buildings into low carbon electricity thus reducing the total cost of electricity used to heat & light the buildings. In an era of high energy prices, it has been instrumental in maintaining community facilities such as saving the Llandysul community pool from closure.

Positioning Wales at the forefront of a technological revolution to address the current climate crisis, the **Smart Efficient Energy Centre (SEEC)** project worked across four low carbon energy sectors (Efficient Nuclear Energy Conversion, Ocean Renewable/Offshore Wind Energy, Energy Efficient Structures and Cyberinfrastructure), further developing the world class expertise in low carbon energy research and a flagship strategic development for the newly formed College of Environmental Sciences and Engineering at Bangor University.

In June 2021, the renewable energy project **Generation Storage Consumption Supply project (GSCS)**, led by Infinite Renewables Ltd, opened Wales' first multi technology energy centre at the Rassau industrial estate. Using a combination of wind turbines, solar photovoltaics and battery storage, it is one of up to seven local energy centre schemes in south and west Wales to provide reliable, cost efficient and greener power directly to communities. The project is also part of a scheme to supply power directly to the Royal Mint in Llantrisant with the 'Giant Daffodil', an 850kW wind turbine painted yellow and green, designed, supplied and built by Infinite already supplying almost 10% of the Royal Mint's energy needs.



Generation Storage Consumption Supply (GSCS) project's energy centre