

Renewable Energy in Wales Consultation

Response from Milford Haven Energy Kingdom Project (MH: EK)

MH:EK is a two-year £4.5 million project, completing in 2022, exploring what a decarbonised smart local energy system could look like for Milford Haven, Pembroke and Pembroke Dock. The project will explore the potential of hydrogen as part of a multi-vector approach to decarbonisation. Central to the project, and to achieving net-zero, is a commitment to engage with the community and local industry, providing insight and opportunities for growth.

Our ambition is to gather detailed insight into the whole energy system around Milford Haven, to identify and design a future smart local energy system based on a truly multi-vector approach (heat, electricity, transport) and comprehensive energy systems architecture.

The project is multi-faceted and will see the team investigate local renewable energy, including solar, onshore wind, future offshore wind and biomass for decarbonised gas transition; diversified seed markets for hydrogen across buildings, transport and industry; consumer trials of fuel cell vehicles and hydrogen-ready hybrid heating systems.

We believe the project holds promise in showcasing the far-reaching benefits of low carbon energy. If successful, it has the potential to lead the way and become the first of many Smart Local Energy Systems supporting the U.K. and our local communities in reaching the Government's target of net zero greenhouse gas emissions by 2050.

MH:EK is one of the chosen "Detailed Design" projects within the Prospering from the Energy Revolution (Pfer) programme of works funded by Innovate UK as part of their Industrial Strategy Challenge Fund (ISCF).

How can the UK Government best support the deployment of renewable generators in Wales?

- Prioritise the publication of a National Hydrogen Strategy to support the development of a hydrogen economy in a joined up way. Production of green hydrogen will provide flexibility and balancing that will be essential in the future energy system dominated by variable renewable energy sources. Lack of a coherent strategy risks that the deployment of renewable generators can be curtailed.
- A whole energy systems approach to buildings, industry, power and transport must inform the strategy to give innovators and investors a clear view of the pathway to net zero.
- Acknowledge the complementary roles that hydrogen and renewable electricity will have in decarbonising homes, businesses, power and transport together.
- Mandate hydrogen-ready boilers / hybrid heating by 2025.
- Direct innovation funding to target demand side projects for hydrogen, and not just production, to support the development of a complete hydrogen supply chain.
- Subsidy support for the fledgling wave and tidal stream industry. Wave and tidal stream can give predictable energy flows. CfD will favour the developed tech such as offshore and floating offshore wind.
- Look at the social and other market value of opportunities such as Swansea Bay / Cardiff /Newport / River Severn tidal lagoons. As well as renewable energy these afford opportunities for aquaculture, leisure, retail, healthy lifestyle activities.

- Recognise that Smart Local Energy Systems (e.g. Milford Haven Waterfront as a zero carbon smart grid) can also give non-monetised benefits - resilience, affordability, network optimisation, community engagement, just & equitable transition etc.
- Promote efforts to streamline consenting of projects and infrastructure, across multiple agencies, in the project planning and development phases.
- Support initiatives (such as Energy Local) to develop local energy markets. Support regulatory change and changes to the BSC to provide a fair price for local energy reflecting their contribution to energy security and encouraging local balancing to run the network efficiently and enable more renewables to be connected. Examples would be support for small scale local markets in response to the survey for Elexon's recent Issue 88, support a supportive regime for unlicensed supply for small scale renewables in the BEIS consultation on unlicensed supply. Introduce regulatory requirements for suppliers to treat renewables fairly and support innovation.
- Creating a single or multiple site facility that would validate emerging technology and build on existing capabilities. It should include a facility to develop bulk production of low-carbon, low-cost, resilient hydrogen including piping, large-scale offshore renewable energy storage demonstration facility and a 'living laboratory' for energy storage integration and local generation systems.
- To accelerate complex demonstration projects, make regulatory sandpits easy to access and multiagency; lessons should be learned from the integrated approach to innovation of the Oil and Gas Authority (OGA), the O&G regulator.

How should the UK and Welsh Governments work together to support the development of renewable energy projects in Wales?

- Both Governments should work together to ensure that devolved and regional energy system planning adds up to a least cost net zero whole energy system outcome for GB. This planning must accommodate a multi-vector approach to (at least hourly) balancing the supply and demand for energy across all sectors and not separately silo the approach to heat, power, transport and industry. Local area energy planning delivered outside of a national context risks regretful investment and committing to higher bills for the long term.

What mechanisms can ensure that subsidies for renewable generators are good value for money?

- IPPA as proposed by the MEC will allow fledgling marine developers to sell power directly to business. Only the uplift in costs associated with innovation will be borne as subsidy. A grant-based approach to this mechanism (as opposed to tax rebate) could make scheme administration simpler and more efficient.

What opportunities are there for renewable generators in Wales of greater interconnection with other electricity markets?

- Green link interconnector and Celtic Sea Alliance projects will bring Ireland and Wales much closer in terms of energy distribution and collaboration.
- The UK could save £17-40 bn across the electricity system from now to 2050 by deploying flexibility technologies as demonstrated in *An analysis of electricity system flexibility for Great Britain* by Imperial College London. Flexibility in the energy system (from technologies like interconnectors) can improve the utilisation of renewable generators, enable system balancing at a lower cost by displacing more expensive flexibility options such as peaking

plants and improve the utilisation of existing conventional generation, and defer investments in transmission and distribution network reinforcement.

How can the UK Government facilitate Welsh contributions to COP26?

- Provide the opportunity for devolved administrations to showcase flagship projects and contributions in the Bleu Zone, outside of the competition for exhibition and event space in the Green Zone.

What implications is COP26 expected to have for Wales?

MH:EK are not providing a response to this section.

Has the COP26 Year of Climate Action had any significant implications for Wales?

MH:EK are not providing a response to this section.

What opportunities are there for renewable energy to aid Wales post-COVID-19 economic recovery?

- Energy that leads to a net zero outcome should be prioritised, not necessarily renewable energy. Developing hydrogen from blue and green sources, along with CCUS, at-scale to facilitate fuel switching and decarbonisation for Welsh industry will benefit the accelerated decarbonisation of other sectors, including transport, home heating and power generation, as well as providing energy system flexibility and storage. This approach protects the businesses, jobs and economic status in Wales and provides a platform to build upon as a global pioneering place to attract investment and growth.

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