COMHAIRLE CONTAE AN CHLÁIR | CLARE COUNTY COUNCIL

9th April 2018

Mr. Vincent McCormack,
DesignPro Ltd,
Rathkeale Industrial Estate,
Rathkeale,
Co. Limerick,
V94 E5C0.

Dear Vincent,

Clare County Council is fully supportive of establishing a tidal energy test site on the Fergus Estuary for the purpose of contributing to Ireland's national renewable energy and green house gas reduction targets. County Clare has a proud heritage of serving Ireland's energy needs through engineering innovation, harnessing our renewable resources in a sustainable manner.

The Clare County Development Plan 2017-2023 contains specific economic development objectives for the Marine Related Industry site at Cahiracon which seeks to harness the economic potential of the Estuary at this location and to capitalise on its natural deepwater characteristics for enhanced maritime activity. The proposed location of this tidal energy device for testing lies adjacent to the zoned Marine Related Industry site with a substantial public pier at Cahiracon (3 km away) that will allow a shore side office/ monitoring station as well as storage of equipment. Foynes harbour (7 km away), a tier one port, has a multicat vessel and substantial cranage facilities in quite close proximity and this can be used for the launching of turbine. The favourable location utilising the existing infrastructure in place will negate the requirement for any construction and/or associated impacts to the environment.

Policy support for Renewable Energy Development within the Shannon Estuary

Clare County Development Plan

Development Plan Objective: Renewable Energy	
CDP8.40	**It is an objective of the development plan:** a) To encourage and to favourably consider proposals for renewable energy developments and ancillary facilities in order to meet national, regional and County renewable energy targets, and to facilitate a reduction in CO_2 emissions and the promotion of a low carbon economy; b) To assess future renewable energy-related development proposals having regard to the Clare Renewable Energy Strategy 2017-2023; c) To assess proposals for wind energy development and associated infrastructure having regard to the Clare Wind Energy Strategy and the associated SEA and AA, or any subsequent updated adopted strategy; d) To prepare an updated Wind Energy Strategy for County Clare during the lifetime of this development plan;

	e) To strike an appropriate balance between facilitating renewable and wind energy-related development and protecting the residential amenities of neighbouring properties; f) To support and facilitate the development of new alternatives and technological advances in relation to renewable energy production and storage, that may emerge over the lifetime of this Plan; g) To ensure that all proposals for renewable energy developments and ancillary facilities in the County are in full compliance with the requirements of the SEA and Habitats Directives and Objective CDP2.1; h) To promote and market the County as a leader of renewable energy provision; i) To support the implementation of 'Ireland's Transition to a Low Carbon Energy Economy 2015-2030'.

Development Plan Objective: Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary	
CDP11.2	**It is an objective of the development plan:** a) To support and implement the inter-jurisdictional Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary in conjunction with the other relevant local authorities and agencies. All proposed developments shall be in accordance with the Birds and Habitats Directive, Water Framework Directive and all other relevant EU Directives. All proposed developments shall incorporate the Mitigation Measures as contained in the SIFP – Volume 7 of this Plan - for ensuring the integrity of the Natura 2000 Network; b) To proactively market the Strategic Development Locations in County Clare at Inishmurry/Cahiracon and Moneypoint as potential locations for future economic development.

Development Plan Objective: Marine-Related Industry/Large-Scale Industry on the Estuary	
CDP11.3	**It is an objective of the development plan:** To capitalise on the natural deep water potential and existing port and maritime infrastructure, by facilitating and proactively encouraging the environmentally-sustainable development of maritime industries at appropriate locations within the Shannon Estuary, while seeking to improve and promote the road and rail connectivity of the deepwater ports in the County. All proposed developments shall be in accordance with the Birds and Habitats Directive, Water Framework Directive and all other relevant EU Directives; All development associated with marine-related industry shall incorporate the sector and site specific Mitigation Measures as contained in the SIFP – Volume 7 of this plan - for ensuring the integrity of the Natura 2000 Network.

Development Plan Objective: Strategic Development Locations	
CDP11.4	**It is an objective of the development plan:** a) To safeguard the role and function of the Strategic Development Locations, which are identified on Map 11A and Map 11B; b) To support economic development by encouraging the sustainable growth, development and appropriate diversification of Strategic Development Locations; All proposed developments shall be in accordance with the Birds and Habitats Directive, Water Framework Directive and all other relevant EU Directives.

Shannon Integrated Framework Plan

The Shannon Integrated Framework Plan (SIFP) contains a specific objective in relation to Research and Development (SIFP RD 1.1) which seeks to explore the potential sustainable development and promotion of the Shannon Estuary as a centre of excellence in research and development of renewable energy technologies. In addition, SIFP objective RE 1.8 looks to support and facilitate the sustainable development of renewable energy developments within and along the Shannon Estuary, in supporting Ireland's legally binding obligations under EU Directives. Lastly, objective RE 1.9 looks to explore the potential of tidal energy as a viable renewable energy resource within the estuary.

This clearly demonstrates the correlation of the proposal at this location with the SIFP and the Clare County Development Plan.

In addition, one of the broad objectives of the SIFP is "*to establish an evidence-based approach to identifying areas for future development to ensure that proposals will work in harmony with the designated European sites*". Objective SIFP ENV 1.1 seeks to "*explore the potential for cooperation between public and private sector agencies in identifying and addressing critical gaps in baseline environmental information relating to the Shannon Estuary*".

The proposed location of this tidal test site satisfies the requirements of the overarching plan for the estuary (The SIFP) in that it is located in an area which avoids sensitive habitats, will not negatively impact on any of the qualifying interest features of the SAC and will accommodate a device which has been designed specifically to have a negligible impact on the environment.

Consistency with the SIFP and the Clare County Development Plan

The Shannon Integrated Framework Plan has also identified four renewable energy development zones. The renewable energy zones identified are consistent with the SEAI Report '*Tidal & Current Energy Resource in Ireland*' which evaluated these sites as having tidal flows on a commercially viable scale.

Previously, Limerick Docks have been used as a tidal device test site. The shipping area of the dock is operated by Shannon Foynes Port Company, while the test site itself is operated by GKinetic and is located on the banks of the River Shannon in Limerick City. The testing is carried out in a secure, enclosed wet dock facility with controlled water levels maintained at a minimum of 5 meters. GKinetic are partly funded by the Sustainable Energy Authority of Ireland to carry out testing in the Limerick Docks facility.

The proposed location of the research & demonstration tidal energy test site is deliberately not within one of the four areas of opportunity identified for renewable energy under the SIFP, as the proposal is specifically for research & demonstration of tidal energy devices only.

The Islands at the mouth of the River Fergus Estuary have several advantages as a research & demonstration site for tidal energy devices. In particular, they provide sheltered stretches of water with fairly high flow speeds. The testing of this device relates primarily to the demonstration of its functionality as opposed to a commercial scale device. The device is aimed at developing countries where there is a lack of grid infrastructure which requires distributed energy solutions this is particularly relevant for supplying remote island communities around the world with energy.

Environmental Impact

The Gkinetic tidal device would be similar to a mooring, would have 2 small anchors and does not require a connection to the foreshore. The unique concept is made up of two vertical axis turbines placed on either side of a buoyant deployment vessel, the "bluff body". The shape of the vessel accelerates the flow of water into the turbines. The combination of this accelerated flow and the "blade Pitch Control System" allows for significant energy to be generated in low flows. The device is designed in such a way so as to exploit flow acceleration, it naturally diverts objects away from the device there by removing the collision risk with marine mammals or fish, it is easy to deploy and recover using floating deployment system and can self start and generate power as low as 0.5m/s.

Other key elements of design relating to environmental impact include:

1. Low blade tip speed, the rotational speed and aspect of the turbine blades is such that the blades do not travel faster than the water moving around them. This reduces risk of damage to both the equipment and marine life.
2. All immersed bearing are manufactured from specialised plastic bush's. No lubricants are used in immersed components. This eliminated the risk of pollution from such lubricants. The only lubricant used on the device is in the gearbox. This gearbox is a sealed unit with an IP 68 rating. The gearbox is itself housed in a protective housing and sealed housing that separates it from the marine environment.
3. An approved anti-fouling paint system specified by "Jotun Paints" will be applied to the required standards.

The testing of this tidal device at this location provides us with the opportunity to obtain key baseline information across all stages of the annual cycle within the estuary through the application of Static Acoustic Monitoring for Marine Mammals in the knowledge that the device does not have the potential for significant negative effects on the conservation objectives or on site integrity of the European Site.

Renewable Energy Mitigation Measures (arising from the SIFP)

The SIFP contains numerous mitigation measures relating to renewable energy which have been applied to this device and the proposed site. Given the specification of the device and its unique design there will be no associated impacts with toxic effects, indirect disturbance or loss of habitats, biological disturbance, direct physical damage to mobile species or EMF issues. The potential for indirect disturbance to species together with all other potential impacts have served to inform the screening for appropriate assessment in line with the requirements under the SIFP. Habitat surveys to characterise the seabed and identify sensitive habitats and species within the area were also undertaken as part of the initial assessments.

Supporting National Targets and Initiatives

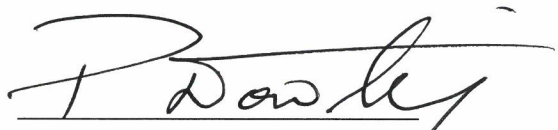
The Government Integrated Marine Plan for Ireland *'Harnessing Our Ocean Wealth'* (HOOW) estimates that the national asset that is the ocean could support a diverse marine economy with vast potential to tap into a ***€1.2 billion global marine market*** across a wide range of sectors.

The recently established Marine Development Team is a Government initiated taskforce focused on maximising marine growth opportunities together with development agencies with a marine interest. The Marine development Team comprised of Enterprise Ireland, the IMDO and the IDA Ireland are working together to achieve targets for the development of the sector set out in HOOW.

The Shannon Estuary is strategically placed to exploit this potential with the Strategic Integrated Framework Plan (SIFP) providing it with a distinct advantage to other locations in Ireland and across Europe.

Goal I of the Integrated Marine Plan is to harness market opportunities to deliver a thriving maritime economy built around the concept of sustainable development of the marine resource. The Shannon Estuary is one of Ireland's premier maritime resources that already host several long-established and successful marine enterprises including ports and nationally significant industries and economic centres.

Mise le meas



Pat Dowling
Chief Executive Clare County Council
Chair of the SIFP Steering Group