

GKinetic Energy Ltd



Ireland

“OREDP Mid-term Review”

Electricity Policy Division

Department of Communications, Climate Action and Environment,

29-31 Adelaide Road,

Dublin,

DO2 X28

REF: GKinetic Energy Ltd Submission to the OREDP

GKinetic Energy Ltd is an Irish developer of a submerged tidal energy device composed of twin, vertical-axis turbines mounted either side of a teardrop shaped bluff body that will be moored to the seabed. The full scale device is intended to be of the order of 500kW and the system could potentially address a number of weaknesses traditionally associated with vertical-axis turbines.

The concept has undergone staged development, in-line with industry best practice. Previous testing has been undertaken at NIJI Galway, the IFREMER flow tank facility in France, Limerick Docks and numerical modelling for design optimisation. Funding has previously been secured through the EU FP7 MaRINET programme which included scientific evaluation and is an additional sign of technical quality. GKinetic has been working with DesignPro since 2014 on the manufacture of the turbine and control system; DesignPro have recently secured €1.9 M funding through the competitive H2020 SME instrument and are using the GKinetic IP to develop and qualify market ready DPR (DesignPro Renewables) turbine systems of 25 kW and 60 kW machines which are intended for an export market. DesignPro expect to create 35 Jobs over the next 2 years during the commercialisation process.

GKinetic continue to invest in R & D with the objective of building 500 kW machines. Our company has received substantial financial support from SEAI through the PDF. SEAI have also provided guidance in best practices that have helped in moving our technology through the TRL levels.

We are an industry partner in MaREI and have found this to extremely beneficial toward the development of our technology. MaREI did not exist when we started our research and it was

very difficult to access information about how to move an idea forward. MaREI now provides excellent resources that can kickstart ideas and quickly solve technical questions. One criticism we have, because we are a tidal energy developer, is that the facilities at LIR have focused largely on wave energy technology. In our view, in recent times MaREI is also branching into other fields of research and becoming more academic focused. In our opinion, MaREI should be more focused on industry needs.

Renewable energy comes in different forms. Wind Solar and Wave can all displace fossil fuels to an extent but they cannot replace them. Backup generation from fossil fuels will always be needed and this costs a lot of money. Tarbert power station for example is on standby at a cost of €50 Million per annum.

Tidal energy is unique in that it is the only renewable energy that can be accurately predicted and therefore it can provide a base load electricity supply. Tidal energy should be recognized as the holy grail of renewable energy therefore deserves special treatment.

The development of a technology for the extraction of power from tidal flows is proving to be a very big challenge. There have been failures and successes. The most notable successes have been Scot Renewables 2 MW machine and the MEGEN project at the Orkneys. This nascent industry will continue like this for a few years more but there is no doubt that technologies will be developed that will work. We believe that a number of different technologies will be developed, and each will be useful in different resources.

There is no reason why these technologies cannot be developed in Ireland. The state has already invested in state of the art facilities that support R & D at low TRL levels. What is now required is the support needed to move through the higher TRL levels. Demonstration of technologies should be promoted and supported by all regulatory stakeholders.

We recently visited the UK to evaluate the economic feasibility of tidal energy there. We found that offshore wind interests have managed to corner the REFIT scheme. The bidding system that has been set up in the UK takes no account of the unreliability of wind versus the reliability of tidal and both industries are expected to bid as if this did not exist. In addition, offshore wind is a fully developed technology with little or no risk for investors. The obvious outcome from this will be the advancement of offshore wind to the detriment of tidal energy.

It is essential that offshore wind, whether it is floating or hybrid or otherwise, is dealt with separately from tidal.

Best Regards

Managing Director

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