

2017_09: Understanding and minimising the potential environmental impacts of tidal range (lagoon) based renewable energy generation via advanced numerical modelling

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Department: Earth Science & Engineering

The Government's recent Hendry Review came out in support of tidal lagoons. This would represent a new UK-based technology and supply chain, with export potential, as well as a new, reliable and predictable clean energy source. However, several challenges remain. Most significant of these is the potential impact on the environment from the installation of a large impoundment in the coastal ocean - e.g. related to marine ecology, habitats and water quality. This project will seek to develop and use advanced numerical models to better predict a variety of potential environmental impacts, and to incorporate the minimisation of these in lagoon designs.

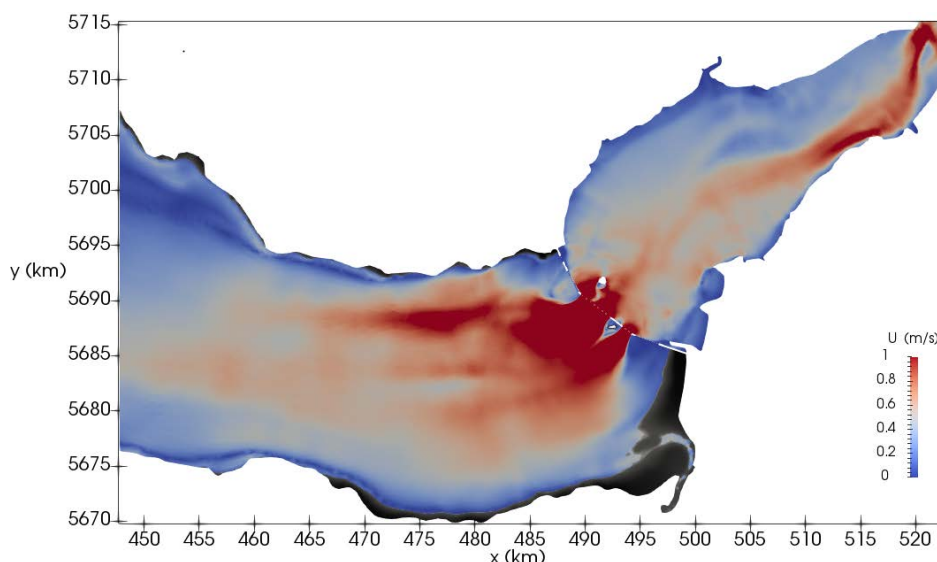


Figure showing velocity field in a recent simulation of a Severn Barrage [Angeloudis et al., 2017].

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This project is a CASE collaboration with CEFAS (the Centre for Environment, Fisheries and Aquaculture Science) and would suit someone with an environmental/engineering background interested in developing numerical modelling skills, or someone with a more mathematical/computational background interested in an application of advanced numerical modelling in environmental science and coastal engineering.

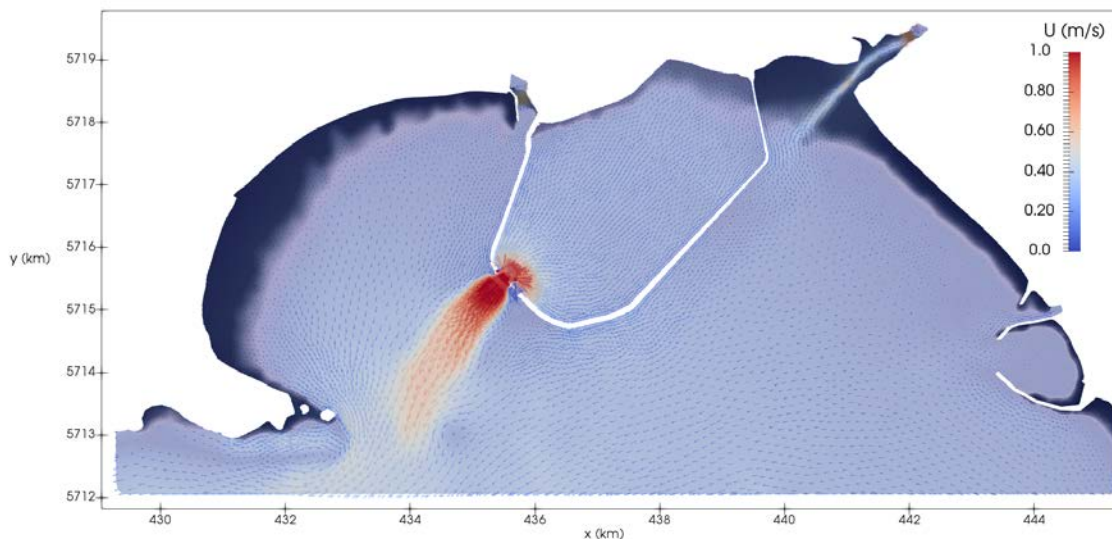


Figure showing velocity field in a recent simulation of a Swansea Bay Lagoon [Angeloudis et al., 2017].

For further details please email: m.d.piggott@imperial.ac.uk

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