

Flume Modernisation and Refurbishment – Grant awarded £7,864

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Summary

Tidal stream energy is a new concept for generating electricity from the daily movement of the tides around the UK coast. Although modern computer packages can reasonably simulate tidal conditions and how devices will react within the flow, they can only provide data based on relative performance. The only real way to validate the data produced to real operating conditions is by actual physical model testing.

Model testing in the field can be difficult, expensive and time consuming with variables such as weather affecting results considerably on a daily basis. For this reason it is much easier to recreate controlled conditions within a laboratory where repeatable experiments can be set up. Similar to a wind tunnel for air flow and study of aeroplanes, a water flume can be used to study tidal flows and how devices will interact to generate electricity.

It is reasonably straightforward to generate power from moving water, the difficult bit is doing it efficiently and at lowest cost. By studying the work at smaller scale significant step forwards in technology and understanding can take place before incurring the expense of creating devices at a larger size for deployment in the ocean. Research work at Lancaster University is concentrating on near shore devices aimed at shallower water, which should prove more economical in the short to medium term to provide a viable form of renewable energy.