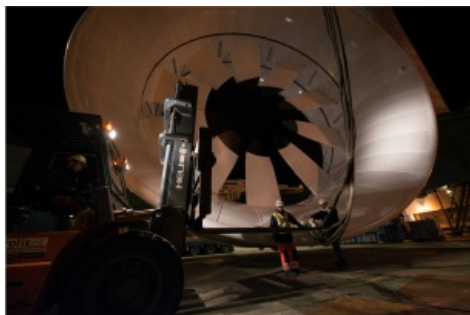


Optimising Operational Speeds for Tidal Turbines



It is crucial for tidal turbine manufacturer OpenHydro to obtain precise current, wave and turbulence information as it is delivering two of the world's first grid connected tidal arrays. OpenHydro has opted for the [Nortek Signature500 current profiler](#) to optimise the operational speed of these 16-metre-diameter devices. Two such turbines have already been deployed on EDF's Paimpol-Bréhat project in

France. Two more turbines are in the final stages of completion and will be deployed in the Bay of Fundy, Nova Scotia, Canada, later this summer.

Quantifying Currents

Understanding the flow field around each turbine is crucial to understanding the optimum operational speeds and the loads on the turbine itself. Furthermore, quantifying these currents improves understanding of how the turbine structure affects the currents and thus the local environment.

OpenHydro chose Nortek's Signature500 current profiler for its measurement range capabilities and high-end performance specifications. The devices have been integrated into the system thanks to their usability. Hamish Kerr, oceanographic engineer at Open Hydro finds that the data recorded so far has been of excellent quality.

Mitigating Risk and Cost

OpenHydro hope to utilise the very fast sampling and concurrent capabilities of the Signature500 to define current velocities to an unprecedented degree. These measurements are key, not just to OpenHydro but eventually, the entire tidal community. They will help validate and improve existing numerical models, bringing a level of understanding to the tidal sector which will aid in mitigating some of the risk and thus cost of deployment, which is crucial for the growth of the sector.