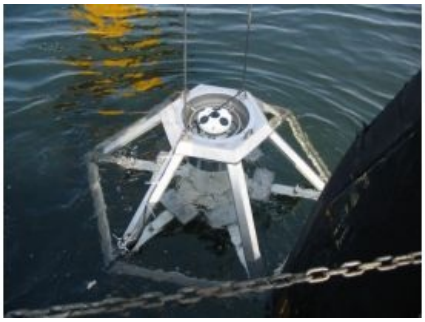
Quantifying Tidal Energy Resource



Partrac's oceanographic team was recently commissioned by SeaGen Wales Ltd, to measure the tidal current energy and the wave climate for a proposed tidal energy farm. SeaGen Wales is a joint initiative between Marine Current Turbines and Npower Renewables to take forward a 10.5MW project using seven SeaGen turbines, off the coast of Anglesey, North Wales. It is hoped the tidal farm will be commissioned around 2011/2012.

Underlying the success of the UK tidal energy sector is the issue of resource measurement. High quality data of the available tidal energy resource at a site is required before developers, and importantly their investors, will fully commit to commercial scale development.

Partrac deployed multiple Nortek AWACs and RDI ADCPs at seabed locations across the site, in order to measure current profile, turbulence, cross-structure tidal forces and the 'background' wave climate for the region. The client requested high intensity sampling for an extended period, synchronised in order that direct comparisons could be made across the site.

Director Peter Wilson, who managed the project, said, 'Deploying seabed frames in the Skerries presented a unique working environment for our oceanographic and diving teams. The tidal window available to deploy equipment on the seabed was just ten minutes. During this window we also had to deploy divers to ensure that the frames and instruments were sited correctly in order to ensure the highest quality data return. The data has enabled SeaGen Wales to progress to the next stage of their project.'

Achieving 100% data return demonstrates Partrac's capability to undertake oceanographic deployments in high energy coastal marine environments. Partrac's oceanographic team have undertaken numerous metocean projects around the UK for renewable energy assessment, including long-term wave climate measurements for marine operations at offshore wind farm sites.