PARTRAC LTD

Stepping into the Marine Renewables Sector

Partrac, based in Glasgow, Scotland, is a dynamic marine environmental consultancy, specialised in oceanography and marine geosciences. Founded in 2003 by a group of marine geologists and oceanographers, the company has grown to become a mature and respected organisation that provides both consultancy and data acquisition services. <P>

This privately ownedcompany services the ports, dredging and marine renewables sectors, but also works with industry, such as utility companies, and government, such as the Department for Environment, Food and Rural Affairs (Defra) and the Environment Agency (EA), to support a range of strategic projects. Uniquely within the UK, Partrac combines both consultancy and data acquisition. The company's philosophy is centred on high-quality science and data acquisition. "We have recently celebrated our 6th birthday," remarked operations director Sam Athey. "To date we have undertaken more than 100 projects for over 35 clients across five continents, a fact of which we are justly proud!"

Core Business

Within the company, the consultancy team works alongside the marine survey team to deliver a range of projects. Partrac's core business is focussed on metocean and geosciences consultancy and marine data acquisition, providing a range of services including foundation scour potential assessments, sediment flux and seabed mobility measurement, dredge impact assessment, coastal and estuarine process studies, tidal/wave energy resource assessments and assessment of pollution impacts.

Athey explained: "As a contractor consultancy, we combine a strong science base with data acquisition within an integrated framework, and this provides a level of service to clients that gives us a competitive edge. We are highly focussed on providing our clients with what they need, which often is not necessarily what is initially specified. We also pride ourselves that due to careful planning, excellent forecasting and a flexible survey team, we have only been forced to charge our clients for down-weather costs once in the last six years. "InnovationSoon after its foundation, Partrac received SMART:SCOTLAND funding, a grant given to companies to assist them in commercialising their innovative products, to develop a transport pathway evaluation (TPE) tool for particulate material (pollution) in marine and freshwater environments. Today this methodology uses fluorescent-magnetic particle analogues in conjunction with conventional methods to understand and map transport pathways, sinks and sources for clients.
The company has recently completed a major 6-month project using TPE to map the transport and fate of highly contaminated sediments in the Lower Duwamish Waterway (WA, USA).

Improving Accuracy

In addition, Partrac has developed several marine instruments for the in situ measurement of seabed stability/scour, including the Voyager II benthic flume, which was recently used in a project with the Centre for Environment, Fisheries and Aqua-culture Science (CEFAS) to map seabed erosion potential on the continental shelf, and the sediment cohesive strength meter (CSM), which has been sold to numerous clients worldwide. The company is also working to improve the accuracy of modelling packages for suspended sediments. Director and oceanographer Peter Wilson commented: "Innovation and the use of novel technologies and methods form part of the ethos at Partrac. We use TPE and the erosion instruments to support many projects, and to provide clients with the data that they require."

Renewables Sector

Within the UK, the political commitment to the marine renewables sector has driven forward dramatic investment in offshore wind, and now tidal energy and wave energy conversion projects are also coming to fruition. Partrac has been involved in several offshore wind farm projects, including the development of the Robin Rigg offshore wind farm in the Solway Firth, initiated by energy company E.ON, and the development of EDF Energy's Teesside offshore wind farm in Redcar Bay.

Tidal Power

More recently, Partrac has successfully collected data to support estimation of tidal power at various sites. A combination of bottom-mounted acoustic Doppler current profilers (ADCP) and acoustic wave and current profilers (AWAC) were used to acquire mean flow velocities, wave properties, cross-turbine shear forces and high-frequency turbulence data. Wilson explained: "Our success in these projects places us at the forefront of providing high-quality metocean data for resource assessments and engineering design for this growing industry. It's not a simple matter to successfully collect data in such energy-rich coastal waters, but our experience and the specific methods we developed to do this work have proven themselves."

Overseas Projects

Partrac has conducted studies, mainly in support of sediment management initiatives, for a number of overseas clients. From 2004 to 2007 they undertook sediment transport and TPE studies for the South Florida Water Management District (FL, USA) to support the Comprehensive Everglades Restoration Plan (CERP), the world's largest wetland restoration initiative. In 2009, Partrac completed TPE studies for the Washington State Deportment of Ecology to help them understand more fully re-contamination of a contaminated Superfund estuary.

Looking Ahead

Partrac's mission is to continue to be a high-quality knowledge partner for its clients. "As we grow and employ talented oceanographers, marine scientists and surveyors, one of the challenges is to continually re-educate our clients as to the growing breadth of metoc, geoscience, survey and environmental services that we offer," explained Wilson.

The company continues to support its client base in the ports, harbours and dredging markets and the future looks busy in the offshore renewables sector, particularly in Scotland. "As we continue to be involved in the offshore wind farm sector, and prepare to undertake multiple projects for wave and tidal resource assessments in Scotland andelsewhere in the UK, the numbers and breadth of our projects will continue to grow," concluded Wilson.?

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