INTEGRATED SERVICE FOR TIDAL ENERGY SITE DEVELOPMENT

A COMPLETE MANAGED SOLUTION, OR EXPERT SUPPORT TO COMPLEMENT YOUR TEAM ... 

STAGE 1
CONCEPT / PLANNING

STAGE 2
INTEGRATION / CONSENTS

STAGE 3
IMPLEMENTATION / DETAILED DESIGN AND BUILD

STAGE 4
IN-SERVICE / REVENUE GENERATION

- Over 15 tidal projects including array interactions and ETI Tidal Resource Modelling
- Lead of IEC Tidal Resource Technical Specification
- Extensive survey feasibility & site selection experience
- Over 200 environmental assessments since 2003
- 8 Statutory coastal EIAs in the last 5 years
- Coordination and production of GLA and HRA for Severn Tidal Power Feasibility Study for DECC
- Holders of the EIA Quality Mark
- Design authority for support structure of ETI’s Tidal Energy Converter, Phase 2
- A global construction company that has been providing grid connection services to the utilities sector for over 50 years
- Over 20 years’ experience in application of analytics to performance, planning and monitoring diagnostics
- Using data to create value by improving infrastructure reliability, efficiency and performance

INTEGRATED BASIS OF DESIGN AND CERTIFICATION APPROACH
Black & Veatch (B&V) has developed strong expertise in conducting basis of design and detailed design work for construction/maintenance, often in close collaboration with certification bodies. B&V provides the UK expert for the development of the IEC technical specification for the ‘Design requirements for marine energy systems’ and the equivalent ‘Certification requirements’.

COMBINED ENGINEERING AND ENVIRONMENTAL CONSIDERATIONS
Successful site development requires a holistic understanding of both engineering and environmental aspects and their interactions and dependencies. B&V’s experience allows these complex issues to be balanced during the engineering design process and definition of a site Rochdale Envelope, reducing risks to the consenting process and optimising energy yield for your project.

WORLD CLASS PROJECT MANAGEMENT
B&V ensures that it has a deep and broad understanding of the key project risks and possible mitigation options, undertakes a collaborative approach with our clients and other suppliers and utilises a bespoke approach to any project, utilising the ‘best tool for the job’ not generic ‘black box’ tools that apply to many projects. B&V prides itself on delivering projects on time and on budget.

EXPERIENCED STAKEHOLDER ENGAGEMENT
B&V has a strong background of completing stakeholder surveys and consultations. For recent marine energy projects B&V conducted structured interviews with key marine energy component developers, market assessments within the marine energy industry and assessed future commercialisation potential of the UK’s wave and tidal energy industries.

“B&V performance was excellent throughout, both in terms of providing robust project management, technical expertise in the field and production of high quality deliverables with great diligence and attention to detail.”

Atlantis Resources Limited (2014)
The Black and Veatch (B&V) marine energy team has extensive experience in resource assessment and project feasibility planning. Working in collaboration with other specialists, we have developed methods and guidelines to produce accurate resource assessments. Using detailed hydrodynamic models combined with proven processes, we have assessed the resources for more than 15 tidal projects. B&V provides the leader of the IEC (International Electrotechnical Committee) Tidal Resource Technical Specification (TS) currently in preparation, and the team has been involved in many feasibility and site selection studies.

B&V has extensive in-house expertise on analysis and assessment of hydrodynamic survey design and data, such as ADCP, wave, met-mast and turbulence data. We also have an experienced Information Management and GIS team that has a proven record of handling large marine datasets, such as seabed composition, wave exposure, tidal currents, navigation and construction methods and the associated coordinate system and datum translations.

The B&V Team has undertaken many due diligence projects on tidal technologies, projects and developers over the past 10 years and has built a unique level of experience in such work. We stringently assessed and reported on the engineering, performance, economics and environmental aspects of 16 tidal devices, including during the MRPF, MRCF and MEAD projects. This experience has provided our team with an extensive experience in such work. We stringently assessed and reported on the engineering, performance, economics and environmental aspects of 16 tidal devices, including during the MRPF, MRCF and MEAD projects.

Since 2003 we have completed over 200 environmental assessments for a wide variety of engineering and environmental projects. These have included effects on seabed, currents and waves as well as construction impacts and mitigation and include vital engineering and environmental support to the Severn Estuary tidal power generation feasibility study for the Department of Energy and Climate Change through a Strategic Environmental Assessment and Options Appraisal, together with associated stakeholder engagement and specialist environmental research and fieldwork.

B&V has experience in the detailed design of all aspects of a tidal energy project including turbine support structures, HV and LV electrical infrastructure and onshore civil structures. B&V is currently the Design Authority for the support structure of the ETI’s Tidal Energy Converter Project and, as a global leader of engineering consultancy services, has considerable experience in the design and construction of electrical and civil engineering projects in the UK and overseas.

The portfolio of civil engineering projects successfully completed by B&V is extensive and includes offshore structures (for tidal energy projects); ports and harbours, coastal structures, dams and reservoirs, hydropower and other works. The wide variety and different challenges of these projects has allowed B&V to develop strong expertise in conducting early stage feasibility and conceptual design studies, basis of design, technical reviews and detailed design work for construction and manufacture.

B&V holds extensive experience in the provision of specialist wave and tidal energy converter performance, yield and availability support services to the marine energy industry. This experience has been gained and advanced through active engagement with technology developers and stakeholders alike, who have provided B&V with a unique understanding of the risks associated with performance and availability guarantees. The majority of our technical due diligence projects involve assessment and evaluation of device performance and yield and the B&V marine energy team include the leader of the IEC Tidal Resource Technical Specification and former academics that specialised in marine energy performance/yield assessment.

Black & Veatch provides products, services and solutions that improve the capability of assets in terms of market strength and viability, customer service, financial performance, capability, flexibility, availability/reliability, risk, efficiency, and environmental performance. B&V has a history of providing asset management services to Publicly Available Specification 55 (PAS55) which enables organisations to achieve an appropriate balance whilst achieving best value-for-money assets from asset selection to disposal. This support is provided through data management, analytics with automated analysis routines and visualisations in order to provide key decision makers with the information required to support prioritised solutions. B&V has developed the commercial monitoring software ASSET360®, a data management and analytics platform for operational and planning analytics to optimise client assets and processes.