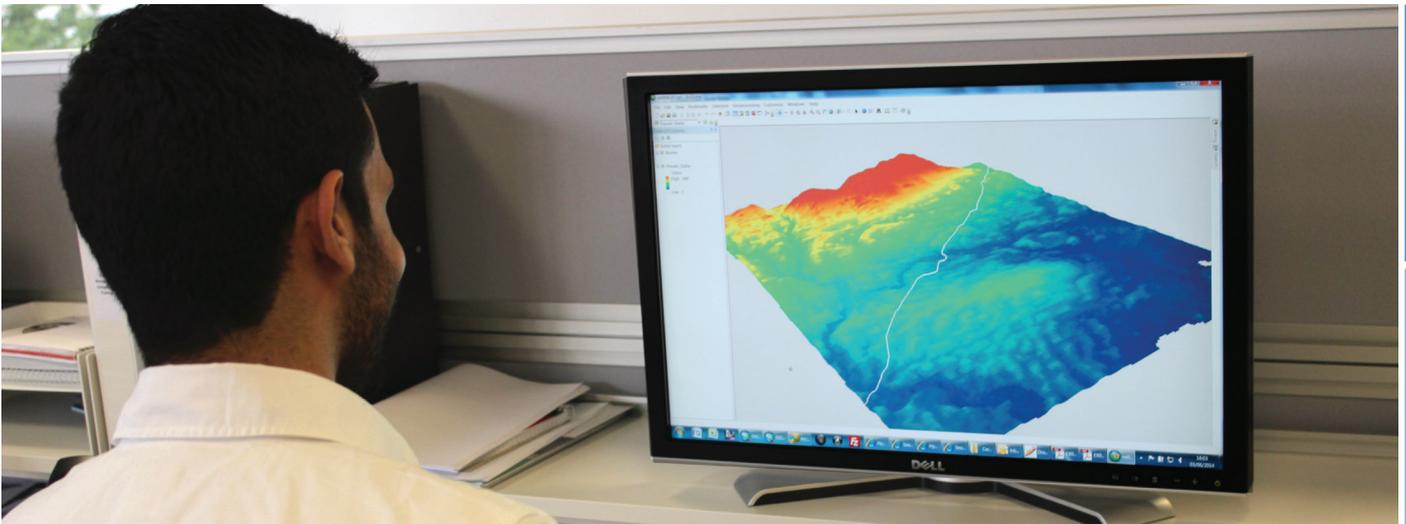


GEOGRAPHICAL INFORMATION SYSTEMS (GIS)

GEOSPATIAL ANALYSIS



RES Offshore provides Geospatial Analysis Services to offshore renewable energy projects.

Geographical Information Systems (GIS) allow us to visualise, question, analyse, interpret and understand geospatial data to reveal relationships, patterns, and trends. We understand the benefit of building a strong geospatial understanding of an infrastructure project. Performing an appropriate level of analysis during the development and design phases brings a number of advantages:

- Identifying and assessing the risk of key development constraints early on, enables the project to proactively engage with key issues through targeted surveys, and stakeholder management.
- Better understanding and management of geospatial constraints leads to a greater chance of securing planning consents for more valuable assets.

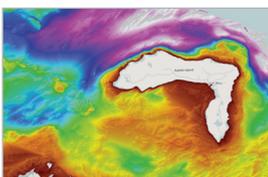
A Geospatial Understanding

The power of a GIS lies in its capacity to enable Geospatial Analysis and can help realise the delivery of an optimised project where:

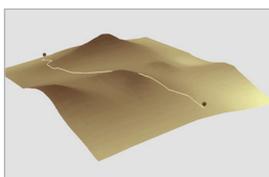
- Installation costs are reduced.
- The cost of infrastructure and materials are reduced.
- Impacts on the environment are avoided or mitigated.
- Survey costs are reduced.
- Energy yields are optimised.

Our Geospatial Analysis includes:

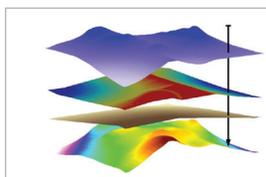
- Site suitability assessment and constraint mapping to assess development potential.
- Cost analysis in relation to ground conditions, foundations, installation and energy yields.
- Conflict checks for surveys.
- 3D modelling for visibility analysis, profiling and volume calculations.
- Bathymetric comparisons to monitor seabed changes over time.
- Cable route feasibility analysis.
- Time series animations to visualise geospatial data in the 4th dimension.
- Spatial interpolation to derive a surface from a set of sample points for further analysis.



Site Assessment

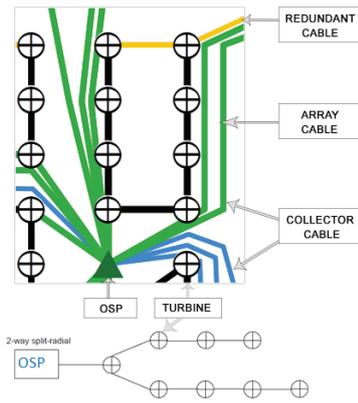


Route Analysis



GIS Overlay

CASE STUDY



PROJECTS: Race Bank/ Rhiannon

Client: Centrica

CabMan, our array cable system layout optimisation tool, was created to simplify the generation, analysis and referencing of array cable layout scenarios during wind farm design and development.

CabMan enables a quick and efficient preliminary design of a number of array cable layout options. Linked to GIS, it allows the designer to take into account various spatial constraints such as existing cables, sand dunes or ship wrecks. CabMan analyses the array cable layouts and outputs parameters that are then fed into a total economic lifetime cost model.

We take a personal approach and add value by:

- Using our considerable experience across the world to provide expert advice on the use and appropriateness of geographic data.
- Utilising existing datasets to help minimise survey costs and reduce overheads.
- Leveraging a suite of industry leading software, powerful geospatial algorithms, and in-house tools and procedures to conduct an appropriate level of analysis.
- Communicating results and key findings in a meaningful way, and providing data for further analysis in a useful format.
- Developing bespoke tools, tailored to undertake specific repeatable tasks, to streamline workflows, increase efficiency and the quality of analysis.

About RES Offshore

RES Offshore offers integrated development, engineering, construction and AO&M services for utility-scale renewable energy projects. From offshore wind to wave and tidal, we bring to projects the considerable skills and experience that we have acquired over 30 years in the renewables industry. RES Offshore is part of the RES Group, one of the world's leading renewable energy project developers. To date, RES has delivered more than 8000MW of wind energy capacity worldwide.

We welcome the opportunity to discuss how we may support you – please call +44 (0)1923 608 200 and ask to speak to our GIS Team

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