

Mott MacDonald is one of the world's foremost consulting engineers and a leader in energy and power for over 100 years. Our power skills cover the full range of renewable technologies and our staff has expertise in all areas from technology assessment, project development and contract strategy through to wave modelling, electrical and civil design and project delivery. In addition, we have market leading skills in providing lender and investor advisory services.



Wave and tidal energy

Mott MacDonald combines technical breadth with a strong track record in assisting project and technology development for all types of power technologies. We understand investors' concerns at each stage in the development of a technology or a project and also bring experience in regulatory, market and permitting issues. We have the skills and experience to support clients in achieving successful and robust bankable projects.

We bring one-stop management to the various technical and commercial challenges – ranging from resource assessment, offshore engineering, electrical engineering, civil engineering and construction in the marine environment through to the year-round operation and maintenance of turbines and devices. This gives investors confidence and allows us to assess risk based on practical experience across many disciplines. In particular, our experience in many offshore wind projects can be directly deployed in assisting the development of wave and tidal technologies.

We cover the whole project cycle. Our teams combine engineers, planners, financial analysts and safety specialists as well as atmospheric, wind and wave modellers and environmental specialists. This enables us to provide a seamless service to our government, utility, technology, developer, investor, municipality and financier clients.

We have a lead in offshore wind, wave and tidal lender advisory work, having been the technical advisor for the first two projects to achieve financial close – Q7 in the Netherlands and C-Power in Belgium. We have also provided consultancy services to projects such as London Array, Beatrice, Ormonde, Robin Rigg, Race Bank, Barrow and Nordseewind.



Our comprehensive services cover:

- Construction supervision
- Contract review and negotiation
- Electrical systems design and analysis
- Energy farm design and optimisation
- Environmental and social impact assessment and consents
- Feasibility studies
- Maritime engineering design and analysis
- Modelling studies
- Operation and maintenance strategy
- Preparation of detailed specifications
- Project finance
- Resource assessment and energy yield
- Site evaluation
- Technology and design reviews
- Tender preparation and evaluation



Contact us

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Our track record

Our offshore power projects give testament to our skills. Some examples taken from our list of offshore renewable energy projects are:

- For the Nordzeewind 100 MW offshore wind farm, we assisted the project developer in developing the technical specifications. We prepared the main technical specifications for the project considering issues throughout the design, manufacture and installation phases. A key element of the work was integrating a well developed health and safety regime into all aspects of the project.
- For AWS Ocean Energy Limited, we undertook a wave energy design at Alness, Scotland. We managed the client's design team creating a prototype wave energy generation unit capable of harvesting renewable energy from the UK coast. We also provided specialists to assist the design team with electrical and civil engineering advice.
- For Aurora Environment, we undertook an Environmental Impact Assessment (EIA) for the Siadar Wave Energy Project, Isle of Lewis, Scotland. As part of a wider EIA, we carried out a specialist environmental study, focusing on noise, hydrology, hydrogeology and coastal processes.
- We undertook the Pelamis Wave Energy Review, UK, a technical review of a 750 kW wave energy device, prior to investment by a major UK utility.
- We undertook an independent technical review of a leading tidal energy device for the development company. The work highlighted key areas of strength and weakness in the concept and also provided an independent opinion for use in an investor information prospectus.
- We undertook a study for National Grid Transco on 18 sites in the UK that were identified as potentially 'at-risk'. We examined details of site levels, potential flood water levels, flood defence levels and Met office data which was used to examine wave heights and spray at exposed sites. We evaluated relevant site specific issues including adjacent critical infrastructure and the costs of applying appropriate defences and or modifications to plant where required. We also assessed the risks of undertaking remediation works and reviewed the implications to the local community and the environment.
- For the Energy Technology Support Unit, Department of Trade and Industry, UK, we undertook a wave energy assessment review of technical feasibility, costing and predicted energy field of a proposed floating wave energy generator.

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