ENERGY STUDIES INSTITUTE
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ESI Seminar

Offshore Renewable Energy – Seeing the Industry Through the Eyes of Those Underwriting the Risk

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2:30 pm to 3:30pm
ESI Conference Room
29 Heng Mui Keng Terrace
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Please send us your name, organization and email address via the ESI website here. For enquiries, please contact Ms. Jan Lui at 6516 2000.

Synopsis

The offshore renewable energy market is growing apace, with offshore wind leading the charge. The UK alone has c. 12GW of capacity - either that already installed (5GW) or that which is in the throes of consenting and construction (7GW). Other markets are also set to grow significantly in the coming 10-20 years, with the USA, China, Taiwan, India and Brazil now planning significant programmes of offshore wind construction. Such momentum is driven by a number of factors but two that dominate are, a) security of supply and, b) decarbonization. This is especially the case given the rate at which coal-fired power stations are to be de-commissioned, a general reluctance to place more faith in nuclear and gas-fired power plant, and a global awareness of the positive impact of renewable energy systems on climate change.

Traditional commentators usually turn their attention to the role of technology and innovation in the creation of step change within the offshore renewable energy sector. Larger turbines, improved aerodynamic performance, optimization of construction logistics, to name but some, are key factors which have contributed to the lowering of the levelised cost of offshore wind, for example, from c. $220/MWh in 2013 to c. $85/MWh today.

However, there is another key factor that is at play. This is the interplay between technology innovation, asset class performance and how this translates into key metrics that those organizations underwriting the risk within the sector – the insurers and the project financiers – understand. In this respect, the operational performance of assets such as blades, towers, cables, power electronics, etc. needs to be monitored, performance data gathered and interpreted such that 'asset betas' can be created for the sector which, in turn, allow the construction of sector-specific, financial instruments based on the Capital Asset Pricing Model (CAPM). In turn, such 'asset betas' form the basis of discount factors used in financial modelling when looking at investment decisions and competition for capital. By moving the focus away from purely focusing on technology per se to one on technology development to positively impact the weighted average cost of capital via a better discount factor derived from a more reflective CAPM, the industry moves its centre of gravity in to the lap of those underwriting the risk within the sector. This is a fundamental shift and one that defines the skill sets that the offshore renewable energy leaders of the future will have to possess i.e. an ability to straddle corporate finance and engineering.

About the Speaker

Alan has over 30 years' experience as a practitioner within the international energy and utilities sectors, having held senior positions with Rolls Royce Industrial Power, British Gas, Suez, Shell, Mott MacDonald and Jacobs. Alan has also led 3 university start-up companies and been a Director of Technology & Innovation at the UK's National Renewable Energy Centre, now part of the Offshore Renewable Energy Catapult, an organization that Alan helped the UK Government to establish in 2012 and for which is currently an advisor. Alan's experience also includes energy technology investment, IP commercialization and new venture creation.

Alan currently operates a portfolio of interests that include: acting as an entrepreneur-in-residence to the UK Government's Global Entrepreneur Programme (GEP) that seeks to attract high-growth-potential clean-tech start-up businesses to the UK. In addition, Alan is a non-executive director of the Port of Blyth near Newcastle upon Tyne in the UK, is a Visiting Professor at Durham University's Energy Institute where he also chairs the Advisory Board, is an advisor to the US Department of Energy (via NREL) and the UK Government (via Innovate UK and the Energy Entrepreneur Fund) and also chairs the Innovation Board of the economic development agency for North East England.

Alan holds BSc (Hons:1), MSc and PhD degrees in Engineering Mathematics plus an MBA from Durham University in the UK. He is a chartered Mechanical Engineer and a Fellow of the UK Institution of Mechanical Engineers.