

Inaugural lecture

On 1st of February 2019 Nicolaos A. Cutululis was appointed Professor MSO in Offshore Wind Power Integration at DTU Wind Energy.

In that connection, DTU Wind Energy invites you to his inaugural lecture with the title "Integrating Offshore Wind".

The lecture takes place on Friday, 11th of October, at 15:00 at DTU Lyngby Campus, Building 101, meeting room 1, 1. Floor, Anker Engelunds Vej 1, 2800 Kgs. Lyngby.

The lecture is followed by a reception.

Regards,
Peter Hauge Madsen
Head of Department



Integrating offshore wind

Offshore wind power has seen an almost 20-fold increase in the last decade; closing up to 20 GW at the end of 2018, and the general expectation is that this pace will only accelerate, with estimates ranging from doubling to tripling today's installed capacity in North Sea alone by 2030. At the same time, offshore wind development is becoming global, with projects in North America and Asia.

Offshore wind power integration is a multi-disciplinary research area with the overall aim of improving the performance of offshore wind, both technically and economically. Reducing the cost of the electrical infrastructure requires new mathematical models and advanced optimization techniques, combining them with lifetime estimation and probabilistic approaches.

Large offshore wind power plants connected via HVDC are complex dynamic systems that – with their 100% converter based generation – provide a glimpse on future full-renewable power systems dynamic performance and stability. Connected to shore either via HVDC grids or hubs such as the North Sea Wind Power Hub, offshore wind power plants can become the cornerstone of the 100% renewable power systems, being able of not only providing abundant and clean energy, but also contributing to the dynamic stability of low (or even zero) inertia future power system. For that, advanced capabilities such as grid forming operation, black-start and islanding operation, enhanced ancillary services (and more) are required.

The lecture will highlight the state-of-the art in offshore wind power integration and will present the challenges and research objectives in developing the offshore wind power plants of the future.