

RESEARCH WEBINAR

Large-scale system integration

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June 30, 2022

9.00-12.00 PM EST / 15.00 -18.00 CET

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DENMARK



The University of Vermont



JOHNS HOPKINS
UNIVERSITY

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Agenda

Tackling the green transition including expansion of Renewable Energy and electrification will put grid flexibility and large scale system integration to a test.

During this webinar, leading researchers will discuss central topics for the green energy transition related to the grid and system integration. Innovation Centre Denmark Boston and Energy Cluster Denmark, have already organised three system integration-related webinars with several DOE laboratories and leading universities in the US and Denmark. This webinar will keep that focus and will lead up to a bigger event on large-scale system integration during the autumn.

The purpose of this webinar is to look into the challenges for a large-scale expansion of renewable energy in the US and Europe. The US' commitment to renewable energy increased from 2 GW in 2016 to 30 GW in 2030, and furthermore, it is estimated that in less than 10 years, the cost of offshore wind energy has decreased with a factor of three. However, moving to offshore wind energy requires rethinking the traditional energy grid, and system integration is widely recognized as one of the biggest challenges.

System integration has long been a focus in Denmark and Europe more generally. Germany, Holland, Belgium and Denmark announced May 19 this year a new target of 65 GW OSW by 2030 and 150 GW by 2050. The share of renewables in Europe (mostly wind) is currently twice as large as in the US, which has prompted Danish and European researchers to look into large-scale system integration of renewable energy sources for decades. 'Because of this, Danish researchers and institutions have built a strong expertise in this field, reflected in forecasting of renewable generation, market principles, energy systems integration, demand response, grid-balancing techniques, and a digitization of the energy grids.

The similarities in green energy ambitions of the US and Denmark make research collaboration between US and DK favorable and mutually beneficial. As part of the agreement between US Department of Energy and Denmark on enhancing green research collaboration across the Atlantic, US and Danish institutions will organise this event. During this event, we discuss key topics, such as methods for a digitization of the grids, markets, energy systems integration, and facilitate the contact between Danish and American researchers.



Torben Orla Nielsen, Science Attaché
Innovation Centre Denmark Boston

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Dennice Gayme Associate Professor, Carol Croft Linde Faculty Scholar
Johns Hopkins Whiting School of Engineering
TBD



Lena Kitzing, Head of Section Society, Markets & Policy
DTU - Technical University of Denmark



Henrik Madsen, Professor,
DTU – Technical University of Denmark

TBA
Harvard University



Maria Münster, Professor in Energy System Analysis,
DTU – Technical University of Denmark
Sector coupling and the integration of renewables



Bri-Mathias Hodge, Associate Professor at University of Colorado Boulder / Chief Scientist,
National Renewable Energy Laboratory



Jakob Stoustrup, Professor, Associate Dean for Research and Innovation,
Aalborg University
Electrifying everything – System integration and Sector Coupling



Dr. Dharik S. Mallapragada, Principal Research Scientist
MIT Energy Initiative
Sector-coupling and deep decarbonization of energy systems - insights from modeling



Mads Almassalkhi, US and DK professor, University of Vermont, visiting professor at DTU & Aalborg University and Chief scientist at PNNL
Moderator of the panel discussion