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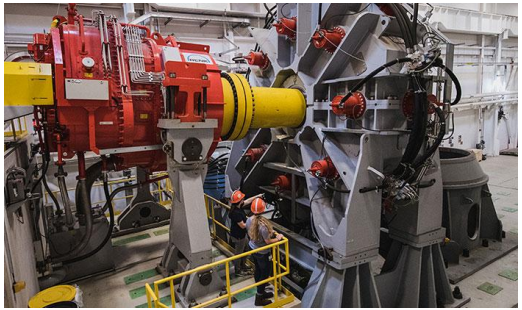
SBU SPIR Energy Lunch and Learn

Kenny Hass – WTG Operations Engineer

Background

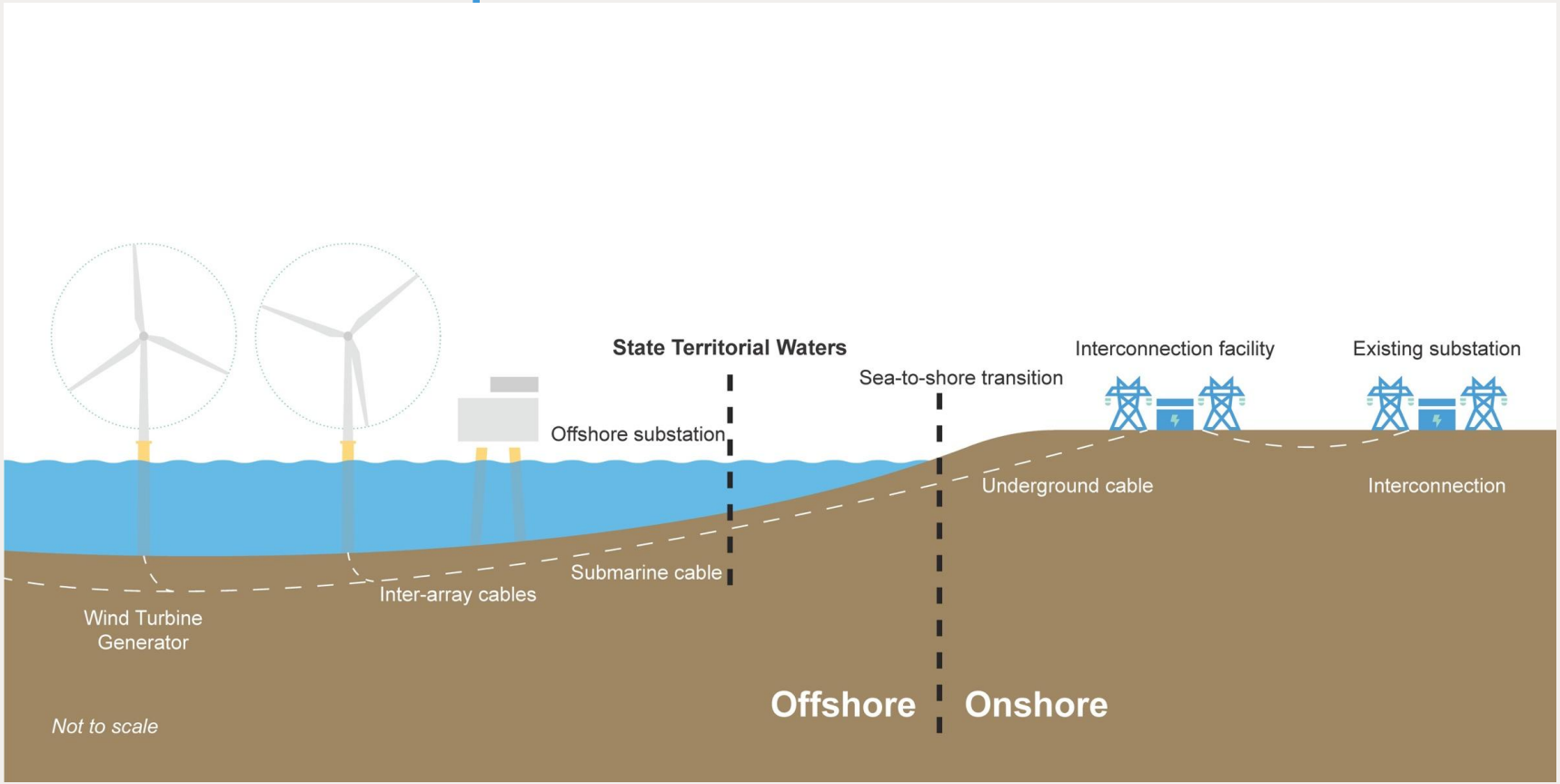


- Born and raised in Stony Brook, NY
- Graduated RIT in 2020 with B.S/M.S. in Mechanical Engineering
- Started wind career at Clemson Wind Turbine Drivetrain test facility (Charleston, SC)
- Invenergy Wind Operations engineer 2021-2023 (Chicago, IL)

- Orsted WTG Operations Engineer Oct 2023 (East Setauket, NY)
  - First line of technical/engineering support to onsite technicians
  - Proactively identify issues before leading to downtime
  - Reactively perform root cause analysis for failures/faults
  - Performance and asset health monitoring
- Fun fact: Love to snowboard ☺

File:Rochester Institute of Technology Bengal Tiger statue.jpg – Wikipedia
Wind Turbine Test Beds (clemson.edu)
South Fork Wind just became the US's first complete utility-scale offshore wind farm (electrek.co)
https://twitter.com/GErenewables/status/1479437930754150411

Offshore Wind Components



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GE 1.5/77sle turbine at the National Wind Technology Center. Photo... | Download Scientific Diagram (researchgate.net)

Siemens Gamesa's first 10MW offshore wind titan unveiled | Recharge (rechargenews.com)


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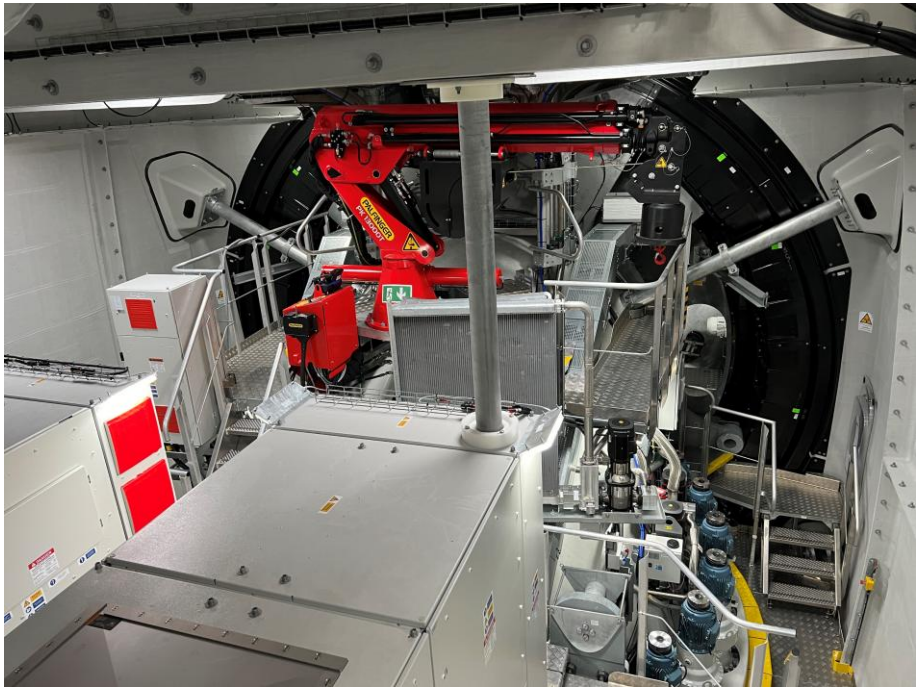
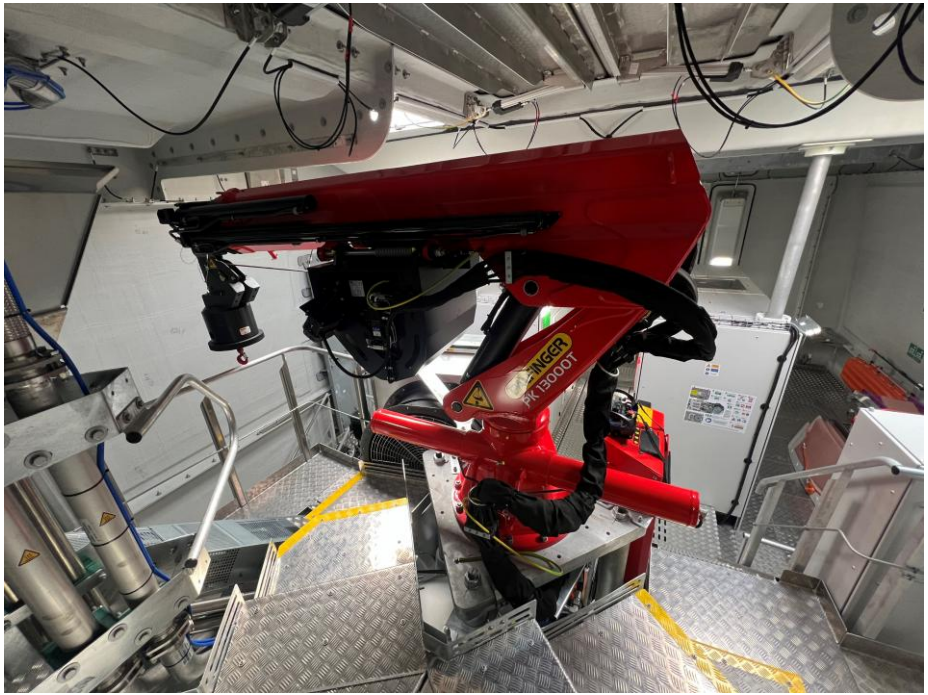
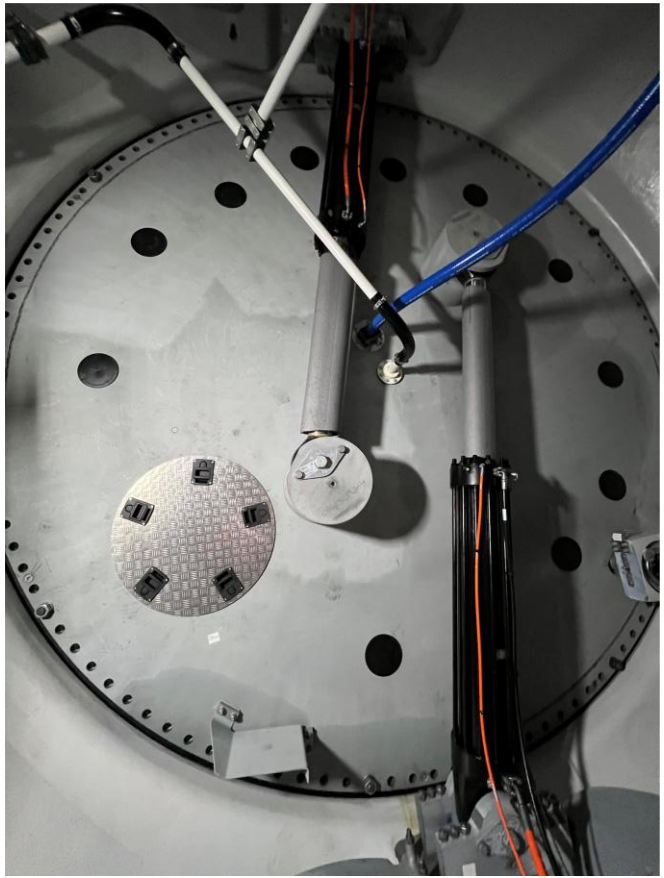
Nacelle/Hub Entrance

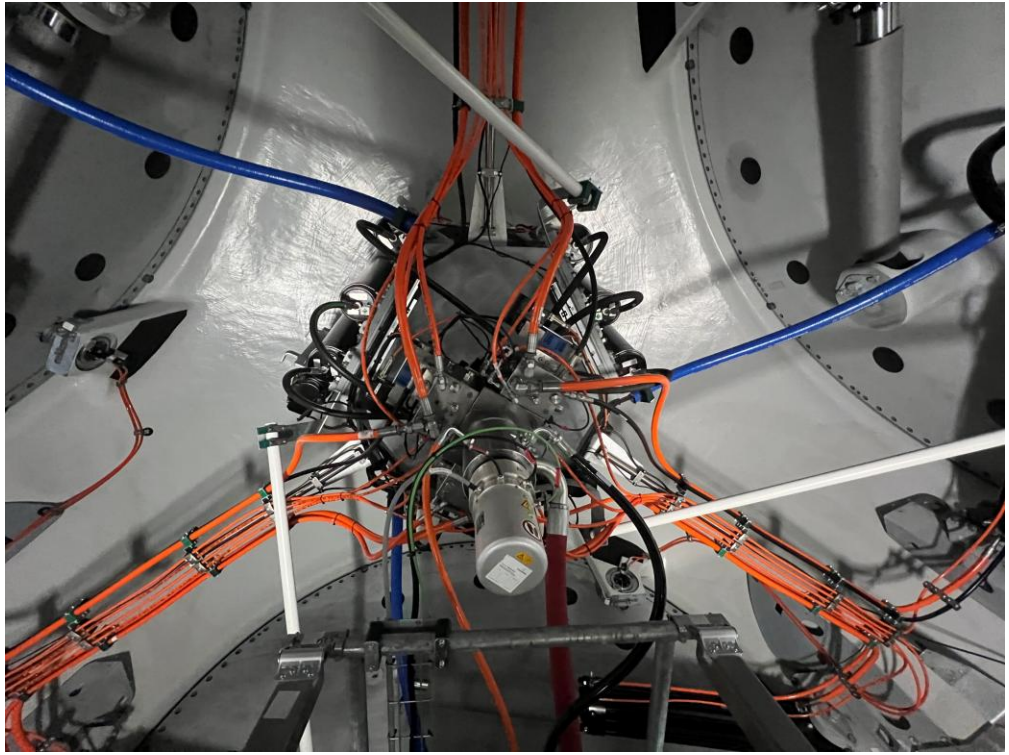


Crane and Turbine Control Cabinets



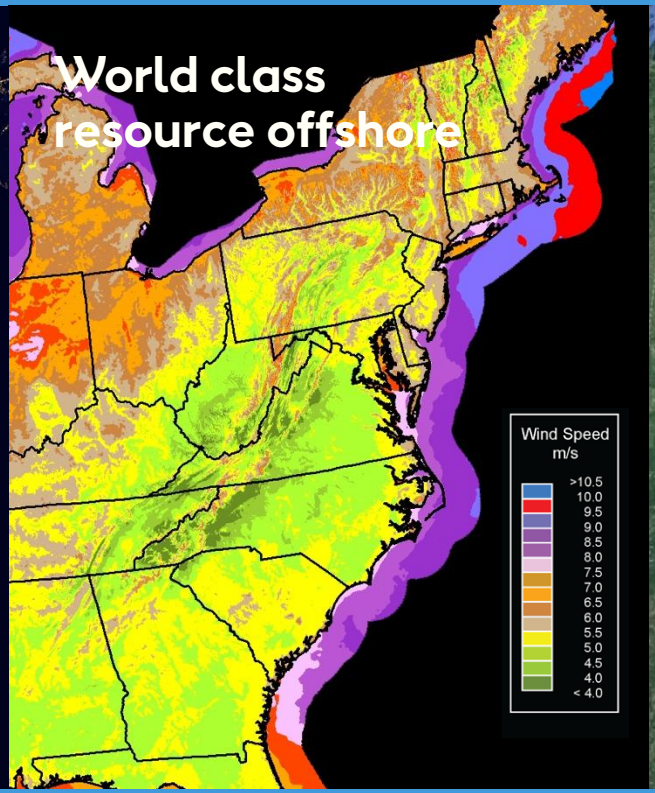
Pitch System inside Hub



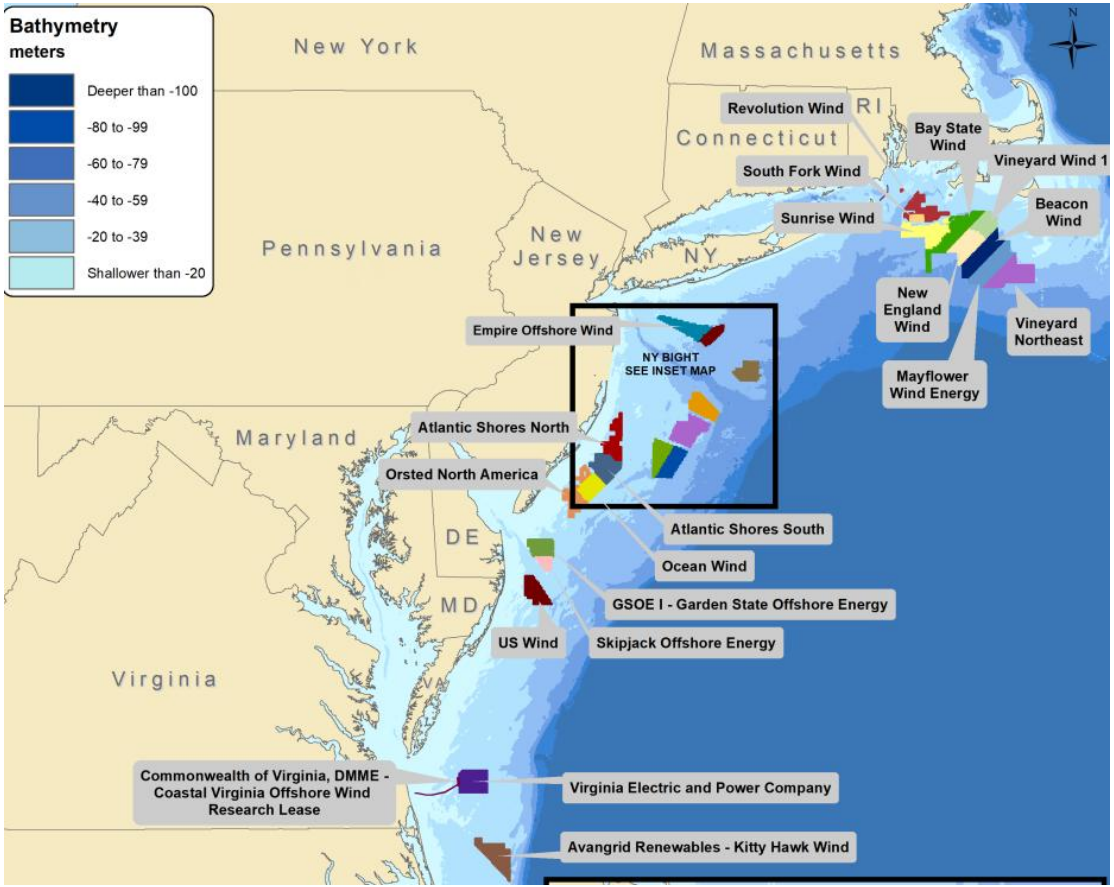


Yaw System/Converters

Offshore Wind on Long Island



East Coast Offshore Wind Market Overview



- Biden Administration OSW target for the US was **30GW by 2030**
- States set OSW targets and drive procurements.
- New York OSW goal is **9GW by 2035**

Opportunities in Offshore Wind

- **Turbine/Foundation/Substation Design**
  - Material Science, Strength of Materials, Dynamics, Controls, Composites, Vibrations, Fluid Mechanics, Heat Transfer, Electrical Eng
- **Wind Farm Development**
  - Data analytics/numerical methods, Meteorology/Oceanic Studies, Statistics, Civil Engineering (Land Surveying, Foundations)
- **Wind Farm Construction**
  - Marine Science, Environmental Studies, Rigging/Lifting/Statics/Strengths
- **Wind Farm Operations**
  - Controls, Data Analytics, Strength of Materials, Vibrations, Meteorology, Marine Science, Coastal/Environmental Studies (and all same areas as design for SMEs)

- **Narrow vs Broad opportunities available at all levels**
  - i.e. Subject matter expert (SME) and main point of contact for one area, or more generalist weaving knowledge of multiple disciplines together

- **<u>Opportunities for improvements and rapid change at all parts of wind turbine/farm life cycle</u>**