

MTS 2020 Virtual Symposia

An Online Series for Marine Technology
Professionals

Please visit www.mtsociety.org for more
information on upcoming webinars and to
register!



marine technology
SOCIETY

Opportunity runs deep™

MTS' 2020 Virtual Symposia

An Online Series for Marine Technology Professionals

- **SeaBed 2030 - An Initiative of the UN Ocean Decade and General Bathymetric Chart of the Oceans (GEBCO)**
 - [Wednesday, May 20, 2020 – 12:00-1:00 pm \(ET\)](#)
 - Vladimir Ryabinin, Executive Secretary of the Intergovernmental Oceanographic Commission (IOC-UNESCO) and Assistant Director General
 - Rear Adm. Shepard Smith, Director of NOAA's Office of Coast Survey and the U.S. national representative to the International Hydrographic Organization (IHO)
- **Back by Popular Demand!! - Applications of Bioluminescence in Marine Technology**
 - [Wednesday, May 27, 2020 – 12:00-1:00 pm \(ET\)](#)
 - Edie Widder CEO, President, and Senior Scientist at the Ocean Research and Conservation Association (ORCA) ReBroadcast

MTS' 2020 Virtual Symposia

An Online Series for Marine Technology Professionals

- **Underwater Matedable Connector History: The Agony and Euphoria of Their Development**
 - [Wednesday, May 27, 2020 – 12:00-1:00 pm \(ET\)](#)
 - James L. Cairns, Ph.D., Owner, Abyssal Systems; Executive Director, Cairns Foundation, Inc.; Founder, Ocean Design, Inc., Inventor of world's first underwater wet-matedable electrical and fiber optic connectors
- **Virtual Conference: Industry Role in Seabed 2030**
 - [Thursday, June 11, 2020](#)
 - Craig McLean (Moderator), Assistant Administrator for NOAA's Oceanic and Atmospheric Research (OAR) Office
 - Vladimir Ryabinin, Executive Secretary of the Intergovernmental Oceanographic Commission (IOC), UNESCO Assistant Director General
 - Rear Adm. Shepard Smith, Director of NOAA's Office of Coast Survey and the U.S. national representative to the International Hydrographic Organization (IHO)
 - Mike Read, President, Teledyne Marine
 - Bjørn Jalving, Senior Vice President Technology, Sensors & Robotics, Kongsberg Maritime
 - Rick Spinrad, President, Marine Technology

MTS Student Webinar
May 13, 2020

Marlene Kaplan
Office of Science and Technology
Policy

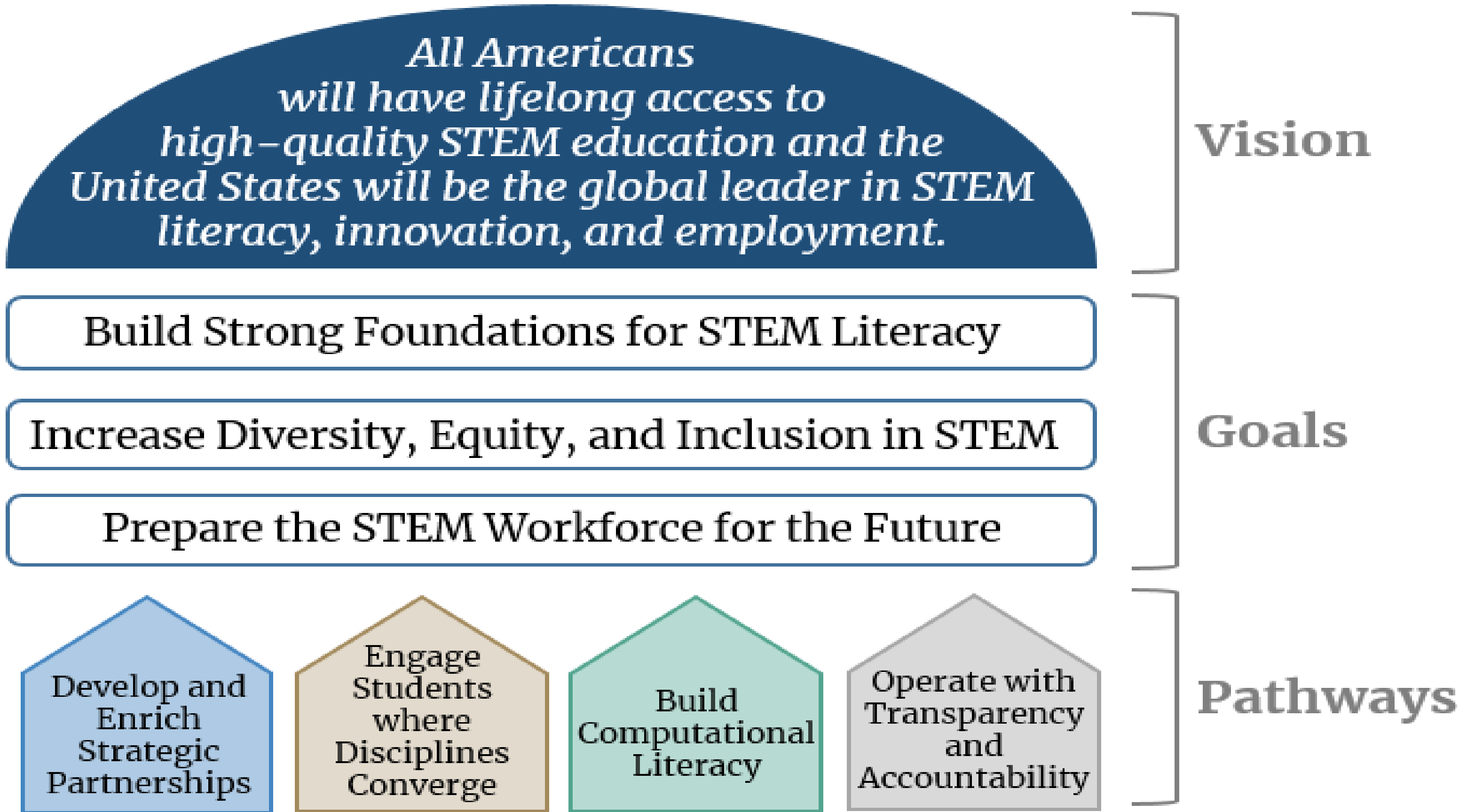




Charting a Course for Success:
America's Strategy for STEM Education
December, 2018



Federal Commitment to STEM Education



Department of Education COVID Funding for Students

- The CARES Act Higher Education Emergency Relief Fund-IHE/Student Aid provides funds to institutions for emergency financial aid grants to students whose lives have been disrupted.
- Contact your institution for information. Institutions determine how grants will be distributed and develop instructions for students about the grant.
- The funding opportunity number is ED-GRANTS-041020-003. If you have questions concerning this program, please submit them via e-mail to HEERF@ed.gov, or by phone, at 202-377-3711.



Federal Opportunities on USAJobs

- Look under Students and Recent Graduates to find Pathways Program:
 - Internship and Recent Graduate opportunities
 - Presidential Management Fellowships in STEM
 - Eligible to be hired noncompetitively after completing these programs
- Look by agency or field for other positions
- Fill out the resume builder ahead of time
- Adjust resume or cover letter to match application requirements
- Set up to get notifications when a new position is advertised



Special Hiring Authorities

- COVID-related hiring
- Expedited Hiring Authority for College Graduates up to GS-11
 - Passed in 2019. Awaiting regulations from Office of Personnel Management
 - Must be hired within 2 years of graduating
- Direct Hire authority for STEM positions GS-11 and above
- Agency specific authorities
 - Department of Interior, NOAA and US Forest Service have authority to hire students who participate in their summer internship programs and subsequently graduate
 - Department of Defense R&T Reinvention Labs have special authorities for student hires (www.avmc.army.mil/Careers-outreach/Student-employment/)
- Special hiring authorities for veterans and people with disabilities



The Federal Contract Workforce

- Agency work done by contractors who may be onsite or offsite
- Many entry level positions in the contract workforce
- Degrees may count toward years of experience
- Companies advertise through online job sites



Other valuable resources

- University Career Offices
- Professional Societies
- Online resources (candor.co/hiring-freezes)
- Professional networks



Ørsted U.S. Offshore Wind

Presentation to the Marine Technology Society



Kris Ohleth
May 13, 2020

Ørsted overview and business units

Ørsted develops energy systems that are green, independent and economically viable



- Revenue (2019): DKK 67.8 bn (USD 10 bn)
- EBITDA (2019): DKK 17.5 bn (USD 2.6 bn)
- Credit Rating: Moody's Baa1 (stable), S&P BBB+ (stable)
- 6,526 employees
- Active in USA, Scandinavia, United Kingdom, Germany, The Netherlands, Poland, Taiwan, Japan

Major Shareholders (voting share %)

- Danish State 50%
- Seas NVE 7.8%
- Capital Group 5-10%

Offshore



- Global market leader in offshore wind
- Develops, constructs, owns and operates offshore wind farms
- Provides 100% wind backed Corporate PPA's & merchant products to large business customers
- Renewable hydrogen projects in electrolysis and Power2X technologies
- 6.8 GW operational capacity
- 3.1 GW build-out plan towards 2022
- Ambition of 15 GW installed offshore wind capacity by 2025

Onshore



- Develops, constructs, owns and operate onshore wind, solar and energy storage projects
- 1 GW onshore operational capacity
- 1.1 GW under construction and pipeline to reach 5GW by 2025
- Energy storage solutions with a first 20MW battery storage project in operation
- Permian Energy Center which consists of 420MW Solar PV and 40MW storage facility

Markets & Bioenergy



- Heat and power plants converted from coal and gas to biomass and waste-to-energy
- #1 in Danish heat and power generation with 25% of market
- Energy supply solutions for B2B customers
- Provides route-to-market for own and customers' generation portfolio
- Market trading operations to optimize hedging contracts

Ørsted Offshore: Global overview

25+ years of experience and unparalleled track record

The global leader in offshore wind

- › **6.8 GW** installed capacity
- › **3.1 GW** under construction
- › **1,350+** turbines spinning
- › **26** offshore wind farms in operation

The world's first

Vindeby, 1991
5 MW



America's first

Block Island Wind Farm, 2016
30 MW



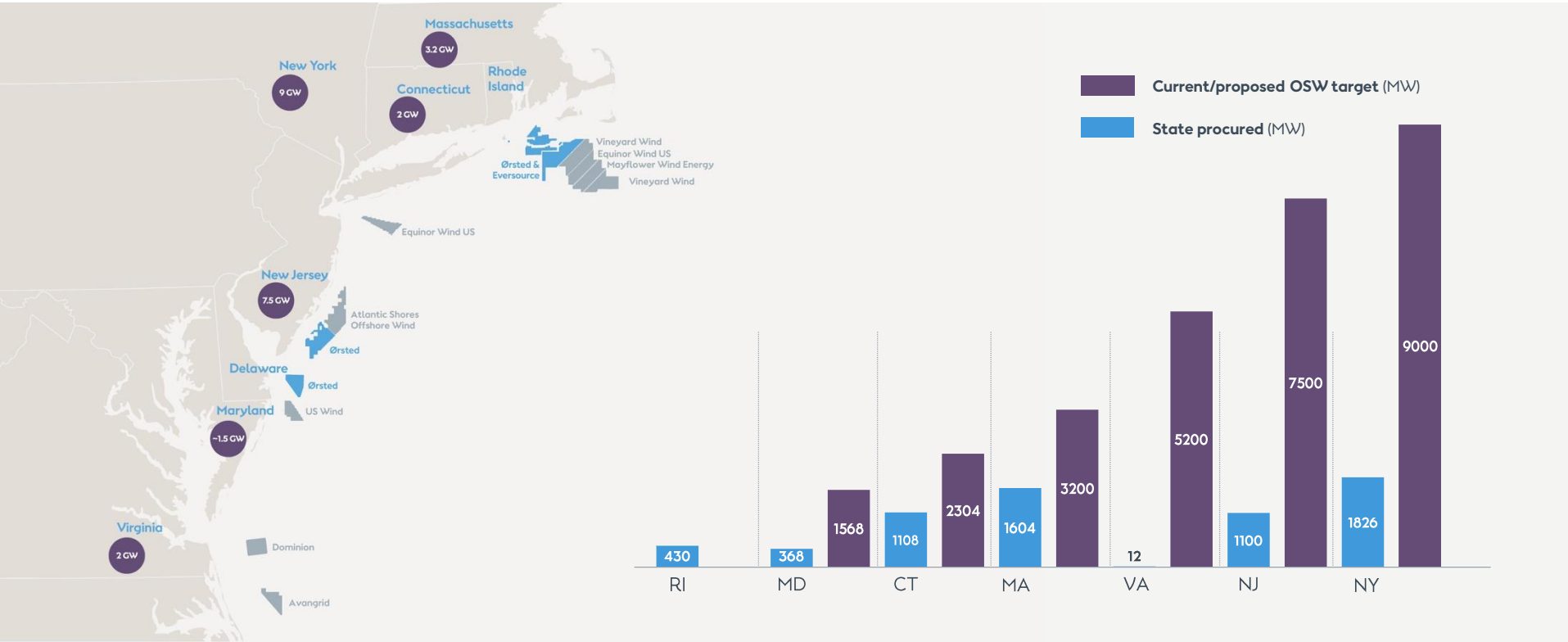
The world's largest

Walney Extension, 2018
659 MW



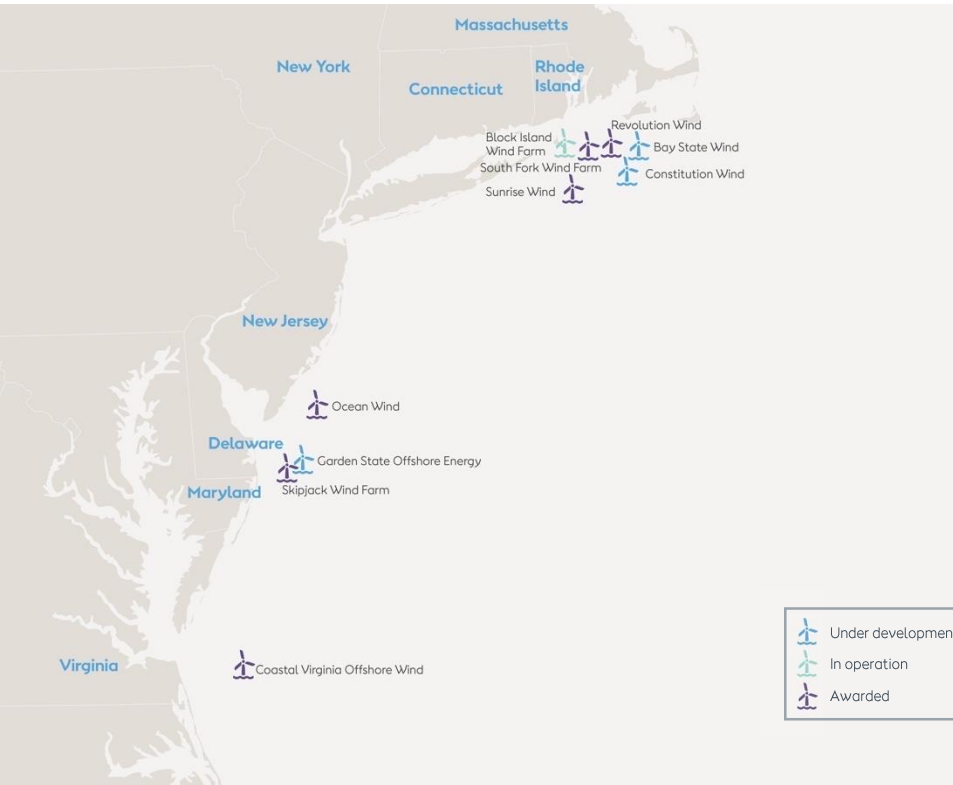
Offshore wind market on the East Coast

Potential for 25+ GW



Ørsted U.S. Offshore Wind

Attractive and geographically diverse portfolio of offshore wind assets: potential for 8-10GW



In Operation

Block Island Wind Farm: 30MW

Awarded

Revolution Wind (50-50 JV w/ Eversource): 704MW (400MW to RI, 304MW to CT)

South Fork Wind Farm (50-50 JV w/ Eversource): 130MW

Sunrise Wind (50-50 JV w/ Eversource): 880MW

Ocean Wind (with the support of PSEG): 1,100MW

Skipjack Wind Farm: 120MW

Coastal Virginia Offshore Wind (EPC contract): 12MW demo project

Under Development

Bay State Wind (50-50 JV w/ Eversource)

Constitution Wind (50/50 JV w/ Eversource)

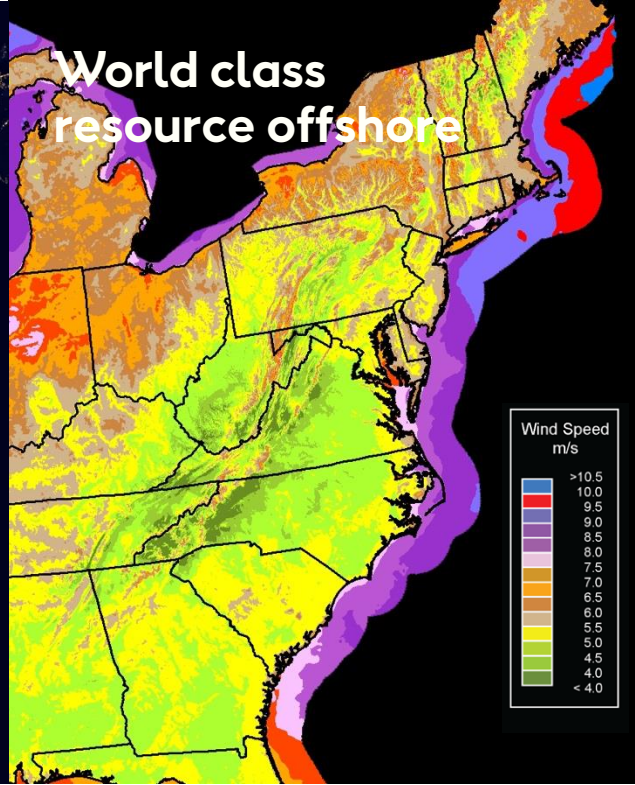
Garden State Offshore Energy (50/50 JV with PSEG)

Why offshore wind

Huge coastal electricity demand



World class resource offshore



Large buildable continental shelf



Block Island Wind Farm

America's first offshore wind farm



30MW project



17,000 homes

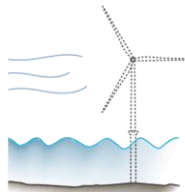


First in the nation



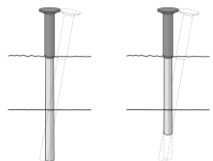
R&D Program: Organized into six roadmaps

RM1 



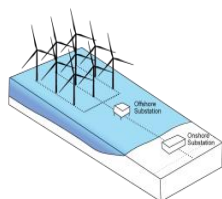
Wind & Waves

RM2 



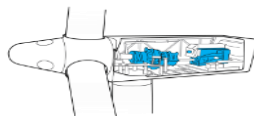
Foundations,
Geoscience and
Marine

RM3 



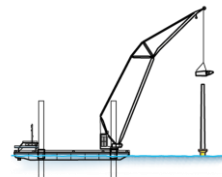
Electrical
Infrastructure

RM4 



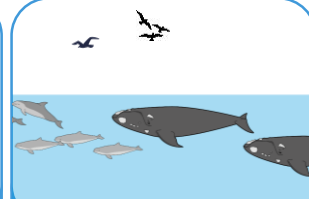
Turbine O&M

RM5 



Logistics

RM6 



Environment

Objectives

- Enable the pipeline
- Cost of Energy reduction
- HSE performance
- Design standard improvements
- Competence development

Ranked most sustainable company in the world



Home / Careers /

Open positions

Category

All categories



Country

All countries



Language

All languages



Available Jobs	Department	Country	Language	Deadline
Finance & Accounting Specialist to ensure local compliance	Ørsted APAC	Taiwan	English	31.05.2020
Back Office Trainee for energy trading activities	Ørsted Poland	Poland	English	22.05.2020



Home / Careers /

Open positions

Category

All categories

- All countries
- Denmark
- France
- Germany
- Japan
- Malaysia
- Netherlands
- Poland
- South Korea
- Sweden
- Taiwan
- UK
- USA

Language

All languages

Available Jobs	De
Finance & Accounting Specialist to ensure local compliance	Ør
Back Office Trainee for energy trading activities	Ør

Language	Deadline
English	31.05.2020
English	22.05.2020

Thank you

Kris Ohleth

Senior Manager – Stakeholder Engagement

KRIOH@orsted.com



MAKAI OCEAN ENGINEERING

Supporting Students in the Age of COVID-19

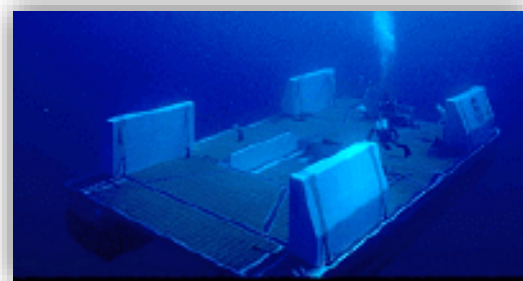
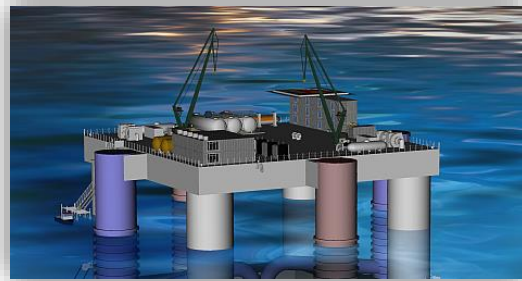
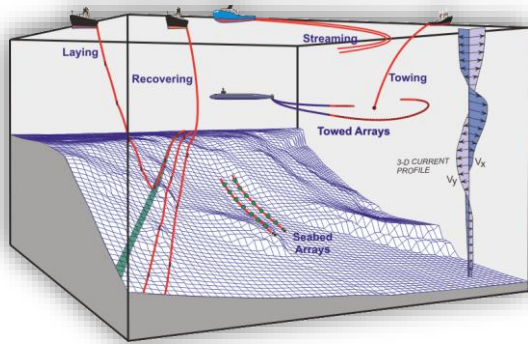
Greg Rocheleau, CEO
Makai Ocean Engineering, Inc.

May 13th, 2020

Makai is...



Innovative Ocean Technology Company • Founded 1973 • 37 employees



Submarine Cable Software

- World's #1 cable software
- Installed +250k miles

Ocean Energy

- Pioneers of SWAC/OTEC
- Next-Gen Heat Exchangers

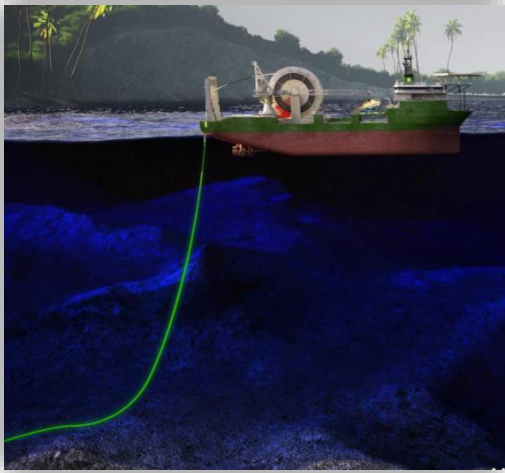
Subsea R&D and Technology

- Subsea vehicles and AUVs
- Sensor & comms networks

Oceans Multiple Award Contract (OMAC)

- Broad Ocean Engineering
- \$250M IDIQ

Cable Lay Software - MakaiLay

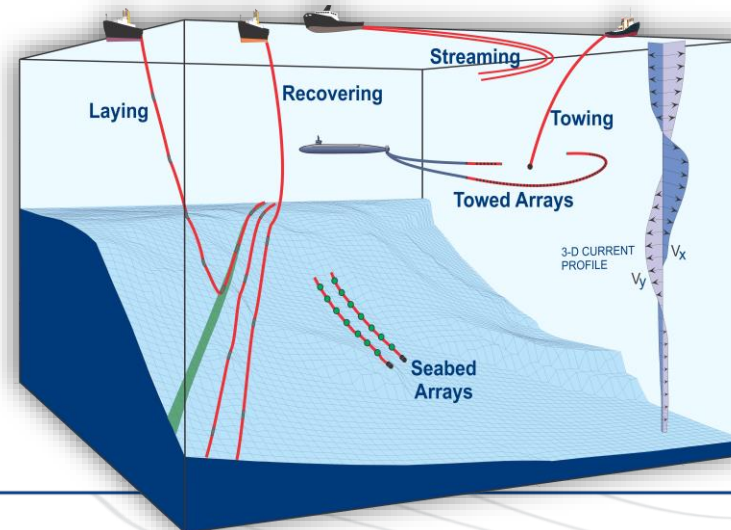


- Started in 1983 in Hawaii
- World's #1 cable laying software
- Used by 80% of global cable ship fleet
- Installed over 250,000 miles of cable
- Over \$35M in revenues = robust



Commercial Cables

- *Telecom*
- *Power*
- *Oil & Gas*



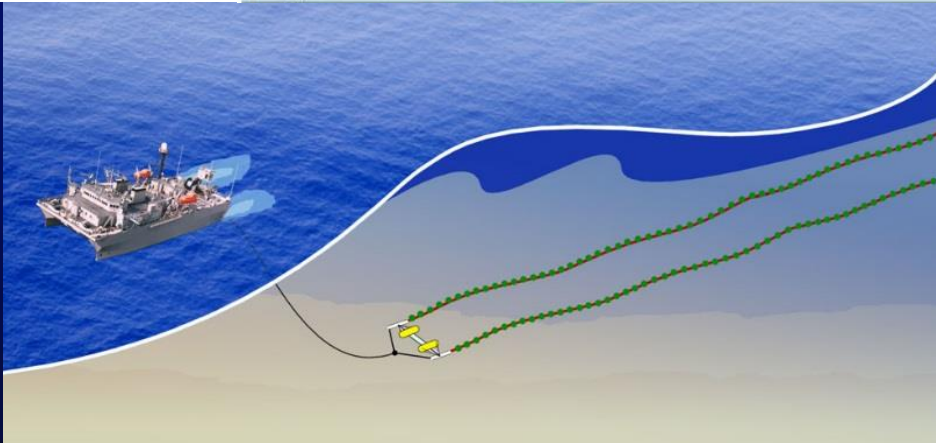
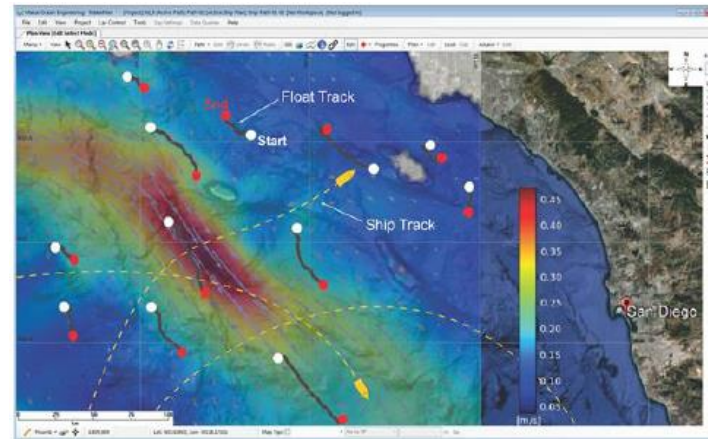
2003 State of Hawaii:
Exporter of the Year

Defense

- *Towed*
- *Fixed*
- *Cable Networks*

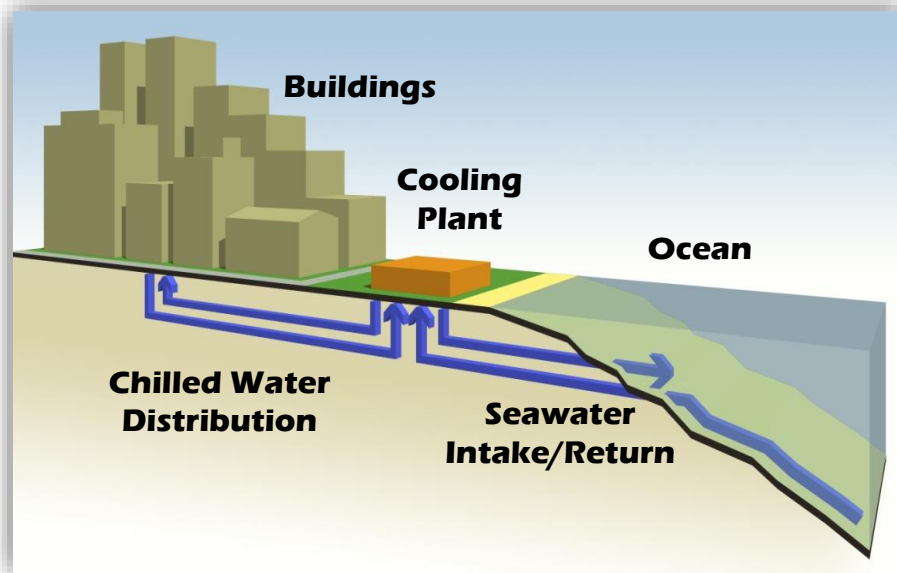
Subsea Technology

- Undersea vehicles
- Power, comms, sensors
- Oceanographic software
- Towed Arrays



Ocean Renewable Energy

Cooling



Seawater Air Conditioning (SWAC)

Pipelines



Ocean Thermal Energy Conversion (OTEC)

Electricity



Makai and Hawaii lead the world in these technologies

Makai Research Pier - Waimanalo, HI

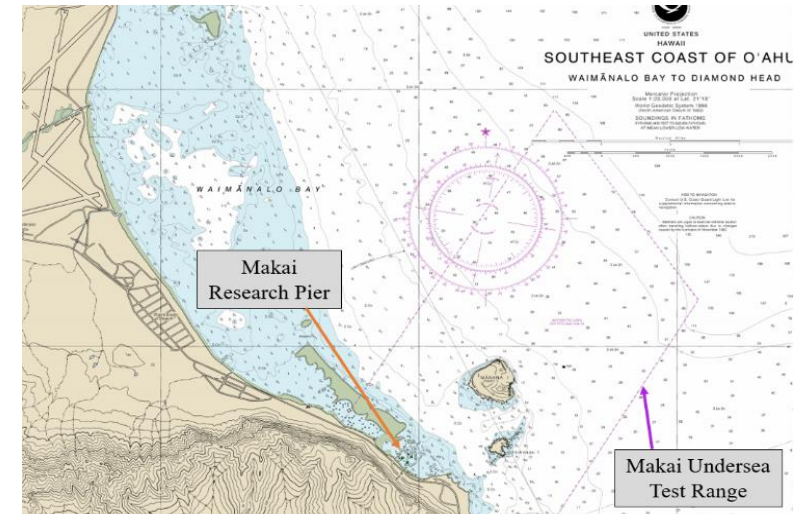
West Coast Operations Office – Ventura, CA

Makai Research Pier

- 215ft of pierside water for testing to 20ft water depth
- Pier-side davits and vessels available Certified divers holding SECRET clearances
- Offshore access - up to ~2000 ft water depth ~4 nmi away from pier

West Coast Office

- Office for OMAC IDIQ and west coast operations
- Equipment bay for hardware, sensor and equipment staging and storage



OERC: Ocean Energy Research Center – Kona, HI

First grid connected cc-OTEC plant in U.S. • NAVFAC/ONR funded • Kailua-Kona, Hawaii



Mission Statement: To reduce the cost of ocean energy

OERC - Marine Heat Exchanger Development & Testing

Heat Exchanger RDT&E

- Funded since 2009
- Next-gen ultra-compact heat exchangers for ONR, USAF, ARMY.

OERC Facility

- ~45,000 liters/min seawater
- ~66 ft, 2,200 ft, & 3000 ft depth SW available
- 39°F - 82°F SW temperatures
- SW velocity: 0 – 16.4 m/s
- High accuracy instrumentation
- Fully automatic controls



How are we dealing with COVID-19?

- **Working remotely with some essential on-site staff**
- **Maintaining stable mix of gov't & commercial contracts**
 - Gov't is doing well at funding their R&D programs
 - Larger commercial projects are not delayed
- **No layoffs and providing 100% capacity to clients**

Has our hiring philosophy changed?

- **As an established small business (47 years), always somewhat conservative / strategic with hiring**
 - **Every person has potential for outsized impact on company performance and future direction**
- **There is minimal change due to COVID – we still hire based on needs and confidence in ability to maintain funding for the position in the future**

What can you do to position yourself?

Challenges facing the work force cannot be sugar coated:

- Headlines include descriptions of largest unemployment rates since Great Depression, large layoffs, whole industry shutdowns

So, what can you do now to help yourself:

- Be patient, be persistent, and practice your speaking and phone/video interview skills to stick out.
- Be open minded and flexible – small businesses may need hires today but remain unsure of future needs – consider offering short term or temporary work to alleviate employer risk and show strong interest
- Short term – continued gov't R&D funding for small businesses and government contractors can be expected as they aim to boost the economy and get productive returns – network in these areas if not already doing so

And don't forget...bigger picture is that careers are not defined by 1 or 2 years:

- This will all eventually pass
- Some of Makai's best engineers / scientists spent "gap" years finding their path – there is more than one way to grow
- Long term - R&D, engineering, and ocean sciences will still be critical for global health and infrastructure – its not going away



MAKAI
OCEAN ENGINEERING

Mahalo!

Visit our website www.makai.com
for more information and contacts.

Greg Rocheleau
makai@makai.com
(808) 259-8871 | www.makai.com