TESTIMONY BEFORE THE ENERGY, UTILITIES AND TECHNOLOGY COMMITTEE

Testimony of Dr. Habib Dagher, Executive Director, University of Maine Advanced Structures and Composites Center
in Support of LD 336 "An Act To Encourage Research To Support the Maine Offshore Wind Industry"

Senator Lawrence, Representative Berry, and Members of the Joint Standing Committee on Energy, Utilities and Technology (EUT): My name is Habib Dagher and I am the Executive Director of the University of Maine's Advanced Structures and Composites Center. It is the largest university-based research center in Maine, with 260 full and part-time employees. Over the 35 years at UMaine, I have been committed to develop technologies that create Maine jobs.

The Center through our research grants and contracts has financially sponsored 2,600 student interns, who got paid to work on research projects which transform their education. For the past decade, dozens have worked on offshore wind in our lab and some are now leaders in the industry. LD 336 is the key to retain this home-grown talent of highly committed bright young engineers, so that they can grow a whole new clean energy industry for Maine. LD 336 is also key to retain our investors.

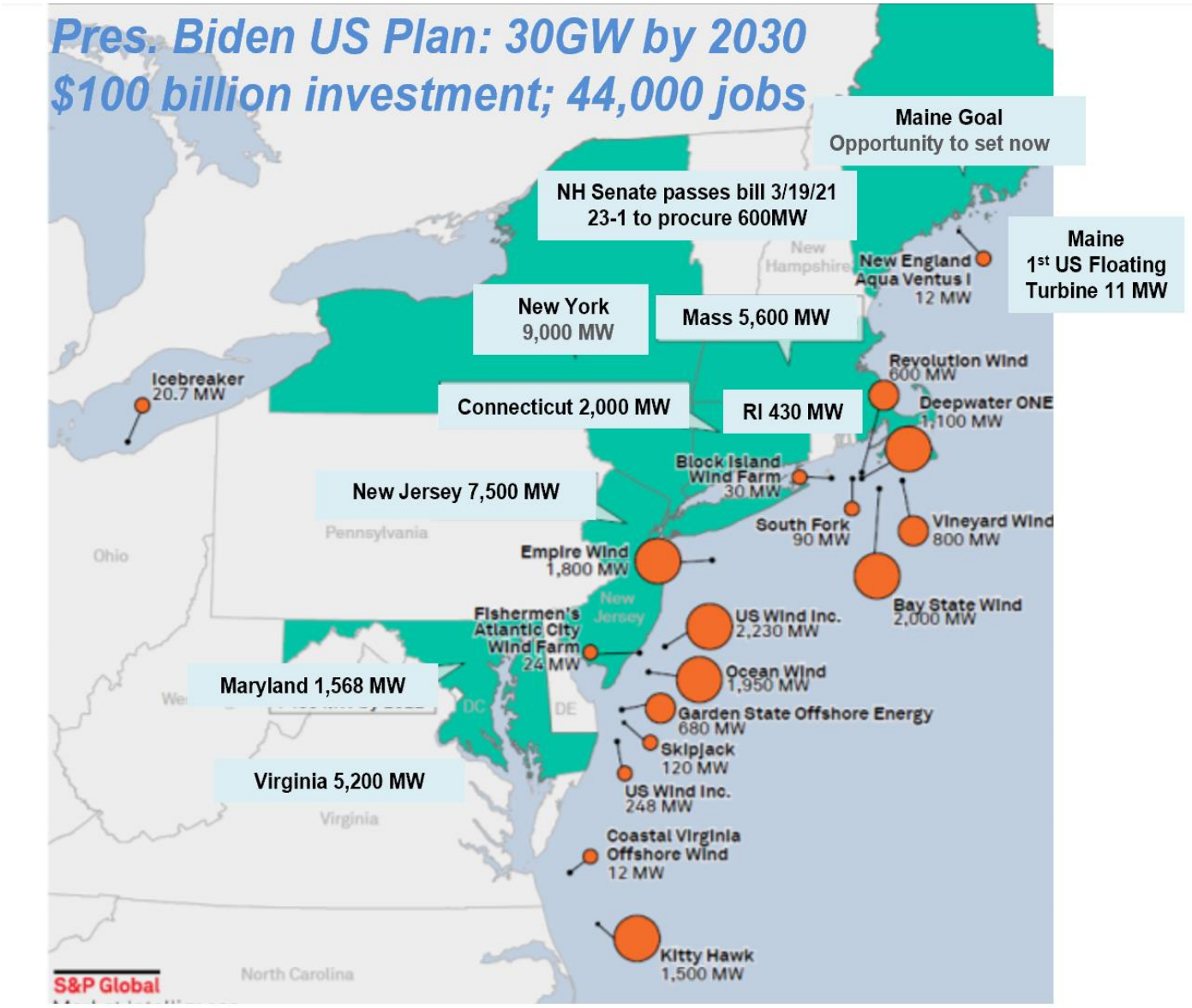
I am testifying in strong support of LD 336, "An Act To Encourage Research To Support the Maine Offshore Wind Industry"

1. Why now?

In 2010, the legislature voted unanimously for Maine to enter the offshore wind race, and Maine voters approved an $11 million bond for UMaine to develop floating wind technology. Over the past decade, we developed a technology that can be made in Maine, that has earned more than 60 patents and has attracted $150 million in DOE and industry investments. However, we cannot take our success or our investors for granted. New technologies have a shelf life and investment will go where it is welcome. LD336 now is key to keep Maine in the race, to stay relevant for our investors, and to finish the job that Mainers have asked us to do.

Maine does not have time to blink. The *Olympics 100-meter dash race* is on and the starter gun has been fired. The world and the rest of the east coast states are already running. Our Maine team has been preparing for this race for 12 years and we are capable of winning; however, without LD 336 now, we will remain on the sidelines watching other runners go by. Please see the figure below: the NH Senate voted 26-1 to procure 600MW of offshore wind, Mass has a 5,600MW target, Connecticut 2000MW, NY 9,000MW and NJ 7,500MW. LD 336 is a small commitment in comparison.

Approving LD336 starts a process that will take nearly 5 years. It will allow the state time to work with fishermen to locate a site, and will allow time to properly evaluate environmental impacts.



2. Why is the Research Array needed?

There is a lot of work between testing a single prototype and starting a new industry. The Research Array is needed to learn how to effectively scale up, how to conduct serial production here in Maine to keep the jobs in Maine. The Monhegan project will be a "hand-built" prototype. We need to evaluate where and how to serially build these complex units, how to deploy them, how to efficiently moor and anchor them, how to effectively maintain them and what major upgrades are needed to our port facilities. We need to design and build vessels that will shuttle hundreds of expected O&M workers to the farms, and we need to develop effective worker training programs. To prepare for a marathon, you don't just go out there and run 26 miles. LD 336 is about preparing for a marathon; it is a "Crawl before you walk, walk before you run" approach.

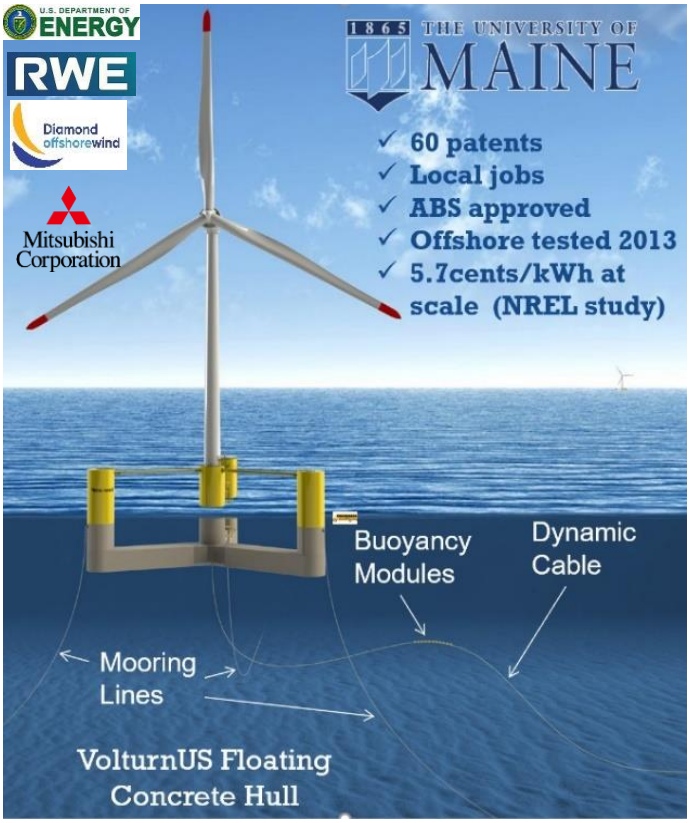
And the prize is big. Mainers spend $4-$6 billion per year on fossil fuels, and most of these dollars leave our state[1].

3. **Why are we Working with RWE and Diamond-Mitsubishi?**

With $11 million invested by Maine voters, we generated over 60 patents and won a $50 million national competition from the US DOE. With this success, numerous private companies competed to build the Aqua Ventus project and we chose two of the best in the World: RWE and Diamond Generating Corporation, a subsidiary of Mitsubishi.

We selected them because they are world leaders, because they shared our vision to lead in the floating wind space, and because they committed $100 million to build the Aqua Ventus project on their balance sheet. In addition, two of their principles have a long history of working and living in Maine.

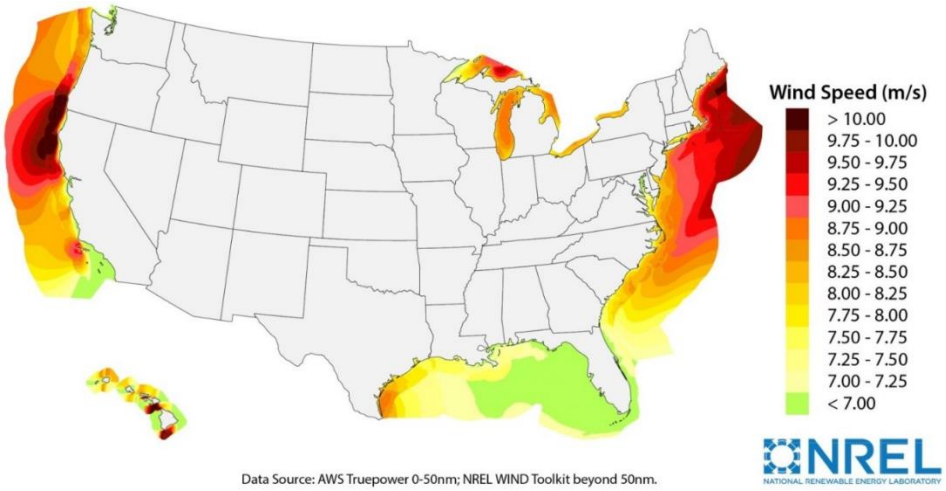
LD336 <u>now</u> keeps Maine in the race, keeps our engineers in Maine, keeps our investors in Maine, and allows us to finish the job that Mainers have voted to do.



[1] Based on Energy Information Administration (EIA) data for Maine https://www.eia.gov/state/data.php?sid=ME

Addendum

The Offshore Wind Resource: Maine has one of the best offshore wind resources in the US. The Gulf of Maine (GOM) has nearly 156 GW of offshore wind capacity within 50 miles of the coast. If we harnessed just 3% of that resource, that is 3% of the GOM area, we can electrify heating and transportation. The only thing is that we have very deep waters off our coast, and we need to float the turbines.



Long History of Support and Mainers have Voted: There has been a long history of bipartisan support for offshore wind in Maine, like there has been in other east coast states. Back in 2009, the Maine Legislature passed LD 1465 which established the Monhegan Test Site which was assigned to the State to UMaine. In 2010, Maine voters passed an $11 million bond to support UMaine offshore wind research and the demonstration project.