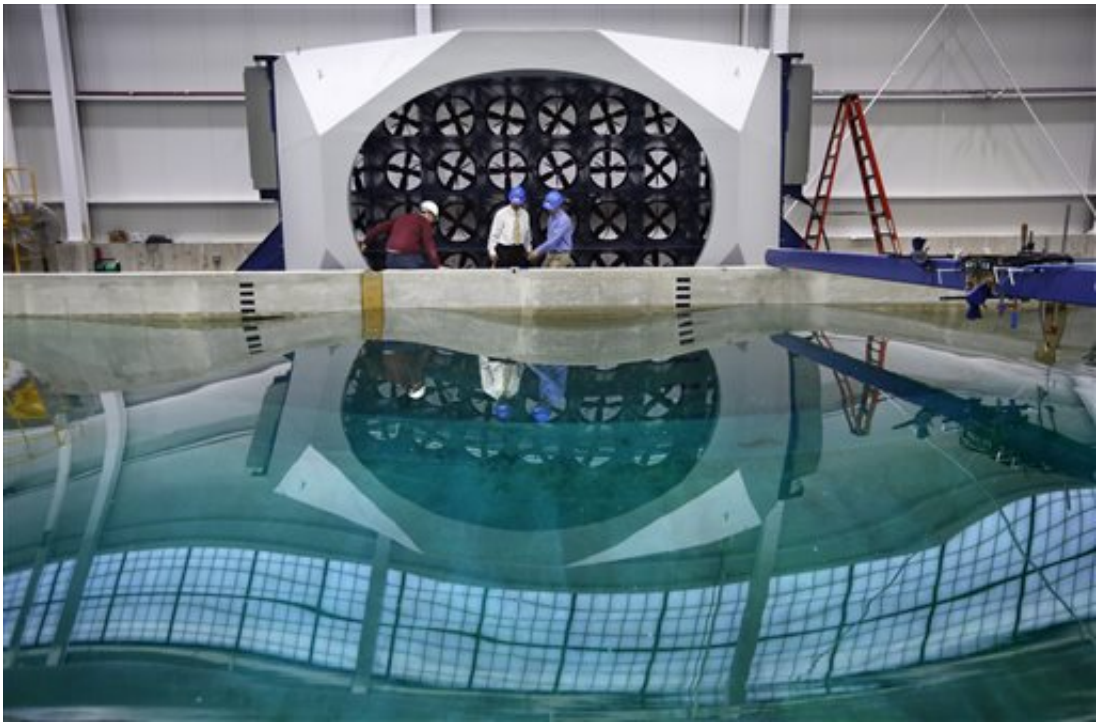
UMaine debuting ocean simulator to test sea-bound technology

November 22 2015, byPatrick Whittle



In this Friday, Nov. 20, 2015, photo, waves distort the reflection in an indoor wave pool and wind tunnel at the University of Maine in Orono, Maine. The university's new wind-wave basin is capable of simulating some of the worst conditions at sea at a 1:50 scale. (AP Photo/Robert F. Bukaty)

Builders of everything from cruise ships and ports to oil rigs offshore wind turbines are tasked with the same question—will their work will be strong enough to stand up to the sea?

A miniature indoor ocean at the University of Maine could make for a lot less guessing.

The school's Advanced Structures and Composites Center is ready to unveil a $13.8 million expansion that director Habib Dagher said will simulate a stormy ocean to help innovators find out if their creations can withstand the sea's fury.

The indoor facility, six years in the making, will be able to simulate waves over 100 feet tall and winds of more than 200 mph on scale models to test products, Dagher said. The university will unveil the facility, the centerpiece of which is a 100-foot pool that uses 32 fans and 16 paddles to generate wind and waves, at a Monday ceremony.

"It's really advancing society by better understanding the ocean—the way things survive in the ocean," Dagher said.

The W2 Ocean Engineering Laboratory will test the strength and seaworthiness of structures such as boats; offshore wind, tidal and wave energy facilities; aquaculture ventures; oil and gas equipment and critical infrastructure such as ports and bridges, Dagher said.

It will also be able to use models of coastal cities—Dagher mentions possibilities like Portland, Maine, and New York City—to simulate how they will be impacted by sea level rise, he said. That will help test potential protective measures for those cities, he said.

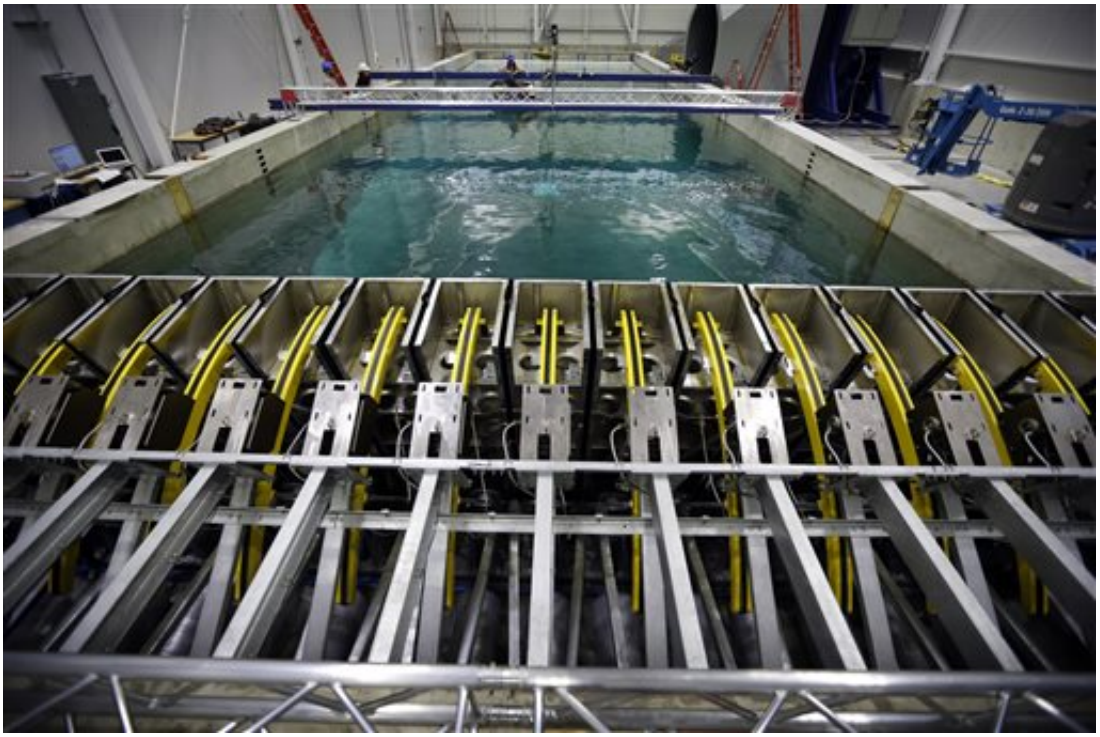
In this Friday, Nov. 20, 2015, photo, Habib Dagher, left, director of the University of Maine's Advanced Structures and Composites Center, and Anthony Viselli, manager of Offshore Model Testing and Structural Design, examine a wind machine at an indoor wave pool at the University of Maine in Orono, Maine. The wind machine can simulate hurricane conditions on a 1:50 scale. (AP Photo/Robert F. Bukaty)

The facility is already attracting interest from builders, as workers were testing a model of a facility that would harness energy from waves. A half-dozen businesses have lined up to use it over the next few weeks, Dagher said.

"We're already getting calls from a lot of wind energy folks. There's no facility that can do this right now," said Anthony Viselli, the manager of the facility and project manager of its equipment's construction.

Dozens of representatives from Maine industry plan to attend Monday's

unveiling, including Peter Vigue, chairman and CEO of Cianbro Companies, which oversaw the construction of the building. He said the facility is important for luring offshore business to Maine.



In this Friday, Nov. 20, 2015, photo, paddles that are part of a wave generator line one end of an indoor wave pool and wind tunnel at the University of Maine in Orono, Maine, that is part of the school's expansion of its Advanced Structures and Composites Center. The center's director says with the new equipment, they will be able to simulate a stormy ocean to help innovators find out if their creations can withstand the sea. (AP Photo/Robert F. Bukaty)

"Technology like this will be of significant value going forward in attracting other companies to our state that are in that industry," he said.

The simulated ocean at the university's campus in Orono was funded by a combination of public and private grants, Dagher said.

In this Friday, Nov. 20, 2015, photo, Habib Dagher, director of the University of Maine's Advanced Structures discusses the school's new indoor wave pool in Orono, Maine. Dagher is the architect of the university's offshore wind project, VolturnUS.(AP Photo/Robert F. Bukaty)

In this Friday, Nov. 20, 2015, photo, a technician steadies a skiff at the "beach" end in an indoor wave pool and wind tunnel at the University of Maine in Orono, Maine. The university's new 90-foot-long wind-wave basin is capable of simulating some of the worst conditions at sea at a 1:50 scale. (AP Photo/Robert F. Bukaty)

In this Friday, Nov. 20, 2015, photo, technicians check equipment from a skiff in an indoor wave pool and wind tunnel at the University of Maine in Orono, Maine, that is part of the school's expansion of its Advanced Structures and Composites Center. The center's director says with the new equipment, they will be able to simulate a stormy ocean to help innovators find out if their creations can withstand the sea. (AP Photo/Robert F. Bukaty)

In this Friday, Nov. 20, 2015, photo, Habib Dagher, director of the University of Maine's Advanced Structures, carries a bag containing the composite material used to create the cement-filled arched tubes behind him at a lab at the school in Orono, Maine. Dagher is the primary inventor of the award-winning composite arch bridge system known as the "Bridge-in-a-Backpack," and the leader of the school's new wind-wave basin. (AP Photo/Robert F. Bukaty)

In this Friday, Nov. 20, 2015, photo, a scale model of a wind turbine sits on a table as Habib Dagher, director of the University of Maine's Advanced Structures, discusses the university's offshore wind project, VolturnUS. (AP Photo/Robert F. Bukaty)