

Offshore wind energy

Massachusetts' offshore wind potential

Massachusetts has a greater potential for offshore wind energy than any other state in the country.³⁴

Wind farms off the coast of Massachusetts could generate more than 19 times as much electricity as the state currently consumes each year, or 8.3 times as much electricity as Massachusetts is projected to use once heating and transportation are converted from fossil fuels to electric power – a necessary step to achieve 100% renewable energy economy-wide.³⁵

A proven technology

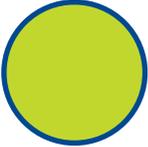
Today, there are more than 22 gigawatts of offshore wind capacity installed in Europe, including 5,000 turbines in 12 countries.³⁶

Offshore wind technology has improved dramatically over the last three decades. The first offshore wind turbines, installed in Denmark in 1991, had a capacity of 0.45 megawatts and a capacity factor (the average generation as a percentage of peak capacity over the course of a year) of 22%. The Block Island Wind Farm, the first offshore wind facility in the United States, has 6-megawatt wind turbines and a capacity factor of 47%.³⁷ Manufacturers are now offering turbines with a capacity of up to 10 megawatts.³⁸

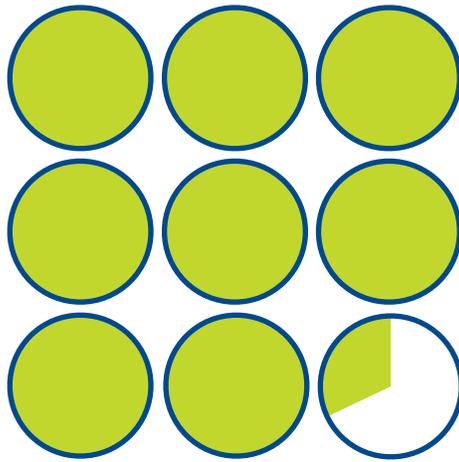
Commitments to offshore wind

In 2016 and 2018, the Legislature passed bills allowing for the procurement of up to 3,200 megawatts of offshore wind energy.³⁹ The first contract was awarded to the 800-megawatt Vineyard Wind project, which will produce enough electricity to meet 6% of Massachusetts' annual demand.⁴⁰





**Electricity
consumption if
heating and
transportation
are electrified**



Offshore wind potential

**Once heating and
transportation
are converted to
electric power,
offshore wind
could still power
Massachusetts 8.3
times over.**

Electricity from Vineyard Wind will cost 6.5 cents per kilowatt-hour, lower than many observers had expected.⁴¹ Over 20 years, the Vineyard Wind project is expected to save Massachusetts ratepayers approximately \$1.4 billion.⁴²

Mayflower Wind was recently chosen to build Massachusetts' second 800-megawatt offshore wind farm, which will provide electricity at a cost even lower than Vineyard Wind.⁴³

Offshore wind hub

Massachusetts is positioned to become a center of the offshore wind industry in the United States. The New Bedford Marine Commerce Terminal is the first facility of its kind in North America, designed for the construction and deployment of offshore wind turbines.⁴⁴ In Charlestown, the Wind Technology Testing Center conducts testing of wind turbine blades.⁴⁵

The U.S. Department of Energy projects that the offshore wind industry could employ 76,000–80,000 people nationwide by 2030.⁴⁶