Offshore Wind Energy

Offshore wind is a source of clean, renewable energy. It can help us use less fossil fuel in Nova Scotia. It is one of many solutions needed to help us meet our climate change goals and grow our green economy.

Nova Scotia's offshore wind speeds are among the fastest in the world. Building offshore wind farms around Nova Scotia will create a new local source of renewable electricity.

The benefits:

- supports the development of green hydrogen and its derivatives.
- a clean, renewable energy source.
- creates sustainable jobs and supports businesses in the Nova Scotia supply chain.
- wind energy plays an important role in the transition from fossil fuels – along with other renewables like solar, tidal and imported hydroelectric power.

What is wind energy?

- Wind energy – or wind power – is electricity produced by wind turbines.
- Wind turbines can be located on land (onshore wind) as well as in the ocean (offshore wind).
- It is a renewable resource – the wind is almost always blowing offshore – and because offshore wind turbines are typically larger than onshore turbines, they can capture a lot more wind to produce electricity.

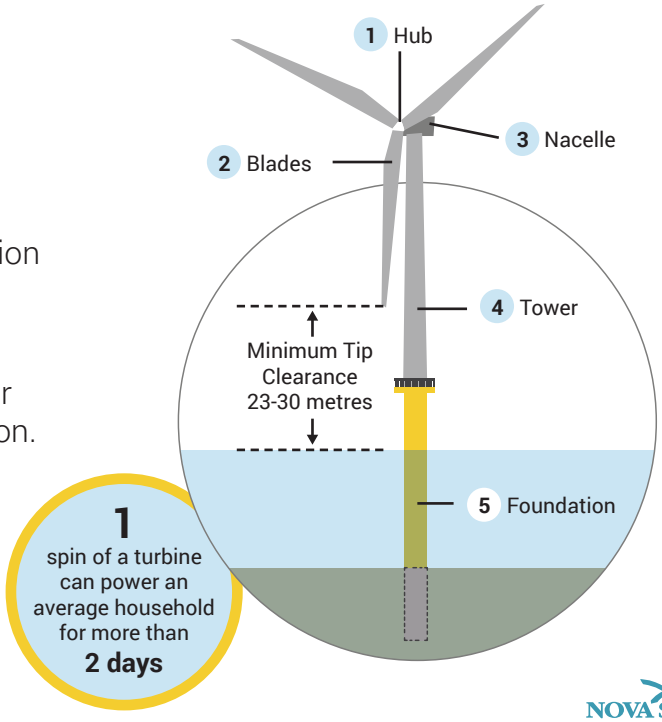
How do wind turbines work?

Wind turbines turn wind energy into electricity.

Wind causes the turbine blades to rotate. This rotation causes the electric generator located behind the blades to produce electricity.

The electricity is transmitted down the turbine tower and along the seafloor through cables to a substation.

From the substation, the electricity is transmitted to shore and onto the power grid for distribution to homes, businesses, and other facilities.



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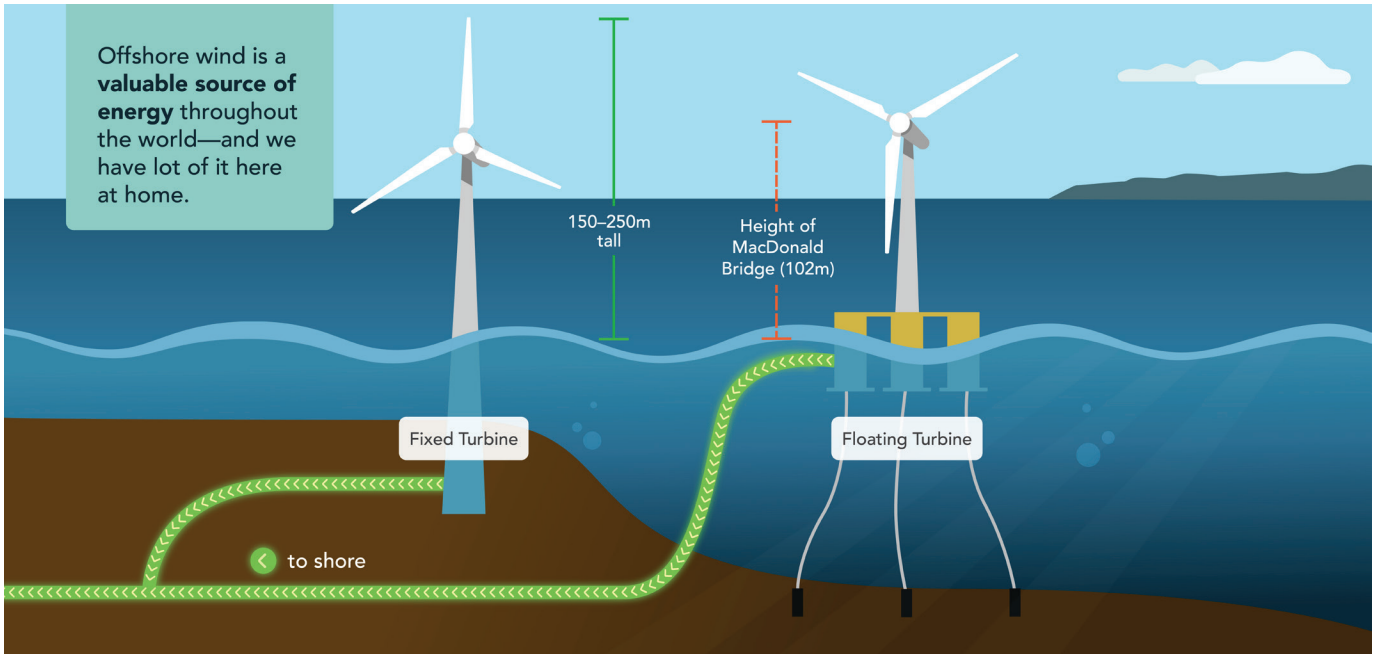
Fixed and floating turbines

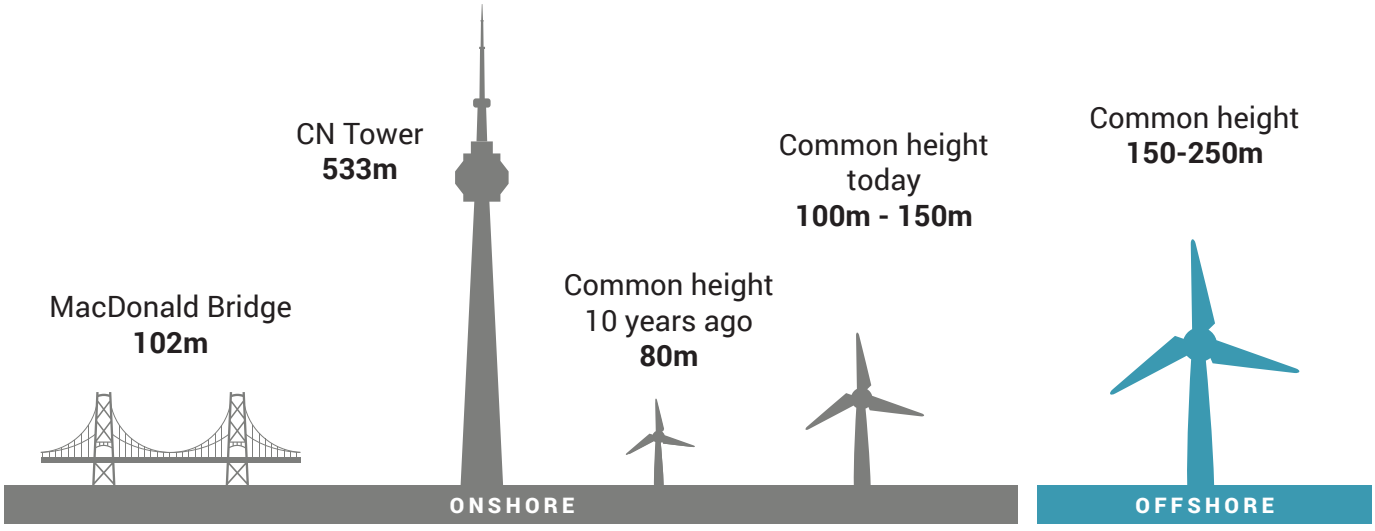
Nova Scotia has a large continental shelf off its shores. This shelf is a good place for both floating and fixed-bottom turbines.

Floating turbines are anchored to the seabed using mooring cables. They are more suitable for water that is deeper than 60 metres.

Fixed-bottom turbines are attached to the seabed directly using different foundations. They are typically used in more shallow waters.



How big are offshore wind turbines?



Offshore wind turbines are taller and have longer blades than onshore wind turbines. The bigger size means they can capture more wind to produce more electricity.

Offshore wind and the fishing industry

Offshore wind is used in other places around the world – the technology and successful co-location with other industries is already happening.

We are developing offshore wind in a way that is responsible and sustainable, and we will make sure it can coexist with other sectors, such as the fishery, without harm.

We worked with the federal government on a regional assessment for offshore wind. This study assessed the benefits and the impacts of developing this sector in Nova Scotia.

The assessment looked at the environmental, health, social and economic conditions that may be affected.

It is helping identify where offshore wind projects should be located, how projects will be built, and how the sector will be regulated.

What does offshore wind have to do with green hydrogen?

Offshore wind produces ample clean electricity to support the development of green hydrogen and its derivatives, while also providing renewable energy to the local grid.

We can do both – greening our grid and building a new and green export opportunity that creates jobs and other economic benefits for Nova Scotia, while fighting global climate change.

Offshore wind is one of the fastest-growing energy sources in the world, and we anticipate high demand for its clean electricity to power the production of green hydrogen.

Together, offshore wind and green hydrogen will spur green industries in Nova Scotia and may help move us closer to net-zero.

Who will regulate this industry?

Both the federal and provincial governments are involved in regulating offshore wind.

The Canada-Nova Scotia Offshore Petroleum Board's mandate has been expanded to include regulating offshore renewable energy. It is now called the Canada-Nova Scotia Offshore Energy Regulator.

The regulator has more than 30 years of regulatory experience, technical expertise, experience enforcing occupational health and safety and environmental standards, and administrative capacity for this kind of work.

Engagement

Developing the offshore wind industry will take time. We are preparing for this new industry and putting our natural resources to work. We are developing Nova Scotia's offshore wind industry with ongoing engagement with Mi'kmaq and Indigenous peoples, the fishery, environmental organizations, and any other interested parties. We are committed to doing this right.

For more information, contact:
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