

Clarkson Ducted Wind Turbine



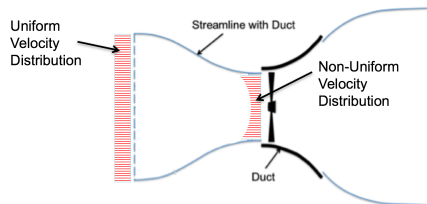
The wind energy group at Clarkson has developed technology to improve the performance of small wind turbines, reducing the cost per kWh to ½ that of conventional wind turbines. Our next step is to build and test a fully working ducted prototype.



Clarkson Design Technology

Integrated Rotor Design

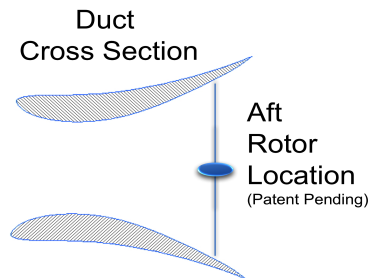
Our rotor design accounts for the influence of the duct on the velocity field of the turbine rotor sees to create the proper twist of the blade.



Rotor Location

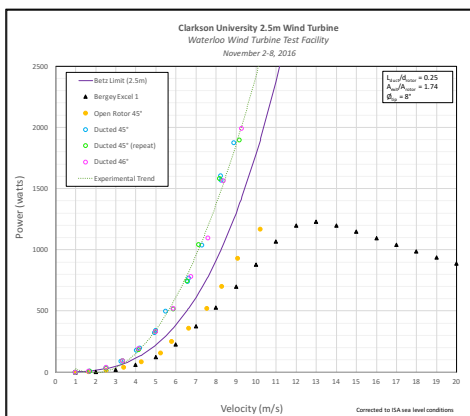
Ducted turbines have traditionally placed the rotor at the throat of the duct, the location of highest velocity.

Clarkson has discovered that if the rotor is moved farther into the duct, the turbine power output increases.



Experimental Data

The performance of a 2.5 m rotor wind tunnel model was recently demonstrated at the University of Waterloo's Wind Turbine Test facility in Waterloo Canada, doubling the output power of a commercially available un-ducted rotor of the same size.



Proposed Commercial Prototype

Construction of a fully workable, commercially viable turbine is the next step in transferring the technology developed at Clarkson to the rest of the world. The designated baseline is a 3-meter rotor design which will fill a need in several commercial markets.

Rotor Diameter	3.0 m (9.8 ft)
Duct Diameter	3.7 m (12.0 ft)
Rated Power (11 m/s):	3500 W
Permanent Magnet Gen.	3.5 kW, 250 RPM
AEO (5 m/s annual average):	7129 kWh
Nacelle Weight (est):	100 kg (220 lb)

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It's cheaper, quieter and generates double the energy of a conventional wind turbine.

Why would you pick anything else?



The DTI-3.0

It's called a "ducted wind turbine" and it delivers twice the energy from the wind than a conventional rotor of the same size. "No brainer" is just the start of it.

