

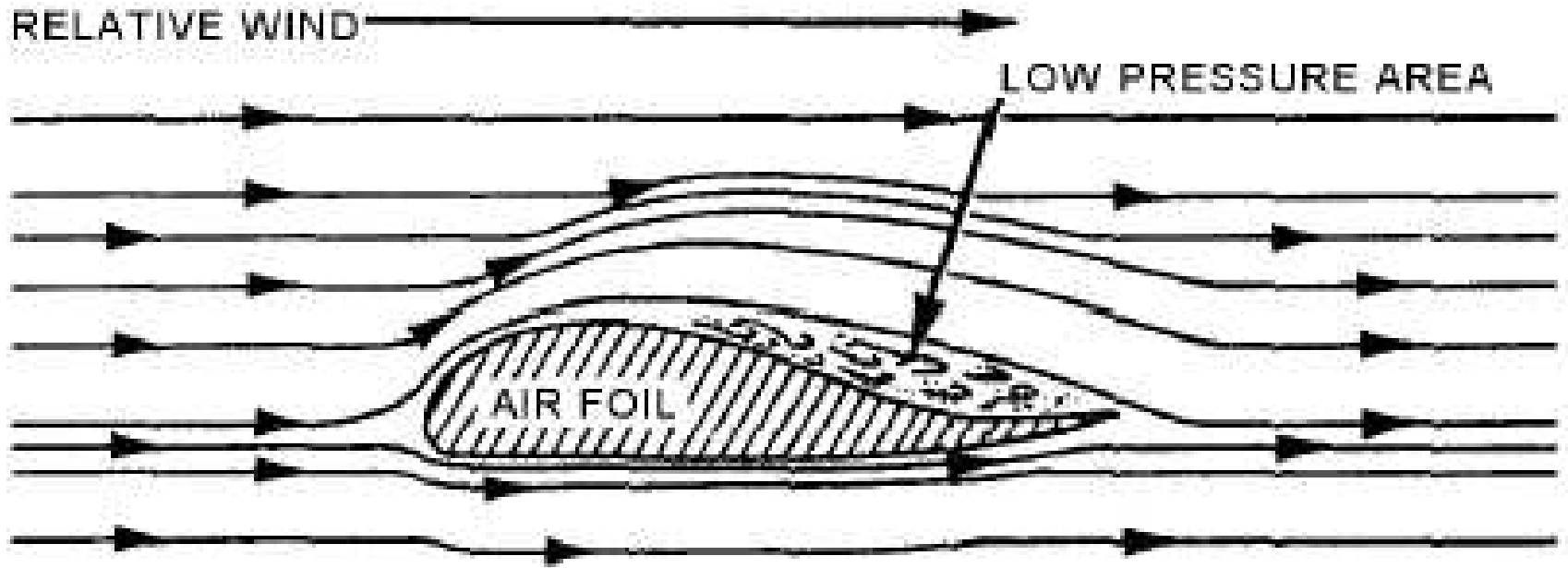


Various Wind Technologies



GENI Global Energy
Network Institute

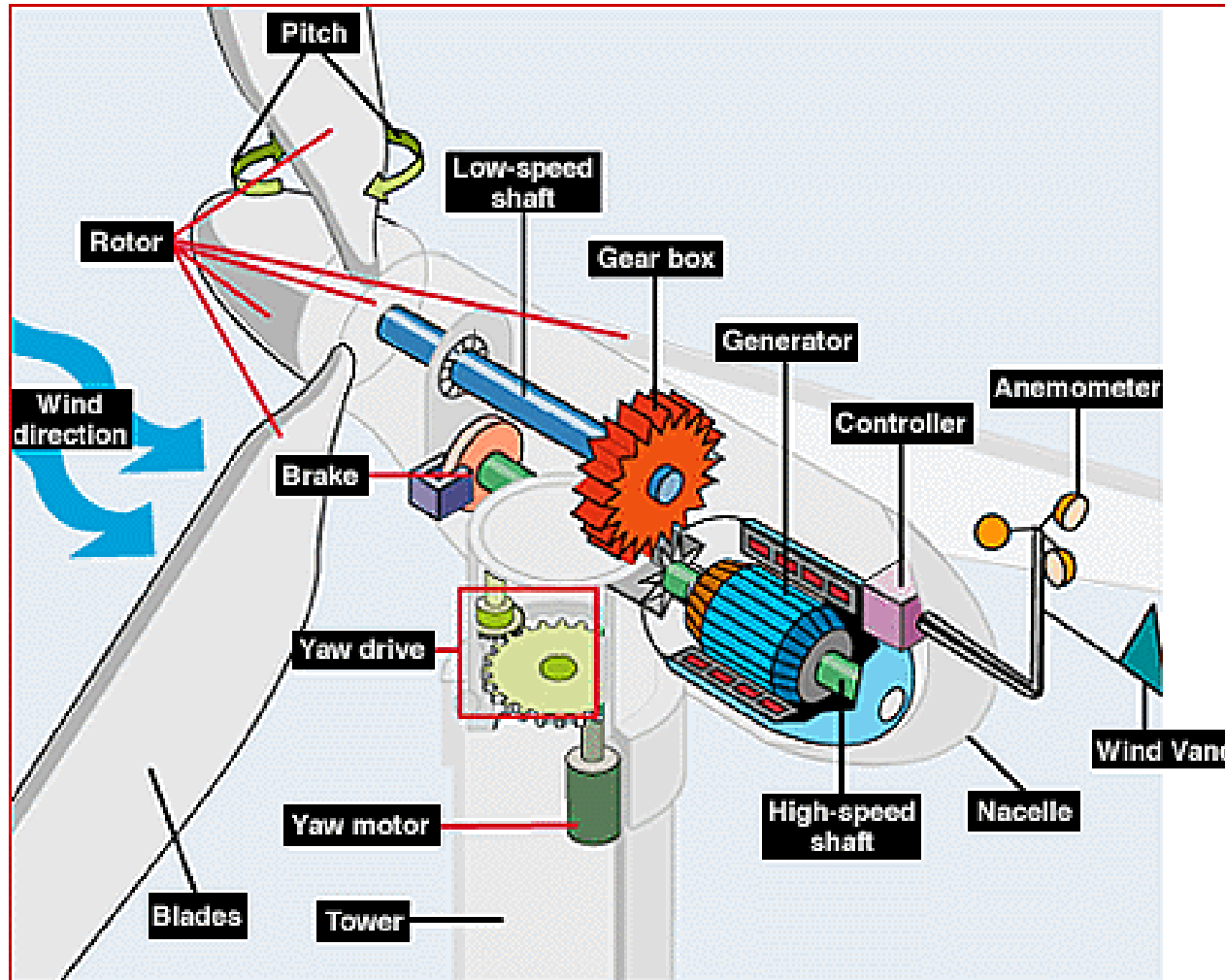




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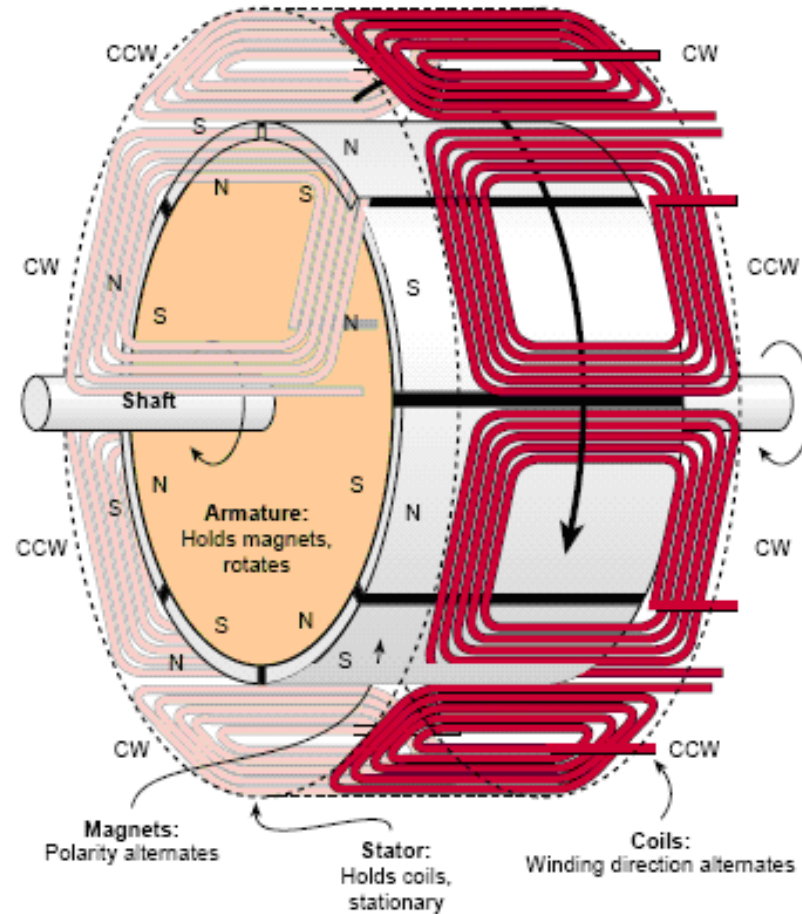


Components of a Wind Turbine



Permanent Magnet Generator

Permanent Magnet Alternator



Swift Wind Turbine



Rated Power: 1.5 kW

Annual Energy Production: 1.2-1.9 MWh/year



First Vertical Axis Wind Turbine



H-Rotor – UrWind O2



Rated Power: 1.7 kW
Annual Energy Production: 2-4 MWh/year



Darrieus and Savonius



Rated Power: 6.5 kW
Annual Energy Production:
4.2-7 MWh/year



Rated Power: 2.0 kW
Annual Energy Production:
2.0 MWh/year





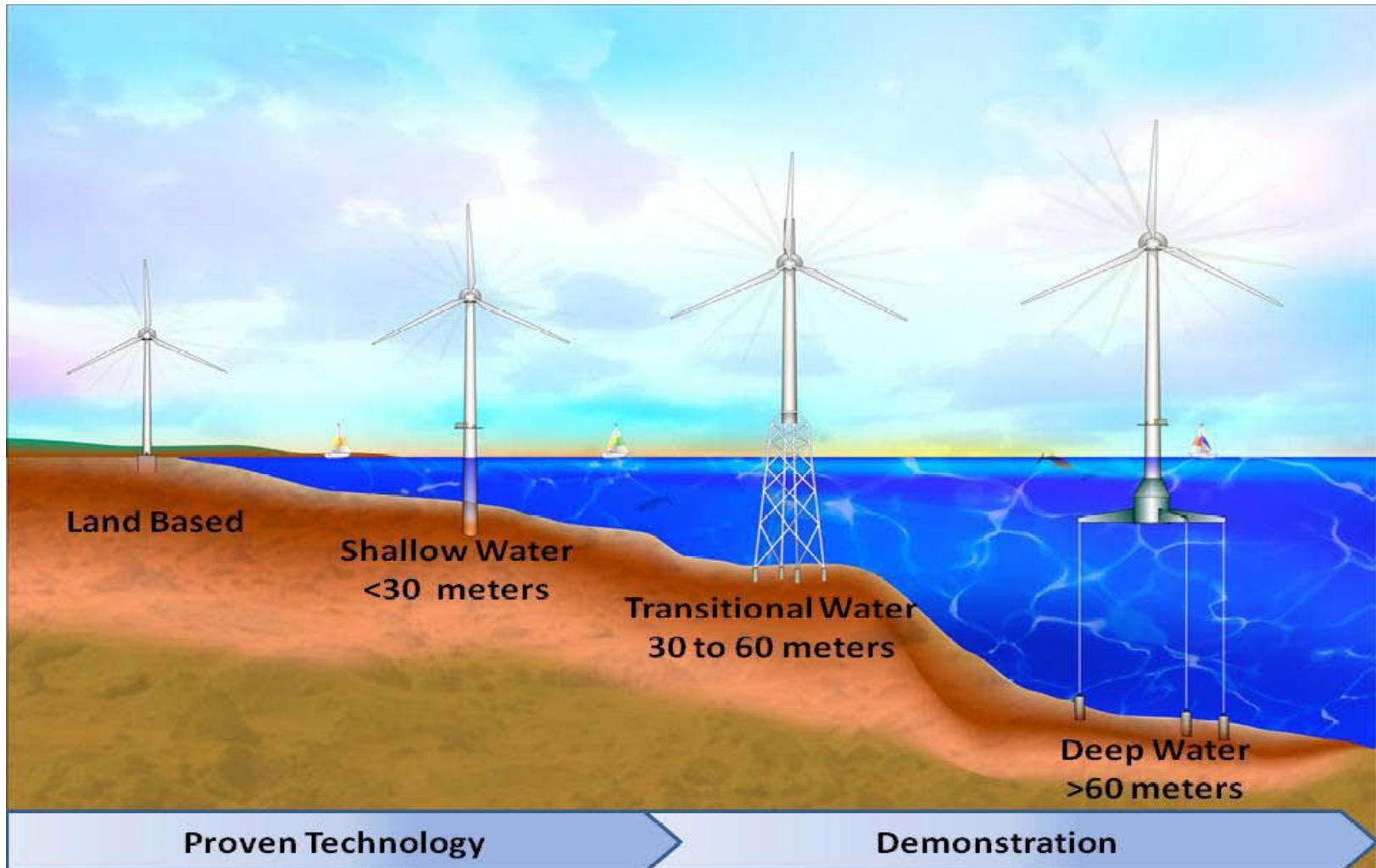
Home-Made Savonius Wind Turbine



Windspire Wind Farm



Offshore Wind



Bird Deaths

Collisions with:	Year of estimate	Mortality estimate low	Mortality estimate high
Wind turbines	2009/10	100,000 (2010)	440,000 (2009)
Towers	2008	4,000,000	50,000,000
Power lines	2001	10,000,000	154,000,000
Roads/vehicles	2005	10,700,000	380,000,000
Urban light	2009	31,158,000	
Glass	2006	100,000,000	1,000,000,000

