

### Falmouth Wind Turbines: Cape Cod Commission vs acoustic experts

The Cape Cod Commission recognizes that wind turbines harm public health when installed near residential communities. Unfortunately, wind turbine acoustic experts emphasize sound measurements and noise predictions, omitting assessing for activity disturbance and nuisance. The Commission has chosen an alternative and potentially a more reliable screening tool than blind and deaf noise level predictions, by imposing a mandatory setback distance based on 10 times the rotor diameter. How effective is their approach?

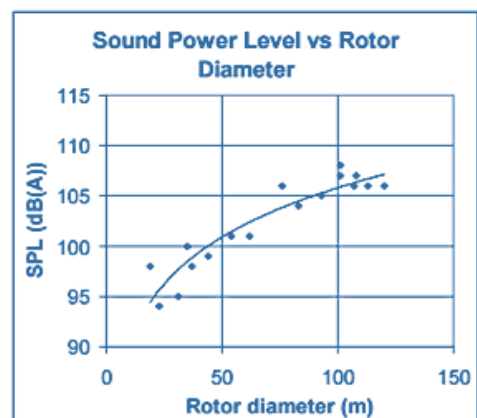
1. Locate Wind-1, Wind-2 and Notus on Google Earth (GE),
2. Using GE's ruler circle draw, measure each wind turbine distance to the nearest residential property lines.
3. Divide the property line distance by 10.



Wind Turbine	Property Line Distance	WT Max Diameter (PL/10)
Wind-1	360-m	36-m
Wind-2	320-m	32-m
Notus	480-m	48-m

4. Use Siemens sound power chart<sup>1</sup> to estimate maximum allowable wind turbine sound power level (Lw) from rotor diameter. Compare to wind turbine sound power levels.

Wind Turbine	Maximum Allowable Rotor Diameter	Estimated Maximum Allowable Lw	North-		
			Vestas V82 110 dBA	Vestas V47 102 dBA	wind N100 94 dBA
Wind-1	36-m	98 dBA	No	No	Yes
Wind-2	32-m	97 dBA	No	No	Yes
Notus	48-m	99 dBA	No	No	Yes



<sup>1</sup> Low-noise wind turbine design, Stefan Oerlemans, Peter Fuglsang, Siemens Wind Power A/S, 2012 EWEA-Noise-Workshop-Oxford-2012-1-1-Stefan-Oerlemans.pdf (page 11).