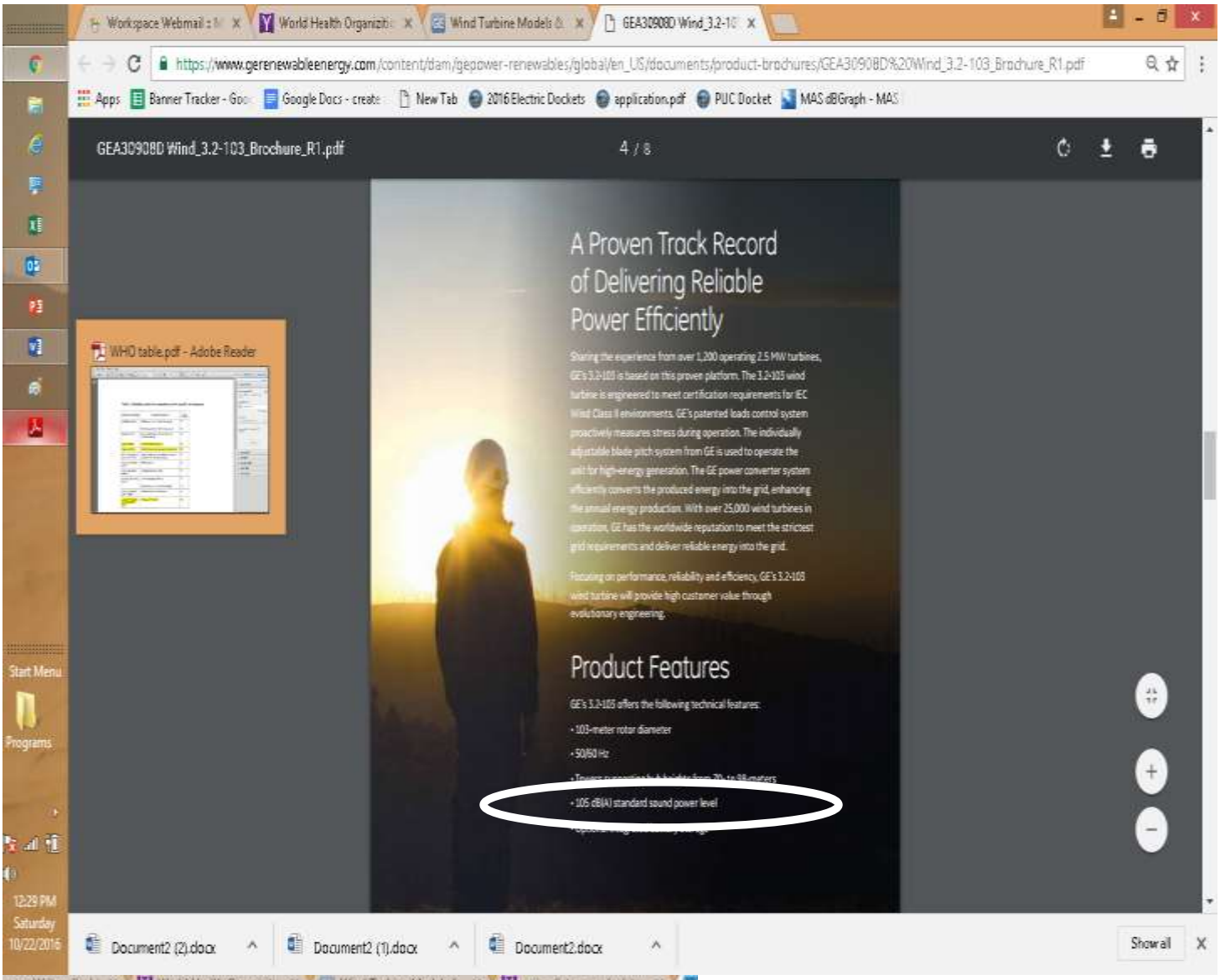
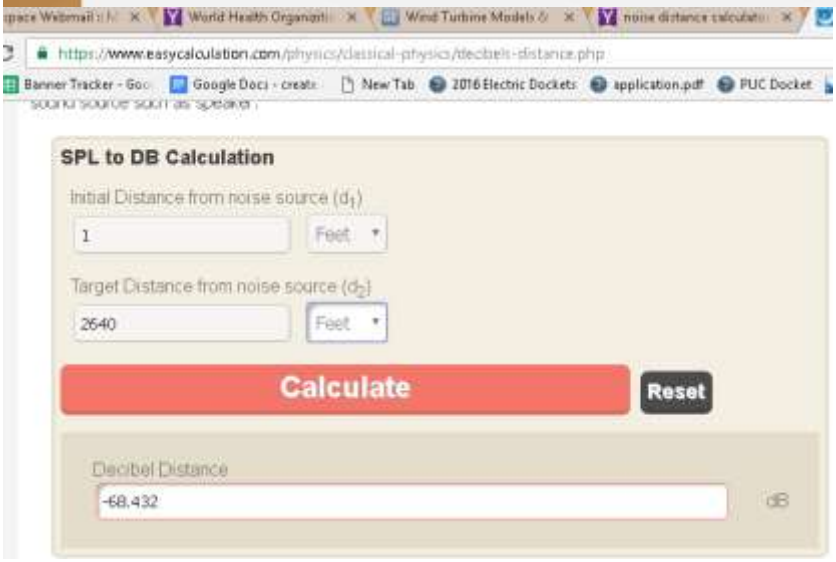
Table 1: Guideline values for community noise in specific environments.

Specific environment	Critical health effect(s)	L_{Aeq} [dB(A)]
Outdoor living area	Serious annoyance, daytime and evening	55
	Moderate annoyance, daytime and evening	50
Dwelling, indoors	Speech intelligibility & moderate annoyance, daytime & evening	35
Inside bedrooms	Sleep disturbance, night-time	30
Outside bedrooms	Sleep disturbance, window open (outdoor values)	45
School class rooms & pre-schools, indoors	Speech intelligibility, disturbance of information extraction, message communication	35
Pre-school bedrooms, indoor	Sleep disturbance	30
School, playground outdoor	Annoyance (external source)	55
Hospital, ward rooms, indoors	Sleep disturbance, night-time	30
	Sleep disturbance, daytime and evenings	30
Hospitals, treatment rooms, indoors	Interference with rest and recovery	#1
Outdoors in parkland and conservations areas	Disruption of tranquility	#3

#1: As low as possible.
#3: Existing quiet outdoor areas should be preserved and the ratio of intruding noise to natural background sound should be kept low.

Source: World Health Organization, “Night noise guidelines for Europe”, ISBN 978 92 890 4173 7





WORLD HEALTH ORGANIZATION SAFE SOUND LEVEL

RECOMMENDATION FOR SLEEP 30 dB

HERES THE MATH

Source Sound Pressure Level	105 dB
Attenuation at **2,640** Feet	-68 dB
Sound Pressure Level at 2640 feet	**37 dB**

TOO LOUD!

Source Sound Pressure Level	105 dB
Attenuation at 5,700 feet	-75dB
Sound Pressure Level at 5,700 feet	**30 dB**

Vestas and General Electric (GE) dominate the market for industrial wind turbines in the U.S. Many older U.S. facilities use NEG Micon turbines, and Vestas has absorbed that manufacturer. Other older facilities use turbines from Zond, which was acquired by Enron (the inventor of "green tags"), whose wind business GE acquired in turn to take over the racket. Click the following company names for more information from their own web sites: Vestas, Gamesa, GE, Siemens, Suzlon, Senvion (Repower acquired by Suzlon in May 2007, renamed in January 2014), and Mitsubishi.Nordex, Enercon, Americas Wind Energy, and Goldwind are also major manufacturers, but their turbines are less common in the U.S.

*This figure is actually half the rotor diameter. The blade itself may be about a meter shorter, because it is attached to a large hub.
†Hub (tower) heights may vary; the more commonly used sizes are presented.
‡Rotor diameter (m) × π × rpm ÷ 26.82
§The rated, or nominal, wind speed is the speed at which the turbine produces power at its full capacity. For example the GE 1.5s does not generate 1.5 MW of power until the wind is blowing steadily at 27 mph or more. As the wind falls below that, power production falls exponentially.

Souce: AWEO "A Problem With Wind Power " By Eric Rosenbloom, 2006

model	capacity	blade length*	hub ht†	total ht	area swept by blades	rpm range	max blade tip speed‡	rated wind speed§
Vestas V100	2.75 MW	50 m (164 ft)	80 m (262 ft)	130 m (427 ft)	7,854 m² (1.94 acres)	7.2-15.3	179 mph	15 m/s (34 mph)
			100 m (328 ft)	150 m (492 ft)				
Vestas V90	3.0 MW	45 m (148 ft)	80 m (262 ft)	125 m (410 ft)	6,362 m² (1.57 acres)	9-19	200 mph	15 m/s (34 mph)
Vestas V112	3.0 MW	56 m (184 ft)	84 m (276 ft)	136 m (459 ft)	9,852 m² (2.43 acres)	6.2-17.7	232 mph	12 m/s (27 mph)
Siemens	2.3 MW	46.5 m (153 ft)	80 m (262 ft)	126.5 m (415 ft)	6,793 m² (1.68 acres)	6-16	169 mph	13-14 m/s (29-31 mph)
Bonus (Siemens)	2.3 MW	41.2 m (135 ft)	80 m (262 ft)	121.2 m (398 ft)	5,333 m² (1.32 acres)	11/17	164 mph	c. 15 m/s (c. 34 mph)
Mitsubishi MWT95	2.4 MW	47.5 m (156 ft)	80 m (262 ft)	127.5 m (418 ft)	7,088 m² (1.75 acres)	9.0-16.9	188 mph	12.5 m/s (28 mph)