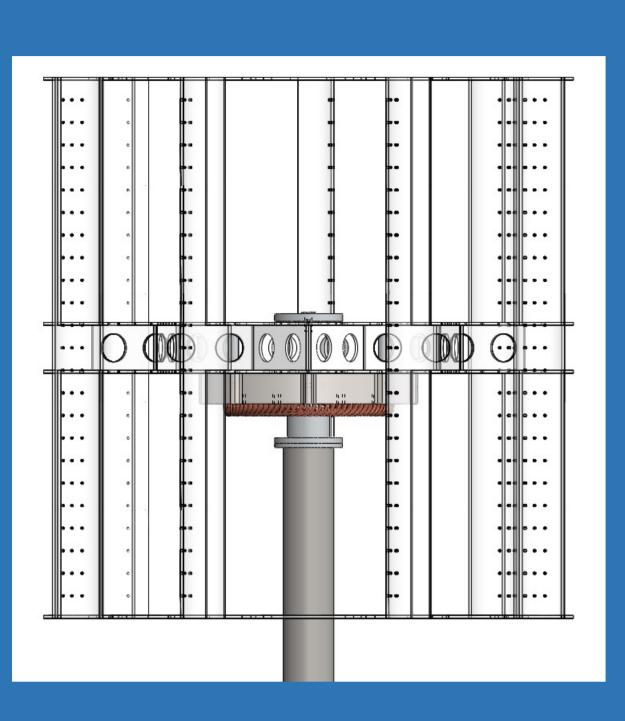




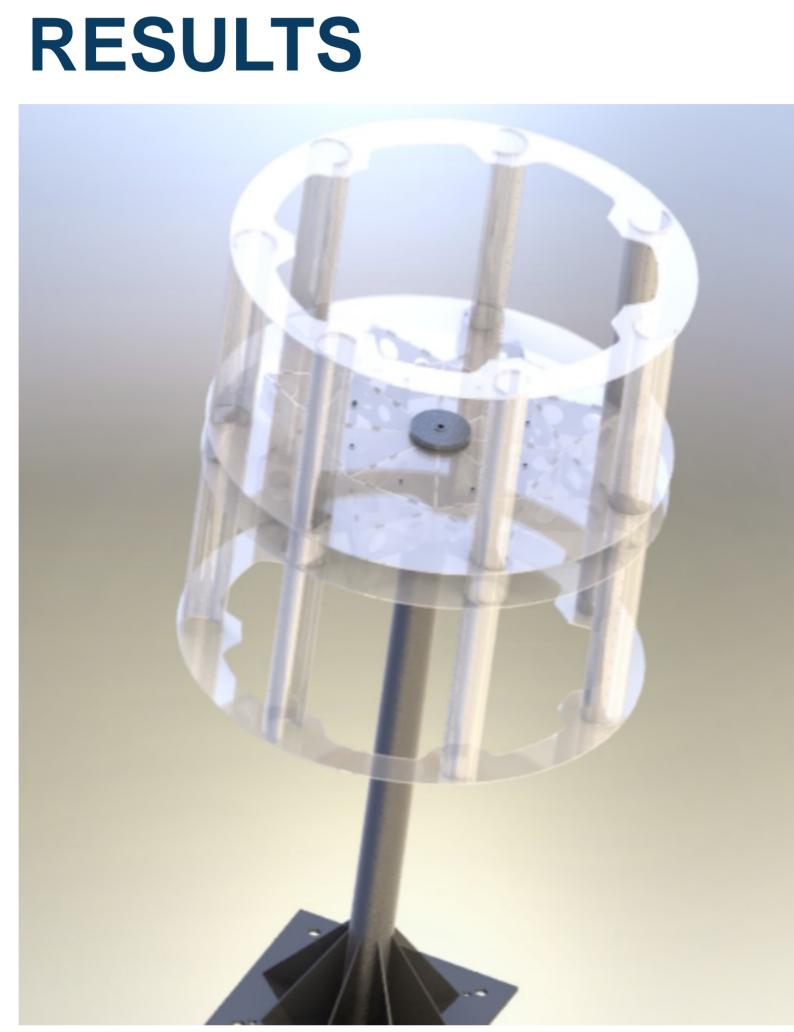
D. RICHARD¹, 1DDU Magnetics, Inc, Lynwood, Illinois



OBJECTIVE

D.C. brushless direct drive wind turbine featuring:

- Cog-less iron core stator
- Sleek design
- Low voltage ripple (harmonic distortion)
- Low cut-in speed
- Noiseless power with near 1.0 crest factor

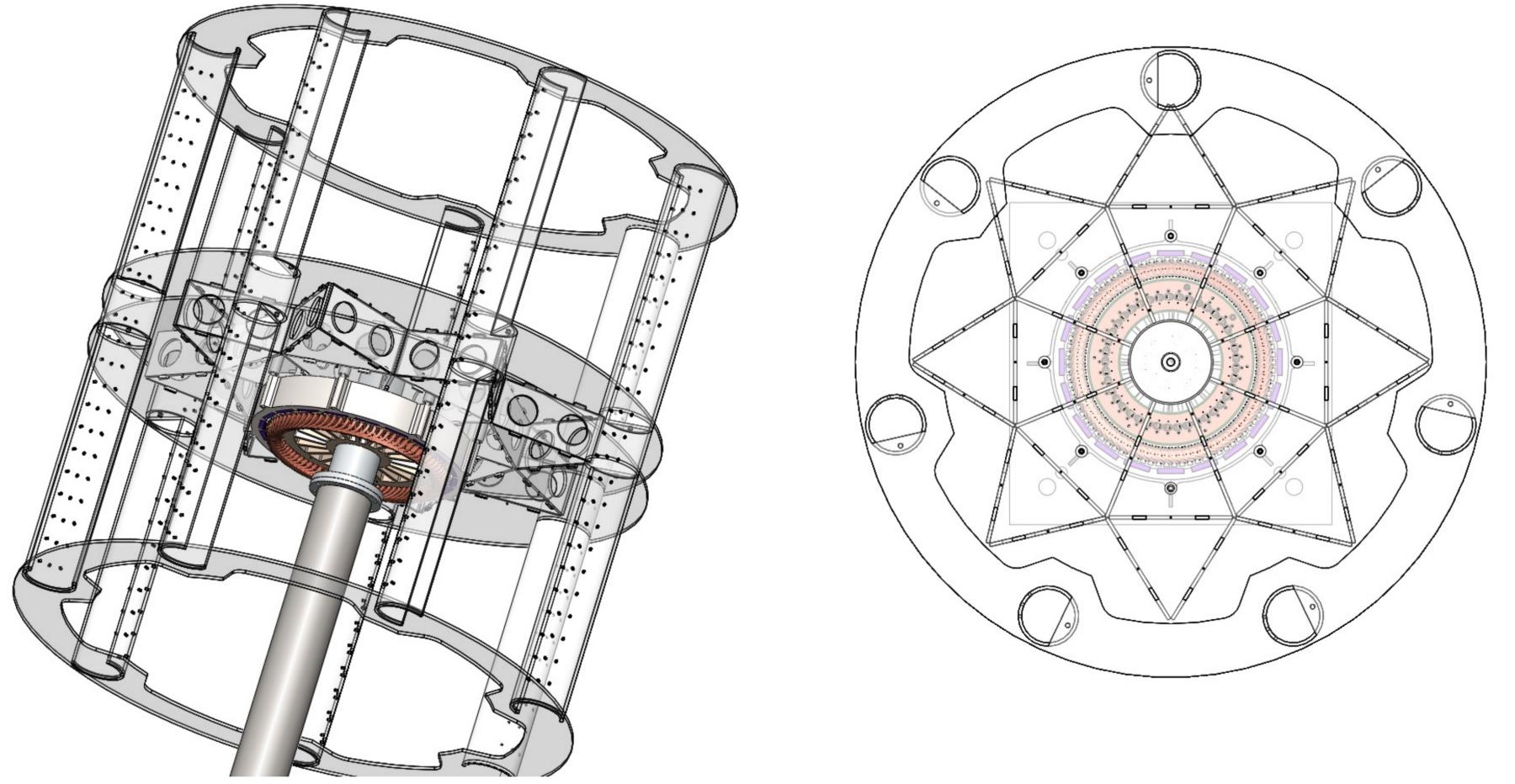


- Ideal for single family homes Businesses
- Farms

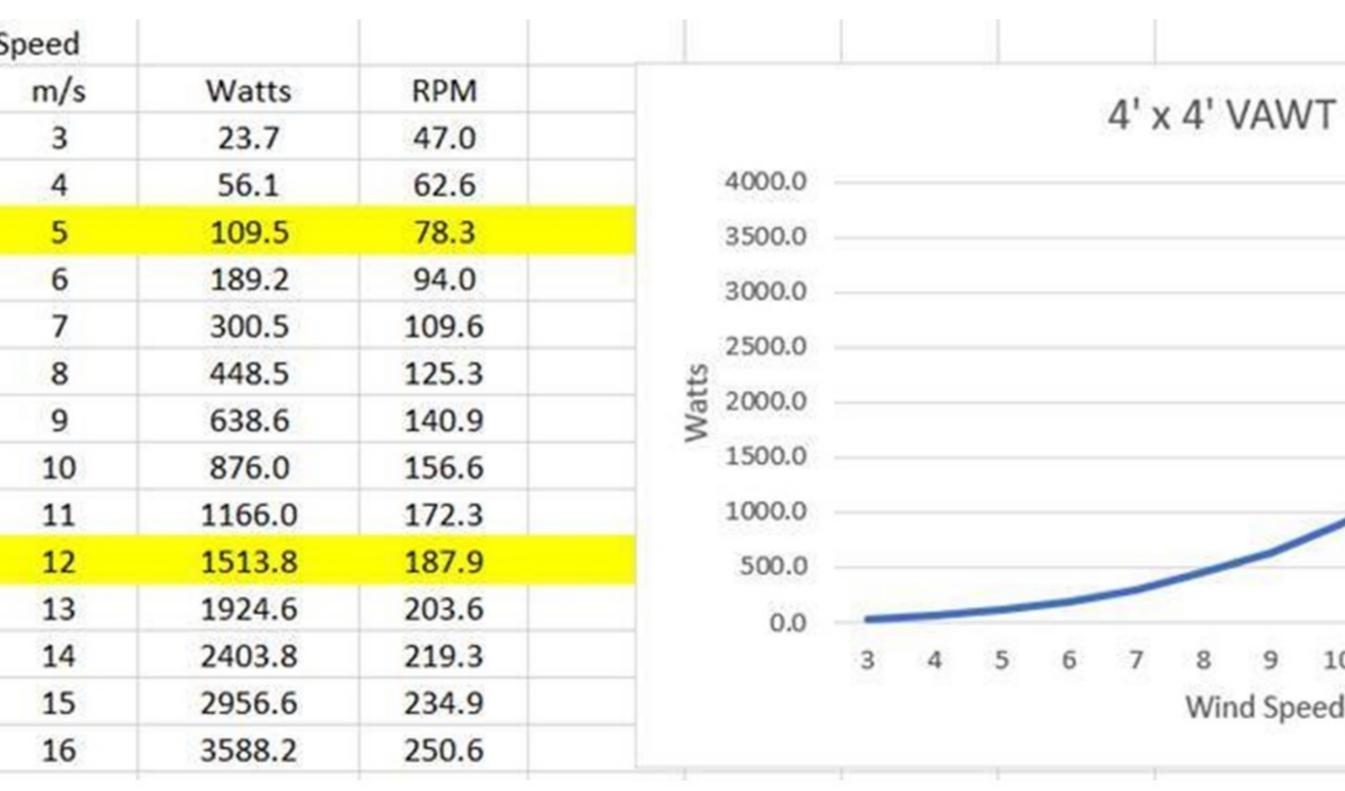
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Wind S	
mph	
6.7	
8.9	
11.2	
13.4	
15.7	
17.9	
20.1	
22.4	
24.6	
26.8	
29.1	
31.3	
33.5	
35.8	

D.C. Brushless Wind Turbine

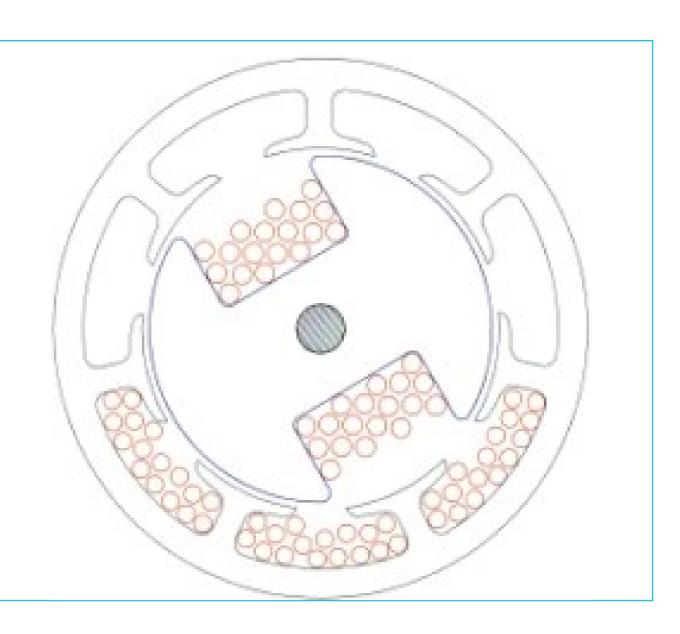


- Scalable
- Network friendly
- Easy to assemble



- Rugged
- Efficient
- Novel

			To	Torq	
-	Volts DC	Amps	Nm	Lb-ft	
	23.0	1.0	4.8	3.5	
	30.7	1.8	8.5	6.3	
/	38.4	2.9	13.4	9.8	
	46.0	4.1	19.2	14.2	
	53.7	5.6	26.2	19.3	
	61.4	7.3	34.2	25.2	
	69.1	9.2	43.3	31.9	
	76.7	11.4	53.4	39.4	
	84.4	13.8	64.6	47.7	
	92.1	16.4	76.9	56.7	
	99.8	19.3	90.3	66.6	
0 11 12 13 14 15 16	107.4	22.4	104.7	77.2	
d (m/s)	115.1	25.7	120.2	88.6	
	122.8	29.2	136.7	100.9	





CONCLUSIONS

Clean D.C. power from wind with:

- No harmonic distortion
- Direct drive PM generator
- Unidirectional vertical axis design
- Switch Reluctance design with 'digital' step switching for larger models
- Wide power band with excellent thermal efficiency using unique iron core design.

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Dr. Tan Pham, Altair; Circom Inc.; IMDS; Warfield Electric; Shankar Rao-Magnet Sales; Booker Richard.

REFERENCES

BOOST CONVERTER DESIGN FOR 20KW WIND TURBINE GENERATOR

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