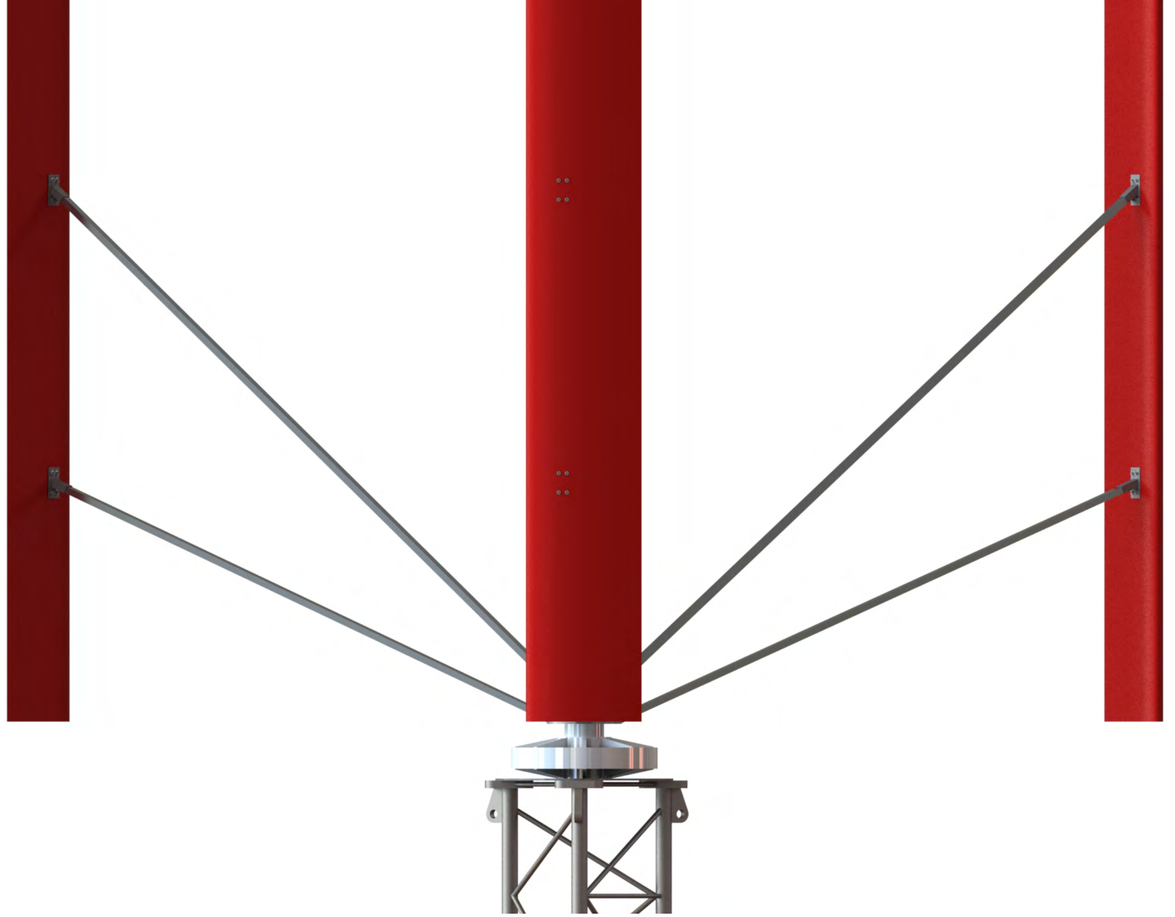

RENEWABLE ENERGY REVOLUTION: SHIFTING TO DECENTRALIZED SYSTEMS & WIND-ER

MMO İZMİR | KÜÇÜK ÖLÇEKLİ RÜZGAR TÜRBİNİ PANELİ 2019

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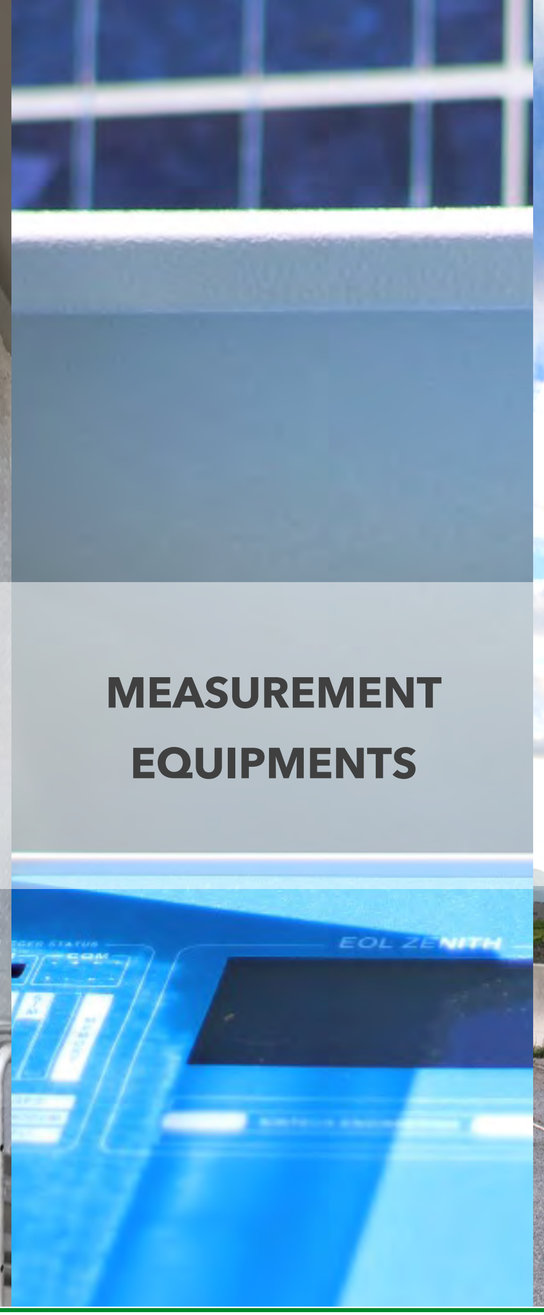
WIND TURBINE TECHNOLOGIES

CONTENT (15DK)

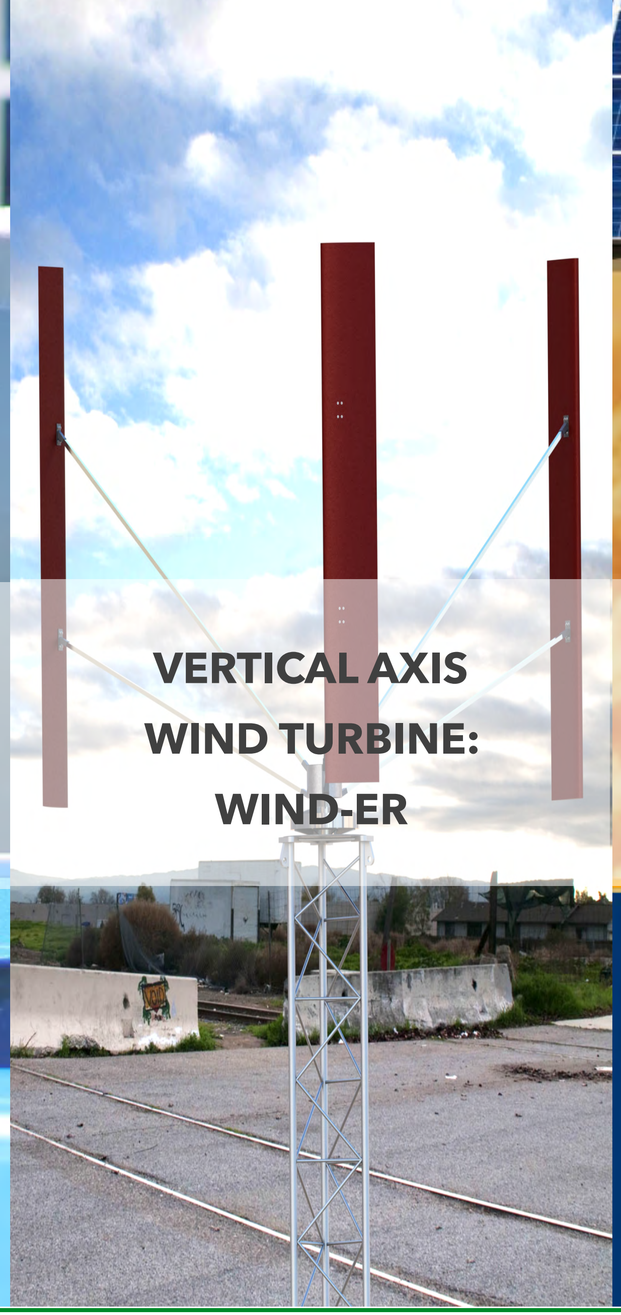
- About XGEN ENERGY & WIND-ER (3 mins.)
- Vertical Axis Wind Turbines (4 mins.)
- Wind-Er 5.2 (7 mins.)
  - Product Details
  - Project Update
  - Upcoming Products (1 mins.)

WIND MEASUREMENT CAMPAIGNS

MECHANICAL PART MANUFACTURING



MEASUREMENT EQUIPMENTS



VERTICAL AXIS WIND TURBINE: WIND-ER

SOLAR POWERED WATER PUMP: SOL-RX

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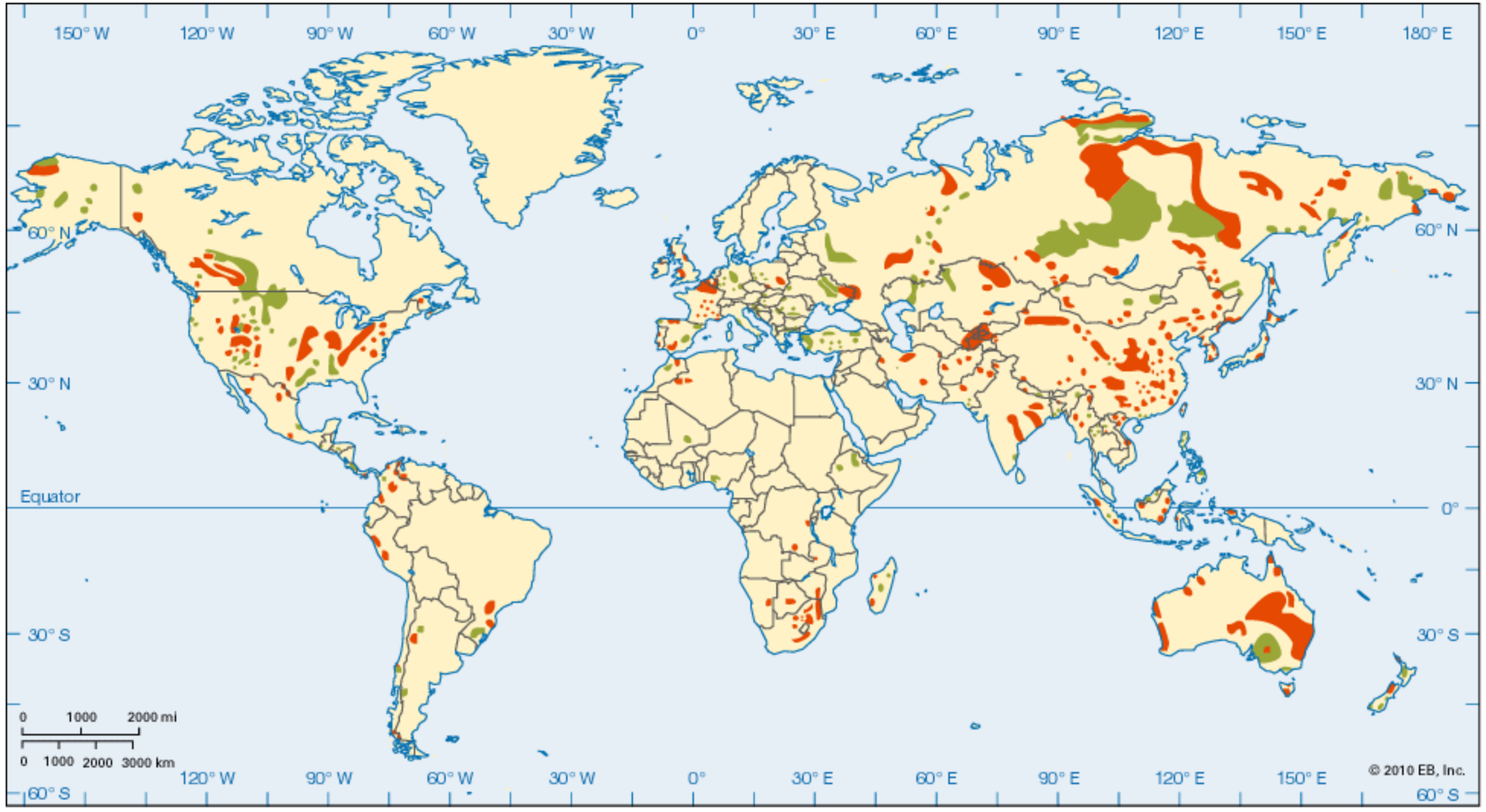
RENEWABLE ENERGY REVOLUTION:
SHIFTING TO DECENTRALIZED SYSTEMS & WIND-ER

by XGEN

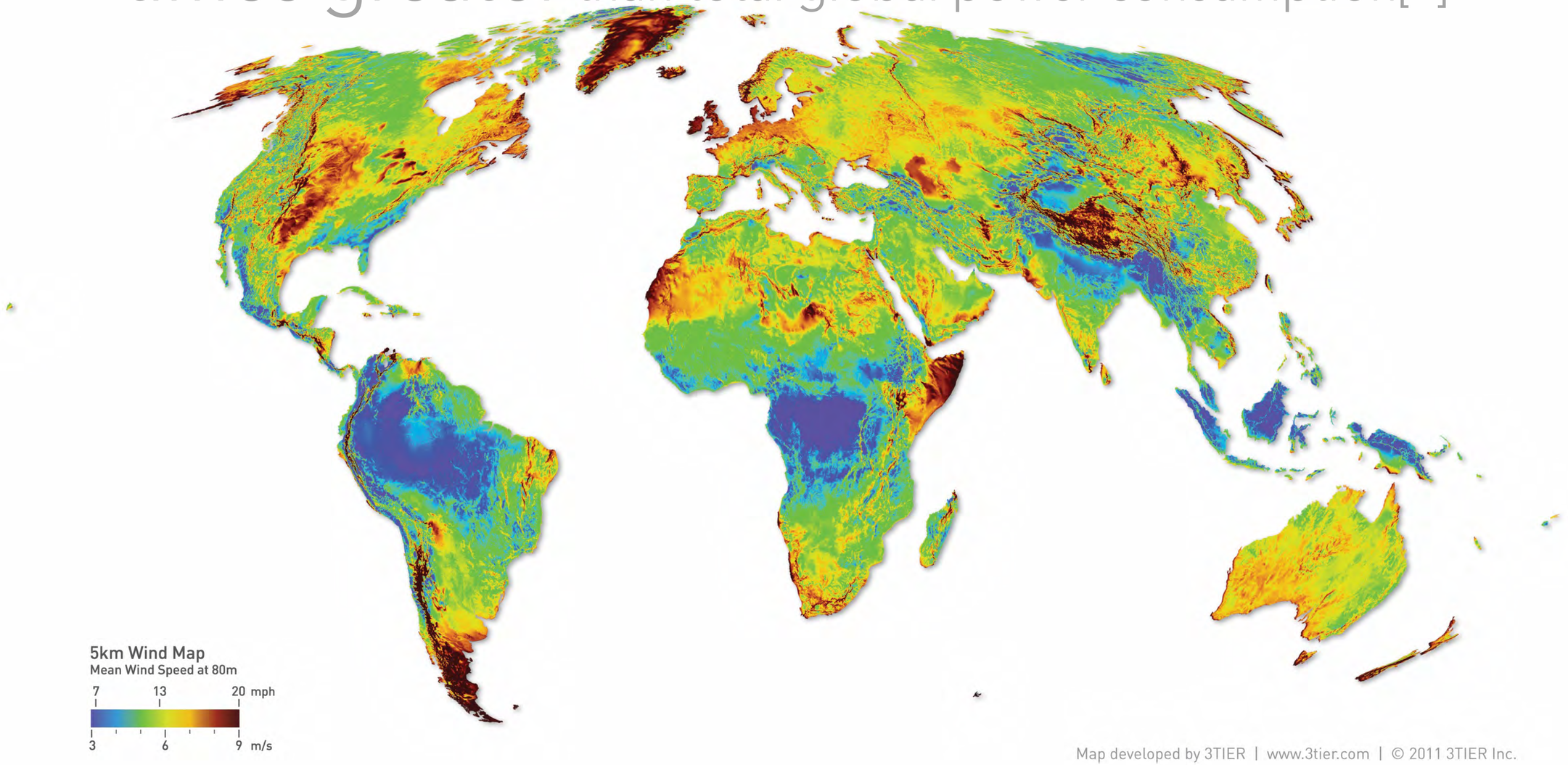
&

global coal resources are located in only 5% of the earth*

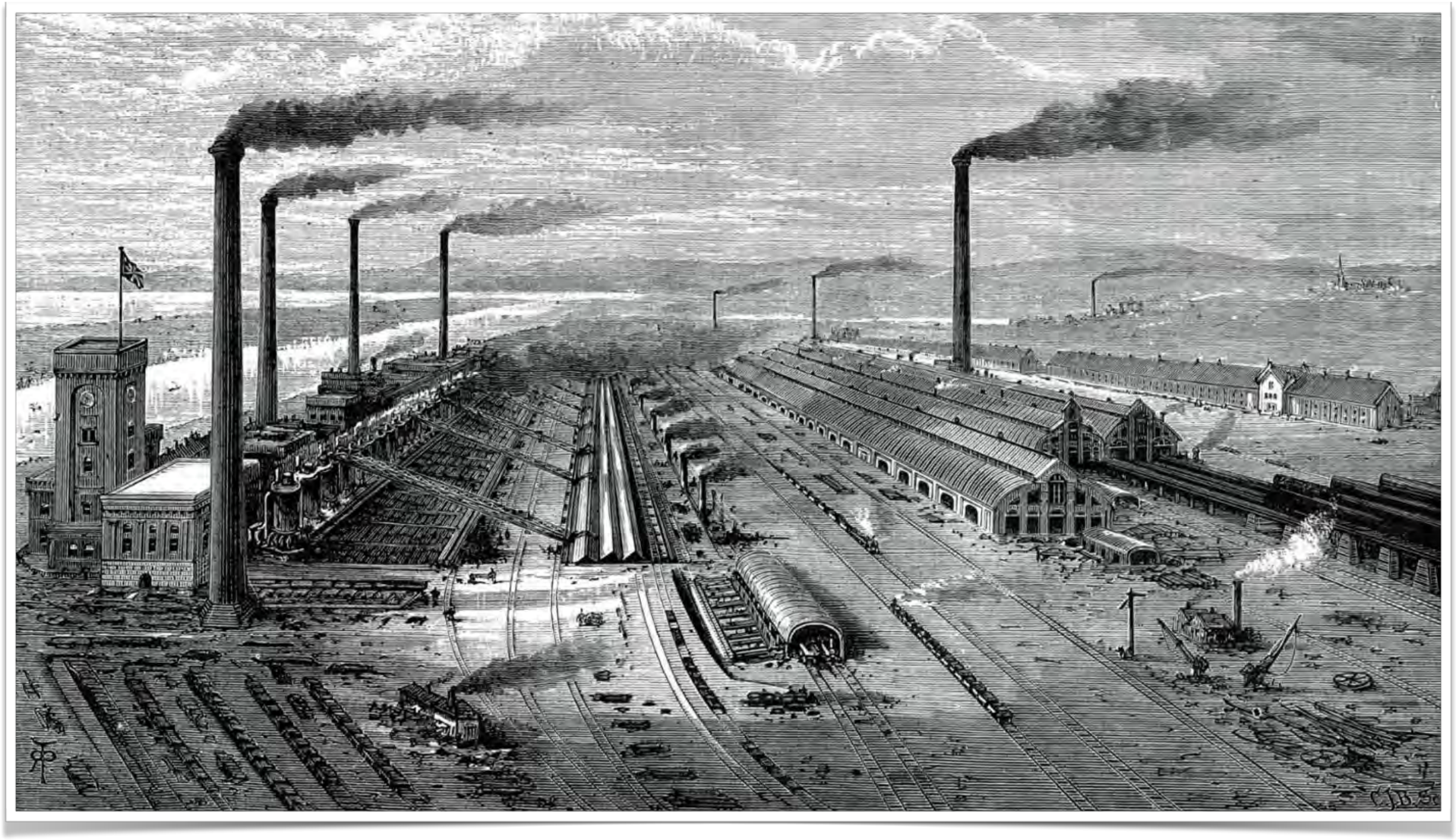


[*] World Energy Council, Survey of Energy Resource 2010 and Energy Information Administration

the estimated 250 trillion watts of global wind power is 20 times greater than total global power consumption[*]



[*] **Jacobson, M. Z., and Cristina L. A.** "Saturation wind power potential and its implications for wind energy." Proceedings of the National Academy of Sciences 109.39 (2012): 15679- 15684



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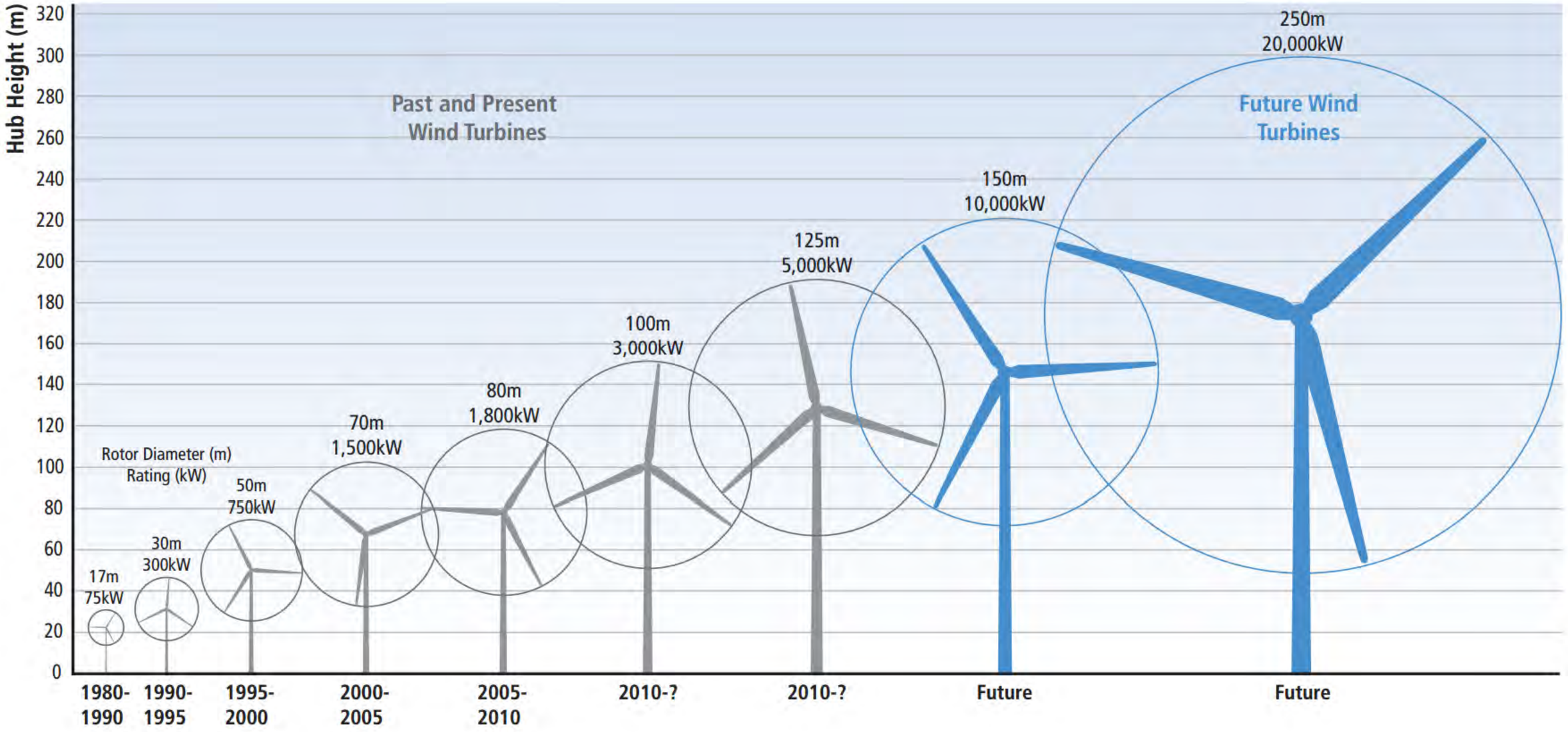
Hub Height (m)
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
Past and Present
Wind Turbines
Future Wind
Turbines
Rotor Diameter (m)
Rating (kW)
17m
75kW
30m
300kW
50m
750kW
70m
1,500kW
80m
1,800kW
100m
3,000kW
125m
5,000kW
150m
10,000kW
250m
20,000kW
1980-
1990
1990-
1995
1995-
2000
2000-
2005
2005-
2010
2010-?
2010-?
Future
Future

footprint power density of HAWT consisted WPPs is around

3 – 5 W/m^2[*][**]

[*] **Dabiri, J. O., Greer, J. R., Koseff, J. R., Moin, P., & Peng, J.** (2015). A new approach to wind energy: Opportunities and challenges. In AIP Conference Proceedings (pp. 51–57). http://doi.org/10.1063/1.4916168

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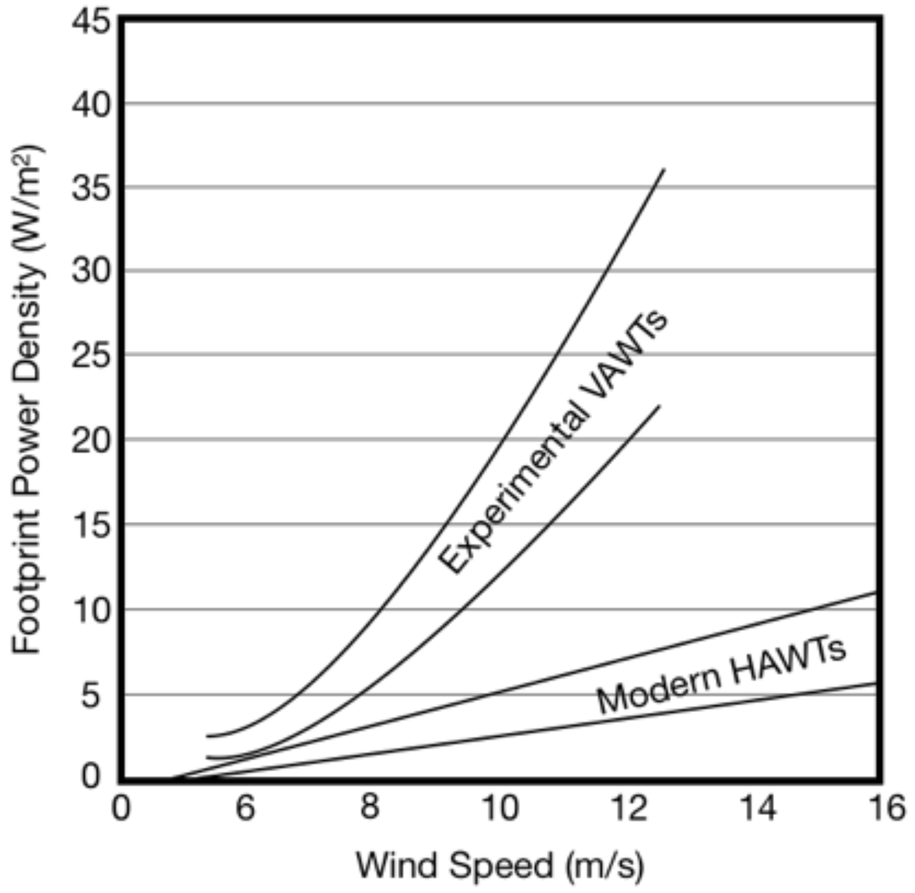
~15- 20 W/m²

3 – 5 W/m²



Dabiri, J. O., Greer, J. R., Koseff, J. R., Moin, P., & Peng, J. (2015). A new approach to wind energy: Opportunities and challenges. In AIP Conference Proceedings (pp. 51–57). http://doi.org/10.1063/1.4916168 ‘den uyarlanmıştır.

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WIND TURBINE
TECHNOLOGIES

TURN THE WIND-ER ON!

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WIND-ER
5.2

ENVIRONMENT FRIENDLY

SILENT

WWW.WIND-ER.COM

WIND-ER 5.2

WWW.WIND-ER.COM

WIND-ER 5.2 | 0.5KW | 1 KW

Wind-Er 5.2 is the smallest version of WIND-ER Series, which is suitable for off-grid systems, hybrid applications and energy storage systems. It's also the best choice for urban sites due to the silent design of 0.5kW and 1kW output powers.

Rotor Height	2.0m
Rotor Diameter	2.6m
Blade Profile	NACA 4418
Generator	Brushless PMG 0.5kW | 1kW
Control Unit	Schneider Electric
Output Voltage	12V DC
Rated Rotational Speed	200 RPM | 100RPM
Operational Temperature	-20C - +80C

Project Update

Design & Verification ✓

Prototype Manufacturing ✓

In-House Tests ✓

Field Tests 🔄

Product Verification & Cerfication ✗

Mass Production ✗

Field Tests

IEC61400-12:2015 Annex H

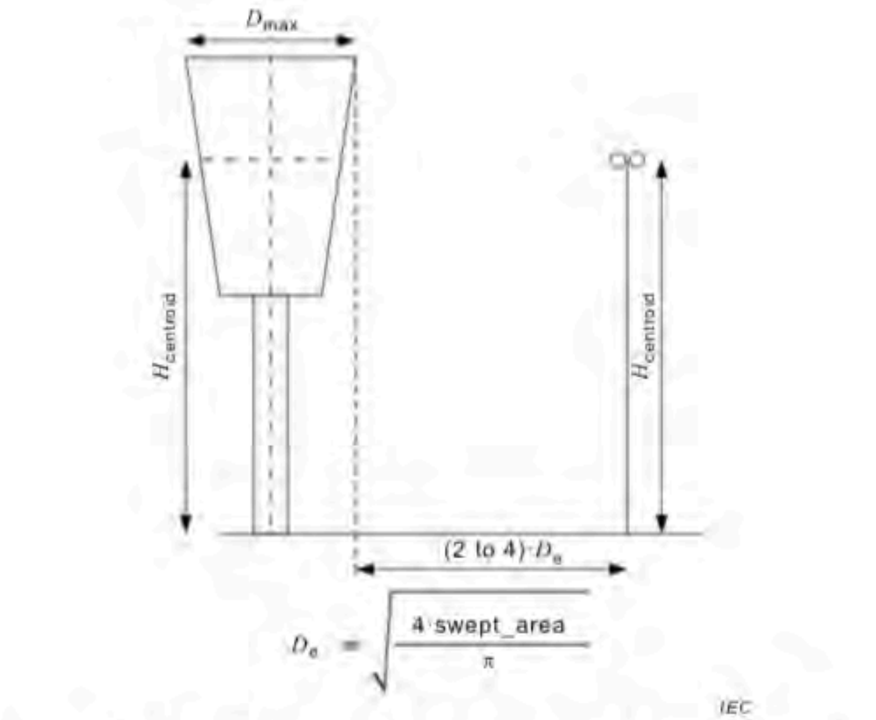


Figure H.1 – Definition of hub height and meteorological mast location for vertical axis wind turbines

Field Tests

IEC61400-12:2015 Annex H

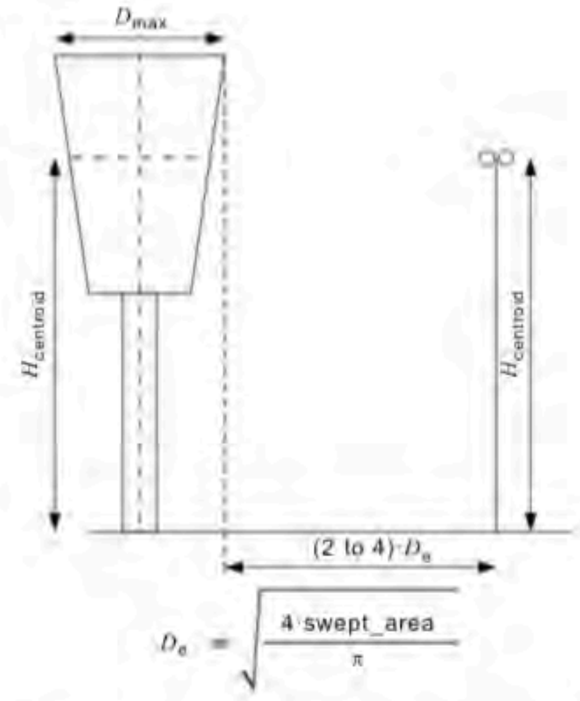
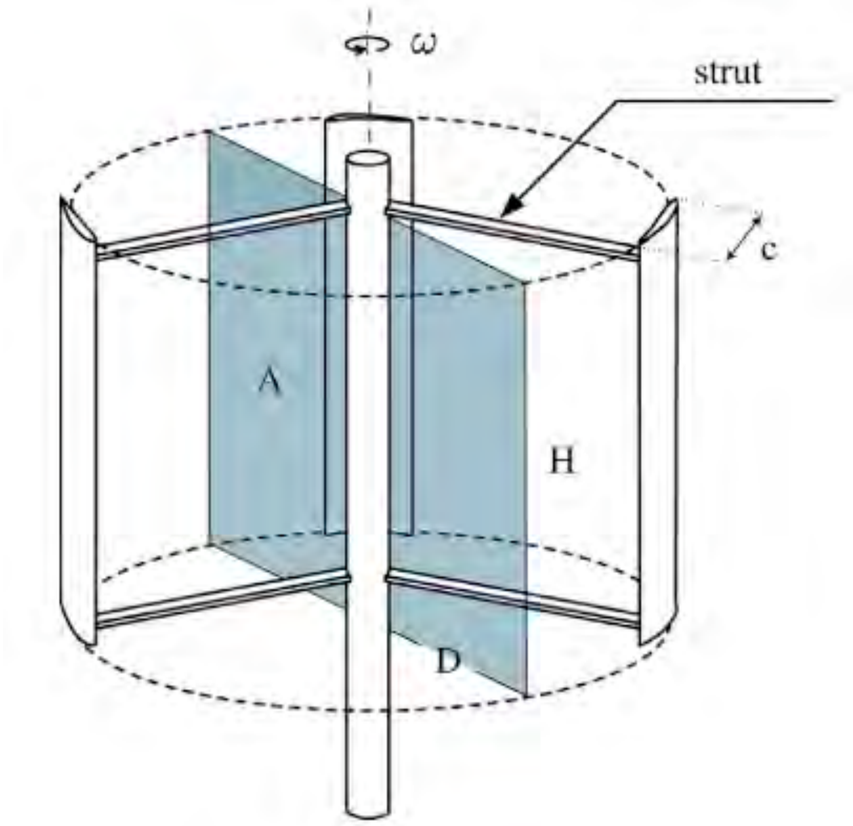


Figure H.1 – Definition of hub height and meteorological mast location for vertical axis wind turbines

Upcoming Targets

WIND-ER X > 10 kW On-Grid VAWT



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