

Maryland Planning Commissioners Association October 25, 2013

INTRODUCTION to COMMUNITY WIND in MARYLAND



Community Owned Wind... **Just Right** for **Your** Community

Maryland Energy
ADMINISTRATION
Powering Maryland's Future



COMMUNITY WIND

GAMECHANGER GRANT 2013
INTRODUCING OUR TEAM



Community Owned Wind... **Just Right** for **Your** Community



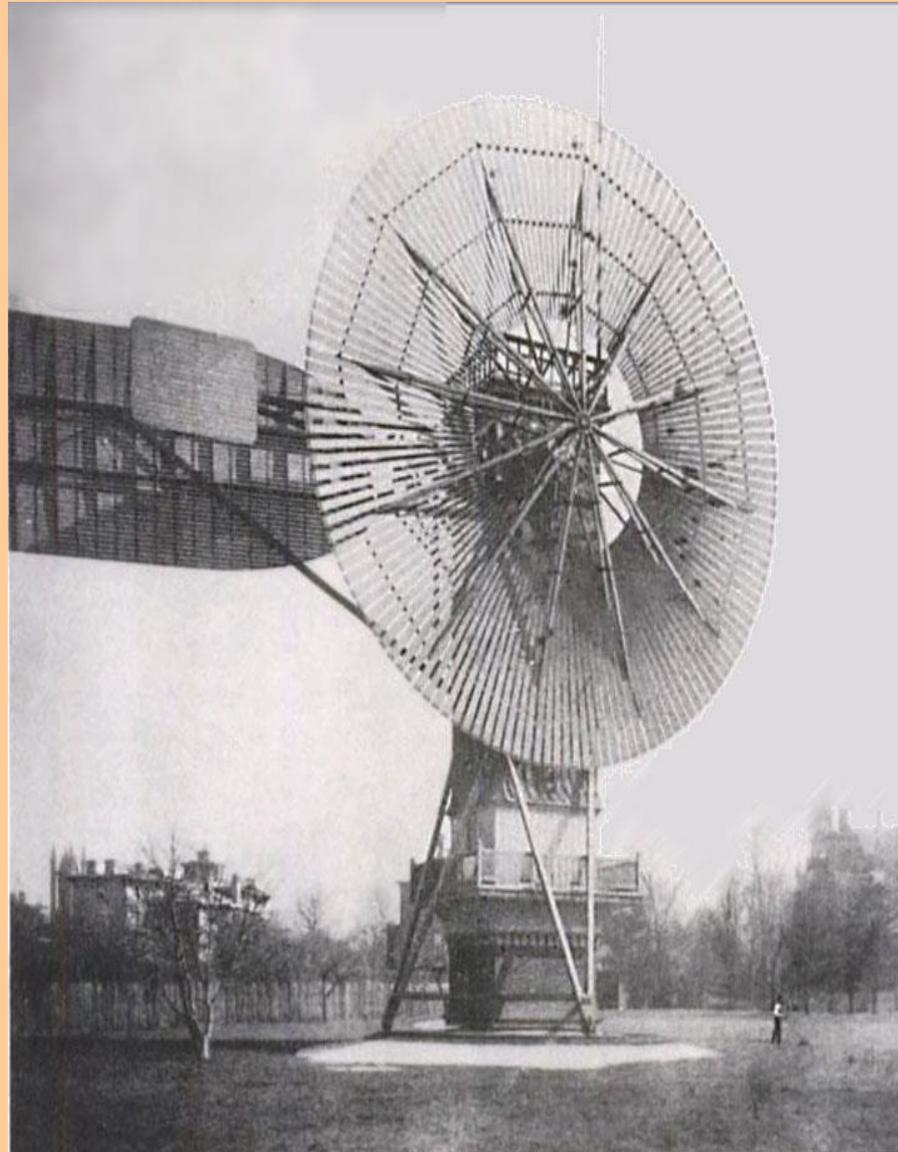


Wind turbines have been used since the 1600's in America –
for LOCAL benefit...from pumping water for rural farms
and grinding grains for commerce.

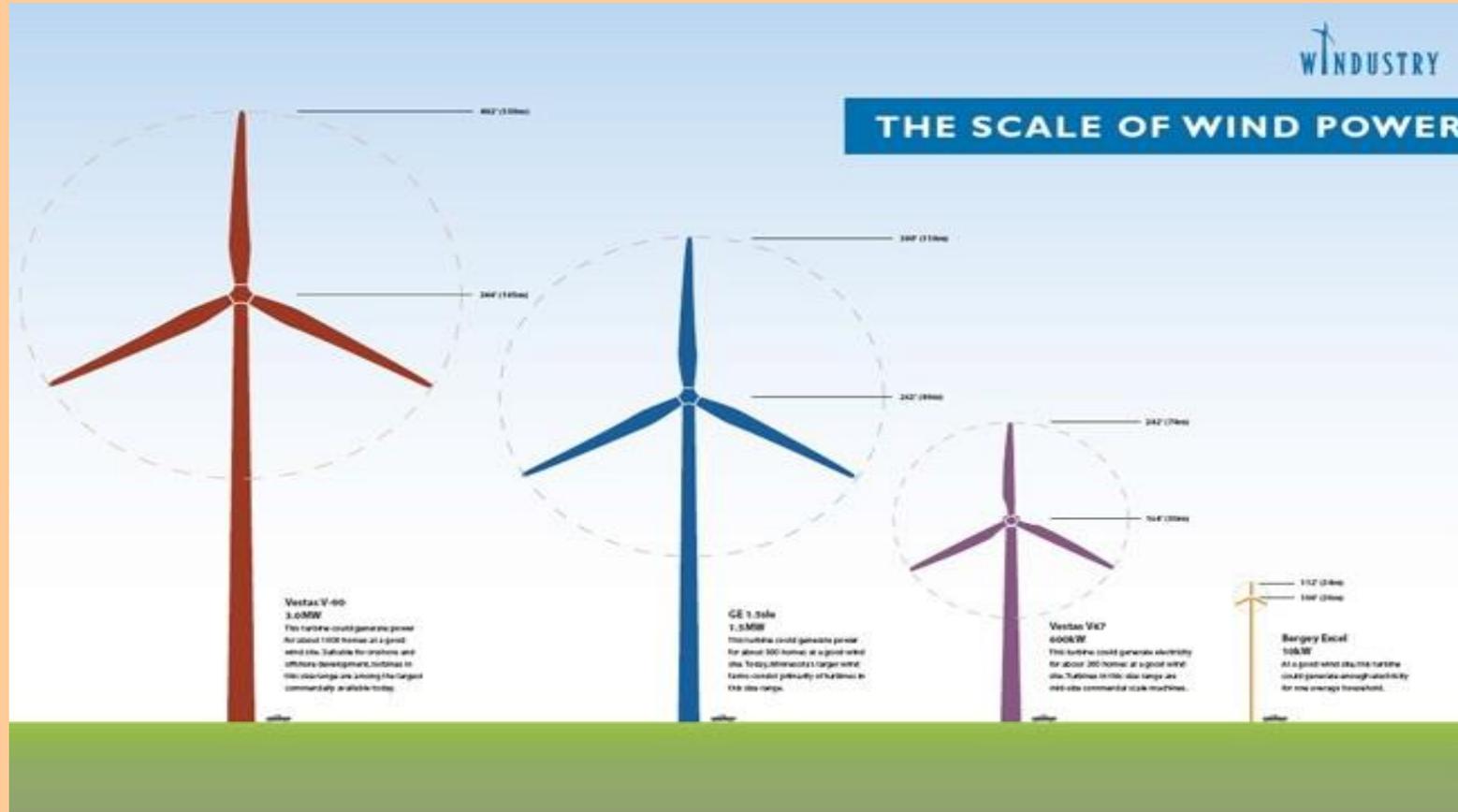


1888
Electricity
Charles Brush

Electricity
production
with wind:
pre-zoning,
residential
back yard
on urban
estate.



THE SCALE OF WIND POWER



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Land-Use Planning

Where should **COMMUNITY** Wind Turbines go?
(Our criteria)

Park and Recreation Areas?
Open Spaces Rules?

Every Mountain Top? (Aesthetics)

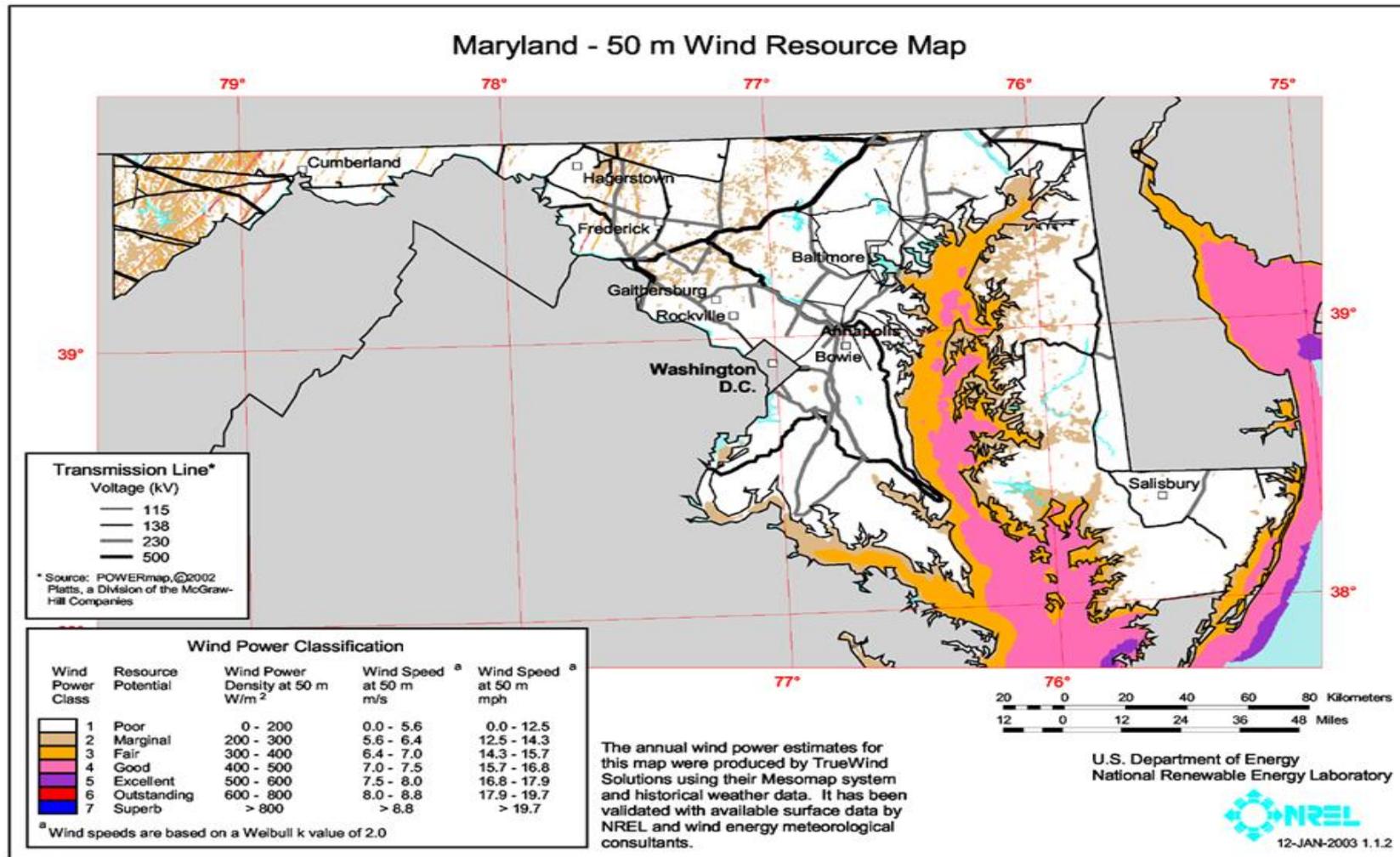
Comp Plans – Energy Park
/Industrial /Wind Zones?

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Land-Use Planning

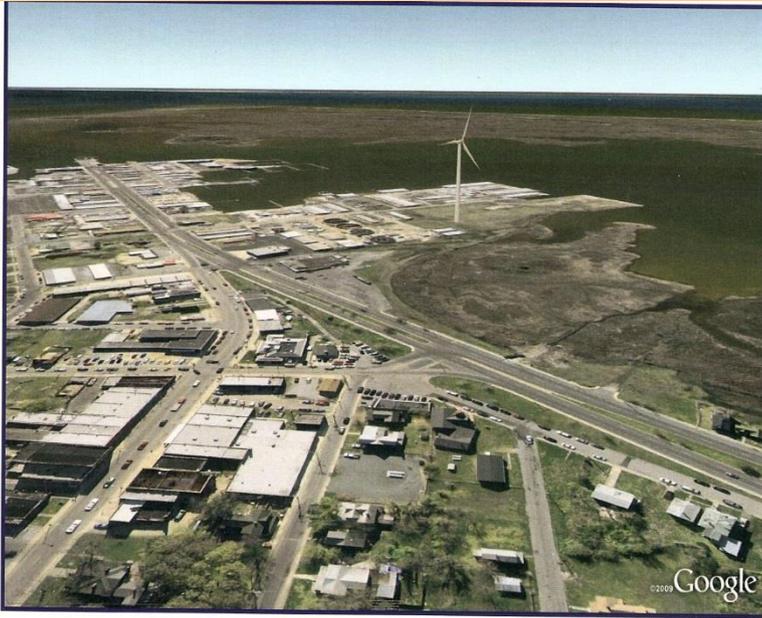
Where should COMMUNITY Wind Turbines go?
(Our criteria – 50 kw – 2 MW; Local Loads)



Great EXAMPLES in Maryland

City of Crisfield

RFP completed for use at
waste water plant (1.5 MW,
and all-other City uses .8 MW)



Chesapeake College

50 kW turbine, 120' pole
Total height 150', installed 2011



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Opportunities and Resources:

- **Community Ownership =
Local Economic Benefit**
- **Lower carbon footprint + FREE**
- **\$ Grants + Economies of Scale**
- **Better site evaluations & simulations**
- **Community- scale devices**
- **MEA Anemometer Loans**
- **Webinars (two) to access**

Economic Development

Lancaster Co PA Landfill
2 @ 1.6 MW – Public/Private: 262 ft. tall

Hard-wired to Turkey Hill Dairy!
7.7 MKWH/year = 6 million gal's of Ice Cream
Or 700 homes



*EPA – project reduces emissions equivalent to 1,000
Cars being removed from roads.*

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Challenges:

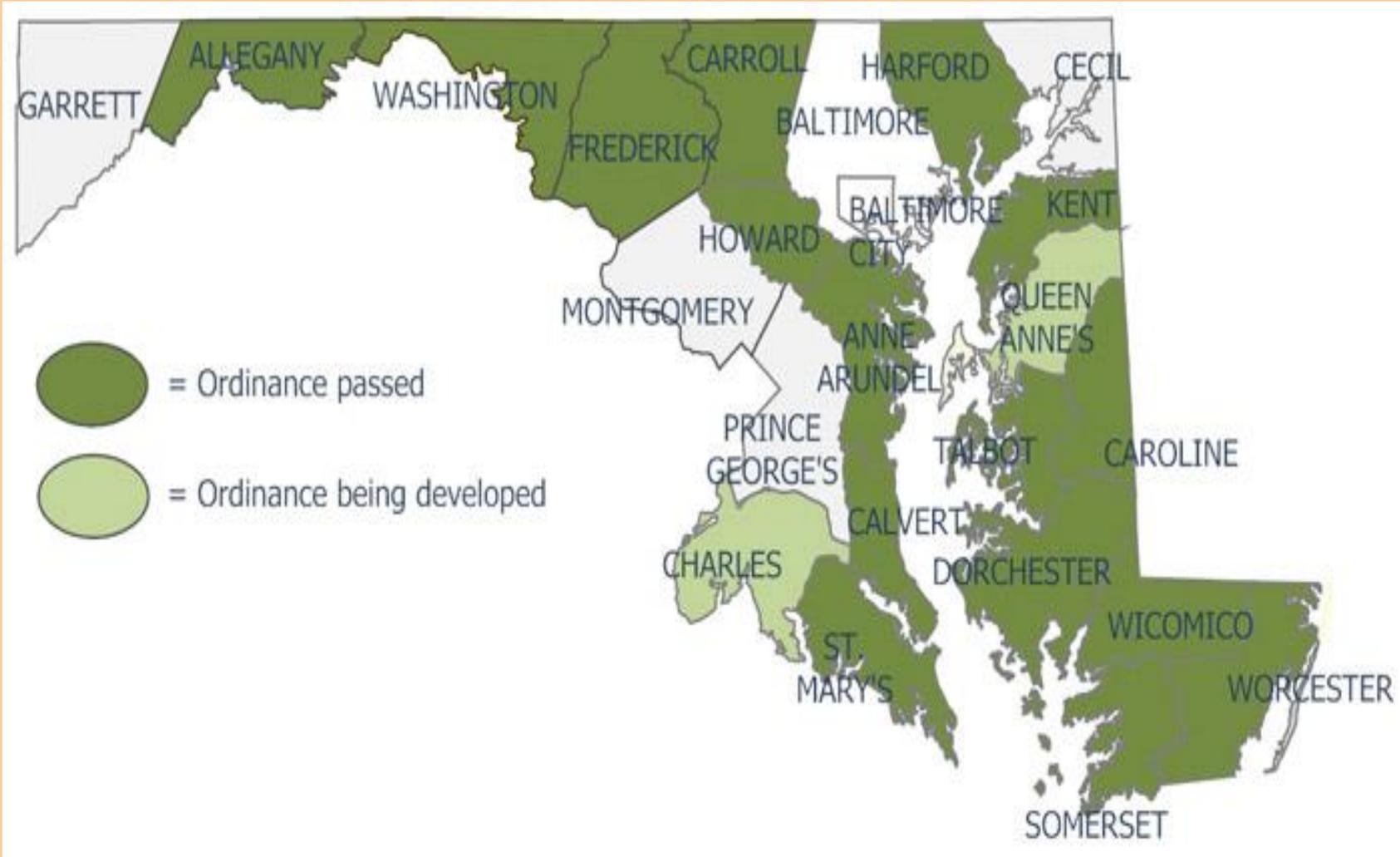
**Wind Ordinances: Don't mention
"Community Wind"**

**Myths Abound: Many concerns
are not realistic**

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Ordinances – Community Wind



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Ordinances – Community Wind

[Allegany County ordinance](#)
[Anne Arundel ordinance](#)
[Calvert County ordinance](#)
[Caroline County ordinance](#)
[Carroll County ordinance](#)
[Dorchester County ordinance](#)
[Frederick County ordinance](#)
[Harford County ordinance](#)
[Howard County ordinance](#)
[Kent County ordinance](#)
[St. Mary's County ordinance](#)
[Somerset County ordinance](#)
[Talbot County ordinance](#)
[Washington County ordinance](#)
[Wicomico County ordinance](#)
[Worcester County code](#)

**Getting
Permits...
New
Ordinances
Required?**

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MYTHS:

#1 Too Loud

#2 Unhealthy/flicker

#3 Dangerous to birds/people

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Biggest Myths...

#1 NOISE Pollution

...State MDE limits

...Local Gov't Administrators

...Mitigate risk with good site plan/study

...Another study of more than 2,000 people suggested that personality traits play a role in the perception of annoyance to environmental issues such as sound (Persson et al.,2007).



Biggest Myths...

#2 Shadow Flicker

...Serious Health Effects?

...Good planning eliminates risk

“Too slow to strobe”



Biggest Myths...

#3 Dangerous to Birds and People

....Sierra Club – refutes “bird danger”
when properly sited

....Setbacks...

....Higher quality devices



Community-Benefit Wind

- Wind energy developed for LOCAL benefit
Conduct research of wind sufficiency
- Models scaled to needs – (50 kW – 2 MW)
- **Local** electricity users come first
- Project uses best practices:
 - a. is there enough wind?
 - b. economic viability?
 - c. public safety assured?

Is Your Community “Open” for a Community Wind Project?

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Thank you!



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NOTES from wind history

Forever the backyard inventor, Brush constructed what may be Ohio's first wind-powered turbine during the winter of 1887-88 behind his Euclid Avenue mansion. It also may have been his most conspicuous creation. The 60-foot, 40-ton wrought iron tower rested on a gudgeon that extended 8 feet into masonry. The windmill's wheel measured 56-feet in diameter, had 144 blades and a sail surface 1,800 square-feet. The tail was 60 feet long and 20 feet wide. A 20-foot shaft inside the tower turned pulleys and belts, which at top performance spun a dynamo 500 revolutions per minute. The dynamo was connected to 408 batteries in Brush's basement. These dry cells illuminated 350 incandescent lamps, ranging from 10-50 candlepower, and operated three electric motors and two arc lights. The whole contraption produced 12 kilowatts at its peak. The windmill reportedly lasted for 20 years, until 1909. Brush's batteries lasted until 1929.

NOISE/Sounds References/Notes

SoundTable

	Industrial	Commercial	Residential
Day	75	67	65
Night	75	62	55

<http://www.mde.state.md.us/programs/ResearchCenter/ReportsandPublications/eMDE/Pages/researchcenter/publications/general/eMDE/vol5no2/Article6.aspx>

http://www.co.marin.ca.us/EFiles/docs/CD/PlanCom/10_0426_IT_100416160206.pdf