



Flower Turbines

The wind turbine you want to live and work next to. Goal to become a large global renewable energy company

Dr. Daniel Farb, CEO | dfarb@flowerturbines.com



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Validation



Pepperdine University Business School picked Flower Turbines as one of the 10 Most Fundable Companies in America in 2020 out of 4500 companies examined.

[Source](#)

IMPEL +

Flower Turbines chosen as a 2021 Innovator by Livermore Labs in Berkeley and the US Department of Energy

[Source](#)



Solar Impulse Foundation picked Flower Turbines as one of their "1000 Efficient Solutions" for climate change.

[Source](#)



Validation

Award Winner

Winner of Dutch Sustainability Award Two Separate Years



Dutch Climate Minister at an Installation





Validation

Award Winner

A Winner of Yes San
Francisco Cleantech
Competition
In Association with the World
Economic Forum



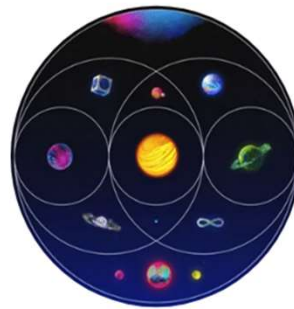


Validation

More Credibility



Featured on
CBS's "The
Henry Ford
Innovation
Nation"



Our Small
units are
helping to
power
Coldplay's
Music of the
Spheres
World Tour



Nominations
and wins for
various
innovation
awards.
Spoke at US
Congress



Problem

Small wind hasn't lived up to its potential as a distributed energy source — Why?



Low noise
and
efficiency
don't mix.



Turbines
close
together
interfere with
each other



Controversial
esthetics



Bird
dangerous



Solution

Say Hello to Flower Turbines

It can provide a better solution than any other wind turbine

We patented how to make vertical axis turbines much more efficient. Third party report: noise less than wind

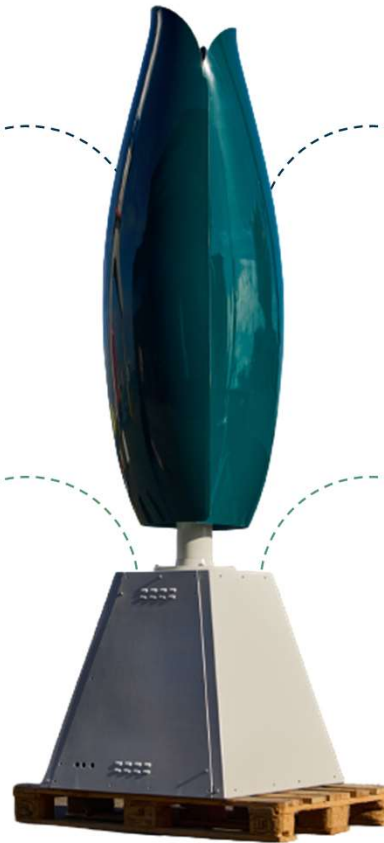


The turbines make their neighbors perform better.

Beautiful yet efficient



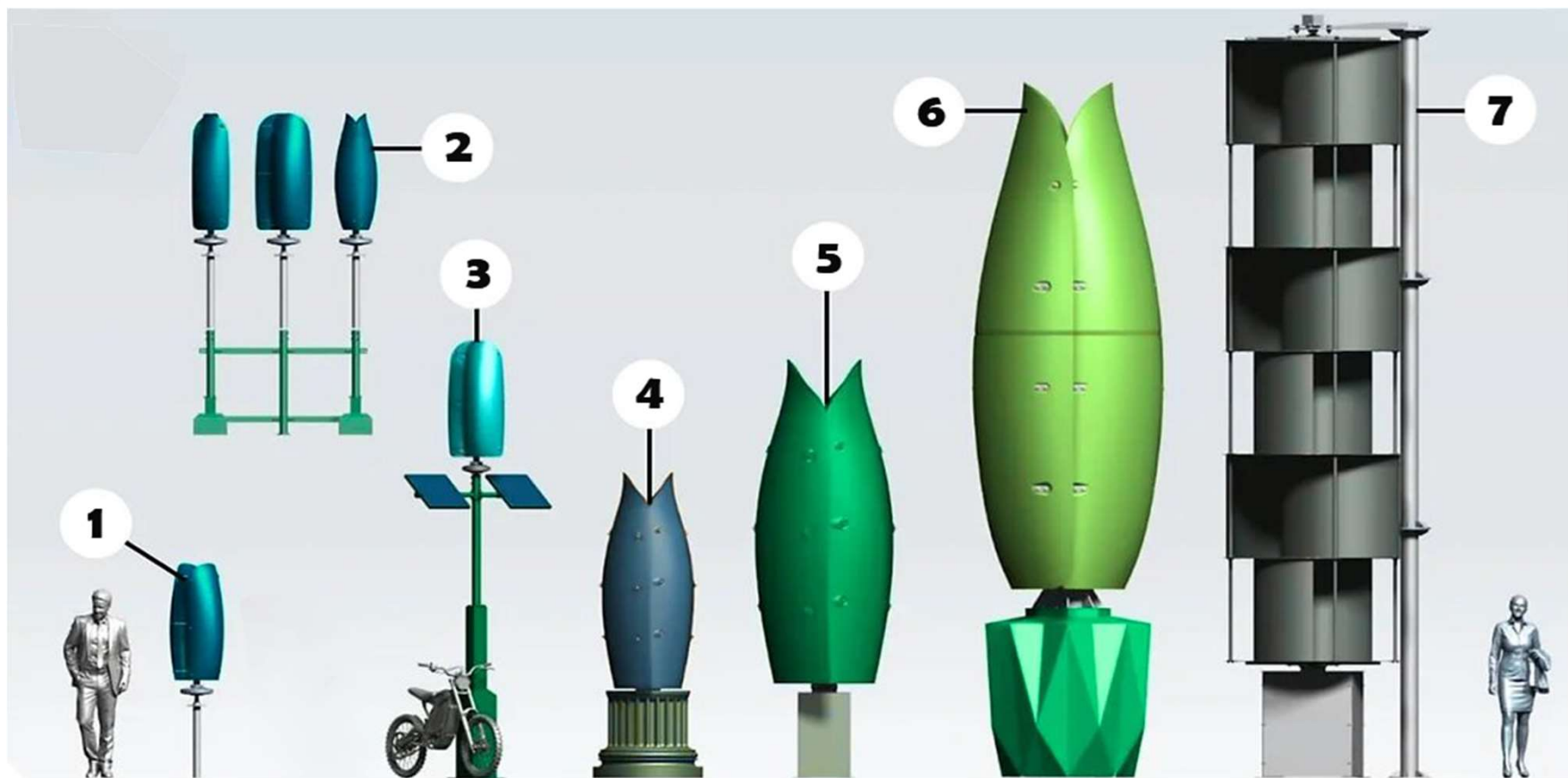
Bird friendly



And they start at low speeds and survive high speeds.



The Product Line



1. Small Tulip Turbine

2. Eco-Roof Energy Hub

3. Charging Station

4. Medium Tulip Turbine

5. 3-M Tulip Turbine

6. Large Tulip Turbine

7. AL13 Power Tower



Innovative Features of the AL13 Power Tower:

Can stack up to
eight 1-meter
modules in
one tower



Low Noise



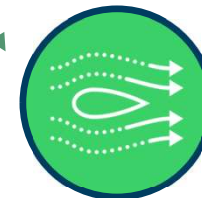
Uses wind from
any angle



Recyclable Turbine



Bird friendly



Efficient internal
aerodynamics

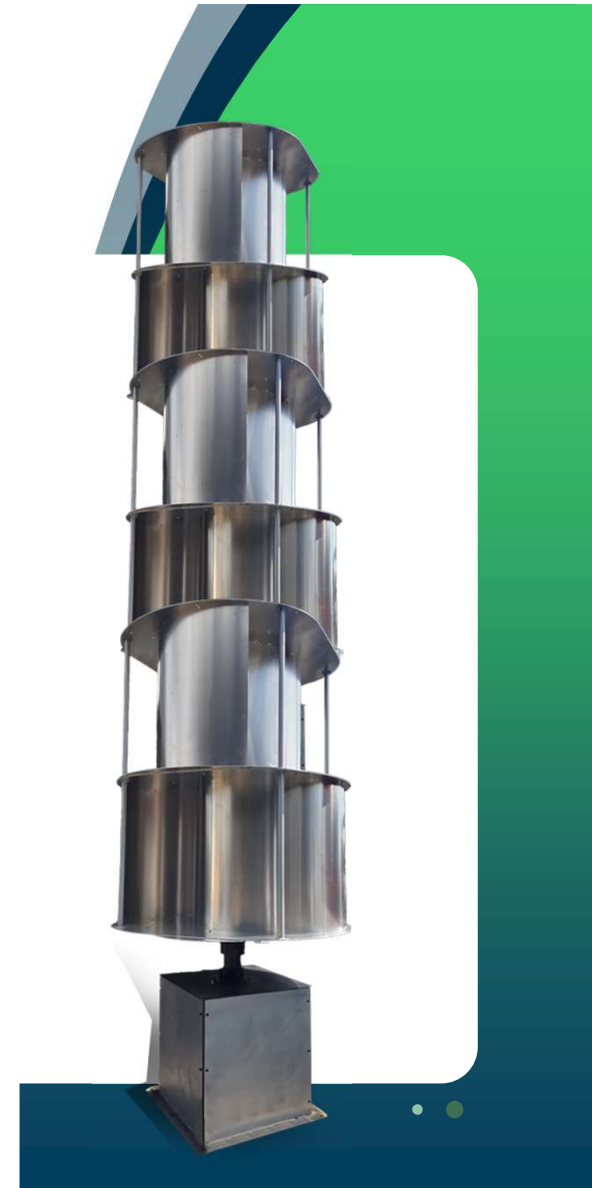
The AL13 Power Tower™ delivers unmatched **effectiveness, cost-efficiency, and space optimization**



AL13 Power Tower

This product addresses the challenge of making our turbines:

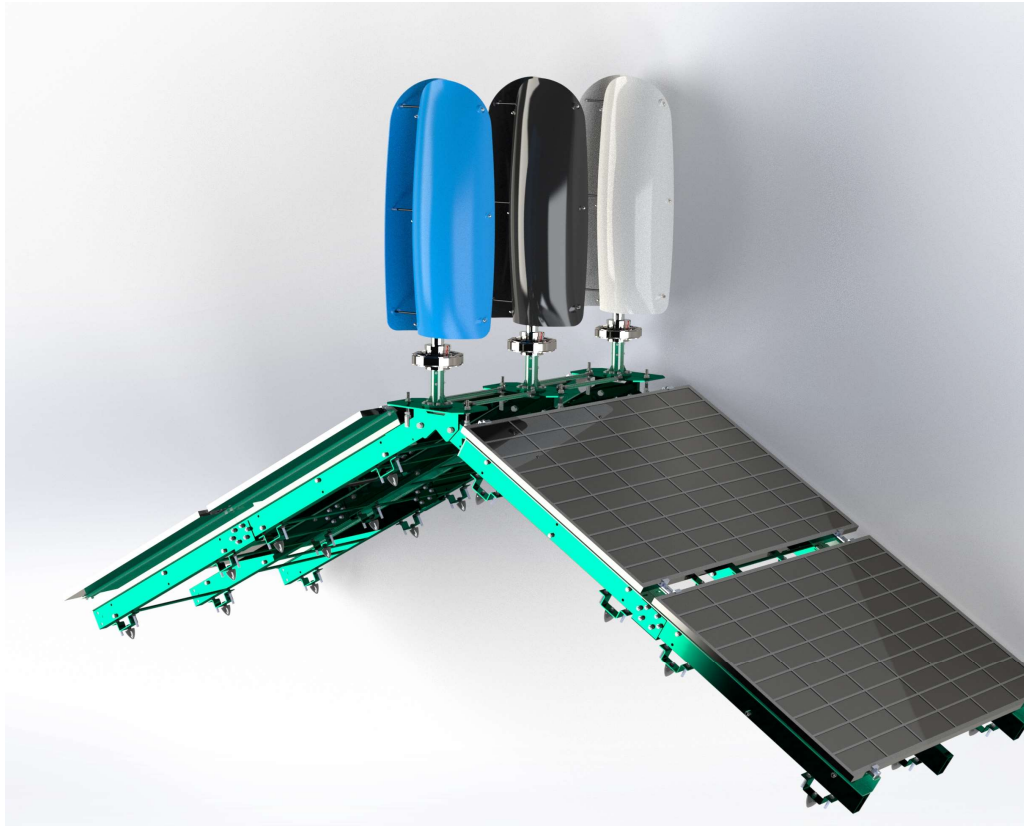
1. Cheaper for all markets due to using aluminum blades.
2. Easier and cheaper to transport and assemble.
3. Starting at even lower wind speeds.
4. Available for more industrial uses.
5. Improved uptake of wind from all directions due to the stacking constructed at alternating angles.





Slanted Roof

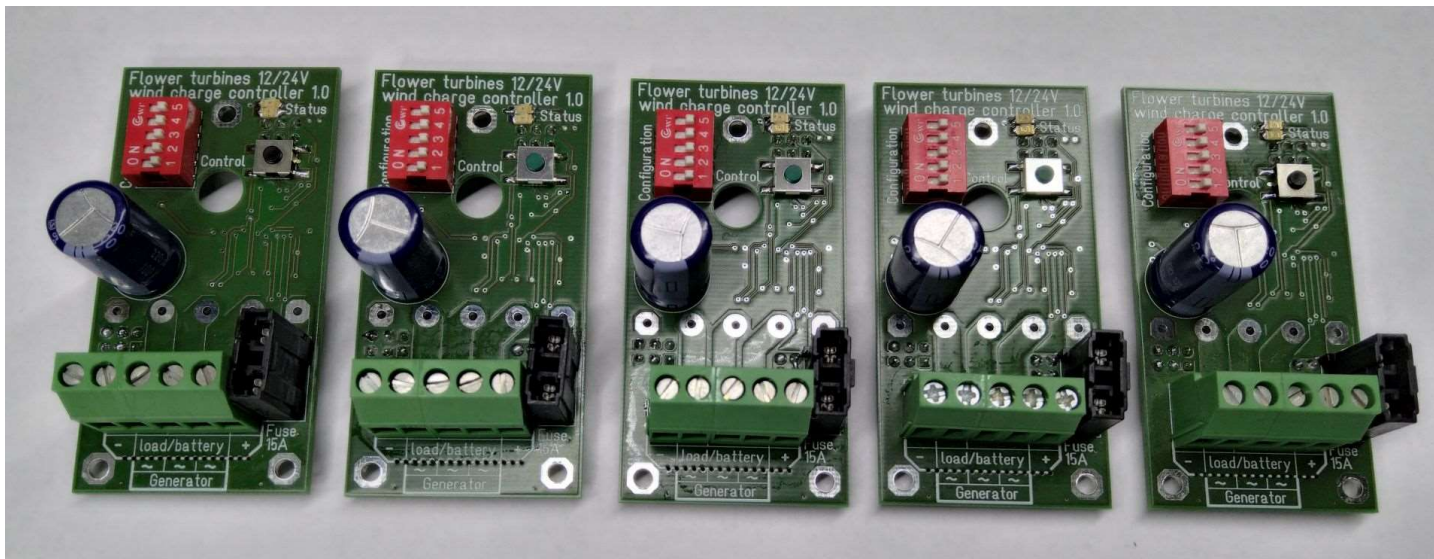
Slanted Roof Option





New Addition to the Product Line

Flower Turbines' own brand of low-power consumption charge controllers—already supplied with some products



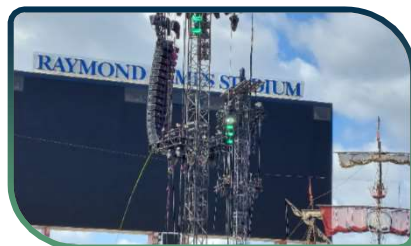


Product

US and EU Sales and Manufacturing



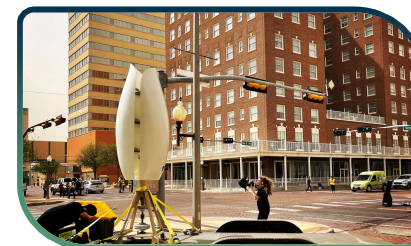
Rooftop cluster for a project in Amsterdam



Helping to power a Coldplay concert



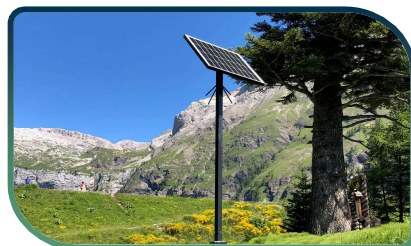
Hilton Hotel in Israel



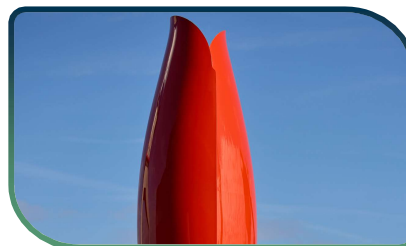
Earth Day in Lubbock, Texas



City of Rotterdam; combined wind/solar e-bike charging



Z-Pole Switzerland



Single Color Turbine



Dutch Military: Proven Compatible with Radar

ZW Pole (Solar and Wind)



Z Pole (Solar)



SL Pole (Grid-Tied Charging)



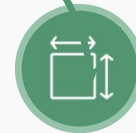
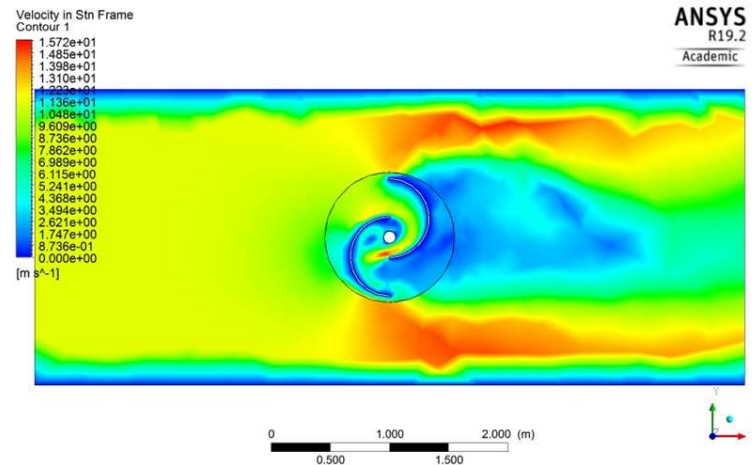


Innovation

The patented design decreases turbulence, increases efficiency, and allows turbines to work together.



Wind from left,
red highest
velocity, yellow
is outside wind
speed, horizontal
slice through the
turbine's two
blades,
shaft in center.



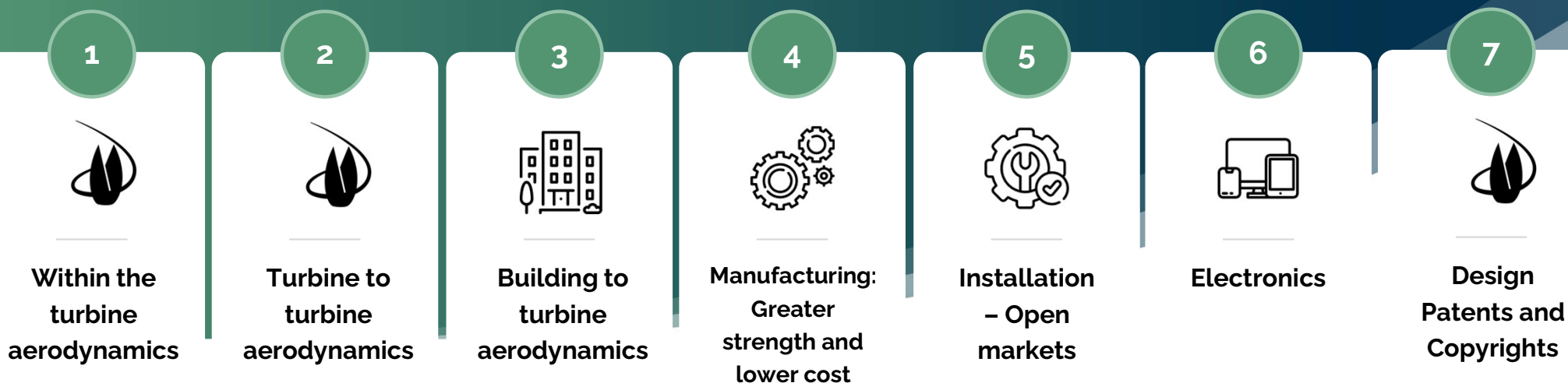
Higher speed
red area inside
the turbine to hit
the second
blade and the
turbine creates
higher speed
areas on the
side.



Patented

Flower Turbines IP Categories—First Class Portfolio

We solved the 3 sources of turbulence and have moved on:



We have patents and know-how addressing each. We also have copyrights and trademarks. Strong IP of over 30 patents, each often filed in several countries. Our two sets of disruptive innovations are aerodynamics and wind turbine electronics.



Patented Electronic Innovations on the Way

Examples

- AI for wind speed prediction and faster turbine rpm reactions
- Rescue of energy normally lost at low wind speeds
- Control of multiple turbines in a group for optimal power, patent specifically written to include large turbines also, to make an electronically regulated cluster effect
- Control of certain common functions among many turbines, such as braking
- Shaftless generators with better bearings adjustment



Patent Strategy

Elements of Our Patent Strategy—Multiple Innovations so No Other Wind Company Can Come Close

Portfolio Approach—
Numerous
Steps and
Technology
Areas to
Overcome

New patents:
Omnibus patents
US Fast Track
Leading to
Patent
Prosecution
Highway

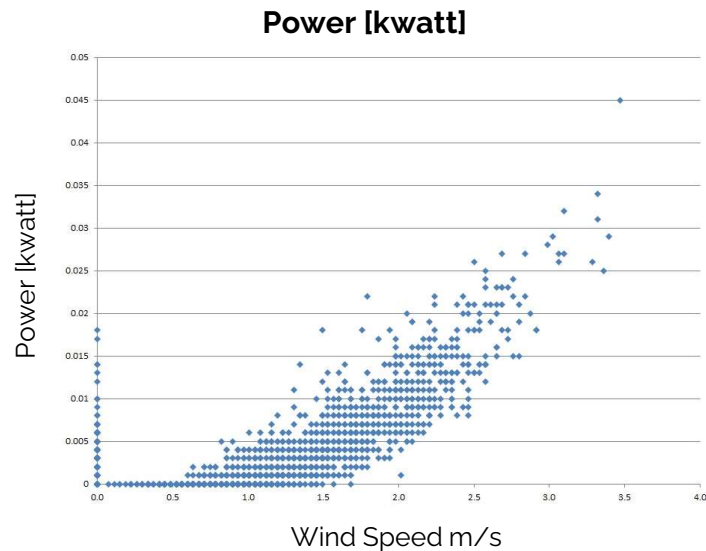
Establishing
Long Term Value

Utility patents
supplemented
with copyrights
and design
patents



Efficiency

Efficiency Even at Low Speeds; Actual Data on Earlier Version

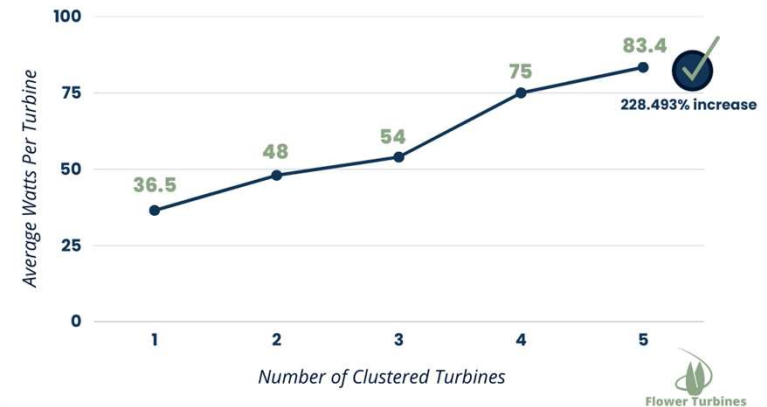


Other turbines start turning here, but the
Wind Tulips are already producing

Synergistic Clustering

The Cluster Effect

Average Watts Per Small Wind Turbine at 10m/s



Each turbine produces more and more power the
more turbines are in a line in the correct
configuration relative to wind direction. 5 turbines
correctly placed produce 228% more power than 5
separate turbines.



Leverage exclusive cluster effect to enable projects in large numbers—estimate in real estate



11M large buildings in North America

X



30% in windy areas

X



10 turbines each of (conservative)

X



\$20,000 per unit on ground and \$5000 on roof

=



\$850B

\$700B (ground) and \$150B (on roof)

Example 1: Rooftops on large commercial buildings

Example 2: Parking lots of malls, other large real estate (Corporate and Government):



Solar Vs Flower

Flower Turbines (Large Size) Compares Favorably to Solar in Windy Areas: Economic significance of the cluster effect

	Solar	Flower Turbines
Number of kilowatts capacity and kilowatt hours per year	20 and 27,381	20 and 50,000
Space in square meters (example: 10 story apt. building)	148.7	36
Cost of system with 30% Federal tax subsidy	\$48,980	\$70,000
Value of electricity per year	\$4381	\$8000
Payback period (years)	11.24	8.75
Revenue per square meter	\$29	\$222 770% Higher

This shows the marketing strategy: Use the cluster effect to make small wind farms, not one at a time sales.



* Zip Code 02532 on Cape Cod Using \$0.16 per kilowatt hour



The Team

Selection of Some Top People in the Company



Dr. Daniel Farb

CEO and Founder, IP Manager

Startup experience in software, clean energy, medical. Won recognition in forums from US Congress to Israeli tech (top 45 in Israel's history) to CBS TV. Degrees in humanities, business, science.
Has over 80 patents.



Warren Stoll

Flower Power

Lawyer by training. In addition to other work in operations and investing, exited four startups, one to Microsoft.. Specializes in using the turbines for art.



Ika Baitish

Mechanical Engineer

Graduate of Technion, expert in engineering software for complex shapes, engineered startup products for manufacturing for high-level clients



Making Money

Turbines

Margin currently around 20%. Will improve with increased volume

Charging

Margin 20-40% in Europe.

Recurring Revenue Plans:

**Selling
Electricity in
Projects**

**Advertising from
Turbine and
Network of
Charging
Stations**

**Licensing
Electronics
Patents to Large
Wind Companies**



Fund Raise - \$17M

- **Start: \$2.5 M from founder, friends, family, and angels**

Round	Amount	Share Price	Closed?
1	\$1.07M	\$10	Closed with waiting list 12/19
2	\$1.03M	\$30	Closed with waiting list 12/20
3	\$9M	\$70	12/30/21
4	\$4.5	\$12 (1:10 split)	Closed 2/17/24
5	\$1.7M	\$12	Closed 5/31/24
6	\$1.4M	\$14	Closed 4/30/25

Non-Dilutive Funding

- **Multiple small R&D grants in the NL**
- **Putting together plans for EU R&D grants**
- **Multiple small State University of New York research grants in association with Stony Brook University**



Flower Turbines

Join us to change the world!

Dr. Daniel Farb, CEO | dfarb@flowerturbines.com



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