



Energies from a Variable Nature.

Wind is a natural resource that seems invisible but is very present near us.



It will be increasingly so
from now on...

... and today more than ever we
need new solutions for
distributed energy production.

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Renewable energy: Rise in global wind speed to boost green power

By Matt McGrath
Environment correspondent

🕒 18 November 2019

🔗 Climate change

Russia and Ukraine at war What you need to know right now

February 3, 2022
2:20 PM GMT+1
Last Updated a month ago

Energy

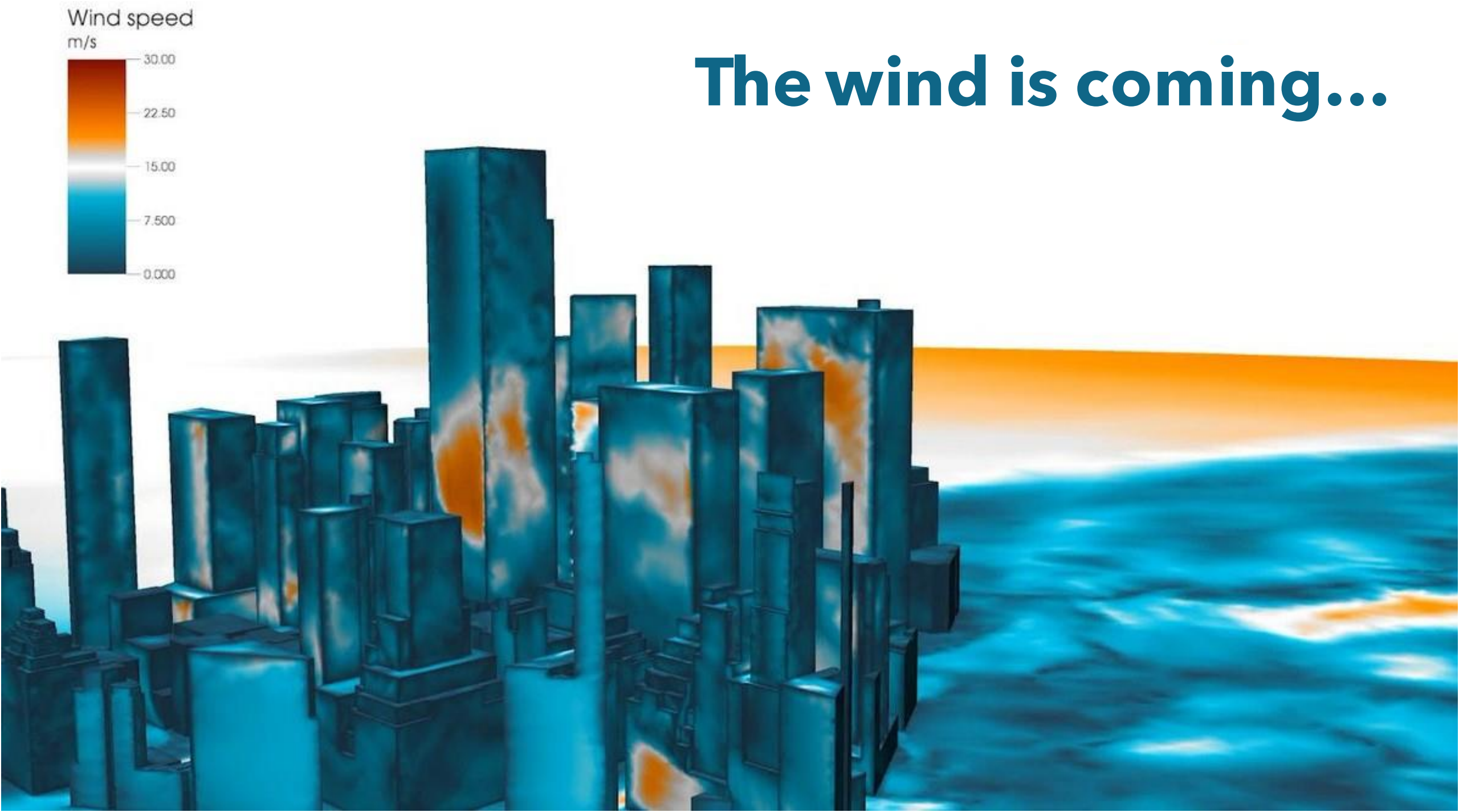
Explainer: Why Europe faces climbing energy bills

By Nina Chestney

 **REUTERS®**

World ▾ Business ▾ Legal ▾ Markets ▾ Breakingviews ▾ Technology ▾

The wind is coming...



If the wind is there, why we still don't see creations like this one everywhere...



...or like this one where the solar-wind synergy would make the batteries last even longer?

A Circular Chance



The point is: why don't we take the circular opportunity that Nature offers us, and instead throw away all the wind that is closest to us, under the height of the large wind turbines?

The wind has 2 souls, just like us

The reason is simple: the wind has two souls, like all of us

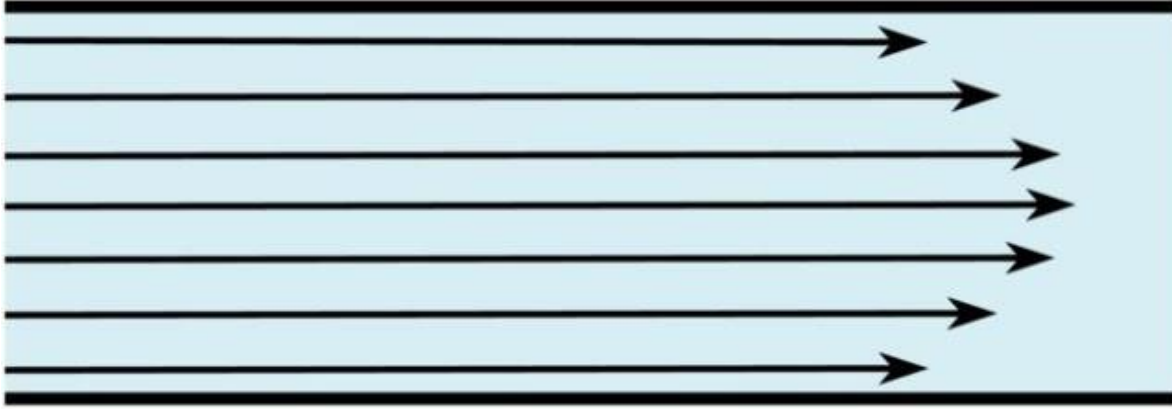


a regular one that blows at
high altitude...

...and a turbulent one that
blows below 50 m

The regular soul

Laminar flow



- predictable,
- laminar,
- found high up in or away from cities,
- has slow cycles of 12-24 hours.

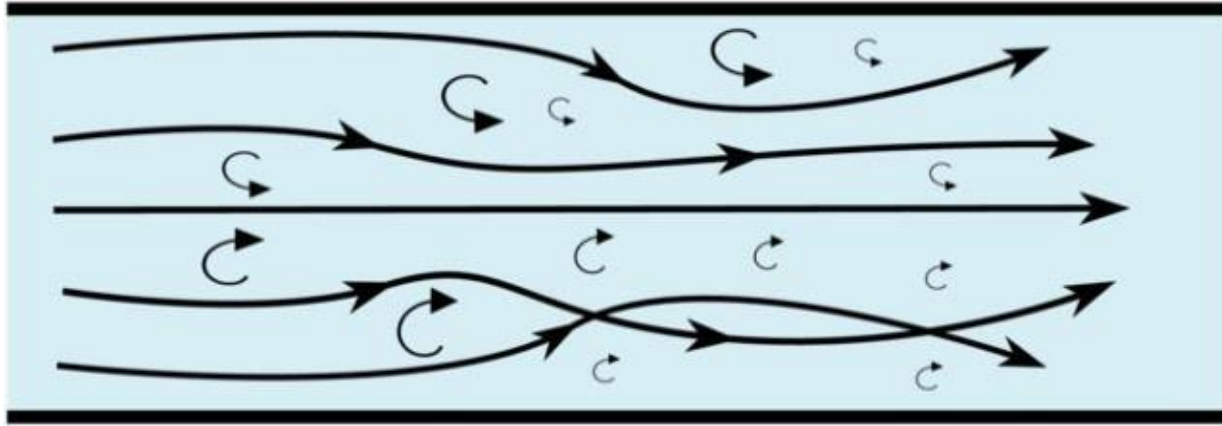
As humans, we have historically turned to laminar flow, and come out with standard solutions that go up to 200m, have nearly fixed and site-specific orientation.

Standard
Solution



The turbulent soul

Turbulent flow



- found low in altitude, in the urban and suburban environment,
- only available in quick bursts of 3-5 minutes.

Faced with this new challenge of the last decade, it seemed obvious to shrink the size of the turbines, but the solution is quite clumsy, because it can only run parallel to the wind.

An old solution for a new challenge



Walking down the street, we all know how quickly the wind direction changes: each time the turbine has to orient itself and start again, this yields to a very low efficiency in the end.

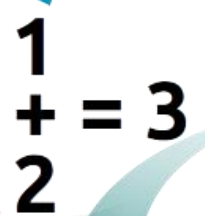
Previous solutions



So the time has come for vertical axis technology, which does not need to orient itself.

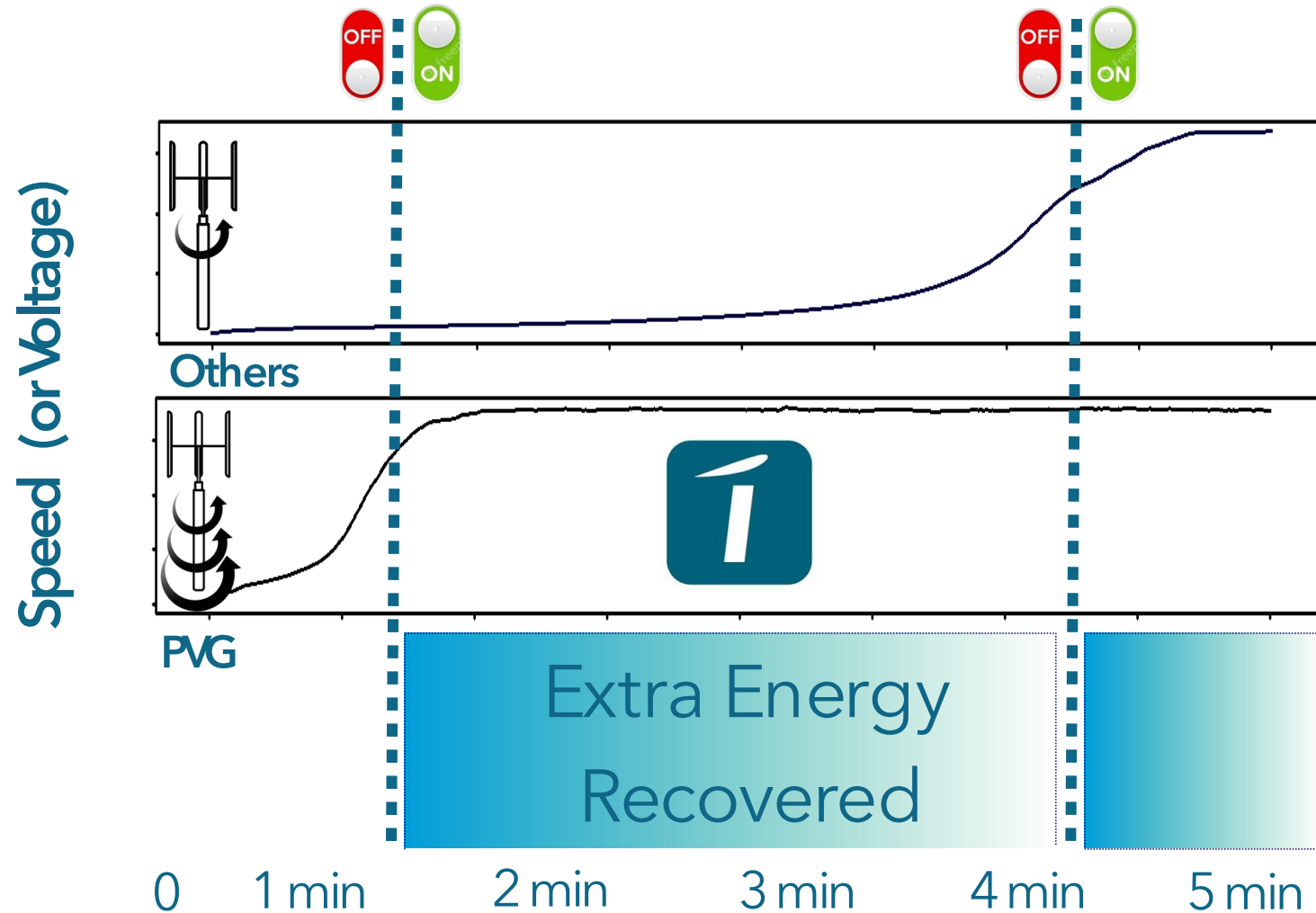
BUT conventional machines are very slow to start, and when they start producing, the wind is already finished.

- They need 5 min to start
- Once they start to produce, the party is already over



- 1) Adjusts the angle of the blade as you do with **sails**, and at the same time:
- 2) Grows diameter as in a **carousel**. In a word: **Self-adapting**
- 3) **4 times faster** to start !

Windcity PVG: Efficiency from a Circular input



How does PVG work? Because it is quick to start, it generates wind energy from each gust of wind that otherwise would get lost.

Consider how many gusts of 5 minutes there are in a day, and you will have total efficiency from a simple circular input

- More than 300 times per day!

Windcity: A complete solution



Efficiency & Sustainability

PVG Blades made of old turbines fibers, CE marked safety and protection system



Plug & Play

AI-based maximum power board, adapts to standard solar inverter, hybrid & storage.



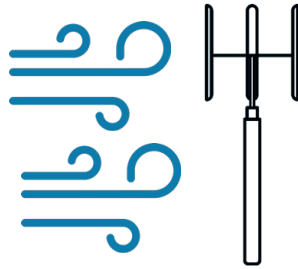
IoT Connectivity

Predictive maintenance, energy data marketplace and smart grid integration

We are not only a bunch of slides



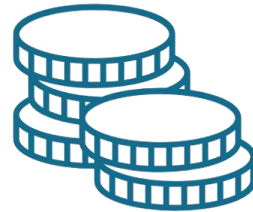
**Seal of
Excellence**
European
Commission



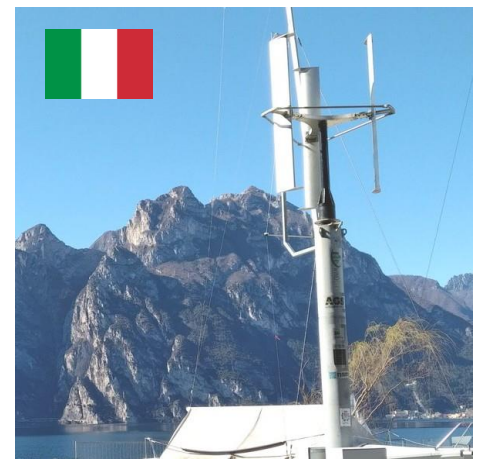
3 Demos
in 3 EU
Countries



4 Interested
Multinationals



€ 750K
Raised Funds
(Awards, Grants, VCs)

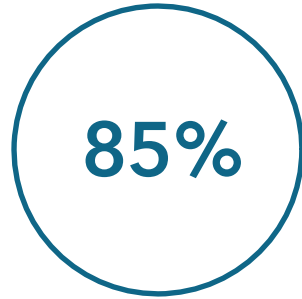


The Big rise of the Small Wind Market



Here begins the BIG adventure of the SMALL wind turbine, which according to DowJones analysts has a growth rate of 15% over the next 5 years

Early Adopting Market

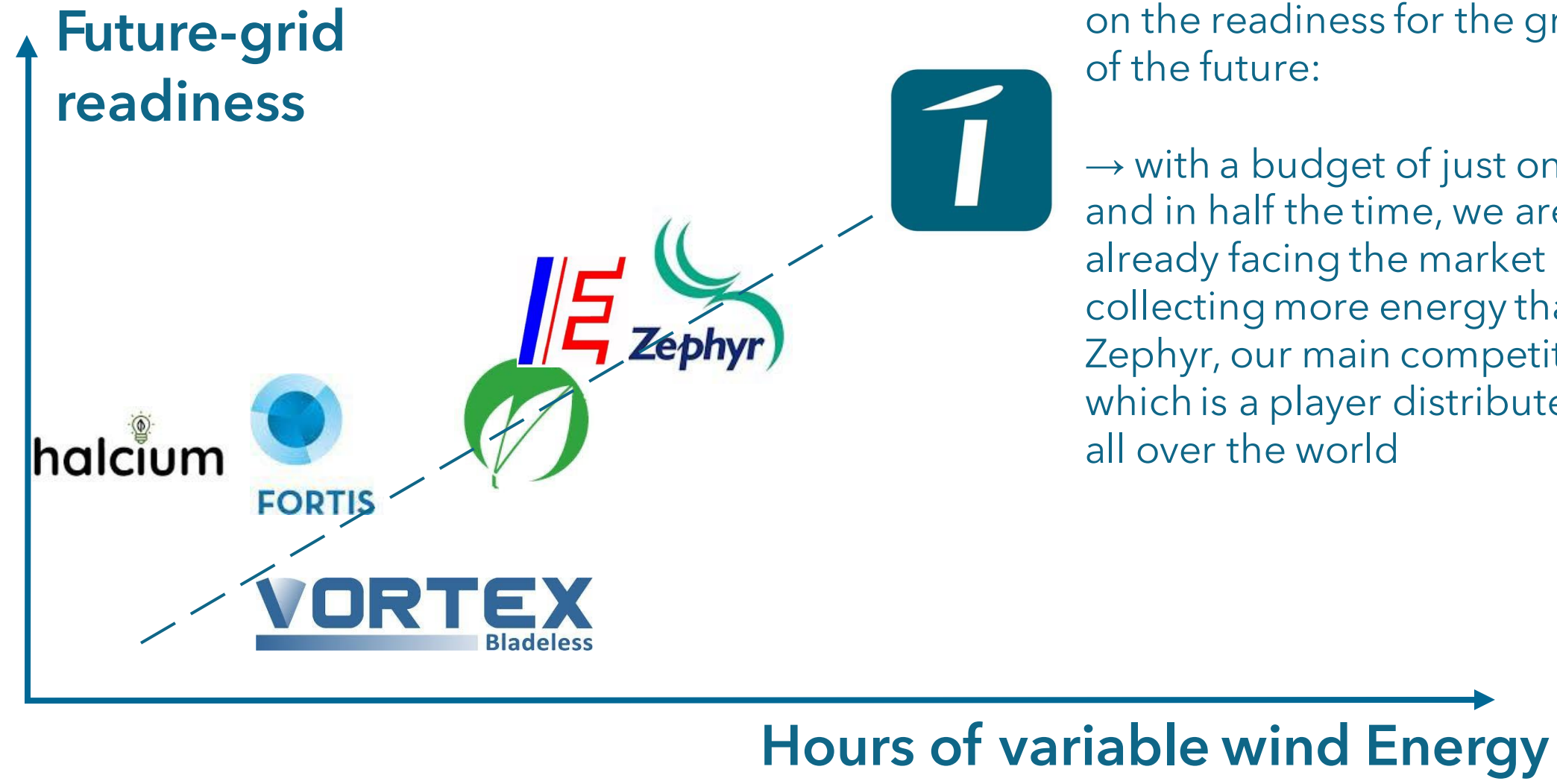


We therefore move into the Early Adopting market:

- we start from the islands, because they have the highest need for clean energy, and they function as a natural funnel for the scale-up: out of 100 Leads, 85 are good urban wind locations
- as part of ZERO we are delivering a POC on an island with Eni / Joule



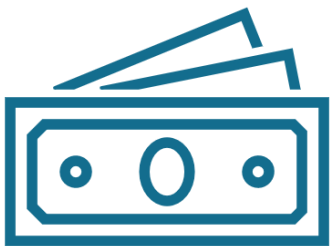
Competition map



The competition travels on the hours of variable wind energy and on the readiness for the grid of the future:

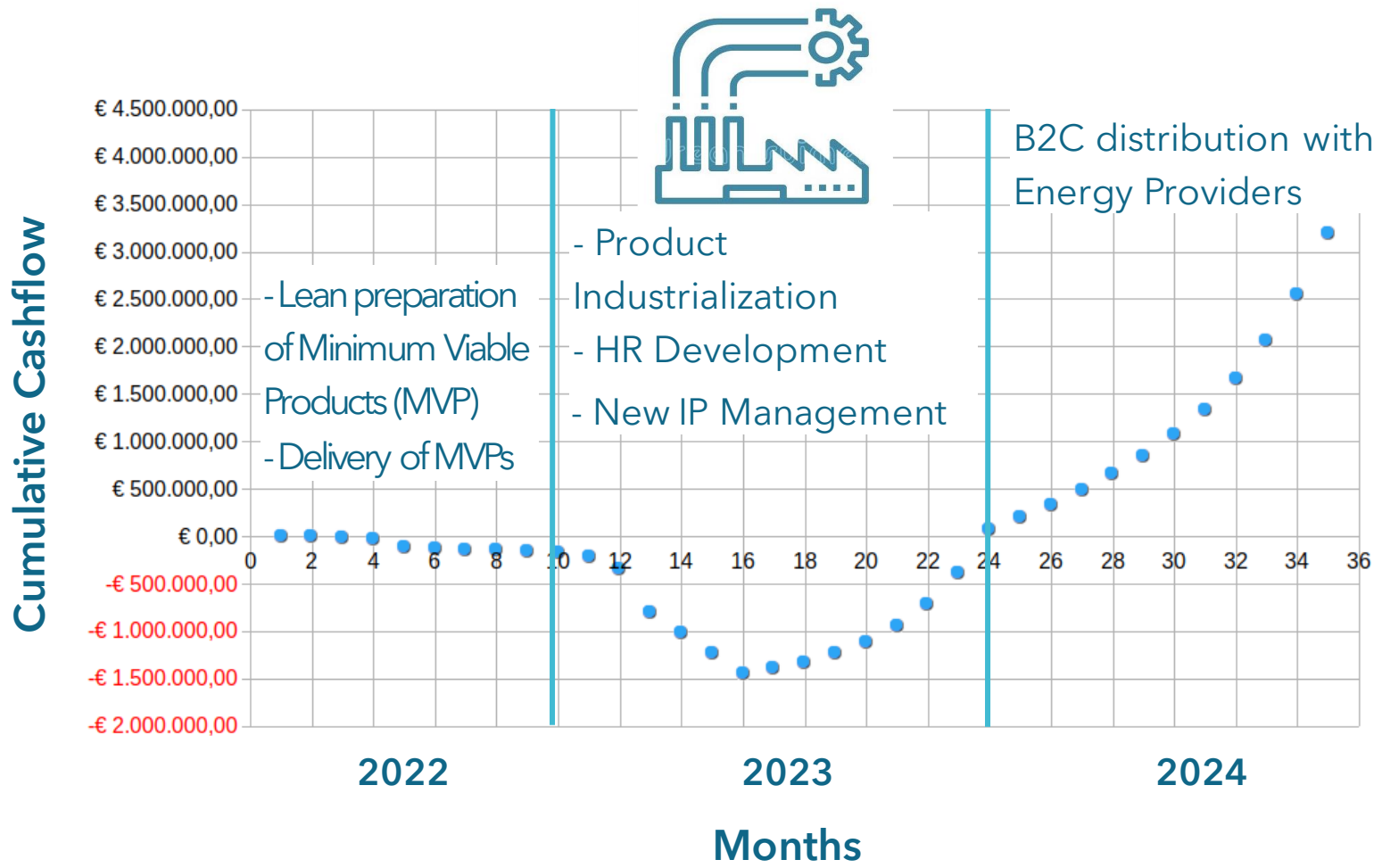
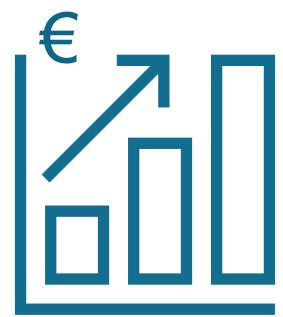
→ with a budget of just one tenth, and in half the time, we are already facing the market by collecting more energy than Zephyr, our main competitor, which is a player distributed all over the world

Financial need - What - For



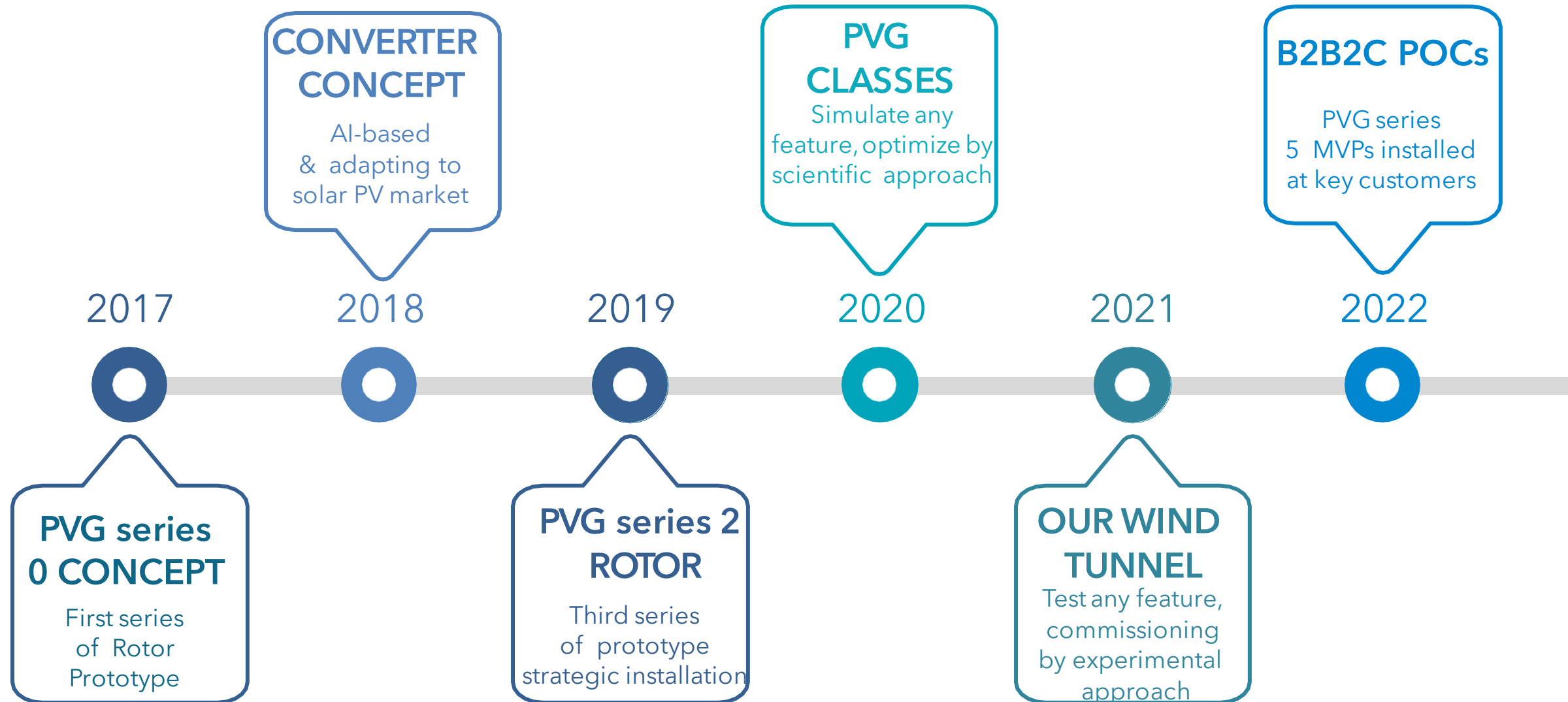
1,5 M€
(min cumulative
Cashflow)

- ROI to
Customer: Energy Price
15 to 7 €cent/kWh
- ROI to Investor
EBITDA:
 - Y1 -0,34 M€;
 - Y2 +0,41 M€;
 - Y3 +3,94 M€

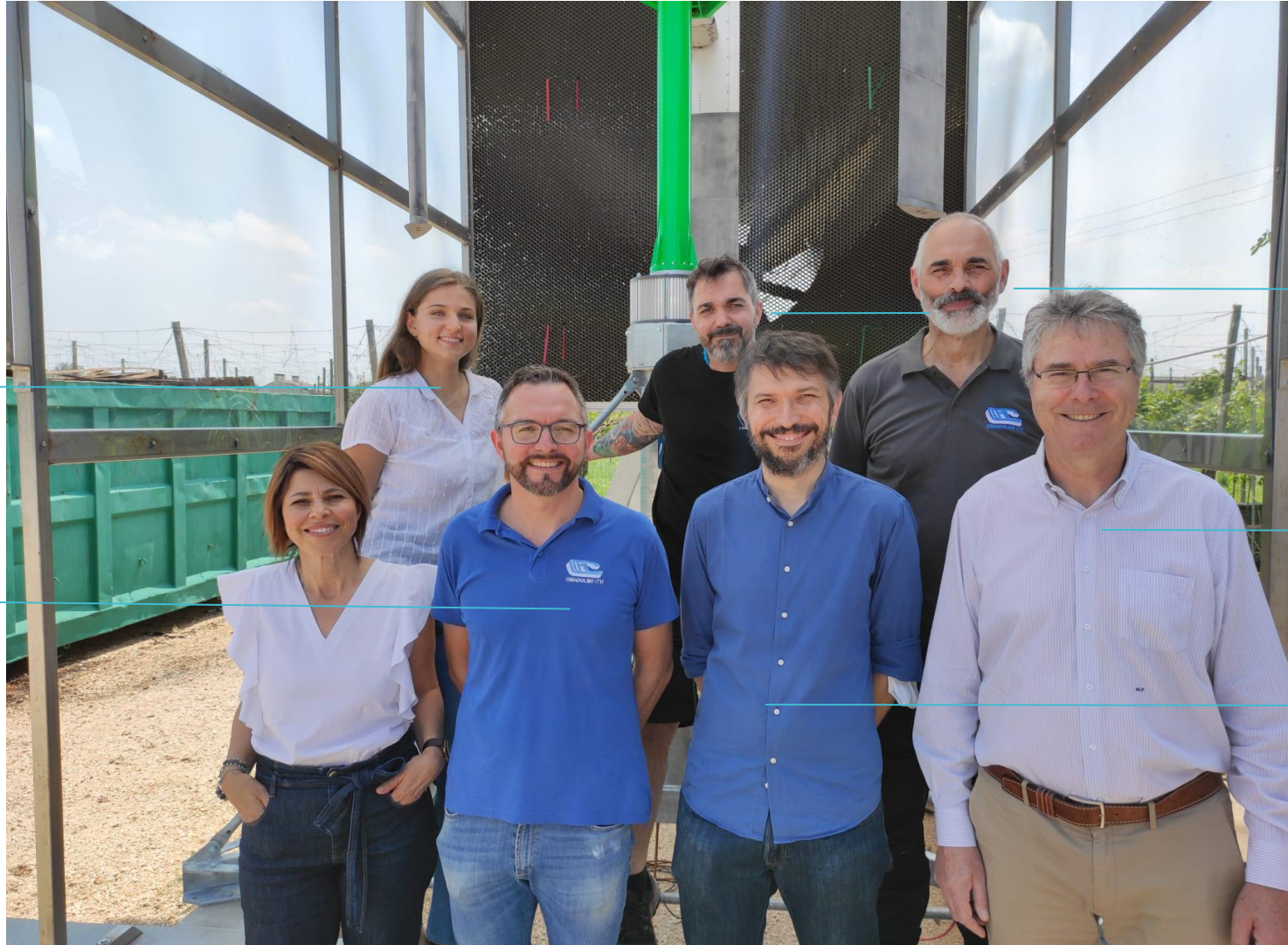


Why us: Roadmap

We are ready for POCs with a great B2B partner that allows us to get to B2C



Why us: Team know-how, know-why, Responsibility



Samuele, Vanni Casonato
Co-founding partners
Prototyping & Production

Matteo Pasti
System Integration

Tommaso Morbiato,
R&D Head, Founder, CEO

Erika Dal Cortivo

Junior Business Developer

Luana, Roby Casonato

Co-founding partners
Back-office & Administration

Eleonora Lisato

Financial & Market
Development

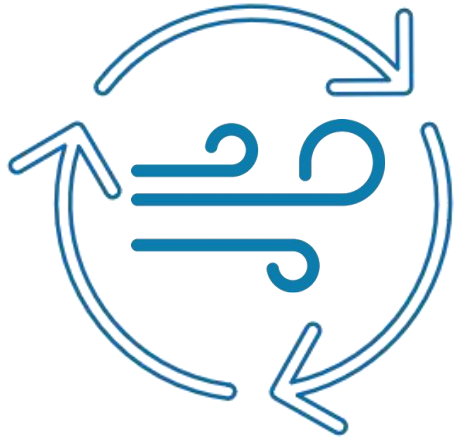
Scientific Advisory Board:

Prof. Charalampos Baniotopoulos,
Prof. Claudio Borri

R&D Team collaborators:

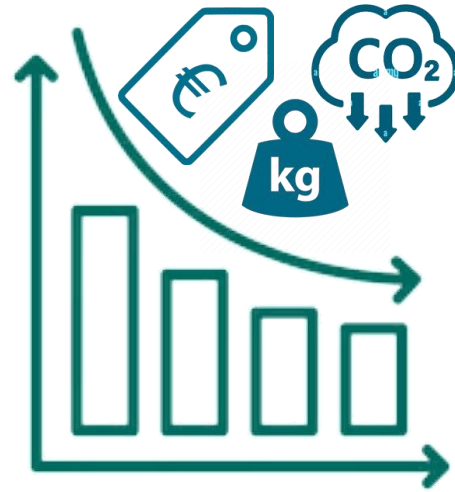
S. Colladet, G. Altimari, T. Pascon, D. Cosenza, I. Achilli, S. Ambroso, B. Dommergues, F. Ponchio, G. Pastore, R. Poletto, Y. Guclu, A. Valentini, E. Mier

Why us: Generate Impact



Urban Wind Refuse

Turbulent soul
is the new
circular input



Partnering for Accessibility

Price, mass, CO₂
emissions 8 times less
since the beginning



Deal-with-it & Adjust

Our solutions adapt
to the market and to
the use-case



Tommaso Morbiato
R&D Head, CEO



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www.windcity.it

The Windcity logo, featuring the word "windcity" in a white, italicized, sans-serif font, set against a dark blue rectangular background. The background of the entire slide is a photograph of a wind turbine's nacelle and blades against a clear blue sky, with a green wireframe graphic overlaid on the left side.

windcity