

VertiGo SRG

VERTICAL WIND TURBINE

A wind turbine that catches both
light breeze and roaring storm.

Traditional HAWT' efficiency is 17%,
VertiGo SRG (VAWT) can reach 43%.

Application areas:

- a) households
- b) SME
- c) isolated areas (islands, jungles)



CONTACT
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Renewable energy
innovation award
1st place

Let's capture wind

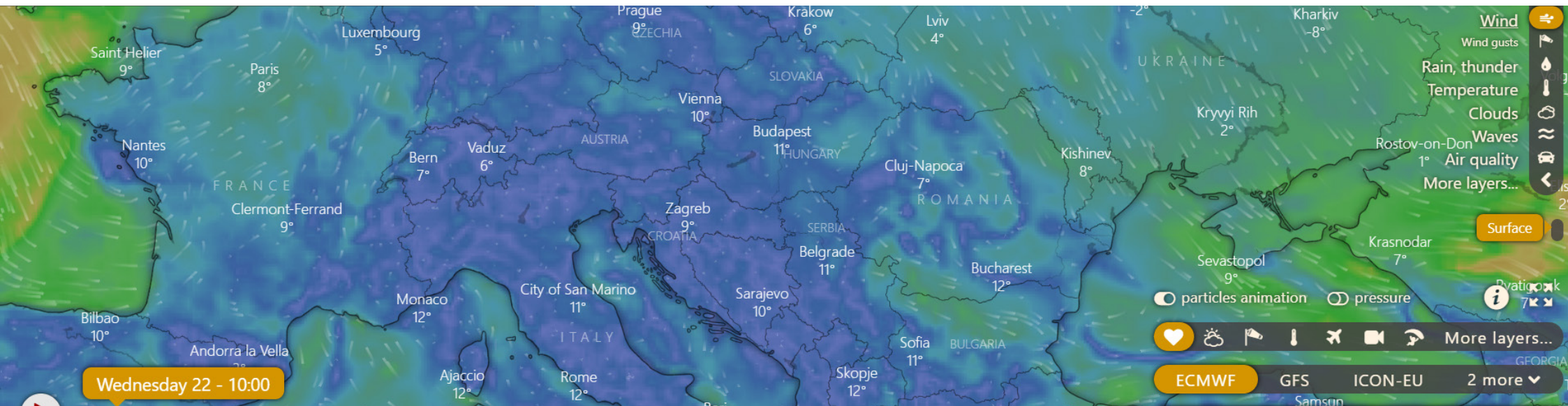
Europe installed 17 GW new wind capacity in 2021

Europe now has 236 GW wind power plant

Europe needs to install 116 GW wind by 2026 to keep up with the 2030 carbon target

ASPAC installed wind capacity is now over 200 GW

ASPAC is dominated by China, followed by India, Japan, South Korea and Taiwan



Problem statement

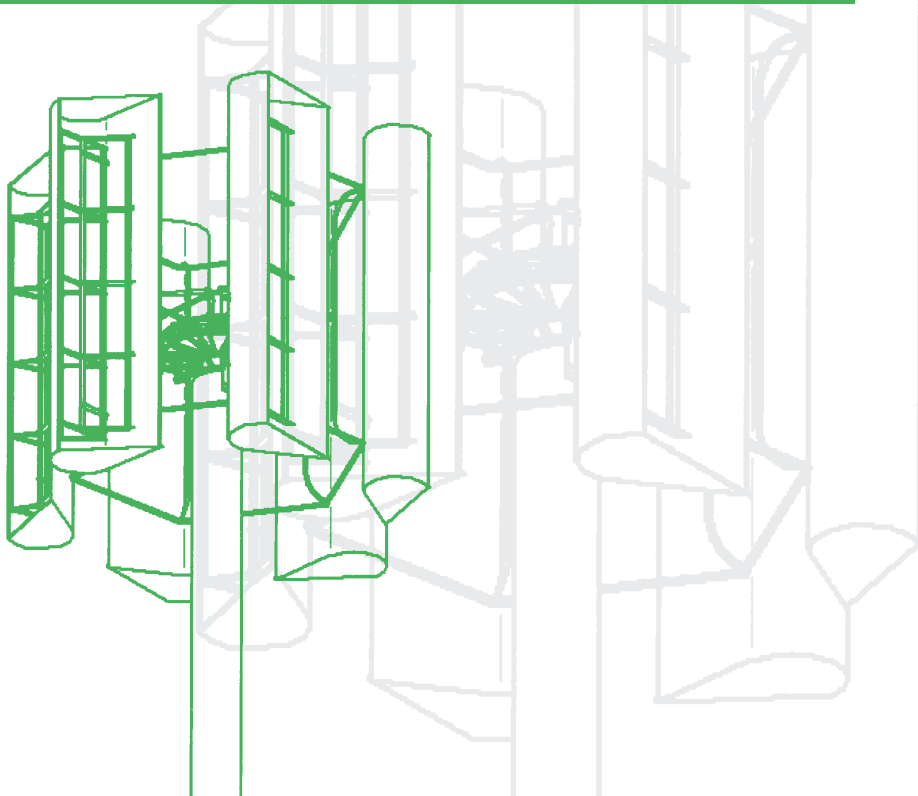
1. HAWT needs to be set in 90 m height
2. HAWT propeller makes noise, environment disruption
3. HAWT cannot capture light wind (under 5-8 m/s) and strong wind (over 25 m/s)
4. Hence the efficiency remains as low as 17%
5. EU has 236 GW wind power capacity at 17% efficiency
6. EU built 17 GW in 2021 – half of what is needed for the 2030 carbon target
7. ASPAC has thousands of small islands with no grid
8. USA – SME, farms in the middle of nowhere
9. Asia is the fastest growing wind energy producer, however, it suffers to find good location for HAWT

Efficiency matters

- HAWT needs a minimum wind speed (2-4 m/s)
 - HAWT cuts-out above 15-18 M/s
 - HAWT collects energy only in a narrow band of wind speed
 - As a result, HAWT efficiency factor is 17%
 - Most VAWT was developed based on HAWT – they have the same handicaps
- VertiGo blades create its own air turbulence („mini storm”) within the turbine
 - VertiGo can start collecting at a wind speed of 0,2 m/s
 - VertiGo VAWT does not need to cut-off the automated break system slows it down to an ideal speed
 - As a result VertiGo can collect energy from any wind speed from any direction – the efficiency factor is 43%
 - High efficiency makes RoI higher and breakeven tenor shorter

What a difference this VertiGo makes...

Annual production	VertiGo KW	HAWT KW
20 KW turbine	21 237,76	12 120,08



Drivers:

- Same windy hours / year
- Normal distribution of wind speed between 0-55 KM/h
- Normal distribution of wind direction
- HAWT safe distance 150-200 m
- **VertiGo safe distance 2-5 m**
- HAWT cut-in 6m/s
- **VertiGo cut-in 0,2 m/s**

Competitive landscape

– VAWT only

Manufacturer, model	Swept area (m2)	Manuf. power rating (kW)	Rated wind speed (m/s)	Cut-in speed (m/s)	Cut-out speed (m/s)	Noise emissions (dB)
WePower, Falcon 1.2	3,50	1,20	13,00	2,70	50,00	32,00
quietrevolution, qr5	13,60	3,30	11,00	4,50	19,00	58,00
Turby	4,90	2,50	14,00	4,00	14,00	N/A
Urban Green Energy,	2,10	0,65	12,00	3,50	32,00	36,00
Windspire Energy,	7,40	1,20	10,70	3,80	N/A	N/A
Windside Oy, WS-4A	4,00	24,00	18,00	1,90	N/A	N/A
Urban Green Energy,	12,80	4,00	12,00	3,50	25,00	38,00
VertiGo	18,00	20,00	18,00	0,20	None	30,00

R&D status

VertiGo Vertical axis wind turbine **innovation completed in 2011**

VertiGo won Hannover Messe „renewable energy innovation award” **1st place in 2012**

VertiGo pilots were installed at **8 locations in EU, USA, ASPAC**

The wind collector mechanism (wind sucking blades) has been **further developed** (to resist heavy wind)

The speed controlling of the VertiGo wind turbine has been implemented (to be able to continue **safe operation even in roaring storm**)

The electronic structure has been modified to enable **usage of energy without the grid network**

For sale

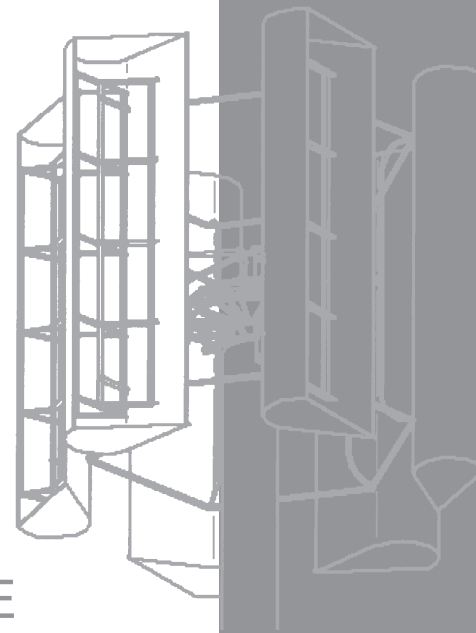
- ▶ Based on the growing trend of wind power plants installed in Europe and ASPAC there is an enormous demand for efficient energy collectors

- ▶ VertiGo can be installed at households, SME (hotel, restaurant, small plants)

- ▶ VertiGo can be installed at islands, in the jungle as no grid is needed

- ▶ BUT the owner of the know-how (Infinite Energy Kft, Hungary) has very limited financial capabilities and VertiGo shall be a standard mass product – production plant is needed

- ▶ VertiGo know-how is for sale



What are we selling?

- The licensed certificates
- The registered know-how
- The technical manuals
- Training and support for 12 months

Target

- We believe that best target is companies engaged in HAWT production (eg Etneo Italia srl)
- Or in VAWT (Skywind Group Holding Ltd) and need an upgrade
- As the geo conditions of ASPAC call for our product – we recommend focusing on industry players in Asia (eg Wuxi, Deming)
- The price can be either a lump sum or a combination of up-front plus royalty – to be discussed

