

# Energy yields up to 10 kW.

WindCarrier – technology for groundbreaking energy production.

 green  
energy

Use 100%  
renewable energy.



→ generate → store → utilise

**GILDEMEISTER**  
energy solutions

# Generate your power requirements yourself.

The WindCarrier from GILDEMEISTER **energy** solutions gives you the perfect technology to generate power autonomously, efficiently and sustainably. Space-saving, efficient and reliable. Utterly quiet, robust and low-maintenance.

→ Clean energy can be generated anywhere.

No matter where you need the energy: the WindCarrier allows you to generate renewable energy in the simplest way possible. Whether for an industrial application or for an office or company premises, you can generate low-maintenance, clean energy to cover your own needs or to feed into the public power grid.

## Earning potential of the WindCarrier.

The following examples were created depending on location using a model calculation. They give an overview of the WindCarrier's potential profitability when it is used for self-consumption.

→ **Calculated annual yield**

Nuremberg: **12,100 kWh p.a.**

Cologne: **16,800 kWh p.a.**

Husum: **27,100 kWh p.a.**

→ **Profitability for self-consumption in 2011 (Cologne)\***

16,800 kWh x 25 cent (average electricity price)

**4.200,- € p.a.**

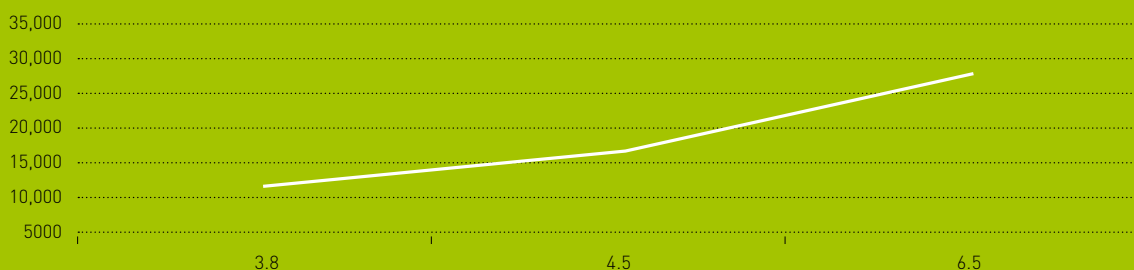
→ **Profitability for self-consumption in 2021 (Cologne)\***

16,800 kWh x 50 cent (estimated electricity price)

**8.400,- € p.a.**

→ **Annual yield**

Energie p. a. in kWh\*



\* Values depend on location and are subject to change.

Wind (m/s)

## An investment that is not just profitable for the environment.

Protect the nature and the resources – while your wind generation plant amortises. Even in a period of less than 10 years, depending on the location.

### Location-dependent annual plant performance: 20000 kWh

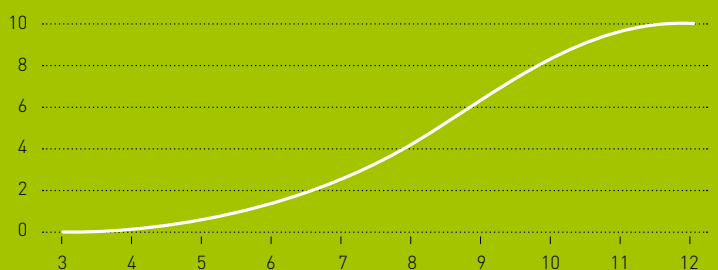
Estimated self-consumption of a small company	15.000 kWh	25c/kWh	3.750€
Fed into power grid	5.000 kWh	9c/kWh	450 €
Sum total			4.200 €

As of 2011

→ Investments in the use of renewable energies are subsidised differently by each country. It is possible for domestic and international commercial companies (which are primarily privately owned), municipalities and organisations, farmers, individuals and commercially active not-for-profit applicants to receive subsidies. Subsidies significantly shorten the amortisation period.

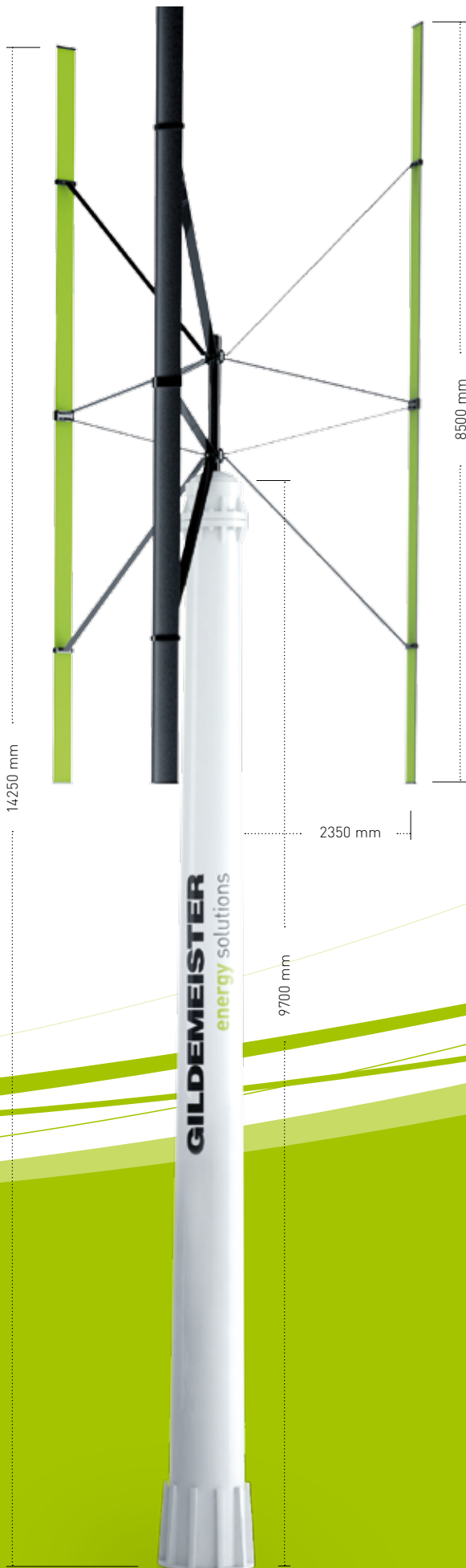
### → Performance diagram

Power in kW\*



\* Values depend on location and are subject to change.

Wind (m/s)



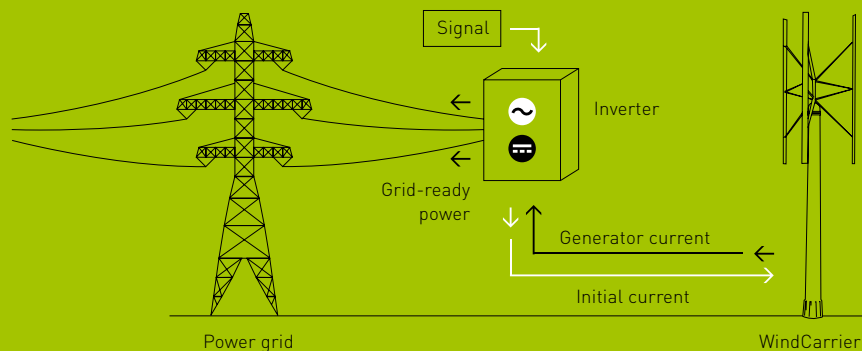
# WindCarrier – guaranteed efficient energy generation.

## → Functional principle of the WindCarrier.

The WindCarrier from GILDEMEISTER **energy** solutions represents a new generation of small wind turbines, using the latest in technology. With a rated power of 10 kW, its gearless principle provides an efficient energy yield, utterly quiet operation and ease of maintenance. Use the power of the wind for clean energy.

## → Up to speed quickly – even with little wind.

Thanks to intelligent sensor technology, the controller will start up the turbine when the wind reaches a speed of 3.6 m/s. The turbine is only switched off when the wind speed drops below 3 m/s and is decreasing constantly. This means constant energy generation from wind speeds above 3 m/s and a wind speed variation buffer of 0.6 m/s, so that frequent switching on and off of the turbine is avoided. The result is a constant energy yield, even when the wind drops briefly.



## → Direct information on the performance data.

Using an optional display or a direct internet connection, you can read off all the performance data and the current wind speed at any time. Your turbine's production data is recorded and the annual yield calculated automatically. This tool will keep you permanently informed.

## → The WindCarrier can handle all winds and all weathers.

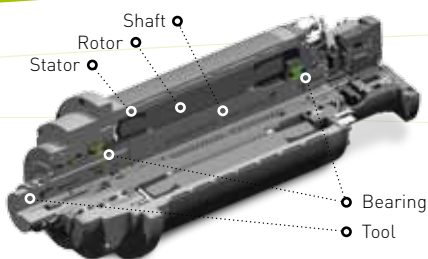
- The first electronic brake will lower the speed of the turbine step by step from wind speeds of 16 m/s.
- The second electronic brake creates a short-circuit should the controller fail, or if there is a fault in the power grid.

## → Fewer losses, more power.

The less that has to be moved, the lighter the drive. As with every form of energy generation, wind turbines are also subject to losses from the gearbox, generators, electronics and the rotor. This is why the WindCarrier does without a gearbox and works more profitably than other turbines – thanks to its direct drive. This principle permits the generator to be controlled directly without detours or losses, thus optimising the efficiency of your WindCarrier.

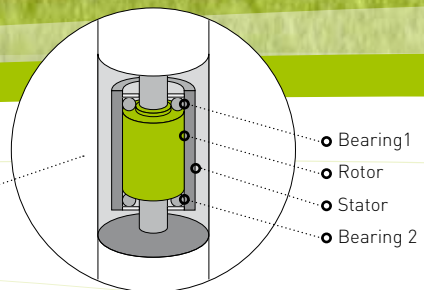
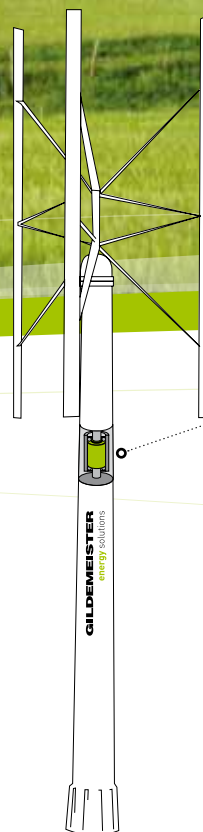
# Advantages of the WindCarrier:

- Generate renewable energy yourself and use it immediately
- Security of supply, independence from power failures
- Secure stable electricity prices for the long term
- Tried and tested technology with a long life
- Utilisation of a free, inexhaustible energy source
- Independent of wind direction
- Low-noise (< 35 dB(A))
- Easy to maintain and wear-free
- Contribute to a cleaner future



## → Built on experience

The core of the WindCarrier is the directly-driven motor spindles, manufactured with high precision.



## → Bearing construction

This robust, well-thought-out and technically mature solution gives the turbine a power advantage of up to 10%. The generator only has two bearings, which require only a minimum of maintenance and is characterised by its excellent efficiency.



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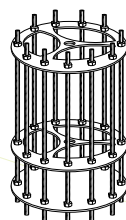
 **green  
energy**

Now generate  
100% clean energy  
yourself.

 **NEW**

- Utterly quiet
- Easy to maintain
- Robust

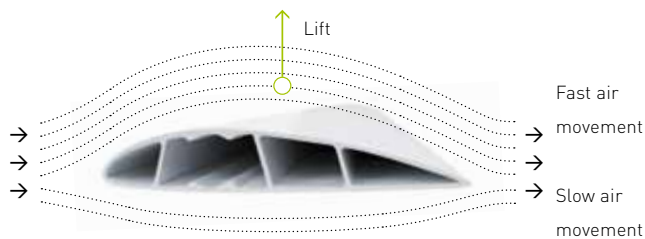
→ Version with anchor cage



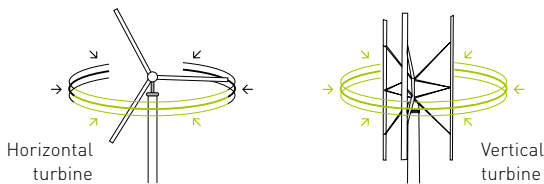
The tailor-made, space-saving foundation for your turbine ensures proper anchoring below ground for the best stability – no matter what weather you are expecting. Also available as an option.

# The Darrieus principle

Innovation in detail: the WindCarrier construction is based on the principle of the Darrieus Rotor with a vertical rotating axis, where the aerodynamic lift is used highly effectively for power generation. The turbine blades are aerofoils, like the wings of an aeroplane. This special shape forces the air on the curved upper surface of the blade to flow more quickly than the air below the blade. The resulting force gives the aeroplane the lift it requires – and the WindCarrier its driving force.



## → Efficient from every direction



The vertical arrangement of the blades has a decisive advantage. The WindCarrier does not need to point in the direction of the wind to maximise power generation. The wind always hits the aerofoil at the optimum angle.

## → Simple and quick to assemble

The WindCarrier can be erected and commissioned in around three hours by three people using a truck-mounted crane.



# Technical data

### Turbine

Overall height	14.25 m
Axis height	9.7 m

### Weight

Generator	0.5 t
Mast	1.25 t
Rods with blades	0.75 t
Entire system	2.5 t

### Performance characteristics

Switching-on speed	3 m/s
Switching-off speed	16 m/s

### Rotor

Diameter	4.7 m
Rated speed	125 rpm
Blade construction	Aluminium
Rotor surface	40 m <sup>2</sup>

### Generator

Type of construction	synchronous
Torque	764 Nm
Rated power	10 kW
Maximum speed	130 rpm
Rated current	15 A
Degree of protection IP	67
Cooling	Air

### Tower

Type of construction	hot-galvanised
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### Paint

Colour	RAL 7011*
Quality	C5M

### Safety system

Short-circuit braking	yes
Mechanical braking	optional
Temperature monitoring	yes

\* For an additional fee, a range of paint colours for the mast and blades is available.

# Generate up to 20% of your power requirements.

Free yourself from increasing power costs with innovative and fully integrated solutions to generate, store and utilise 100% sustainably generated energy.



**Global presence:** GILDEMEISTER energy solutions operates a global service network in cooperation with 75 international GILDEMEISTER sales and service locations.



**MORE INFORMATION HERE!**  
If your mobile phone comes with QR-Code recognition software, you will be directed to [www.gildemeister.com](http://www.gildemeister.com).

## → generate

→ **SunCarrier:** The SunCarrier is a **unique tracking system** which continuously aligns the surface of its modules with the current position of the sun via its vertical axis.

→ **WindCarrier:** The new generation of small wind turbines using the Darrieus principle with a rated power of 10 kW **guarantees efficient power generation.**

## → store

→ **CellCube:** A new generation of stable electricity storage devices – the long-life and low-maintenance vanadium-based **redox flow battery** provides **uninterruptible power, supplied for example by solar- or wind-powered systems.** The large, weather-proof battery is extremely low-maintenance and is therefore able to supply clean electricity 24 hours a day.

## → utilise

**Intelligent products and technologies for modern energy management:**

- e-mobilitysolutions → telesolutions
- backup solutions → off-grid solutions
- industrial solutions → power solutions

→ Visit us at our **energy solutions Park in Bielefeld** and experience modern energy supply first-hand: Gildemeisterstrasse 60, 33689 Bielefeld, Germany

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