

WIND TURBINE



Practical Microgeneration Solutions



WE GO FURTHER





LCG ENERGY

Covering the heat and power supply of your home with renewable energy.



LCG Energy has been operating as a licensed energy supply company for years in Austria and develops self-sufficient energy solutions for businesses and private households with the help of renewable energies

With our modern wind turbine technology, we generate energy for private households, which is used both for heat production and for supplying buildings with electricity. Equipped with storage units and heating technology, it is thus possible to make the household as self-sufficient as possible from external energy sources. In addition, you help significantly reducing carbon emissions.

With our wind turbine, we make an active contribution to reducing CO2 consumption and thus support the global efforts towards the energy transition.



VERTICAL CENTRIFUGAL WIND TURBINE

Our system is the only one of its kind which, thanks to its compact form and its small size of approx. 140 cm in height, can be installed on any house roof without making a big visual impact and runs silently.

The reduction of fossil fuels and thus CO₂ savings is achieved through the use of modern heating technologies. We can also power existing heat pumps, as well as charge your electric vehicle and provide up to 75 % of your homes power requirement.

Thanks to the battery storage included in the system. It offers sufficient possibilities for the use of free energy. The storage units of different sizes also allow you to use the energy production at different times, so that you can use the electricity flexibly and largely independently.

Our wind turbine as a microgeneration solution supports CO₂ emission reduction by reducing the use of fossil fuels, so that a single-family house (approx. 140 sqm) can save up to 6 tonnes of CO₂ p.a. (if gas heating was used before). With oil heating, we expect a CO₂ saving of approx. 5.8 tonnes.

CO₂ SAVINGS IN A FAMILY HOME: *

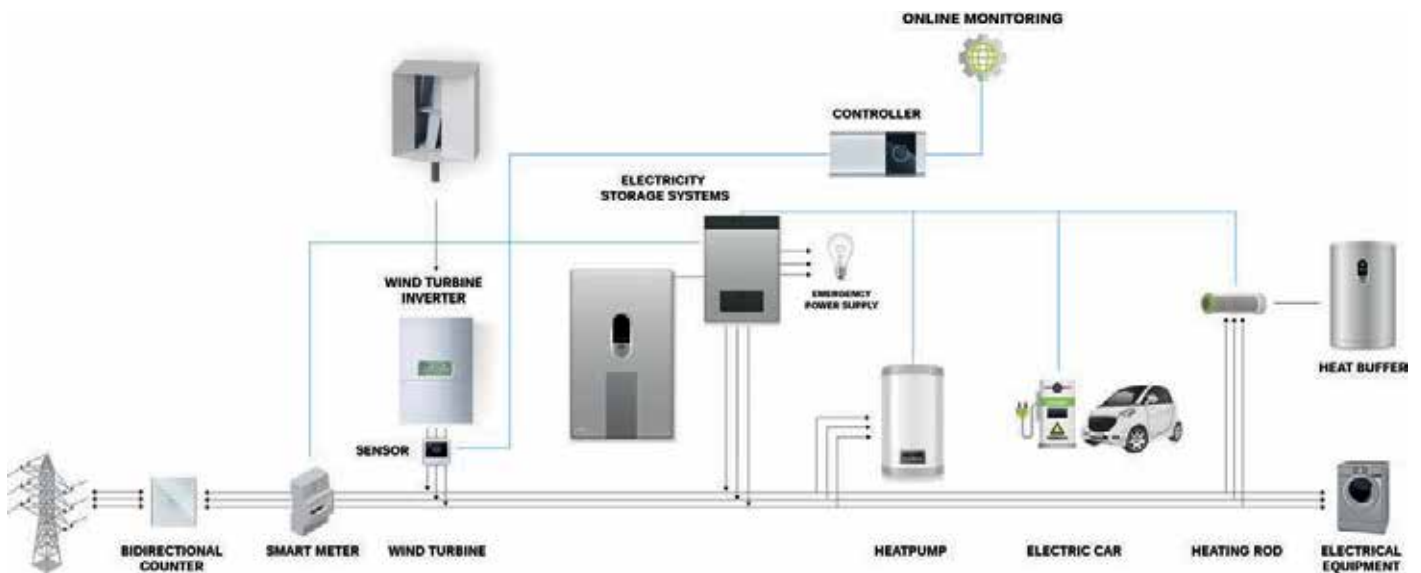
- Up to 6 tonnes for gas heating
- Up to 5.8 tonnes for oil heating systems



THE SYSTEM AT A GLANCE

The wind turbine generates energy, which is fed into the building's power supply or heat generation via the battery storage system.

The system's inverter supplies energy for the building's electricity requirements. The heating coil serves as a heat accumulator and is heated to the appropriate temperature. In this way, domestic hot water and the heating system are supplied with heat. Electric vehicles can also use the energy for charging via the system's storage unit.



LCG Energy has been successfully active in the industrial and commercial customer segment for years in Austria.



LCG WIND TURBINE ADVANTAGES

BENEFITS

- The latest wind turbine technology providing power and heat to your home by means of renewable energies
- Active contribution of every single household to the global transition to low energy
- Innovative storage technology - currently selectable with 5 or 10 kW battery storage
- The wind turbine heats the heating coil for up to 9,000 h in your water buffer storage with a lance temperature of up to 200 degrees Celsius, so up to 100 % of the heat demand of a single-family home can be realised
- Surplus electricity is fed into the building to secure the supply of electricity where required.
- By using the energy storage, they can also use the wind turbine to charge an electric car.
- **CO2 neutral energy production**
- The wind turbine produces energy when you need it, e.g. in the cold season when there is a high demand for heat, 24 hours a day, 7 days a week.
- The system operates completely quietly
- No follow-up costs as it is maintenance-free.
- Wind is free of charge, unlike oil and gas heating systems or heat pumps, which incur high annual costs.
- The centrifuge increases the wind speed inside the rotor by approx. 2 m/s (energy production is exponential)

** Based on an energy efficient dwelling of up to 140sq.m*



SAMPLE CALCULATION

Energy supply of a single-family home (approx. 140 sqm), with electricity and heat:
Household 1 Family with 2 children:

SAMPLE

**GROSS PURCHASE PRICE OF THE SYSTEM WITH 5 KW
STORAGE EXCL. INSTALLATION €35,000**

(LCG Top Model with 10 kW storage gross €42,000)

.....
ENERGY COSTS P. MONTH APPROX. €450
ENERGY COSTS AFTER INSTALLATION APPROX. €150

.....
**TOTAL SAVINGS P.A. APPROX. €3.600 THROUGH USE OF
THE WIND TURBINE**

We reduce your heating costs by up to 100% and electricity costs by approx. 75%
(Average values calculated for a single-family household)
Amortisation of costs after approx. 10 YEARS for the complete system.

With the Wind Turbine you reduce your energy costs
in the long term and make yourself less dependent
on energy price increases.



PERFORMANCE DATA

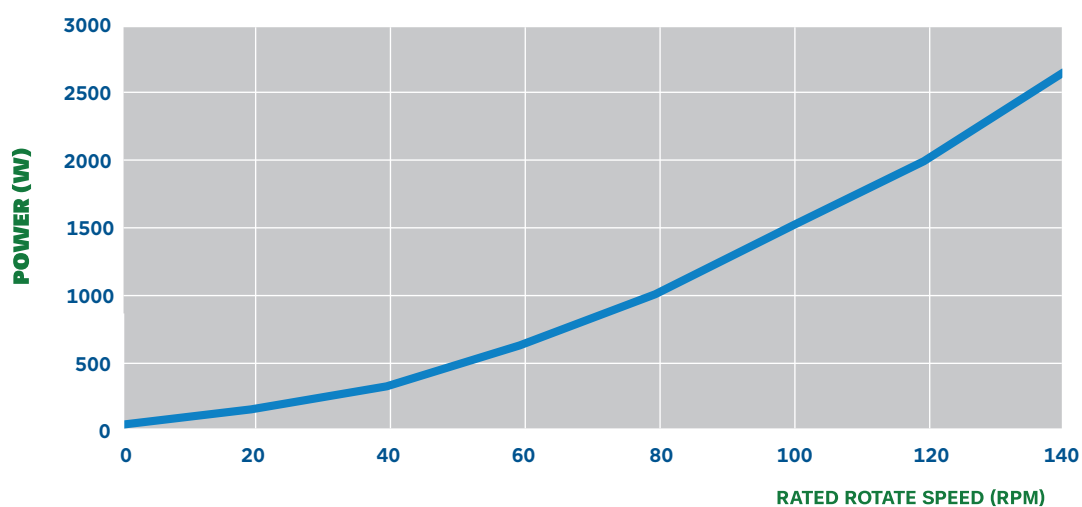
THE WIND TURBINE IS THE SOLUTION FOR REDUCING ENERGY CONSUMPTION

In order to save fossil fuels, one needs an EEG system (wind turbine), which is inexpensive to manufacture and can be easily installed on any building.

FUELS BY REDUCING CO2 EMISSIONS

Our system is the only one of its kind which, due to its compact form and its small size of approx. 140 cm height, can be installed on any house roof without making a big visual impact.

We support the reduction of fossil fuel use. Our system helps you reduce carbon emissions and save money in a CO2-reducing way, so that you can save these and your heating costs by up to 100 %.



LCG WIND TURBINE VERSION

- Generator 2KW
- Battery storage 5 KW and 10 KW
- Heating element
- Controller/Battery control
- Inverter

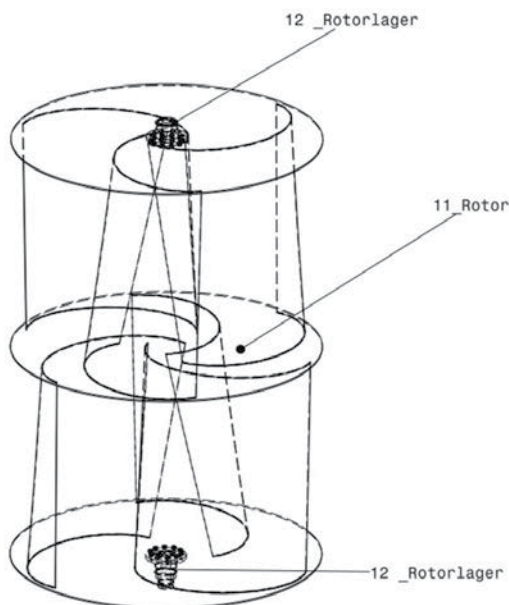


THE ROTOR

The rotor is a combination of Savonius rotor and helical structure with three rotor blades.

(Explanation Savonius rotor: invented by Sigurd Savonius, is a wind turbine with two or more blade-shaped, overlapping blades, stretched along the axis of rotation and mounted between circular end plates)

In practice, the number of rotor blades has proven to be optimal. Due to the open structure inside the rotor, the wind pressure can be directed to several rotor blades at the same time, which results in a higher rotor speed. The rotor was twisted in the middle by 60° to create a turbo effect on the rotor, since more rotor blades are now activated by the wind at the same time than without twisting.



MAGNET GENERATOR

Below the housing is the 2 kW permanent magnet generator. A maximum of 3 kW can be achieved. This type of generator is very durable compared to other wound generators.

The entire system has electronic wind direction tracking.

The wind direction tracking is carried out by a servomotor, which detects the wind direction via a sensor, a so-called wind direction sensor determined.

The rotor is mounted in the outer housing, connected to the generator shaft. The generator is mounted on a bearing shaft, which is anchored to the house.

TECHNICAL DATA

Model LCG Energy Windturbine WTB: Performance max. 3 kW / Start wind speed 2,5 m/s

SIZE / WEIGHT:

- Height 150 cm - height substructure 80 cm - length 130 cm - width 108 cm
- Weight incl. gearbox: 214 kg

GENERATOR PARAMETER	
RATED POWER	2 kW max. 3 kW
RATED ROTATE SPEED	140 RPM
RATED VOLTAGE	48 Vac
RATED CURRENT	24A
FREQUENCY	26.7 Hz
POLES	20
EFFICIENCY	92 %
WENDING METHOD	Y
INSULATING RESISTANCE	100 Mohm Min (501V DC)
LEAKAGE LEVEL	< 5 ma
START TORQUE	< 0.3 NM
RATED TORQUE	130 N/M
PHASE TYPE	3 Phase
STRUCTURE	Out Rotor
STATOR	Coreless wire coil
ROTOR	Rare Earth Permanent Magnet
GENERATOR SHELL DIAMETER	450 mm
GENERATOR SHELL LENGTH	295 mm
WEIGHT	55 kg
SHAFT DRAMETER	59 mm
GENERATOR SHELL MATERIAL	Aluminum alloy
SHAFT MATERIAL	Steel
BEARING	NSK Deep groove ball bearing

Die LCG Energy Development gives a 10 years warranty on the windturbine. The warranties on the technical components e.g. storage battery, generator etc. are between 2 and 10 years, depending on the component and producer.





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