

WIND TURBINE  
**DRAGON**  
POWER GENERATOR

[www.dospel.com](http://www.dospel.com)



# DRAGON

FUTURE ENERGY





## **FUTURE IS NOW**

### **50 YEARS OF EXPERIENCE**

For half a century, Dospel has been providing the highest quality solutions to the industry, based on solid experience and knowledge. Our history is a guarantee of trust and reliability.

### **INDEPENDENT POLISH PRODUCTION COMPANY**

We are proud of our roots as an independent Polish company that has been operating on the market for years, offering products that meet the highest quality standards.

### **DYNAMIC DEVELOPMENT**

We are constantly developing, adapting our solutions to the changing needs of customers. We invest in innovations and new technologies to remain a leader in the ventilation market.

### **OVER 40,000 M<sup>2</sup> OF WAREHOUSE AND PRODUCTION SPACE**

Our modern infrastructure, covering over 40,000 m<sup>2</sup> of space, allows us to fulfill even the most demanding orders with the highest efficiency.

### **8 YEARS WARRANTY**

Our products are covered by an 8-year warranty, which confirms their reliability and durability. We make sure that every customer feels confident when choosing our offer.

### **PROFESSIONAL SERVICE**

The Dospel team consists of experienced specialists who provide support at every stage of cooperation - from technical advice to after-sales service.

### **POLISH PRODUCT**

We create products 100% in Poland, which allows us to take care of you for the highest quality and support the local economy.

### **MODERN MACHINERY**

We have a modern machine park that allows us for precise and efficient compliant production with the latest technological standards.

### **BREAKTHROUGH TECHNOLOGIES**

Introduction to the production of energy-saving BLDC motors such as Tesla, Fenix - The world's best recuperator combined with 6-level air filtration. Dragon vertical wind turbine with a generator specially designed by the company, dedicated to Polish wind conditions.

### **ENERGY SAVING POLICY**

We create products with the natural environment and the customer's wallet in mind, in accordance with EU standards.

### **RESEARCH AND DEVELOPMENT TEAM WORKING ON THE HIGHEST QUALITY PRODUCTS**

Our research and development department constantly works to improve products, ensuring that each new line meets customer expectations and was ahead of market trends.

LIGHT ALUMINUM  
DESIGN,  
NOT INCRIMINATING  
ROOF

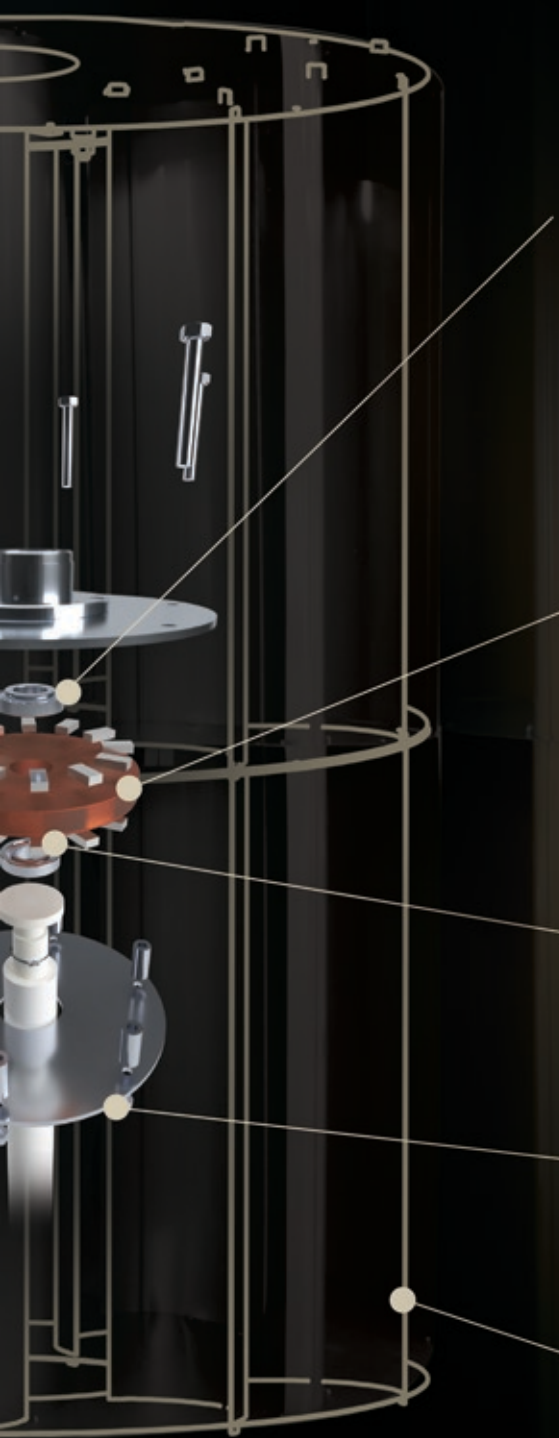
UP TO 8 YEARS  
WARRANTY  
MANUFACTURER  
DOSPEL

PRODUCT  
MADE  
100%  
IN POLAND

EASY ASSEMBLY  
NOT REQUIRED  
MAST  
AND PERMITS

GALVANIZED  
FIRE UNTIL  
650 MICRONS - PERFECT  
PROTECTS METAL  
ELEMENTS  
TURBINES  
DRAGON  
AGAINST CORROSION





THE QUIETEST  
WORK AND HIGH  
RESILIENCE  
THANKS  
APPLICATION  
HIGHEST  
CLASSES  
BEARINGS  
SKF COMPANY

GENERATOR  
LOCATED IN THE CENTER  
TURBINES, ELIMINATES  
NEGATIVE VIBRATIONS,  
MICROVIBRATIONS  
AND IT'S PERFECT  
PROTECTED AGAINST  
CONDITIONS  
ATMOSPHERIC

COILS  
GENERATOR  
PRODUCED  
100%  
MADE OF WIRE  
COPPER

DEDICATED  
TO POLISH ONES  
CONDITIONS  
ATMOSPHERIC,  
LOW THRESHOLD  
TURBINE START,  
UP TO 1.2 M/S

POSSIBILITY TO WORK  
IN THE SYSTEM  
OFF-GREAD  
AND ON-GREAD



## Disadvantages and problems when using large wind turbines which require permits and significant financial outlays

### Classic horizontal wind turbines

3kW turbine



- ✗ Necessity of application pole or mast
- ✗ Only electricity generation at 6 m/s wind
- ✗ Noisy, unpleasant work
- ✗ A structure that requires construction expensive foundation
- ✗ Installation with specialized crane
- ✗ Requires obtaining permits and consents of neighbors
- ✗ Requires installation at a very high height mast, a few meters above the buildings. It does not collect reflected winds

Horizontal wind turbine  
most often Chinese or Turkish production

- ✗ Hidden, extra installation costs\*
- ✗ 1-2 years warranty
- ✗ No support after-sales
- ✗ Requires permits

\*Including permits, foundation, pole, crane, several people needed for assembly



Our idea is to split one large turbine into a 3xDRAGON package  
It generates electricity at any time throughout the year

## Dragon vertical wind turbines

- ✓ Easy installation with no additional costs hidden costs
- ✓ Very quick start of power generation, from 1.2 m/s wind speed
- ✓ The quietest, noiseless operation, thanks to SKF bearings
- ✓ Compact, lightweight design
- ✓ Installation without the use of a crane
- ✓ No permits required. Dimensions allowing installation on any roof
- ✓ Additionally, for electricity production collects winds reflected from buildings and trees

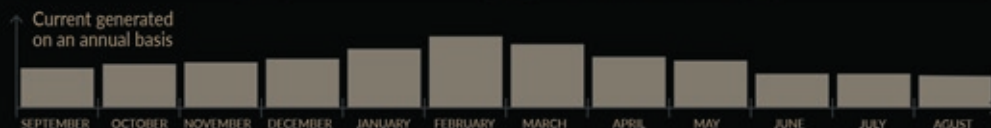


3kW installation  
the package includes 3 x Dragon 1000W



## Dragon turbine - 100% Polish production

- ✓ 8 years warranty
- ✓ No hidden costs
- ✓ Full support after-sales
- ✓ No permits required



# DRAGON

## Dragon wind turbine

The perfect complement to a photovoltaic installation!



### Dedicated to Polish weather conditions

The DRAGON wind installation works individually and as a complement to the photovoltaic installation - it allows for an efficient increase in energy independence and a noticeable reduction in electricity bills.

**8** YEARS  
WARRANTY  
MANUFACTURER

- Free energy
- The quietest turbine on the market!
- Off-grid / on-grid installation
- Possibility of financing
- Payback on installation: 3-5 years
- No permits





# DRAAGON

## MATCH DRAAGON

Choose the color that suits you best  
to your roof or building facade



DEEP FOREST  
(RAL 7026)



ANTHRACITE  
GRAY  
(RAL 7016)



GRAPHITE  
(RAL 9004)



LEMON  
GRASS  
(RAL 6011)



FORREST  
GREEN  
(RAL 6007)



PEARL BEIGE  
(RAL 1035)



COPPER  
GOLD  
(BY DOSPEL)



SKY BLUE  
(RAL 5007)



MIDNIGHT  
BLUE  
(RAL 7024)



TERRACOTTA  
(RAL 7032)



DOSPEL  
- SINCE 1974 -

DOSPEL

# DRAGON<sup>NEW</sup>

Package ON/OFF-GRID

## 3000W+

A package consisting of 3 wind turbines, power generators - Dragon 1000+ is our NEW with a NEW IMPROVED GENERATOR that will allow you to gain true energy independence. Wind turbines are an ideal complement to photovoltaics, because they generate electricity when the panels are not working.



DOSPEL  
SINCE 1974

# DOSPEL

	Package Dragon 3000+
The power of the package	3000W
Dimensions of a single turbine	100x170cm
Generator output voltage	AC
Generator	three-phase (3f) with neodymium magnets
Takeoff speed	od 1,2 m/s
Brake	in the regulator/braking controller
Noise level according to Standard PN-EN 61400-11	<44dB at 8m/s at 3m
Operating temperature	from -25°C to 45°C
Compliance with the standard:	CE, IEC 61400
Protective layer:	hot-dip galvanized, 650µm



The perfect complement  
to a photovoltaic installation



Work in an off-grid  
or on-grid system



The quietest operation,  
thanks to SKF bearings



Endurance tested in wind  
speeds of up to 200 km/h

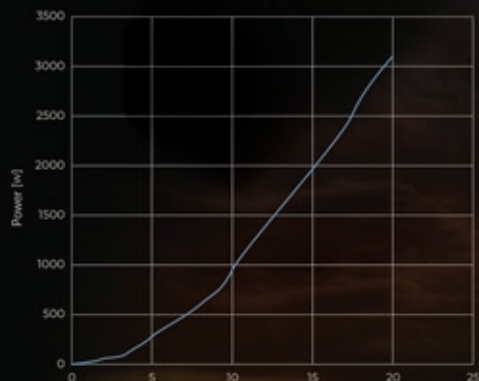


Dedicated to Polish  
weather conditions



Light construction that  
does not burden roofs

#### POWER CHARACTERISTICS



# DRAGON

Package ON/OFF-GRID

## 4500W+

A package consisting of 3 wind turbines and power generators - Dragon 1500+ will allow you to achieving true energy independence.

Wind turbines are the perfect complement photovoltaics because they generate electricity when panels do not work.



DOSPTEL  
SINCE 1974

# DOSPTEL



	Package Dragon 4500+
The power of the package	4500W
Dimensions of a single turbine	150x240cm
Generator output voltage	AC
Generator	three-phase (3f) with neodymium magnets
Takeoff speed	od 1,2 m/s
Brake	in the regulator/braking controller
Noise level according to Standard PN-EN 61400-11	<44dB at 8m/s at 3m
Operating temperature	from -25°C to 45°C
Compliance with the standard:	CE, IEC 61400
Protective layer:	hot-dip galvanized, 650µm



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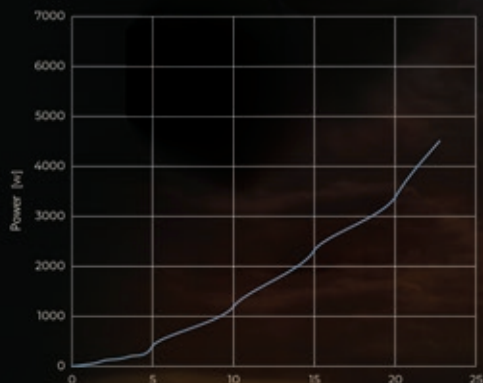


Dedicated to Polish  
weather conditions



Light construction that  
does not burden roofs

#### POWER CHARACTERISTICS



# DRAGON

Package ON/OFF-GRID

## 6000W+

The most efficient wind turbine package on the market consisting of 4 1500W turbines. The Dragon 6000+ package will allow you to achieve true energy independence. Triple Generator in Dragon turbines maximizes the energy obtained from the wind.



DOSPEL  
SINCE 1974

	Package Dragon 6000+
The power of the package	6000W
Dimensions of a single turbine	150x240cm
Generator output voltage	AC
Generator	three-phase (3f) with neodymium magnets
Takeoff speed	od 1,2 m/s
Brake	in the regulator/braking controller
Noise level according to Standard PN-EN 61400-11	<44dB at 8m/s at 3m
Operating temperature	from -25°C to 45°C
Compliance with the standard:	CE, IEC 61400
Protective layer:	hot-dip galvanized, 650µm



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speeds of up to 200 km/h

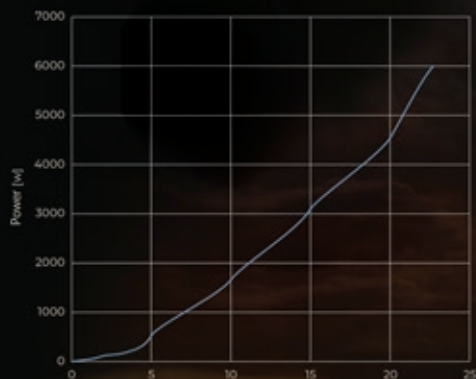


Dedicated to Polish  
weather conditions



Light construction that  
does not burden roofs

#### POWER CHARACTERISTICS

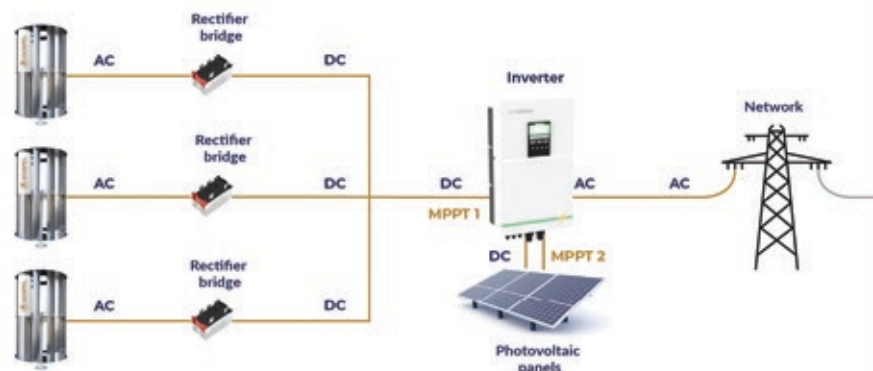


## Hybrid electrical connection (example schematic) 3xDRAGON 1000+

### System ON-GRID hybrid

Gain energy independence with the Dragon wind turbine mounted in an on-grid system. This system accumulates the generated electricity in the power bank, guaranteeing access to electricity 24 hours a day.

#### System ON-GRID hybrid 3000W

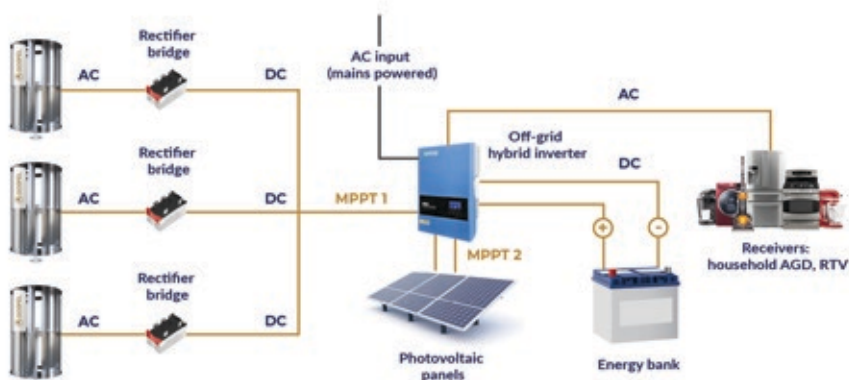


We are the only company that gives the possibility of connecting turbines in series and parallel, depending on the wind zone and the inverter used.

### System OFF-GRID HYBRID

A perfect complement to a photovoltaic installation. A wind turbine generates electricity both during the day and at night, when photovoltaics are not working. What's more, Dragon produces energy both in summer and winter, when photovoltaics are limited only to sunny days.

#### System OFF-GRID hybrid 3000W



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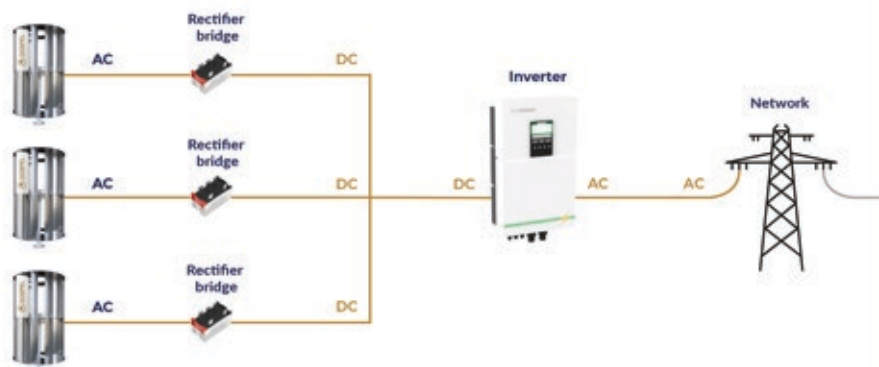


## ON-GRID electrical connection (example schematic) 3xDRAGON 1000+

### System ON-GRID

Get energy independence with the Dragon wind turbine installed in the on-grid system.

**System ON-GRID  
3000W**

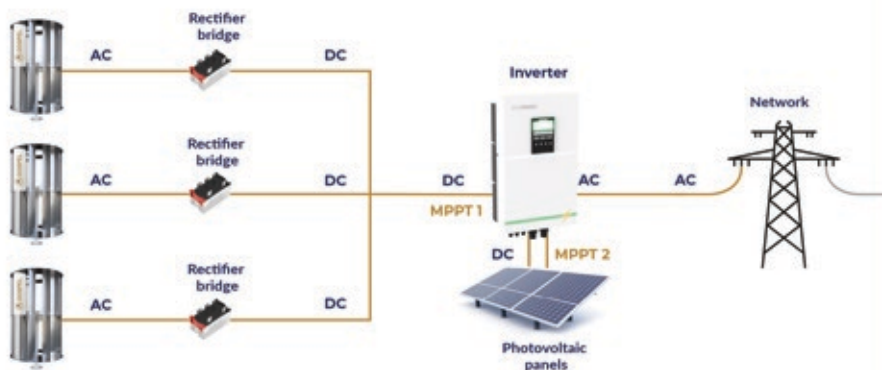


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**System ON-GRID  
hybrid 3000W**



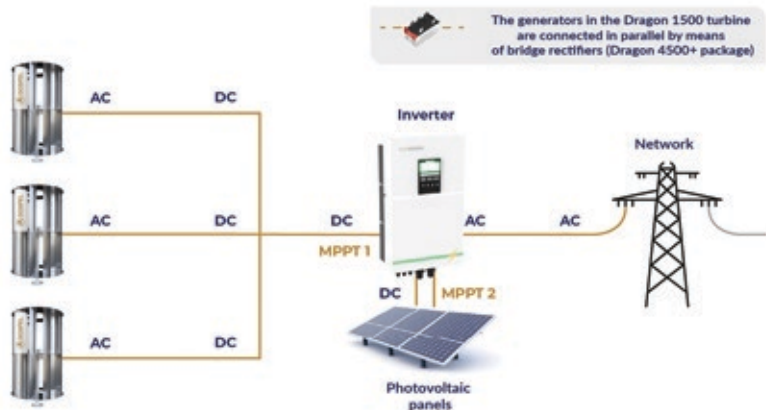
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## Hybrid electrical connection (example schematic) 3xDRAGON 1500+

### System ON-GRID hybrid

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#### System ON-GRID hybrid 4500W

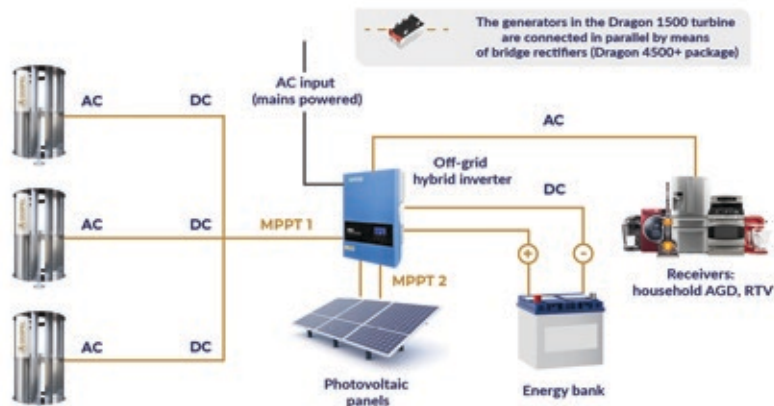


We are the only company that gives the possibility of connecting turbines in series and parallel, depending on the wind zone and the inverter used.

### System OFF-GRID HYBRID

A perfect complement to a photovoltaic installation. A wind turbine generates electricity both during the day and at night, when photovoltaics are not working. What's more, Dragon produces energy both in summer and winter, when photovoltaics are limited only to sunny days.

#### System OFF-GRID hybrid 4500W



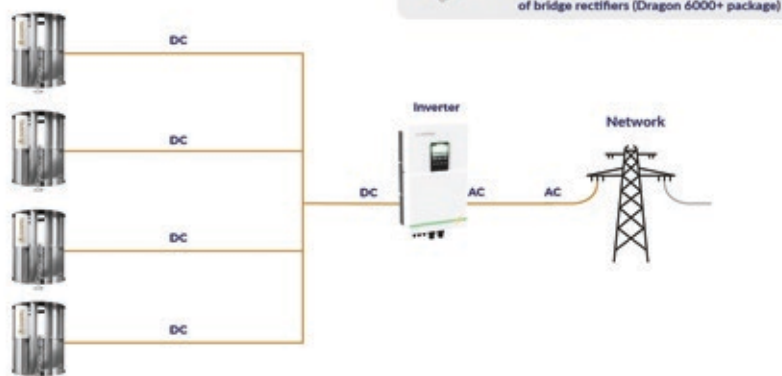
We are the only company that gives the possibility of connecting turbines in series and parallel, depending on the wind zone and the inverter used.

## ON-GRID electrical connection (sample diagram) 4xDRAGON 1500+

### System ON-GRID

Gain energy independence with a Dragon wind turbine installed in the on-grid system.

#### ON-GRID system 6000W

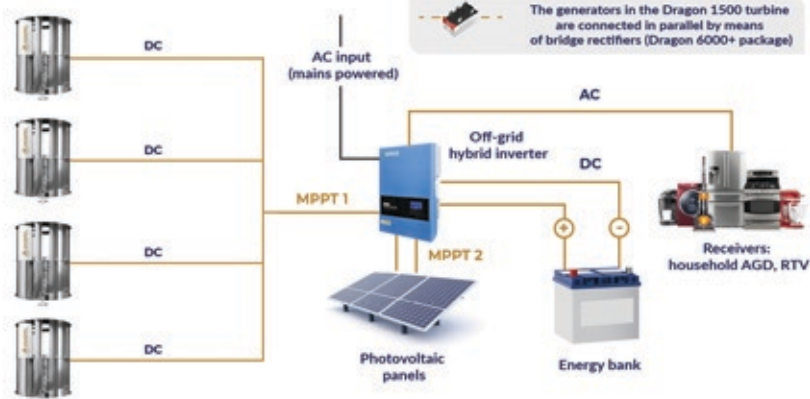


We are the only company that gives the possibility of connecting turbines in series and parallel, depending on the wind zone and the inverter used.

### ON-GRID HYBRID system

The perfect complement to a photovoltaic installation. A wind turbine generates electricity both both during the day and at night, when the photovoltaics are not working. Moreover, Dragon produces energy both in summer and winter, when photovoltaics is limited only to sunny days.

#### ON-GRID system hybrid 6000W



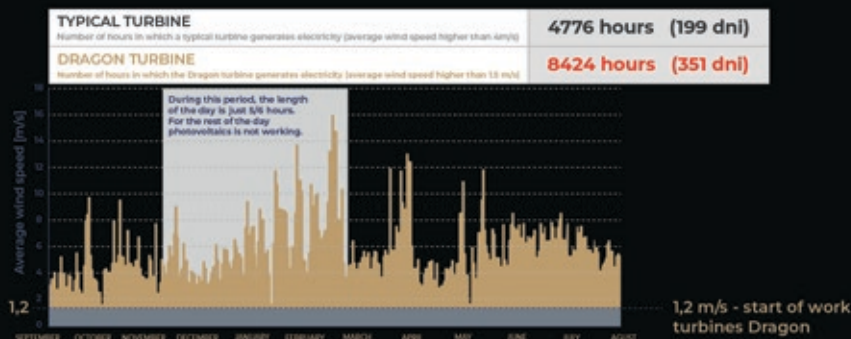
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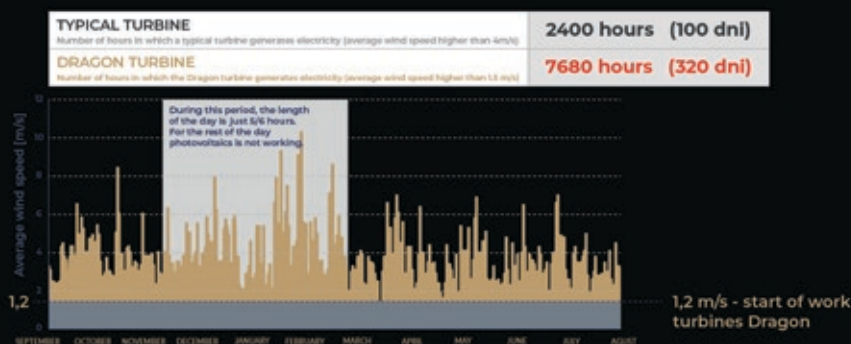
# Map of wind zones in Poland based on the average wind speed per year

<b>Zone 2</b>	Average wind speed: $\approx 6 \text{ m/s}$	<b>Zone 1</b>	Average wind speed: $\approx 5 \text{ m/s}$
• Recommended driver: 48V		• Recommended controller: 24V	

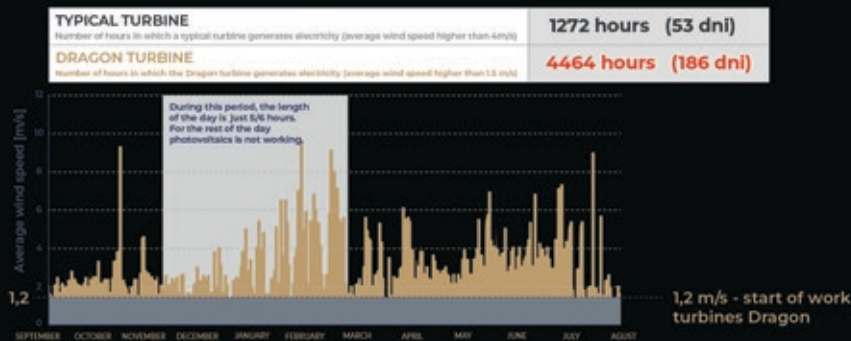
Average wind speed  
in Łeba in 2022.



Average wind speed  
in Warsaw in 2022.



Average wind speed  
in Jelenia Góra in 2022.





# DRAAGON

## Double generator maximizing the energy obtained

The Dragon 1500+ wind turbine has a double generator.

In order to perfectly match the turbine to the wind conditions prevailing at the site its assembly, the manufacturer Dospel offers two types of generator plate connections:

### CONNECTION IN PARALLEL

Recommended for use in conditions high wind. Maximizes energy obtainable from strong wind.

### CONNECTION STERGOUR

Dedicated to low wind zones windy. This connection will allow you to generating electricity at a lower speed wind.

### On-grid system:

On-grid is a system integrated with the network. Any surplus of energy produced is transferred to the plant energy. The person can later settle them accordingly with the principles of net-billing. This type of installation allows you to benefit from photovoltaics or wind turbines when the installations do not operate at full energy gain. Previously transferred energy can only be "taken away" in electricity bills. On-grid systems are very popular in our country, but their significant disadvantage is that in the event of a network failure, the installations do not work, and therefore the house or company is without electricity.

### Off-grid system:

Off-grid installation allows for independence obtaining electricity, without the need to connect to the general network energy. In such a system there are surpluses energy are stored in the energy bank and regulated by the charging system. Thanks to this, the user has complete freedom in using the stored energy. Off-grid installations such as vertical wind turbines with a coreless generator, are a perfect solution for people striving for full energy independence. Unlike on-grid systems, off-grid installations do not require a connection to the network.

## Maximum optimization for a specific location

For efficient operation of a wind turbine, it is necessary to determine the wind strength in a given location. DRAGON ita universal device because it can be equipped with a diversified control system, and therefore goes to adapt the characteristics of its work to a specific location. It exists in this device possibility of installing a 24 or 48 V controller. It will be suitable in low-wind areas 24V controller. In high windy locations, a 48V controller will be appropriate. To determine what controller we need, check what the average wind force is in the place where we plan to install DRAGON. It is easy to check this using available platforms, for example, Meteoblue and select the appropriate driver on this basis.

# DRAAGON

## Easy installation of the Dragon installation



### Mounting bracket for the Dragon package

A dedicated mounting bracket allows for easy and stable installation of Dragon wind turbines on straight and sloping roofs. The design of Dragon turbines is so light that their installation does not burden the roof even in gusty winds. The holder has an adjustable angle of inclination for precise positioning of the turbine perpendicular to the horizontal.



SEE THE REALIZATIONS

## Dragon Braking Controller

The brake controller can be used in voltage installations with different voltage ranges (from 0 to 1000V), depending on the from the selected version of the device. This allows it to be customized for a variety of installation needs, offering flexibility in applications with different operating voltages.



### Deye Sun 3.6kW 1-phase

DEYE SUN-3.6K-SG03LP1-EU is a single-phase, low-voltage (48V) hybrid inverter that allows you to increase energy independence and optimize the direction of energy flow and the sources or receivers where this energy is directed. With a compact design and high power density, this series supports a DC/AC ratio of 1.3, which saves on device investment.

## Solplanet 3-phase

The Solplanet inverter is an innovative, three-phase inverter dedicated to Dragon wind turbines. It allows for intelligent management of the energy produced, e.g. with a connected energy storage facility we can use the energy produced at night during the day. Low start and run voltage on the DC side 180 V / 125 V and two MPPT inputs 13 A each. The inverter is equipped with a WiFi module for wireless connection to the Internet and cloud monitoring, giving us access to data from our mobile phone wherever we are.



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FUTURE ENERGY





# DRAGON

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