

ICE
RENEWABLES



MEDIUM WIND SPECIALISTS

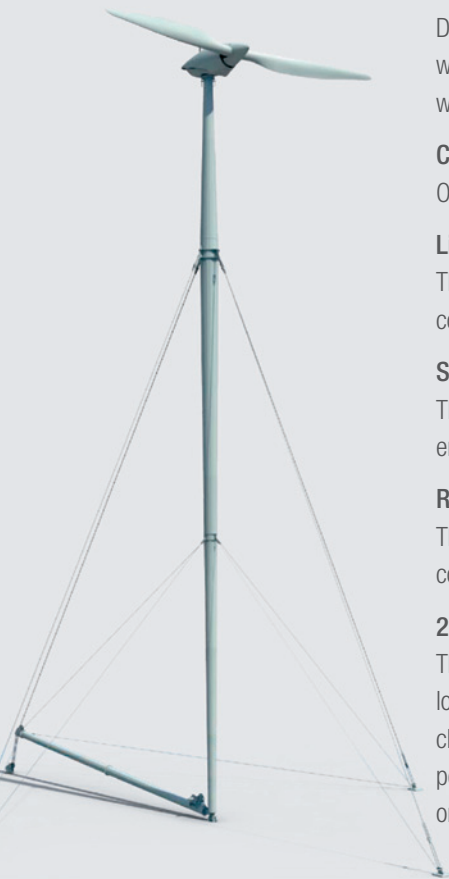
Exclusive GB Distributors of Vergnet wind turbines



GEV MP C & MP R
200/250/275 kW

Technical Specifications

GEV MP C Light, compact and versatile



Lightweight structure

Despite being 55m tall to the hub, the GEV MP C only weighs 20 tonnes. It is half the weight of a conventional wind turbine of the same rated power.

Compact nacelle

One nacelle can fit in a standard 20' container

Light guy-wired tower

The 5 x 11.88m tower sections are transported in 40' containers.

Self-erecting concept

The whole turbine is assembled on the ground and then erected using an integrated hydraulic winch.

Reduced foundation

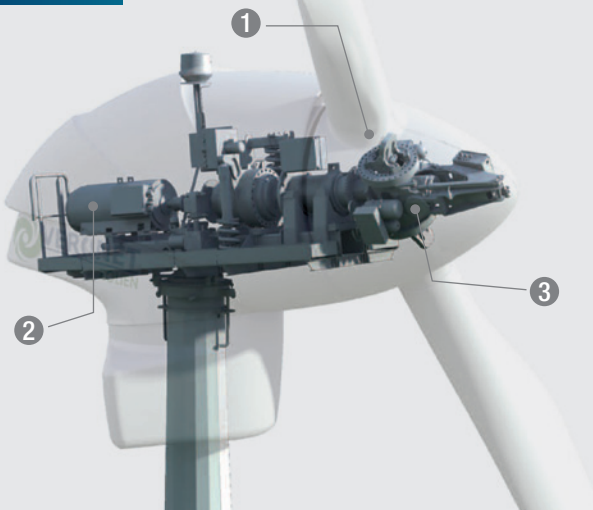
The unique design of the foundation means there is less concrete used than in a conventional monopole design.

2-blade rotor – Exclusive lowering system

Thanks to its 2-blade design the GEV MP C can be lowered to the ground for maintenance and blade cleaning. The whole machine can be lowered by two people in an easy and safe operation that takes less than one hour.

Ensure green profits for 20 years

GEV MP R Especially designed for the UK



1 Hydraulic pitch

Ensures the turbine blades are maintained at the optimum angle of attack to harness maximum wind energy.

2 Heavy-duty generator

Robust squirrel-cage generator supplied by a world-class specialist manufacturer.

Teetering Hub

3 Reduces mechanical stress by 35% on the whole structure.

V-SCADA™ supervision system

Measures, tracks and controls remotely all the production parameters to achieve maximum output.

Safety systems

Protect your wind turbine against lightning and voltage spikes.

At a glance:

✓ Ground level maintenance

- GEV MP C offers ground level maintenance thanks to its lowering system

✓ Easy Installation

- Designed to fit in standard containers (blades excluded)
- Shipped easily and cost-effectively
- Standard trucks, unpaved roads, islands and hills... most destinations can be reached

✓ Robustness and reliability

- 20 years of field experience
- Light and robust
- Advanced technology & state-of-the-art manufacturing
- Reliable even in the windiest areas
- Trouble free energy production
- 2-7 year warranty options

✓ World Renowned Manufacture

- Vergnet is a world renowned wind turbine manufacturer
- Over 750 wind turbine installations world wide
- In over 35 countries and across 5 continents
- 25 years of manufacturing history and data

✓ Designed for the harshest conditions

- The GEV MP C can survive up to Category 5 hurricane winds when lowered
- This protection is recognised by first class insurers

✓ High performance and High return on investment

- Excellent availability
- 32m blades provide huge swept area of 804m²
- Minimum operating costs
- GEV MP C is designed to make the most of wind potential
- RBS & NatWest approved for 100% financing

✓ Turbine Open Days

- GEV MP turbines being installed across Great Britain
- Open Days across GB. Sign up for one of our open days and see first hand how you can harness the true power of wind for you and your business

✓ Easy Operation

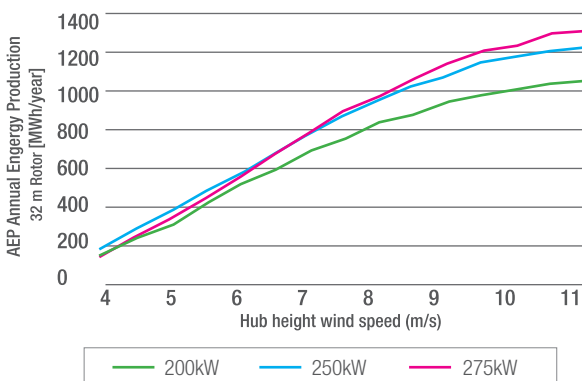
- Cost effective planned maintenance
- 24/7 SCADA monitoring
- Controlled remotely

SPECIFICATIONS

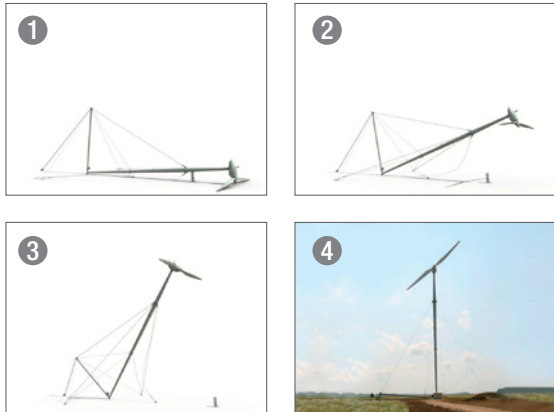
ANNUAL ENERGY PRODUCTION:

Hub Height Wind speed (m/s)	AEP [MWh/year]		
	200kW	250kW	275kW
4.0	161	163	164
4.5	239	244	246
5.0	326	338	342
5.5	417	441	449
6.0	510	547	560
6.5	599	652	673
7.0	684	754	782
7.5	761	849	885
8.0	830	936	980
8.5	890	1012	1064
9.0	940	1077	1136
9.5	981	1131	1197
10.0	1013	1174	1246
10.5	1036	1207	1283
11.0	1051	1230	1310

GEV MP ANNUAL ENERGY PRODUCTION AEP [MWh/year]



A GEV MP C Exclusive lowering system



TURBINE CONCEPT

Rated Power	200kW, 250kW, 275kW
Class	3 (as per IEC 61400-1)
Blades	2 blades- down wind
Gear Box	2 stage planetary
Hub	Teetering hub
Pitch	Hydraulic pitch
Generator	Asynchronous
Yaw	Active yaw
Output Voltage	400 V – 50 Hz
Frequency	
Power Control	Pitch
Reactive power control	Capacitor bank
Blades	Twisted vinylester reinforced with fiber glass

CONTROL SYSTEM

Automation control	Industrial TLC Siemens S7
UPS (voltage outage)	56 Ah
Remote supervision	V-SCADA™/ through RTC, radio, internet.

TOWER

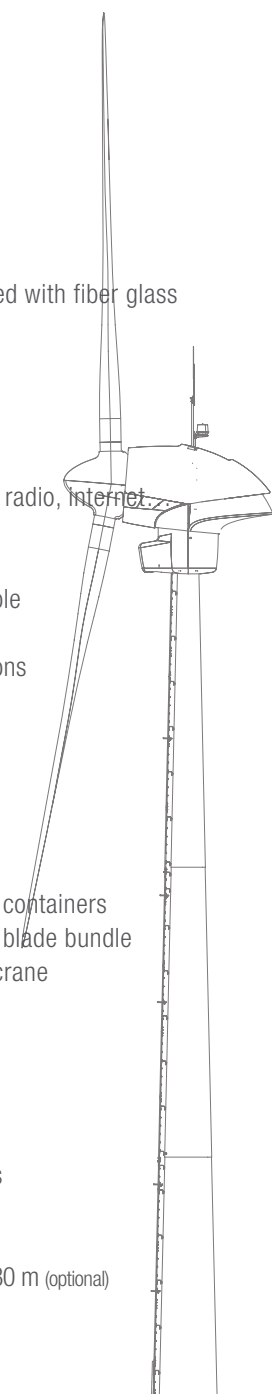
MP C	MP R
Guy Wire	Monopole
Tubular	Tubular
5 sections	3 sections
11.8 m	11.8 m

PACKING & INSTALLATION

	MP C	MP R
Nacelle weight	7.2 t	9.1 t
Tower weight	15 t	12 t
Packing	5 x 40'	3 x 40' containers 1 x 40' blade bundle
Erection	35 t crane Integrated hydraulic winch	130 t crane

OPERATION

	MP C	MP R
Cut in speed	3.5 m/s	3.5 m/s
Cut out speed	25 m/s	25 m/s
Hub height	55 m	32 m
Rotor diameter	32 m / 30 m (optional)	32 m / 30 m (optional)
Max wind speed	52.5 to 42 m/s (instant)	
Temperature	-10 .c to 50 .c (survival)	



V-SCADA™

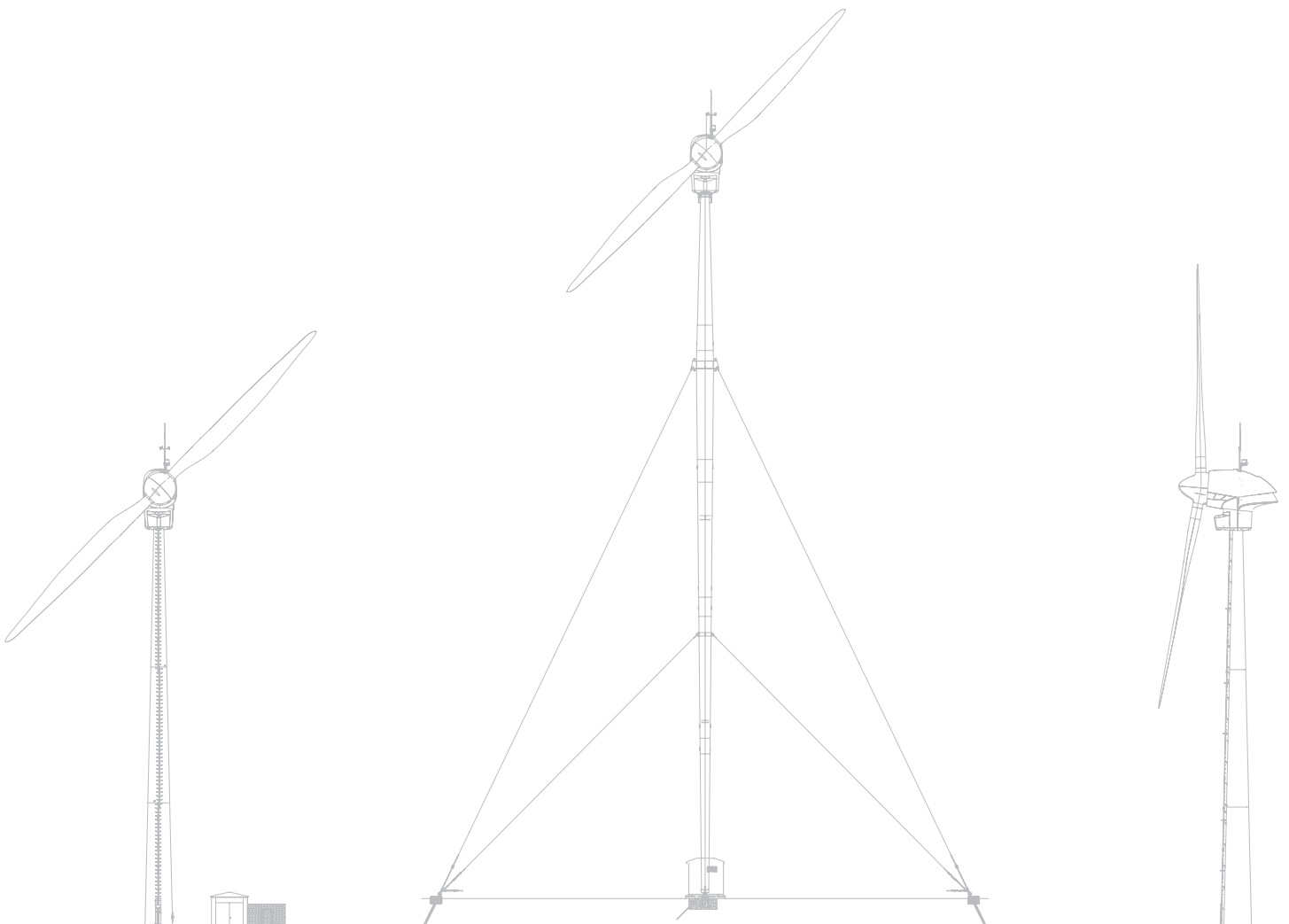
Real-time production monitoring, either remote or on-site.
Allows recovery from systems failures directly from a remote computer or from Vergnet headquarters.
Records data and establishes statistics in graphical user-friendly forms.
Adapted to digital or analog telecommunications systems (public phone wire).
Backup protection in case of a grid outage by a battery located in the electrical building.

SAFETY SYSTEMS

All the safety systems comply with international standards:
Aerodynamic braking system through pitch control, including individual back up power units in case of supply failure.
Safety rotor lock system to ensure safe service operation.
Automatic shut down – high wind, grid failure, over-speed, faults detected.
Lightning protection option.
Shock absorber which reduces the stress on the drive train and helps produce a pure sine-wave signal.

ROBUST DESIGNS

All parts of the GEV MP R and MP C are made from superior quality materials.
They are designed to bear 365 grid outages per year compared with 20 per year for conventional turbines.
Most parts are standard and widely used in many industries which guarantees their reliability.
Major cast components including rotor hubs are made of spheroidal cast iron.



For world leading wind energy solutions

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