



REtechnologies®
WINDSHAPERS™

SENVION
We make wind perform.

INDIA

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WE

We, at Senvion are close to a 1200 strong team.
We provide sustainable energy for well over
a million households. But above all, we never stop
challenging ourselves as "WINDSHAPERS™".



Our Scope

We make wind perform! Senvion, today is one of the fastest growing firms in the Indian wind industry. Senvion is proud of its legacy of engineering excellence of more than 25 years. The journey of Senvion in India started from Bengaluru in early 2015 with an R&D set up and commercial operations in 2016. Today Senvion engages 1200+ direct and indirect resources across the value chain in India. Senvion has built its inhouse data analytical capabilities and is committed to provide its customers comprehensive wind energy solutions.



📍 HAMBURG, GERMANY

Our Vision

Our aim is for renewable energy to become the base load. We envision a future in which clean and sustainable wind energy consistently powers our communities and industries.

Our Quality

We aim to ensure that our turbines remain efficient throughout their entire service life, starting from the moment of conception to realization, commissioning, and service. Over numerous years our wind turbines have built up a proven track record of reliability and efficiency, so that we are able to give you a contractual guarantee regarding performance curve and technical availability. We are certified under ISO 9001: 2015.



RE Technologies - Where innovation powers the growth of wind energy.

We are an international company with operations in India and Germany, setting global benchmarks in the wind industry and furthering technological developments.

RE Technologies not only specialises in designing and manufacturing competitive and reliable wind turbines; we also provide a wide range of comprehensive services and retrofitting solutions to maximize the performance and service life of your existing turbines.

We are committed to making a sustainable, cleaner future a reality for all of us.

WHAT DRIVES US.



Wind. Its power fascinates us as we know it is vital to our progress toward a sustainable future. We are convinced it will let us make clean energy a market-driven reality. That's why we work with passion and commitment to make wind power profitable and competitive for our customers. We keep challenging ourselves – to provide our clients with optimum wind energy solutions.

That's what drives us.

Every single day.



Innovation needs a solid foundation.

Senvion is driven by the pioneering spirit. Delivering the innovation and outstanding performance that has made us one of the leading manufacturers of wind turbines, remains our greatest motivation. We now design, produce and sell wind turbines for almost every site conditions. In addition, we also provide project-specific solutions for windfarm engineering, transport, installation and service & maintenance as well as foundation construction.

 **Senvion 101:**
Senvion has a proud global legacy engineering
excellence of more than 25 years.

- 2024 3.1M130 prototype installed
- 2023 Operational fleet crosses 500MW
100th 2.7M130 turbine dispatched
- 2022 M130-2.7MW* introduced in RLMM
- 2021 Senvion wins new orders:
 - 432MW from JSW Energy
 - 120MW C&I Market Continuum Energy
 - 100MW Tata Power
- 2019 Prototype installed in Gujarat
- 2018 Launch of new product for commercial sale in India
- 2018 Launch of new product M130 for commercial sale in India
- 2017 Launch of 2.3M120 & 2.4M110
- 2017 Acquisition of Kenersys Technology & nacelle plant
- 2016 Senvion India commences operations
- 2014 RE Power re-branded as Senvion
- 2001 RE Power established in Germany



MAKE

Making wind power consistently competitive with fossil fuels takes dedication, innovative thinking, and expertise. That's why we work with great passion and commitment to make our products and services even better – each and every day.

We want to deliver the best possible solutions for every one of our customers. Because their success means a cleaner future – for all of us.

 **Senvion 101:**
One of the fastest OEMs in India
to book over 1GW firm orders.



Nacelle & Hub Manufacturing Plant

- ⦿ The factory is in Baramati, which is situated approximately 120 km from Pune and 300 km from Mumbai. The facility has access to the JNPT port while Pune is the nearest airport.
- ⦿ The plant is spread over 40 Acres and has scope for future expansion for new products.
- ⦿ The plant's capacity is 1GW per year, making it one of the largest nacelle and hub assemble facility in the region.
- ⦿ 100+ direct and indirect employees at the factory contribute to the smooth functioning of the facility.
- ⦿ With a continuous Q-Wall throughout the component sourcing and production process, Senvion India adheres to strict quality standards.
- ⦿ The facility is equipped with production equipment and a test bench. Critical quality checks are carried out using calibrated instruments and equipment in accordance with the demands of the design and procedure.



Blade Manufacturing Plant, Gujarat and Tamilnadu

We deploy benchmark quality framework across entire product value chain committing defect free product delivery to end customers.

- ⦿ Dedicated production lines
- ⦿ High class machineries for manufacturing quality products
- ⦿ We have close to 400 direct and indirect resources working in our Blade plant

 Wind Energy 101
A wind turbine blade can be the length of nearly two full-sized Olympic swimming pools. That's nearly 100 meters

Quality Control Framework

- ⦿ Senvion follows rigorous quality requirements with seamless Q-Wall across blade manufacturing process at each stage.
- ⦿ Critical to quality test are done with calibrated tools & tackles as per design & process requirements.
- ⦿ Senvion controls SOP/WI and manuals as an acting guideline for manufacturing & quality checks stagewise.



Customized solutions or individual success.

Every project is unique. From the country you operate in to site conditions and wind speeds, individual requirements can vary hugely. That's why we develop unique solutions tailored to each customer, based on customized products and services. Senvion's customization concept relies on three key elements: the comprehensive modular design of our turbines, their ongoing optimization and our focus on leveraging and upgrading digital technologies. Design, Manufacturing, Execution and Service - We combine our market intelligence, expertise and experience to make your project a success.

Tower Manufacturing plant, Gujarat

- The factory is located near Ahmedabad which ensures easy accessibility for transportation and logistics to the wind sites in Gujarat.
- The plant is spread over an area of 38 acres. The factory's extensive land area allows for future expansion and growth.
- The plant has over 250 highly qualified and multi-skilled personnel in the plant.
- The plant maintains ISO 9001, OHSAS 45001, and the highest HSE standards, 14001, as well as international standards for Product and productivity, EN ISO 1090, ISO 3834, and MECS.

Did You Know?
The largest wind farm in the world
has over 7000 wind turbines.





 **Wind Energy 101**
Wind Energy Sector Will Employ
4 Million People by 2030.

Countless options, individual solutions. Worldwide.

Our Design, Engineering and R&D divisions at Bengaluru in India and at Hamburg in Germany houses some of the best brains in the industry. The centres have the capabilities and capacity to upgrade existing wind turbine designs and to develop future turbines. Our core competencies are in overall turbine design, system integration, subsystem, and component design. Our global outlook and worldwide operations inform our strategy and shape our mindset. Instead of just focusing on single turbines, we think in terms of entire projects. And because we engage with our partners right from the start, we can streamline every step along the value chain. Remaining open to external sources of expertise and keeping an eye on the whole process are keys to preventing excessive costs down the line.

Other elements of our integral approach include our TechCenter as well as our Turbine Control Center (TCC) in Baramati and our TECH Park in Bengaluru, India. These facilities are at the heart of Senvion's research and development which is based on using proven designs as a springboard and evolving them by combining findings from the onshore and offshore sectors. At our TCC, we monitor wind farms around the clock. This lets us respond to any faults promptly, both remotely and through our local teams. From research and development to logistics, installation, and maintenance, all our efforts are directed at delivering solutions that are the perfect fit for our customers – every time.

Indian Footprint

As a company with global outlook and local expertise, we are perfectly tuned to our customer's needs in every sense of the word. With a diversified manufacturing footprint and Service presence in key wind states, we are ready to deliver quality projects and service to our customers.

HEADQUARTER

Mumbai

NACELLE MANUFACTURING PLANT

Baramati,
Maharashtra

TOWER MANUFACTURING PLANT

Ahmedabad

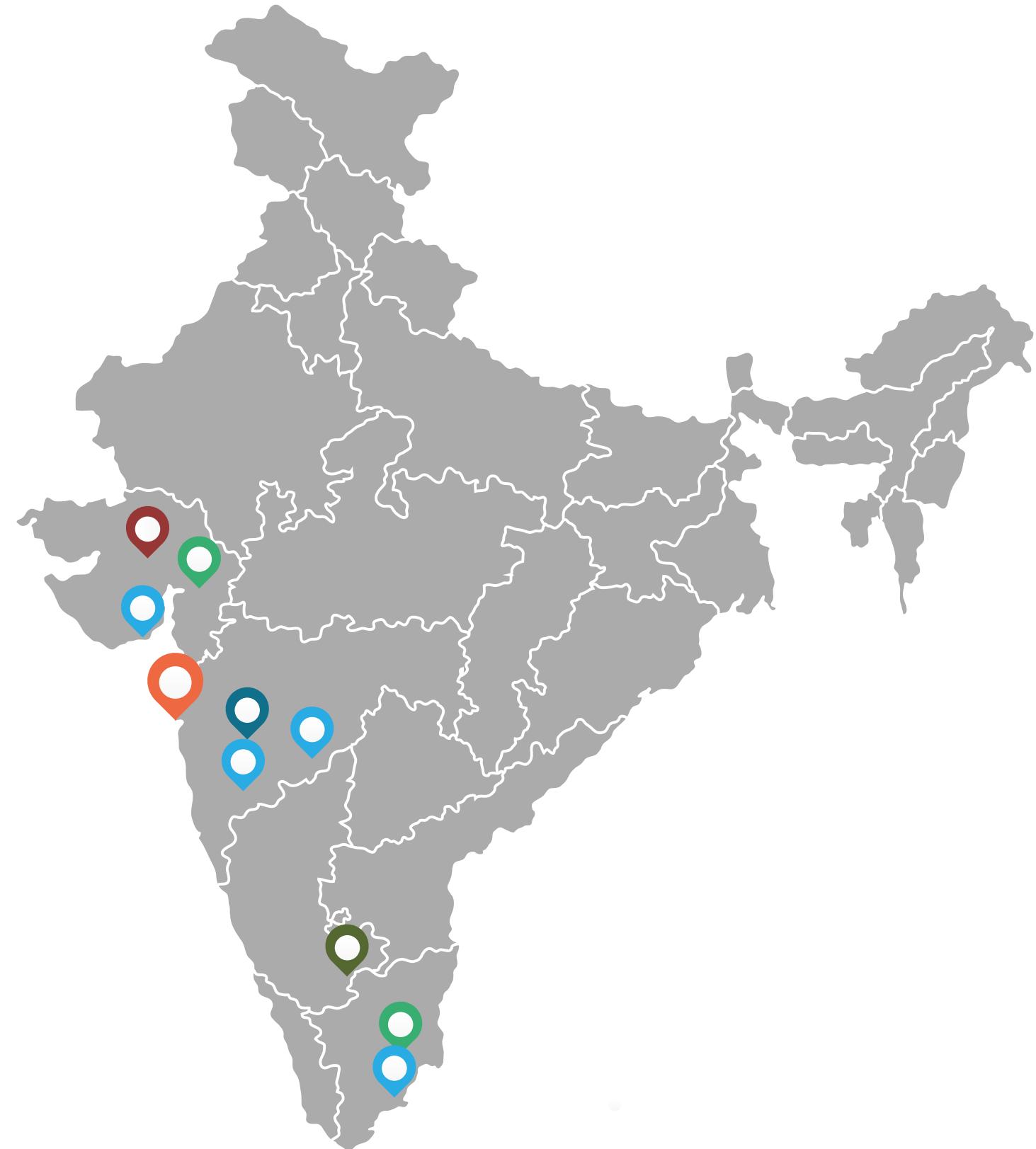
R&D TECH CENTRE

Bengaluru, India

BLADE MANUFACTURING PLANT

Vadodara,
Trichy

ALL SERVICE SITES





WIND

The power of wind can be awe-inspiring. But using all your passion, ingenuity and the experience won over decades to harness this raw force of nature, is even more exciting. On land, in any wind conditions, under harsh conditions and in just about any location, we have proven just how competitive this clean power source can be.

 Wind Energy 101
Wind energy has been in
use since 200BC.

THE 2.3M120

OPTIMIZED FOR MEDIUM WIND SEGMENT



The Senvion 2.XM Series

Our new 2MW+ series wind turbine generator with a hub height of 120m has been optimized for higher yields at medium – low wind site. With an operating temperature range of upto 40 °C, it can also be operated in tropical climates. The supply chain is localized. The 2.XM series is fully compliant with Indian grid code requirement.

Design Data

Nominal Power [kW]	2300
Cut in wind speed [m/s]	3.0
Cut out wind speed [m/s]	20.0
Nominal wind speed [m/s]	11.0
Operating Temperature range [°C]	-10 to 40
Survival Temperature range [°C]	-20 to 50

Rotor

Diameter [m]	120.0
Rotor Area [m ²]	11,310
Power Control	Electrical pitch system

Certification

Hub Height [m]	Wind Class	DIBt wind zone	Transformer
120	IEC S (based on IIIB)	-	ETS

Tower

Max. sound power level [dB(A)]	107.0
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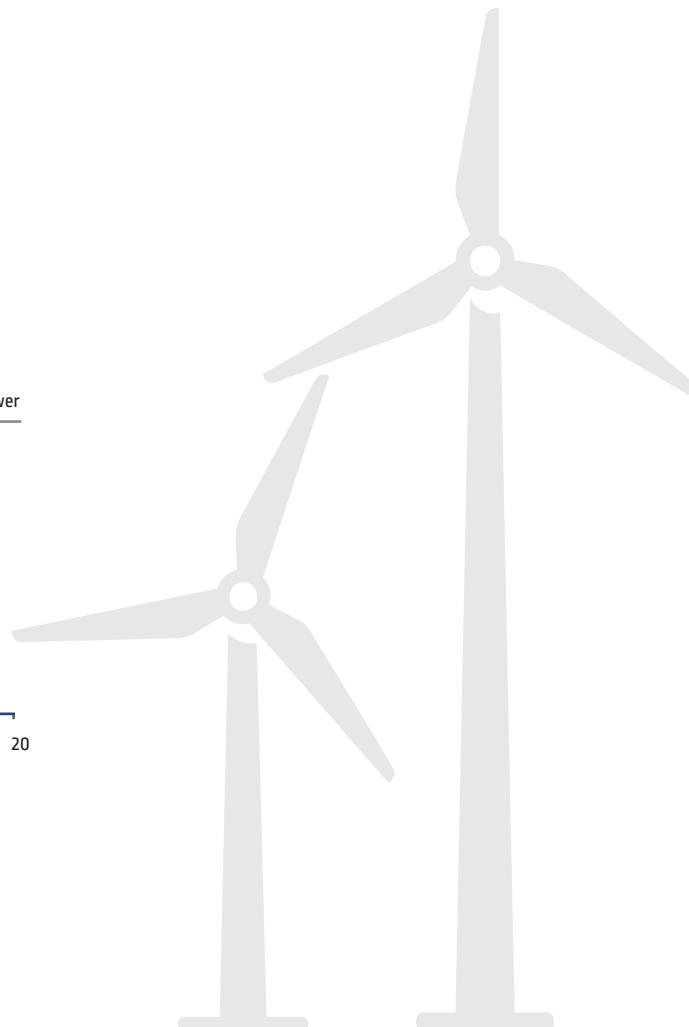
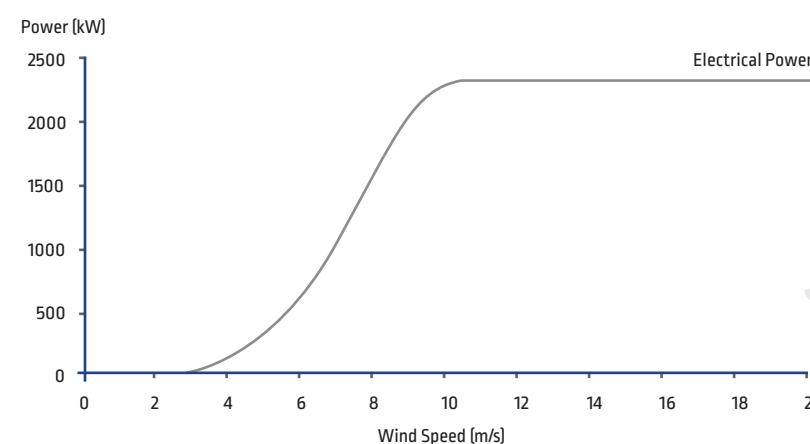
Electrical System

Nominal Frequency [Hz]	50
Converter Type	Converter (Full power conversion)
Generator	Electrically excited synchronous generator
Generator protection class	IP 54

Rotor Blade

Length [m]	LM 58.7
Type	GFRP

Power Curve



THE 2.7M130*

OPTIMISED FOR LOW WIND SITES



The Senvion 2.XM Series

Our new 2MW+ series wind turbine generator with a hub height of 130/140m has been optimized for higher yields at medium – low wind site. With an operating temperature range of upto 49 °C. Based on the tried-and-tested technology the new platform has been enhanced using innovative components as well as off-the-shelf components from top suppliers and our supply chain is localized. The 2.XM series is fully compliant with Indian grid code requirement as on date.

*Commercially available only in India

Design Data

Nominal Power [kW]	2700
Cut in wind speed [m/s]	3.0
Cut out wind speed [m/s]	20.0
Nominal wind speed [m/s]	12.0
Operating Temperature range [°C]	0 to 49
Survival Temperature range [°C]	-20 to 50

Rotor

Diameter [m]	130.0
Rotor Area [m ²]	13,273
Power Control	Electrical pitch system

Certification

Wind Class	IEC S
Type Testing	IEC 61400-22

Tower

Type	Tubular steel tower
Height	Up to 140m

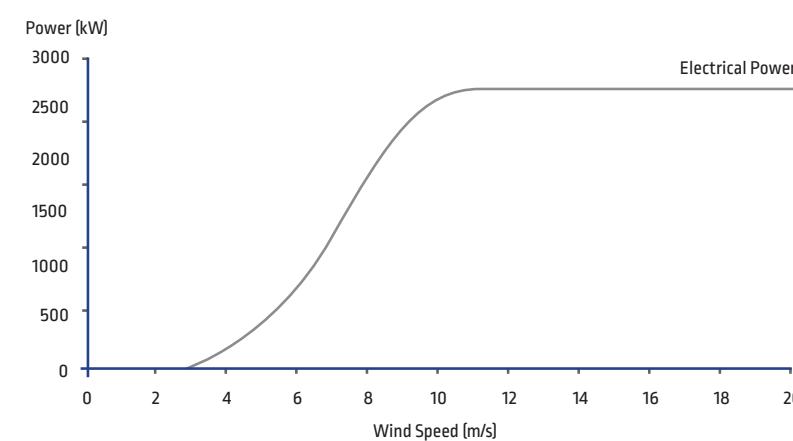
Electrical System

Nominal Frequency [Hz]	50
Converter Type	Frequency converter for DFIG with DC Link
Generator	Double-fed induction generator (DFIG)
Generator protection class	IP 54

Rotor Blade

Length [m]	63.7
Profile Type	SE 63.7
Material	GFRP

Power Curve



THE 3.1M130*

OPTIMISED FOR LOW AND MEDIUM WIND SITES



The Senvion 3.XM Series

Our new 3MW+ series wind turbine generator with a hub height of 130m has been optimized for higher yields at medium – low wind site. With an operating temperature range of upto 49 °C, it can also be operated in tropical climates. The supply chain is localized. The 3.XM series is fully compliant with Indian grid code requirement

*Under type-testing. Commercially available only in India

Design Data

Nominal Power [kW]	3100
Cut in wind speed [m/s]	3.0
Cut out wind speed [m/s]	20.0
Nominal wind speed [m/s]	13.0
Operating Temperature range [°C]	0 to 49
Survival Temperature range [°C]	-20 to 50

Rotor

Diameter [m]	120.0
Rotor Area [m ²]	11,310
Power Control	Electrical pitch system

Certification

Wind Class	IEC S
Type Testing	IEC 61400-22

Tower

Type	Tubular steel tower
Height	Up to 140m

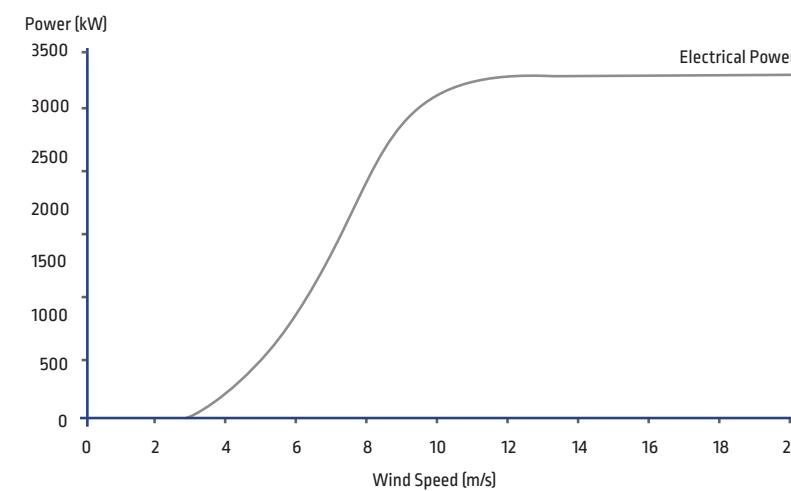
Electrical System

Nominal Power[Hz]	50
Converter Type	Full power conversion with IGBT
Generator	Electrically excited synchronous generator.
Generator protection class	IP 54

Rotor Blade

Length [m]	58.7
Profile Type	LM 58.7
Material	GFRP

Power Curve



THE 4.2M160*

OPTIMIZED FOR LOW TO MEDIUM WIND SEGMENT



The Senvion M160 Turbine

Introducing our new 4XM wind turbine platform, which is optimised for higher yields at low-wind sites with hub heights of up to 140 metres. Our innovative design uses off-the-shelf parts from top suppliers and local supply chain integration. With an operating temperature range of -10 to +45°C, our platform meets all the Indian grid code requirements. Trust the proven technology of Senvion to power your wind energy investment.

**Under type-testing. Commercially available from 2025

Design Data

Nominal Power [kW]	4200
Cut in wind speed [m/s]	3.0
Cut out wind speed [m/s]	20.0
Nominal wind speed [m/s]	11.0
Operating Temperature range [°C]	-10 to 45
Survival Temperature range [°C]	-20 to 50

Rotor

Diameter [m]	160.0
Rotor Area [m ²]	20,108
Power Control	Electrical pitch system

Certification

Wind Class	IEC S III C
Type Testing	IEC61400-22/IECRE OD 501

Tower

Type	Tubular steel tower
Height	140m

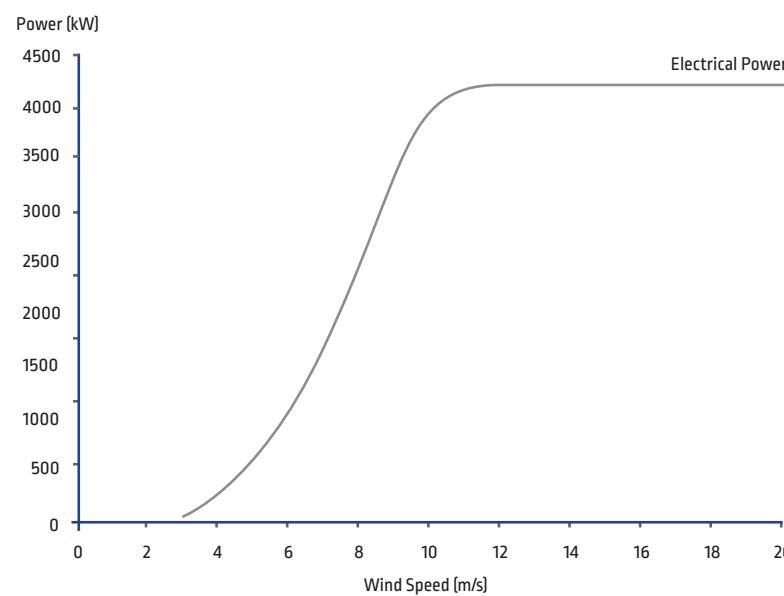
Electrical System

Nominal Frequency [Hz]	50
Converter Type	Partial converter DFIG
Generator	Double-fed induction generator (DFIG)
Generator protection class	IP 54

Rotor Blade

Length [m]	78.5
Profile Type	SE 63.7
Material	GFRP

Power Curve



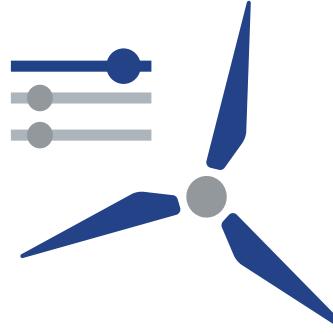


Senvion 101
Turbine design life of 20 years
with a possibility of extended
service of 25 years.

PERFORM

Senvion isn't just part of the energy transition. We're at the heart of it. Every day, we push our limits to improve processes, ensure smooth collaboration, drive innovation, and deliver outstanding service. Because we want our customized, high-performance turbines and wind farms to bring down the leveled cost of energy. And each of our projects across the globe reflects the rapid progress we are making toward our ultimate goal.



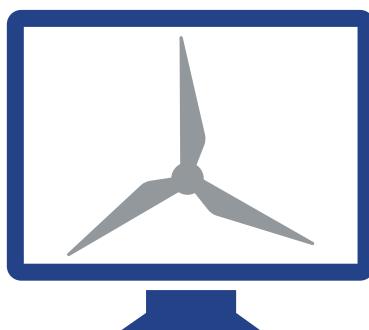
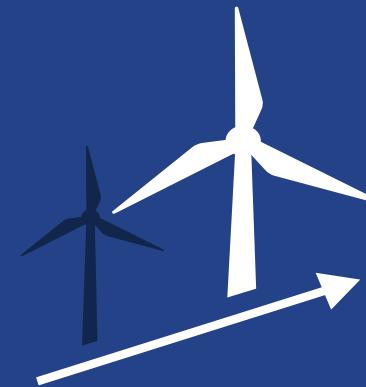


Modular design

Modular design is an important success factor in creating wind power plants that use the prevailing conditions to optimum effect. This factor is particularly relevant with our WTG platforms. Different rotor blade lengths, drive trains, tower heights and other tried-and-tested components can be combined to fit specific requirements for maximum performance and minimum risk.

Ongoing optimization

Both in the planning phase and for existing plants, we work closely with our customers to choose and implement the best available performance optimization tools for their requirements. These range from aerodynamic improvements through real-time monitoring, all the way to comprehensive software updates and our Lifetime Extension Program.



Digital focus

Our application – and continuous improvement – of digital technology has enabled us to provide ever more precise and detailed performance analysis and forecasts. We leverage our digital expertise at every point along the value chain to develop new products, optimize processes, enhance analysis and network turbines.

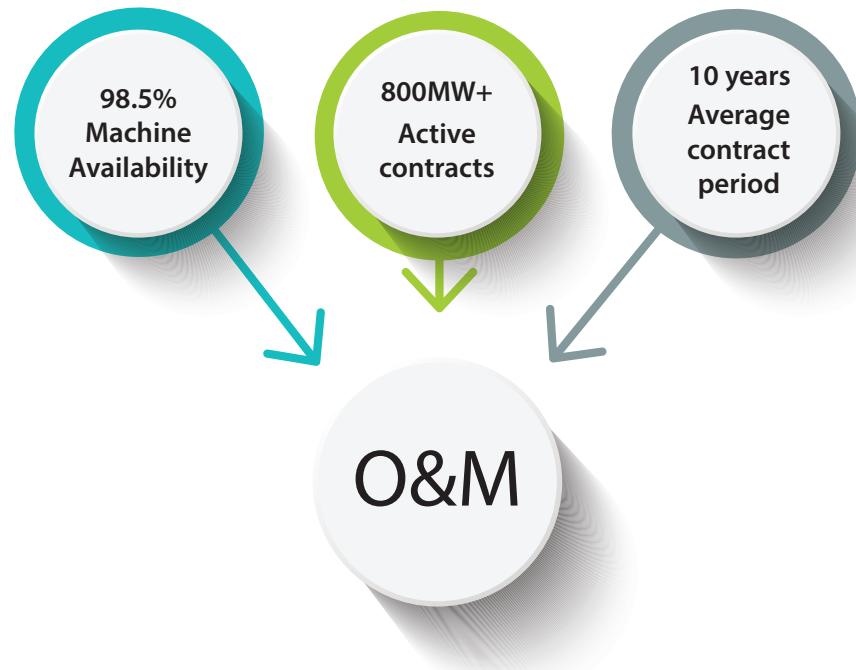


Service footprint in India

Senvion India has its efficiently proven in-house Operation and Maintenance [O&M] team active in various state of India for the Wind Farm Power Projects owned by the Esteemed retail Customer's base and leading Independent Power Producers [IPP's] in the market.

With the project sites spread across India, we provide 24x7 service to 350+ MW across India.

Our service philosophy is based on 4 pillars - Monitor, Maintain, Restore and Optimise. This ensures high machine availability with safety and reliability of the operating fleet.



STATE-WISE SERVICE SITES*

	Existing Sites [807.5 MW]		Upcoming Sites [280.8 MW]	
State	MW	WTG's	MW	WTG's
Gujarat	450.6 MW	184	86.4 MW	32
Maharashtra	244.2 MW	105	0 MW	0
Karnataka	78.3 MW	29	113.4 MW	42
Tamil Nadu	34.4 MW	13	81 MW	30

TURBINE-WISE SERVICE SITES*

State	WTG Model	WTG Ratings	Existing Sites		Upcoming Sites	
			MW	WTG's	MW	WTG's
Maharashtra	K110	2.4 MW	45.6 MW	19	0 MV	0
Maharashtra	K82	2.0 MW	96 MW	48	0 MV	0
Maharashtra	M130	2.7MW	102.6 MW	38	0 MV	0
Gujarat	K82	2.0 MW	28 MW	14	0 MV	0
Gujarat	M120	2.3MW	209.3 MW	91	0 MV	0
Gujarat	M130	2.7MW	213.3 MW	79	86.4 MV	32
Karnataka	M130	2.7MW	78.3 MW	29	113.4 MV	42
Tamil Nadu	K82	2.0 MW	2 MW	1	0 MV	0
Tamil Nadu	M130	2.7MW	32.4 MW	12	81 MV	30

*as on September 2024

SUSTAINABILITY

Sustainability is at the core of our mission. We engage with diverse stakeholders to identify ESG-related material topics, drawing insights from customer surveys, industry trends, and regulatory agencies. In 2022, we appointed CareEdge Advisory to integrate ESG principles into our processes and conduct our first materiality assessment. Our ESG Executive Oversight Committee has reviewed this assessment to ensure alignment with our policies, strategy, and risk priorities.

The technology Senvion delivers has the potential to contribute to the achievement of all 17 United Nations Sustainable Development Goals (SDGs). Senvion's core contribution to the SDGs is primarily through SDG 7 (clean and affordable energy) and SDG 13 (climate action).

ENVIRONMENT

KPI	Unit	CY 2022	2025	2030	2040	UNSDG
Decarbonization of business – • Recyclability of Turbines, Blades	% Recyclability	Not Measured	50%	75%	100%	
Carbon emission reduction [Scope -1 – own manufacturing] • Usage of green vehicles • Green energy for operations	[kWh] conventional energy consumed	Baramati -313959 Units [Apr22-Mar2023] Trichy -4021340 Units [Sep22-Mar 23]	25% reduction from 2022	25% reduction from 2025	25% reduction 2030	
Carbon emission reduction [Scope -3 : Tier 1 & 2 vendors]	CO2e emissions reduced	0%	50%	75%	100%	

SOCIAL

KPI	Unit	CY 2022	2025	2030	2040	UNSDG
Elevate marginalized society by providing access to better education & healthcare facilities	No. of beneficiaries reached	Not Measured	2500	5000	10000	
Globally Best in class LTIFR	LTIFR	0	<2	<1.5	<1	
Share of women in work force with equal opportunities	%	5%	10%	15%	20%	

GOVERNANCE

KPI	Unit	CY 2022	2025	2030	2040	UNSDG
Compliance and responsible business training	% of compliance	Not Measured	100%	100%	100%	
Business ethics	% of compliance	Not Measured	100%	100%	100%	
Supplier Code Of Conduct acceptance	% of purchased volume	Not Measured	75%	90%	100%	