



L82 2.0/2.3 MW

ADVANTAGE
THROUGH **EXPERIENCE**





Next generation technology

RIDING THE RIGHT TECHNOLOGY WAVE

The wind sector demands technology which reduces the cost price per kWh and which can cope with the future power quality requirements. Lagerwey's newest generation of direct drive turbines is ready for the future and is challenging earlier concepts in many aspects. Lagerwey's long experience and innovative development of direct drive technology has resulted in an optimal platform of multi megawatt wind turbines. Cost reduction by reducing the number of components and design simplicity are essential drivers.

A long lasting relationship

Lagerwey, a Dutch manufacturer of direct drive turbines in the multi-megawatt class builds on 35 years of experience in innovative wind technology, benefits well from the lessons learned and has a solid base of in-house expertise which dates back to the early years of modern wind turbine technology.

Over 1.200 Lagerwey turbines have been installed worldwide, various technological Lagerwey spin-offs can be found in today, but clearly as the master mind in wind technology we are several steps ahead. This product enables profitability for you, for ourselves and partners.

Technological platform

The turbines have a permanent magnet generator with excellent efficiency in partial and full load. Together with a full power converter we are able to deliver clean, grid - friendly power with a low short circuit contribution and meet even the most demanding grid requirements.

Lagerwey's advanced electrical pitch system reduces the loads, optimize a maximum energy capture and guarantees the turbine safety. The only high load cycle moving part is the main bearing unit where Lagerwey deliberately engineered a comfortable safety margin regarding wear and loads and use the a world class bearing quality.

The Lagerwey turbines have hollow main shafts for direct access to the hub. This makes the design robust together with high stiffness to withstand high loads. All service can be done comfortably and safe from the inner side of the turbine. Safety means the world to us!

The fully encapsulated generator can withstand the most severe environments. Due to the high generator efficiency an internal cooling system is not necessary. The passive, by the natural air stream, cooled generator is very robust and making the turbine suitable for harsh environments in hot and cold climates.

Reduce your cost price per kWh

Transportation and installation costs have become major costs in the multi megawatt turbine class. Our compact concept with closed ready-to-fit assembly modules enables low transport and installation cost and requires minimal crane capacity.

The efficiency of the Lagerwey turbines is high, in partial load – where it matters, it outperforms the existing drive train concepts by far.

Simplicity, reducing the number of components, low installation and maintenance cost make the turbine a low risk investment . This combined with the excellent energy capture it stands for an attractive return on investment. Shouldn't this be the turbine of your choice for the next projects?

Covering the life cycle

The high quality direct drive generators are designed and produced in-house. Lagerwey's in- house production, service & maintenance capabilities make Lagerwey a designer, producer and service provider which ensure the optimal cost effectiveness over the life cycle of the product.

We supply turnkey projects with our turbine types coming from our factory in the Netherlands or future manufacturing plants in local markets.



DURABILITY
IN MANY **ASPECTS**

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Lagerwey's next generation of direct drive

General

Rated power	2000 kW Certified 2300 kW to be Certified
Rotor Diameter	82 m
IEC Class	IIa
Turbine Concept	Direct drive gearless, variable speed, variable pitch, full power converter.

Rotor

Type	3 Bladed upwind rotor
Diameter	82 m
Swept Area	5.290 m ²
Rotor Speed	Variable 7,5-18,5 rpm
Power Regulation	Electric pitch control
Blade length	40 m
Blade Material	Fiberglass / Epoxy
Lightning Protection	Blade integrated, direct contact to structure

Generator

Type	Lagerwey HD multi pole synchronous
Efficiency	0.975
Field Excitation	Permanent magnet
Main Bearing	Dual row tapered rollers

Safety System

Type	Independent pitching system per rotor blade with allocated emergency supply
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Grid Inverter

Type	Full power AC-DC-AC
Control	IGBT-Control
Cooling	Water cooled

Operational Data

Cut in the wind Speed	2,8 m/s
Cut out Wind Speed	25-28 m/s
Power factor	Controllable

Devices

Brakes	Rotor and yaw brake
Locks	Rotor blade, yaw and drive train
Lubrication	Full automatic controlled bearings and teeth

Tower

Type	Tubular steel tower
Hub height	66 m / 80 m (other heights on request)

Others

Service lift	Include as standard
Resque nacelle kit	Include as standard
Noise mode reduction	Optional
Aviation lights/markings	Optional
Ice watch system	Optional
Blade shadow system	Optional

Advantage through experience

LTC service agreement & insurance

Lagerwey provides an all - inclusive long term service agreement which we call Lagerwey Turbine Care (LTC), which covers all technical operational costs, has a comprehensive machine breakdown – and business interruption insurance covered by global insurance companies. Our service costs are significantly lower compared to the

market and more complete, ensuring our customers face controlled and limited costs over the life cycle of the machines. Key elements are the low need for maintenance, the preventive character of the services and the reduced risk as a result of a lower number of parts and processes to handle.

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