

# FUSIONDRIVE®

from 3 MW to offshore class

The smartest gear and generator  
combo in the market



moventas | GEARED FOR  
NEW ENERGY



# FUSIONDRIVE®

## The smartest gear and generator combo in the market

Moventas, one of the industry's leading wind gear manufacturers, combined its latest gear solution with the proven medium-speed permanent magnet generator (PMG) from The Switch, a leading supplier of megawatt-class permanent magnet generator and full-power converter packages. The result is a solution that offers high availability, compact size and the lowest weight.

### *Unbelievably small size*

enables manageable transport and assembly with a shorter drive train

### *Lowest weight in the market*

improves total turbine cost competitiveness

### *Reliable medium-speed technology*

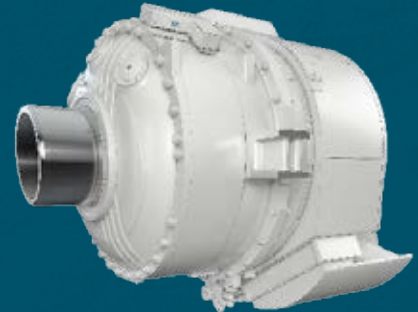
ensures highest availability and annual energy yield

### *Best serviceability in the market*

with main components changeable up-tower

### *Scalable platform*

extends from 3 MW to offshore class in onshore size

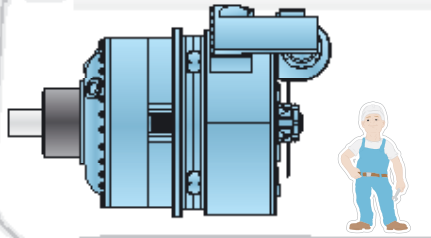


	<b>FUSIONDRIVE 3</b>	<b>FUSIONDRIVE 7</b>
<b>Max. nominal shaft torque</b>	3000 kNm	7000 kNm
<b>Max. nominal rotor speed</b>	14.6 rpm	11 rpm
<b>Generator output power</b>	3-4.1 MW	6-7.7 MW
<b>Total max. efficiency</b>	0.96	0.96
<b>Overall weight</b>	35 t	85-95 t
<b>Overall length</b>	3-3.5 m	4-4.5 m
<b>Diameter</b> (Ex. auxiliaries and torque supports)	2.3 m	2.8 m

Weight and total length dependent on rated generator output power.

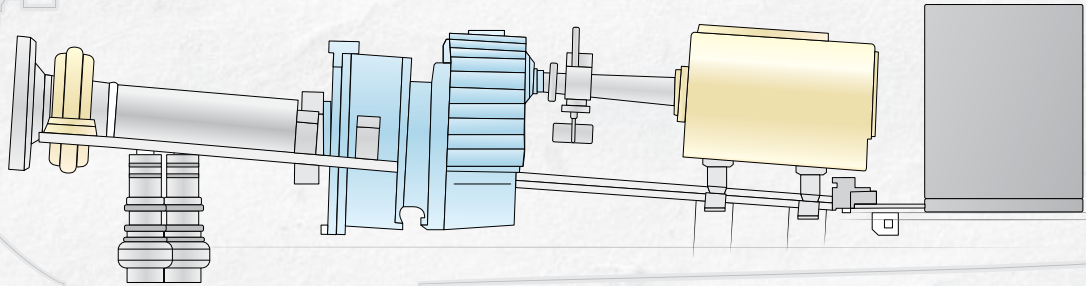


# FUSIONDRIVE®



Simplified structure  
= shorter drive train

A conventional drive



	<b>FUSIONDRIVE 3</b>	<i>High speed</i>	<i>Hybrid*</i>	<i>Direct drive*</i>
<b>3 MW</b>				
Total weight	35 t	40 t	40 t	75-85 t
Overall length	3 m	6.5 m	5 m	2-2.5 m
Diameter	2.3 m	2.3 m	2.3 m	5.5-6.5 m
Min. efficiency	0.96	0.96	0.96	0.94
	<b>FUSIONDRIVE 7</b>	<i>High speed</i>	<i>Hybrid*</i>	<i>Direct drive*</i>
<b>7 MW</b>				
Total weight	90 t	100-105 t	95-100 t	120-130 t
Overall length	4 m	8 m	6 m	8-10 m
Diameter	2.8	2.8 m	2.3 m	5.5-6.5 m
Min. efficiency	0.96	0.96	0.96	0.94

\*) Estimate: Depends greatly on the mechanical concept of the turbine



# **Minimize** total life cycle cost & **boost** annual energy production

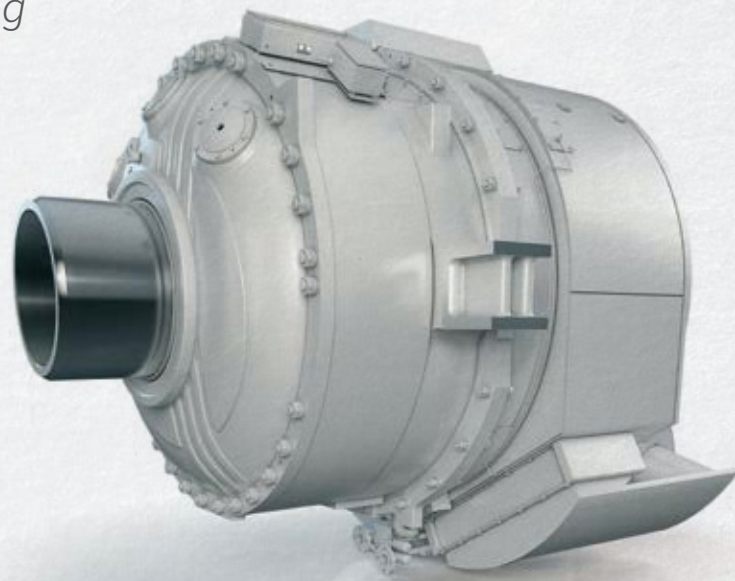
Annual energy production is dependent on drive train availability and efficiency. FusionDrive® is a reliable medium-speed solution. All high-speed components that are more prone to failure have

*“Manageable transport and assembly with a shorter drive train”*

been removed from the design, which leads to the highest availability. PMG also enables the greatest efficiency curves, making this a winning combination to boost annual energy production.

The unbelievably small size enables manageable transport and assembly along with a shorter drive train. The drive train's size also simplifies the turbine's structural design and boasts the lowest nacelle weight. This improves total turbine cost competitiveness in the market.

*A high annual energy production level and a minimum total life cycle cost is the formula for lowering the cost of energy!*

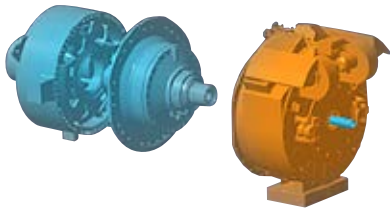


# Best serviceability

## in the market

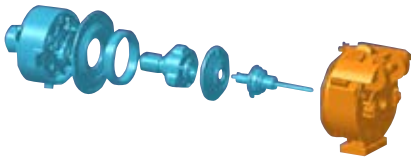
Right from the beginning, FusionDrive® has been designed for minimal maintenance and easy serviceability. The gear and generator can be split, and all components are changeable in the nacelle. The small size, simplified turbine and great serviceability combined bring down total life cycle costs.

# 1



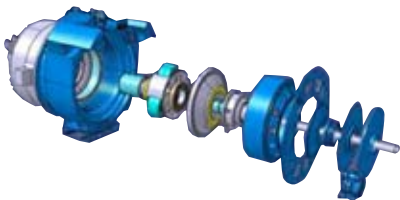
*All main components  
can be disassembled and  
serviced **up-tower**.*

# 2



*Secondary planetary stage  
can be disassembled and  
serviced **up-tower**.*

# 3



*The generator  
can be disassembled and  
serviced **up-tower**.*

## Why not think ahead?

Moventas CMaS condition management system has been developed to prevent any unexpected disturbances in wind energy production. CMaS helps you keep your operations running reliably and extends the lifetime of your turbine. Install with your FusionDrive® and enjoy the peace of mind!

Find out more:  
[service@moventas.com](mailto:service@moventas.com)  
[www.moventas.com](http://www.moventas.com)



Moventas is one of the world's leading gear manufacturers. Moventas offers power transmission solutions to, for example, wind energy, pulp and paper as well as the mining industry, and comprehensive services for the overhaul, maintenance and remote management of power transmission machinery. Globally operating Moventas is part of the global engineering group Clyde Blowers.

*To find out more, email [moventaswind@moventas.com](mailto:moventaswind@moventas.com) or visit [www.moventas.com](http://www.moventas.com)*



The Switch is your core power-generating components partner, adding value by collaborating and networking to lower the cost of new energy for the market. Our technology ensures reliable, future-proof grid compliance and maximized energy yields. We offer proven engineering designs, flexible production capacity and local service, wherever needed. And we aim to create a brand-new world of new energy with you through value-added partnership to innovation.

*To find out more, email [info@theswitch.com](mailto:info@theswitch.com) or visit [www.theswitch.com](http://www.theswitch.com)*