

# OPT FOR CASTROL OPTIGEAR

SYNTHETIC X



IT'S MORE THAN JUST OIL. IT'S LIQUID ENGINEERING.

 **OPTIGEAR**

# CASTROL OPTIGEAR SYNTHETIC X

## UNIQUE GEAR PROTECTION THAT OPTIMISES EFFICIENCIES FOR LESS DOWNTIME.

### INTRODUCTION

Castrol Optigear Synthetic X is a premium synthetic oil for wind turbine gears operating in wide temperature ranges and under high loads. It delivers best-in-class surface protection and reduces gear friction.

Suited for high capacity wind turbine gears Synthetic X can also be used in oil-lubricated rolling element bearings.

### TRUSTED TECHNOLOGY, UNIQUE GEAR PROTECTION

Castrol Optigear Synthetic X has been developed on Castrol's unique Microflux-Trans Plastic Deformation (MFT-PD) technology which is proven to give 30% less friction and superior surface protection compared to other commercially available wind gear oils<sup>1</sup>.

This reduces critical gearbox stress, operating temperatures and wear<sup>2</sup>, allowing bearings to emerge from tough qualification tests as good as new<sup>3</sup>.

In fact, Castrol Optigear Synthetic X has even been proven to significantly slow down<sup>4</sup> any further damage in pre-micropitted gears.

### CASTROL OPTIGEAR SYNTHETIC X

How our robust gear oil lets customers take control of the levelised cost of energy (LCOE)

Nothing hurts wind turbine efficiency and cost control (LCOE) like downtime and nearly 40% of unscheduled downtime days are attributed to gearbox failures, costing up to 200,000 USD per event<sup>5</sup>.

Independent tests<sup>2</sup> have proven that Optigear Synthetic X reduces heat, reduces wear, reduces unplanned maintenance and extends the life of the gearbox more efficiently than any other oil on the market<sup>6</sup>.

Customer tests reported low bearing-wear and high micropitting resistance after eight years of use<sup>4</sup>.

Customers opt for Optigear Synthetic X because they can operate at maximum efficiency, minimise the risk of unexpected gearbox failures and take control of their LCOE.

# WHY THE WORLD'S MOST EFFICIENT WIND FARMS OPT FOR CASTROL OPTIGEAR SYNTHETIC X

## KEY CLAIMS

Castrol Optigear Synthetic X is proven to reduce friction by 30% more than other commercially available wind gear oils.

Tested and proven in both the lab and field by customers and independent experts.

Less friction means more efficient energy generation.

Less friction also reduces heat and reduces wear, providing the ultimate overall protection to the gear.

Almost 40% of unscheduled downtime days are attributed to gearbox failures, costing up to 200,000 USD per event.

Castrol Optigear Synthetic X reduces downtime because it provides greater resistance to gearbox breakdown.

Synthetic X offers superior surface protection over other commercially available wind gear oils.

Synthetic X can also significantly slow down any further damage in pre-micropitted gears.

Castrol Optigear Synthetic X gives wind farms control over their levelised cost of energy.

## QUESTIONS TO ASK CUSTOMERS WHEN SELECTING THE OPTIMUM GEARBOX OIL FOR THEIR BUSINESS

Does the customer operate a fleet of mixed turbines?

Does the customer operate a fleet made by a single manufacturer?

Are any of their turbines out of warranty or close to end of warranty?

## WHAT FACTORS MATTER MOST WHEN SELECTING AN AFTER-MARKET GEARBOX OIL?

Ultimate performance	<input type="checkbox"/>	Gear protection	<input type="checkbox"/>
Less downtime	<input type="checkbox"/>	Controlling the levelised cost of energy	<input type="checkbox"/>
Oil life	<input type="checkbox"/>	Comparison tests – in labs and in the field	<input type="checkbox"/>
Other	<input type="checkbox"/>		

If the customer wants best performance in market, do they have a skilled team who will manage a thorough changeover process?  
 If they operate a mixed fleet or want to simplify maintenance schedules Castrol Optigear Synthetic CT may be more suitable.

# OPT FOR CASTROL OPTIGEAR SYNTHETIC X

If you want to take control of your energy costs,  
opt for the oil that delivers ultimate gear protection  
and maximises efficiencies.

Visit [castrol.com/windenergy](http://castrol.com/windenergy)

Sources:

1. The SRV friction (5ae) Test, 2016/2017.
2. Sincro Mecánica Wind Oil Evaluation 2016.
3. After 7 years field experience: FE8 - Roller bearing wear test for lubricating oils according DIN 51 819-3 (D-75/90-80) in 2016.
4. Source: FZEG Micropitting test 2010.
5. The Wind Operations and Maintenance Report, The Wind Energy Update, 2016.
6. Independent MPR testing carried out by Powertrib, 2010

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