



HOW WE HELP MAKE IT HAPPEN FOR INDUSTRIAL MANUFACTURES

INDUSTRIAL INSIGHTS

A detailed, close-up photograph of a transparent industrial engine block, showing internal pistons and connecting rods. The engine is set against a dark background. A red line and a green line are drawn over the engine, curving around the components.

+ FEATURE

Control Freaks Wanted!

Ready to automate your MWFs?

Pg 13

+ FEATURE

The Circle of Life

Inside the new era of reusable
cleaning fluids

Pg 07

FOREWORD

SRIKANTH VISVANATHAN

GLOBAL MARKETING DIRECTOR | CVO & INDUSTRIAL

Environmental standards high, impact low

Welcome to the first issue of *Industrial Insights*, our new quarterly e-magazine dedicated to everything industrial. The contents vary from the latest news and trends from the industry to customer success stories using Castrol industrial products/solutions.

For the first issue, we're focussing on what's possibly the biggest challenge facing industrial manufacturing: how we work toward a smarter, sustainable, carbon neutral future that safeguards both our environment as well as the profitability of our companies.

Why are we highlighting this? Because the challenges to manufacturing are no longer

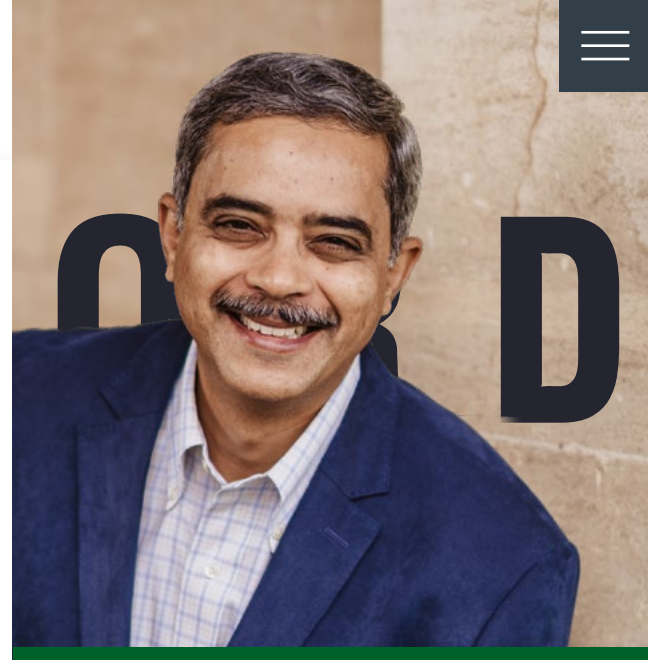
just about production and maximizing output. Government and legislative action around the world on pollution, waste and exploitation of resources, and consumer-led environmental campaigns, mean that industrial manufacturers are faced with a range of unprecedented pressures.

Working directly on-site in factories and facilities across the world, we are helping our customers to optimize their use of existing lubricants to reduce both their manual work as well as their carbon footprint. We are developing new lubricants and fluids that will lessen automakers' environmental impact, extend lubricant life and reduce waste.

You'll see how we're actively working toward a smarter, carbon neutral future in industrial manufacturing with new products and solutions highlighted in this issue such as Castrol SmartControl and our Techniclean XBC cleaners. I hope you enjoy the first issue ([feedback welcome](#)). ■



AT CASTROL WE'RE ACTIVELY WORKING TOWARDS A SMARTER, CARBON NEUTRAL FUTURE IN INDUSTRIAL MANUFACTURING"



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News and insights

READ NOW →



Your industrial success: we help make it happen

Castrol has been collaborating with industrial businesses like yours since 1899. Whatever you do, we can make a big difference to your operation. Every one of our liquid engineers has the knowledge and experience to help you make smart decisions that can lead to competitive advantages. Together we can help make your business even stronger.

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NEWS AND INSIGHTS

Turning big data into even bigger opportunities

At Castrol, we've been using big data and the on-site application of monitoring and benchmarking for years to improve the performance of our industrial fluids.

At machine level, we have been able to demonstrate cost saving measures including the dramatic extension of oil and machine life. We have done this with what are, in effect, semi-manual systems. The next step is to see these relatively small — but verifiable — gains automated, integrated with machine learning and control systems, and scaled up into factory-level and then global commercial advantage.

What data can do is bring all pockets of activity together, make the information available quickly and in real time, and

provide the basis for more informed, more effective decision-making.

That is where the connected factory and a connected company will be able to turn on the benefits of 4IR — but it needs leadership. It needs to be driven forward by those who want to lead the development of this fourth industrial revolution and reap the rewards.



**THE FUTURE DOES
NOT START HERE;
IT HAS ALREADY
BEGUN”**

However, time is a luxury we cannot afford. The future does not start here; it has already begun. If you aren't actively investigating and embracing the technologies and techniques of 4IR, using IIoT to connect your machines, factories, customers, and supply chains together, then you'll see yourself left behind. Why? Because other companies — your competitors — will be doing it. Any mindsets that get in the way have to be swept aside. Your company's competitiveness and, as a result, its survival, depends on it. →

To get ahead, read more about SmartControl on [page 13](#).

NEWS AND INSIGHTS

A cost-effective, carbon neutral future for industrial manufacturers

For business itself to be sustainable, it needs to operate profitably, and to be a responsible corporate citizen.

Environmental issues form a significant part of that citizenship and they are increasingly the subject of legislation, rather than just exhortation.

One of the concerns of manufacturing, when it comes to green and environmental issues, is cost. It's possible for manufacturers to use the technologies offered through Industry 4.0 to adopt sustainable practices now in the production processes in ways that are commercially, environmentally, and financially beneficial.

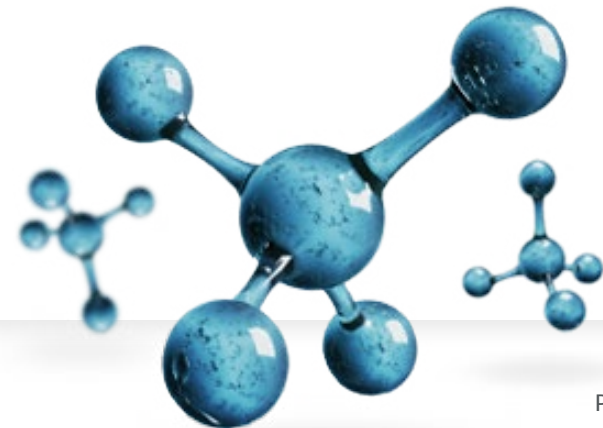
“

MANUFACTURERS CAN ACHIEVE SIGNIFICANT IMPROVEMENTS IN ENERGY USAGE”

Within Castrol's own field, personalized site plans, monitoring fluid condition, and laboratory analysis driving new and more efficient products, can enable metalworking fluid producers to help to deliver cost efficiencies in production processes.

By harnessing the technologies and techniques available thanks to Industry 4.0, manufacturers can achieve significant improvements in energy usage and, consequently, in financial and environmental performance. →

Read more about how Techniclean XBC can help manufacturers achieve sustainability both for themselves and for the environment on [page 07](#).



NEWS AND INSIGHTS

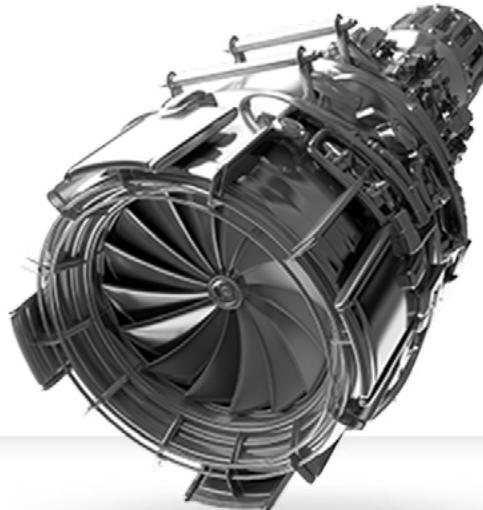
OEM approvals highlight

We've reached another crucial milestone in the delivery of our industrial growth strategy with the following major approvals:

- 1 **Boeing approval for Castrol Hysol SL 45 XBB under the BAC 5008 specification for the aerospace sector**
- 2 **Burckhardt approval of Castrol Aircol CL 1400 and Castrol Aircol CL 1400 S for use in compressors that are widely used in the LDPE manufacturing process**
- 3 **Commercial Aircraft Corporation of China (COMAC) approval for Castrol Hysol SL 45 XBB, Syntilo 9913 and Syntilo 9828 for airliner manufacturing**

These approval projects have been in the pipeline for just over two years.

Boeing is among the leading global aircraft manufacturers with facilities around the world. Widely recognized as a requirement of Tier 1 aerospace part manufacturers, the BAC 5008 approvals are essential for conducting business in the aerospace sector.



Lisa Gianino, Global OEM Manager at Castrol, said: **“Tier 1 aerospace suppliers have been asking for high quality new technology options, and Hysol SL 45 XBB fills that need perfectly. Our relationship with such companies brings valuable insight to our development pipeline, allowing us to shape the future of lubricants.”**

Burckhardt Compression AG is a Winterthur-based Swiss firm specialising in reciprocating compressors. The company has declared itself the world leader in this field, with its products being used around the globe in an array of industrial applications. ■

+ FEATURE

THE CIRCLE OF LIFE

Imagine a cleaning fluid that you don't have to throw away – that you can reuse as a cutting lubricant. Could that be possible? Read on to find out...



Closing the circle

The concept of the 'circular economy' was codified by the Ellen MacArthur Foundation. The yachtswoman has seen at first hand the damage that waste and thoughtless disposal can do to the environment, from poisoning wildlife to physical contamination of our oceans.

The 'circular challenge' calls for minimisation of waste, for resources to be continually regenerated over time, the optimal utilization of products and possessions, through circularity built-in to design, leading to minimization of waste, and round again, unendingly.

Industrial manufacturing is familiar with the concept of recyclability and has, through encouragement, cajolment, and legislation, got to the stage where 95% of a new car sold today in Europe can now be recycled at the end of its life. In 10 years' time, that figure may well be higher – there is talk of 99%.

That is a remarkable achievement in its own right but that positive environmental performance can be negated if the processes used in manufacture are polluting or wasteful and consume high levels of energy and natural resources. ■



EMBRACING THE CIRCULAR ECONOMY

95%

of a new car sold today in Europe can now be recycled at the end of its life.

99%

In 10 years' time, that figure may well be higher – there is talk of 99%.

+ FEATURE | THE CIRCLE OF LIFE

Compatibility is key

“Techniclean XBC cleaning fluid helps companies to reduce operational costs and carbon footprint,” says Michael Petzold, Global Product Manager at Castrol. That’s a pretty bold claim to make, but he is confident he has the proof to support it.



BORON

BIOCIDES

“Techniclean XBC fulfils the latest requirements for a modern cleaner used in industrial metalworking process chains and it offers much more than just being a high performance cleaning fluid,” he explains. “It is designed with ‘circular economy’ characteristics built-in: it is durable and reusable, so it cuts consumption of raw materials, cuts waste disposal and hence reduces the overall environmental footprint.”

The key to this ‘magic bullet’ is the fluid’s compatibility with Castrol’s range of Alusol XBB and Hysol XBB coolants. When Techniclean XBC has reached the end of its useful life then, rather than just throw it away – with all the waste disposal and maintenance cost involved – it can be recycled and reused in the Alusol and Hysol XBB coolant systems.

The chemical DNA is important. All XBB coolants and XBC cleaners are designed without Boron or formaldehyde-releasing biocides – thus the ‘XBB’ designation (the C in Techniclean’s “XBC” stands for ‘cleaning’). They all comply with the latest HSE legislation. Techniclean XBC is available in two variants to meet local requirements: Techniclean 80 XBC containing MEA (Monoethanolamine) and Techniclean 90 XBC, formulated without MEA.

Their compatible formulation design means the Techniclean cleaners can be added to Alusol and Hysol emulsions without compromising the coolant performance. ■



+ FEATURE | THE CIRCLE OF LIFE

Environmentally And Operationally Efficient

That sounds simple enough and looks like a step forward but a lot of 'green' or supposedly environmentally responsible solutions are not particularly good at their jobs.

It can be a false economy if a manufacturer has to use two, three or four times as much product to achieve the same standards as a supposedly expensive and polluting alternative.

Michael Petzold is keen to stress that this is not the case with Techniclean XBC; its reusability does not come at the price of lower performance.

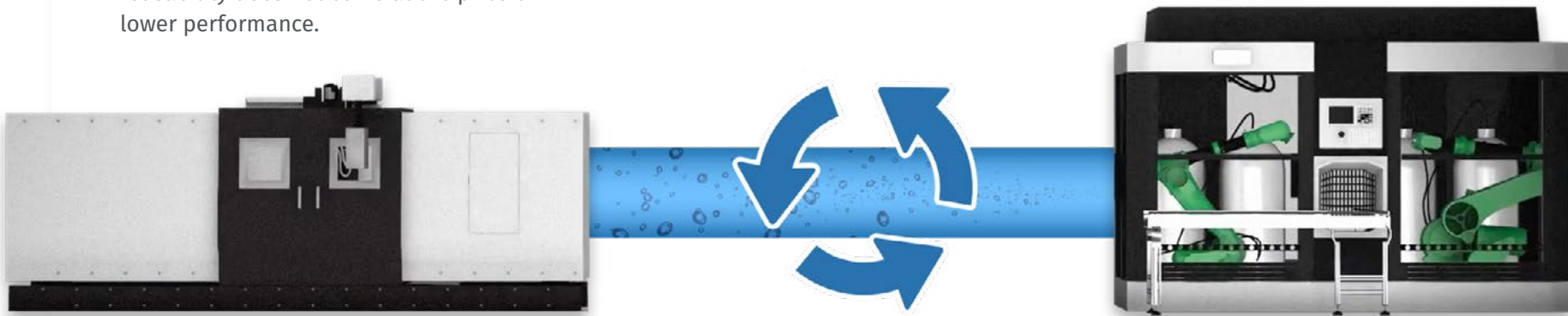
If anything, it demonstrates high level cleaning performance performs even better, across a broad application spectrum. ■



It has low foaming characteristics across a wide temperature range and is usable in low-temperature cleaning operations in contemporary spray, intensive flood-wash, and high-pressure equipment (*), and hence can help lowering the heat energy consumption,” Michael Petzold says.



We established this was the case within our own laboratories and have been able to demonstrate that it delivers to the expected standard, in the field, in customers' operations on their own premises. We also proved to customers' complete satisfaction that it has excellent demulsifying performance, which gives it a longer bath life in the first place, as well as enabling easy skimming.” (* based on 2017 Castrol's laboratory tests and 2018 customers' trials)



+ FEATURE | THE CIRCLE OF LIFE

Down to zero waste

Castrol has been working for years to reduce the levels of oil contained in its lubricants and metalworking fluids. At the same time, it has been collaborating with customers since the last century on ways to reduce consumption and to cut waste disposal, with the ultimate aim of 'zero to landfill'.

There is urgency in its quest. China, which will soon be indisputably the largest economy in the world, is legislating under its Made in China 2025 strategy for factories to reduce waste to zero. There is no choice but to drive down on waste and consumables, and Techniclean XBC is very much part of that scenario.

But it isn't all about complying with legislation. Every penny that leaves the factory in the form of waste is a penny off the bottom line. Every avoidable gram of carbon is a cost that can – and should – be eliminated.

Find out more about Castrol Techniclean XBC [here](#). ■

GROUPE RENAULT

How XBC reduces waste for Renault

Through a partnership with Castol, Renault is set to save

1 MILLION LITRES

of waste and water this year with XBC Techniclean.

“

This project saved last year 300m³ of water and 300m³ of waste on site and will reach a saving of 1 million litres of water and waste this year alone.”

Maria Luisa De Contes D`Esgrandes
Renault RSC&DI Manager

+ CASE STUDY

STACKPOLE INTERNATIONAL & CASTROL



Increasing machinery efficiency and reducing oil consumption from 20 barrels per month to eight.

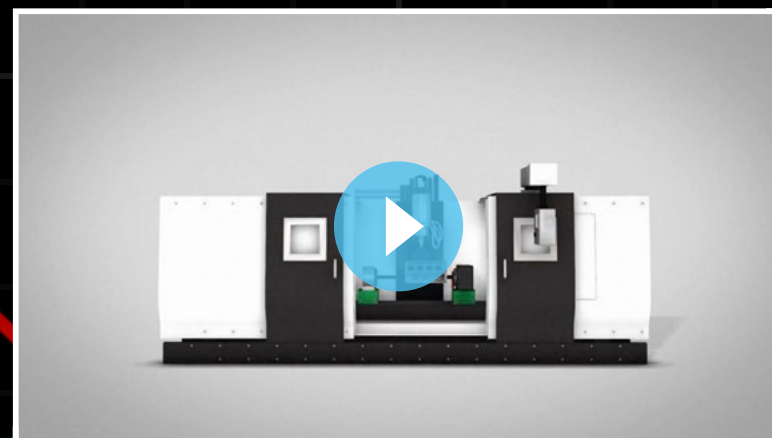
In this short video, meet our Industrial Sales Manager, Mustafa Bodur, and Stackpole's Global Process Best Practice Manager, Ergün Düzgören.

From Stackpole's Turkish plant in Izmir, the pair discuss the near decade-long partnership and how Castrol products are used to improve efficiencies when manufacturing oil pumps and vacuum pumps for engines by using our cutting oils, slideway oils, chain oils, machine oils, engine oils, and cleaning fluids. ■

CONTROL FREAKS WANTED

+ FEATURE

Automating lubricants: a new way to manage, monitor, and optimize metalworking fluids



+ FEATURE | CONTROL FREAKS WANTED

Fluid management 4.0 is here

Castrol's SmartControl system is the new way for industrial control freaks—people just like you—to monitor and control their metalworking fluid (MWF) management, automatically and in real time.

To make this happen, Castrol's liquid engineers—responsible for the development

of industrial lubricants—have joined forces with Tiefenbach, the German control systems expert.

Castrol SmartControl monitors and measures the state of lubricants and coolants in real time, and works in conjunction with Castrol XBB fluids to optimize system stability, maximize efficiencies, and deliver the confidence that comes from complete control. ■

How Castrol
XBB fluids help
make it happen

Find out more



IT LIBERATES OPERATIONS
AND MAINTENANCE”

CASTROL XBB CUTTING FLUIDS

Castrol Hysol XBB and Alusol XBB multi-metal soluble cutting fluids are formulated without boron or biocides.

They reduce the need for expensive treatment additive top-ups, increase production efficiency, and reduce costs. They also extend fluid life and eliminate unnecessary repairs and interventions, while also maintaining high specification and improving performance.



+ FEATURE | CONTROL FREAKS WANTED

SmartControl BASIC: the freedom that comes from total control

Lubrication is complex, and choosing the right lubricant for particular applications is becoming ever more complex as new formulations are developed.

Getting the best performance out of today's advanced MWFs requires monitoring and adjustment, but doing such tasks manually is far from ideal.

The traditional methods of manual measurement—dipping, sampling, sending off for analysis, and then waiting for the results that will inform key decisions—

are time-consuming, and make things harder than they need to be for modern manufacturers.

SmartControl is the latest Castrol solution to allow manufacturers to operate efficiently, cleaner, faster, and altogether better. It frees operators from repetitive tasks. It measures all the key parameters automatically, including:



Concentration



pH level



Conductivity



Temperature



Volume flow

All manufacturers want more control, greater efficiency, better fluid management and higher productivity. Castrol SmartControl is the key to making it happen. ■

How we use 4IR technology to help make it happen



Find out more



INNOVATION IN VISION

Castrol SmartControl uses Industry 4.0 technology to:



**Improve
visualisation**



**Provide data instantly,
in real-time**



**Provide email or SMS
notification**



**Alerts direct to ERP/MRP
system (optional)**

Integrating fluid engineering and IT

SmartControl integrates Castrol's advanced industrial fluid engineering expertise with Tiefenbach's IT and systems resources to improve fluid performance, eliminate unscheduled downtime, boost workplace safety, and cut waste.

By combining the benefits of SmartControl and our Castrol XBB cutting fluids — Alusol XBB and Hysol XBB — we put industrial control freaks in total control of their operations.

This new method of monitoring and controlling metalworking fluids is intended for a range of engineering and manufacturing machining applications, including automotive and aerospace, and can be utilised by suppliers and OEMs.

+ FEATURE | CONTROL FREAKS WANTED

The next step: automating the process

MWF management is a critical activity, but it can be overlooked. When done correctly, nobody will notice. However, if something goes wrong, complaints will be impossible to ignore.

SmartControl BASIC monitors the most relevant MWF parameters, constantly and in real time. It facilitates intervention only when needed.

SmartControl AUTO technology goes above and beyond condition monitoring. It enables complete automation of MWF management, based on concentration and pH level.

The system can be connected to your fluid supply and control system, and can also add water, concentrate or additives as required, based on real-time measurement.

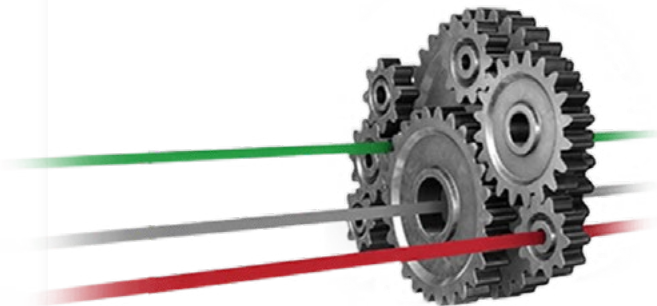
Automated dosing with concentrate, water or additives eliminates the need for manual intervention. It improves the working environment by eliminating odours, and cuts unscheduled downtime that is caused by compromised fluids to virtually nil.

Whether automated or not, Castrol SmartControl self-calibrates and self-cleans so as to ensure ongoing measurement accuracy. It cuts manual testing, lab sampling and documentation, and frees up technicians to spend their time in more valuable activities.

Are you ready to become a real engineering control freak? ■

Find out more [here](#).

“THE SYSTEM CAN BE CONNECTED TO YOUR FLUID SUPPLY AND CONTROL SYSTEM”



+ CASE STUDY

WIND OPTIGEAR

Enhancing the performance of wind turbines so as to increase operational efficiency and minimize the need for maintenance.

At Castrol, we understand the importance of helping our customers to be as efficient as possible. Our role is to help them cut costs while also ensuring that their operations run smoothly, and our work in the wind sector a perfect example of how we achieve those twin goals.

In this short video, experts from ONYX InSight and Castrol discuss the importance of marginal gains, and break down how it is possible to turn concepts into reality. ■

The world's first



bptargetneutral.com



Data source

Calculated using a typical scenario with following parameters:

Turbine rating = 2 MW | Unit energy price = \$ 0.122 / KWh |
Capacity factor = 35 % | Operating hours / annum = 8760 |
Efficiency improvement is observed during 50 % of the operating hours'

+ EMPLOYEE SPOTLIGHT



RUTH SELIRAND

DISTRIBUTOR BUSINESS MANAGER
CASTROL INDUSTRIAL

For this edition of the newsletter we spoke to Ruth Selirand, Distributor Business Manager for the Nordics. If you've ever wondered what it takes to be a Castrol employee, here's your chance to find out!



“A NEW ERA FOR INDUSTRIAL MANUFACTURING”

+ CASTROL WHMIH

Your industrial success: we help make it happen

Castrol helps industrial businesses win by partnering to tackle today's tough challenges to do with sustainability, productivity, TCO, data, and performance. And we've been doing this since 1899, to drive increased efficiency, productivity and reliability within industrial manufacturing while remaining compliant and sustainable in our practices as well as yours.

We're here to help make it happen with:



A premium industrial oil offering that's liquid engineered to help optimize performance



Advanced analytics that enable data-driven maintenance



Chemical management services (CMS) that help drive down total cost of ownership (TCO)



A firm commitment to helping reduce the environmental impact of your operations (and ours)



But we don't do this alone. It's about delivering success for our customers. That's why, in every issue, we'll be showcasing customer success because together, we help make it happen.

In this issue we've explored how we help to increase wind turbine efficiency by 1.2% ([page 19](#)) and how we help to reduce consumption of consumables and improve manufacturing efficiencies for Stackpole International ([page 12](#)). ■



WE HELP
MAKE IT HAPPEN





SIEMENS GAMESA WERE BLOWN AWAY BY THE SAVINGS THEY MADE EXTENDING OIL CHANGE INTERVALS. WE HELPED MAKE IT HAPPEN.

Siemens Gamesa Renewable Energy (SGRE) operate a fleet of 14,000 wind turbines. The yaw-gear units, which enable these giants to turn with changes in wind direction, typically need oil changes every 5 years. By using Castrol Optigear Synthetic X 320 SGRE have extended their oil change to 10 years, minimising maintenance costs and maximising energy generation potential.

Discover how we helped make it happen.
Visit castrol.com/industrial

Find out more

#makeithappen

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

