

**DESIGNED TO DELIVER
RELIABILITY AND EFFICIENCY.
JUST LIKE OUR LUBRICANT
SOLUTIONS FOR POWER.**

DESIGNED TO MEET CHALLENGES



CHOOSING THE RIGHT LUBRICANTS AND SERVICES FOR YOUR POWER-GENERATION ENGINES CAN HELP TO MAKE A REAL DIFFERENCE TO THE EFFICIENCY OF YOUR ENTIRE OPERATION

DESIGNED FOR RELIABLE OPERATION

Keeping engines working efficiently and reducing operating costs is critical for power generation. Engines need to work efficiently, even when pushing operating boundaries. At Shell Lubricants, we appreciate that in order for engines to give reliable and consistent output, components need to be protected against wear and deposit formation. We understand that you also need to reduce operating and maintenance costs. Choosing the right lubricants and services for your business needs can help to make a real difference to your entire power generation operation.

Our technology-leading power-generation engine lubricants, which are developed, researched and supported by our international team, can help you to reduce your operating and equipment ownership costs by providing

- enhanced protection of critical components to reduce replacement costs and extend engine life
- reduced lubricant consumption and maintenance through extended-life products
- improved operational efficiency through advanced oil technology.

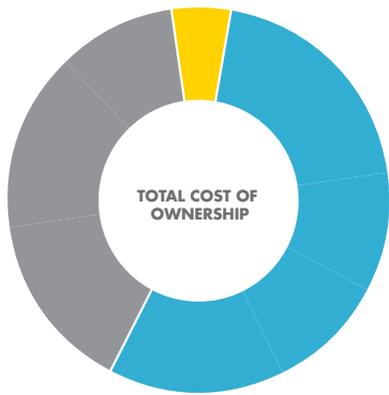
UNDERSTANDING YOUR NEEDS

Because of our experience working with power-generation companies across the world, we understand the crucial role that lubricants play in engine operation. We also understand that engine breakdowns can have disastrous implications, and the need to keep maintenance outages to a minimum and satisfy emissions standards further adds to the challenge. Whether you want to prevent deposit formation or wear on engine hot spots or extend the time between oil changes, we have a wide range of lubricants to meet your needs.

Whether you use diesel or gas fuels, our global network of experts can design a package of products and services for your business, helping to increase your profitability. Not only do we supply an extensive range of lubricants, we also aim to help you to

- choose the right products
- store, handle and apply your lubricants correctly
- achieve continuous improvement through equipment performance monitoring.





PRODUCT COSTS
Lubricants



MAINTENANCE COSTS
Leaks
Handling and dispensing
Oil analysis
Disposal



BUSINESS COSTS
Inventory
Administration and management
Training

LUBRICANTS – SMALL COST, BIG IMPACT

Buying low-quality lubricants can be a false economy. Lubricant costs are typically less than 5% of a power generation business' total maintenance budget. We focus on providing performance products that can help to reduce maintenance requirements and increase reliability, and services that are designed to improve maintenance and business practices, and thus lower your overall costs.



DELIVERING VALUE

As the size of engines reduces but the generation demands upon them rise, they are required to run longer and hotter, putting pressure on the components and the lubricants that protect them. At Shell Lubricants, we appreciate the challenges of increasing output while keeping down costs. By designing the right package of lubricants and services for your requirements, we can help you to substantially reduce your total operating and equipment ownership costs. Using high-quality, appropriate lubricants and services correctly can lower operational and maintenance costs, extend component life and increase engine availability.

LOCALLY SUPPORTED GLOBAL PRODUCTS AND SERVICES

Our international organisation of engine lubrication experts based across the world delivers lubricants with proven performance and multiple equipment manufacturer approvals wherever you operate.

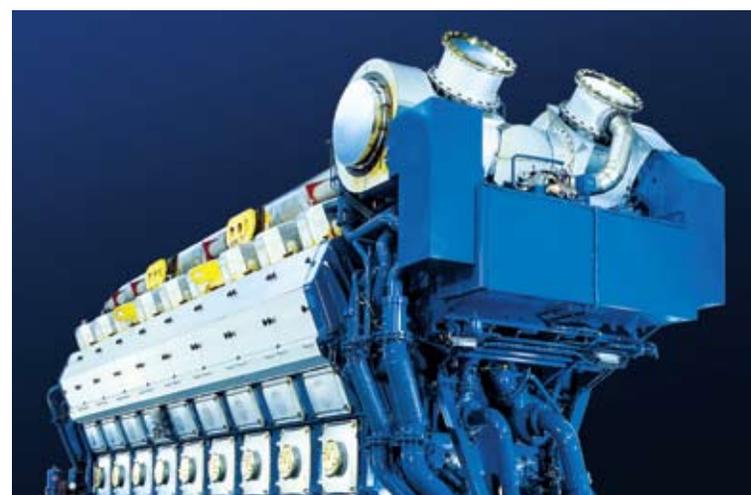
Our experts can work with you to analyse your needs and solve your problems. They can provide and help to implement a lubrication plan designed to unlock your generating potential.

We offer a wide range of lubricant-related services to help you maximise the positive impact of lubricants on your operation. These services can include

- **Shell LubeAdvisor** lubricant surveys and recommendations
- **Shell LubeControl** inventory management
- **Shell LubeAnalyst** oil condition monitoring.

For example, the Shell LubeAnalyst service can be a vital tool in extending component life and the time between services. This health check for lubricants and vital components is designed to reduce costs and add value by

- identifying potential oil or component failures before they become critical
- extending lubricant life, thus reducing change-out downtimes and procurement costs
- reducing risks and contributing to safe and reliable operations.

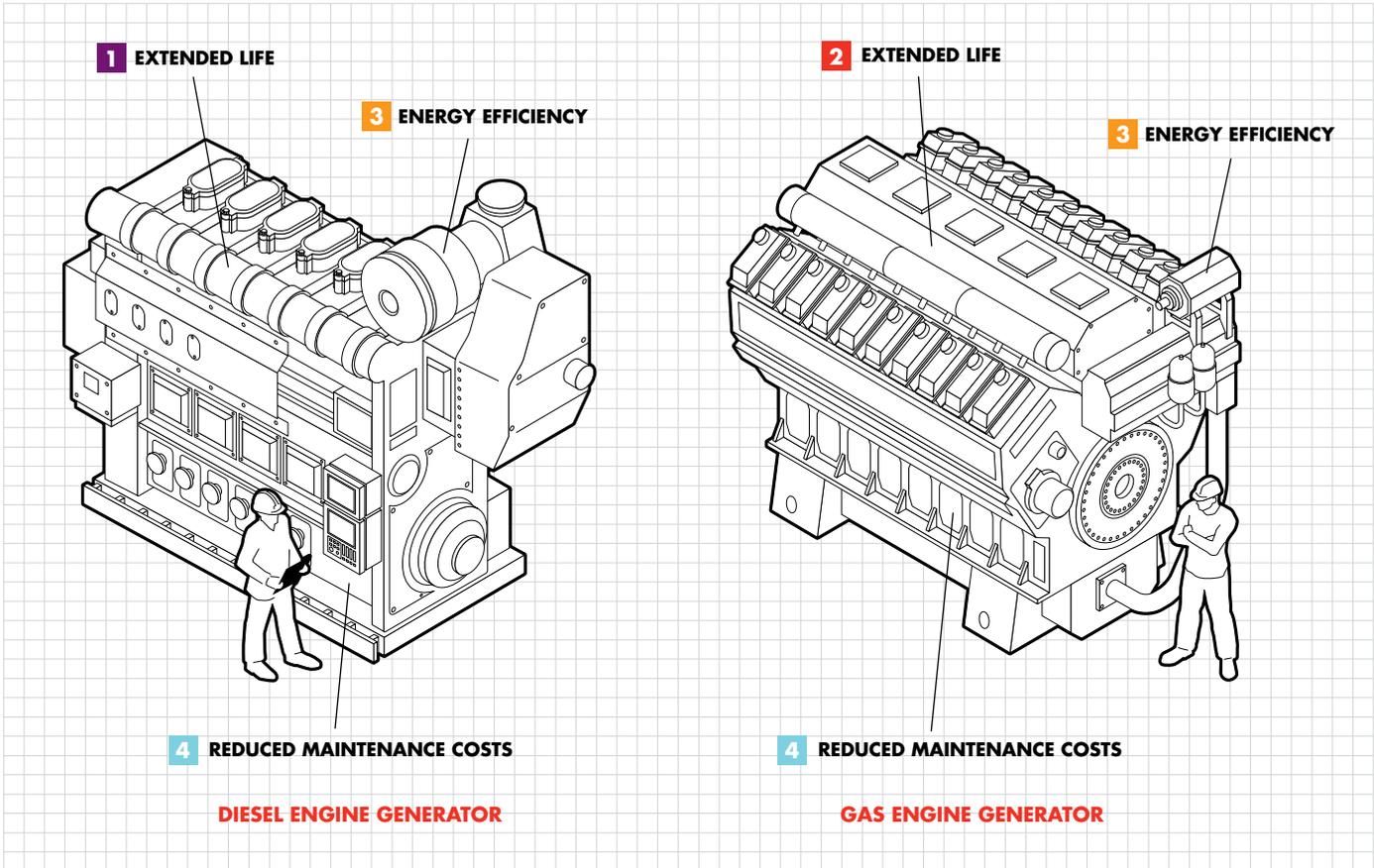


**A LUBRICATION PLAN DESIGNED TO UNLOCK
YOUR POWER GENERATION POTENTIAL**



WHERE LUBRICANTS CAN ADD VALUE

Some examples of ways that lubricants can help you operation to run more efficiently



- 1 EXTENDED LIFE** for oil and components using Shell Argina XX diesel engine oil
- 2 EXTENDED LIFE** for oil and components using Shell Mysella XL gas engine oil
- 3 ENERGY EFFICIENCY** and long service life with Shell Corena S4 R turbocharger oil
- 4 REDUCED MAINTENANCE COSTS** and extended oil life with Shell LubeAnalyst used-oil analysis for preventive maintenance

TECHNOLOGY WORKING FOR YOU

The development and application of innovative technology sit at the heart of everything we do at Shell. We invest in cutting-edge laboratories in Asia, Europe and the USA and recruit top-class scientists. They are the people who develop products that make a difference to your business, even under the most challenging conditions. From the Panama Canal and the Airbus A380 to Ferrari, what we learn in our collaborations, we use to create lubricant solutions to fulfil your business needs.

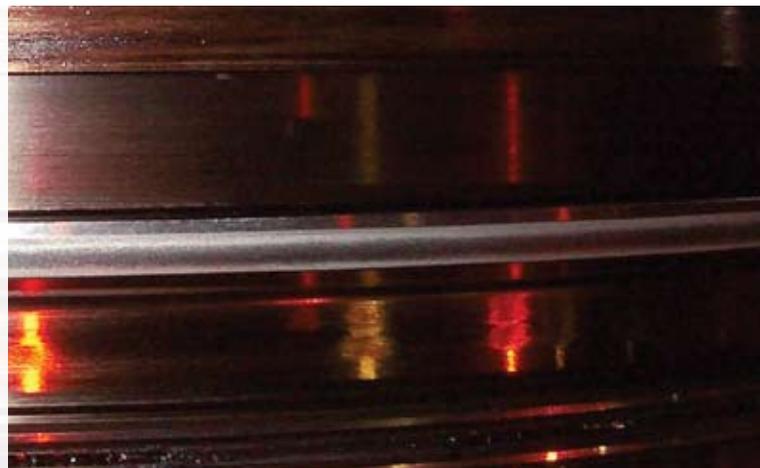
And we do not just have some of the best lubricants, we also have some of the world's leading field experts working with customers every day to apply these solutions. The result? Technology that delivers value to your operation.

ENHANCED RELIABILITY

One customer runs its gas-power engines in a dusty environment, which was causing increased oil consumption and residue build-up. This led to unacceptable operational costs and maintenance downtime.

Using the Shell LubeAdvisor service, our experts recommended Shell Mysella XL gas engine oil. The company has also improved its lubrication practices by taking advantage of Shell LubeAnalyst oil and equipment condition monitoring, and Shell LubeCoach technical and safety training services. By changing to Shell Mysella XL, the customer reported saving approximately \$42,000¹ a year and

- reduced outages
- decreased oil consumption
- increased oil-drain intervals.



REDUCED OPERATING COSTS

One customer experienced sharp falls in the total base number (TBN) of two different diesel engine lubricants. An inspection confirmed that soot and deposits had built up in the engine – a direct result of the TBN dropping below a critical level.

We recommended a switch to Shell Argina XL 40 diesel engine oil along with the Shell LubeAnalyst oil condition monitoring and Shell LubeVideoCheck inspection services. The engine is now much cleaner and has fewer deposits in the chamber and on the valves. By using Shell Argina XL 40 oil and an improved sweetening regime, the company reports an 11% drop in oil consumption, which is saving a reported \$39,000¹ a year.



WORKING WITH THE POWER GENERATION INDUSTRY

So that you get the most from your engines, we work closely with engine manufacturers and their component suppliers, making sure that our products help to enhance operational efficiency and offer increased component protection and extended oil and equipment life. We often work in parallel with manufacturers to develop lubricants for new engine designs. Shell lubricants are either approved or meet the specifications of many equipment manufacturers, including

- ABB
- Alfa Laval
- Caterpillar
- Daihatsu
- Guangzhou Diesel
- Engine Factory
- MAN Diesel
- MTU
- Pielstick
- Rolls-Royce
- Wärtsilä
- GEA Westfalia Separator.

EFFICIENCY FOR YOUR POWER GENERATION OPERATION

Over many years of working with the world's power generators, our lubricants experts have developed a deep understanding of your industry challenges. We can use our knowledge and experience to create a lubrication plan for your business and tailor our technology-leading products and services to help you meet the needs of your business.

Challenge us to demonstrate how we can add value to your operations by **contacting your local Shell Lubricants customer service centre.**



shell.com/power

"Shell Lubricants" refers to the various Shell companies engaged in the lubricants business.

¹Savings reported by individual customers. Actual savings may vary, depending on the application, the current oil used, the maintenance procedures and the condition of the equipment.