



SOUTH AFRICAN POWER COMPANY REDUCES ENERGY CONSUMPTION WITH SHELL OMALA S4 GX

TOTAL REPORTED ANNUAL CUSTOMER SAVING

US\$170,000



COMPANY: Eskom

COUNTRY: South Africa

APPLICATION: Fan gearboxes

SAVING: US\$170,000 total reported annual customer saving

KEY EDGE: Shell Omala S4 GX, Shell LubeExpert

Electricity company Eskom in South Africa wanted to improve operating efficiency at its power stations. The company was using a mineral oil to lubricate the fan gearboxes and was considering the benefits of switching to a synthetic oil.

Shell technical experts recommended that Eskom should trial Shell Omala S4 GX, an advanced, synthetic industrial gear oil, in the 13 gearboxes at one of the power stations. The company also decided to take advantage of the Shell LubeExpert specialist technical support service.

By switching to Shell Omala S4 GX, Eskom found that the operating temperature of the gearbox had reduced to 69–73°C compared with 73–80°C when using the mineral oil at similar loads. The results of the trial showed that Shell Omala S4 GX, in combination with improved lubrication practices, provided energy savings of between 2.2 and 3.8%.

As well as reduced energy consumption, the company benefited from extended oil-drain intervals, lower lubricant consumption and longer component life. Eskom was also able to reduce operational downtime and maintenance costs. As a result, the company has reported a total annual saving of US\$170,000.



1

CHALLENGE

Electricity company Eskom in South Africa wanted to improve operating efficiency at its power stations and was considering switching from a mineral to a synthetic oil to lubricate its fan gearboxes.

2

SOLUTION

Shell technical experts recommended that the company should trial Shell Omala S4 GX in the 13 gearboxes at one of the power stations. The company also took advantage of the Shell LubeExpert specialist technical support service.

3

OUTCOME

The results of the trial showed that Shell Omala S4 GX, in combination with improved lubrication practices, provided energy savings of between 2.2 and 3.8%.

4

VALUE

As well as reduced energy consumption, Eskom benefited from extended oil-drain intervals, lower lubricant consumption and longer component life. It was also able to reduce operational downtime and maintenance costs. As a result, the company has reported a total annual saving of US\$170,000.¹

¹The savings indicated are specific to the calculation date and mentioned site. These calculations may vary from site to site and from time to time, depending on, for example, the application, the operating conditions, the current products being used, the condition of the equipment and the maintenance practices.



SHELL OMALA S4 GX

ADVANCED, SYNTHETIC INDUSTRIAL GEAR OIL

Shell Omala S4 GX is an advanced, heavy-duty, synthetic industrial gear oil offering excellent lubrication performance under severe operating conditions, including reduced friction, long service life and high resistance to micropitting for optimal gear protection.



Applications

- Wind turbines and other inaccessible installations. Shell Omala S4 GX is particularly recommended for systems where extra long oil life is required, maintenance is infrequent or systems are inaccessible.
- Enclosed industrial gear systems. Shell Omala S4 GX is recommended for industrial reduction-gear systems operating under severe conditions, such as high load, very low or elevated temperatures, and wide temperature variations.
- Other applications. The oils are suitable for lubricating bearings and other components in circulating and splash-lubricated systems. For highly loaded worm drives, the Shell Omala W series oils are recommended. For automotive hypoid gears, the appropriate Shell Spirax oil should be used.

Performance features and benefits

- Long oil life – maintenance saving. Shell Omala S4 GX is formulated using an advanced additive system in combination with specially selected synthetic base fluids to provide excellent resistance to breakdown over long-duration and/or high-temperature operation. This performance is recognised by Flender: a formal approval for 20,000 hours' (four years') use at 80°C (bulk oil temperature) has been granted. Shell Omala S4 GX can operate successfully at bulk oil temperatures up to 120°C. The product offers the potential to significantly extend service intervals compared with conventional industrial gear oils.

- Excellent wear and corrosion protection. Shell Omala S4 GX is formulated to have excellent load-carrying capacity and micropitting performance to provide long component life, even under shock-load conditions. These features provide benefits over mineral oil-based products in terms of gear and bearing component life. Shell Omala S4 GX also offers excellent corrosion protection, even when contaminated by water and solids.
- Maintains system efficiency. Shell Omala S4 GX can help to maintain or enhance the efficiency of industrial gear systems through improved low-temperature performance and lower friction compared with mineral oil-based products. This provides better lubrication at low start-up temperatures. Shell Omala S4 GX oils have excellent water separation properties, so that excess water can be easily drained from lubrication systems to help extend the life of the gears and ensure efficient lubrication of the contact areas.

Specifications and approvals

Shell Omala S4 GX is fully approved by Flender and Gamesa (wind turbine gearboxes). It meets the requirements of ISO 12925-1 Type CKD, except ISO 1000; ANSI/AGMA 9005-E02 (EP), except ISO 1000; US Steel 224, except ISO 1000; David Brown S1.53.106, except ISO 1000; and DIN 51517-3 (CLP), except ISO 1000.

Complementary products

Equipment	Lubricants
Hydraulic systems	Shell Tellus
Gears	Shell Omala
Compressors	Shell Corena
Slideways	Shell Tonna
Industrial greases	Shell Gadus