

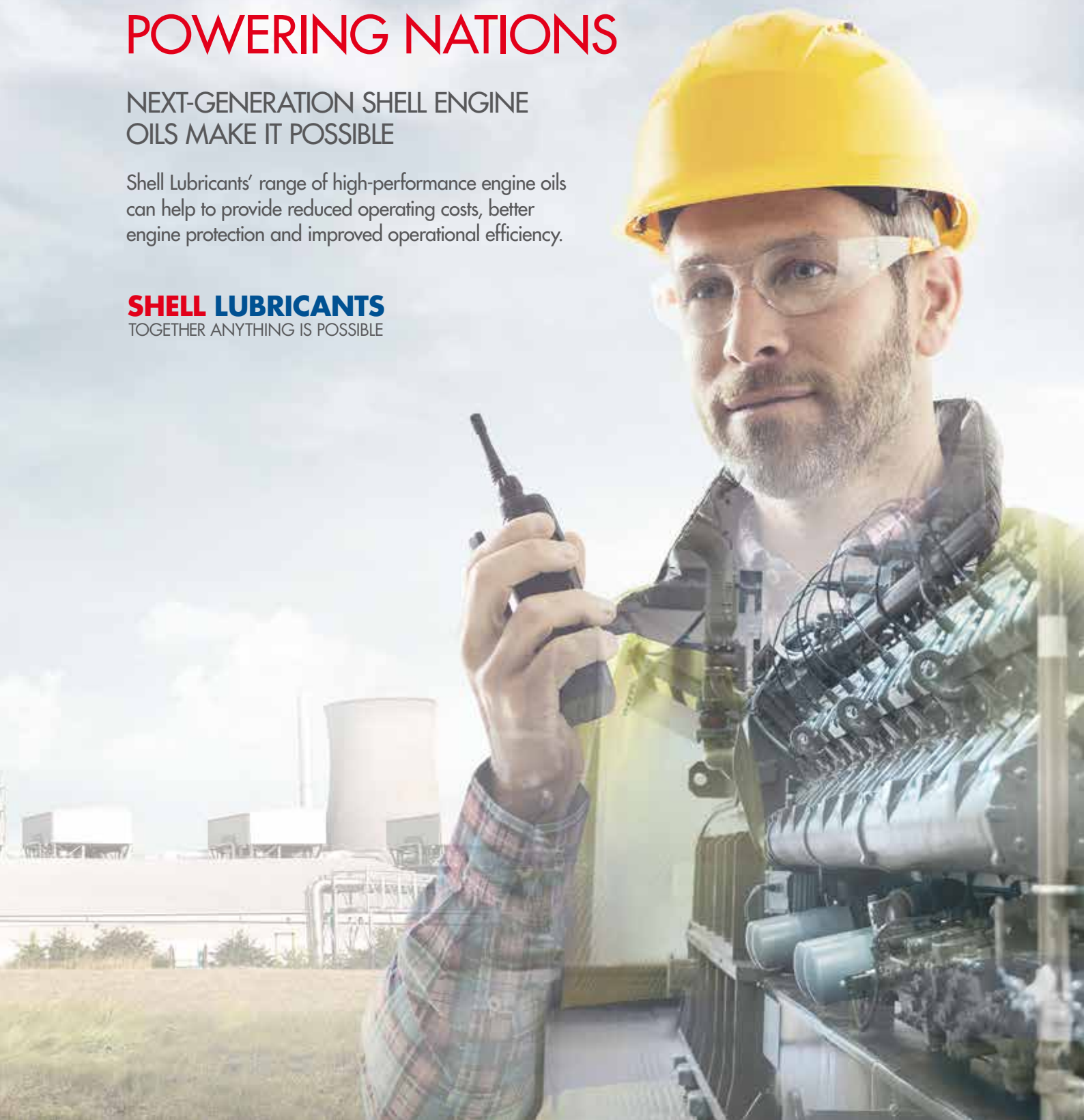


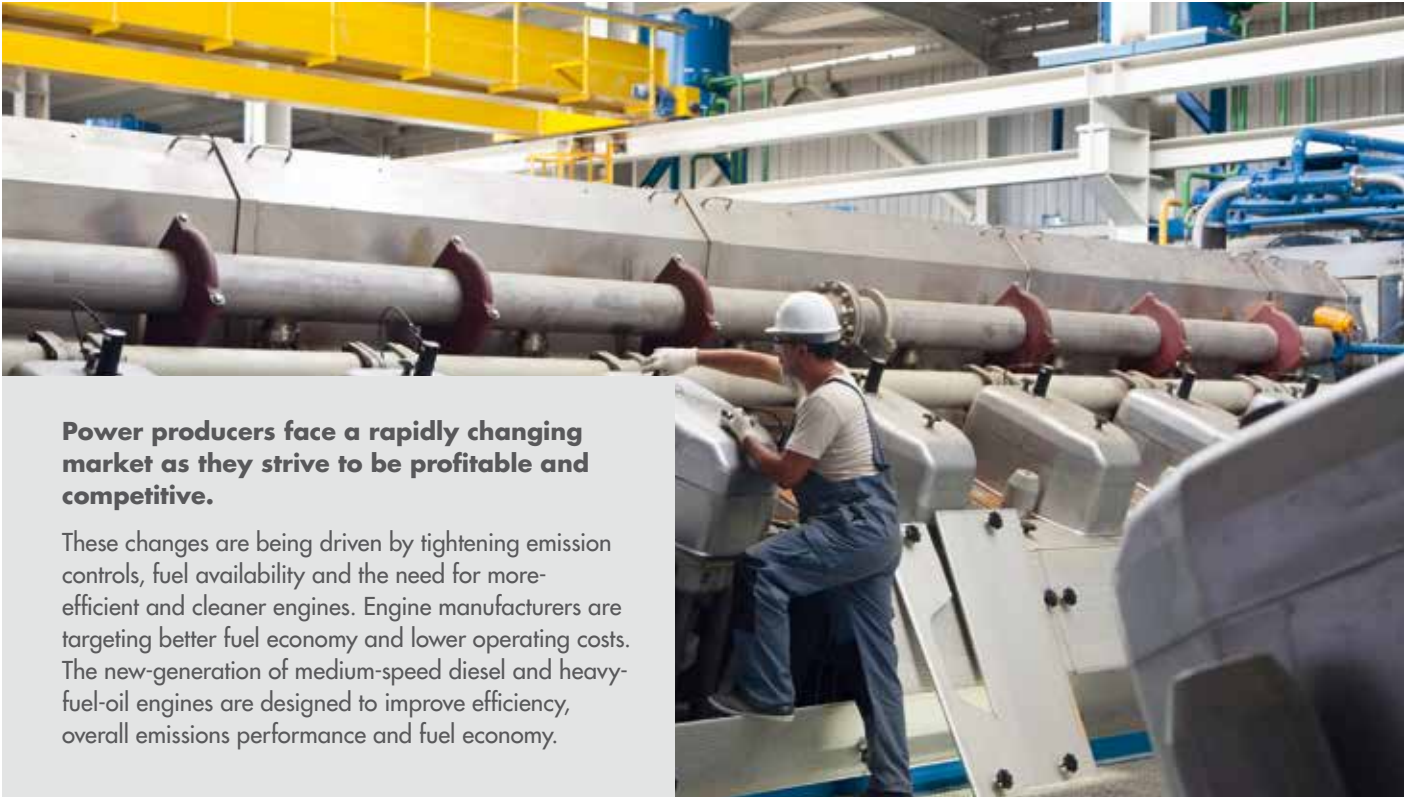
FROM MEETING CHALLENGES TO POWERING NATIONS

NEXT-GENERATION SHELL ENGINE
OILS MAKE IT POSSIBLE

Shell Lubricants' range of high-performance engine oils can help to provide reduced operating costs, better engine protection and improved operational efficiency.

SHELL LUBRICANTS
TOGETHER ANYTHING IS POSSIBLE





Power producers face a rapidly changing market as they strive to be profitable and competitive.

These changes are being driven by tightening emission controls, fuel availability and the need for more-efficient and cleaner engines. Engine manufacturers are targeting better fuel economy and lower operating costs. The new-generation of medium-speed diesel and heavy-fuel-oil engines are designed to improve efficiency, overall emissions performance and fuel economy.

Although they deliver efficiency for the user, the latest engines place greater stress on the oil through higher pressures and temperatures. This can mean that the oil undergoes rapid base number (BN) depletion and viscosity increase. In addition, the lower natural specific lube oil consumption (SLOC) may increase the need for sweetening. Greater variability in fuel quality also means that the lubricant needs to be able to handle poor-quality fuels.

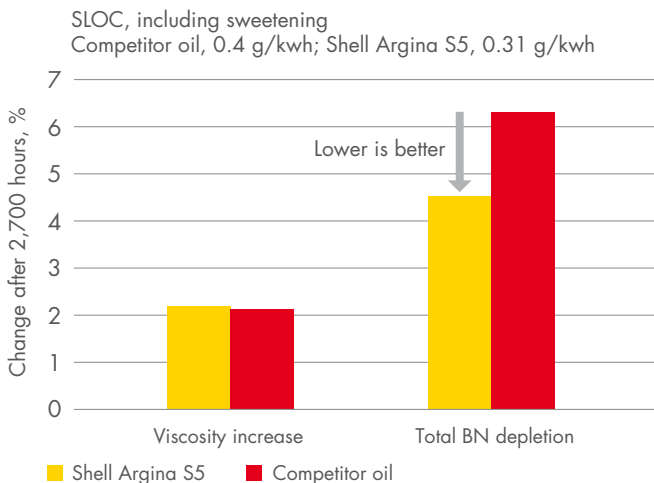
SHELL ARGINA

New Shell Argina S5 is a BN55 grade engine oil designed for the latest, high-output and dual-fuel engines from MAN and Wärtsilä. It has improved base number (BN) retention and viscosity control, and has been trialled in the most demanding applications.

In tests to measure performance compared with a competitor's oil, Shell Argina S5 demonstrated

- 18% better BN retention
- 22% less oil consumption

resulting in a reduction in overall oil consumption from 0.4 g/kwh to 0.31 g/kwh.



Performance of Shell Argina compared with a competitor's oil

SHELL GADINIA

Shell Gadinia S3 has been developed for diesel engines and is approved for a broad range of ancillary equipment. Shell Gadinia S3 has been specially optimised to minimise liner lacquering, which can be a problem in some engine designs. It can also be used for non-engine applications such as reduction gears and stern tubes and can provide a single lubricant solution for smaller vessels.

In tests using a Caterpillar MAK 8M20 engine, Shell Gadinia S3 showed better wear performance, compared with traditional grades.



Shell Argina S5 and Shell Gadinia S3 can help to reduce operating costs through lower maintenance requirements. Their enhanced viscosity control and resistance to oxidation reduce the need for sweetening. They can also help to protect assets by keeping engines clean through deposit control.

SHELL MYSELLA

The Shell Mysella range of gas-engine oils has been developed to enable equipment operators to select the oil that will help deliver optimum value to their operations through enhanced wear protection, long oil life and high system efficiency.

Shell Mysella S5 N is a premium-tier product designed to meet the challenges posed by the latest high-brake-mean-effective-pressure engines. It offers an extremely long oil life to help extend maintenance intervals and excellent engine protection. It is formulated to control deposits, maintain ring belt cleanliness and protect the cylinder liners, even under the high-temperature, high-pressure conditions in modern engines.










It also provides superior deposit control, even in the latest generation of high-output engines that operate in very severe conditions with very high piston temperatures and pressures. This helps to maintain excellent ring belt cleanliness and cylinder liner protection.

HELPING TO MEET CHALLENGES

Shell's technical experts work with customers to offer guidance on current operations, enhancing lubricant management practices and selecting the right products to deliver value. The Shell Argina, Shell Gadinia and Shell Mysella portfolios have been designed to offer the enhanced oil performance demanded by the new engine designs and can withstand the higher oil stress. They also offer reduced operating costs, better engine protection and improved operational efficiency.

A RANGE OF STATIONARY ENGINE OILS TO MEET YOUR NEEDS

To meet the challenges of the demanding applications faced by the power industry, Shell has designed a portfolio of oils that enables you to choose a product to match your technical and operational needs.

		SHELL ARGINA RANGE Marine and stationary engines with low SLOC and/or burning high-sulphur heavy fuel oil	SHELL GADINIA RANGE Marine and stationary engines burning diesel or other distillate fuels	SHELL MYSELLA RANGE	
				Natural or mid sour gas	Natural or sour gas
↑ INCREASINGLY EFFICIENT PROTECTION	ADVANCED	Shell Argina S5 <ul style="list-style-type: none"> Extra protection from deposits and corrosion Extended oil life BN55 		Shell Mysella S5 N <ul style="list-style-type: none"> Extra protection from deposits and corrosion Extended oil life 	Shell Mysella S5 S <ul style="list-style-type: none"> Extra protection from deposits and corrosion Extended oil life 
	MAINSTREAM	Shell Argina S4 <ul style="list-style-type: none"> Extra protection from deposits and corrosion Extended oil life BN40  <p>Marine and stationary engines burning low-sulphur heavy fuel oil</p>			
		Shell Argina S3 <ul style="list-style-type: none"> Protection from deposits and corrosion BN30 	Shell Gadinia S3 <ul style="list-style-type: none"> Extra protection from deposits and corrosion Wide applicability in non-engine applications BN12 	Shell Mysella S3 N <ul style="list-style-type: none"> Reliable protection Low ash content for four stroke engines 	Shell Mysella S3 S <ul style="list-style-type: none"> Extra protection* Medium ash content for four stroke engines 
		Shell Argina S2 <ul style="list-style-type: none"> Protection from deposits and corrosion Suitable for residual, blended and distillate fuels BN20 			

APPLICATION ICON KEY

Power engine	Long life	Pipelines
Power station	Natural gas	Enclosed gears
Fishing boats	Landfill biogas	

*Compared with market representative products

THE SHELL ARGINA, SHELL GADINIA AND SHELL MYSELLA PORTFOLIOS HAVE BEEN DESIGNED TO OFFER THE ENHANCED OIL PERFORMANCE DEMANDED BY THE NEW ENGINE DESIGNS AND CAN WITHSTAND THE HIGHER OIL STRESS.



ADDING VALUE THROUGH TECHNICAL SERVICES

For you to get the most value from our lubricants, and as part of a lubrication management programme, we recommend our technical services.



Shell LubeAnalyst is an oil and equipment monitoring service that provides a health check for lubricants and machinery by benchmarking equipment performance against a large global database.



Shell LubeAdvisor helps to identify quantifiable areas for lubrication improvement through site assessments conducted by our specialised Shell lubricant technical advisors.



Shell LubeMatch, an easy-to-use online service, recommends lubricants for specific industrial applications.



Shell LubeCoach is a customised training programme led by our technical experts and designed to develop understanding of lubrication.



Find out more by visiting
www.shell.com/lubricants