

Summary

Power Systems is a leading provider of high- and medium-speed reciprocating engines, complete propulsion and drive systems, distributed energy solutions and fuel injection systems. The business serves the marine, naval, land defence, rail, mining, oil & gas, construction & agriculture and power generation markets through its core brands MTU, MTU Onsite Energy, Bergen and L'Orange.

Key highlights

- Underlying revenue 3% lower; weaker original equipment partially offset by good growth in services.
- Underlying profit before financing 15% lower; led by lower gross margin.
- Positive outlook for 2016; healthy closing order book with good positions in key market segments.
- Long-term R&D investments to increase cost competitiveness in higher volume engine applications.

MTU diesel engine

Our MTU brand is a world leader in high-speed diesel engine power.

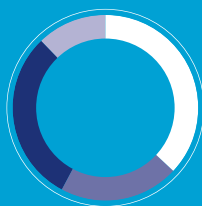


Underlying revenue mix



■ OE revenue	68%
■ Services revenue	32%

Underlying revenue by sector



■ Marine	37%
■ Industrial	21%
■ Energy	30%
■ Defence and other	12%

POWER SYSTEMS

OPERATIONAL REVIEW

Underlying revenue of £2,385m was 3% lower on a constant currency basis (12% lower at actual rates). Original equipment revenue was 5% lower, reflecting weaker oil & gas markets and weaker governmental demand which peaked in 2014. This was partially offset by an improved luxury yacht demand and some recovery in our sections of the construction and agriculture market where new emissions regulations increased demand. Underlying service revenues were up 3% despite some weakness in spare parts sales in North America and Europe.

Gross margins were slightly lower at 26.6% (2014: 27.3%) reflecting a change in product mix and lower overall volumes as expected.

Underlying profit declined 15% as a result of the lower gross margins. On a constant currency basis costs below gross margin were unchanged.

Investment and business development

Our Power Systems business serves a variety of markets ranging from marine, industrial, construction & agriculture to defence and power generation. This diversity enabled the business to mitigate some of the weak environment, particularly that linked to oil and commodities.

2015 order intake was £2.5bn (2014: £2.6bn) with the closing order book broadly unchanged at £1.9bn. Within this, the defence sector demonstrated greater resilience with a combination of a higher proportion of long-term service contracts together with the winning of the first order worth approximately €80m from the British Army for 589 MTU diesel engines for the new Scout Specialist Vehicle.

Within the broad range of industrial applications, while a number of markets deteriorated through the year, there was positive news. This included contract wins from a Chinese company for 232 MTU Series 4000 engines for freight locomotives bound for South Africa, and further orders for luxury yacht engines. An extension to our longstanding co-operation with Daimler was also agreed for the development of a new range of industrial engines, which comply with new EU off-highway regulations for reduced soot emissions.

The energy segment generated an increased order intake in 2015 reflecting good growth in gas gensets, particularly in Asia. In addition, the easing of the trading embargo with Iran is enabling the business to secure a good foothold in the country. As a result, we enjoy a strong market position within back-up power, particularly for larger mission-critical applications, which is a growing market. Recent notable orders came from Kuwait, Turkey and Bangladesh for the provision of back-up power for hospital modernisations and continuous power for a steel mill.

Power Systems outlook

The outlook for Power Systems remains steady. The business finished the year with a healthy order book for many of its key markets. As a result, while some markets remain difficult, we continue to expect the business to deliver modest growth in revenue and profit in 2016.

Closing order book

£1.9bn

POWER SYSTEMS / KEY FINANCIAL DATA

£m	2014	Underlying change	Acquisitions & disposals	Foreign exchange	2015
Order book	1,971	(43)	—	—	1,928
Underlying revenue	2,720	(72)	—	(263)	2,385
<i>Change</i>		-3%	—	-10%	-12%
Underlying OE revenue	1,893	(97)	—	(178)	1,618
<i>Change</i>		-5%	—	-9%	-15%
Underlying services revenue	827	25	—	(85)	767
<i>Change</i>		+3%	—	-10%	-7%
Underlying gross margin	742	(37)	—	(70)	635
<i>Gross margin %</i>	<i>27.3%</i>	<i>-70bps</i>	—	—	<i>26.6%</i>
Commercial and administrative costs	(296)	(9)	—	30	(275)
Restructuring costs	(7)	3	—	—	(4)
Research and development costs	(183)	3	—	18	(162)
Joint ventures and associates	(3)	3	—	—	—
Underlying profit before financing	253	(37)	—	(22)	194
<i>Change</i>		-15%	—	—	-23%
Underlying operating margin	9.3%	-110bps	—	—	8.1%

MARKET REVIEW

The markets served by Power Systems are driven by global megatrends such as increasing population growth, rising energy, resource and food demand, increasing and stricter emissions legislation and government defence budgets. Despite the current market downturn in some of our markets, most noticeably in oil & gas and offshore, we expect long-term recovery in these and continuous growth in all of our markets. We estimate that Power Systems 'off-highway' reciprocating engine markets offer an opportunity of £650bn.

Potential for OE and services over the next 20 years

Power Systems – all sectors

£650bn

Market dynamics

- Population growth and increasing urbanisation are driving rising demands for energy, resources and food and continuous infrastructure developments.
- Global GDP development with particular growth in Asia.
- Increasing global and regional trade and transport of goods.
- Geopolitics and an increasing multipolar world are driving modest defence budget growth (1-2%) in NATO countries with more growth in emerging markets.
- Increasing focus on renewable energy sources requires decentralised and clean energy solutions (eg. continuous gas and back-up power generation solutions).
- Increasing environmental legislation and efficiency requirements drive emission and efficiency technologies.
- Current weak environment in certain markets (eg. oil & gas and mining), due to current low oil and commodity price levels.

Business risks

- Economic: some markets are currently affected by low oil and commodity prices (oil & gas, mining) while some regional markets show challenges due to the current economic situation.
- Political: increasing political tensions and sanctions might limit levels of global trade and customer access.
- Competitive: upcoming competitors from Asia and new entrants into our existing markets can potentially put pressure on volumes and margins.
- Technological: complementary technologies might replace existing solutions eg. energy storage for back-up power.

Competition

- Fragmented competitor landscape in 'off-highway' engine markets which varies depending on specific market segments – many players although a few dominate.
- Continuing industry consolidation results in strong, large scale and integrated players.
- Expansion of western competitors in our specific core engine markets.
- Competition from Asia increasingly focusing on higher power ranges where MTU operates.
- While traditional competition has been limited to engine suppliers, solution providers are becoming more relevant.

Opportunities

- Regional growth, eg. Asia, through leveraging partner companies.
- Continuous development into clean propulsion and energy solutions which are compliant with new emissions regulations.
- Development of efficiency solutions, eg. e-drive/hybrid drives and fuel diversification towards gas/dual-fuel.
- Enhancement of system competence and solutions to create customer value through optimised total system functionality and performance.
- Expansion of service portfolio, customised offerings and intelligent applications and services.

Key Rolls-Royce differentiators

- Technology leadership and reputation with market-leading performance and system approach especially in mission-critical applications; new product innovation (eg. hybrid/e-drive); and high level of customisation.

High-efficiency power for trains

Hybrid rail technology is the energy-saving combination of a conventional diesel engine and an electric drive system.

During 2015, Rolls-Royce completed further trials on its hybrid drive power system, the result of five years of pioneering work.

A conventional MTU railway PowerPack combines all the individual elements needed for power and efficiency into a single functional unit mounted on a supporting frame. MTU has delivered more than 6,000 of these PowerPacks to the rail industry.

The MTU hybrid PowerPack combines the benefits of a conventional diesel system with an electric propulsion module, energy storage and propulsion control system.

The basic idea of hybrid rail technology is that the kinetic energy initially generated by the diesel engine is recovered via an electric motor operating as an electric brake. This energy is stored chemically in a powerful battery for later use.

The recovery of the kinetic energy in braking mode is extremely energy- and cost-efficient, particularly in stop-and-go situations on local public transport lines where there are a large number of stops and on inclined rail sections on hilly terrains.

In 2015, for the first time, MTU performed its own tests on a hybrid train. During the tests, fuel consumption was shown to be reduced by more than 23% compared to straightforward diesel mode. Under optimum conditions, MTU believes fuel savings of 25% or more are possible.



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