



Score **Energy Limited**

Intelligent Gas Turbine Solutions™

www.score-group.com



Gas Turbines Services

Introduction

An international organisation with over 30 locations worldwide, Score Group plc has evolved from its roots in the North East of Scotland to provide a network of services on every continent.

Score Energy was established over 20 years ago as an independent supplier of aeroderivative gas turbine services. We specialise in overhaul, repair, upgrade, modification, testing and supply of gas turbines, fuel systems and accessories.

- Gas turbine overhaul, repair and testing
- Fuel systems, accessories and auxiliaries
- Dry Low Emission centre of excellence
- Field service support
- Condition and emissions monitoring
- Component repair
- Long term service agreements
- Gas turbine lease and sales
- Training

Customer Focus

Our goal has always been to provide complete customer satisfaction by delivering flexible, cost effective and reliable solutions which combine quality, technical innovation and improved performance.

We recognise the importance of providing fast turn around times, tailored to suit your requirements and adopt a system where we manage all services, an extensive parts inventory and rotatable exchange units 'in-house'.

Our dedicated team form a worldwide service network of partner support, 24 hrs a day.....365 days a year.



Gas Turbine Overhaul & Repair

Our purpose built gas turbine overhaul and test facility located in Aberdeenshire, Scotland provides operators with a complete service for Rolls-Royce Avon, RB211 and Olympus aeroderivative gas turbines.

By going beyond current industry standards, we provide a superior service through the application of advanced repair schemes and coating technologies. As a result, module assembly and engine final build standards achieve consistently higher levels of operational efficiency and reliability.



- Market leading facilities
- Advanced coating technologies
- Cost effective repair schemes
- Extended life span and reliability
- Higher operational efficiency
- State-of-the-art engine test facility (gas and liquid fuels)
- Extensive spares inventory



Overhaul & Repair

Fuel Systems, Accessories & Auxiliaries

Unique OEM approvals and the latest aeroderivative service facilities allow the support of a vast range of equipment across many engine types manufactured by General Electric, Siemens, Rolls-Royce and Solar. A high quality and unparalleled turn around service utilising OEM parts and procedures ensure maximum performance and life span whilst retaining engine warranty. Our customer base includes major service centres, end users and OEM's throughout the world.

We carry a large stock of parts and rotatable exchange units which can be shipped prior to planned shut down and therefore keep downtime to an absolute minimum

Only facility in the world approved by Parker Hannifin and General Electric to carry out the overhaul, testing, repair and GE service bulletin upgrades on the complete range of LM gas turbine fuel nozzles and accessories.



Only facility in the world approved by Siemens to carry out the overhaul, testing and repair of Light Industrial Turbine Fuel Burners and Accessories.



Fully approved and supported for overhaul on the complete range of industrial fuel system components.



- Fuel nozzles, valves, regulators and pumps
- Bleed air and thrust balance control valves
- Fuel dividers, manifolds and feed pipes
- Lube oil pumps and valves
- Hydraulic controllers, pumps and servo's
- VSV and IGV actuators
- Starter motors
- Staging valves
- Sensors, cables and harnesses

General Electric

- LM1600
- LM5000
- LM2500
- LM6000
- LM2500+
- Frame

Rolls-Royce

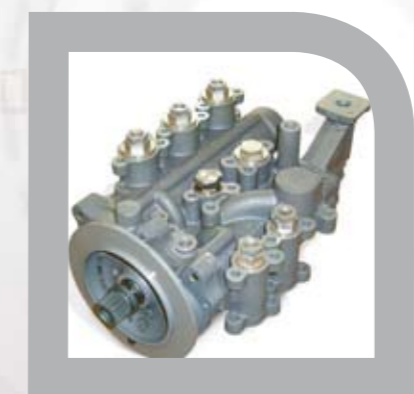
- Allison
- Avon
- Olympus
- RB211

Siemens

- TA1750
- TB3000
- TB4000
- TB5000
- TD4000
- Tornado
- Typhoon
- Cyclone
- Tempest

Solar

- Centaur
- Mars
- Taurus
- Titan



Dry Low Emission “Centre of Excellence”

Exclusive OEM approvals allow Score to provide the worlds **only** authorised DLE (Dry Low Emission) pre-mixer Overhaul, Repair, Testing and Supply facility for General Electric LM Gas Turbines. We also process a wide range of DLN (Dry Low NOx) fuel systems across a range of engines, as listed on page 5.

All overhaul services are managed ‘in-house’ utilising the latest equipment and technology. These services are supported by the worlds largest stock of DLE pre-mixer components, providing our customers with an unparalleled turn around service, minimising engine downtime and associated costs.



Condition & Emission Monitoring

Customised to suit your operational requirements, our complete condition monitoring systems detect the early stages of failure enabling maintenance routines to be planned, avoiding costly secondary damage.

We have developed GenMap, an online solution which analyses mechanical deterioration and performance loss. GenMap is tailored to be installation specific and can include the following:-

GenMap™

- Vibration spectral analysis
- Airflow control geometry
- Mechanical monitoring
- Lube oil debris analysis
- Emissions monitoring (CO₂, CO, NO_x, SO_x, unburned hydrocarbons)
- Compressor wash optimisations



The GLEN Test Cell

The **Ground Level EN**gine test facility was opened in 2003 to provide the worlds most advanced dual fuel gas turbine test facility to operators in the power generation and oil & gas industries.

At its core, the GLEN's high technology precision calibrated test bed is capable of testing industrial turbines up to 60MW in both liquid or gas fuel. We can also provide the unique option of steam/water injection for projects such as research and development.

- Liquid and gas fuel testing
- High performance data logging system
- ISO standard for test cells/testing engines
- Vibration spectral analysis
- UKAS certified, traceable to first principles
- Full 360° access to engine on test
- Hydraulic, electric and air starter systems
- Customer controlled live web monitoring system



Performance Testing

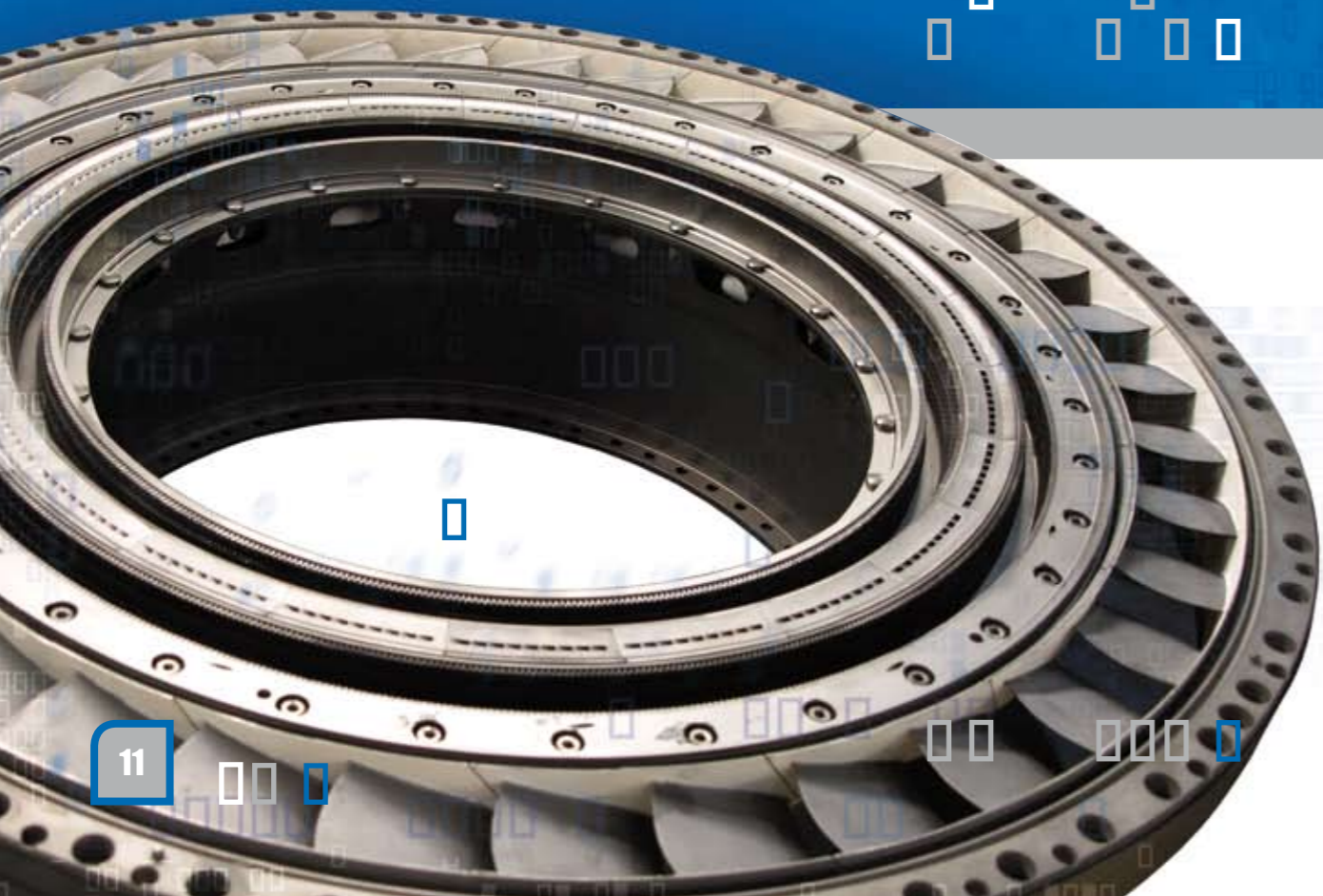
Component Repair

Score Energy provide an industry leading gas turbine component inspection, repair and overhaul service over a wide range of Rolls-Royce, GE, Siemens and Solar equipment.

We carry out component overhaul 'in-house' to OEM specifications, but have also developed advanced repairs and coatings which improve turbine performance and extend service life.

These tested and validated advanced repairs, allow us to salvage components which would otherwise be replaced with costly new ones.

- Component salvage and repair
- Specialised surface treatment and coatings
- Vacuum brazing and heat treatment
- CNC machining
- Ultrasonic and pyrolytic cleaning
- Electro discharge machining and precision grinding
- Automated and electron beam welding



Field Service Support

Our five strategically placed field service centres allow us to provide rapid support anywhere in the world. Routine inspection and maintenance from these sites can be arranged upon request or as part of a long term service agreement.



- Troubleshooting, routine inspection and maintenance
- Boroscopic inspections
- Gas turbine installation and commissioning
- Onsite repairs
- Consultancy and maintenance planning



Parts Management

In support of our overhaul facilities we maintain over \$30million of both new and overhauled parts for various manufacturer's gas turbines, fuel nozzles and auxiliary units. Through our association with various OEM's we can also offer access to a vast range of engine spare parts for direct supply.

- As part of a spares management contract Score Energy design and supply operational spares kits which cover all common maintenance scenarios. This approach ensures that all necessary spares will be on hand to minimise downtime during maintenance activities and unplanned shutdowns. Our fleet of pre-tested lease engines and serviceable equipment are available to provide immediate support to our customers worldwide.

All parts are certified and covered by our extensive warranties.

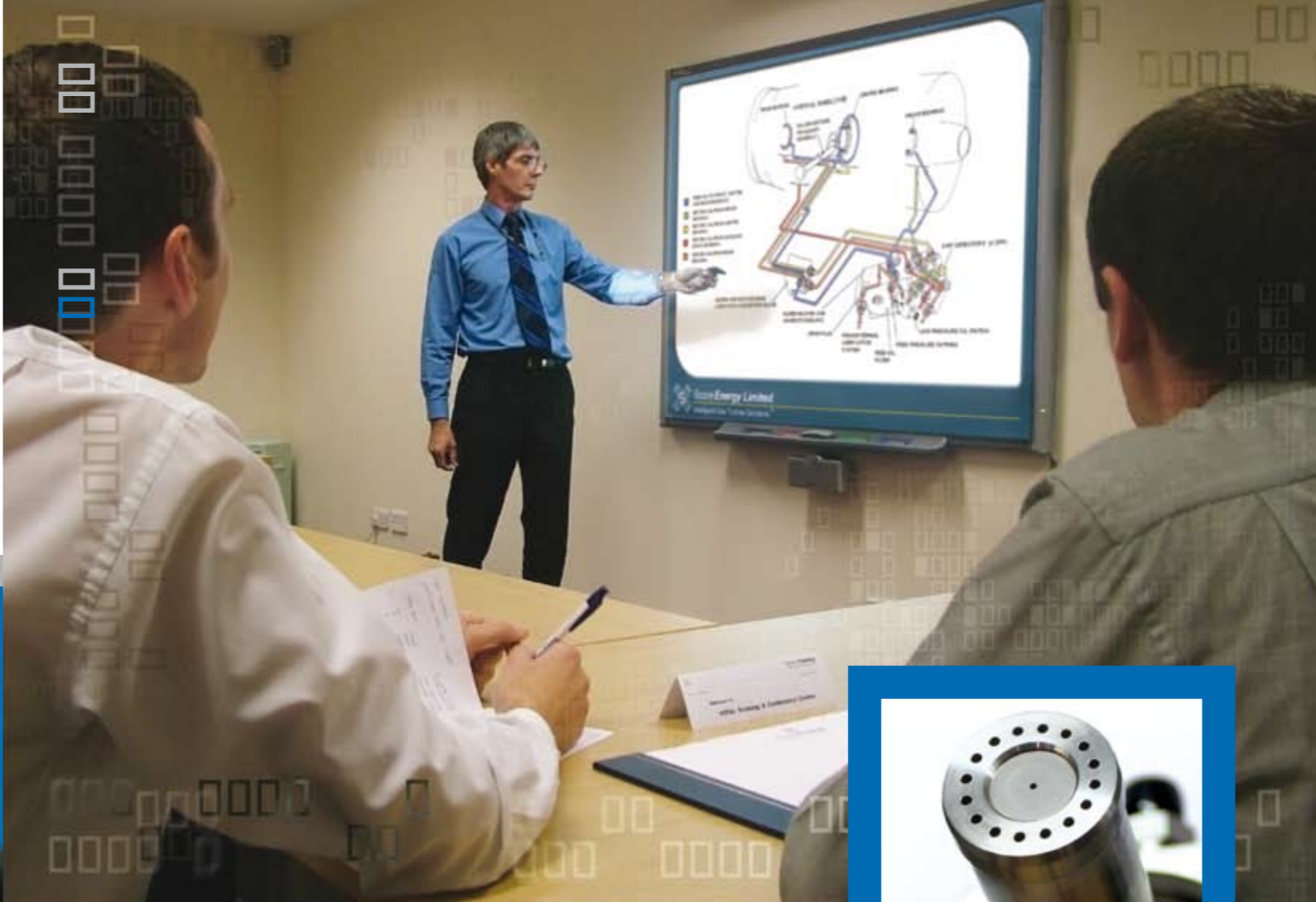


Gas Turbine Consultancy

Our team of highly experienced engineers can provide a complete range of gas turbine consultancy services. We have a proven track record of problem solving and improving plant performance. Consultancy services can be provided ad-hoc or as part of a comprehensive gas turbine management package.

Complete turbine management packages can be tailored to satisfy each individual customers requirements. Our intelligent turbine management solutions provide a structured process of continual improvement ensuring engine condition and operational data is used for maximum effect. By optimising spares holding, maintenance and operations procedures we ensure that our customers develop and retain a competitive advantage.

- Intelligent Turbine Management
- Problem solving and investigation
- Equipment selection
- Independent witnessing
- Operations and maintenance audits
- Technical support



Generating Solutions

Our extensive and multidisciplinary engineering capability allows us to offer complete solutions. Operators can realise significant reliability improvements by replacing obsolete or troublesome equipment with reliable engineered solutions.

By combining operations expertise and auxiliary system design under one roof, we can offer our customers a 'single shop' solution. With access to the most advanced analytical and design tools we ensure our customers obtain the maximum benefits from recent technological developments when replacing original package equipment.



- Instrumentation and control systems
- Vibration protection systems
- Fuel systems
- Lubrication and hydraulic systems
- Compressor wash systems

Score - A Culture of Quality

Score Energy is committed to our customers, the environment, and our employees by implementing the latest industrial quality systems, processes and employee training programs.

Quality with Score industrial systems

Quality and Environment are an important part of our business culture. Rigorous efforts are made each day in meeting the expectations of ISO and other industrial certification guidelines.

Quality with Score employees

Supplementing our existing work force, we currently employ over 200 young men and women who are undergoing a comprehensive 6 year apprenticeship scheme which develops both their skills and knowledge base and ensures our next generation of engineers.



Modern Apprenticeships Awards
Employer of the Year 2008



VITAL

Virtual Intelligence for Training And Learning is an innovative web accessible training package developed by Score to ensure all our staff and technicians continue to apply best known practices, standards and techniques regardless of their location throughout the world. Supporting our commitment to training, we have media facilities encompassing a 300 delegate arena and four smaller conference suites, all fully equipped with the latest audio visual technology, based in our Aberdeenshire headquarters.

Customer Training

We recognise the importance of gas turbine operators having adequate product knowledge to ensure smooth and economic operation of these complex machines. Therefore, we have developed a range of gas turbine training courses specifically for plant maintenance and operations personnel, including engine specific familiarisation and maintenance procedures integrated into both practical and theoretical sessions.

- Olympus operations and maintenance
- Gas turbine condition monitoring
- Avon operations and maintenance
- RB-211 operations and maintenance



All courses are customised as to their content and duration to suit each client's particular needs. Our team of experienced instructors can travel to your location and deliver the courses onsite helping to cut down on logistical costs.





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ISO 9001:2000
Quality



ISO 14001:2004
Environment



OHSAS 18001:2007
Health & Safety



ISO/IEC 27001:2005
Information Security
Management



ITSMF
ISO/IEC 20000-1:2005
IT Service
Management



(97/23/EC)



Investor in People



ATEX



Supplier: 40447



ISO/IEC/EN/ 17025
Laboratory



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