



Score  
*Energy*  
*Limited*

**Gas Turbine and Accessories  
Specialist Newsletter**

Issue 1 Dec 2014



# About Score Energy

Score Energy was established over 20 years ago as an independent supplier of aero derivative gas turbine services. Since then they have built an award winning and customer focused Gas Turbine business based on technical expertise, and exceptional customer relationships and support.

With over 120 employees strategically placed at their worldwide service network they specialise in overhaul, repair, upgrade, modification, testing, supply and leasing of gas turbines, fuel systems and accessories 24 hours a day, 365 days a year.



## Bruce Buchan - Operations Director

2014 has been a great year for Scotland with the country's profile raised to new levels thanks to events such as the Glasgow Commonwealth Games, Homecoming Scotland and the Ryder Cup held at Gleneagles.

It has also been an exciting year for Score Energy Limited with increased customer numbers and higher than ever customer satisfaction ensuring that we maintain our position as the world's No. 1 aero-derivative gas turbine support company. This along with additional team members, expanded services and strong growth over the past 12 months allows us to position ourselves for an exciting 2015 in support of you our customer.

The expansion of our territory has allowed us to open a new service centre in Houston, Texas to service our customers in North and South America locally. We have also been successful in gaining approval from long established OEMs including Arkwin and Honeywell to our market-leading line-up of existing OEM approvals, meaning that we are now better placed than ever to support your requirements, wherever you are with whatever you need. You will find out more on these important initiatives throughout this newsletter.

Looking to 2015 we have already begun our investment programme which will see us building on our existing foundation to ensure we are offering additional services and solutions that help keep your gas turbine running.

We hope that the features in this inaugural issue of our Score Energy Newsletter will be of interest and value to our customers, and we look forward to any feedback which you may have.

Thank-you for your valued custom in 2014, and we look forward to continuing our support of you in 2015. With best wishes for the festive season Bruce Buchan Jnr.



# Score Energy goes global in partnership with Advanced Atomization Technologies, LLC.

Score Energy Limited expands global distribution and maintenance agreements with Advanced Atomization Technologies, LLC. and Parker Hannifin Corporation.

Score Energy has been an authorised repair centre and technology partner with Parker Hannifin for 25 years. With the joint venture, Advanced Atomization Technologies LLC, recently set up between General Electric and Parker Hannifin's Gas Turbine Fuel Systems Division, we have expanded the agreement to include global maintenance and distribution of the GE LM and LMS series of industrial gas turbine fuel and oil system products.

Score Energy has successfully provided authorised overhaul of over 100,000 Single Annular and Dry Low Emission (DLE) fuel nozzles. In addition, we have an exclusive, authorised DLE shroud repair process (demonstrated on nearly 3000 shrouds), which significantly reduces the overhaul cost of DLE fuel nozzles.

Also under this agreement Score Energy has expanded its repair network to include a new Fuel Nozzle and Accessory repair centre in Houston, Texas.

"Our expanded agreement with Advanced Atomization Technologies and Parker Hannifin continues to demonstrate our commitment to offer original equipment manufacturer (OEM) approved repair services to a global network of GE LM and LMS Service Depots and gas turbine operators, and expands on our "One-Stop-Shop" suite of accessory and fuel system services" said Bruce Buchan, Operations Director, Score Energy Ltd.

For more information and a full account of the extensive capabilities of Score Energy Ltd, please email [energycustomersupport@score-group.com](mailto:energycustomersupport@score-group.com) or visit [www.score-energy.com](http://www.score-energy.com)

**Fun Facts:** At the heart of Score Energy's Gas Turbine Test Cell is 'Thrust Bed-001' originally used by Sir Frank Whittle when he invented & developed the jet engine at RAF Farnborough. Score have taken this historic piece of engineering and brought it in to the 21st century and now use it to performance test gas turbines up to 60MW.

## Score Energy LLC open in Houston, Texas

In August Score Group plc opened their latest global service facility based in Houston, Texas. This state-of-the-art engineering and test facility, operated by subsidiary company Score Energy LLC and located alongside Score Valve Services Inc., allows Score to support their extensive customer base throughout the Americas from a central location.

The primary function of the new Houston facility is to provide a fully OEM-approved, one-stop service centre for the repair, overhaul, testing and service bulletin upgrading of fuel nozzles covering the complete range of General Electric's LM industrial gas turbine engines. However, with global capabilities covering most aero-derivative gas turbine fuel nozzles, accessories and a large stock of items such as DLE pre-mixers, lube & scavenge pumps, upgraded Honeywell bleed valves and TDI clutches and starters they are ideally placed to support your gas turbine operation.

For more information and a full account of the extensive capabilities of Score Energy LLC, please call +1 713 574 9680, email [energycustomersupport@score-group.com](mailto:energycustomersupport@score-group.com) or visit [www.score-energy.com](http://www.score-energy.com)



**Fun Facts:** One of the first Public Power Stations was built by Thomas Edison in 1882, his Pearl Street Power Station sent electricity to 85 buildings. People were initially afraid of electricity and parents would not let their children near the lights.

Fun Facts: One GE LM6000 gas turbine can produce enough electricity for a town with as much as 50,000 homes in it.



# Honeywell

## Honeywell Approval for Score Energy

On 8th August 2014 Score Energy Limited was approved by Honeywell International, Inc, to become an authorised service provider to service Honeywell's industrial bleed air valves. Score has introduced major upgrades to the Honeywell bleed valve product line and successfully demonstrated improved performance and tolerance to DLE operating conditions on more than 400 bleed valves and over an estimated 2.7 million operating hours.

The addition of Honeywell International is another major OEM endorsement of Score Energy as the premier provider of authorised repairs and distribution services for GE's LM and LMS series of aero-derivative fuel systems and accessories.

Over the past five years, Score has expanded its authorisations with Parker Hannifin, and added OEM authorizations by Woodward, Arkwin, Honeywell and Tech Development (TDI). In addition, Score Energy is an authorised supplier to GE Power & Water.

"We continue to expand our portfolio of authorised services to ensure our placement as the preferred One-Stop-Shop fuel systems and accessory repair source for GE Service Centres and engine operators," said Bruce Buchan, Operations Director, Score Energy Limited.

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**Fun Facts:** A festive one! General Electric was the first company to offer pre-wired Christmas light strings in 1904-1905. Prior to this, lights had to be hand wired on the tree. GE was unable to patent their string (or festoon), and suddenly the market was open to anyone who wanted to manufacture the strings.

## Arkwin Approval for Score Energy

With effect from 1st July 2014, Score Energy Limited (and its wholly owned subsidiaries) has been approved by Arkwin Industries, Inc. as an authorised independent service facility to service Arkwin's industrial gas turbine actuators.

The OEM agreement recognises Score Energy as the exclusive global distributor and service provider for Arkwin's industrial actuators. Most importantly, it will enable the company to provide a full range of services including distribution, sales, overhaul, exchange and repair for Arkwin actuators used with the GE aero-derivative LM2500, LM2500+, LM6000 and LMS 100 gas turbine engines.

This further expansion of capabilities at Score Energy provides customers with a one-stop shop covering the full range of LM fuel systems and accessories.



# TB5000 - History & Score Capabilities

## Introduction

The Siemens range of TB industrial gas turbine engines started with the TB3000 in the late 1960s as a twin-shaft machine for mechanical and electrical generation duties. Since these early days the power output has been increased to 4000hp and 5000hp, with the latest enhancement producing 5400hp.

As development progressed, mechanical arrangement changed little except for the introduction of an interduct between the gas generator and the power turbine when the TB4000 engine was introduced.

The gas generator consists of a 13-stage compressor and a 2-stage compressor turbine. External reverse-flow combustion chambers allow easy maintenance of the combustors and give a shortened overall length for the engine which incorporates a 2-stage power turbine supported from the gearbox casing and bolted to the gas generator via an interduct.

## A Great Win for Score

Score Energy are proud to have been awarded a multi-year contract for the support, refurbishment and maintenance of eleven TB5000 / 5400 gas generators and power turbines in the North Sea. This success reflects the wealth of experience gained over many years in the maintenance of rotating equipment, ranging from site visits by our own highly skilled field service engineers to major inspections, repairs, overhauls and testing involving multi-discipline teams at our overhaul facility at Peterhead.

**Fun Facts:** Did you know that the World's first commercially used gas turbine for the generation of electricity went into operation in 1939 in Switzerland?

Our in-house capabilities extend to include the refurbishment of accessories such as burner assemblies, blow-off valves and control valves.

Within our Score Energy workshops we can offer full overhaul of the gas generator and power turbine, which can include a full compressor rotor strip and rebuild, all scopes of work are carried out under ISO 9000 quality standards. This ensures that procedures are regularly assessed by internal and external quality control personnel. In order to reduce overhaul costs to the customer, many parts such as blading, combustion components, compressor discs and bearing journals are repaired rather than renewed.

In order to ensure longevity of operation and safe use, all turbine casings are treated with a sacrificial coating and after overhaul the TB gas generators are tested rigorously at Score Energy's on-site test facility, which is capable of dual-fuel operation.

Finally, to ensure complete satisfaction for our clients, live streaming of test data can be transmitted worldwide for remote witnessing by the customer.

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## Calum Melhuish returns to Score (Energy) Limited

As the Score Energy team continues to go from strength to strength we are delighted to announce that Calum Melhuish has come back to work for Score, where he started his gas turbine career over 14 years ago. He returns as Head of Sales & Business Development, based at our Glen Test Facility at Peterhead in Scotland, and will be responsible for our gas turbine, fuel nozzle and accessory sales, overhauls and customer support.

Calum has said *"What Score Energy have achieved and the capabilities they now have in place to support gas turbine users worldwide are second to none. I'm looking forward to being part of this dynamic team and working alongside some old and some new faces in support of our loyal customers. It's great to be back home!"* Calum can be reached at [calum.melhuish@score-group.com](mailto:calum.melhuish@score-group.com)



**Head of Sales  
and Business  
Development**

# Score Energy supports 'Skills for Work Energy'

Skills for Work (SFW) Energy is an all-girls initiative run by North East Scotland College (Fraserburgh Campus) and sponsored by companies including Score, Shell and Haliburton. It gives girls during their secondary school education an opportunity to visit engineering companies such as Score, and to observe and experience what working in the energy sector is all about, including basic engineering skills and the importance of team working.

During the current 2014-15 session, Score will once again be playing a large part in supporting the 82 girls from local schools who have enrolled for SFW Energy, including course sponsorship of 10 pupils from Ellon and Meldrum Academies.

Score Energy has already participated successfully and profitably in SFW Energy. In 2013-14, one of the girls was so impressed by what she had experienced on SFW Energy, that she chose to embark on a career in engineering with Score. This young lady is now an Engineering Trainee with Score Energy and part of Score Group's highly regarded Modern Apprenticeship Scheme.



*Picture of the SFW Energy pupils at their Induction Day*

## Apprentices given Tour of Score Energy

On 25th September the January 2014 intake of apprentices from the Peterhead Training Centre (Peterhead Engineers Development Limited, PEDL) were given an extensive guided tour of the Score Energy facility at Wellbank, Peterhead. The aim was to provide all new engineering apprentices with the opportunity to see at first-hand some of the work undertaken within Score Energy.

Supervised by four senior Score Energy apprentices, all departments within Fuel Nozzles and Accessories, Gas Turbine Overhaul and Repair, and Woodward Workshop and Flow Loop were visited, where team leaders provided in-depth information on activities and on-going projects within their own departments. A great deal of interest was generated and many questions were asked by the enthusiastic trainees.

The overwhelming conclusion, obtained from feedback the following day from the apprentices, was that the visit had been hugely successful and had provided a significant insight into the training opportunities on offer at Score Energy. It was also very encouraging to hear that many of the apprentices remarked that what they had seen on the tour had made them even more determined to complete the course at the Training Centre, so that they could then move on to experience the practical work opportunities within Score Energy.



**Fun Facts:** The first GE LMS100 PB DLE Engine in the world was used at the Winter Olympics at Sochi, Russia in 2014, and Score Energy have just completed the overhaul of the Premixer Nozzles from this engine.

# Meet Our Team



**Name:** Mark Webster

**Current Role?** Score Energy's Regional Sales Manager for the Americas based out of our new overhaul facility in Houston TX.

**Previous roles held in Score?** Initially started as Customer Support and Sales Manager for Europe. As we grew my role became more global with particular emphasis on developing business with the major Service Centres. I also took on the role of Contracts Manager to encourage major customers to enter into Agreements with Score before becoming Commercial Manager for Score Energy. When we were given the opportunity to open up the North American market place I was asked to start up a new overhaul facility in Houston and use this as our base to build a business centre for the entire Americas.

**How long have you been with the company?** It will be 10 years this January.

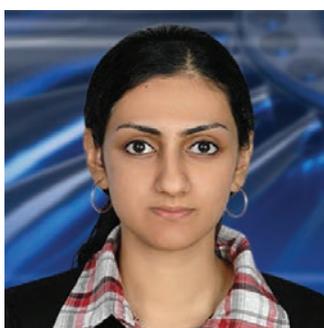
**What services do you provide to customers in the region?**

Initially we have set up our Houston facility to test, repair and overhaul fuel nozzles and specific accessories, which gives us a great opportunity to tap into the world largest gas turbine market place. As we establish ourselves and discover our customers' requirements the intention is to add additional members of the team and key overhaul capabilities to our portfolio so that eventually we can be a one stop shop for overhauling fuel nozzles and accessories for all Americas customers. We have some great customers in the region so it's exciting for us to be able to support them locally. Their feedback and support has been tremendous, so maybe I can take this opportunity to say thanks to our customers, as without them there's no us!

**What aspects of the job do you enjoy most?** Waking up every morning to glorious sunshine is a boost but to be honest it is the challenge of effectively starting a new business from the bare floor up. Establishing and growing a business in America is a fantastic opportunity for me and the local team. I'm pleased to have been entrusted with its development and know the support and experiences from my colleagues at our more established sites around the World will come in handy!

**Which is the favourite country you have visited and why?** I have been very lucky to have travelled the globe on Score business. I've enjoyed the Middle East, Asia and Europe. Paris and Rome are my favourite cities and Italy has to be up there as a favourite country but the obvious one is America as I've travelled here from an early age. I love the variety in its landscapes, cities and of course the diversity of the people. Where else can you get the beaches of California, mountains of Colorado and cities like New York.

**What advice would you give to one of our apprentices if they wanted to work in your region?** Like most countries these days, America is continually tightening up on immigration, they are looking for highly qualified or specially trained people so you need to achieve the highest level of qualifications you can. No matter which work path you choose to go down, education and training are the silver bullets. You are lucky as Score's apprenticeship scheme provides you with one of the best vessels in achieving these goals so stick in and the land of opportunity awaits you.



**Name:** Deela Raphael

**Current Role?** Sales Coordinator Middle East

**Previous roles held in Score?** Administration Assistant

**How long have you been with the company?** 7 years

**What services do you provide to customers in the region?**

I'm the focal point for all enquiries across the region which includes support services to customers before, during and after an order has been placed. Ensuring customers fully understand the services provided by Score Energy and where necessary liaising with our extensive technical, commercial and workshop personnel to allow us to provide the necessary detail.

Once we have received an order I make sure everything is on time by expediting both internally and externally to ensure the customer gets what they want, when they wanted it!

**What aspects of the job do you enjoy most?** Every day is a challenge and a learning experience. With the vast area covered in this exciting region the different time zones, languages and customs there is never one strategy. Evolving and adapting without losing our core essence is the most enjoyable aspect in my job.

**Which is the favourite country you have visited and why?**

In Dubai you always get to see a bit of the world every day, new faces, new cultures, new cuisines.

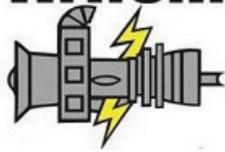
I did however really enjoy my trip to Edinburgh, the Castle and the tales that surround it. A piece of Scottish history entwined with the present.

**What advice would you give to one of our apprentices if they wanted to work in your region?**

Dubai is a very dynamic place and if you are up for a challenge the Middle East office is the place to be. Hard work, dedication combined with Integrity and settling for nothing but the best is exhausting and never ending but keeping on track is worth it.

# Score Energy Event Attendance 2015

**W.T.U.I.**



WTUI Conference  
March 15-18  
Long Beach, CA



Offshore Technology  
Conference  
May 5-8  
Houston, Texas



Power-Gen Europe  
June 9-11  
Amsterdam, Netherlands



Power-Gen Asia  
Conference  
September 1-3  
Bangkok, Thailand



Offshore Energy Exhibition  
& Conference  
October 13-14  
Amsterdam, Netherlands



ADIPEC  
November 9-12  
Abu Dhabi, UAE

For more information and on these events please email:  
[energycustomersupport@score-group.com](mailto:energycustomersupport@score-group.com) or visit:  
[www.score-energy.com](http://www.score-energy.com)

Let us know if you are attending any of these Events »



Power-Gen International  
December 8-10  
Las Vegas  
Convention Center



# Score Energy Limited

Intelligent Gas Turbine Solutions™

[www.score-energy.com](http://www.score-energy.com)

## Here for you, did you know we do this?

### GE LM gas turbines:

Supply, Inspection, testing, repair and overhaul of Fuel systems- from Fuel control valves through to fuel nozzles/premixers, Accessories and Auxilliaries.

### GE Frame 5 units:

Inspection, testing, repair and overhaul of Fuel burners, Accessories and Auxilliaries.

### Rolls Royce Avon:

Supply, Inspection, testing, repair and overhaul of Fuel burners, Accessories and Auxilliaries.

Turbine parts

Field service

Gas turbine testing

Engineering Consultancy & Training Services

### Rolls Royce RB211:

Supply, Inspection, testing, repair and overhaul of Fuel burners, Accessories and Auxilliaries.

Turbine parts

Field service

Gas turbine testing

Engineering Consultancy & Training Services

### Alstom (Siemens) TB range:

Supply, Inspection, testing, repair and overhaul of Fuel burners, Accessories and Auxilliaries.

Turbine parts

Field service

Gas turbine testing

Engineering Consultancy & Training Services



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