



POWER ON

YEARBOOK 2019

POWERING THE
ISLAND OF INCHCOLM

STANDBY POWER FOR
NEW ZEALAND HYDRO POWER FACILITIES

FG WILSON DELIVERS
100TH GENERATOR SET TO INDUSIND BANK

MAJOR MILESTONES
35 YEARS AT FG WILSON

Power For Our Generation

There are many ways to store or produce energy but when it comes to guaranteeing standby or emergency electrical power, in terms of cost, flexibility and responsiveness, there's no better option than a generator set from FG Wilson.

Our products range from ready-to-run generator sets to complete bespoke turnkey power systems with remote monitoring, all with lifetime product support from our dealers.

Based in the UK for the last 50 years, we've worked together with a multitude of customers in all environments globally and since 1990 have installed more than 640,000 generator sets around the world, with as much combined power generation capacity as the entire UK power grid.



To find out more,
visit us at www.fgwilson.com



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CASE STUDIES

STANDBY POWER FOR KEY NEW ZEALAND HYDRO POWER FACILITIES

In New Zealand's Waitaki Valley, the Aviemore Hydro power facility generates 220MW of electricity for around 107,000 homes.

Power comes from four 55MW generators, the largest in New Zealand, weighing 210 tonnes and with rotors nearly eight

metres in diameter. The dam itself is made in two parts: an earth dam and a concrete dam. It is the biggest dam of this type in New Zealand and is the second largest concrete dam.

For local service back-up power, the power facility relies on an FG Wilson P500-3,

supplied by our dealer AllightSykes www.allightsykes.com in January 2019 and commissioned by Aaron Clarke from Allight Sykes in association with Meridian Energy Limited and its on-site contractors.





POWERING THE ISLAND OF INCHCOLM

Our dealer Dieselec Thistle Generators www.dieselelecthistle.co.uk has just serviced two FG Wilson P16.5-6S generator sets which, since August 2018 have provided mains power for the beautiful and historic island of Inchcolm, off the east coast of Scotland. Both are synchronised and remotely monitored from the mainland allowing operators to run the generator sets and check for alarms or issues.

In August 2018, we successfully installed and commissioned two P16.5-6S generators at the Historic Scotland site, Inchcolm Island, which is situated off the south coast of Fife. The two synchronising single-phase sets provide mains power to the island. At our first servicing visit, we installed battery isolators, a sight glass for the bulk fuel

tank, and the DSE890 remote monitoring equipment. This vital piece of equipment enables our customer to remotely access the generators for monitor readings, checking for any issues or alarms, and running the generators. We have just serviced the generators again and they are ready to power the Island for another 500 hours, until the next service!

POWER FOR A WATER TREATMENT PLANT IN GAZA CITY

Omar Khoudary, Installation and Setup Engineer at our dealer in Gaza, Mustafa Mourtaga and Sons, sent us these photos of an installation which they've just completed at a waste water treatment plant in the Khan Younus area of Gaza Strip.

Scope consisted of the installation and start-up of three FG Wilson prime power generator sets at 810 kVA, 1,350 kVA and 2,000 kVA, with tropicalised 50°C advanced cooling. One of the photos shows Omar and his colleague Ashraf at the start-up of the 2,000 kVA unit.

It's a great installation and made all the more challenging because it arrived in five separate packages due to the size of the sets which could not be shipped as one unit.



Keep Powering On

For more than 50 years,
generator sets from FG Wilson
have guaranteed electric power
for businesses across the world.

We offer a complete range of
self-contained generator sets
from 6.8 – 2,500 kVA, designed
and manufactured in modern
world-class facilities, installed
and fully supported by our
extensive, fully trained
dealer network.

To find out more visit
www.fgwilson.com



TAKING ENGINEERING TO NEW HEIGHTS

Look around the skyline of the City of London and you'll find that many of the most iconic buildings in view have FG Wilson generator sets inside, installed by Bells Power Solutions. Known for delivering technical turnkey generator solutions for some of the UK's most prestigious buildings, Bells recently surpassed themselves, installing six FG Wilson 2,250 kVA, 11 kV generator sets at Level 57 of 22 Bishopsgate, around 260 metres above the street below. These are believed to be the highest installed generator sets in a building in the northern hemisphere.

Bells Power Solutions, who have been a dealer of FG Wilson for 30 years, are contracted to T Clarke / Multiplex group, who are responsible for constructing 22 Bishopsgate, now the tallest building in the City of London with the highest useable floor space in northern Europe. The building, described as a "vertical city" in the city of London, is a state of the art 62 storey skyscraper, standing 288 metres tall and offering 1.275 million square feet of premium space for business and leisure.

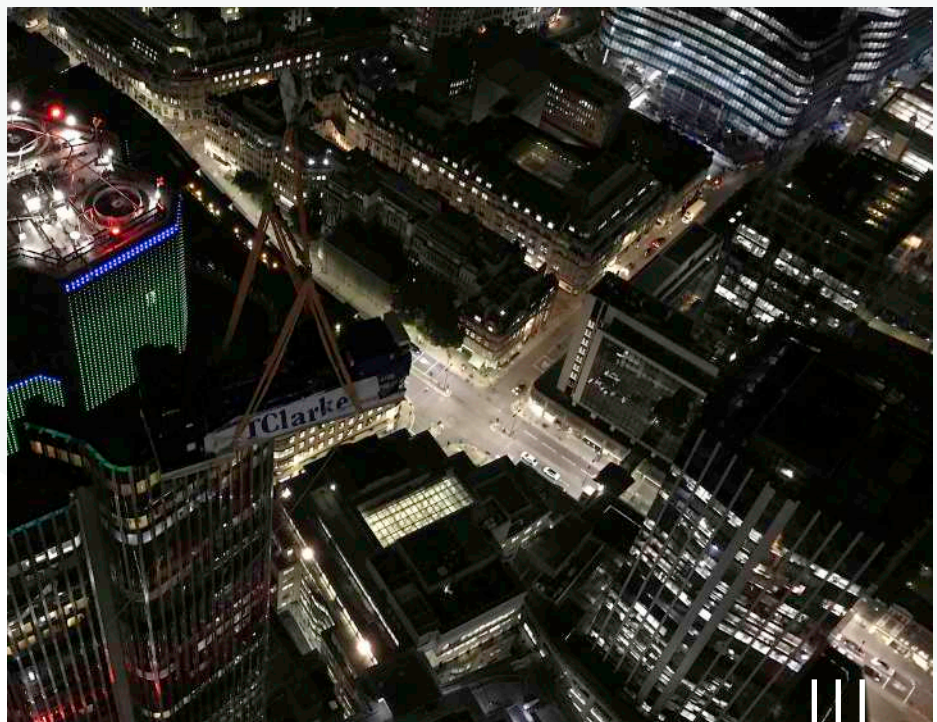
Since 2014, Bells Power Solutions and FG Wilson have been working together closely with the building's designers and constructors to ensure the generator sets could be successfully integrated into the building's design, taking account of their weight, noise, vibration and fuel systems, as well as fully meeting the building's power needs. FG Wilson P2250-1E emission-optimised generator sets, powered by Perkins 4016-61TRG2 engines, were selected for the project to ensure reliable power with lowest possible emissions. The radiator package for the generator sets was specially designed to ensure the lowest coupled airflow requirement for cooling as louvre space was limited. The generator sets synchronised together can deliver 13.5MVA of power at 11 kV, enough to power a small town.

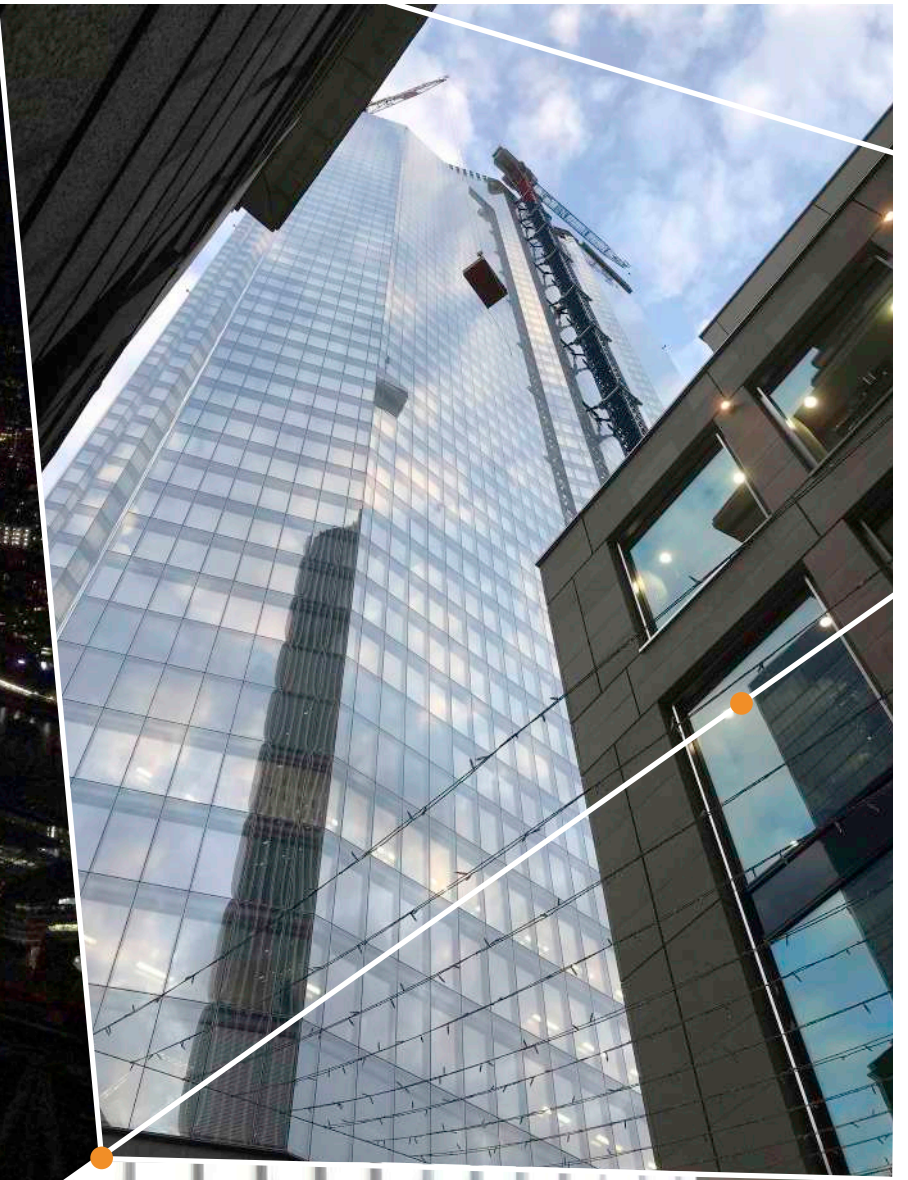
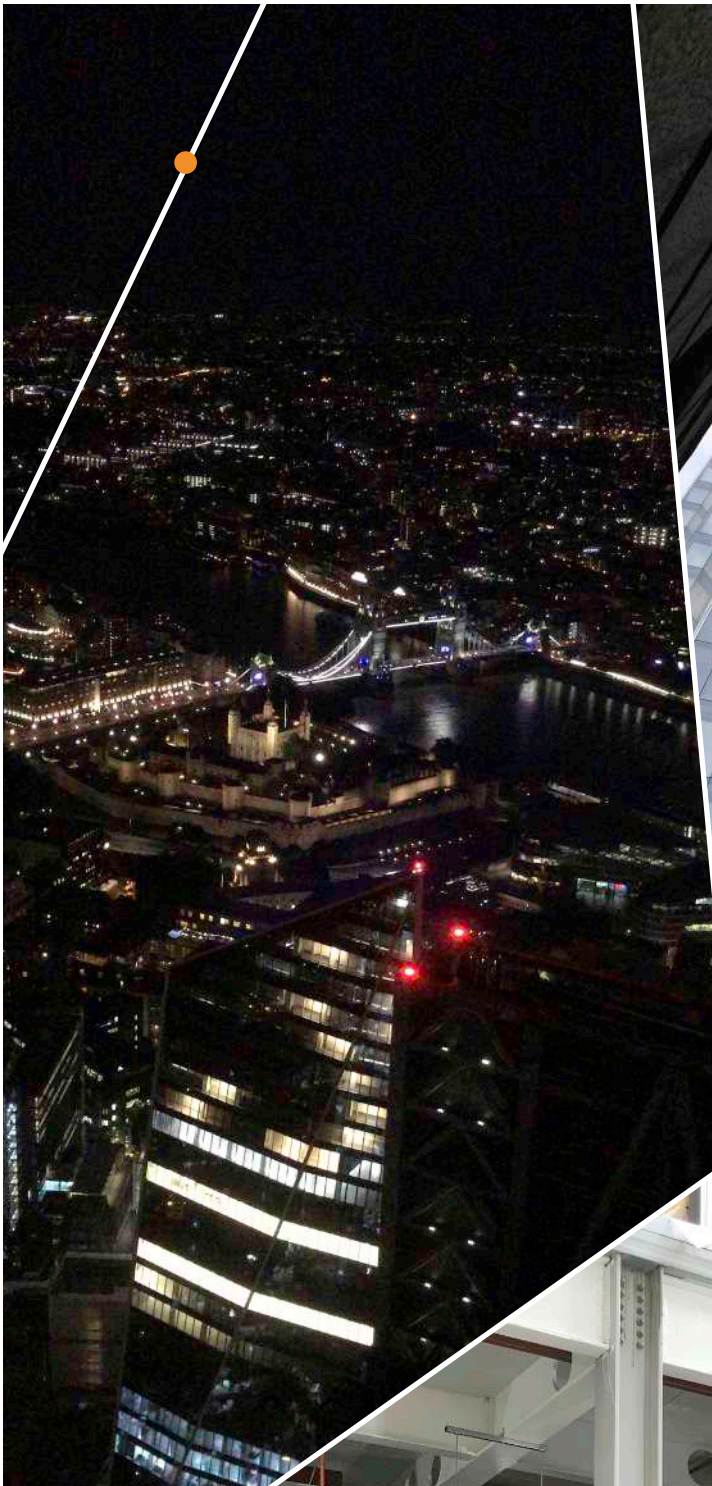
A project of this kind is challenging enough when the generator sets are at ground level or in a basement but at a height of 260 metres, installing the generator sets becomes a huge project all on its own. Getting the components in place meant lifting more than a hundred lifts for items of all shapes, sizes and

weights and took place over a six week period during July and August 2019. Components were lowered through the outlet attenuator penetration in the Level 58 / 59 slab onto the Level 57 generator room floor. With the on-site cranes, Bells Power were able to lift the generator sets in complete sections, with up to 16,000 kilograms hoisted in each lift.

James Murphy, Managing Director of Bells Power Solutions commented "The last five years of planning and work is leading up to the turning on the generator sets on-site. It is fitting that when everyone else will be turning on their Christmas lights, at 22 Bishopsgate, we'll be powering up the equivalent of a power station for a small town. Everything about 22 Bishopsgate is impressive: the design, the floor space, the height of the structure and its location. We at Bells Power Solutions are very pleased to play a part in the construction of this building."

For more information on Bells Power Solutions, visit <http://bellspowersolutions.co.uk/> and on FG Wilson www.fgwilson.com/





POWER FOR A LIFESTYLE CENTRE

The LSH Lifestyle Centre in Brisbane, Australia features the largest Mercedes-Benz dealership in the southern hemisphere. And for standby electrical power, it relies on an FG Wilson P330-5 generator set supplied by our Australian dealer AllightSykes www.allightsykes.com

The building's top floor has a P330-5 generator set in acoustic enclosure

with a self-bunded diesel fuel tank with 795L capacity, for 24-hour runtime based on a 40% load.

As part of the project, AllightSykes supplied and installed the air and exhaust duct from the generator room to penetrate through the roof, as well as a weatherproof hood with vermin proofing. With a tight deadline, everything was completed, shipped and installed in

a timely manner with a custom air discharge duct fitted on schedule.

Now open, as well as the Mercedes-Benz dealership, the building offers a rooftop restaurant with views over Brisbane, promenade café and shops and a museum.

Photo credits: Andy Macpherson: www.andy-macpherson.com



This Cloud Never Falls



Today when you need to guarantee standby or emergency electrical power, in terms of cost, flexibility and responsiveness, there's really no better option than a generator set from FG Wilson.

Over our 50+ year history, FG Wilson generator sets have been installed in more than 150 countries worldwide by organisations and businesses just like yours.

And when you entrust your power project to us, you receive the full support of more than 300 skilled technicians who nurture your project from initial design and manufacture, right through to installation and commissioning.

To find out more,
visit www.fgwilson.com



FG WILSON TURKIYE: POWERING "EUROPEAN DATA CENTRE" IN ISTANBUL

With a prime strategic position between East and West, throughout history, Turkey has always been a renowned trading hub. And today, Turkey's entrepreneurs have a new edge. The country has a young, vibrant population (average age just over 30) and Istanbul, with its 15 million people, is at the centre of a thriving hi-tech industry.

Supporting that and helping to drive it is a growing data centre infrastructure in the country. One new data centre being built in Greater Istanbul makes no bones about it: named European Data Centre, it's going to bring more online capacity to meet the growing demand for colocation and interconnection services in Turkey.

The European Data Centre will not only provide direct and secure connectivity for the expanding Turkish economy, it will also sustain accelerated traffic and data transfer, as well as the rapid growth of cloud and online services around

the entire Eurasia region. Once fully operational, it will be one of the largest data centres in Turkey with state-of-the-art hardware, at world-class standards.

Data centres need electrical power which is stable, reliable and high quality. Power outages are not in the data centre playbook and the new European Data Centre is designed to meet the Uptime Institute's Tier 3 standard which means no more than 1.6 hours of down-time in a year. And that's where FG Wilson Turkiye have a part to play in this story. As the leading supplier of power systems to data centres in the country, the new data centre will always have electric power thanks to the installation of FG Wilson generator sets. FG Wilson Turkiye has been working closely with the designers, builders and owners to ensure that power needs are fully met and many technical meetings have been held both in Turkey and in Larne, UK, where the generator sets have been produced and tested.

The installed generator sets, powered by Perkins 4012 series engines, have a capacity of 20 MVA. The design includes double-walled fuel tanks, fuel polishing system, fuel control systems, advanced synchronization panels with PLC system, special container systems for sound insulation and weatherproof purposes, critical type exhaust silencers and over 20 metres of exhaust piping systems. The design has been fully tested and validated by FG Wilson and FG Wilson Turkiye engineers.

Speaking about the project, Murat Erden, Business Development Manager at FG Wilson Turkiye said, "This is a truly exciting project. We are proud to be entrusted with a project of this kind and proud to be playing our part in the big challenge of our times: connecting and bringing the world closer together through technology."





ARTICLES

POWERING ON OR POWERING OUT? WHY IT'S IMPORTANT TO THINK ABOUT LIFETIME OWNERSHIP WHEN YOU BUY A GENERATOR SET

Generator sets are a regular sight across Africa and likely to remain that way for a long time to come. Of course, buying a generator set is one thing. Making sure it has a long and productive life with decent running costs is another. How long is that life? FG Wilson carried out field research of owners of all generator set brands globally and found that an average generator set has a life of about 10 years.

Steve Lorimer, Aftermarket Manager at FG Wilson, says consideration of lifetime costs is very often swept away in the buying process. "When you're buying, it's usually because you've lost power. You're fed up, annoyed. It's a problem you don't want and a reluctant purchase. It's like buying insurance. The big temptation is to go for the cheapest."

Sometimes that makes sense, if power outages are rare and the generator set is going to be used infrequently. But when it's going to be relied upon and used more regularly, lifetime cost and efficiency really need to be weighed up. That's not always easy to do and Steve helps put it into perspective.

"Local, effective support is very important. Our experience shows that over a 10 year product lifetime, being able to resolve an issue with one less visit to site can save you an average of \$6,000 for every generator set. That means local dealers who carry parts and who are trained to diagnose issues

right first time. We put a big priority on this and support our dealers with a parts facility carrying 11,500 parts lines, taking 500 orders a day and shipping 3 million parts a year to dealers who know our products just as well as we do. We also test and validate all our parts and offer a warranty. That's important: it's tempting to buy cheaper "will-fit" parts and while they may solve an immediate problem, you won't get the same level of performance or lifetime and longer term, they will cost you more money."

There are many reasons why generator sets fail and Steve picks up on this point. "It's easy to focus on the engine and think that if engine parts are easy to obtain, this will cover most support needs. But our experience and external research indicate that only 1 in 4 problems occur in the engine. That leaves much scope for other issues. Often they are electrical and we see a lot of people attempting DIY wiring inside control panels which leads to further problems and can be dangerous. When you're buying a generator set, it's really important to think about whether your supplier can support every aspect of it through its lifetime. If they can't, you may end up spending a lot of time hunting down people who can, and when you find them, how do you know they are trained to fix the problem properly?"

That's not to downplay the importance of the engine in a generator set because engine life and performance are a very important consideration. Steve

calculates that an engine life of 20,000 hours versus one of 4,000 hours is worth \$6,000, so yes, it really is worth buying a generator set with the best and most modern engine which is within your budget. That can also translate into big fuel savings if you're running your generator set regularly. Steve says, "FG Wilson generator sets run with the most modern and fuel-efficient engines available. We calculate that running at 75% load for 2,000 hours per year, lower fuel consumption can save you up to \$21,000 per unit over 10 years versus a typical "low cost" engine based on an old design. So yes, while a generator set with a more modern engine has a higher upfront price, over time, it will pay for itself, not only in terms of durability but also in terms of fuel usage if you're going to use it regularly."

Steve gives one final piece of advice which is interesting but maybe not surprising. "About a quarter of all reasons why generator sets fail is simply because the battery has run flat, the unit has run out of fuel, or had poor quality fuel pumped into the tank. A low cost battery charger and just keeping an eye on the fuel or oil situation can make these problems go away.

To find out more about FG Wilson service and support, visit:

www.fgwilson.com/support



POWER IN MOTION

In September 2017, the city council of the Ukrainian city of Kriviy Rih began a program to modernise its fleet of trolleybuses. One of the most ambitious goals was to guarantee the transport from Kriviy Rih to Zhitomir by electric trolleybus. It's a journey of more than 500 km and can take 8 - 9 hours to complete. Because of its length, the journey had never before been attempted on an electric autonomous mode of transport. A further aim was to equip trolley buses to operate on road where there was no electrical supply.

The Kryvyi Rih City Council, which manages the trolleybus network, decided the solution was a generator set mounted at the rear of the bus, capable of supplying electricity in locations where the network lacked supply.

A call was made to FG Wilson dealer Madek. Madek's engineers connected the AC/DC converter of the trolleybus to a P110-3 FG Wilson generator set, which in turn supplied power to the electric engine of the trolleybus. The control

panel of generator set was also re-designed, with switchgear moved to the driver's dashboard and the emergency stop button was duplicated and located in front of the driver's seat.

There are three trolleybuses currently operating in Kriviy Rih with FG Wilson generator sets on board, with one of them serving the Kriviy Rih-Zhitomir route. Another nine trolleybuses are in the process of being modified to take the generator sets and three are in storage for modification later in 2019.

Now other city authorities in Ukraine are taking a real interest in the initiative,

seeing it as a low cost and practical way to extend their trolleybus networks. A further benefit is that trolleybuses modified to carry the generator sets are still able to operate when mains power is down.

Speaking about the project, Vera Fedulova, Deputy General Director of FG Wilson dealer Madek said, "We're delighted to be part of this project and see the results. It's a real example of innovative, connected thinking by our customer and our team."

<https://madek.ua/>





BLACKWOOD HODGE: 70 POWERFUL YEARS

We live at a time when the average lifespan of a Fortune 500 Company is around 15 years and a business which has lasted for decades often catches our eye, as if to find out whether there is some secret recipe for commercial longevity.

Distributor of FG Wilson generator sets, Blackwood Hodge, have been part of the Kenyan economic landscape since 1949, 70 years. Since 1993, they have been an official distributor of FG Wilson branded generator sets, covering Kenya and Uganda, in a working relationship which dates back even further. FG Wilson themselves have been around for more than 50 years.

In 2018, Blackwood Hodge came under a new management team from Tamgo International, a Zahid Group Company. The new Blackwood Hodge Country Manager Kenya and Uganda, Ahmed Elbehiry, says it's been a time of reflection and renewal.

"We've been celebrating the past, conscious of Blackwood Hodge's great history. Moving into our 8th decade, we're now thinking a lot about the future, reflecting on what we're here for. We're fortunate in that the generator sets which we sell are of excellent quality. And our role is to surround them with all the service and support that a customer could need. So our starting point as a team is how we can effectively deliver great service for the 21st Century."

The guiding principle was: look after the organisation and team, and that will look after the customer.

First came a complete end-to-end refurbishment of the facilities, and within

the industry, it's a place anyone would be proud to call their place of work. But as Ahmed is quick to highlight, "It's not just about having a good-looking facility, it's about how efficient and effective we can be in satisfying our customers' needs."

Within the team, there was a tightening-up of structure and clear demarcation of roles and responsibilities. Operations Manager Kenneth Muindi says, "In small and medium sized enterprises, sometimes roles evolve organically. Now we have our people and their expertise all tightly defined. There's very clear demarcation of the departments and very good communication between them. We're seeing a lot more interaction which of course makes operations very efficient. This is important because the service a customer gets is only as good as the service we give each other within the organisation."

Customer service functions were given special attention. Judith Wangui from the Parts Department says, "We restructured our warehouse which means we can access and pick parts faster and new processes are helping us communicate more quickly with customers. And with additional customer service people, we can follow up more effectively with customers, giving better after sales service and support."

Technicians are now freed up to spend more time with customers, which means more support for more people. They are able to bring back feedback and learning which is shared in a structured way within the organisation.

Customers have started to feel the changes. Joseph Maundu from Joe

Invesco Agencies says, "The changes have come with a lot of benefits. We're getting parts slightly cheaper, from ready stock, which reduces our turnaround period for all the products we are dealing with. In a modern business, time and reliability are of the essence. If we're getting the parts, and the right parts, then that is a plus for us."

The 70th anniversary event was held in February, with more than 100 customers and business partners joining in the celebrations. A tour of Blackwood Hodge's newly refurbished facilities also took place on the day.

Guests were impressed with the new décor, the professionalism and the customer-focus. A few even left their personal feedback in the video conference corner, created by Blackwood Hodge for the occasion.

Speaking after the event, Ahmed said, "We hope that today's event will evolve into the start of new long-term business relationships."

You can see the vigour and energy in the people at Blackwood Hodge when you speak with them. Ahmed is excited for the future: "The team works. Actually we feel like we are family. If you look after Blackwood Hodge, the resources, the expertise and the team, everything is possible."

It's a view echoed by TAMGO International General Manager Fadel Hassan: "As a part of our long-term expansion strategy in East Africa, Blackwood Hodge Kenya is the first step in our African journey."

www.blackwoodhodge.com



MONGOLIAN MINING INDUSTRY GUESTS VISIT LARNE

In November, we were very glad to host a delegation of visitors from Mongolia. The visit was organised by the Department for International Trade of the British Embassy in Mongolia, aiming to introduce prospective customers from Mongolia's mining industry.

The delegation included senior executives from major Mongolian mining companies including Energy Resource,

DMP, Bayalag Energy resource, Crystal Top Mine, Erdenet Mining corporation. Representatives from our Mongolian dealer Monhorus International were present, together with British Embassy officials.

The highlight of the visit was a tour of the Larne facility which included fabrication, production lines and test facilities and there was plenty

of opportunity to interact with our engineering and production teams.

We thank our dealer Monhorus International who played a key role in facilitating the visit.





POWER AT THE TOP OF THE WORLD

FG Wilson generator sets guarantee power in some of the world's most challenging climates.

This FG Wilson P1250P3 unit has just been installed in the Hunza Valley where Pakistan meets China and Afghanistan in the stunning and rugged Karakoram

mountains, the second highest mountain range in the world and home to the K2 mountain. Winter is in full force there now.





HAITI

In March, a customer in Haiti sent us these photos of him and his friends moving his 20 year old FG Wilson generator set to a new location at his beach house. We think this must be one long-lived, well-maintained happy generator set.

HO CHI MINH CITY

Ho Chi Minh City is the largest city in Vietnam, with 13 million people in its metropolitan area and growing fast. FG Wilson Vietnam dealer Tuong Viet Co Ltd has just delivered and installed three generator sets: a P1250P3, P1500P3 and P2500-1 at a prestigious new apartment building in the city's District 7.

<https://tuongviet.vn/>



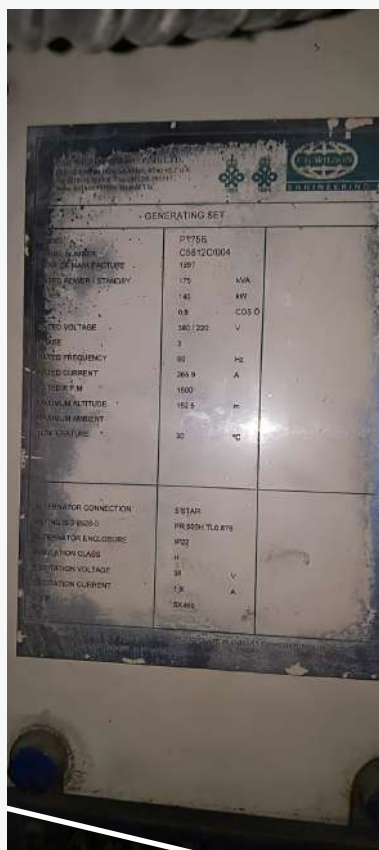
POWER IN THE ARCTIC

In March, Service Engineer Dale Pomraning contacted our dealer Simply Reliable Power about some technical support for a generator which he was servicing in the Arctic. It was installed around 20 years ago and is still working hard in the coldest of environments.

www.srpamericas.com/







TRIED AND TESTED IN MYANMAR

Our dealer in Myanmar, AR Mahn Trading Co Ltd is still looking after this 22-year-old 175 kVA FG Wilson generator set for their customer in Yangon, First Top Group Co. LTD. It has 30,000 hours on the clock and is still running happily. The reason? A well-built machine and regular servicing from our dealer with genuine FG Wilson parts.

<https://armahntrading.net/>

FG WILSON DELIVERS 100TH GENERATOR SET TO INDUSIND BANK

In March, FG Wilson dealer, Gainwell Commosales Private Limited (GCPL), one of our dealers in India, commemorated the delivery and key handover of the 100th FG Wilson generator set to its key customer, IndusInd Bank.

IndusInd Bank has been a key customer of FG Wilson since 2017 and from the start, the product's robustness and quality gained the confidence of bank officials. Now, over a period of two years, the bank has purchased 100 generator sets in the power range 10 to 62.5 kVA for its branch offices across India.

Our team was pleased to invite Jagmohan Mehta, Head of Facilities Administration and Corporate Services from IndusInd Bank to receive delivery of the bank's 100th generator set.



Meena Chaturvedi, Joint Managing Director of GCPL, handed over a plaque and product key to Jagmohan Mehta in the presence of Arvind Rishi,

Head of Energy & Transportation at GCPL and Deepak Grover, Regional Sales Manager, FG Wilson India and other team members.





WHAT GOES IN

WHY FUEL AND FUEL SYSTEM MAINTENANCE ARE IMPORTANT

There's nothing worse than going to the expense of buying a generator set, then just when you need electric power, it won't start. General care and maintenance go a long way to help, but sometimes it's the things which are easiest to solve which cause problems – like fuel quality.

Diesel fuel starts to degrade almost from the moment it's refined and has a shelf life of 6 to 12 months at most. During that time, it's pumped through pipelines, transported and stored and then pumped into your fuel tank. All through this time, natural deterioration, build-up of condensation and opportunities for external contamination can all contribute to decline in fuel quality. And eventually this can cause the build-up in particulates in the fuel which will block or damage filters, fuel pumps and injectors.

But that's not the full story: during its lifetime, like any other organic liquid, diesel fuel starts to deteriorate, usually after about 100 days. The fuel begins to

break down, fall out of solution, cluster up and drop to the bottom of the tank as a dark sludge. The fuel goes dark, smells bad and makes engines smoke. This is because some of the clusters can be small enough to pass through filtration and into the combustion chamber: the outer edges of the cluster get burned there but the rest goes out of the exhaust as unburned fuel. As these clusters grow, they reduce the flow of fuel by clogging filters and eventually injectors will be ruined. Over time you'll see a loss of power, smoke from exhausts and a bad smell of unburnt fuel. The less often you run your diesel engine, the more quickly these problems can arise.

The good news is there are some very simple steps you can take to prevent problems.

Always ensure that you fit genuine filters as specified in your operator manual. It's tempting to use lower cost filters which fit or to let routine maintenance slip to save money but in the longer term, this is only going to cause problems. Don't wait until you

see a problem before you think about changing the filters.

Be careful that you buy fuel from reputable suppliers and that the tanker which delivered your fuel isn't containing diesel one day and something else the next.

Keep your tank full of fuel. This prevents condensation from forming which is the number one cause of algae growth within the fuel tank.

If you don't run your generator set regularly, remember the shelf life of the diesel in the tank.

If you own a generator set from FG Wilson, you'll always have expert help. Your FG Wilson dealer can support and advise you on all the best practices for fuel system maintenance so that your generator set has a long and productive life.

For more information on FG Wilson parts, visit https://www.fgwilson.com/en_GB/support/genuine-parts.html

POWER FOR AGRICULTURE

For most businesses a power interruption delays a project or slows down manufacturing processes. While there is always a financial implication, few run the risk of losing an entire business cycle. Those few include farms and agri-processing.

A complete chicken production cycle can be lost in the event of a power interruption that's long enough to disrupt the circulation of food and water, and the maintenance of perfect climatic conditions inside chicken houses where up to 40,000 birds are being reared.

Similarly, much of a fruit harvest can end up spoiled if pack house processes are paralysed in the critical post-harvest period.

These are just two examples of the importance of reliable and efficient electricity supply to the agricultural sector.

Rory Reid, Sales and Marketing Director of FG Wilson South Africa dealer Master Power Technologies and an expert in backup power solutions, says; "Many farmers, especially those far away from towns, already have hybrid power systems or independent infrastructure due to ongoing challenges with grid electricity in remote areas. However, regardless of your current supply status, if you have not done so during the past year, you should now take the time to consider your energy system as a whole. The aim should be to outage-proof your operation while making it as energy efficient and cost effective as possible."

Drawing on more than 20 years' experience in the backup power solutions market, Master Power

Technologies specialises in providing power systems for critical applications. These include data centres that support telecommunication capabilities, banks and retail stores, as well as hospitals, the mining industry and the agricultural sector.

"Backup power is nothing new," says Rory. "What we are seeing is fast-paced development and evolution of technologies. Batteries and solar panels are becoming ever more efficient to provide clients with solutions that are more cost effective from both capital and operational expenditure perspectives."

These improvements also result in systems that are more environmentally friendly and that can reduce overall energy consumption. "Against this backdrop, we are advising farmers to not only add, for instance, another generator to their existing infrastructure, but to rather relook their complete setup," says Rory.

The solution best suited to a specific farm depends to a large degree on the type of farming. On a dairy farm, for instance, milking has to be done at specific times every day for optimal product yield and to ensure the wellbeing of the cows. To use the milking machines during a power cut, the farmer should ideally invest in a hybrid solution where electricity comes from solar panels, generators and the grid.

Such a mix of energy sources also meets the objective of cost savings under normal circumstances. "The farmer runs the solar system to displace some of the usual grid electricity usage,"

explains Rory. "When an outage strikes, the solar system also displaces some of the generator usage, resulting in a considerable diesel cost saving."

Generally speaking, solar energy is the cheapest energy solution a farmer can invest in. "Once it is installed and paid for, you will never look back," says Rory. "The beauty of solar is that it can also convert dead space, such as the roof of a barn or a pack house, into a power generating plant. Such spaces already exist on farms, so it's an opportunity to make your infrastructure assets work harder."

"However, the golden rule remains understanding exactly what your operation needs", says Rory. If, for instance, a farm depends on a critical application that cannot tolerate even a short break in electricity supply, look at a battery backup that kicks in while the generator powers up.

In terms of general power saving tips, Rory advises farmers to "put common sense into common practice". Change to more efficient LED lighting, replace corrugated iron roofs with fibreglass to take advantage of natural light, and use gas instead of electricity to power heating and cooling systems.

As our planet grapples with the growing challenge of food security, farmers are under increasing pressure to produce more with fewer resources and in a more sustainable manner. Energy supply and usage is central to increased efficiency, productivity, quality and optimal yield.

For more information about FG Wilson generator sets, visit www.fgwilson.com



FINDING GENERATOR SETS FAST

Roberto Doninelli of FG Wilson talks about how generator manufacturer FG Wilson is making it quicker and easier for customers to source and buy.

The digital world has revolutionised our lives, the way we interact with each other and the way we buy. And for business customers too? Roberto Doninelli, FG Wilson Digital Commercial Manager, has an answer: "The time is ripe for a change in how people buy in our industry and how we interact with customers."

FG Wilson have been manufacturing electricity generator sets for more than 50 years, mostly sold to businesses who want secure power supply. Roberto is behind an initiative at FG Wilson allowing customers to search and reserve online all in one place, quickly and easily.

He says, "We've all heard about B2C or B2B but I see it more as B2Everyone.

The way it feels when we're buying as consumers spills over into our business lives and we all expect the same online, real time experience when we're buying for our businesses. That means real time information and a fast response from suppliers."

During May, in the UK, France and Netherlands, FG Wilson launched the first phase of an initiative which will expand to more countries globally. It gives visibility of available FG Wilson generator sets at selected dealers, showing products and features, with real time tracking, pricing and configuration options. Units can be reserved and, as with many retailers, be collected or delivered and in all cases, customers can specify installation or commissioning support and extended service coverage. It's a platform connecting customers, dealers and FG Wilson, helping customers find the right generator set quickly and easily.

Roberto says, "This is the first step of something much larger, we're learning quickly and in steps. Ultimately, we want to grow this into a hub where our customers can self-serve, with dealer support when they need it, and make informed decisions on what options and services they need in their region to get an installation completed properly and efficiently. Once installed the lifetime support from our dealers is always there when needed. These new online tools enable customers to access our service at their own convenience, where and when they need to. Time is everyone's most precious resource. We want to give some of that time back to our customers."

To find out more about FG Wilson, visit www.fgwilson.com and to see online inventory visit www.easypower.fgwilson.com



Find Generator Sets Fast

In the UK, now you can quickly and easily search for FG Wilson generator sets for immediate delivery from real time inventory at a selection of our dealers.

You can see product specsheets showing features and options together with pricing and configurations.

And you can reserve any units, then collect or ask for delivery, with installation or commissioning support from our dealers if you need it.

And once installed, that lifetime support from our dealers is always there for you when you want it.

To get a real time view of inventory at our dealers at any time,

visit www.easypower.fgwilson.com



To find out more about FG Wilson,
visit us at www.fgwilson.com



DIGITAL WORKSHOP

In May, a group of dealers from Turkey, Liberia, Democratic Republic of Congo and Tanzania visited us for a digital marketing workshop. During that time, we were all treated to a great factory tour by Noel Bell and Colin McCune who took the group around the Larne Engineering Centre of Excellence.



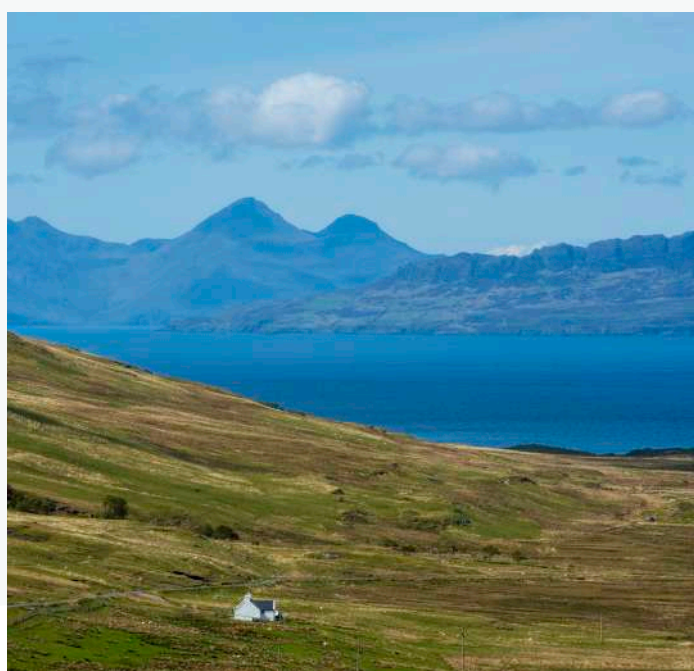
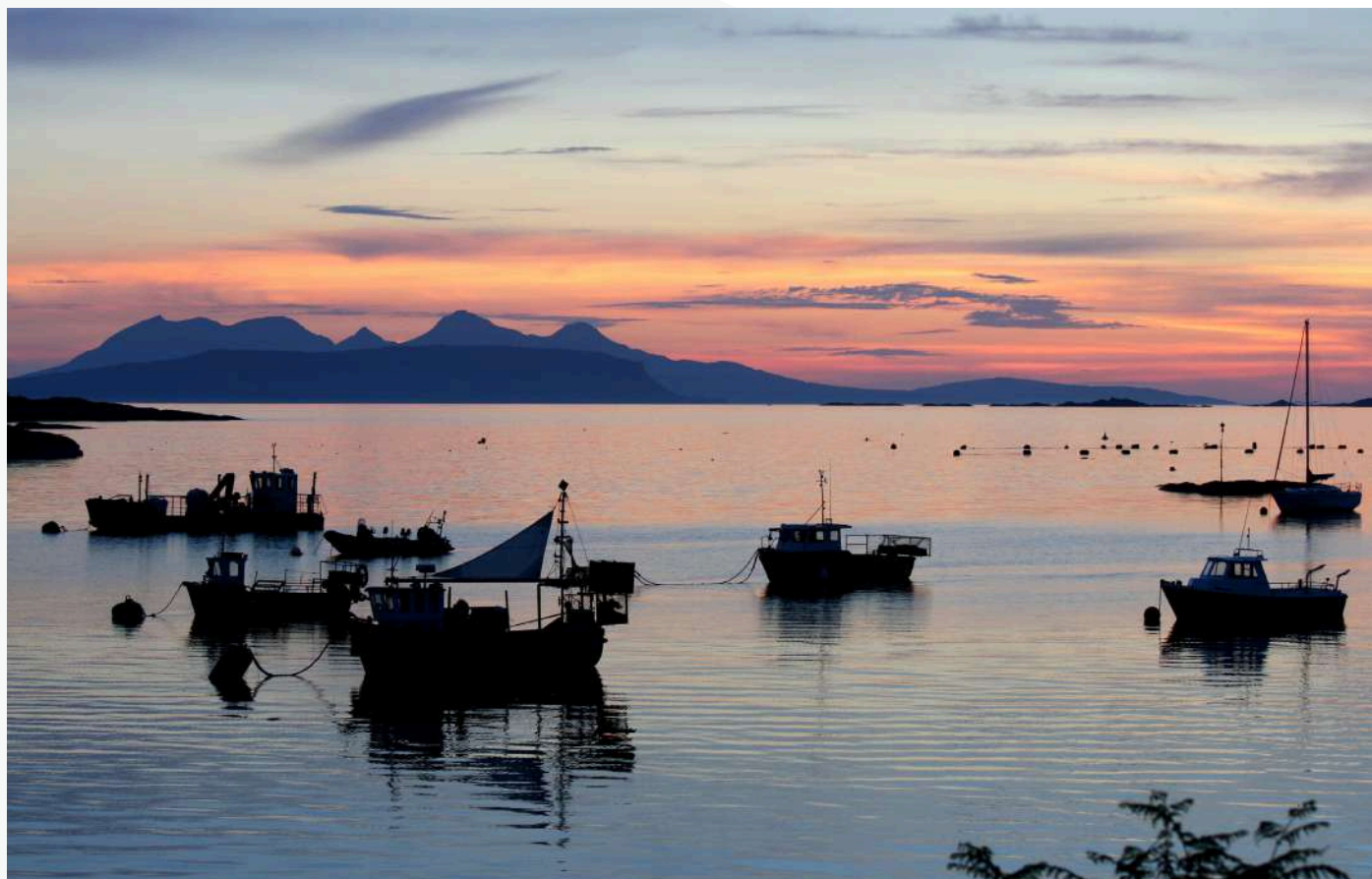
GOLFING IN KINSHASA

In May, our dealer in the Democratic Republic of Congo, Unicomplex unicomplex.net was at the 21st Kinshasa Golf Open with FG Wilson flags on the practice green and a tent stand, and generator set at the 16th Green and 17th Tee Box.



ISLAND OF EIGG

One of our UK dealers, Dieselec Thistle Generators www.dieselecthistle.co.uk has just delivered this FG Wilson generator set to the Scottish island of Eigg. It gives backup power to the island's renewable energy power network which is run by the local community-owned initiative, Eigg Electric.



FROM CRISIS CONTROL TO FUTURE PROOF

Backup power solutions in an energy crisis

Menno Parsons, CEO of Master Power Technologies

Africa continues to face ongoing power delivery challenges and there is no denying that without secure sources of backup power, load shedding has a significant negative impact on economic growth. From loss in turnover to the less tangible, but no less serious, impact of dwindling business and investor confidence.

According to Menno Parsons, CEO of Master Power Technologies and an expert in backup power solutions, there are opportunities during this energy crisis. As a leading backup power specialist, Master Power Technologies, in partnership with FG Wilson with a track record of over 50 years, provides quality generators customised for individual business needs.

"We believe business owners should use the current electricity shortage to take a critical look at their own energy situation and take steps to not only deal with further outages, but to better manage consumption and costs into the future," he says.

It's a mindset which is even more important for small to mid-sized businesses, which often have fewer resources to get through tough times. Says Menno, "John F Kennedy famously said that 'the time to repair the roof is when the sun is shining'. The time to rethink electricity consumption and infrastructure is when the lights are on."

Drawing on his many years' experience in high-quality backup power solutions for industries where uptime is critical, such as manufacturing, mining, telecommunications and data centres, Menno recommends starting with a current-state review. "This should include identifying your critical systems, benchmarking current consumption, and understanding which of your equipment or systems use the most electricity."

With this picture in hand, the next step is to look at more energy efficient options. Appliances and equipment that use less electricity are cheaper to run on backup systems such as generators or inverters and will benefit the bottom line even when the lights remain on. Changing to LED lighting, and insulating geysers and ceilings are further easy-to-implement examples.

Low-energy consumption options might not be available for all your equipment, but with a little effort, it may be possible to reduce consumption in other ways. Machinery that is well maintained is often more energy efficient, and a change in a specific manufacturing process could result in less energy being consumed. "The point is to look at your business with new energy eyes," says Menno.

Once you understand your operation's energy landscape, it's time to decide what backup systems are needed to ensure business continuity, and to research options thoroughly. "This is the great benefit of taking action while the lights are on," says Menno. "You don't have to make a decision under pressure, and you won't be competing with thousands of other desperate people when it comes to purchasing the solutions you choose."

Backup systems vary greatly, from simple rechargeable lights to generators with the capacity to run an entire factory. When power outages are longer and more unpredictable, generator sets remain a popular option as they bring flexibility and will provide power for as long as you fuel them. Only when you know exactly what your business needs to remain operational, can you choose the appropriate solutions.

"Small to mid-sized businesses need uninterruptible power supply (UPS) systems with decent battery and inverter backup," says Menno. "If at all feasible, it is worth investing in a solar power system over time to feed the batteries and complement a generator



set as part of a balanced approach to standby power," he adds.

Regardless of the backup power solution a business owner selects, a handful of important principles apply:

- Only ever buy from companies that are reliable, have a credible track record and proven after-sales service. Never entrust your business continuity to a fly-by-night organisation, even if the price appears to be highly attractive.
- Based on your energy review, invest in the right technology for your needs and with the right partner. It is advisable to invest in a turnkey provider so you know the system components are all compatible and you don't have to manage a variety of service providers.
- Regularly test and maintain your backup power system, and ensure you have consumables such as fuel and batteries available.

"Energy efficient and backup power systems are expensive when viewed in isolation," says Menno. "However, when they are seen as a vehicle for business sustainability, both in times of power interruptions and when reducing energy consumption to save costs, they become a tangible investment in the future of your business."

For more information about Master Power Technologies visit kva.co.za or FG Wilson at www.fgwilson.com



POWERFUL GROWTH IN EAST AFRICA

Generator set manufacturer FG Wilson have been part of the economic landscape of East Africa for over forty years and witnessed many changes during that time. Graham Scandrett, FG Wilson Area Manager for Africa and Middle East picks up the thread.

"In our industry, we see many markets where demand is still lagging behind where it was in the last worldwide boom year of 2008, but we believe the East African market is about 40% larger than it was in 2008."

So what has driven this? FG Wilson see many of the same kind of customers today but the scope of their needs has increased. Graham says, "Ten years ago, if electric power was down, many businesses could still function, at least for a short time. Now in our online world, it's almost impossible. Many businesses can't take the risk of even short interruptions of electric power. Much of that industry growth has come from this digitalisation effect."

Another factor in play has been the sourcing of those generator sets. Graham says, "We closely monitor market and trade statistics and the last ten years have seen a major switch in where generator sets for East Africa are made. In 2008, around 80% came from Europe, 20% from China. Today only 30% come from Europe, 60% from China and most of the rest imported via the Middle East or other African countries."

Some of that change has been driven by generator sets arriving on the back of Chinese investment in the region and some has come from European manufacturers, like FG Wilson, locating more of their production in their own facilities in China. Graham sees this as a logical step. "Components, particularly engines, make up a big element in a generator set package. As soon as established Western engine brands began locating more of their production in China, the case for assembling there became very compelling. It makes no sense to ship major components



halfway round the world and then ship them halfway round the world back to customers as finished products. Now our most modern, state of the art facility in the world is located in Tianjin, China, and it's capable of manufacturing almost our entire range. With FG Wilson, our China-made products are made to the same design, with the same components using the same processes and supported with the same global parts infrastructure as all our European-made products. And, of course many other industries work the same way: look at the phone in your pocket or the computer on your desk. Most likely these were made in China."

The third big change which Graham has seen has been growing expectations of support from customers, especially as the cost of loss of power has grown for businesses. Graham says, "In the last ten years, between us and our dealers, we've invested hugely in this area. We reckon we have around \$30 million of parts inventory at our dealers around the world, backed up by our UK-based parts warehouse stocking 11,500 individual parts and shipping 3 million parts a year. It means automotive industry levels of support."

FG Wilson's dealer in Tanzania, Merrywater, who have represented FG Wilson for 25 years, embodies this approach. Based in Dar-es-Salaam,

Merrywater offers the entire FG Wilson range of generator sets. All service employees are formally trained by FG Wilson's UK-based team and the dealer offers a full range of aftermarket services including 24 hour call-out. Henrik Nielsen, who manages the Merrywater Power Division sees this as a critical element of Merrywater's business. He says, "We're seeing more of our customers taking great interest in service contracts. If you don't want the risk of downtime and want to manage and plan costs, this makes a lot of sense with labour and transport costs covered, lower spare part prices, reduced rates for temporary replacement units and fixed workshop repair prices."

And the next ten years? Graham sees generator sets as playing a similar role, co-existing alongside other power generation technologies. "Interest in solar power generation has grown and solar panels are getting more efficient. But you need a very large surface area to install a solar plant compared to the space occupied by a generator set. We see a lot of people who ask about solar power generation but what they really need is a generator set. We can see generator sets living alongside renewables and battery storage as part of a balanced package. Maybe we can pick up the discussion again in 2029!"



Power For Our Generation

There are many ways to store or produce electricity but when it comes to guaranteeing standby or emergency electrical power, in terms of cost, flexibility and responsiveness, there's no better option than a generator set from FG Wilson.

Our products range from ready-to-run generator sets to complete bespoke turnkey power systems with remote monitoring, all with lifetime product support from our dealers.

Based in the UK for more than 50 years, we've worked together with a multitude of customers in all environments globally and since 1990 have installed more than 640,000 generator sets around the world.

To find out more,
visit www.fgwilson.com



POWER FOR POLYNESIA

French Polynesia makes up a very wide group of 118 islands, almost in the middle of the South Pacific Ocean, stretching across a 1,200 mile area. It is an Overseas Collectivity of France, which means it is like an overseas country within the French Republic.

Remoteness and the way the islands are widely dispersed means that for mains electrical power, generator

sets are essential and there are an estimated five hundred FG Wilson units on the islands, many of the larger ones operated by utility provider Electricité Du Tahiti (EDT), installed and maintained by Poly Diesel www.poly-diesel.pf and operating as main power stations for the islands. This means the generator sets are running for prime power and running for 45,000 hours or more.

In July, Peter Havenaar from our sales team visited customers on the islands with our French dealer Geniwatt www.geniwatt.fr/ who work closely with Poly Diesel. He said "It was great to see our FG Wilson machines providing essential power for the islands and it was good to see machines with 30 - 40,000 operating hours on the clock. I even spotted one with just under 44,000 running hours!"





POWER GENERATION IN THE MIDDLE EAST

INTERVIEWEES



Medhat Al Shafey:
Engineering Products Division Manager, TAMGO, FG Wilson dealer in the Kingdom of Saudi Arabia.



Naveen D'Souza:
General Manager / Vice President, FG Wilson (Engineering) FZE, FG Wilson dealer in UAE and the Gulf region.

As oil prices rise to US\$56 recently, what are the upcoming changes do you predict for the generator set market? If you could provide with the market and import values in the UAE and Saudi Arabia for 2018, it would be great.

Medhat Al Shafey: "Yes, the recent oil price increase will have a positive impact on the market in Saudi Arabia, and this is going to reflect on the growth and recovery for the generator set market. But product costs are always going to be important and generator set brands will need to look towards lower cost manufacturing countries to stay competitive. Generator sets made in China now account for about a third of the Middle East market and below 375 kVA that rises to more than half of the market. Some of this is Chinese brands but much of it is accounted for by established global brands like FG Wilson, manufacturing in China. We know that for some customers who may have previously bought generator sets made in Europe or the USA, there can be an image challenge with made-in-China products, maybe to do with quality or how a product will be supported. With FG Wilson, our China-made products are built in modern, world-class factories, at the same standard, to the same design, with the same components and supported with the same global parts infrastructure as any of our other European or USA-made products. We make a big effort to show this to our customers. And, of course many other industries work the same way: look at the phone in your pocket or the computer on your desk. Most likely these were made in China."

Naveen D'Souza: "Yes, we're seeing positive signs in the Gulf region. As oil prices have increased, we've noticed brisk activity in the oil & gas and construction sectors. Investor confidence always increases when oil prices rise, and this has a positive effect on the market for generator sets."

Factors leading to the rise in power rental market in the Middle East? How has the growth been in the GCC, especially in UAE and Saudi Arabia

Naveen D'Souza: "In the UAE, the rental sector is certainly seeing growth, as customers opt for equipment rental instead of a capital purchase. It makes a lot of sense when customers have budget constraints or are thinking about liquidity. Renting or leasing a machine means it becomes an operating expense, not a capital asset. This helps customers keep tighter control over their finances. Other benefits of renting are that customers don't need to employ people to maintain the generator set: it's all looked after by the rental operator. And if a unit fails, the rental operator is contractually obliged to repair or replace it immediately. With a dedicated rental product range, backed up by effective aftermarket support and ready spare parts, FG Wilson is a preferred brand with several Middle Eastern rental operators."

Medhat Al Shafey: "I agree with Naveen. Another reason why renting machines is becoming more popular is because construction projects are more often broken up into smaller, shorter phases which encourages customers to focus on shorter time horizons and not think about investing in machinery for an entire long-term project. For these shorter project timescales, renting can be a very good solution."

Which is the biggest generator set market in the region? Recent reports suggest Saudi Arabia, the UAE and Qatar are leading the way. What are the countries, you think, follow the list?

Naveen D'Souza: "The last few years have been challenging for many in the industry but there is now renewed vigour and investment across the region. We would see the top 3 markets as Turkey, UAE and Saudi Arabia. Together they account for well over half of the entire generator set market in the Middle East."



Between gas and diesel generator sets, which has a better growth prospect and why? With solar generation being tapped in a big way today especially in Saudi Arabia, the UAE and Egypt, do you think it may affect the generator set industry?

Naveen D'Souza: "I think diesel generator sets have better growth prospects in the immediate future. Although gas generator sets have been in use for many years, lack of proper distribution and local storage constraints are hindering growth. But there is now much emphasis on clean energy in the region which could drive growth for gas generator sets. There are efforts to provide local storage solutions, with uninterrupted supply of gas and this will help to grow the gas market."

"Interest in solar power generation has increased tremendously in the region but for the foreseeable future, this will co-exist alongside generator sets. Even though the size of solar panels is reducing, you still need a very large surface area to install a solar plant compared to the space occupied by a generator set. We see a lot of people who ask about solar power generation but what they really need to meet their needs is a generator set."

Medhat Al Shafey: "Yes solar power generation will definitely play a growing role in Saudi Arabia and across the Middle East, but for now and the foreseeable future, we're going to see power generation solutions combining diesel and solar, especially in the telecoms sector."

What is the role of hybrid generators in the present context?

Medhat Al Shafey: "All telecom companies in Saudi Arabia are interested in hybrid generator sets. They prefer a complete solution from one source, so it's one call for service and support for the entire system. At TAMGO, we're working closely with our customers to provide them a complete solution."

Naveen D'Souza: "Yes, we see this strongly too. There are a few variants of hybrid generator sets in the market. However, the only successful hybrid options are for solar with back-up from a diesel generator set and battery. These are mostly used by telecoms operators to provide power to the GSM towers. As the batteries get more efficient and smaller, hybrid generator sets with battery back-up might play a bigger role in the coming years."

What are the preferred ranges that are most popular in the region and the industries that are catered to?

Naveen D'Souza: "FG Wilson manufactures generator sets from 6.8-2,500 kVA. These are used across the various industry segments. Most of our 6.8 - 30 kVA range are installed by telecoms operators and our 30-700 kVA range is used widely to provide prime power at construction sites, offices, small industries and events. Our larger range of 750-2500 kVA generator sets are used in power plants (as a main source of power), large industries and emergency standby in buildings and other installations, where continuity of power is important, for example, hospitals, banks, data centres and high-rise buildings."

Upcoming trends in the generator set market for the Middle East region. How is North Africa region looking in terms of generator set market?

Naveen D'Souza: "Customers are certainly becoming more price conscious. We think in terms of lifetime value: so while we focus heavily on cutting down the costs, we do not compromise on quality, reliability and support. It's always possible to find something which is cheaper up-front, but always important to think of ownership experience and costs over a product's lifetime."

"North Africa is experiencing strong growth mainly driven by infrastructure development, oil & gas and structural reforms and these will drive demand for generator sets."

Medhat Al Shafey: "Yes we're seeing promising developments in Egypt with new infrastructure projects and the new capital city which is now under construction."



INTEGRATING STANDBY GENERATOR SETS INTO DATA CENTRES

There are many causes of data centre outages but loss of power doesn't need to be one of them and a well-chosen generator set can take this concern away.

If you're thinking of installing a standby generator into a data centre's power system, there are several key decisions.

Generator Set Selection

The first and most important decision is choosing the right generator set rating to meet demands from the critical UPS / IT and cooling / chiller loads (also called the N demand). If the data centre is likely to expand, this may change over time.

The decision on whether the generator set will supply power at high or low voltage depends on the size and overall scale of the data centre, on the tier

distribution topology and on the actual space available to accommodate the generator sets. Typically when the N load requirements are above 4 -5 MW, high voltage is the best option.

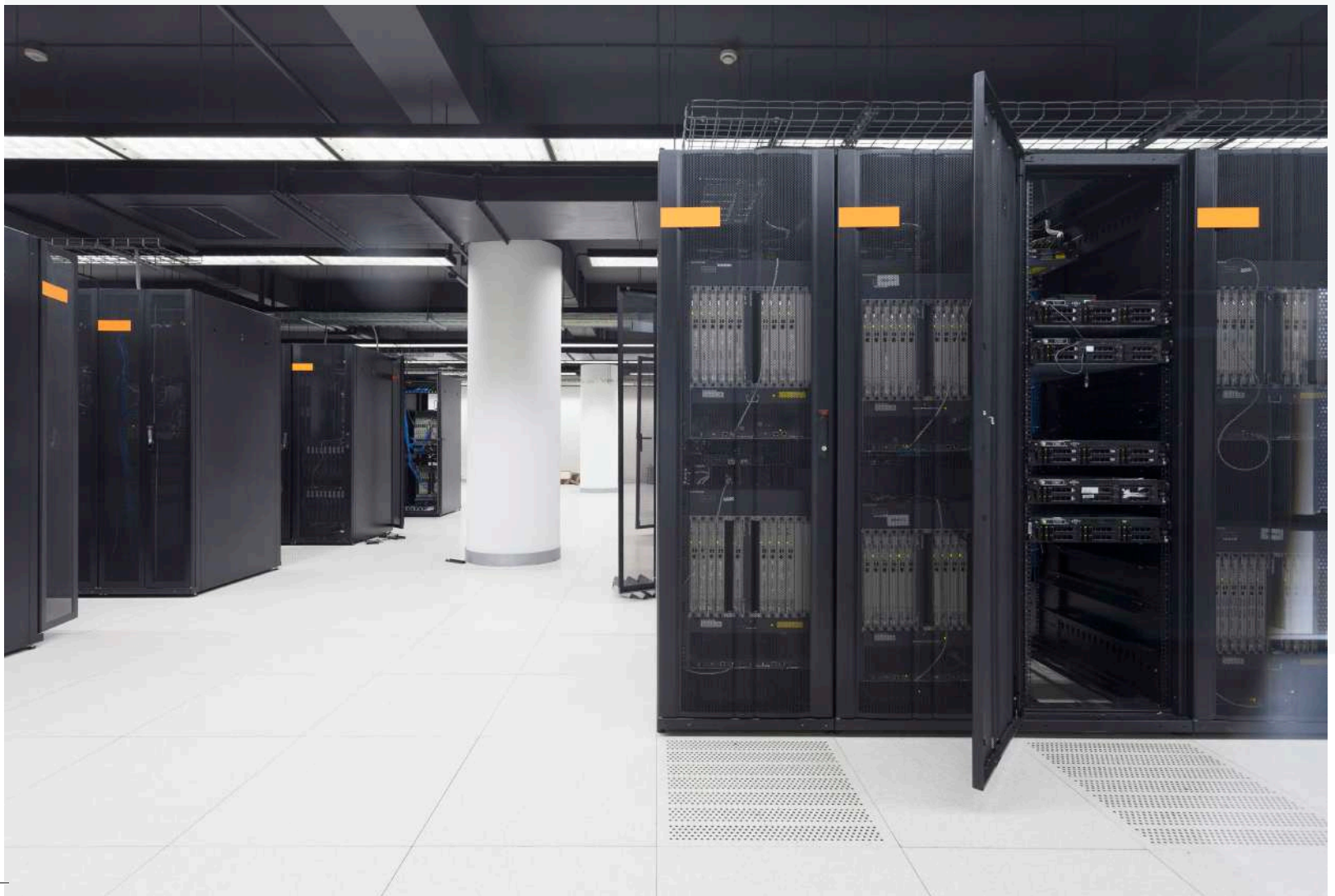
Critical UPS / IT load can influence generator selection in several ways:

- UPS battery recharge which can be 10-20% of UPS rating. This power may need to be covered by the generator. In some cases, an operator may opt not to recharge when running the generator set. This will affect the design autonomy when transferred back to the mains and presents a risk which the data centre operator must consider.
- Modern UPSs present quite low levels of harmonic current distortion (THDi) to the generator set although in situations where the UPSs are in

bypass mode, the higher harmonic distorting IT / Server load needs to be supplied by the generator set which may require an oversized alternator to ensure the quality of voltage waveform is not affected.

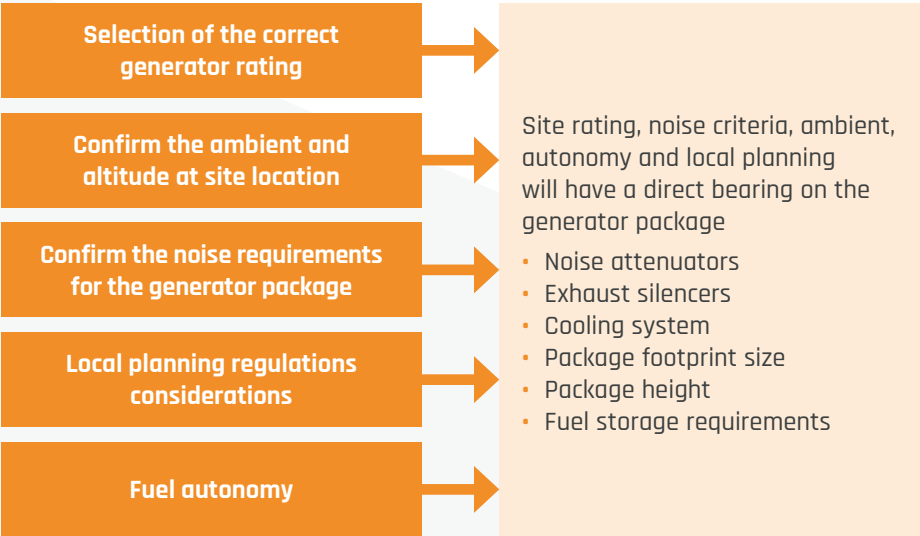
- Most modern IT loads present a leading power factor by nature. This does not create an issue for UPSs in normal mode, but again if the UPS is in bypass mode, the leading power factor load must be supplied by the generator set directly and this may cause voltage instability issues which may require an oversized alternator.

The effect of UPSs in bypass mode will depend on the UPS kVA rating in proportion to the generator / generators rating. A supplier will be able to provide detailed support on this and other aspects of generator set selection.



Data Centre Continuous Ratings

The running duty of the generator set in data centre applications is very important, especially when looking at requirements defined by the Uptime Institute. FG Wilson in conjunction with our sister company Perkins have developed a Data Centre Continuous Rating which delivers unlimited hours of annual operation with no restriction on the average load factor up to 100% constant load. This rating complies fully with Uptime Institute Tier III and IV continuous operation requirements and is currently available from the P400-1 through to our P2500-1 models.



Generator Set Package Integration

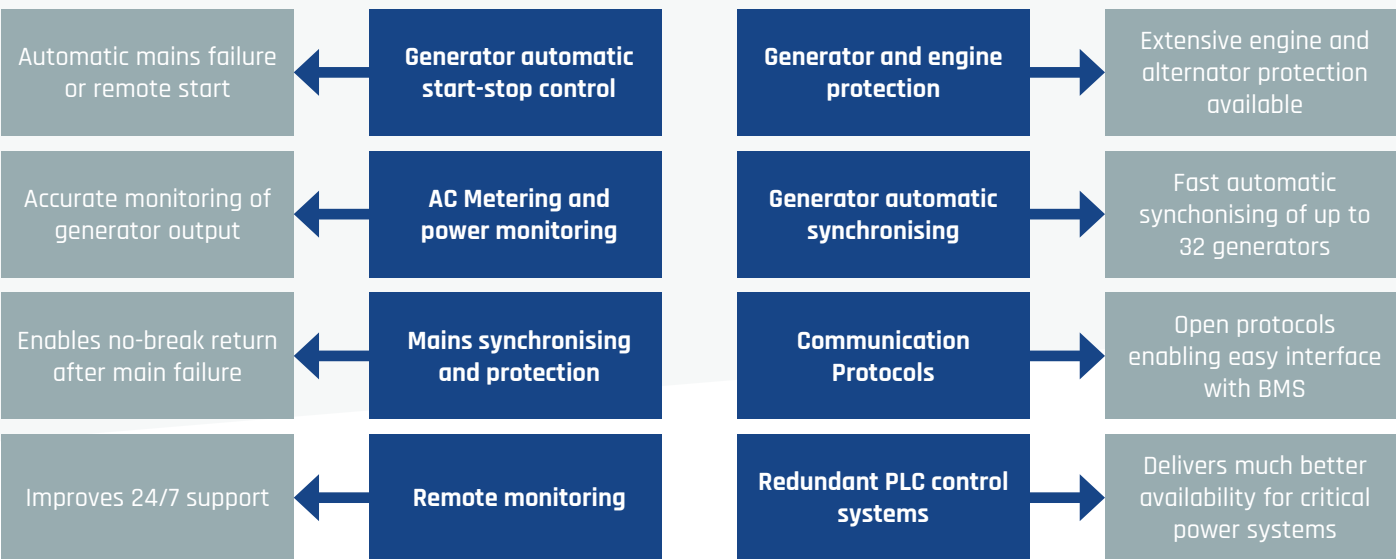
After determining the rating and number of generator sets required to meet site load demands, the physical integration of the units means consideration of ambient, noise, local planning regulations and fuel autonomy. The outcome of these considerations influences the generator set package installation in terms of noise attenuators, exhaust silencers, cooling systems, package footprint, height and fuel storage. For example, if a very low noise level is required this will increase the size of attenuation, exhaust silencers and the

overall package footprint, which of course will increase the package costs. It's vitally important that the criteria are as accurate as possible at the concept stage of the project. A generator set supplier should be able to provide in-depth support during this development phase.

Generator Set Control Systems

This covers a wide range of features and functions, many of them vitally important when delivering key control requirements for the generator set. For

example, the ability to load sequence enables N+1 or N+2 functionally for redundancy. The extensive communication interfaces can facilitate interfacing with on-site management systems and enable operators to monitor the generator set remotely, improving 24/7 maintenance support. Redundant PLC control systems are essential for delivering a high level of availability when managing the primary power of the data centre, essentially the mains and standby primary incomers and distribution.





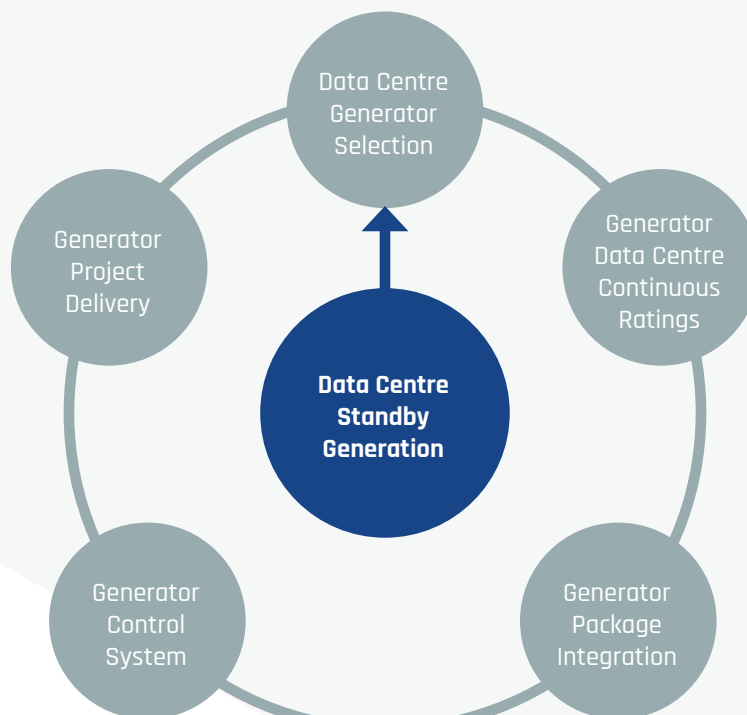
| | |
|---------------------------|---|
| Project definition | <ul style="list-style-type: none"> • Understand client needs • Agree detailed scope • Identify project stages |
| Project plan | <ul style="list-style-type: none"> • Select suitable Genset • Develop operational control philosophy • Detailed site specification design: <ul style="list-style-type: none"> - System control - Fuel system - Noise attenuation - Site layouts |
| Project delivery | <ul style="list-style-type: none"> • Factory witness testing • Task specific method statement • Risk assessment • Commissioning protocols • Document handover |
| Project closure | <ul style="list-style-type: none"> • System walk down • Snag completion • Integrated System Testing (IST) • Client handover |

Generator Set Project Delivery

When choosing a generator set brand it's important to evaluate a supplier in terms of their ability to support in the definition of the project, the development of a project plan, the

manufacturing, testing, site installation to the final commissioning and most importantly after sales maintenance support.

Robert Breadon is an Application Consultant at FG Wilson.





Always Connected

While you may not be able to control when a power outage occurs, you can take steps to ensure it never impacts on your business. And today when it comes to guaranteeing standby or emergency electrical power, in terms of cost, flexibility and responsiveness, there's really no better option than a generator set from FG Wilson.

Over our 50+ year history, FG Wilson generator sets have been installed in more than 150 countries worldwide by organisations and businesses just like yours. You'll find our generator sets in many of the world's most iconic buildings, quietly guaranteeing that they are never without electric power.

And when you entrust your power project to us, you receive the full support of more than 300 skilled technicians who nurture your project from initial design and manufacture, right through to installation and commissioning.

To find out more, visit us at www.fgwilson.com



COAL MONGOLIA

From 5 - 6 September, our Mongolia dealer Monhorus International www.monhorus.com were at the British Embassy Booth at Coal Mongolia, www.coalmongolia.mn Mongolia's biggest coal trade and investment conference and exhibition, in the Shangri-La Hotel, Ulaanbaatar.



UEL'S 30TH ANNIVERSARY

In July, we were really pleased to see Uel McKinney back in Belfast to mark his 30th anniversary with FG Wilson.

Uel joined us in 1989, starting in a production role in First Street, Belfast, our original premises. He helped start up the FG Wilson sales office in Dubai in 1992, was with our Hong Kong Sales Office almost from the start in the early 90s, was one of the first employees at the Newberry, South Carolina, facility in the late 90s. Uel is now FG Wilson Regional Sales Manager for SE Asia, based in Singapore.



DIDCOT

Three FG Wilson 500 kVA rental generator sets from our UK dealer Power Electrics www.powerelectrics.com/ supplied electric power to the works at Didcot a Power Station in Oxfordshire, UK, before the remaining three huge cooling towers disappeared in quick succession on 18 August.



FG WILSON: ASIA'S POWERHOUSE

Generator set manufacturer FG Wilson have been a strong player in the Asian power generation market for four decades now. Ciaran McCarney, who manages FG Wilson's sales in the region says local presence has been crucial. "Probably the most important and most difficult thing to do when you're establishing in a new region is finding the right partners to work with to promote and support your products, particularly in a huge and demanding region like South and South East Asia. We are based in the UK and very early on, we realised that we needed a local hub to support, train and carry stock for dealers across the region."

The hub, or master stockist, was set up in 1992 in Singapore, and today, as FG Wilson Asia Pte Ltd, it's still there doing the same job for a wide group of dealers across 13 countries. FG Wilson Asia carries up to 600 generator sets in stock, from small to very large, together with a colossal array of FG Wilson spare parts, around \$2 million of them at any time.

Ciaran explains, "We do this because it brings the kind of capabilities which we have in our home markets to markets far from our factories and it means we can serve customers equally well everywhere. This is important because although some generator sets may be running for fewer hours than they did ten years ago, the hours when they are needed are more crucial now. Ten years ago, if electric power from the grid was down, many businesses could still function, at least for a short time. Now in our online world, it's almost impossible. Many businesses can't take the risk of even short interruptions of electric power. Much of the growth in demand for standby power generation has come from this digitalisation effect."

FG Wilson Asia also acts as a powerful hub to work together with dealers on major projects. The most recent involved 8 x 2000 kVA generator sets for standby power in one of Indonesia's most iconic structures, the Indonesia Satu / Indonesia-1 twin towers complex now under construction in Jakarta's Central

Business District. Each generator set was installed with customised enclosures to ensure low operating noise of 75 dBA at one metre and the units can operate in island mode or parallel with the grid.

Ciaran says, "Having the stock of generator sets, including very large units, means fast deliveries. Having the know-how in the region means that generator sets can be customised and projects can be managed far from the factory. And having a big stock of parts in the region means fast service. And now we also have one of our factories in the region. Our facility in Tianjin, China, can manufacture almost our entire product range. For our dealers and customers in Asia, this means the same high quality products at shorter lead time from the factory. Altogether, this brings us closer to customers with the same quality, standards and high levels of support everywhere."

www.fgwilson.com.sg/



JOHN PETROPOULOS RETIREMENT

In October, Peter Havenaar from our sales team travelled to Athens to present a retirement gift to John Petropoulos of our dealer Petros Petropoulos, who have represented FG Wilson in Greece for more than 30 years.

John Petropoulos was born in Athens in 1944. He graduated in 1963 from Athens College and received a B.Sc. in Mechanical Engineering from Queen Mary College, University of London in 1966. Two years later he received an M.Sc. degree in Internal Combustion Engineering from Kings College, University of London.

After completing military service, John entered the family business, Petros Petropoulos & Partners. At the time there was a conflict between the Partners, which was resolved and the Company was split, in 1970. The Founder Petros Petropoulos and his two sons, Costas and John continued the business which at that time was mainly based on Perkins Diesel engines. Together with his brother Costas they worked very hard

to overcome the serious difficulties the Company was facing at that time.

After 1972 the Company started growing fast, taking on exclusive distribution rights with Lombardini in 1974 and with Isuzu diesel engines and Allison Transmissions in 1980. In 1984 the cooperation with Scania Trucks started and in 1987 with FG Wilson. Over the following 10 years the company grew, both in sales and profitability, resulting in its very successful entry to the Athens Stock Exchange, in 1999.

Growth continued over the next 10 years, driven by co-operation with Bombardier and Evinrude, then with Zodiac, in 2000 and in 2001, with ARGO Tractors and in 2003 with Isuzu Pickups. The crisis in the Greek economy after 2008 hit all businesses in Greece hard, with some markets collapsing by 80%. But Petros Petropoulos was able to restore the business back to pre-2008 levels with exclusive co-operation with Shell Lubricants in 2010 and Jaguar Land Rover, in 2011. Today the Company has higher



Sales than 2007 and also one of the highest credit ratings in Greece.

After 49 years of leadership in the Company, John retired in April 2019. But he still has an office in the company and is never very far from what is happening there.



MAJOR MILESTONES

In November, we saw two wonderful milestones: Debbie McAteer marked 25 years with the FG Wilson team and Linda Walker marked 35 years. Linda joined FG Wilson when we were at our original premises in First Street, Belfast. A lot of great stories were shared when we got together with them both!



35 YEARS AT FG WILSON

In November, Linda Walker marked 35 years with FG Wilson. Now in our Marketing Team, Linda joined us on 5 November 1984, as the 9th female employee of FG Wilson.

At that time, we were based in First Street, our original premises and of course, FG Wilson was a family business, owned and managed by our founder Fred Wilson. Linda remembers it as a place where everyone knew each other and everyone's job description was to do whatever it was that needed to be done. Most of all, she remembers a place where work was piled high, everyone worked as a team and where many great characters made that team. And every Thursday, everyone received wages in a little brown envelope.

During the last 35 years, Linda has worked in the Telex Room. For those of us not old enough to know what this is, it was a machine which received and sent printed messages, almost like SMS messages. And the messages came on ticker tape. Linda also spent time in the typing pool, where all correspondence and quotations were prepared in pre-desktop

computer times. She also worked in the main reception, answering all the calls which came in from across the world. For many people coming for job interviews or for their first day of work at FG Wilson, Linda's was the first face to greet them. Later, Linda was one of the first team members of the Parts Department, when it began as a team of three people.

Today, Linda is with the Marketing Team. She looks after our website, dealer

locator, merchandise, supports around 20 dealer websites, proof reads all our content, and still supports the parts team with marketing initiatives. And she also keeps us right with paperwork.

Although many things have changed in 35 years, for Linda, two special things are still the way they have always been: the culture of FG Wilson and also our connection to the people and places where our business came from.

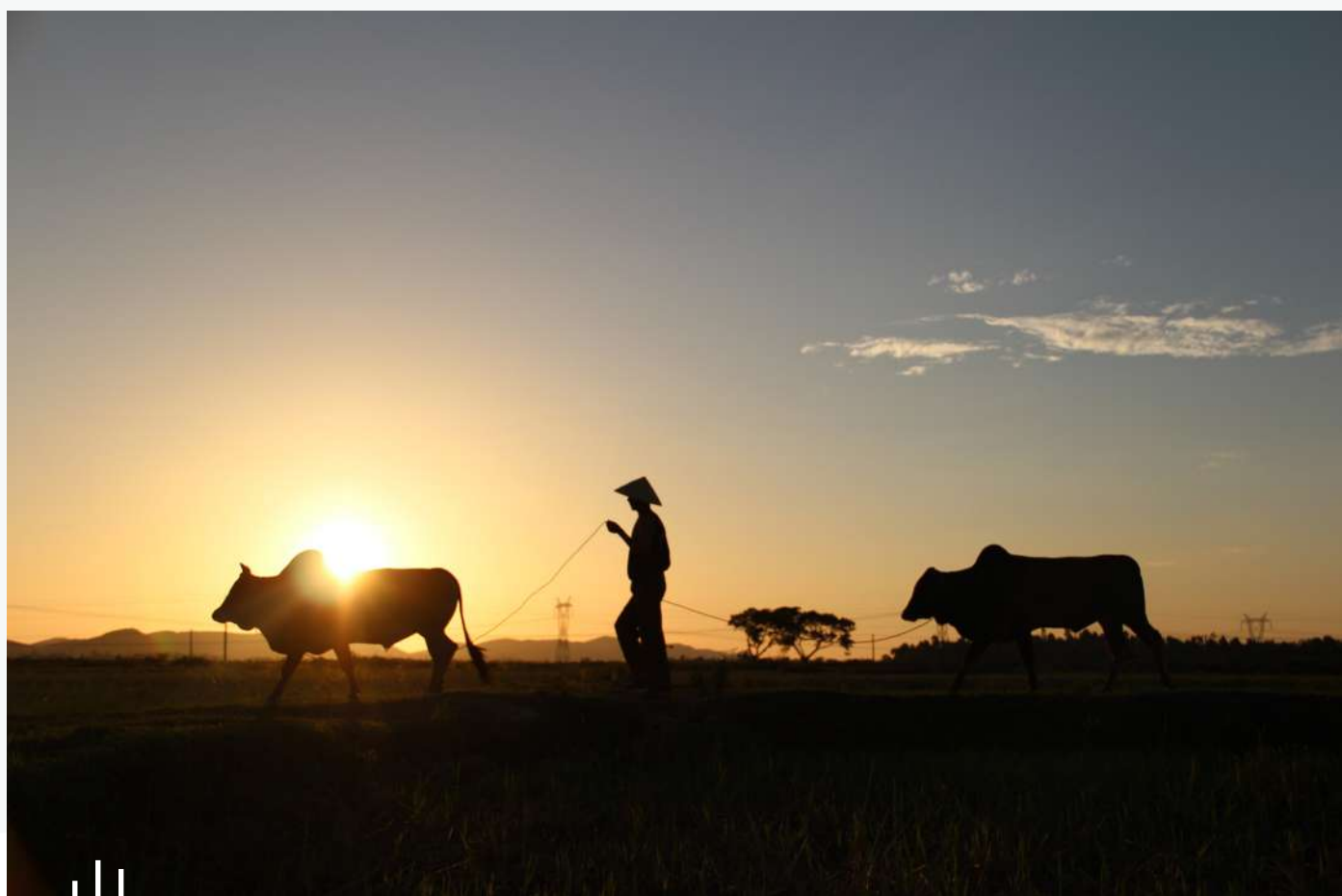


POWER FOR VIETNAM FOOD SECTOR

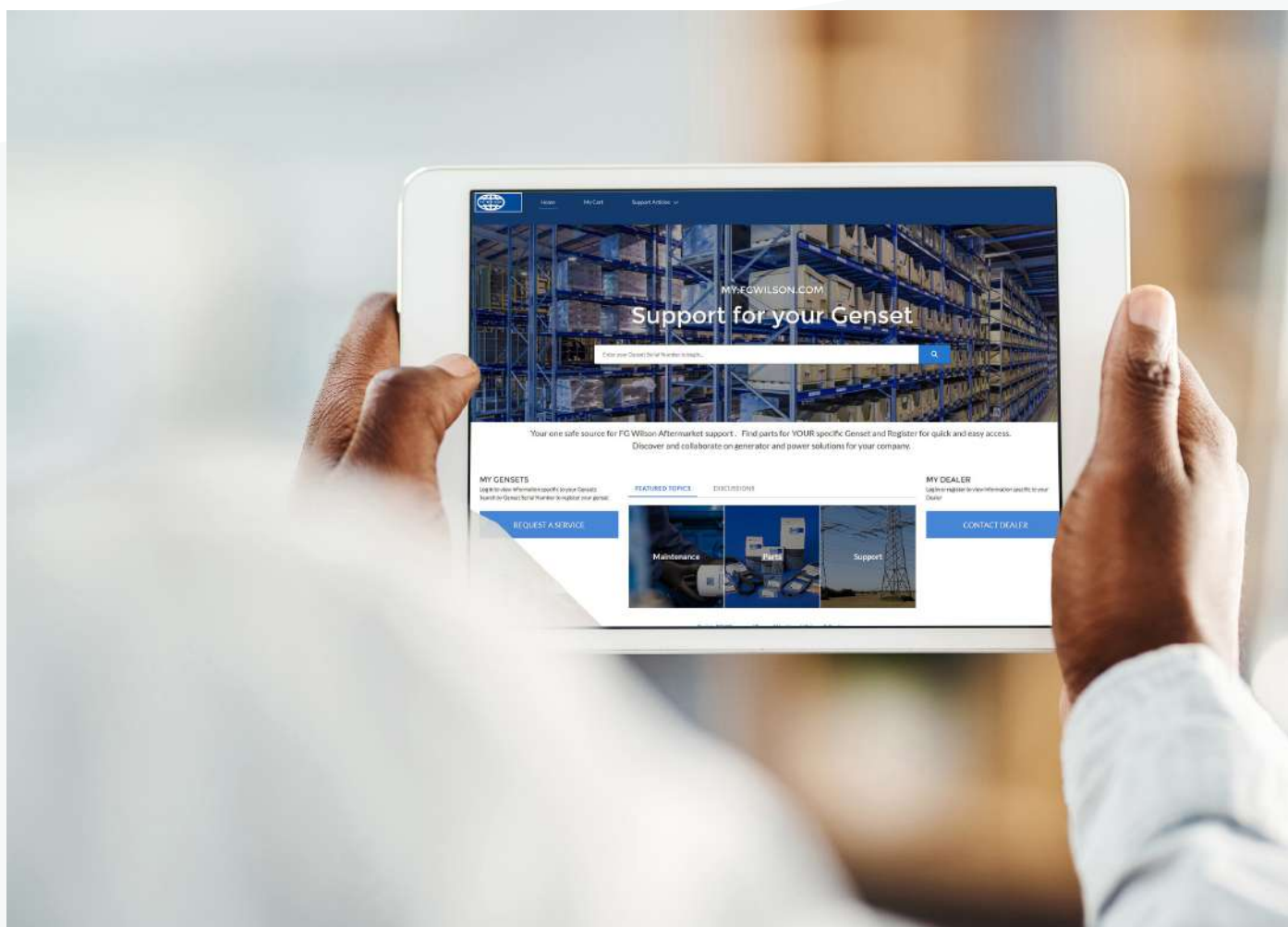
Vietnam is fast becoming a major producer and trading hub for the global food industry and FG Wilson generator sets supplied by our dealer Tuong Viet <https://tuongviet.vn/> are now helping to power the operations of a major agricultural conglomerate in the country as part of a \$200 million investment with more units following into 2020.

The investment will benefit from Vietnam's membership of the Trans-Pacific Partnership trade deal, which gives the country more advantageous trading terms with other members. The initiative will lead to a major increase in shrimp exports, boosting shrimp farming capacity to 50 billion units a year from the current 12 billion.

FG Wilson has supplied standby power to several similar farms across Vietnam with more due to follow in 2020.



FIND PARTS FAST



How FG Wilson is enhancing the ownership experience for customers

No one likes to spend time looking for something, especially when it's not easy to find.

From 2 December 2019, if you own a generator set from FG Wilson, you'll be able to find a parts list tailored specially for you through the new online parts identifier in <https://my.fgwilson.com>

Simply enter your generator set serial number to see your parts list. If you need a price quote for the parts, select the parts you need, choose your local dealer from a dropdown list, fill in your contact details and ask for a quote.

Now you can easily find the parts you need and have the confidence that you're buying genuine high-quality parts from an authorised distributor.

Using the same <https://my.fgwilson.com> site you can also view how-to documents, ask questions, and book a service. It's all part of our plan to put our customers in the driving seat, making it easier to find what you need and have a great ownership experience.

POWER RESTORED



During the recent floods in England, a call centre for Police and Health Service lost power when its HV sub station was flooded with over four feet of water.

Our dealer Power Electrics restored power within 12 hours, supplying 2.4 MW of temporary power from FG Wilson generator sets.



TEESIDE PORT

At Teeside Bulk Handling Docks in England, there are several FG Wilson P33-3 generator sets powering mobile hoppers like this one.



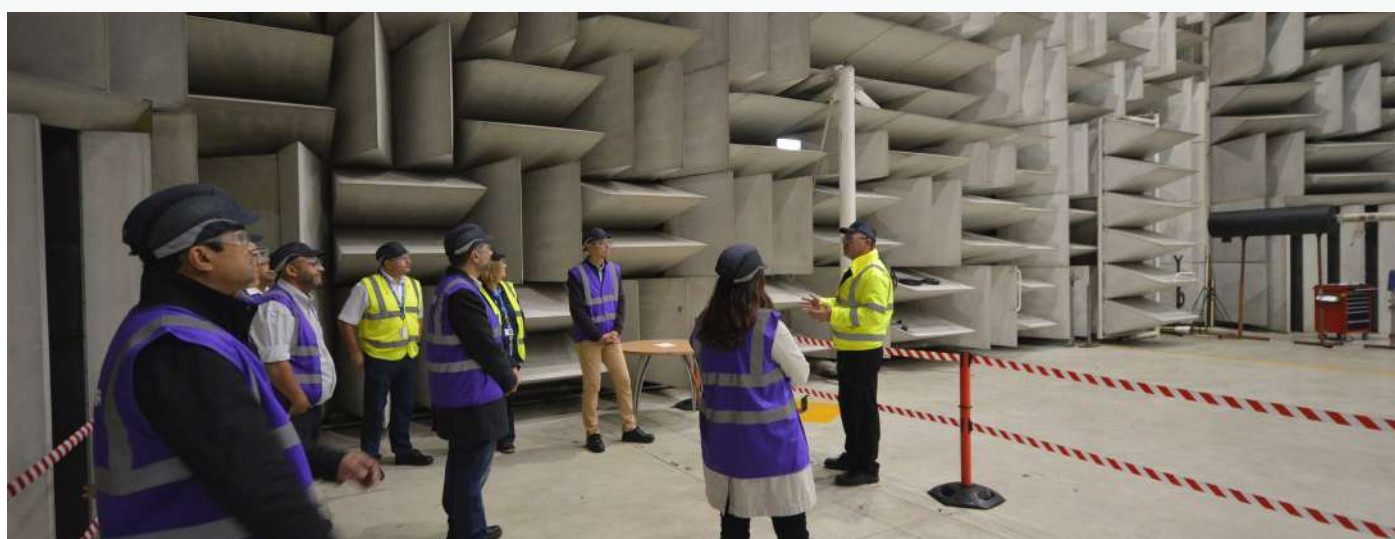
WITNESS TEST FOR 20,000 KVA DATA CENTRE PROJECT



In October, a major Turkish data centre investor visited our Larne factory with FG Wilson Turkiye to see a witness test for generator sets to be installed at their European data centre in the greater Istanbul area.

GOING DIGITAL

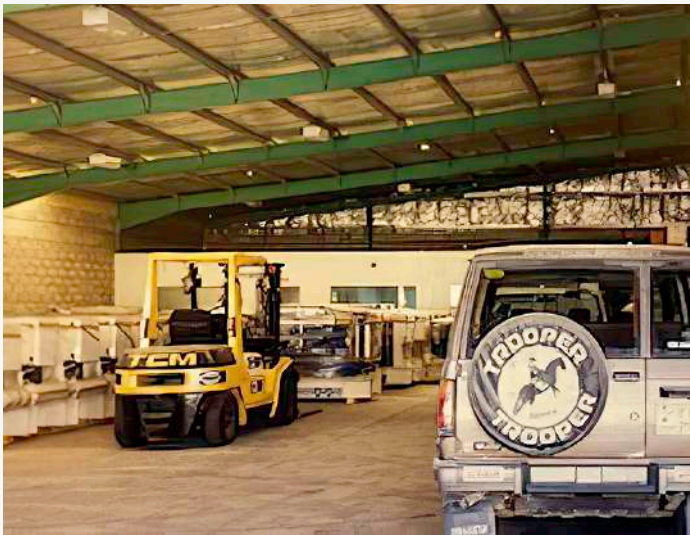
During September, in Belfast, we ran a digital marketing workshop where we were joined by dealers from Kenya, Egypt, France and the UAE. And we were also treated to a great tour of the Larne facility by Noel Bell.





FRIENDS IN HIGH TECH PLACES

In our digital age, face to face working relationships are probably even more important. On the way home from a dealer digital workshop in Belfast, Mithilesh Singh from our marketing team called in to see Sarah and Damien who look after our FG Wilson Google account in Barcelona. In a day like this, we learn and achieve far more than in a year of e-mails or teleconferences.



JEBEL ALI 1992

Uel McKinney found these photos taken in September 1992 when we were opening our first sales office in Dubai. Since then, it's been a great privilege to witness the wonderful transformation which the region has seen.

Power For Our Generation

There are many ways to store or produce energy but when it comes to guaranteeing standby or emergency electrical power, in terms of cost, flexibility and responsiveness, there's no better option than a generator set from FG Wilson.

Our products range from ready-to-run generator sets to completely bespoke turnkey power systems with remote monitoring, all with lifetime product support from our dealers.

Based in the UK for more than 50 years, we've worked together with a multitude of customers in all environments globally and since 1990 have installed more than 640,000 generator sets around the world, with as much power generation capacity as the entire UK power grid.



To find out more,
visit us at www.fgwilson.com





Always Connected

The FG Wilson 6.8 – 25 kVA range of generator sets is designed to run efficiently for long intervals in remote locations, which means:

600, 1,000 and 2,000 litre fuel tanks so you need to refuel less often.

Service intervals up to 1,000 hours so you make fewer visits to site.

New LCD control panels with optional remote communications to make day-to-day operations much easier.

And three enclosure designs so you get the enclosure you really need.

Find out more at
www.fgwilson.com



FG WILSON EVENTS

MANDALAY ELECTRICAL PRODUCT AND AIR CONDITIONER EXHIBITION

In February, AR Mahn Trading Company Ltd, one of our dealers in Myanmar, participated in the Electrical Product and Air Conditioner Exhibition in the Mandalay Convention Hall.

Mandalay is the second largest city in Myanmar and the region around the

city is upper Myanmar's most important commercial area. The team were able to meet many potential customers and the event was a strong opportunity to enhance FG Wilson presence in the region, with more than 100,000 people visiting the event.

Already two generator sets, 100 kVA and 275 kVA units, have been sold as a result of contacts made at the event.

armahntrading.net



FG WILSON RENTAL RANGE AT THE EXECUTIVE HIRE SHOW 2019

In February, we were exhibiting at the Executive Hire Show, in The Ricoh Arena in Coventry, UK, showcasing the FG Wilson PRO range of generator sets for rental operators.

In the UK, this event has become an unmissable national exhibition for tools, plant and hire equipment. The show brings the entire industry together and is pitched as an event where "Passionate Hirers Meet Innovative Suppliers". Initially a trade-only event open to hire executives throughout the UK and Ireland, today it also attracts hire industry visitors from Europe and beyond.

With a rich heritage of more than 50 years, FG Wilson is a major provider of power generation equipment to the sector and we are a regular participant at this event. The FG Wilson PRO range

of rental models offer fleet owners a robust, reliable, versatile and user-friendly product, designed especially for rental power applications.

During the show, we exhibited PRO60-2 and PRO275-2 models, and also introduced a new product into the PRO Range family: the PRO30-2 model. This rating product now completes our PRO range of rental generator sets from 30 kVA up to 500 kVA.

We had many visitors at our stand, including potential new clients, existing customers and also FG Wilson dealers from UK and beyond, including Javier Aldaz, General Manager at GrupoNorte in Northern Spain, who operates a significant fleet of FG Wilson rental generators, including many of the new PRO models.

As well as showing visitors around our FG Wilson PRO Range models, we were also able to discuss and explain our current and future plans as we transition from EU3 to EU5 Emissions legislation requirements in Europe.

As well as offering units designed to meet EU Emissions standards for applications in Europe, we also offer fuel-optimised versions for global requirements outside of Europe. In addition to our PRO Range, we also have a substantial portfolio of generator sets which are suitable for the power rental sector.

For further information on FG Wilson full rental product range, contact Paul Rea, FG Wilson Rental Sales Manager.



Powerful Performance



From the baseframe up, the FG Wilson Rental generator set range are thoroughbreds, designed for rental and construction applications.

The entire range comes with 500 hour service intervals, industry-leading fuel consumption and 110% extended capacity fully bunded fuel tanks.

In preparation for a long service life anywhere, our enclosures are fully galvanised, designed to withstand the harshest on-site conditions and offer excellent noise reduction.

And ease of installation and maintenance are built into every corner of our generator sets.

To find out more, visit
www.fgwilson.com





MIDDLE EAST ELECTRICITY

Middle East Electricity is the world's largest exhibition and conference for the power industry. Held in the Dubai World Trade Centre, this year it took place in March and once again, FG Wilson had a prime location at the event.

On a large stand, we exhibited five generator sets from across our range, from a P22-1 to a P2250-1. Parts and

service played a big part on our stand and one of the highlights of the event was a well-attended seminar where Phil Brady (FG Wilson Aftermarket Manager) and Steven Lorimer (Business Development Manager) spoke about the importance of genuine parts and filtration.

The event is always an opportunity to meet new customers, and with many

of our dealers from the Middle East and Africa present, it's a great time for all of us to meet. On the evening of 6 March, our team and dealers came together for dinner.

We'd like to extend a big thank you to the team at FG Wilson (Engineering) FZE in Dubai who helped with the logistics and supplied the products for the event.



CUSTOMER AND CONSULTANT SEMINAR IN MONGOLIA

In November, the FG Wilson team in association with regional dealer, Monhorus International, hosted our first customer / consultant seminar in Mongolia in over 20 years. More than 125 consultants, existing and potential customers attended the seminar, dinner and networking event in Ulaanbaatar.

Philip Malone, British Ambassador to Mongolia, delivered the keynote welcome speech. Mithilesh Singh, from the FG Wilson Marketing Team, talked through the history of the FG Wilson brand, our UK and Asia Power Systems (APS) production facilities, extensive dealer network and 24/7 customer support. From Monhorus International, dealer Principal Byambadorj Battur also spoke

and highlighted major FG Wilson power projects completed in Mongolia.

A generator set was on display at the venue and the evening also included local cultural performances. Overall it was an evening which strengthened and renewed relationships with our key partners and customers in the country.





CUSTOMER AND CONSULTANT SEMINAR IN YANGON, MYANMAR

In February, together with dealer Myanmar Amethyst Trading Company Limited, we were very pleased to host more than 70 consultants, existing and potential customers in Yangon.

FG Wilson was represented by Uel McKinney, Asia Pacific Sales Manager

and by Mithilesh Singh from the Marketing Team.

The session was opened by an inaugural address from dealer CEO Heinz Ludi. Uel McKinney highlighted the history of FG Wilson since 1966. Mithilesh Singh spoke about the key attributes of the FG Wilson brand including production

facilities, dealer network and 24/7 customer support.

From FG Wilson Asia, Isaac Lee, Yeo Peng Guan, Kyaw Ko Ko and Kyaw Lin highlighted major projects completed in the region and the strength of after-sales support in Myanmar and across Asia.





FG WILSON AT PHILIPPINE ASSOCIATION OF WATER DISTRICTS

FG Wilson in collaboration with regional dealer PowerAsia participated in the 40th Philippine Association of Water Districts (PAWD) National Convention in February, at the SMX Convention Center in the Mall of Asia Complex, Manila (Philippines).

We engaged with potential customers and enhanced the brand visibility of FG Wilson on Manila.

PAWD is considered as one of the biggest gatherings in the water industry,

the event is expected to attract over 2,000 participants from the water districts and other key players in the sector.





HOSTING CUSTOMERS IN PRAGUE

In May, Noel Bell attended a Power Safety conference organised by our Czech dealer Pronix.

The event was held in the Minorite Monastery in Prague, one of the city's most famous landmarks, dating from the 13th Century. There were more than 120 participants including customers,

consultants and decision makers. FG Wilson was present among several key suppliers to Pronix.

Noel presented to the delegates on FG Wilson's history and highlighted our support capabilities through the global dealer network.

He also talked through the FG Wilson product range including the new high power density P780-1 and P850-1 models, as well as updating on FG Wilson approach to EU Stage V emissions standards.

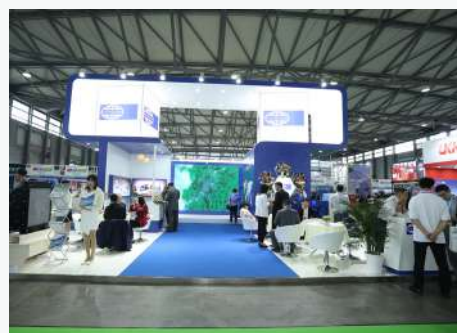
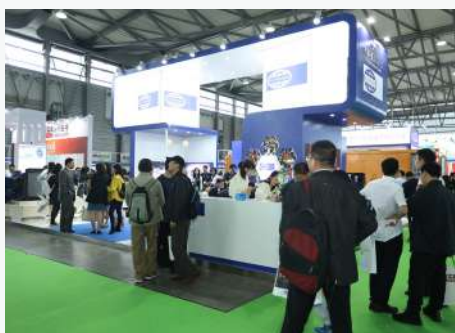
FG WILSON AT GPOWER, SHANGHAI

In April, together with our China dealer Asia Pacific Power Electric (APPE), we participated in the 18th China (Shanghai) International Power and Generating Sets Exhibition (GPOWER).

The event included a press briefing at our stand announcing the launch of a range of 24 – 220 kVA generator sets specifically for China, as well as the launch of 730

– 2500 kVA generator sets produced in our Tianjin manufacturing facility. Ciaran McCarney, FG Wilson Area Sales Manager for Asia Pacific and Pony Ma, Factory Manager at Asia Power Systems Tianjin, addressed the audience and media at the conference and the APPE management team also briefed the media about legacy of FG Wilson and benefits of new product launched for China market.

GPOWER attracted nearly 370 domestic and overseas industry leading enterprises from 40 countries and regions, across an exhibition area of more than 32,000 square metre. During the two-day exhibition more than 27,000 visitors came from 45 countries.



Because Your Business Never Stops

The seasons stop for no one and with a generator set from FG Wilson, neither do you.

FG Wilson offer a complete range of robust and reliable self-contained diesel generator sets from 6.8 – 2,500 kVA which are easy to operate and require a minimum of installation work.

Our dealers can help you choose a generator set which will give you years of service, install it for you and ensure that you have all the service and support you need.



To find out more, visit
www.fgwilson.com



DEALER MEETING IN VIETNAM

This March at the Hyatt Regency Resort in Da Nang, Vietnam, our Singapore-based dealer FG Wilson Asia hosted 50 dealer representatives from 16 different dealerships across Sri Lanka, Indonesia, Myanmar, Maldives, Malaysia, Vietnam, Thailand, Bangladesh and Singapore.

The three-day conference began on Monday 25 March with dinner. On Tuesday 26 March, Alan Ow, Executive Director of FG Wilson Asia, delivered the welcome speech and with a theme of "Advancing Partnership" the event included sessions on:

- Technology Disruption and Business Transformation: SH Leong, General Manager, FG Wilson Asia

- FG Wilson NPI Updates: Roger Kennedy, NPI & Product Engineering Manager, FG Wilson
- FG Wilson Factory Initiatives: Ciaran McCarney, Area Sales Manager, FG Wilson
- FG Wilson Parts Strategy: Uel McKinney, Regional Sales Manager, FG Wilson
- Digital Marketing Session: Mithilesh Singh, Marketing Communications, FG Wilson

After the presentation of a crystal plaque by Alan Ow to each dealer, the event concluded with a dinner in the ancient city of Hoi An, a well-preserved UNESCO-listed site.

On the final day dealers visited Ba Na Hills to experience a 5,801m ride in the world's longest non-stop single-track cable car, followed by a visit to Ba Na Hills resort.

What made the event extra special was that every location: Da Nang Airport, Da Nang Hyatt Regency Hotel, Ba Na cable car and Ba Na Resort all rely on FG Wilson generator sets for standby power.





Thinking Inside the Box

The new FG Wilson CAL heavy duty enclosure is a box full of surprises.

It combines many of the features of our top-of-the-range enclosures including:

- Highly robust design
- Galvanised steel as standard
- Strengthened baseframe
- Improved handling

And at the same time, it stays around the more economical price point of our CAL enclosure range.

To find out more about our range of generator sets from 6.8 - 2,500 kVA, visit www.fgwilson.com

Or find your nearest FG Wilson dealer at www.fgwilson.com/dealer



MINING IN MONGOLIA

Mongolia has one of the world's largest mining industries and is home to 10% of the world's coal reserves with 17 mines sitting on top of more than 160 billion tonnes of coal. Because mines are remote, it's very common to find generator sets running almost continuously on-site, and those which are installed need to be reliable, efficient, high quality and well supported.

FG Wilson dealer in Mongolia, Monhorus International LLC www.monhorus.com is a key supplier of generator sets to the industry and on 5 - 6 September, they were present at Coal Mongolia in Ulaanbaatar, an annual international coal trade, investment conference and exhibition which aims to attract investment, introduce new technologies, improve coal export, trade,

transportation and logistics as well as to strengthen the competitiveness of the Mongolian Coal Industry.

Monhorus International LLC have represented FG Wilson in Mongolia since 1997 and offer the full range of generator sets with a complete range of pre and after-market support.

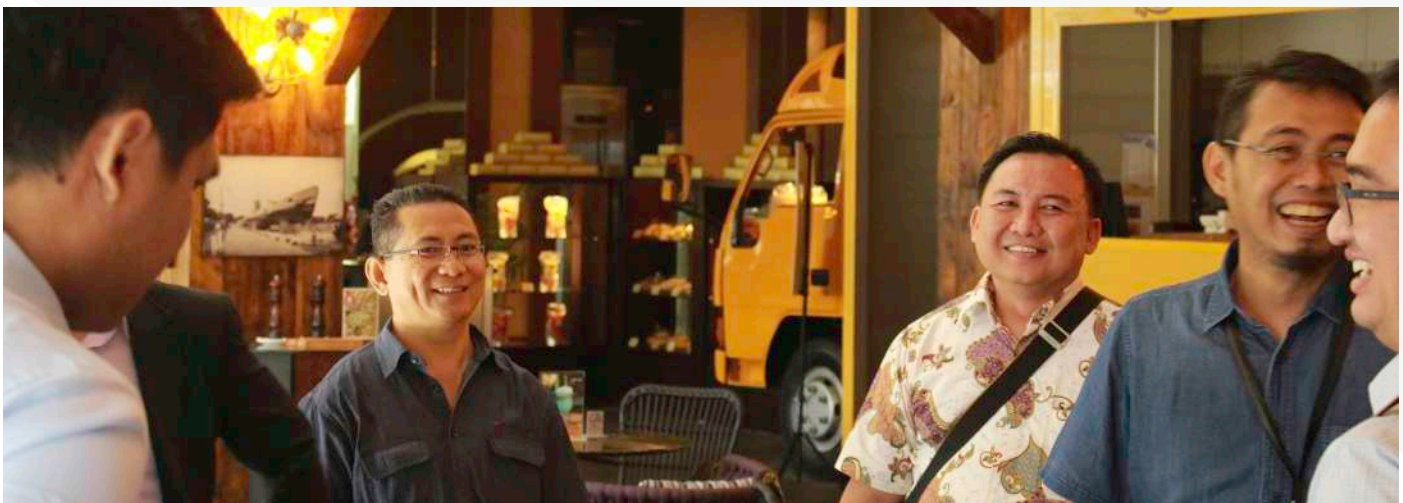


MEETING CUSTOMERS IN INDONESIA

In September our dealer in Indonesia, PT Swayadaya Harapan Nusantara (SHN) hosted a customer event at Hotel Mercure Grand Mirama in Surabaya, Indonesia.

The event was opened by Yushendri, Marketing Director of SHN followed by a brief speech by John Cheng, Business Development Manager of FG Wilson Asia who spoke about FG Wilson's history and heritage and marked the partnership with SHN over the last 19 years.

SHN's General Manager Sofyan Affandi and Sales Manager Yustinus spoke highly of FG Wilson's Larne and APS production facilities, and the quality and design of FG Wilson products. The speeches were followed by a question and answer session, and lunch.



MYANMAR TRAINING

Last month in Yangon, Myanmar, Jonny Rodgers and Robert Breadon joined in with Isaac Lee and Derick Teo of FG Wilson Asia to lead technical training for 25 enthusiastic participants from our dealers Ar Mahn Trading Co Ltd and Amethyst Trading Co Ltd.



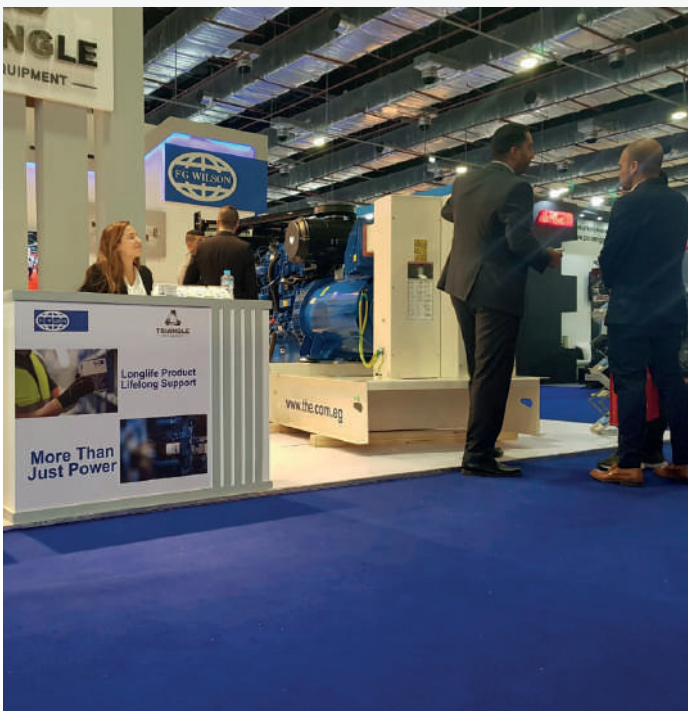
EXHIBITING IN EGYPT

In November, FG Wilson dealer for Egypt, Triangle Heavy Equipment <http://the.com.eg/> were exhibiting at Electricx in the Egypt International Exhibitions Center in Cairo. The three-day event and conference was an opportunity to present FG Wilson to more than 11,000 trade professionals

and buyers, bringing together many of the key decision makers in Egypt.

Speaking at the event, Ashraf Kamal, the Division head of FG Wilson Power Generation at Triangle Heavy Equipment said, "For several years now, we have viewed Electricx as the go-to event

which sets the pace for the year ahead. It's a great opportunity to meet new customers in our business and it allows us the opportunity to learn about new technologies and ultimately stay up to date with the latest industry trends."



PRODUCT NEWS

MORE ENCLOSURE FOR LESS COST

We've just launched a new heavy duty enclosure for our 24 - 220 kVA range of generator sets. It combines many of the features of our top of the range CAE enclosures, while staying at the more economical price point of our CAL enclosures.

This includes galvanised steel as standard coated with advanced powder coating paint, together giving strong resistance to corrosion. Strengthened base frames extend out beyond the enclosure which helps reduce handling damage. All enclosures come with a single piece roof and are weather resistant.

There's also excellent access for maintenance with lift-off hinges on side doors, and removable end panels which give access to the radiator, exhaust outlet and alternator.



MORE POWER IN A SMALLER PACKAGE



We're pleased to launch a new, more fuel-efficient P780-1 and P850-1 (50Hz) and P813-1, P895-1 and P938-1 (60Hz) generator sets, powered by the Perkins 2806 engine.

These offer significant cost savings on fuel versus the 23 litre 4006 engine models. The smaller footprint size of these models also means potential cost savings on shipping and transportation.

Suitable for a wide range of applications, the new models are able to operate in high ambient conditions, are available in EU3a compliant variants and available with dual wall bunded fuel tanks.

For further information on our products visit www.fgwilson.com/en_GB/products

730 - 2,500 KVA RANGE LAUNCHED IN TIANJIN FACILITY

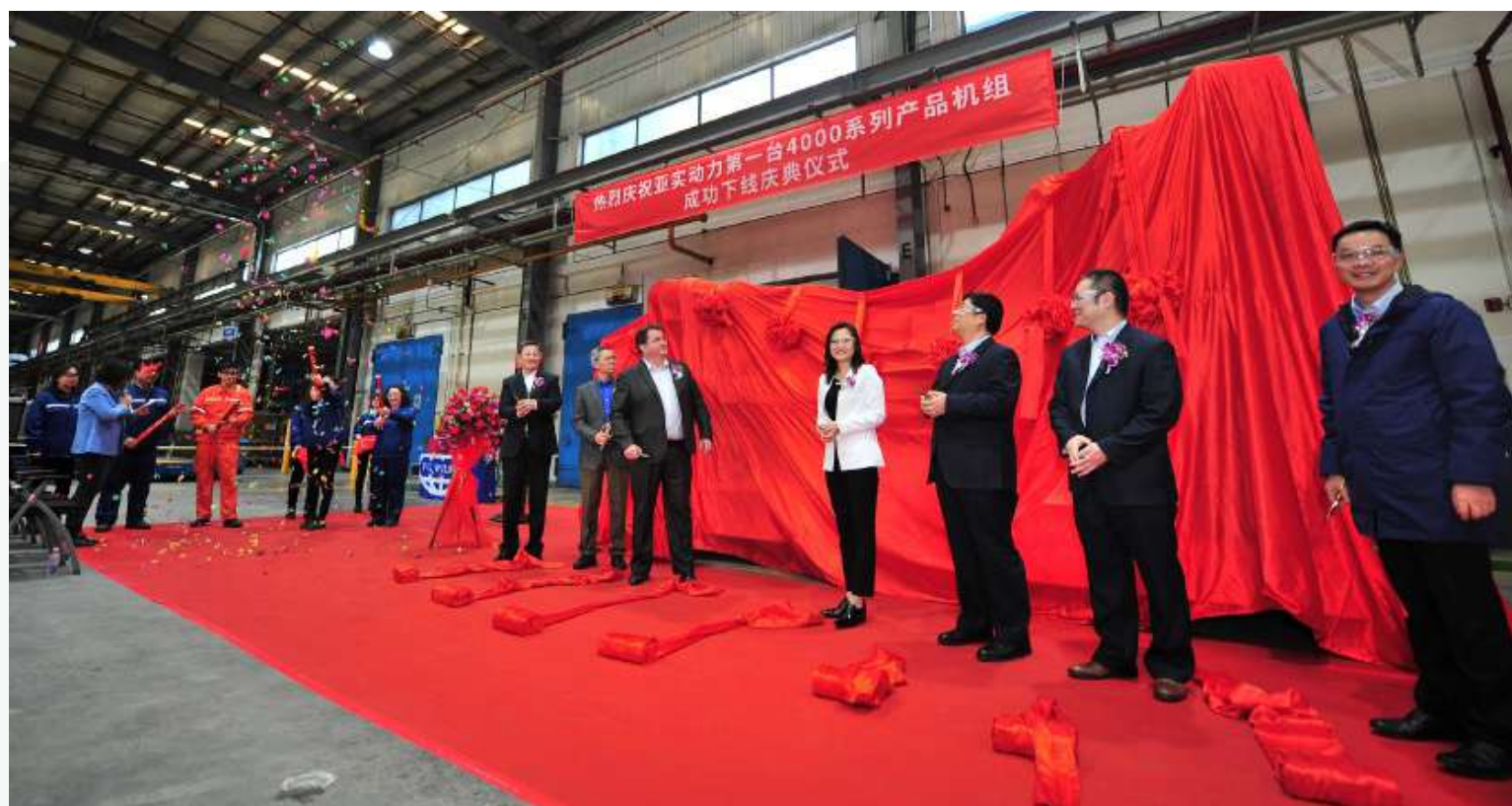
The FG Wilson 50 Hz 730 - 2,500 kVA range of generator sets is now available from our APS facility in Tianjin, China.

This means our customers have a choice of two sourcing facilities, with products built to the same

global design and sharing the same components. The range comes complete with mechanical engines offering excellent design, reliability and simple servicing, Leroy Somer alternators, compact package footprint and full availability of parts across the range.

The first unit rolled off the production line on 6 March in a ceremony marked by China Business Director Apple Fu, together with ten guests from FG Wilson dealer, Asia Pacific Power Electric Ltd and Facility Managers from the Tianjin factory.







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