

TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

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Petrochemicals in prominence

Saudi Arabia restructures policies to achieve higher output

The eco trail

Sustainability takes the driving seat in the UAE's transportation sector

THE CURRENT LEADER

A LOOK INTO HOW MIDDLE EAST ELECTRICITY 2018 IS GUIDING THE REGION TOWARDS SMART TECHNOLOGIES

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EDITOR'S NOTE

EVERY YEAR, THE UAE sets and meets new goals in sustainability – be it transportation, construction or electricity. At WFES 2018, in January, we noted the interest in electric vehicles, with sales expected to rise going forward. Our feature on p32 will tell you why. Sustainable buildings too have been a core focus in the emirates and this is why it is imperative to harness IoT and automation to manage buildings more efficiently. Find out more on p26.

On the event front, its Middle East Electricity (MEE) time again. The show is all about smart solutions for getting ahead. With the launch of Global Smart Energy Summit at this year's MEE, the latest products and technologies for efficient use of electricity will be on site. We preview the major launches and advance news (p42-82). Also, don't miss the analysis of Saudi Arabia's petrochemicals sector (p14) by economist Moin Siddiqi.

At Technical Review we always welcome readers comments to trme@alaincharles.com

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TECHNICAL REVIEW

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Briefly

Abu Dhabi Ports opens ME's first Port Digital Innovation Lab

ABU DHABI PORTS has launched the first Port Digital Innovation Lab that provides a platform for creative minds in the UAE to develop innovative solutions and technological applications to meet trade and industry needs. The lab is located at Maqta Gateway, an Abu Dhabi Ports subsidiary, and the developer and operator of the first port community system.

Capt. Mohamed Juma Al Shamisi, CEO Abu Dhabi Ports, said, "The launch of the first Port Digital Innovation Lab in the region marks another significant milestone in Abu Dhabi Ports' dedication to investing in cutting-edge innovation and skills."

Dr Noura Al Dhaheri, general manager of Maqta Gateway, said, "This is the first Port Digital Innovation Lab in the Middle East and it promises to fulfil the need for studying emerging technologies and developing new solutions by young, inspired creators and innovators."

In addition, Abu Dhabi Ports also revealed its long-term innovation strategy to its stakeholders that will focus on four key themes, which are smart technology, Ports-Emirates duality, future trade and logistics, and space logistics.

More than 700 mineral exploration permits issued in Iran

IRAN'S MINISTRY OF Industries, Mining and Trade issued 702 mineral exploration permits during the nine months to 21 December 2017, indicating a 27.9 per cent rise compared with last year's corresponding period.

According to the Ministry, there are over 5,400 active mines in Iran, from which close to 400mn tonnes of minerals are extracted every year, the Ministry's official news service Shata reported.

Iran is home to 68 types of minerals with more than 40bn tonnes of proven reserves and 60bn tons of potential reserves.

According to the United States Geological Survey, Iran holds the world's largest zinc, ninth largest copper, 10th largest iron ore, fifth largest gypsum and barite, and 10th largest uranium reserves.

World's first autonomous pods tested in Dubai

VICE-PRESIDENT AND PRIME MINISTER of the UAE and Ruler of Dubai, HH Sheikh Mohammed bin Rashid Al Maktoum, attended initial tests of the world's first autonomous pods. The project is developed by the Roads and Transport Authority (RTA), in cooperation with Next Future Transportation. The project is part of RTA's efforts under the Dubai Future Accelerators initiatives.

The autonomous pods are designed to travel short and medium distances in dedicated lanes. They can be coupled together in as little 15 seconds or detached – depending on the riders' destination – in five seconds. Each pod is fitted with cameras and electromechanical technologies to carry out the coupling and detaching processes, which can be activated while in motion.

The pod that can accommodate 10 riders (six seated, four standing), measures 2.87 metres in length, 2.24 metres in width and 2.82 metres in height, and weighs around 1,500kg. The pod has an average speed of 20k/h and it is fitted with a battery that supports three hours of operation, and can be fully charged in six hours.

Mattar Al Tayer, director-general and chairman of the board of executive directors of the RTA, said, "The pilot test of driverless units is directed by HH Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, in the context of transforming Dubai into the smartest city worldwide. It is also part of RTA's endeavours to provide autonomous transport by carrying out technological tests under Dubai's climatic conditions. It echoes the Dubai Autonomous Transport Strategy aimed at converting 25 per cent of mobility journeys in



Photo Credit : WAM

The tests were witnessed by the Vice-President, Prime Minister and Ruler of Dubai, HH Sheikh Mohammed bin Rashid Al Maktoum along with Crown Prince of Dubai and Chairman of Dubai Executive Council HH Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum and other dignitaries.

Dubai to autonomous transportation by 2030."

"The RTA has signed an agreement with American Next Future Inc. to develop autonomous units named NX1 as part of the initial phase of Dubai Future Accelerators. The prototypes of these units are manufactured in Italy and shipped to Dubai for trials. These pods run on a virtual pre-configured and programmed lane and are overseen by the operational system," he added.

Al Tayer also said that the success of initial tests of these units will bring about a breakthrough in transportation systems that offer innovative mobility solutions and ease snarls in the city.

"The autonomous pods have three protection systems to ensure full control and avoid accidents. The main system comprises 3D cameras, and the second one is a standby system based on ordinary cameras, and the last is operated manually by the operator," he added.

Allies pledge US\$30bn but Iraq needs more

IRAQ RECEIVED PLEDGES of US\$30bn from its allies in February 2018, primarily in credit facilities and investment, but this fell short of the US\$88bn Baghdad says it needs to recover from three years of war.

Kuwait's Emir Sheikh Sabah Al Ahmad Al Sabah met with Iraq's Prime Minister Haider al-Abadi in Kuwait City last month as donors and investors gathered to discuss ways to rebuild Iraq's economy and infrastructure as it emerges from a ruinous conflict with Islamic State (IS) militants who originally seized almost a third of the country.

"If we compare what we got today to what we need, it is of course much lower than what Iraq needs," Iraq's foreign minister Ibrahim al-Jaafari said. "But we know that we will not get everything we want."

The USA and UN said that failure to help Iraq rebuild could unravel its gains against IS since

economic and social problems that bred sectarian conflict, creating political space for jihadists, would persist.

Although the USA said it was extending a US\$3bn credit line to Iraq, it has not provided any direct government assistance. Instead it hopes it could count on its GCC allies to shoulder the burden of rebuilding Iraq.

Saudi Arabia will provide US\$1bn through its Saudi Fund for Development and US\$500mn in export credit. Qatar pledged US\$1bn in loans and investments and the UAE pledged US\$500mn, but added that there was US\$5.5bn in private sector investment in Iraq.

Turkey will give Iraq US\$5bn in credit lines and other allies made smaller pledges. Rebuilding homes and critical infrastructure will be crucial in providing jobs for the young, reversing displacement, and putting an end to decades of political and sectarian violence.

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Briefly

JinkoSolar and Marubeni's Sweihan project wins MESIA award

THE RECORD BREAKING 1,177MW Sweihan project, co-developed by JinkoSolar, Marubeni, and the Abu Dhabi Electricity and Water Authority (ADWEA), won the 'Large Scale Solar Project of the Year' award by the Middle East Solar Industry Association (MESIA).

When the Sweihan project is complete, at 1,177 MW it will be the world's largest PV plant. The project also broke a world record in PV electricity generation cost. At the time when the bid was announced, the JinkoSolar-Marubeni bid of US\$0.0242 /kwh was the lowest in the world. The Sweihan project achieved such a large-scale and competitive generation cost largely due to the utilisation of JinkoSolar high efficiency monocrystalline solar modules. The high efficiency of the modules also allowed for decreases in balance of system cost, enabling the world record low tender price.

Xiande Li, chairman of JinkoSolar, said, "Fuelled by the success of the Sweihan project, we will continue to seek to produce cutting-edge high efficiency modules, fulfilling our vision of optimising the world's energy structure and blazing new trails in solar power."

Hyperloop prototype unveiled, makes global debut in Dubai

DUBAI'S ROAD TRANSPORTATION Authority (RTA) unveiled the first look of the Hyperloop One prototype on 22 February 2018. HH Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai, took the first look into the hyperloop prototype design.

The ultra-fast levitating capsule can travel at 1,200kmph, transporting passengers from Dubai to Abu Dhabi and back in 12 minutes. It will take 17 minutes to travel from Abu Dhabi to Fujairah.

As part of UAE Innovation Week, the RTA displayed a full-scale model of the Hyperloop pod that is designed to reach speeds of well over 1,000km an hour.

In 2016, Virgin Hyperloop secured US\$50mn in initial funding from Dubai-based DP World and Caspian Venture Capital. It envisages having a prototype running by 2020.

DEWA inaugurates first Expo 2020 substation

DUBAI ELECTRICITY AND Water Authority (DEWA) has commissioned the first 132/11 kV main substation for Expo 2020 Dubai, and is overseeing the completion of the remaining substations as part of its ongoing commitments. DEWA completed the infrastructure and energy projects to support Expo 2020 in record time – two years before the official inauguration of the exhibition. This is part of DEWA's efforts to achieve comprehensive sustainable development in Dubai and the UAE, and in line with the vision of HH Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, to host the best expo in Dubai in 2020.

DEWA has allocated US\$1.16bn to support the infrastructure for electricity and water at the expo site. DEWA is also building three 132/11kV substations named Sustainability, Mobility and Opportunity with 45km of high-voltage (132kV) cables. The total cost of the electricity projects is US\$ 114.35mn. DEWA aims to generate half of the energy to be used by the exhibition from clean and renewable energy sources to promote sustainability, which is a key pillar of the exhibition. Mohammed bin Rashid Al Maktoum Solar Park will provide Expo 2020 Dubai with a dedicated capacity of 400MW of electricity.

"DEWA's strategy is to invest US\$22.05bn over the next five years to meet the energy needs of the emirate. This will strengthen the UAE's global



Photo Credit : DEWA

DEWA CEO HE Saeed Mohammed Al Tayer (fourth from left) said that DEWA aims to achieve HH Mohammed bin Rashid's vision to host the best world expo in Dubai in 2020 and promote the UAE and Dubai's global position.

competitiveness with a focus on a green economy, by launching projects in clean and renewable energy infrastructure. This supports the Dubai Clean Energy Strategy 2050, which aims to make Dubai a global hub for clean energy and green economy, and diversify the energy mix so clean energy will generate 75 per cent of Dubai's total power output by 2050," said DEWA CEO HE Saeed Mohammed Al Tayer.

Al Tayer added that DEWA works tirelessly to enhance infrastructure and its total production capacity, to reach 10,200MW of electricity and 470mn imperial gallons (MIGD) of desalinated water per day. A further 4,000MW of energy production will also be built. DEWA has established 235 132/11 kV substations as of the end of 2017. DEWA commissioned 15 of these substations in 2017, at a total cost of US\$450mn.

AES Arabia wins modular skids contract in Saudi Arabia

SAUDI ARAMCO HAS awarded AES Arabia a US\$27mn project to supply tie-ins modular skids to the oil and gas wells for the Khurais and Haradh sites in the eastern province of Saudi Arabia.

The scope of work includes providing detailed engineering, procurement, manufacturing and fabrication along with testing and commissioning in Saudi Arabia.

AES further said that the skids are expected to be installed near the respective wellheads in order to control the flow and pressure of oil or gas and also inject the appropriate chemicals.

Apart from this contract, AES Arabia was awarded several Saudi Aramco contracts, including the SWRO plant for the Jizan refinery. This is currently under construction with a capacity of 60,000 cu/m per day in accordance to the oil industry standards.

AES Arabia has adopted the IKTVA programme, aiming to meet the Aramco target of 70 per cent IKTVA rate by 2021.



Photo Credit : AES Arabia

"AES is in co-ordination with Saudi Aramco to work on achieving this rate in a quick yet sustained manner. Achieving this target will enable AES Arabia to maintain its position as one of the most favoured partners of Saudi Aramco," said the company.

AES Arabia's engineering teams aim to work on the details of process, electrical, instrumentation, automation and telemetry, providing water and waste water treatment solutions for offshore oil and gas exploration platforms in the kingdom and the Middle East and North Africa region.



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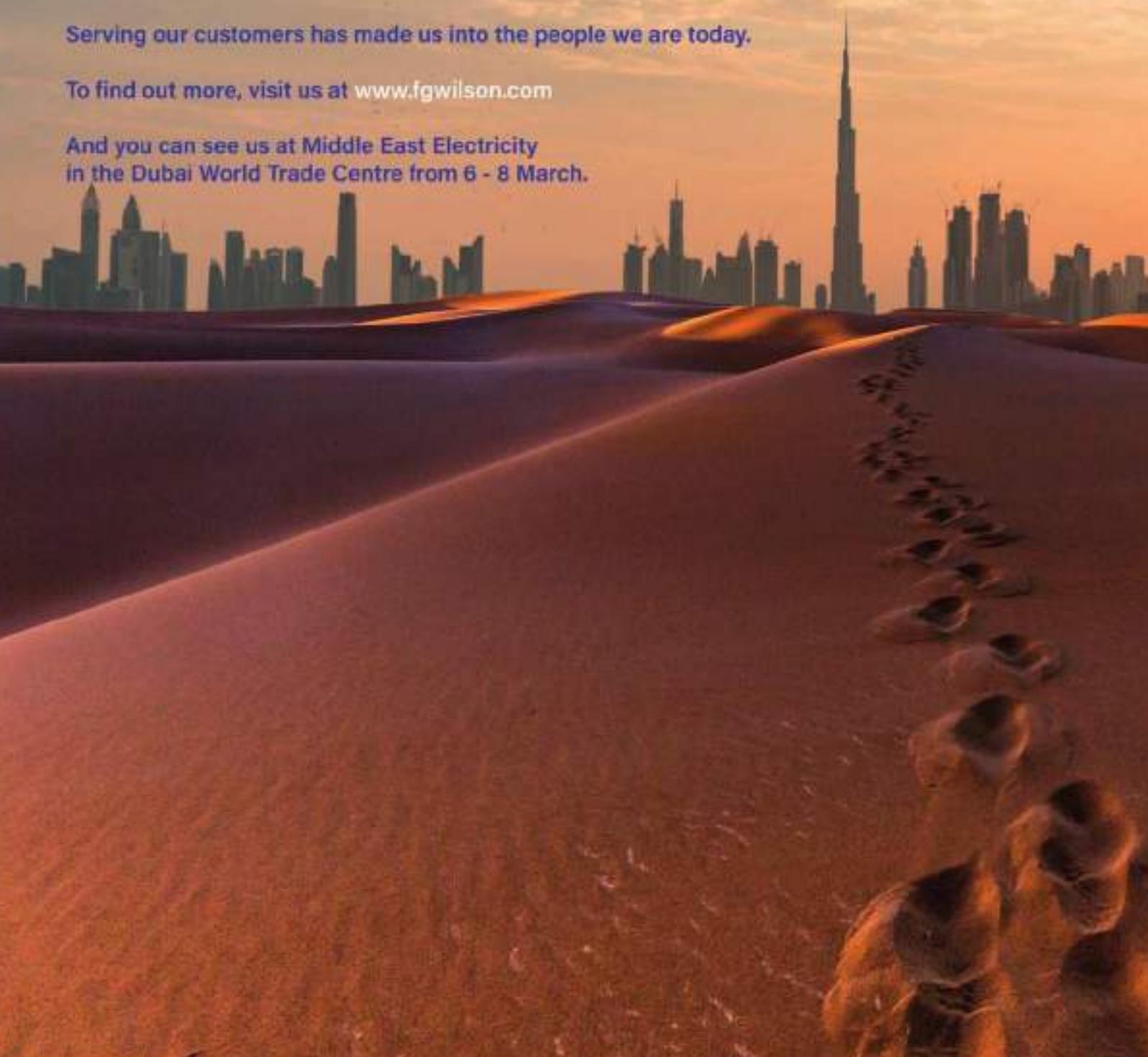
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6-8	Global Smart Energy Summit	DUBAI	www.middleeastelectricity.com
6-8	Middle East Electricity 2018	DUBAI	www.middleeastelectricity.com
6-8	ISNR 2018	ABU DHABI	www.isnrabudhabi.com
12-13	Middle East Rail	DUBAI	www.terrapinn.com/events
26-28	The Big 5 Heavy	DUBAI	www.thebig5heavy.com

APRIL

10-12	The Big 5 Construct North Africa	CASABLANCA	www.thebig5constructnorthafrica.com
15-18	BUILDEX 2018	DAMMAM	www.buildex-sa.com
23-28	INTERMAT	PARIS	www.paris-en.intermatconstruction.com
24-26	Gulf Construction Expo	MANAMA	www.gulfconstructionexpo.com
30-2 May	Oman Energy & Water	MUSCAT	www.energyandwater.com

MAY

7-10	Project Qatar 2018	DOHA	www.projectqatar.com
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SEPTEMBER

15-17	The Big 5 Construct Egypt	CAIRO	www.thebigfiveconstructegypt.com
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ON THE WEB

A round up of the leading developments and innovations recently featured on *Technical Review Middle East's* online portal. To read more or to stay up to date with the latest industry news, visit www.technicalreview.me

DEWA awards contract for fourth phase of H-Station

DUBAI ELECTRICITY AND Water Authority (DEWA) has awarded the contract for the construction of the fourth phase of H-Station at Al Aweer, worth US\$300mn, to a consortium comprising Siemens and Elsewedy Power.

The power station is one of DEWA's most important projects in helping meet growing demand for electricity. The station is equipped with the latest control systems and technologies to reduce emissions. The turbines will be completely fuelled with natural gas. H-Station at Al Aweer has a current total capacity of 1,996MW under climatic conditions and high temperatures of up to 50° C. Once the 815MW fourth phase is complete, the station will have a total capacity of 2,811MW.



DEWA MD and CEO Saeed Mohammed Al Tayer.

Photo Credit: DEWA

GWl analyses regulatory trends in the water industry

A NEW GWI Market Insight report reveals that in Abu Dhabi, amid concerns of nutrient-loading caused by ocean discharge of treated wastewater, the government has set a target of 100 per cent reuse by the end of 2018. India is also looking to expand its wastewater treatment capacity and roll out over 100 real-time water quality monitoring systems, as part of the Ganga river clean-up plan. Recent legislation in Europe is providing new opportunities for technologies targeting micropollutants and sludge management.

Recent public health crises and new monitoring technologies have raised the profile of water quality issues around the world, shaping global regulatory trends and quality standards, and creating new market opportunities, a new market report and database published by Global Water Intelligence (GWI) finds.

High profile public health crises such as the Flint Lead crisis, and the continued degradation of environmental resources due to industrial activity, have highlighted the damage that can be done through poor regulation of water quality.

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The GCC increased its year-on-year chemical R&D spend by 38 per cent to US\$729mn in 2015, versus a 9.5 per cent decline in the global market. But the GPCA said that the region's overall contribution to global spending is still just two per cent.



Photo Credit : supakittmoj/Adobe Stock

Blend it like **Saudi Arabia**

The petrochemical sector in the kingdom is accelerating at rapid pace to achieve the 2030 Vision goal of economic diversification. Economist Moin Siddiqi reports.

The industry's biggest project is being jointly undertaken by SABIC and Saudi Aramco, which entails building the first-ever 'Oil-to-Chemicals' plant in Yanbu at a cost of US\$20bn.

OIL AND PETROCHEMICAL products are vital for nearly all industry sectors – from automotive to textile, ICT, clean energy and construction business. Even medical devices, pharmaceuticals and agro-nutrients (the latter derives fertilisers from chemicals) depend heavily on oil derivatives. This puts the hydrocarbons-rich kingdom at the forefront of supplying global businesses with plastics, rubber, fertilisers, cables and all kinds of packaging and plastic bags. Saudi Arabia possesses six to eight per cent of the global petrochemicals market and diversification in the value chain is set to increase the value of production in coming years.

The Vision 2030 goals include the creation of a world-class downstream sector in Saudi Arabia, built on four key pillars: maximising value from crude oil production via vertical and horizontal integration across the entire

hydrocarbons chain; establishing a network of conversion industries to produce semi-finished and finished goods, thereby diversifying the economy; developing advanced technologies and innovation; and, enabling sustainable development in tandem with the kingdom's National Transformation Programme.

To remain internationally competitive, a new initiative 'National Industrial Clusters Development Programme' aims to exploit the value-added potential of local resources. "The government has, and still is, investing heavily in the sector, encouraging investor participation and supporting Saudi foreign joint ventures for new petrochemical projects. Ultimately, sustainable growth for the sector over the long term can really only be achieved by moving down and across the petrochemical value chain and this is currently beginning to take place in the

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kingdom,” noted a Jadwa Investment report (February 2017).

A report by the American Institute of Chemical Engineers (2014) analysed the importance of the Saudi chemicals sector in industrialisation strategy; noting:

- The plastics packaging sector requires a polymer-conversion industry;
- Home appliances need upgraded polymers, such as acrylonitrile butadiene styrene (ABS) and nylon for casings and other assorted components;
- Carmakers use huge volumes of plastics and composites in vehicles to reduce weight and for essential components (tyres);
- Solar panels contain polymers such as ethylene vinyl acetate (EVA) film;
- Downstream processing of metals requires processing fluids, which are oil- and chemical-based to produce higher value products.

Capacity additions

Jadwa Investment noted, “The creation of a downstream specialty and end-product sector is vital not only for establishing a higher value-adding manufacturing base, but also for pushing the kingdom’s non-oil exports.” Experts suggest moving up the value chain into more complex derivative products could increase returns from US\$500 to US\$2,000/tonne by 2040.

New sophisticated projects completed over the past year bode well for Saudi Arabia’s economic diversification strategy; these include the Sadara Chemical joint venture between Saudi Aramco and US’ Dow Chemical at Jubail – the world’s largest integrated chemicals plant ever built in a

The creation of a downstream specialty and end product sector is vital not only for establishing a higher value adding manufacturing base, but also for pushing the kingdom’s non-oil exports.



Photo Credit : gjeerawut/Stock-Adobe

Cars represent a fast-growing market for the chemicals industry according to IHS, with global car shipments expected to nearly double over the next 17 years, rising to 104.1mn units in 2020, up from 56.9mn vehicles in 2003 based on information from IHS Automotive.

single phase, with 26 manufacturing units utilising multi-feed cracker (the first in the GCC). It can yield 3.2mn tonnes/year of high-value performance plastics and products (previously imported), such as pygas, pyoil, isocyanates, amines, polyols, propylene glycol and PE/elastomers. The US\$20bn project represents the single largest foreign direct investment (FDI) so far in domestic petrochems sector.

The expanded PetroRabigh-11 facility (costing US\$7bn) also at Jubail – jointly owned by Aramco and Japan’s Sumitomo – began commercial operations in 2017. It possesses 2.6mn tonnes/year of chemicals plus 400,000 bpd of refined petroleum capacities. Industrial parks were built alongside each complex to house factories for downstream conversion industries.

Another new project that came online last year was the US\$3.4bn Kemya Elastomers facility, an affiliate of Saudi Basic Industries Corporation (SABIC) and Exxon Chemical Arabia. The country’s first commissioned synthetic rubber plant produces 400,000 tonnes/year of rubber, thermoplastic speciality polymers and carbon black.

Mega investments

A combined total investment value of US\$46bn is at the planning stage – on top of twenty-five projects worth US\$15bn already underway – mostly in the western region where one-third of the kingdom’s plastic and petrochemicals industries are located. Some of the upcoming developments notably are:

- Farabi Petrochemical Co.’s US\$1bn

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- greenfield linear alkyl benzene (LAB) and derivatives complex project at Yanbu Industrial City (expected online mid-2020). Using diesel from the Yanbu Refinery as feedstock, it would produce 220mn pounds/year of LAB and other derivatives.
- Advanced Petrochemical Co.'s US\$580mn pygas and pyoil project in Jubail – due to become operational in 2021, with a nameplate capacity of 300,000 tonnes/year. Its product portfolio comprises over 12 specialty chemicals, including aromatics solvents, premium wash oils, hydrocarbon resins, and naphthalene to be produced for the first time in the Middle East and North Africa (MENA) region.
 - Global Co. for Downstream Industries' US\$500mn Jubail (Plaschem Park) grassroots facility to produce 350,000 tonnes/year of specialty chemicals from aromatics concentrate sourced from a Sadara chemical plant. Construction could start later this year, with completion by end-2020.
 - Sadara Chemical Co.'s Al-Jubail Paraxylene Unit addition. Final commissioning is now underway for the US\$500mn plant to produce 460,000 tonnes/year of paraxylene. It is located at Sadara Petrochemical Complex Al-Jubail Industrial City II.

The industry's biggest project is being jointly undertaken by SABIC and Saudi Aramco, which entails building the first-ever 'Oil-to-Chemicals' plant in Yanbu costing US\$20bn.

"Derived from improved refining technology, the crude oil-to-chemicals process will involve innovative configurations with proven conversion technologies. This will create a fully integrated petrochemical complex, which maximises chemical yield, transforms and recycles by-products, drives efficiencies of scale and resource optimisation and diversifies the mix of petrochemical resources in the kingdom," according to a SABIC statement.

The proposed facility, integrated with the existing 240,000 bpd refinery at Yanbu, could be operational by 2025, processing around 400,000 bpd of super-light crude into nine million tonnes annually of chemicals (mostly ethylene, propylene, benzene, toluene and xylene) and base oils, plus 200,000-bpd of diesel for domestic consumption. The new complex would add 1.5 per cent to Saudi Arabia's gross domestic product (GDP) by 2030 and promote job creation.

The external challenges

Saudi petrochem industry faces stiff competition from three main sources:

- Global petrochems capacity is expected to rise steeply over the next decade.
- The US shale boom has unlocked huge quantities of cheap natural gas liquids, including ethane, a primary feedstock for ethylene production. This has resulted in 'colossal' investments into the country's industry, which today account for 15 per cent of global chemicals production (the American Chemistry Council estimates). According to S&P Global Platts Analytics, the US comprises 18 per cent of global ethylene capacity and by 2025 this could reach 21 per cent, if all projects come online as planned. Moreover, the US ranks as the number one gas producer with 2016 output totalling 749.2bn cu/m – significantly exceeding Saudi Arabia's output 109.4bn cu/m (BP data).
- The development of new technologies such as methanol-to-olefins (MTO) and coal-to-olefins (CTO) makes it possible to produce chemicals from coal. China, with the third-largest global coal reserves, has made big inroads in that area. The Chinese are not only building conventional petrochems plants, they are investing in coal-to-gas plants. Industry sources predict steep hikes in MTO and CTO capacities of China from three million tonnes in 2015 to 10mn tonnes by 2025.

- Iran – the world's largest holder of gas reserves – plans to expand petrochems capacity from 60mn tonnes presently to 150mn tonnes within 10 years, according to its National Petrochemical Company. This ambitious target requires about US\$55bn to US\$85bn worth of FDI in technology and infrastructure to revive an ailing downstream industry – severely hit by decades of international sanctions. S&P Global Platts Analytics estimates that Iran's annual ethylene capacity could reach 12mn tonnes by 2025, up from currently seven million tonnes. Sanctions remain in place for US firms, while European and East Asian companies show keen interest in Iran's relatively untapped energy sector.

In summary, projects to integrate refineries and petrochems plants capable of producing 'specialty chemicals' would enhance the petroleum value chain, allowing the kingdom to export more crude in the form of value-added fuels and finished products in place of oil and 'basic chemicals'/intermediaries. The country's petrochems industry is poised to expand three-fold over the next decade. McKinsey Global Institute estimated that a drive towards functional excellence with emphasis on sophisticated products – on par with global product mix – can boost chemicals sector's GDP by US\$30bn and create 30,000 new jobs in Saudi Arabia. ■

FACT FILE

- *The Saudi petrochems industry is the bedrock of a non-oil economy – it has received US\$150bn in total cumulative investments over the past four decades.
- *Saudi chemicals output grew at 12.7 per cent in 2016 to 106.7mn tonnes – equivalent to 67 per cent of the GCC total capacities (GPCA data).
- *Plastic and chemical products exports represent two-thirds of Saudi Arabia's aggregate industrial exports and a tenth of the country's exports overall.
- *The sector is dominated by SABIC (fourth biggest global chemicals Co. in 2017).
- *SABIC product lines include basic chemicals, fertilisers, polymers, intermediate products and metals. The state-owned company is one of the top producers of polyethylene, ethylene glycol, propylene, polyolefin and polycarbonate.
- *By 2020, SABIC is projected to produce over 135mn tonnes, up from 98.8mn tonnes in 2016. It holds significant shares in 22 manufacturing facilities.
- *Saudi Arabia's petrochems industry directly employs over 138,700 people, with every job indirectly creating five-six additional jobs in the economy (GPCA data).
- *Gas is a valuable/cheap feedstock for petrochemicals plants – distributed through the Master Gas System. Aramco plans to expand production of dry gas from 12bn standard cubic feet/day (scfd) to 17.8bn scfd by 2020.
- *Gas produced in Saudi Arabia is mostly 'wet', which, in addition to methane and ethane also contains natural gas liquids (i.e. propane and butanes).
- *In early 2016, feedstock prices for ethane and methane were raised to US\$1.75 and US\$1.25 per million British thermal units (from US\$0.75/mn Btu).
- *Proven gas reserves (excluding the Neutral Zone) at end-2016 were 8.4 trillion cubic metres – with an estimated 16.9 trillion cu/m of unconventional shale gas.



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BAUER stands for quality, reliability and accountability



Colin Fountain is the managing director of BAUER Kompressoren GCC FZE.

Photo Credit : BAUER Kompressoren

Technical Review Middle East catches up with Colin Fountain, managing director of BAUER Kompressoren GCC FZE, in his office in JAFZA, Dubai, to discuss and review industry developments and assess future opportunities in the compressors industry.

Technical Review Middle East (TRME): Can you take us through your journey in BAUER Kompressoren over the last six years?

Colin Fountain (CF): When I joined the company it was managed at a distance from Germany, and the present office was under construction. My new role required me to work on physically setting up the company, which meant dealing with building contractors as well as the JAFZA permits. BAUER Kompressoren was also in the process of getting ISO certification. That was a very interesting time for me. So in my first six months, I was setting up a permanent office in Dubai as well as guiding it towards ISO certification. It was a good start.

After that, I concentrated on remodelling the distributorship strategy, with my experience in this area helping to bring more discipline to our distribution network. At the time, the distributor network was disorganised – service levels, training levels, pricing levels and discount levels, were all very ad hoc. What we did was to bring in a

structured approach to distribution to clarify what distributors could expect from us and what we could expect from them. We also tried to refocus the business in favour of industrial ranges, as the company had been more focused on selling breathing apparatus.

We enjoyed good growth in business with revenue more than doubling from 2012 to 2014. Then came the massive crash in the oil price. Approximately 60 per cent of BAUER Kompressoren business is led by the oil and gas sector, so it resulted in two very difficult years for us. We had to refocus internally once again to try to diversify our business. In 2015, our profits dropped by 35 per cent, and a further 10 per cent in 2016 when we cut staff, which was not an easy decision. 2017 saw an improvement. The first half of last year saw the stabilisation of oil prices that resulted in a stronger flow of inquiries, and the second half was even better. I am quite optimistic about 2018; we are on a slight upward gradient and while it will take some time to reach the dizzy

heights of 2014, it is moving in the right direction. To sum it up, we have good products, great staff and have had a couple of bad years.

TRME: What major achievements has BAUER Kompressoren witnessed during your time in the company?

CF: The biggest change has not been in the product offering, but in the way the customers use our products. We have introduced a number of things that make our products more efficient, easier and, in line with 21st century developments, more digital. In many of our machines, we have removed analogue displays and manual controls and replaced them with touchscreen digital displays and automatic controls for operators. There is also a lot of technology in terms of connectivity and user interface that we have introduced. Our machines have changed significantly over the years.

We produce compressors primarily for breathing air, and these need to meet the

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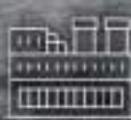
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highest standards. BAUER Kompressoren is accountable for every breath our users take in. Contaminants in the air can cause damage to the lungs of users. So there are stringent controls requiring a manual test of air quality every three months. We have introduced a technology whereby you can constantly monitor the quality of air without having to stop the machine. We can send that sample to the third-party lab and they can provide certification of the quality of our products.

TRME: How is business going in the Middle East?

CF: We are experiencing two-pronged growth – by product mix and by geography. As I mentioned earlier, when I joined BAUER Kompressoren, more than 90 per cent of our sales were breathing air-related and the industrial range accounted for a very small proportion of the business. We are putting a lot of effort in to grow our industrial ranges now, and are doing much more industrial range business in the Middle East. We are already No.1 in the world for breathing air apparatus and hold 65 per cent of the market globally. In the industrial sector, we have a much lower market share. Going forward, I see more opportunities to grow this side of the business.

In terms of geography, the biggest market for us is Saudi Arabia, and I still see a lot of growth in that market with regards to industrial and breathing apparatus.

I believe Iran has a lot of pent up demand and there is strong demand to increase oil output. Iran is a very diverse market compared with the GCC, and I see it as offering very good potential. We opened a branch in Iran last year, which is fully operational with three employees, but we have not seen much growth there yet. We are still laying the groundwork to establish relations with customers and contractors. Oman and Qatar are also good markets for us.

TRME: What are BAUER Kompressoren's best selling industrial ranges?

CF: The segregation is based on the actual use of air rather than customer specification. The breathing air applications mainly go into the oil and gas sector.

Another area where we have experienced growth in is emergency responders for firefighters, police, coast guards, etc.

But our strongest market, which is not very strong in Dubai but is really totally

Colin Fountain with the BAUER Kompressoren team in JAFZA, Dubai.



entwined in the history of BAUER Kompressoren, is air compressors for diving – commercial and scuba. Innovative high-pressure system technology by BAUER Kompressoren helps the recovery and decanting of noble gases and gas mixtures. The compressors are intelligently controlled based on the final pressure of the storage system, the level of the gas balloon or the intake pressure.

We also have products for alternative fuels handled by our European market – compressed nitro gas (CNG). In the UAE, vehicles are being converted to run on CNG, and BAUER Kompressoren won a contract with ADNOC in 2009-10 to supply all the CNG compressors for vehicles in the capital city. So far, there are 34 CNG stations around Abu Dhabi and Sharjah and the northern emirates.

TRME: What trends and technologies that are affecting the compressors market?

CF: There is a rise in the trend of 'invisibility'; people do not want to see the gas, just feel it – like electricity. You know it's there but not how it's produced. Compressed air is considered the 'fourth utility' and needs to be remotely operated.

IoT is a big trend. Another is achieving energy efficiency. One of the biggest costs to compressor users is the operating cost rather than the initial purchase price. Many customers make their buying decision on the purchase price. But the biggest cost to a user is the operating cost over a period of, say, 10 years. Operating costs come down to two things – energy consumption and service and maintenance cost. So I think there will be continuous efforts to increase efficiency of compressors.

With regards to service and maintenance costs, currently this is conducted periodically, like servicing a car, on a preventive analysis basis. The trend will slowly shift towards predictive maintenance in the future, and this is where our air monitoring technology comes in. We monitor the health of the compressor and make interventions. With the degree of use in harsh environmental conditions, it will now force manufacturers to extend warranties and expand service intervals.

Another trend is the move towards oil-free compressors. As clients are becoming more environmentally aware, there is a push to remove oil from compressors, as it is a contaminant. With an oil-lubricated compressor, oil must be monitored and changed according to schedule. As oil-free air compressing systems utilise a teflon sleeve or coating in the compression chamber, they do not require any lubrication. They are maintenance free as far as lubrication is concerned. However, one will still need to service the air filter on a regular basis. And oil-free compressors do not provide zero risk of contamination (atmospheric dirt, microorganisms, etc). At BAUER Kompressoren we provide oil compressors with filtration, building our own purification systems. We are the specialists of contaminants removal. We have the technology portfolio to achieve oil-free air, even if it is not an oil-free compressor. We are not yet looking at making oil-free compressors, because the less oil in a machine, the more heat it generates, and the more heat the machine generates, the more times the machine has to be stopped. Productivity is lost in the process.

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- Static Transfer Switches (Industrial or Standard)
- Static Frequency Converters (Industrial or Standard)
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- Hybrid UPS
- UPS (Industrial or Commercial)
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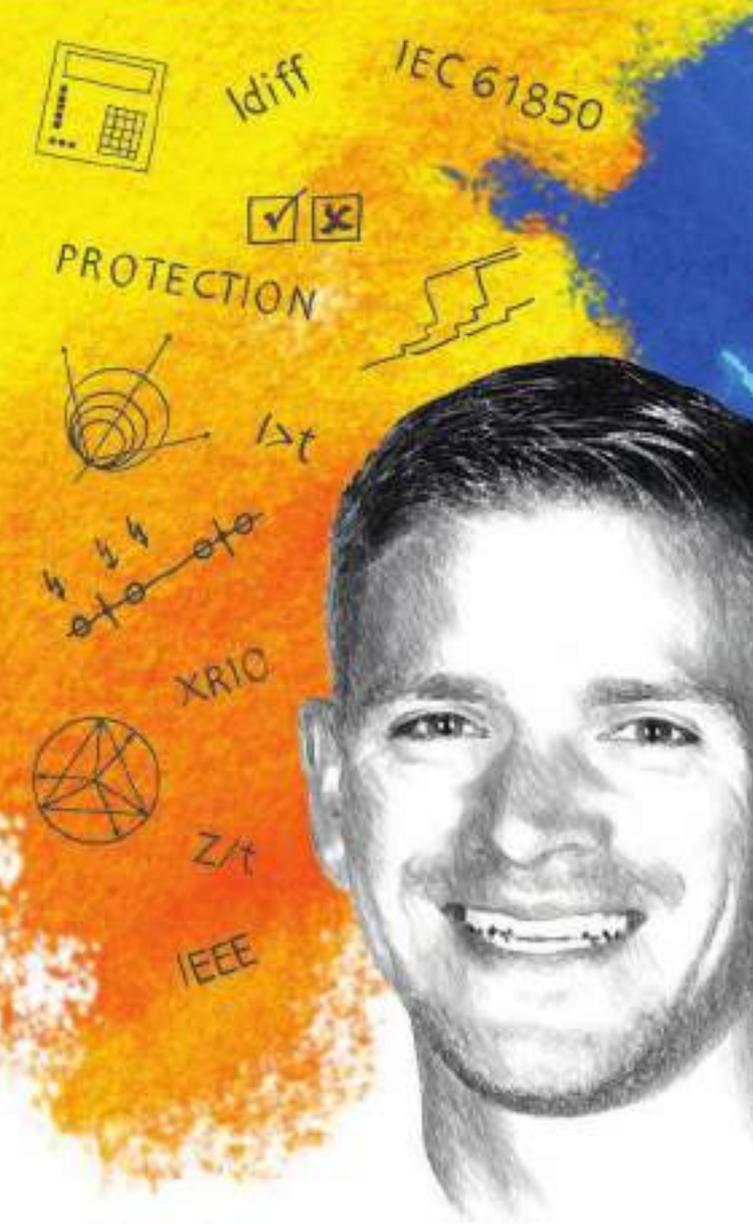
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TRME: What are BAUER Kompressoren's best solutions in the market currently?

CF: We produce a range of products for the offshore oil and gas sector, which are our best-selling products right now in the region. The solutions mainly include breathing air compressors for H₂S protection, commercial divers offshore; nitrogen generators for blow out preventers (BOP); air compressors for rig tensioning and motion compensation. They are used in offshore rigs for which you require two compressors – electric and diesel. We also have a medium sized compressor range in the fire and marine industry. We call it the Premium Line and they are our fast moving compressors. They are used on ships and for diving activities. Standalone compressors are used in small fire stations. But our star is the Unicus 4i range. It is the state-of-the-art control system with a 12-inch HMI touch-screen interface, which allows the operator to manage the entire system from the single-point touch screen. It unifies breathing air parts in one package and everything is available on one interface. This is the product we see growing in the future.

The latest version launched two years ago with the focus moving towards the fire fighting industry.

I refer to BAUER Kompressoren as the 'Rolls Royce of Compressors'. We are not the cheapest, but we offer the best value to customers.

TRME: What is your advice to someone looking at the compressors industry as a career option?

CF: I would say that this is a very mature business. This industry has been around for 70 years. The technology is dependable and forward moving. But what I find interesting about this industry is that we have such a wide range of customers. We are selling to individuals, companies like Saudi Aramco, ADNOC and now to Dubai Civil Defence and Abu Dhabi Civil Defence. It is very exciting in terms of day-to-day involvement with customers.

TRME: What makes BAUER Kompressoren the best?

CF: Our logo states 'Quality. Our DNA'. If you ask me to come up with one word to define what makes BAUER different, it is quality. We manufacture practically all the components of our compressors. And the main reason for that is to maintain quality. The typical life of compressors is 25 years, and it is not unusual for our compressors to run up to 35-40 years. That really, in my opinion, sets us apart. We pay strong attention to detail on quality. With that comes a responsibility. I refer to BAUER Kompressoren as the 'Rolls Royce of Compressors'. We are never the cheapest, but we offer the best value to customers. It's very unlikely that our customers have ever been dissatisfied. Quality, durability and reliability are what BAUER stands for. ■

When sustainability is talked about in a built environment, it is important to remember that its needs to look at along with the entire building operations and not in isolation as a yearly audit process.

Building with IoT

Photo Credit - Facilio

In his first interview since the launch of Facilio, a greentech startup firm with pilot projects in the UAE, Prabhu Ramachandran who is the founder and CEO, speaks exclusively with *Technical Review Middle East* on the need to build a unified suite of facilities and energy management software to manage buildings efficiently and sustainably. He also believes that technology can be leveraged to drive environmentally responsible facilities that create a positive impact in the world.

Facilio helps customers operate at scale across their portfolio and manage building operations, maintenance and sustainability performance, in real-time, by harnessing the power of IoT.

Technical Review Middle East (TRME): How would you describe Facilio in one sentence?

Prabhu Ramachandran (PR): Facilio is a unified suite of facilities management (FM) software that harnesses IoT and machine learning to manage building operations, maintenance and sustainability performance, in real-time, and across an entire portfolio.

TRME: What exactly does Facilio do for the built environment?

PR: Facilio connects and unifies your teams, systems, and equipment across multiple facilities. Facilities today have a diverse set of solutions for diverse functions – apps for maintenance, traditional building management systems, environmental sensors at server rooms, systems for security and a lot more. But, typically, these tools were designed to operate independently – which made it difficult for buildings to achieve portfolio-wide positive performance.

Our objective is to allow building owners and FM companies to centrally gain control and visibility, and manage everyday building operations efficiently, and

sustainably. In short, it is Facilities on Autopilot, or Buildings on Autopilot.

To set the context – these unstructured and disparate systems spread across multiple buildings limit the integration and flexibility, and lead to various operational efficiencies. In fact, the lack of portfolio-wide transparency can increase energy costs by almost 30 per cent and maintenance expenses by nearly 15 per cent.

Additionally, the legacy software that is currently being used to manage buildings is not designed to meet real-time operational and sustainability expectations, which leads to issues like delayed response times.

With Facilio, we are offering a Unified Facilities and Sustainability management suite that helps owners and FMs to operate a portfolio of buildings centrally. And we are using IoT to connect all existing systems seamlessly and derive value out of the data already existing on those systems.

TRME: Why is now the right time for a company like Facilio?

PR: There are several drivers for it.

Despite billions of dollars worth of investments in automation of buildings, they

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continue to perform at sub-optimal levels. This is because they are not optimising their benefits from this automation and instead end up being inefficient. A pure software driven solution that can make use of existing systems and help customers operate buildings efficiently is something that customers are already looking for.

Secondly, there is a dire need for innovation to drive a continuous flow of efficiency in building management. Operating a portfolio of buildings centrally, leads to significant economies of scale. Take the example of Henry Ford's assembly line automation for cars. It not only revolutionised the industry, but also greatly reduced costs and production time. A software-led solution like Facilio is bringing in similar assembly-line innovation for buildings, by providing a centralized system for a continued flow of efficiency.

Thirdly, sustainability, despite becoming increasingly critical everyday, especially in the built environment given its high energy consumption, has seen no major shift in the past several years to become mainstream. Once again, a software-driven solution that can help customers involve every stakeholder in the sustainability dialogue, like owners, facility managers (FMs), tenants etc., is the need of the hour.

Against this backdrop, the market has a compelling need for a solution that addresses these challenges, without breaking the bank. And Facilio's IoT and ML-based software provides exactly that – an integrated solution for all these challenges, allowing you to address the health of your building portfolio in one single dashboard, by optimising existing systems.

Despite huge investments in automation of buildings, they continue to perform at sub-optimal levels because they are not optimising their benefits from this automation.

TRME: The market is flooded with IoT providers and smart building automation systems. What is it that Facilio does differently?

PR: It is important that we put strategic objective at the core of the smart building business. And this is what Facilio does. We look at solving the most basic set of challenges that rank high on the agenda of customers using IoT as an enabler technology, and not the other way around.

Many IoT solutions today come bundled with a proprietary set of sensors that only adds to the existing siloed environment and already heavy total cost of ownership (TCO). The value in IoT for smart buildings will not be in the addition of many new connected sensors, but in tech-driven applications that use existing data to improve efficiency multi-fold. And it is this value that differentiates Facilio – our solution integrates with existing building systems without having to uproot expensive infrastructure or add any new sensor. By acquiring, analysing and contextualising data into real-time actionable insights, Facilio enables all stakeholders to make better organisational decisions continuously, and provide the

best occupant experience.

Facilio helps customers operate at scale across their portfolio and manage building operations, maintenance and sustainability performance, in real-time, by harnessing the power of IoT. This way, we truly help transform the facilities experience.

TRME: Despite the hype and mindshare surrounding sustainability, adoption has been slow. How can Facilio help?

PR: When we talk about sustainability in the built environment, it is important to remember that we need to look at it along with the entire building operations and not in isolation as a yearly audit process. Facilio can help customers take a phased approach to sustainability, and use existing investment. (There is a massive amount of data already available within existing building systems)

Also, for sustainability to be sustainable, it needs to become a daily habit. Facilio's solution involves all stakeholders into the sustainability drive – FMs, building owners, occupants – beyond the 'technician only' mindset. This helps 'everyday sustainability' become a reality.

We also work on real-time data and help customers fix issues on energy and water as part of their existing facilities process.

TRME: To conclude, what would you say are the top three benefits for building owners and/or facility managers to consider a software-enabled building management solutions like Facilio?

PR: A lot of money is being spent on blindfold, separate tools with multiple interfaces and different pricing. A solution like Facilio provides an integrated approach.

Secondly, current systems lack efficiency in managing buildings, which is far-more significant to an occupant. With Facilio, end-user facility experience can be enhanced.

And thirdly, a software-enabled solution like Facilio is creating a new industry benchmark of real-time data across the portfolio of buildings. ■



Prabhu Ramachandran is the founder and CEO of Facilio

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Iran plans to build small-scale power plants in the north

IRAN'S ENERGY MINISTRY has launched plans to establish 40 small-scale power plants with distributed generation systems in the northern provinces of Mazandaran and Golestan with the help of the private sector.

"The facilities are slated to be built within six years across the two provinces to deploy a more resilient, cleaner and cost-effective source of energy," Razmara Zakeri-Far, project manager at Mazandaran and Golestan Regional Electricity Company, was also quoted as saying by news agency IRNA.

"The new plants will inject more than 1,000MW into the northern region's power grid to supply tens of thousands of homes with electricity," he added.

According to Zakeri-Far, three 25MW, one 8MW and three plants with a capacity lower than 5MW are currently active in the region.

Distributed generation refers to the electricity produced in small quantities near the point of use, as an alternative or supplement to traditional centralised grid-connected power. It reduces the cost and complexity associated with transmission and distribution, while offsetting peak electricity demand and stabilizing the local grid. Most small-scale units in Iran are powered by diesel.

The government is trying to work in partnership with the private sector by giving out incentives to expand the capacity of electricity generation, Financial Tribune reported.



Iran's installed power capacity stands at around 77,000MW, including some 62,000MW in thermal capacity and only a few hundred megawatts of renewables.

Photo Credit : Vadim/Adobe Stock

Officials say Iran needs to expand power generating capacity by 5,000MW annually, i.e., 20,000MW in four years, to meet rising demand at home and expand its footprint in the regional energy market.

Zakeri-Far noted that several incentives have been formulated to encourage domestic and foreign investments into such projects.

"The Energy Ministry guarantees the purchase of electricity generated by small-scale plants for five years," he said.

They can sell their electricity under the supervision of the Ministry, he added, but did not elaborate.

"Since the easing of sanctions in 2016, investors from Canada, Germany, South Korea, China and Malaysia have signed deals

worth US\$150mn on building 10 power plants with a capacity of 25MW each in Mazandaran province.

"Three plots of lands have been given to the Canadian companies to start construction. Equipment has been purchased and is being transferred to the sites," he revealed.

As part of efforts to boost electricity generation through cleaner energy, small-scale power plants can help preserve the green provinces' environment.

Zakeri-Far concluded that distributed generation systems can help curb power wastage since "studies reveal that major power plants waste up to 60 per cent of power".

Egyptian Electricity Holding Company discloses development plans

THE EGYPTIAN ELECTRICITY Holding Company (EEHC) has entered into an agreement with the National Bank of Egypt (NBE) and Banque Misr (BM) to borrow US\$1.07bn for the development of the distribution companies and complete their plans to replace electrical cables and install panels and distribution boxes to improve the efficiency of service provided to subscribers.

The South Delta Electricity Distribution Company ranked first in terms of rates of implementation of its investment plan at 42 per cent, according to Daily News Egypt report. The company aims to install 379 transformer substations, 322 kiosks, 104 medium-voltage panels, 57 low-voltage panels, 2,685 medium-voltage towers, and 126km of low-voltage connectors.

The company will also install 731km of medium-voltage cables, 11,277 low-

voltage towers, 319.3km of low-voltage connectors, and 19.3km of low-voltage cables, as well as 15 distributors, the report added.

The North Delta Electricity Distribution Company's investment plan, meanwhile, did not exceed two per cent. The company plans to install 330 transformer substations, 284 metal kiosks, 12 medium-voltage panels, 38 low-voltage panels, 3,082 medium-voltage towers, and 3,339km of medium-voltage connectors.

The company also plans to install 641km of medium-voltage cables, 24,885 low-voltage towers, 3,638km of low-voltage connectors, 68km of low-voltage, and seven distributors.

Meanwhile, the Central Egypt Electricity Distribution Company ranked first in terms of rate of execution of achieving self-investment plans, at 70 per cent, which

includes the installation of 63 transformer substations, nine kiosks, 21 medium-voltage panels, four low-voltage panels, and 894 medium-voltage towers.

In addition, the plan includes installing 62km of medium-voltage connectors, 119km of medium-voltage cables, 1,894 low-voltage towers, and 639km low-voltage connectors, along with 20 low-voltage cables, and 77 distribution boxes.

The Alexandria Electricity Distribution Company has achieved rates of 13 per cent in its self-investment plans. The plans include installation of 82 transformers, 68 metal kiosks, 68 medium-voltage panels, 68 low-voltage panels, 150 medium-voltage towers, and four kilometres of medium-voltage connectors. The company aims to implement 113km of low-voltage connectors, 58km of low-voltage cables and one electricity distribution box.

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Life in the fast lane

Interest in sustainable transportation technologies in the UAE is at an all time high. Fuelled by a potent mix of economic and environmental considerations, it is an industry poised for rapid growth. Martin Clark reports.

DESPITE BEING THE world's greatest oil and gas producer, the GCC region is strongly pushing the renewable energy technology.

That includes the transportation sector where global interest in – and demand for – electric vehicles is on the rise, from performance sports cars to automated trucks.

Beyond electric vehicles, this exploration of sustainable technology for the transportation sector also spans new areas and applications, from drones to solar-powered aircraft. Bringing that all together will take time and brains, but GCC nations are committed to advancing such ideas on a wider scale in the years ahead.

Some of these technologies were visible at January's World Future Energy Summit (WFES) in Abu Dhabi, a global showcase for industry players. The event attracted all the major auto makers, such as Nissan Middle East, which showcased its all-electric Nissan LEAF car, reportedly the world's most popular electric vehicle, with sales of more than 280,000 to date.

"Electrification is not only the future, it is the present," Ismail Sethi, regional product marketing manager for SUV, crossovers and electric vehicles at Nissan told an audience at the event.

And he said the local GCC market is now a high priority for Nissan, as it seeks to tap into strategic and government sustainability targets. "LEAF customers have driven more than 3.5bn zero-emission kilometres combined," said Sethi. "As global leaders in electric vehicles we are committed to contributing to the success of electric vehicles in the UAE, and believe the ambitious plans set out by the government will be met."

Sustainability targets

Indeed, the UAE's sustainability targets have been well documented under the Vision 2021 banner and other national blueprints. Moreover, Abu Dhabi's endorsement as the world headquarters for the International Renewable Energy Association (IRENA) underscores its long-term ambitions.

But there is a long way to go

A central player in delivering results on the ground is Masdar, Abu Dhabi's state-owned renewable energy company. It presented a report at the Abu Dhabi sustainability week showcasing the potential impact of such emerging mobility technologies.

While these solutions have the potential to provide transformational benefits for the region's cities, Masdar reckons successful integration will require a focus on smart urban planning and long-term investment, as well as the deployment of the latest vehicle solutions.

The Masdar Report on Technologies for Future Smart City Transit predicts that new technologies such as electric and autonomous vehicles, the Internet of Things, data analytics, blockchain and 'smart roads' will provide the building blocks to revolutionise urban transport over the next two decades.

These technologies are converging at the same time, putting the mobility sector on the cusp of a significant leap forward which will improve efficiency, save lives and reduce pollution, it says.

Cities, given their high density and increasing requirements for effective public transit, can be innovation test beds for the most cutting-edge smart transit projects.

Joined up thinking

To make this happen requires hard work and innovative thinking.

However, the report suggests that countries with a relatively new urban transport network, such as the UAE and other GCC states, may have an advantage over other countries because their transport infrastructure is newer and less sprawling – meaning it is easier to update and integrate with emerging digital technologies.

Cities worldwide face similar transport challenges: congestion, pollution and traffic accidents.

"Urban transport is reaching a crossroads as emerging technologies come together, placing us on the cusp of a step-change which could revolutionise the sector, making it safer, more efficient and environmentally sustainable," said Yousef Baselaib, executive director of sustainable real estate at Masdar.

Making this a reality, though, would require substantial investment over the next few decades, as well as strong cooperation between the public and private sectors to work together to agree technology standards.

The potential environmental dividend is huge. The transport sector accounts for about 30 per cent of global energy consumption and has the lowest renewable energy share of any sector, according to IRENA. It also accounts for around a quarter of the world's energy-related emissions of greenhouse gases.

Innovative technology

All the while key industry players continue to introduce new technology to drive forward sustainability in the transportation sector.

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That includes the commercial sector too, improving the performance of the region's freight and logistics industry.

Truxapp, a technology-enabled trucking and logistics provider, sees huge potential in the GCC market. Entering the UAE in 2017, the company already boasts 20,000 trucks listed in the GCC and growing. This year it plans to expand its reach across the regional market.

"While several industries are becoming digitally enabled, the logistics sector has largely been neglected, or not given the necessary attention, because of its complexities as a B2B service," said Naseer Ahmed, Truxapp International's co-founder and chief executive.



Truxapp dashboards for clients show real-time data, various heat maps including scope of reverse haulage, automated documents and reports, utilisation and uptime index, employee and vehicle management, data analytics and flexible

pricing. "Unlike technologies behind B2C ride-sharing companies, road freight has many more variables and a complete knowledge of the logistics sector is critical when developing a platform like Truxapp," said Ahmed.

"Once appropriately established, digitally-enabled trucking services can support all industries as well as the drive toward seamless smart cities. Currently, the logistics is lagging and this is affecting growth in many other sectors that depend on the efficient movements of goods."

Technology can play a part in transforming these limitations and open up more robust and efficient freight transportation services for the entire region. ■

MAKING A DIFFERENCE

Technologies set to transform and improve urban transport and help the environment, according to the Masdar Report on Technologies for Future Smart City Transit

Electric cars

Today there are about three million electric cars on the road. By 2040, more than one-third of vehicles on the road will be electric, thanks in large part to a fall of more than 50 per cent in the price of lithium-ion batteries. This will help make electric cars as economical to own as traditional cars.

Wireless charging

The number of public charging points for electric vehicles has increased significantly in the last five years: from 100,000 in 2012 to more than 360,000 in 2016. Yet, more are needed. Charging an electric vehicle wirelessly by running electricity through two coils of copper wire, one of which is connected to the car, would make charging easier and charging points smaller and probably cheaper. Some large carmakers are reportedly working on electric vehicles that can be charged wirelessly.

Autonomous cars

Vehicles that can drive themselves could make driving safer (fewer collisions), and optimise driving performance (higher and more efficient utilisation of road networks). Companies including Google, BMW, Volkswagen and Intel, are developing autonomous cars, which may go on sale between 2020 and 2025. Technology (data collection, analysis and communications networks) will be vital in keeping them safe and effective.

Digital ride hailing

Since Uber's founding in 2009, digital ride hailing has rapidly grown. The five largest ride hailing companies in the world have a combined valuation of about US\$130bn and close to 500mn users. Ride hailing may have mixed effects on city transit and the environment, though. It enables more carpooling, which improves vehicle utilisation and congestion. However, ride hailing might encourage people to take cars for trips they otherwise could have walked or used public transport. Smart regulations to maximise the benefits of ride hailing while minimising its adverse effects will be needed.

5G networks

Fifth generation (5G) wireless mobile networks will be able to process more than 1,000 times more data traffic than today's 4G networks.

Autonomous and digitally 'connected' vehicles will likely run on 5G networks because of speed and bandwidth limitations of current networks. 5G is still being tested and won't be widely introduced until 2020. Its reliability will need to be proven before adoption for autonomous vehicles. The uncertain cost of 5G is another potential barrier.

V2X communication networks

V2X communication networks enabling vehicles to exchange information with other vehicles and their surrounding will also be crucial in enabling the roll out of fully autonomous vehicles. Cars would be able to upload travel information from the city, avoid crashes, and produce analysis that enables future improvements in city transport. The technology is still in its early stages.

Blockchain

Blockchain (secure, decentralised ledgers maintained by a network of participants) is best known as the technology that enables bitcoin. It could make transport simpler by enabling computers and sensors in cars, buses and other vehicles to automatically conduct secure transactions (e.g. pay tolls and other transport charges without human intervention). Machines could control digital wallets, with smart contracts automating payments between machines.

Smart roads

Smart roads gather data on traffic, vehicle accidents and driving conditions from street cameras, street lights, traffic lights and vehicles. Potential benefits include reduced congestion (city planners and authorities can better understand traffic flows), fewer traffic accidents (smart roads could alert drivers (or vehicles) of nearby accidents and automatically grant priority to emergency vehicles trying to reach an accident site). Smart roads could even produce energy through built-in solar cells or pressure plates, something that could prove particularly practical for the GCC states, due to their sunny climate. Smart roads are being trialled in various countries such as Singapore and the USA. Challenges include their potential high upfront cost and lack of technology and security standards.

Smart traffic control systems

Rather than simply detect and measure traffic, traffic control systems may in the future reroute traffic to reduce congestion and improve safety. Smart traffic control systems would use networks of cameras and road sensors and utilise artificial intelligence to act on the large volume of data collected in real time.

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PASCHAL provides formwork for German youth centre

The outer walls of the pilot project in Berlin-Friedrichsfelde are built using the LOGO.3 wall formwork system.

A PROJECT, UNIQUE IN Germany, is currently being developed in Berlin-Friedrichsfelde. For the first time ever, the highly insulating building material 'infra-lightweight concrete' is being used for the construction the new 'Betonose' Youth Centre. The formwork for this extraordinary project is provided by PASCHAL.

An innovative concept

The new leisure and youth centre will occupy a total of 480 sq m and provide residents with a bright, friendly community space. The project was designed by GRUBER UND POPP ARCHITEKTEN BDA, an architectural office, well-known for creating unique and sustainable building concepts and school buildings.

The architects aim to realise this new building using innovative infra-lightweight concrete. This construction material is so new that its final approval by the building supervisory authorities is still pending. Therefore, in order to implement this project, the planners had to obtain individual approval. Given the extremely positive test results, which have been achieved with this material, this was granted without any problems.

Exposed concrete quality with LOGO.3

Thanks to the exceptional heat insulating properties of this infra-lightweight concrete, the passive-house standard is achieved with a wall thickness of just 50cm. No additional insulation of the outside walls is required. Moreover, with infra-lightweight concrete,



Photo Credit: PASCHAL

The planned completion date for the 'Betonose' youth centre is July 2018.

the visual quality of solid exposed concrete can be achieved. In this way, the demands for an appealing concrete look have been reconciled with the energy requirements imposed on external components for the first time ever.

To satisfy the requirements when concreting with this new material, the construction company E & W BauTec Gbr is using PASCHAL's efficient formwork solutions. The high-strength LOGO.3 wall formwork system has been selected for constructing the walls. Exceptional exposed concrete results can be achieved even with the standard version of this system, without any additional extras.

The highly insulating outside walls of the Betonose are being cast monolithically onsite as a single-shell concrete structure

on site using around 275 cu/m of infra-lightweight concrete. In total around 428 sq m of walls will be built in four stages. Since a special drainage material has been stuck to the formwork when concreting with the infra-lightweight material, all the formwork panels have to be free from separating agents.

The reinforcement must be completely galvanised, including the binding wires. The outside walls are concreted up to the top edge of the parapet wall.

Around 523 sq m of PASCHAL-Deck is also being used as support for filigree concrete slabs and about 160 sq m as in-situ concrete support in the project.

Reliable formwork and perfect supervision

"The LOGO 3. formwork is a reliable solution, which not only yields good exposed concrete results, but is also remarkably easy to work with. What has impressed us most is the professional site support during the project and the rapid implementation of changes during the planning phase," explains construction manager Frank Müller, E & W BauTec Gbr. ■

The infra-lightweight concrete is so new that its final approval by the building supervisory authorities is still pending, according to PASCHAL.

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PERI to realise Zaha Hadid's dream for Bee'ah



Located in Sharjah, the UAE, Bee'ah headquarters' dune-like design is both inspired by, and intended to blend in with, the local desert landscape.

Photo Credit: PERI

PERI's formworks and scaffolding will play a huge role in shaping the concept.

IN THE MIDDLE of the Sharjah Desert in the UAE, a futuristic building is currently being constructed according to the plans of late architect Zaha Hadid whose design was inspired by sand dunes. PERI is supporting this ambitious project with an individually-designed planning solution, project-specific formwork elements as well as by providing comprehensive support through its local team of experts.

After completion, around 7,000 sq m of usable space will serve as the headquarters of Bee'ah, an environmental and waste management company. The complex complies with state-of-the-art technology in all aspects. The shape of the structure mimics dunes crossing each other, thus providing a permanent reference to the surrounding natural environment. The dome shape of the roof offers a number of advantages: in addition to the exceptional spatial perception, the architecture impresses with its reduced energy and resource consumption. Furthermore, the entrance hall is also optimally supplied with natural daylight. Last but not least, the area of glass surface subjected to direct exposure to the desert sun is reduced. As a result, the shape of the building provides optimum protection against the shamal wind that occurs several times a year in the region.

Design brought to fruition

The dome above the entrance hall is 23 metres long and 17 metres wide, and plays a central role in the design concept of the project. Through the use of proven formwork and scaffolding systems, the PERI team created a very efficient solution for constructing this huge vaulted section.

As shoring for the slab formwork, the modular PERI UP Flex Scaffolding System provides a cost-effective solution. The continuous 25 cm or 50 cm system grid as well as the possibility of combining it with SRU Steel Walers taken from the VARIOKIT Engineering Construction Kit, allows the load-bearing construction to be optimally adapted to different geometries and loads. In the centre of the dome, the steadily increasing height of the shoring reaches its maximum height of 15.30 metres.

Futuristic-shaped

The entire dome will be realised in four formwork sections. The demands placed on the architectural concrete quality are very high and the tolerance in terms of joint pattern, anchor points and screw heads remain extremely low.

PERI engineers, therefore, have precisely adapted the formwork solution to accommodate these planning specifications: Both the positioning of the anchors as well as the formation of the formwork joints were defined in great detail. For the load-bearing substructure of the individual segments, primarily VARIO GT 24 System Components, SLS Heavy-Duty Spindles and SRU Steel Walers are used. Realisation of the high-quality plywood formers and panels was achieved using a customised production process in each case and correspondingly adapted to match the arched slab dimensions. In addition, the tailor-made formwork solution takes into account all required recesses. Due to the well-coordinated cooperation between the entire planning and assembly teams along with the jobsite crew, an excellent architectural concrete result has been achieved in the course of the execution of the work that fully complies with the strict architectural requirements.

Safely erected

The latest technological and safety options have also been the focus of attention during the construction work. The PERI UP Scaffolding System has been used to create safe working platforms in various areas. The metric system grid and the possibility to change the direction of the decking allow the modular scaffold to be easily adapted to suit all local conditions and geometries. In addition, the self-locking ledger connections on the rosettes and the integrated protection to prevent the decks from lifting allow the PERI UP Flex to be mounted extremely quickly. The modular scaffolding also offers a high level of safety during use as the end-to-end guardrails, yellow toe boards and non-slip decking ensure high degree of workplace safety.

Everything from a single source

In addition to the planning and engineering services, PERI is also providing Bee'ah HQ with a comprehensive range of other services during the construction phase. This includes a PERI supervisor to support the jobsite team to make sure that the PERI system equipment is used efficiently and safely right from the start. Moreover, a PERI project manager has ensured the optimised coordination of the formwork and scaffolding planning as well as the management of on-time material supply. In this way, the quantity of materials can be continuously adjusted in order to match the actual construction progress. This individual on-site project management not only guarantees complete transparency and planning reliability but also increases the cost-effectiveness. ■

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Retrofitting **the right way**

THE STRONG GROWTH of energy demand over the past decade has driven the world to think more sustainably. Investments into production capacity are costly, and those that operate in the construction and development sectors have been pressured to reconsider energy efficiency.

In recent years, Taqueef, providers of air conditioning solutions in the Middle East, has experienced an increase in demand for R&R (retrofitting and refurbishment) services in the region, particularly in the UAE. Changes in electricity and water tariffs, oil prices, government-led reduction strategies and the ageing of capital equipment are key drivers of this in the market. High energy bills are also forcing commercial building owners to find ways to reduce power consumption, as well as divide building running costs such as air conditioning bills amongst tenants. This has led to an increase in awareness of the benefits of retrofitting, however, there is still a lack of awareness about the benefits of air-conditioning retrofitting.

Sustainability legislation has played a crucial role in driving the R&R industry as it requires the developers to abide by green specifications. New buildings are 'forced' to take long-term running costs and impact on the environment into consideration. Older buildings need to be updated to ensure that they are running more efficiently, particularly as they become less resourceful as they age, with insulation deterioration and inefficient maintenance for cooling systems.

In Dubai, Etihad ESCO was created by DEWA in 2013 to retrofit 30,000 buildings by 2030 with an initial focus on government facilities and in 2017, ADWEA launched Kafa'ati – a building retrofit initiative as part of the Tarsheed DSM programme. Taqueef has also seen similar initiatives in Oman, Saudi Arabia and Jordan, so this drive to be more sustainable is region wide.

"These legislations are necessary in terms of setting guidelines. However, many developers and building owners aim to achieve the minimum requirements set, instead of aiming for the maximum energy efficiency that the building is capable of. As a result, we are witnessing shallow retrofits across the industry – developers and building owners opt for quick fixes, such as



Raffi Kazazian, energy solutions director at Taqueef, speaks about the crucial role of retrofitting in HVAC.

Photo Credit: Taqueef

changing light fixtures and faulty air conditioners or chillers, as opposed to taking on the costs of changing the full cooling system for better effects," says Raffi Kazazian, energy solutions director at Taqueef.

By looking at the age and design of a building, a new, bespoke energy and cost-efficient cooling system can be installed. This will provide long-term benefits for building owners, stakeholders and tenants. Retrofitting old energy inefficient buildings with a new generation of cooling technology offers huge savings – over 50 per cent in energy consumption, electricity bills and emissions. As air-conditioning systems in the region contribute to 60-70 per cent of the total energy usage and operation costs of a building, the impact of responsible retrofitting is enormous.

One way of increasing awareness about air conditioning energy usage and reducing the number of shallow retrofits done by developers and building owners would be to increase tariffs. By doing so, end-users will be more energy-conscious and owners are driven to implement energy retrofits.

In response to the increased demand in R&R solutions, Taqueef created an Energy Solutions Division in 2016 to offer a number of environmental services, including retrofit – with a focus on all five cooling technologies: water and air-cooled chillers, variant refrigerant flow (VRF), ducted and split units.

"As one of the very few air conditioning solutions providers in the market that have a dedicated in-house department for retrofit, Taqueef's team possesses a wealth of expertise in this sector, with a certified energy manager and certified measurement and verification professional," the energy solutions director adds.

The majority of Taqueef's retrofit projects are from old, private buildings that operate outdated and inefficient cooling systems. Building owners are typically driven by the increasing energy bills and maintenance costs, as opposed to the energy efficiency of buildings.

"Once we analyse a building, we present the owner with a 15-20-page document to highlight how much energy can be saved if they opt for a full retrofit service through Taqueef. More often than not, most of our clients understand the long-term benefits and return on investment and opt for the full package.

"Our environmental programmes and partnerships develop greener, cleaner cooling solutions, and we are leading the industry through driving professional development with LEED and ESCO accreditation. We are also surpassing industry standards with our new eco products, and, we are the first to have our entire product range endorsed by Emirates Authority for Standardization and Metrology (ESMA) and Abu Dhabi Quality and Conformity Council (QCC)."

Taqueef also works with organisations such as Eurovent and Emirates Green Building Council, to find solutions to the industry's biggest environmental challenges through strategic investment in three key areas – appliance standards and labelling, building retrofit and district cooling.

National initiatives currently in place suggest that the UAE is the most active in the R&R space, driving the business faster than the other countries in the region. It has also served as a catalyst for the region in the renewable and efficient energy sectors.

According to Kazazian, it is important for key players in the HVAC industry to take advantage of these initiatives and further raise awareness of the benefits of R&R, particularly for those in the air conditioning sector in this market given the harsh climate conditions. ■

Prototype of world's first environmentally friendly AC out now

RESEARCHERS FROM THE National University of Singapore (NUS) have produced the first prototype for a new, environmentally friendly air conditioner in what could be a "quantum leap" in the 100-year old technology.

In January 2018, the scientists announced the development of a prototype of a sustainable air conditioning unit, which uses water instead of refrigerants, and consumes 40 per cent less electricity to operate, and can cool a space to as low as 18°C.

Ernest Chua, associate professor from the university's department of mechanical engineering, told *Eco-Business*, "Current air conditioners are based on technology that is a century old, and there's not been any breakthrough in making air conditioning less energy intensive or environmentally friendly."

Statistics from a survey by the National Environment Agency found that air conditioning accounts for almost 40 per cent of electricity bills in the home. Air conditioner manufacturers to date have sought to improve the performance of the machine's different components such as compressors and evaporators. "But these are marginal improvements. We need to have, as we say in scientific terms, a quantum leap improvement in energy efficiency," said Chua.

After four years of research, his team produced two new technologies that make it possible for air conditioners to perform cooling functions using water rather than chemical refrigerants.

The first is a membrane dehumidifier, which uses special water-absorbing materials and a difference in air pressure to extract water from ambient air as it is passed through the membrane. The water removed is potable and almost as pure as bottled drinking water.

The drier air is then passed through what is called the counter-flow dew-point evaporative cooler, the team's second invention. This device removes heat through evaporative cooling, the same process that reduces body temperature through perspiration.

With the two new technologies, air conditioners no longer need energy-hungry processors or chemical refrigerants like Chemical refrigerants such as chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs) to work. CFCs were banned under the Montreal Protocol in 1987 and the Kigali Amendment legally binds signatory countries of the Montreal Protocol to take action against HCFCs.

Instead of relying on HCFCs, the newly developed air conditioner can cool a room using rain water. It needs one litre of water to cool a

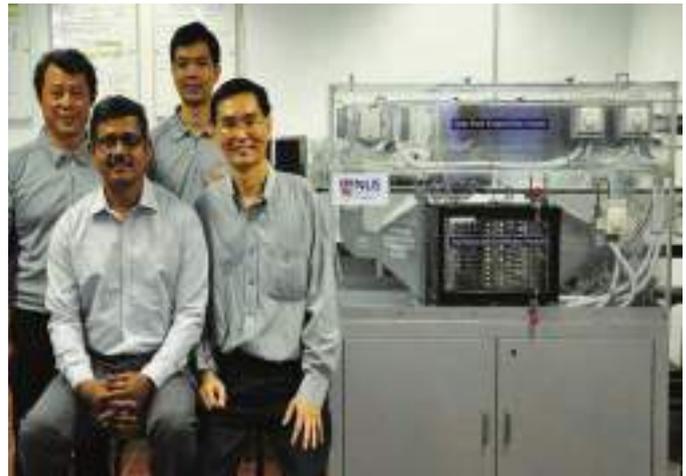


Photo Credit : NUS

The NUS team (clockwise from top left): Senior research fellow Dr M Kum Ja, research fellow Dr Bui Duc Thuan, associate professor Ernest Chua and senior lecturer Dr Md Raisul Islam.

master bedroom unit for 15 to 20 hours, said Chua. While regular air conditioners expel hot air as a byproduct, the prototype releases humid air that is still likely to be cooler than ambient temperatures. This helps to avoid disrupting the urban microclimate outside.

According to a recent study, the world could see an increase of over one billion new air conditioners by 2030 as climate change causes rising temperatures and the global middle class gains greater purchasing power. The new means of cooling represented by the prototype would not only help conserve energy but also ensure that the environment is not sacrificed in mankind's quest for thermal comfort, added Chua.

But he emphasised that the 1.6 metre-tall prototype is not the finished version, and his team is now looking to create a more compact and commercially viable product in three to five years' time. He estimated that the air conditioner would be up to 30 per cent cheaper than models currently available, and last for up to 10 years.

The one drawback is that it cannot cool spaces to a low enough temperature to replace the refrigerants-based systems of refrigerators or freezers. However, Chua said that the new developments could be used in industrial chillers.

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Get smart, stay ahead

The region's leading energy event, Middle East Electricity, will take place from 6-8 March in Dubai. Anita Mathews, group director – industrial portfolio at Informa Exhibitions, in conversation with *Technical Review Middle East* talks about what it takes to make the shift in minds of decision makers and providers.

From the technology driving innovation, to the future of energy storage and the needs of smart cities – smart energy is now being pursued worldwide.

Technical Review Middle East (TRME): Middle East Electricity has been forefront of pushing both traditional grid and renewable energy projects in the region.

What prompted Informa to launch Global Smart Energy Summit this year?

Anita Mathews (AM): Middle East Electricity (MEE) is the region's leading annual international trade event for the power industry, and is now in its 43rd year featuring over 1,500 exhibitors from 66 countries, supported by 23 dedicated national pavilions. Every year the show evolves to meet changing demands of the sector, and, coupled with this region's pioneering approach towards adopting new technologies, the introduction of Gulf Smart Energy Summit (GSES) was a natural progression.

GSES runs alongside MEE at Dubai World Trade Centre (DWTC) from 6-8 March 2018 and, as a high-level summit, it aligns impeccably with the objectives of MEE. GSES will feature some of the biggest corporate champions in the global transformation to smart energy, including Jeffrey Brian Straubel, co-founder and chief technical officer, Tesla Inc and Board Member of the transformative SolarCity; Andy Karsner, former assistant secretary for Energy Efficiency at the US Department of Energy, who led the implementation of the Twenty-In-Ten Advanced Energy Initiative and internationally-acclaimed Big Data guru Kirk Borne, the astrophysicist and data-scientist who for two decades supported NASA projects including the Hubble Space Telescope research phenomenon.



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With more than 140 local and international high-profile speakers delivering 100-plus content sessions across four tracks, the summit will lay out the future of global smart energy transformation and is expected to attract more than 700 attendees exploring reform patterns across the entire power spectrum.

The summit will host scientific and innovation pioneers of international relations, space, industrial and power sectors from 28 countries exploring the technology and processes that will transform the way we live and work.

TRME: What support are you expecting from the local government to push your smart energy agenda in the MEE platform?

AM: From the technology driving innovation, to the future of energy storage and the needs of smart cities – smart energy is now being pursued worldwide. As the regional leader in renewables with a resounding commitment to clean energy the UAE government fully supports MEE. The Dubai Clean Energy Strategy 2050 states clearly the emirate’s intention for seven per cent of its total power output to come from clean energy by 2020, 25 per cent by 2030 and 75 per cent by 2050.

The summit will open with a keynote address – ‘The State of Energy: Balancing Growth Through Smart and Sustainable Energy Sources to Drive Long-Term

Energy diversification within the GCC region also presents ample development and investment opportunities and a variety of financial and socio-economic benefits.

Competitive Advantage’ – from the UAE’s Ministry of Energy & Industry.

GSES will also feature dedicated, country-focus sessions looking individually at the opportunities and challenges of developing usable renewables and meeting national power programmes in seven Middle Eastern countries – the UAE, Saudi Arabia, Bahrain, Oman, Jordan, Egypt and Kuwait.

Addressing these key sessions are luminaries such as Her Excellency Fatima Mohammed Al Shamsi, assistant under secretary for electricity and future energy at the UAE Ministry of Energy & Industry; Eng. Ziad Jebri Sabra, assistant secretary general, Jordan Ministry of Energy and Mineral Resources; Dr Ayad Y. Aldaiji, advisor and chief information officer for Saudi Arabia’s Ministry of Environment, Water and Agriculture; Tamer Farid Hejazi, director, technical minister’s office at the Ministry of Electricity and Energy, Egypt; and Engin. Suhaila Marafi, director, department of studies and research, at the Kuwait Ministry of Electricity and Water.

TRME: What are the other highlights at Middle East Electricity 2018?

AM: Under our key theme ‘Energising the Industry’, the event services the shifting dynamics of the regional sector by bringing together the most comprehensive group of local, regional and international manufacturers in the power sector to demonstrate and debate the latest technologies transforming industry practices.

This year sees the inclusion of the Energy Storage & Management Solutions sector as a new segment in addition to the Transmission & Distribution, Power Generation and Lighting stalwarts, as well as Solar, which joins the MEE fold as a dedicated sector after six years as a co-located event.

Most of the leading manufacturers including Perkins, Cummins, SDMO-Kohler, Al Fanar, Ducab, Siemens, ABB, Eaton and Lucy Electric will have a major presence at the show this year.

TRME: Are there any plans to add value to the event by diversifying further in the future?

AM: We strive to consistently evolve the event to reflect and meet the needs of the region’s energy industry. The *GCC Power Market* report, produced for Middle East Electricity by Ventures Onsite, states that over the next five years the GCC requires a combined US\$131bn worth of investment in electricity generation, transmission and distribution to cope with increasing demand from growing populations, expanding economies and climatic changes.

The report adds that much of the investment is likely to come from public-private partnerships (PPP) if a regulatory framework is introduced to incentivise independent power producers (IPP).

Consequently, we have a variety of panel discussions and speeches on the topic at GSES to learn more about GCC’s focus on energy policy, frameworks and PPPs. Similarly, in the future we will include tracks in our conferences to address topical themes. ■



Anita Mathews, group director – industrial portfolio at Informa Exhibitions.

Photo Credit : Informa

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Visitors to MEE will see three new engine platforms, the 7L Perkins® 1206, 9.3L 1706 and 18L 2806, which deliver a massive uplift in power density across a comprehensive range of power nodes.

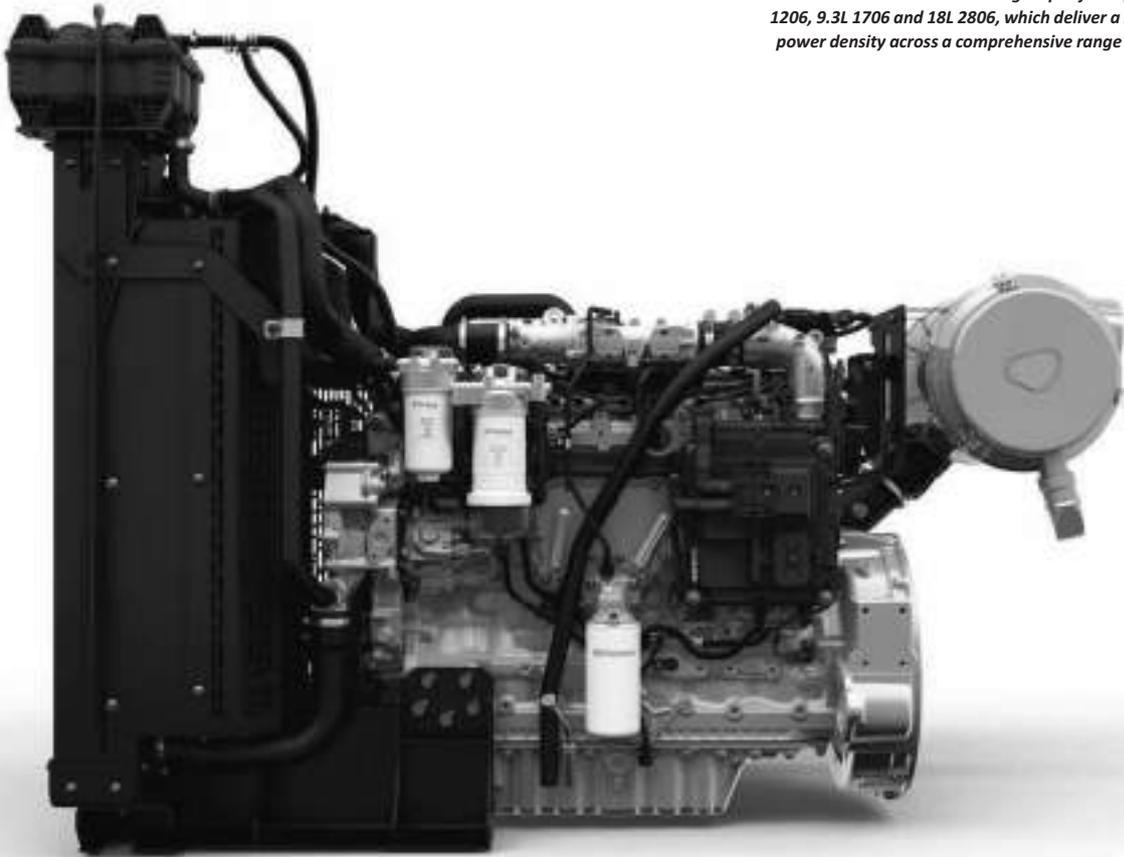


Photo Credit : Perkins

New products power Perkins forward at MEE

The Perkins team returns to Middle East Electricity (MEE) in 2018 with more than 85 years of history behind it and new product launches that deliver a massive uplift in power density to the electric power (EP) sector.

THE VISION AND values held by the Perkins Engines company founder, Frank Perkins, have driven Perkins and its customers to continual successes across the decades. And just as was the case back in 1932 when the first 4-cylinder Vixen and Wolf engines were launched, the Perkins philosophy in 2018 remains concentrated on providing competitive and dependable industrial power solutions.

“You will find our engines throughout the world delivering the power you need when

you need it,” said Trevor Toulson, Perkins director of sales and distribution for EAME & CIS and Perkins EP business strategy. “This ranges from hotels to hospitals, in frozen wastelands or expansive deserts or within rental equipment at construction sites. Our products put power in place where there is no other source, in remote locations throughout the world. We stand before our EP customers at MEE and elsewhere knowing we represent more than 85 years of the Perkins brand,” said Trevor. “We are

proud of this important milestone in our company history and of our rich heritage and we have great confidence that our products, services and solutions continue to evolve with changing market needs to serve our customers.”

Engines made at any Perkins facility are made to the same, consistent, high-quality standards. A collaborative approach with original equipment manufacturers (OEMs) during the engine integration process, or locally thanks to Perkins’ global product



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06/08 March 2018, H3 D39



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support network, ensures that Perkins engines are integrated and supported to meet the needs of OEM partners. These are among the many brand attributes that have made Perkins a global leader.

A massive uplift in power density

When you're running a business in the EP sector, every competitive advantage counts. Choosing an engine that draws the maximum power from the smallest package can make all the difference to your bottom line.

Perkins engineers are dedicated to delivering power upgrades across the range. Visitors to MEE will see three new engine platforms, the 7L Perkins® 1206, 9.3L 1706 and 18L 2806, which deliver a massive uplift in power density across a comprehensive range of power nodes.

Whether you're a generator set manufacturer or end user of Perkins

Whether you're a generator set manufacturer or end user of Perkins engines, choosing these new Perkins platforms to power your business can bring significant benefits to your operations.

engines, choosing these new Perkins platforms to power your business can bring significant benefits to your operations.

Delivering the power

"For OEMs, improved power density is vital to the success of your business," said product marketing manager (electric power), Karan Ohri.

"Each of our new engines delivers the same, or better performance as engines that were historically much larger and heavier."

The 1206, for example, has 20 percent improved power density and is 22 percent lighter than the existing 8.8L 1506 platform it replaces. The 1706 has 22 percent improved power density compared to our 13L 2206 platform.

The 2806, meanwhile, has 28 percent improved power density and a 35 percent reduced package size compared to the 23L 4006.

"These power upgrades make our new engines easier to package, reduce complexity and makes them

cheaper to transport, saving customers vital costs in a competitive marketplace. With improved running costs, better fuel efficiency and the technology on board to meet more stringent emissions regulations up to U.S. EPA Tier 3, the engines can also make the generator sets they're fitted to more saleable."

The enhanced engines are packed with benefits for end users too.

"For those companies buying and using generator sets equipped with

these smaller engines, they'll see better fuel consumption, which means significantly lower fuel costs," added Karan. "Our 2806, for example, will use 10 percent less fuel than the previous model, which adds up to major savings on fuel spend."

"What's more, customers will get all the reliability, performance and dependability of a Perkins engine in a product that takes up less room. So, in critical applications in cities like Mumbai, Dubai, Hong Kong, Singapore and London, where space is at a premium, having a smaller generator set will save on space and reduce installation, maintenance and running costs."

Future-proof engines

Across the EP sector, the trend for engines with increased power density is growing. With fuel prices rising, new EP emission standards set to arrive in 2019, and the complexity of transporting heavy engines to consider, more customers are searching for engines that are smaller, cleaner and built for the future.

All three of the new Perkins solutions will exceed customers' expectations in these critical areas. The new 1206, for example, produces 200-275 kVA output from just a 7L displacement. Until now, customers would have required a 8.8L Perkins® 1506 platform to achieve that power.

The 1706, meanwhile, produces 350 kVA from a 9.3L engine. This was previously met by Perkins 13L 2206 platform. The powerhouse 2806 delivers the same 750 kVA rating as the existing 23L 4006 platform, but now from a market-leading 18L displacement.

The new engines are also built with the future in mind. They have all the technologies required to meet the full range of global emission standards, from unregulated parts of the Middle East and Africa to the most highly regulated territories of the USA (U.S. EPA Tier 4 Final capable) and Europe (EU Stage V capable).

"These engine platforms already meet the most stringent emissions regulations



Karan Ohri is Perkins' product marketing manager (EP).

Photo Credit : Perkins

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applicable anywhere in the world,” said Karan. “Customers who do business in the rental and standby market could benefit from the same core engine that could meet standards in either a less regulated or highly regulated emissions market.”

Each engine provides huge technological strides forward for EP customers.

“As diesel engine technology has improved, we’ve been able to leverage this advanced technology across our fuel systems, turbo charging and more, and apply them to our EP engine platforms and subsystems,” maintained Karan. “This allows us to produce more power density and get a higher output of power from a relatively small engine.”

Built-in confidence

Up to now, one of the biggest challenges for many manufacturers of smaller engines with high power density has been their reliability under extreme environmental conditions. Some manufacturers’ engines have been unable to reach their highest power rating when the going gets tough.

It’s a challenge that Perkins engineers have been determined to overcome.

“We want our customers to enjoy the advantages of using a smaller engine without sacrificing on performance and dependability,” reiterated Karan. “Our latest fuel systems and cooling packs allow our engines to reach their maximum power ratings, even at high altitudes and ambient temperatures of up to 55°C.

“So even if you’re operating in the middle of a desert or high on a mountain, you’ll be able to depend on your Perkins engine to perform to its best. You can be confident that our engines will meet all of your requirements under all the conditions you need them to work in.”

As the new engines further strengthen Perkins proven EP offering, Karan is proud to



The Perkins® SmartCap.

see Perkins leading the way on power density.

“With the 1206, 1706 and 2806, we’re delivering power density upgrades across the range and that means that whatever sector of EP you work in – whatever your power needs are, emissions demands, or environmental challenges – you can run a more cost-effective business with a smaller engine that is just as high performing and dependable as before.”

Whichever way you look at it, Perkins’ already comprehensive range is now even more competitive thanks to the addition of these three remarkable engines. Perkins customers will get much more from an engine that’s lighter, smaller and less complex than before.

Perkins® SmartCap for mechanical and electronic engines

Perkins has launched the world’s first low cost engine level telematics device – the

Perkins® SmartCap. The company’s latest innovation is a ‘smart’ oil cap, which can be used on new and existing Perkins mechanical and electronic engines. Installed simply by replacing the existing oil filler cap, the Perkins SmartCap is a low cost connectivity solution that allows end users to connect their mobile device to their engine via the free Perkins® My Engine App on their smartphone. The cap monitors the Perkins engine and sends data directly to the app, which can be downloaded now from the Apple and Google app stores.

When combined, the Perkins SmartCap and Perkins My Engine App will give Perkins customers truly useful engine information including –

- Engine running hours
- Engine location
- Service reminders and service log
- Parts book and consumables information

The breakthrough telematics offering also provides easy access to engine specific information such as build list, series, type, model, the Perkins® Platinum Protection indicator and the operation and maintenance manual (OMM). The app, which is already available in English, German, French, Spanish and Portuguese, provides instant engine telematics information in key languages around the world; more languages are on the way with scheduled releases in 2018.

“This patented device is the world’s first low cost engine-specific connectivity device,” said Michael Wright, Perkins general manager – aftermarket.

“It provides the only way to add any connectivity to a mechanical engine and the only way to add telematics with no ongoing costs. We are watching its popularity grow with each passing day as we meet the needs of our global customers with this innovative and breakthrough step forward in the aftermarket.”

Priced at an introductory offer of £39.99/€45.99/US\$49.99 or the equivalent exchange rate, the Perkins SmartCap, which has no ongoing costs, is now being sold within Australia, the European Union, New Zealand, Canada and the USA. It is continually obtaining certification in more countries and will be available via the Perkins distribution network. ■

To contact your local Perkins distributor, visit www.perkins.com/distributor.

PERKINS IN POWER

- More than 20 million Perkins engines have been built, of which more than five million are still in service.
- Perkins has the capacity to manufacture 800,000 engines a year from its manufacturing facilities in Peterborough and Stafford, UK; Griffin in Georgia and Seguin in Texas, USA; Curitiba in Brazil; Wuxi in China; and Aurangabad and Hosur in India.
- Perkins is one of the world’s leading suppliers of off-highway diesel and gas engines in the 4 – 2000kW (5-2800hp) market.
- The Perkins global distribution network supports customers in 182 countries from 3,500 outlets supplying parts, repairs and solutions
- In 1998 Perkins became a wholly-owned subsidiary of Caterpillar Inc.

For more information, visit Perkins at Stand No: S1C10



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Power for a New Generation



FG Wilson has been around long enough to see a transformation in how customers use power today.

Photo Credit : FG Wilson

WHILE DEMONSTRATING THE company's new 6.8-25 kVA universal product range, FG Wilson described the company's business growth in the Middle East region

"The Middle East, and especially the Gulf region, is like home to us," said Ann Brown, managing director of FG Wilson.

Founded in 1966 in Northern Ireland by Fred Wilson, FG Wilson started as one of many small family-owned engineering

companies, repairing and servicing products, including generators and making products designed by Fred himself.

The big change came in the early 1970s when much of the world was gripped by an energy crisis. With electricity rationed, Fred saw an opportunity. He began to charter planes and flew generator sets into the UK from the US, renting a warehouse near London's Heathrow airport and auctioning them to businesses.

It wasn't long before Fred figured out that he could assemble generator sets himself and he set his sights on big things. Demand for electric power in the Middle East was booming and through contacts there, Fred began marketing mini power stations. FG Wilson's first small power station (six 2,000kVA units) was commissioned in 1974 in Abu Dhabi followed by many others across the region, particularly in Saudi Arabia, providing prime power for remote settlements which were then rapidly developing at the edge of the desert.

For FG Wilson, that was a defining time: "The design, installation and in some cases, the operation of these small power stations allowed us to develop a very experienced design and engineering team, and that knowledge and hard-won experience were absorbed into the team we have today."

FG Wilson has been around long enough to see a transformation in how customers use power today. "There's always been a need for reliable power for critical applications," said Ann, "but now there's a greater edge to it and much of this is driven by increasing reliance on digital technology. Fifteen or twenty years ago, businesses which lost electric power probably had a

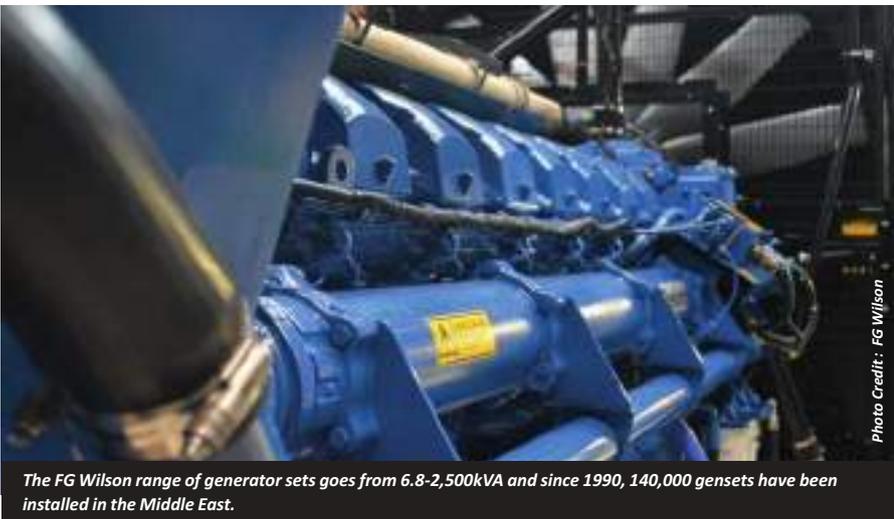


Photo Credit : FG Wilson

The FG Wilson range of generator sets goes from 6.8-2,500kVA and since 1990, 140,000 gensets have been installed in the Middle East.



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back-up plan to work with pen and paper. But today, when power is lost, everything else stops with it. Particularly for businesses which operate data centres either for themselves or for others, the costs of going offline due to power outages are colossal."

That means that for many businesses, the tried and tested generator set has a place. Ann noted, "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 really no better option than a generator set."

The FG Wilson range of generator sets goes from 6.8-2,500kVA and since 1990, which is as far back as their IT systems can report, over 600,000 generator sets have been installed worldwide, of which 140,000 are in the Middle East. If you lined up every generator produced since 1990, you could power an entire country the size of the UK.

The FG Wilson approach is simple. Ann explained, "You could sum us up in three words: products, dealers and support."

Across the entire product range, FG Wilson takes the same approach to product design and launch, whether the generator set is large or small. Nothing is released for sale until it's been rigorously tested, validated and a full suite of parts is ready for customers. All of this goes on at an Engineering Centre in the UK, a US\$26mn investment which is also home to Europe's largest Anechoic Chamber for noise testing. "This is how we operate," says Ann. "When we bring products to market, we know exactly how they will operate for our customers in real conditions and we know we can support them fully. That's very important to us and we won't compromise on it. Just as an example, recently many of our generators in the Caribbean were battered by two major hurricanes, and then



The FG Wilson approach is simple, Ann explains. "You could sum us up in three words: products, dealers and support."

Photo Credit: FG Wilson

went on to operate for four months all day until mains power was restored. It's gladdened our hearts to get feedback and photos from customers who have relied on us and our products. When someone asks us why we do what we do, there's the answer."

Supporting those products is a network of dealers, painstakingly built up over decades. Ann says, "People starting in our industry often underestimate how difficult it is to establish a distribution network. Yes, you can support customers locally yourself within a small radius of where you are, but once you go further, you need good local distribution partners."

FG Wilson's distributors carry inventory for immediate delivery, with larger dealers holding up to 600 units in stock. Some customers can walk in and drive away with a generator set, while for others it's a major project. That means working with consultants on load requirements, finding the right generator set, designing the complete layout of the generator set including exhaust and fuel systems,

installation and commissioning. For Ann, this is important. "With larger projects, it's about managing complexity and risk so the choice of supplier is important. It's about trust and we achieve that through the stringent testing and validation of our products, the competency of our engineering teams at our factory and dealers, and with the onsite support from our dealers."

Dealer support is backed up by a parts operation stocking more than 11,500 parts products and delivering up to three million parts a year.

So what about the future? Ann described, "Demand for power is going to grow, everyone sees that. People will expect more stable power, zero tolerance of power outages. And I see a place for generator sets in that for the foreseeable future: technology has made engines much more efficient and that will continue to happen for as long as we use them. On customer sites, generator sets will co-exist more with other renewable power generation technology as part of a balanced solution. We're already seeing that: maybe the generator set is for critical power needs onsite while some electrical energy, perhaps derived from renewable sources, is stored for other applications."

From 6-8 March 2018, the FG Wilson team will be exhibiting at Middle East Electricity at the World Trade Centre in Dubai. For FG Wilson, this is one of the highlights of the year. "There's nothing like this for us. It's a wonderful place to showcase our products and connect with people. Many of our Middle East and African dealers join us so it becomes quite an event." ■

Stand No: S2.D10



Photo Credit: FG Wilson

All FG Wilson products are rigorously tested and validated at an Engineering Centre in the UK, a US\$26mn investment which is also home to Europe's largest Anechoic Chamber for noise testing.

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Visa SpA provides high-tech solutions that can be tailored to all situations and sectors – from telecommunications to construction and engineering, industry, hospitals, retail and entertainment.

Photo Credit : Visa SpA

VISA SPA, ONE of the most complete and qualified companies in the generating set sector, will be exhibiting again at Middle East Electricity 2018 in Dubai from 6-8 March.

Successfully operating for almost 60 years in the design and manufacturing of diesel generators, it offers a complete range from 9 to 2,500kVA, well-known for the high level of quality and reliability, that can be tailored to all kind of situations. Exporting 90 per cent of its products, Visa SpA provides energy solutions in more than 80 countries, always focusing its attention on the ever-changing demands. According to the company, quality cannot be compromised and each product is tailor-made for a particular region, respecting the specific characteristics of the different geographical areas.



The Zeus Wet Prime Motorpump.

In the Middle East, specifically, the ambient conditions tend to be very difficult and challenging and hence a quality product operating in such an environment is now onboard.

At this year's edition of MEE, Visa SpA will be showcasing a unit of the Galaxy Series, which represents an innovation for harsh ambient conditions, resulting from a consistent and deep commitment of R&D team of engineers. The unit comes with a specific kit for extreme weather conditions, which is designed to meet the industry's toughest testing standards and grant optimum performance, durability and longevity.

The showcase also includes

- **P30 BIG FOX:** Equipped with Perkins engine and Stamford alternator, it is compact and sturdy, low noise and extremely versatile. It represents a perfect solution for all those projects where power as well and compact size is needed.
- **Zeus Wet Prime Motorpump:** Building on the significant specialist knowledge acquired through the company's lengthy experience in production diversification, the Zeus Series self-priming centrifugal motor pumps are designed to treat clean water, wastewater and sewage containing solids in suspension.
- **Each Onis Visa generator set** comes with highly qualified technicians who support customers through all stages of the project – from the early drafts and initial designs right through to manufacturing, installation and commissioning. Customers can always count on a prompt professional aftersales service. Visa SpA firmly believes that working with a 'well-structured' organisation can improve regional know-how and aftersales service. ■

Stand No: S3.A50

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The key to network management

GLOBALLY, HOW ENERGY is generated, distributed and consumed is changing rapidly, driven by the increased use of renewables, distributed energy resources, and the development of the internet and mobile devices.

Data is becoming increasingly important to utilities for both network monitoring and control. But data alone does not give companies the information they need to make decisions on planning, maintenance and network operation to manage the impact of these changes.

Lucy Electric is working at the forefront of data monitoring and control. Its industry-leading GridKey LV/MV monitoring system and associated analytics enable customers to identify actionable information from the ocean of data collected from networks today.

Speaking at the Global Smart Energy Summit at Middle East Electricity 2018 at the Dubai World Trade Centre, Lucy Electric's marketing director Phil Dingle will look at the value of network data to the multiple user groups within utilities as well as exploring possible network architectures for managing control and analytical needs.

Lucy Electric is well-placed to help its customers meet these data challenges and has a deep expertise in both monitoring and automation projects and are working with the latest techniques on projects across the world.

"We are constantly innovating and developing our monitoring and automation product ranges so that our customers can take advantage of the latest technology. Our experts work with utility companies to identify the right analytics to add value and give them greater visibility of their networks to help forecast and actively manage the network in real-time, manage flows and plan maintenance to improve reliability," said the company spokesperson.

Lucy Electric will be showcasing the latest developments to the



Photo Credit : Lucy Electric

Data is becoming increasingly important to utilities for both network monitoring and control.

graphical interface for our GridKey range and launching an extension to its Gemini 3 remote terminal unit (RTU) range.

The new Gemini 3 Mini adds a high quality, entry level option to the market-leading range of Gemini 3 RTUs, giving customers greater cost and operational flexibility. The Mini can control up to six switches, either locally or remotely through an HMI module and is available as a 'monitoring only' option. It is a great solution for customers looking to manage costs without compromising on quality or functionality. ■

Stand No: H2.D10

Teksan Generator 'making a difference' with its power solutions

TURKEY-BASED ENGINEERING COMPANY and genset manufacturer Teksan Generator will be showcasing its hybrid power solutions at Middle East Electricity (MEE) event.

Hybrid Power System, a renewable and efficient energy solution, which is supported by TUBITAK, is the first system of its kind in Turkey and being preferred mostly in telecommunications, agriculture and heavy construction projects.

The company also provides diesel, natural & biogas generator sets, lighting towers, cogeneration-trigeneration systems with comprehensive technical services.

The company was listed among "Turkey's Top 500 Industrial Enterprises" and "Top 500 Exporters of Turkey", "50 Fastest Growing Export Companies" in 2016.

Burak Basegmezler, Teksan Generator board member – sales and marketing, states that the company is both proud and happy to manufacture products, which deliver significant benefits to people even under the most difficult circumstances. "We provide the power turning dreams into reality. We have witnessed many unique stories by taking part in with our products so far. It was always an exciting experience for us to help our partners making the dreams come true. One such case is in Iraq. While accessing to clean water resources is a problem around the whole world, providing essential power through our products to sustain the pumping process of the Qarmat Ali Water Treatment Facility was a vital project for us. The facility now meets 55 per cent of the clean water

requirement in Basra, Iraq. And this is something we are also proud of."

Teksan exports approximately 60 per cent of its production. Distinguishing itself against competitors through its technology, R&D and innovation, Teksan solutions are preferred in more than 120 countries.

He added, "We have recently exported our hybrid generator set, which was innovated by our R&D team, to one of the South America's largest telecom operators to be used for its base stations in Bolivia. We provide hybrid generator sets for remote stations of telecom companies operating in different continents, such as South America and Africa."

Stand No: S3.C40

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Need a reliable generator or light tower? Make sure it's powered by KOHLER. Our new KDI engines are fuel-efficient and built to last, **so you never have to stop.** They're also ultra compact and equipped with KOHLER Flex technology — a suite of integrated engine systems that allows you to meet every emission standard on earth, including Stage V. Defeat downtime. **BE UNSTOPPABLE.**

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KOHLER Flex™ : integrated suite of engine systems

KOHLER WILL PRESENT a new development of its platform of diesel engines, designed to meet the requirements of a market that demands more application flexibility and compliance with the various emissions limits, along with performance and productivity at the Middle East Electricity (MEE) 2018.

Kohler's Stage V solution is compact in design with best-in-class performance, reduced consumption, easy to install, and optimised solutions for every emissions regulation.

With the Stage V development, Kohler adds another model to the line-up. KDI engines are characterised by extremely clean combustion and now, with the introduction of the DPF, Kohler takes full advantage of the efficiency of the combustion to deliver to its customers the most advanced technology and the most compact after-treatment system in the market. The company is proud of the DPF smart regeneration strategy, which was developed through extensive use of advanced simulation tools and testing.

KOHLER Flex™

KOHLER Flex™ is the range of solutions for emission control that Kohler has designed to enable each configuration of the KDI platform to comply with all emissions standards and regulations, worldwide.

At the heart of KOHLER Flex™ there is the clean combustion of KDI engines that enables the adoption of a compact, state-of-the-art DPF to meet the Stage V emission standard.

KOHLER Flex™ combines the clean in-cylinder combustion of KDI engines, made possible by high-pressure common rail (2,000 bar), four valves head, turbocharger and cooled EGR, and the most compact after-treatment devices (DOC, DPF and SCR) to comply with all emission requirements.

Each combination of KOHLER Flex™ has been designed in line with the all-in-one philosophy, with the objective of minimising change for engine installation into existing packages.



Photo Credit : Kohler

To facilitate the transition to Stage V, KDI engines are already available for development and validation tests.

These efficient and reliable systems can be deployed in many combinations to achieve effective emissions solutions for the different markets.

KDI line-up extension

The Stage V version of KOHLER Flex™ is the most functional solution for manufacturers and end users, as the regeneration strategy has been designed to maintain optimal machine operation, even at low load and low temperatures, thus preventing downtime due to forced regeneration events.

Kohler released two DPF versions. The first one reaches a maximum service interval of 10,000 hours, whereas the second is the most compact of the market and ensures a maintenance interval of 6,000 hours.

Kohler offers the after-treatment system mounted on the engine or separate, and thanks to the 360° rotation of the axial and radial inlet/outlet pipes it provides excellent adaptability for every application.

While complying with the new Stage V limits, the engines are also optimised for increased torque response and torque density. The KDI 3404 reaches 640 Nm at 1,400 rpm of maximum torque and 105kW of rated power. These new ratings improve productivity and efficiency of machines and give OEMs a great chance to adopt smaller and more compact engines.

For applications that require simple and

compact solutions, the new KDI version without charge air cooling (CAC) offers OEMs an extremely cost-competitive solution. This simplified non-CAC version is characterised by an upgraded fuel injection strategy that delivers the necessary torque and power and at the same time frees up space, reduces cooling load on the equipment and simplifies the engine installation.

Kohler is also extending the KDI engine line-up with new configurations for less regulated countries. These versions, with a 1,600 bar pressure common rail, no EGR and no DOC, will ensure the same performance of other configurations.

Introducing KDI Stage V

The Stage V models of KOHLER Flex™ enhance the strong points of the KDI range in terms of efficiency, compactness, power and torque delivery, simplified installation package, low operating costs and ease of maintenance, offering manufacturers and end users a complete and versatile engine platform. Cost competitiveness and superior performance are key advantages that are appreciated in every geographical area.

Kohler's Stage V development has followed the company's simple, straightforward philosophy: deliver more value to customers and end users. Kohler has developed a solution that is functional and compact so that OEMs are not required to re-engineer their machines. It offers end users a DPF technology that eliminates machine downtime, thanks to the smart regeneration strategy and the clean combustion of KDIs, with positive effects in terms of fuel consumption and oil cleanliness.

Up to now in the European Union (EU), the emissions standards only regulated the weight of the particulate matter emitted into the atmosphere. Stage V introduces the particle number (PN), which requires the use of a particulate filter system (DPF).

To facilitate the transition to Stage V, KDI engines are already available for development and validation tests. ■

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Baudouin celebrates 100th anniversary, latest engines to debut

THIS YEAR, MOTEURS Baudouin is celebrating a very special milestone – its 100-year anniversary.

From humble beginnings making petrol engines for fishing boats, it has grown into a leading force in the marine industry, globally recognised for its durable, reliable and efficient engine and power generation products.

A century ago, in 1918, Charles Baudouin set to work creating his first five hp engine, constructed just a few metres from the Mediterranean, in a small metal foundry in Marseille, France.

And in the ten decades since, the engines have become cutting edge, and the customer base has grown to include a variety of

applications both at sea and on land. But one thing remains: marine is in Baudouin's DNA.

This marine heritage lies at the heart of Baudouin's success. In the unforgiving environment at sea, there is no room for unreliable engines. So even when used in power generation applications, customers are assured that every Baudouin product is crafted to the same exacting standards demanded of the harsh ocean-going environment – durable, robust, and built to last.

This is evident in the company's comprehensive range of engines and generators. These include the tough M26.2 Series, and the latest M26.3 common rail engine range, which extend marine power to 1650hp while offering unmatched continuous power to weight ratio and noise reduction technology.

In 2017, Baudouin launched their innovative PowerKit range of



The latest M26.3 common rail engine range from Baudouin.

engines for power generation applications. Using the same design philosophy of the marine engines, every PowerKit product includes the engine, cooling system and air cleaner, with a choice of outputs spanning 15 to 2,000kVA for both 50 and 60Hz applications.

In addition to high-end components and engineering excellence, every PowerKit product is backed by one of the best warranty programmes on the market: two years and unlimited hours for prime power applications, and four years for standby power applications.

Baudouin also delivers some of the longest intervals between servicing and overhauls in the industry. This, combined with

excellent fuel economy, gives their engines one of the best and most competitive 'total cost of ownership'. Yet another reason clients all over the world trust Baudouin to stay up and running, whatever their power needs.

"As we enter a new century in Baudouin's history, durability, reliability and clean power remain our key focus areas," says Fabrizio Mozzi, the company's president and managing director.

"Our completely new and extended product range meets the most stringent customer requirements, allowing us to access the majority of global markets and applications. We have never been better equipped to power our clients' success, as we look to the next 100 years of excellence in the engine industry."

Stand No: S3.340

Photo Credit: Baudouin

Innovative product portfolio from Rittal Middle East

RITTAL MIDDLE EAST (subsidiary of Rittal GmbH & Co. KG), a leading system supplier for industrial enclosures, power distribution, climate control, IT infrastructure and software & services, will be showcasing its innovative product portfolio at Middle East Electricity 2018 that takes place in Dubai World Trade Centre.

The key highlights of this year's presentation include:

- World First – BLUE E+ cooling solutions with up to 75 per cent energy savings.

Based on the success of the BLUE E+ cooling units with energy savings of up to 70 per cent, this technology and its components are now also being used in industrial chillers for the first time. The new units are equipped with DC inverter and microchannel technology, have an output range of 1 to 6kW and impress with their high temperature accuracy of +/- 0.5K.

- The all new TS 8 Enclosures and variants,



Bharat B. Mahajan is the sales manager – Middle East, Industrial & Electrical Products (IE) at Rittal Middle East FZE.

which come with more benefits

- Integrated solutions with Rittal

enclosures on Ri4Power platform

According to Bharat B. Mahajan, sales manager – Middle East, Industrial & Electrical Products (IE), Rittal Middle East FZE, "All in showcase at MEE will elevate Rittal's promise – 'Our Expertise – Your Benefit'."

'Embracing Standards, Empowering the Industry' is a key message to the audience and visitors, set to experience the industrial and electrical portfolio from Rittal Middle East namely AE Enclosures, CM Enclosures, TS-8 Enclosures, Stainless Steel Enclosures, EX Enclosures, RiLine components complying to global standards and certifications and Innovation Ri4Power (Form-4, Type Tested MCC's Acc. to IEC 947), SE Enclosures, Cooling Units with 'Blue-E+' technology and much more.

Stand No: S5.D10

Photo Credit: Rittal Middle East

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Durable and safe labels from Brady.

Photo Credit : Brady

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Install the firmware update on your custom capable Brady label printer, load the custom label rolls, manually or automatically add the specific information your label should display, print and identify.

Choosing your ideal identification labels

For every identification challenge, even in the most complex industrial environments, specific identification labels have been designed that can durably identify cables, components, parts, products and facilities.

Brady's Durable identification labels guide book supports industries in choosing the ideal label for their identification needs. It shows what is possible in the world of labelling and presents solutions that enable companies to easily design and print their own, trusted identification labels.

Solve your identification challenges to enable more productivity, better troubleshooting, complete traceability, increased workplace safety and other identification advantages.

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The Dubai Aluminium Company is the result of a US\$60mn investment that seeks to strengthen the UAE's industrial supply chain in line with the UAE strategy to champion industrial investments.

DAC: A 'Made in the UAE' story

'MADE IN THE UAE' is a phrase that Ducab has been proud to adhere to since the company was founded. Owned equally by Abu Dhabi's General Holding Corporation (Senaat) and Investment Corporation Dubai (ICD), Ducab has produced cables and components since 1979 out of its facilities in Abu Dhabi and Dubai, which today are used by leading organisations and governments in the areas of energy, general construction, defence, transport and specialty industry applications.

With the launch of Ducab Aluminium Company (DAC) earlier this year, Ducab is poised to further support the ambitions of UAE Vision 2021 and Abu Dhabi Economic Vision 2030 by increasing local manufacturing, and reducing the dependence on hydrocarbons.

Located in Khalifa Industrial Zone of Abu Dhabi, also known as KIZAD, Ducab Aluminium Company is a joint venture between Ducab and Senaat. It is the result of

a US\$60mn investment, which will strengthen the UAE's industrial supply chain by providing 50,000 metric tonnes per annum of aluminium rod, and 16,000 metric tonnes per annum of overhead conductors.

The new manufacturing facility marks several strong partnerships. The first, the one between Abu Dhabi and Dubai, the parents of shareholders Senaat and ICD who in turn were inspired to partner as joint owners of Ducab. Further leveraging the power that comes with partnerships, Ducab and Senaat partnered again to form Ducab Aluminium Company.

Eng. Jamal Salem Al Dhaheri, chairman of Ducab and CEO of Senaat, and also the chairman of Ducab Aluminium Company, said, "The launch of Ducab Aluminium Company extends the UAE's industrial capabilities and addresses the growing aluminium market globally. DAC has signed a long-term partnership with its neighbour EGA for the supply of molten aluminium to

the facility along KIZAD's "Hot Metal Road". With this special partnership with EGA, we are now positioned to offer tailored products for the electrical supply chain, optimising local resources in line with the Abu Dhabi Economic Vision 2030. Moreover, the new company will substitute substantial imports of aluminium rods and overhead lines into the UAE, and help build a competitive edge for 'Made in the UAE' industrial products."

With its capacity capabilities, DAC will contribute to a lowered reliance upon imported aluminium products, driving a more sustainable 'Made in the UAE' supply chain with products that can be tailored to the needs of the country's diverse vertical industries. Raw material will be obtained from Emirates Global Aluminium's Al Taweelah site, which provides a reliable, sustainable source of ISO9001 certified aluminium, delivered to DAC.

The electrical conductive grade aluminium and aluminium alloy rods, wires, and bare overhead conductors manufactured at DAC will complement Ducab's existing portfolio of products. With a wide range of cabling and accessories tailored to meet specific requirements – such as fire performance cables, Ducab FlamBICC or Ducab PetroBICC for the oil, gas and petrochemicals industry – Ducab has established itself as a leader in the development, design, manufacture, marketing and distribution of copper and aluminium wire and cable products. ■

Stand No: H8.E10



DAC manufactures Electrical Conductive (EC) grade aluminium and aluminium alloy rods, wires, and bare overhead conductors.

Photo Credit: Ducab

Photo Credit: Ducab

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JDPS' compact 60kVA prime generator drive engine in focus

AT MIDDLE EAST ELECTRICITY (MEE) 2018, John Deere Power Systems (JDPS) will unveil its new ultra-compact 60kVA (prime) generator drive engine aimed at non-emissions regulated markets.

The product delivers a full 61kWm, meaning that typical standby ratings can reach 65kVA, all this whilst achieving an impressive 23 per cent improvement in power density over the previous model covering this node.

The advantage to the OEM and end users alike is clear: a smaller engine can lead to a smaller canopy and lower shipping costs. Despite the significant leap ahead in power density, the product is designed to the company's rigorous product verification and validation standards.

This latest product is the latest release as JDPS continues the revamp of its line up of non-regulated generator drive engines.

As an entirely independent

engine manufacturer of diesel driven power generation engines, JDPS offers OEMs unbiased engine expertise and a complete range of products from 30 to 630kVA that meet most worldwide emissions regulations – from non-regulated engines to EU Stage III A and EPA Final Tier 4.

With the John Deere extensive worldwide service network, end users never have far to go to find expert assistance: more than 4,000 service locations worldwide provide customer support when and where it is needed.

John Deere Power Systems manufactures and markets 30kW to 448kW (40hp to 600hp) industrial diesel engines and 56kW to 559kW (75hp to 750hp) marine diesel engines, as well as drivetrain components for use in a variety of off-highway applications.

Stand No: S2.C30



Photo Credit : JDPS

This product is the latest release as JDPS continues the revamp of its line up non-regulated generator drive engines.



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Contact: Nigel Sproston

Acrastyle Limited is an engineering company which designs and manufactures protection, control and associated electrical solutions to the Building & Infrastructure, Energy, Industrial, Transportation and Utility market sectors worldwide. We predominantly operate in the electrical Transmission & Distribution utility sector and are fully certified to ISO:9001, ISO:14001 and OHSAS:18001 standards.

BEAMA

H2.G25

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BEAMA members are manufacturers in the energy, electrical installation and power

sectors, a UK industry with a turnover of £13 billion and employing 137,000 people. BEAMA has considerable influence on standards and legislation in the UK, Europe and worldwide. Our interest spans from market models, regulations, products and system integration.

Broyce Control Ltd

H2.F30

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H2.F14

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IPEC Limited**H2.F34**

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Web: www.lawson-fuses.com
Contact: Mr Stephen Lawson

Lawson Fuses manufactures LV fuse-links and fuse-holders for use in distribution networks, house service, industrial applications, motor circuits and semiconductor protection. Products are ASTA 20 Authorised to the latest IEC/B5 standards. The Final Distribution Product range includes mcbs, isolators and distribution boards. Lawson Fuses is accredited to ISO:9001 and ISO/IEC:17025.

Luceco (BG Electrical Ltd)**H2.G19**

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British General – BG Electrical, part of Luceco PLC based in the UK, has over 70 years of experience in the manufacture and distribution of electrical wiring accessories.

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M2 Electrical**H2.G14**

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Web: www.m2electrical.co.uk
Contact: Mr Paul Brighton

M2 Electrical has been in continuous business under one ownership for 50 years. Our principle activity is the manufacture of wiring accessories supplied to the electrical trade and specification market via 800 distributors worldwide. With its manufacturing base in the central region of the UK, the company is ideally situated to support all local, national and international customers.

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Mettex Electric Co Ltd**H2.G11**

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MXB British Group Ltd H2.F31

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MXB is a trusted partner for the supply of high quality, competitively priced Wiring Devices, Fluorescent lighting fixtures and a comprehensive range of environmentally friendly LED lighting to Trade/Projects in Africa and the MENA region. We efficiently process and deliver orders from our 20,000 sqm logistics facility in UAE.

P & B Metal Components Ltd H2.G15

Tyler Way, Whitstable, Kent CT5 2RR
Tel: 0044 1227 791200
Email: sales@p-and-b.com
Web: www.p-and-b.com
Contact: Lyle Abbott

P&B is a World-Wide manufacturer of Silver Contacted welded and riveted assemblies, contact materials top-layer and inlay strips, micro-profile contact tapes and contact rivets.

Established for over 50 years in UK and now manufacturing in Malaysia, currently exporting to over 30 countries. P&B has an excellent reputation for Service and Quality meeting both ISO and TS Standards.

Remora Electrical Ltd H2.F15

Unit BA Shortwood Business Park
Barnsley
Tel: 01226 352000
Email: Sales@remora.net
Web: www.remora.net
Contact: Nigel Greaves

We are a business of over 40 years manufacturing and distributing Cable Glands Cleats and Accessories having international recognition.

REPL International Ltd H2.G19

REPL House, Kingsdown Road, SN25 6PB
Tel: +44 (0)1793 821 220
Email: graham.gardner@repl.com
Web: www.repl.com
Contact: Graham Gardner

REPL International Ltd (www.repl.com) is a global manufacturer of cable accessories for low & medium voltage joints and terminations. We are one of the largest independent companies specialising in heatshrink, coldshrink, smart-termination and push-on products.

Scolmore International Ltd H2.F10

Dubai Office: Empire Heights Bldg,
Office 1104, Marasi Drive Dubai (UAE)
Tel: +971 52 8732 019
Email: timpiggott@scolmore.com
Web: www.scolmore.com
Contact: Tim Piggott

For over 25 years Scolmore a UK based manufacturer has designed and produced high quality and innovative electrical accessories. We will be exhibiting at MEE in conjunction with our Middle East partner- Scolmore Dubai to showcase our extensive range of wiring accessories and the latest additions to our product portfolio.

Silver Fox Limited H2.G20

Swallow Court
Swallowfields Wgc
Herts AL7 1SA
Tel: 01707 373727
Email: sales@silverfox.co.uk
Web: www.silverfox.co.uk

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Tel: + 441 419 411 940
Email: marketing@terasaki.co.uk
Web: www.terasaki.com
Contact: Tim Campbell

TERASAKI is a world class specialist in innovative circuit protection, control and system products for electrical energy distribution.

The Faraday Centre Ltd H2.F32

The Wilton Centre Annexe, South Building,
Wilton Centre, Redcar, TS10 4RF, UK
Tel: +44(0)1642 467236
Email: shauna.bryan@faradaycentre.co.uk
Web: www.faradaycentre.co.uk
Contact: Shauna Bryan

A leading international electrical safety training provider. Our centres in the UK and Cyprus boast a vast range of both high and low voltage electrical equipment, allowing candidates to improve their knowledge of electrical procedures, regardless of the model or manufacturer of the equipment. The majority of current courses combine both theoretical learning and hands-on practical experience, within dedicated realistically designed environments. Training is assessed on a 'one to one' basis to ensure that the individual candidate has attained the appropriate level of competency. In addition, courses can be carried out onsite at client's premises, worldwide and can be customised to the clients own rules, technical requirements and time scale, if required.

Whitelegg Machines Limited H2.F29

4 The Boulevard, Altira Park
Herne Bay, Kent CT6 6GZ
Tel: 01293 526 230.
Web: www.whitelegg.com
Contact: Belinda Wakeling

Established in 1930, Whitelegg specialises in supplying equipment and tools for the repair of AC and DC electric motors. We have a full range available for all rewinding needs. On display will be winding fixtures, hand tools and much more.

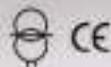
Wrexham Mineral Cables H2.G24

Wynnstay Technology Park,
Ruabon, Wrexham
LL14 6EN, UK
Tel: 01978 810789
Email: sales@wrexhammineralcables.com
Tel: www.wrexhammineralcables.com
Contact: Colin Hughes, Group Manager.

The only UK manufacturer of light and heavy duty mineral insulated cables, fire survival cables for use in critical circuits, 25 years system warranty offered as standard.



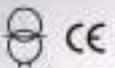
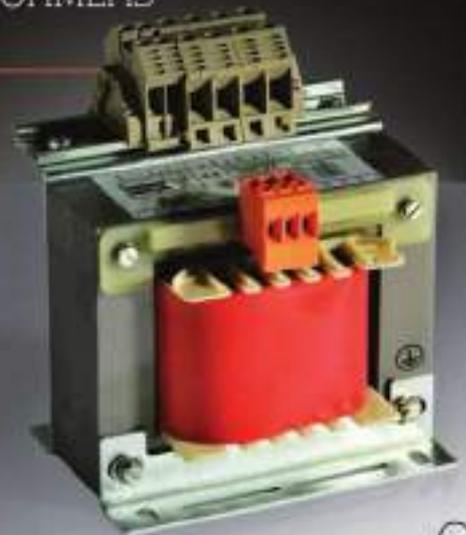
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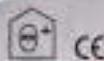
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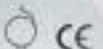
ISOLATION TRANSFORMERS FOR MEDICAL LOCATIONS



SAFETY TRANSFORMERS FOR SWIMMING POOL LIGHTING



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MEE 2018 - STAND H2-E18



Online monitoring system for better performance

OMICRON has launched an online monitoring system to detect partial discharge activity in HV cables, which warrants simultaneous PD monitoring of short or long cable links.



Users can remotely configure the monitoring system and view real-time PD data using MONCABLO's intuitive web interface.

Photo Credit : OMICRON

AUSTRIAN COMPANY OMICRON has rolled out MONCABLO - a customisable, permanently-installed system for continuous online monitoring of partial discharge (PD) activity in the electrical insulation of high-voltage (HV) cable systems, including cable terminations and joints. The monitoring system is capable of detecting and locating PD anomalies along the entire length of HV cables. The system is equipped with advanced diagnostic techniques for a reliable evaluation of insulation condition to prevent costly in-service failures at an early stage.

Customisable system design

Thanks to its modular and expandable architecture, MONCABLO can be modified to suit the customer requirements based on the number of cable accessories to be monitored. The system warrants simultaneous PD monitoring of short or long cable links,

including buried or tunnel cable systems.

The PD data is synchronously gathered by high-frequency current transformers (HFCTs) installed at the grounding or cross

The system can be set up to automatically notify users by email as and when the PD activity exceeds pre-set warning or alarm thresholds.

bonding links of each monitored cable accessory, and is transmitted to a data acquisition unit for pre-processing. Multiple data acquisition units are connected to a central computer with fibre optic cable which ensures the galvanic isolation between the high-voltage area and the control room where the central computer is located.

Software with intuitive web interface

The MONCABLO software's intuitive web interface allows users to remotely configure the monitoring system, to view real-time PD data and historical trends, as well as to analyse the collected raw data. In addition, automated features for PD data evaluation are available via the same web interface. The system can be set up to automatically notify users by email as and when the PD activity exceeds pre-set warning or alarm thresholds. The software also allows the correlation of PD data with the data from

third-party sensors (e.g. temperature, oil pressure, etc.) installed on the cable system for complete condition assessment.

IEC 60270 compliant PD measurements

The software permits users to simultaneously view the PD status of all cable accessories in a single overview screen. The PD defects are reliably identified along the entire cable length using a unique patented technology. Such features enable users to make PD measurements for post-installation testing of HV cables.

Advanced technology for convenient PD data evaluation

The high PD measurement sensitivity of the MONCABLO monitoring system is based on advanced OMICRON technology for noise and PD source separation. Multiple PD sources are automatically separated from each other and from external noise through synchronous multi-channel measurements and methods such as the 3-Phase Amplitude Relation Diagram (3PARD) and the 3-Center Frequency Relation Diagram (3CFRD).

Handholding

OMICRON's dedicated team of service engineers provides users with complete guidance and support during the design, installation, commissioning, set-up and use of the MONCABLO PD monitoring system. OMICRON will also assist with data evaluation and reporting.

Preventing in-service failure of HV cables

HV power cables, terminations and joints are generally factory-tested before installation to ensure quality and reliability. However, mechanical forces during cable laying, hidden imperfections, and flaws caused during the onsite installation of cable accessories can result in partial discharge activity. If undetected, PD will erode the insulation and eventually result in the complete breakdown and in-service failure of the entire cable system. Such failures might lead to unplanned power outages, loss of plant production, adjacent equipment damage, and in some cases, personal injury.

The monitoring of PD activity can aid asset managers in making strategic decisions regarding the repair and replacement of HV cables or accessories and avert untoward incidents. OMICRON has several years of experience in the field of on-line PD monitoring on high-voltage cables with a long list of monitoring projects implemented across the world. ■

Stand No: H2.D20

The software permits users to simultaneously view the PD status of all cable accessories in a single overview screen.

CIRCUTOR new energy efficient products in focus at MEE

SPAIN-BASED ENERGY EFFICIENCY company CIRCUTOR, which has over 40 years in the energy efficiency sector, will participate at Middle East Electricity 2018 to showcase new solutions for improving electrical energy efficiency.

Its product focus at the show includes:

- New CVM-A1500 power quality analyser with built-in datalogger
- New MYeBOX® portable network analyser for energy audits
- Network analyzers and software for energy management solutions (EMS)
- New CEM sub-metering energy meters
- SVG for reactive energy compensation (static var generator)
- New AFQevo active filter
- RECmaxCVM a unique in the market solution for earth-leakage protection systems with built in automatic reclosing and measurement system

CIRCUTOR has more than 40 years' experience working on the design and manufacture of units for improving energy efficiency such as electrical energy and power quality measurement and control units, industrial electrical protection, reactive energy compensation and harmonic filtering, smart electric vehicle charging and, during the past few years in the renewable energy sector.

Stand no: H2.E28



Photo Credit: CIRCUTOR

The AFQ-evo series is ideal for installations that generate harmonics such as computers, UPS, lights, lifting units, ACs with phase shifters, etc.



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Experience VR and a brand new genset from Cummins

CUMMINS POWER GENERATION is introducing the C450 D5, as part of the QSG12 series diesel gensets, for the commercial and industrial markets at Middle East Electricity 2018.

This new product offers more power for less space, by delivering a much higher power density and a more reliable power solution. The series is available from 400-450kVA and powered by a Cummins four cycle, inline, six-cylinder dual speed diesel engine offering more robust performance using less fuel. Features also include extended service intervals of 500 hours, lower fuel consumption and unaided cold start capability at 12°C.

“MEE 2018 is a perfect platform for Cummins to debut its refreshed product line-up for the power-generation sector,” Alok Joshi, Cummins Power Generation, director, Africa and Middle East, said.

“Cummins is a long-time exhibitor at MEE, having had a major presence at this leading power-generation exhibition for the past seven years. It is a major event for us as it talks to the industry we are in. A lot of diesel genset manufacturers are also present, many of them powered by Cummins. Hence, it is not only a good platform to launch new products, but to engage with other OEMs as well.”

Joshi also revealed that the genset market in the Middle East and Africa is growing due to the unreliability of power grids in general and a region-wide electricity shortage. However, prevailing economic and political conditions continue to hamper growth in major markets such as Kenya.

“The biggest growth area, at the moment, is in West Africa, where the focus is on markets such as the Côte d’Ivoire and Senegal.”

Also on display is the new variable speed generator set model, C22DVT – the newest member of the existing X2.5 telecom product series. The new model offers fuel savings up to 45 per cent based on load and a much greater reduction in operational expenditures to further optimize the total cost of ownership (TCO). Due to its variable speed capability, the C22DVT model operates with less noise, which is ideal for telecom installations located near residential areas. The model is designed to be used with rectifiers to produce 48VDC power delivering reliable and uninterrupted service.

The C1540 N5CC is the newest addition to the QSK60 gas engine portfolio and offers new customer options that make it a perfect fit for both independent power producers and combined heat and power applications. Supplying electrical efficiency of up to 43.8 per cent, the upgraded model can reduce total cost of ownership for its customers and deliver world-class power efficiency.

Meanwhile, the new 9.5 litre



Photo Credit : Cummins

The QSG12 series diesel gensets.

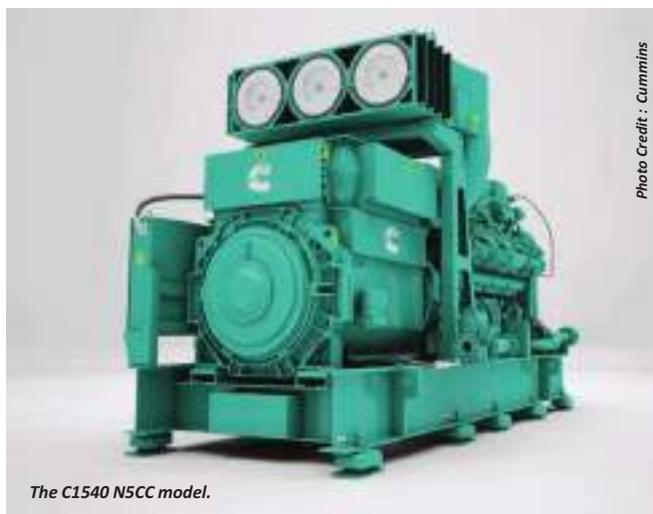


Photo Credit : Cummins

The C1540 N5CC model.

G-Drive Coolpac series will also be showcased in the newly released Cummins black colour. The 6LTAA9.5-G1 G-Drive Coolpac model, available at 350kVA, offers higher efficiency and dependability. With a 24-valve and a larger flow injector design, this new model delivers one of the highest power-to-weight ratios in its class.

Cummins is also displaying the Digital Master Control 8000, a fully automatic, distributed logic controller suitable for remote applications, making it easier for users to integrate and adapt their varying power needs. The new Digital Master Control system can control diverse power sources such as solar, genset and wind. With available remote access and monitoring, users can securely access the control system and view up to 90 days of data logging at anytime, anywhere.

This year, Cummins is launching a virtual reality (VR) experience, allowing visitors to step inside a generator plant room. Users will be tasked with connecting its complete power system before the time runs out to help Cummins power a world that’s ‘Always On’.

Commenting on Cummins’ continued participation at MEE, Joshi reiterated, “We want to be perceived as the power solutions provider

of choice for a wide range of applications and industries. It is not just about supplying products, but the actual project execution on the ground, and how we are able to support those products throughout the lifecycle of a particular installation. “We want customers to see us as a complete solutions provider, combined with our aim to keep customers up-to-date with the latest technology and trends by introducing new products that will contribute to their bottom line by reducing their TCO.” ■

Stand No: S3.D30

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BUILT FOR IT.™

French companies showcase power at MEE

BUSINESS FRANCE IS once again presenting the world-class, innovative and dynamic French electricity sector at the French Pavilion at the Middle East Electricity Exhibition. As a key platform for the introduction of new products and services in the world of electricity, this flagship exhibition continues to be a springboard for French businesses looking to expand in the region. The exhibitors at the French Pavilion are geared up to welcome the thousands of expected participants and to showcase their latest novelties.

A global leader in the electricity industry and leading exporter in Europe, France will showcase a diverse offering across the sector with representation from companies including power generation, transmission, distribution equipment and applications, products and systems for protection, security and lighting. Products and solutions will also be displayed from every level of the electricity value chain including electrical network operators, telecoms operators, engineering firms, integrators, equipment suppliers, component manufacturers, ICT firms and others.

As the world's eighth top producer of electricity, with one of the highest quality supplies of electrical power and the world's seventh-largest exporter of electrical equipment, selected French companies will showcase their quality products and provide expert advice to their regional partners.

Marc Cagnard, managing director at Business France Middle East, stated, "this



The Business France Pavilion at the previous MEE edition.

Photo Credit : Business France

trade show represents a benchmark exhibition for France's electricity sector, with the ever growing number of large-scale infrastructure projects in the Middle East, France's electricity industry, with the newly introduced technologies, are in high demand."

In this favourable environment where US\$283bn of investment in the Middle East between now and 2020 has been confirmed, the French experts are well placed to offer competitive and groundbreaking solutions to regional partners. "We noticed over the past few years that this exhibition offers French

companies tremendous opportunities to interact with regional leaders in the industry, fostering key business relationships for greater growth", Cagnard added.

Some of the exhibiting companies include ADDEV Materials, AEG Power Solutions, AOIP, Cable Equipments, Chauvin Arnoux, CITEL 2 CP, Delta Box, Enersys, Ensto, JST transformateurs, Mafelec, NILED, Obsta, RS ISOLSEC, SAFT and Sediver, among other.

Stand No: H7.D16

INMESOL prepped for another edition of MEE, new genset ranges on display

ENTERING ITS SEVENTH year at the Middle East Electricity (MEE), INMESOL is back with its new range of gensets that comply with best global standards.

This year the power generator set specialist will be displaying various ranges that include:

- Rental range 44kVA LTP genset, soundproof, with FPT engine, IIR-044 model.
- Industrial range 115kVA LTP genset, open version, with Perkins engine, AP-115 model
- Stand-by range 110kVA LTP genset, soundproof, with VOLVO engine, IV-110 model.
- Portable range, 11kVA LTP, with transport kit, LOMBARDINI engine, AL-1000 model
- Rental range 44kVA LTP genset,



Rental range 44 kVA LTP genset, soundproof, with FPT engine, IIR-044 model.

soundproof, with FPT engine, IIR-044 model

According to INMESOL, a significant portion of the market, mainly the growing rental machinery sector such as companies that organise shows, events, F&B

companies, catering and hospitality services, etc., demand increasingly quieter equipment, equipment with low gas emissions regulated by strict and limiting regulations, equipment controlled at all times, and equipment with maximum reliability in terms of service provisioning.

Hence, the reduction of noise emissions has been one of the main objectives set by INMESOL for developing new products launched in 2017.

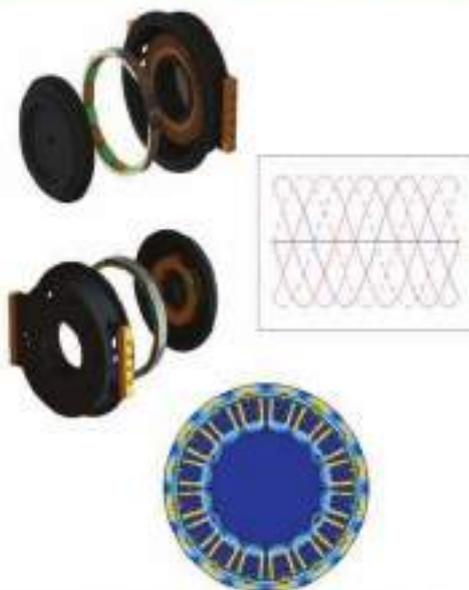
INMESOL works with prestigious manufacturing brands, capable of supplying engines that meet the latest requirements established by the corresponding regulations, in particular, those on the gas emissions, which is currently STAGE IIIA in Europe.

Stand No: S1.F10

Photo Credit : INMESOL

PERMANENT MAGNET GENERATORS (PMG) PERMANENT MAGNET ALTERNATORS (PMA) VARIABLE SPEED DC GENERATORS VARIABLE SPEED HYBRID GENERATORS

3 kW – 30* kW
12 Volts - 650 Volts DC
100 Volts – 1000 Volts
100 Hz – 960 Hz



PERMANENT MAGNET ALTERNATORS (PMA)

Available in voltages of 12 to 650 Vdc
& ratings upto 30* kW

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- ✓ Micro Grid Power Stations
- ✓ Telecommunications
- ✓ Auxiliary Power Unit (APU)
- ✓ Defence / Military
- ✓ Railways
- ✓ Refrigerated Food Transportation

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4. Low electrical ripple
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6. 500/1000 Hours Service Intervals
7. Remote Monitoring

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- Yanmar
- PERKINS
- DEUTZ
- Kubota
- Farymann
- Mitsubishi & other reputed brands



Inverter Generators,
AC/DC Generators

3 kW – 30* kW
12 Volts DC – 650 Volts DC



Note: * Higher ratings and voltage can be offered on specific request

Note: Engine Brands Indicated is for Reference only

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ABB to unveil world's first 'intelligent' distribution transformer

TXpert™, launched in 2017, is part of the ABB Ability™ portfolio that is built upon ABB's experience and expertise.



The transformer has a built-in Wi-Fi and Ethernet connection.

Photo Credit: ABB

ABB WILL RELEASE the world's first digital distribution transformer for the Middle East markets during the Middle East Electricity (MEE). The product was first launched in 2017.

Integrated sensing and monitoring technology in ABB's new TXpert™ distribution transformer provides intelligence to maximise reliability, optimise operating and maintenance costs and manage the asset more efficiently. This latest innovation builds on the ABB Ability™ digital offering that uses cloud computing and connected devices to generate actionable data for a broad range of customers.

Performance data collected from the sensors is stored and analysed within the transformer, offering insights on how it is operating. This provides utilities, industries and installations like data centres with vital information to make key decisions on the operation and maintenance of their transformers and support the management

of the asset throughout its lifecycle.

This includes activities such as scheduling of maintenance, optimising system performance and planned asset replacement.

Meanwhile, power grids are undergoing an unprecedented transformation both on the supply and demand side.

Many new and distributed sources of energy, including the influx of renewable energy and new demand loads like data centres and charging stations for electric vehicles, call for a more flexible grid, thus driving the need for greater digitalisation and automation. Intelligent products that can communicate are an essential component in the convergence of information and operational technologies.

"Distribution transformers are vital components in the electrical value chain. This latest innovation extends our digital portfolio and ABB Ability based offering, and reinforces our position as the world's leading transformer manufacturer," said Claudio

Facchin, president of ABB's power grids division, adding, "It also reiterates our next level strategic focus on enabling a stronger, smarter and greener grid."

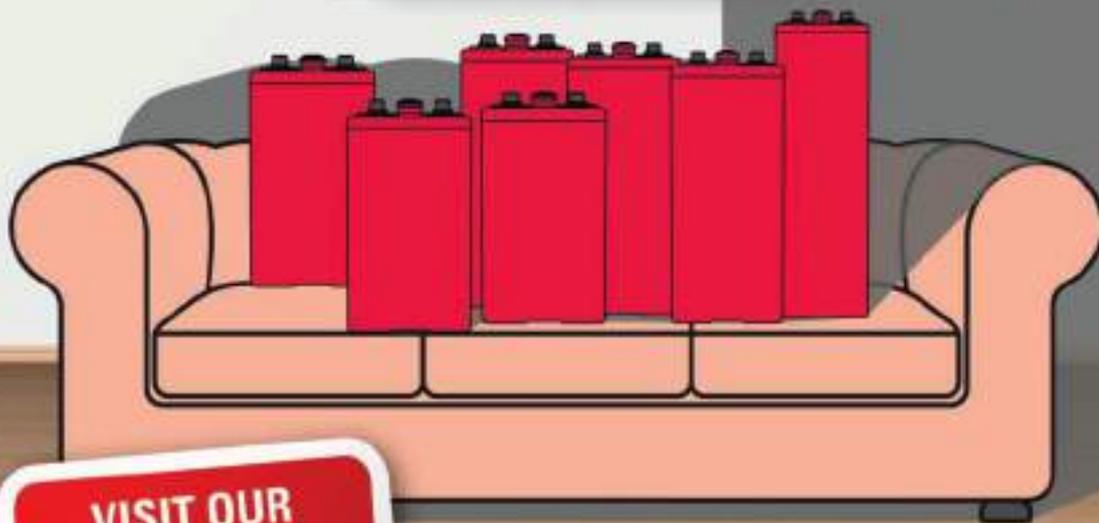
Why TXpert™

- Integrated solution built into the transformer as opposed to a bolt-on attachment
- Capitalised expense (CAPEX) vs. expense on existing operational equipment (OPEX)
- No additional wiring or hardware required
- Time-synched data allows for trending analytics (inference and predictive)
- Remotely expandable digital platform that can be accessed while still online
- Built-in Wi-Fi and Ethernet connection
- Flexible configuration to support data through numerous communication mediums
- Part of ABB Ability™ ■

Stand No: H4.D20

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2 Volt Family Extension



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ENERSYS
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AT H7.C10

Tecnoware introduces new UPS EVO DSP PLUS TT 100-200KVA

TECNOWARE WILL BE displaying its new UPS EVO DSP PLUS TT 100-200KVA, which help protect computers from any irregularities in the AC line, at Middle East Electricity (MEE) 2018.

This innovative range of uninterruptible power supply (UPS) is the result of constant technological research aimed at obtaining the best performance at the lowest cost.

UPS EVO DSP PLUS TT is an advanced on-line UPS built specifically to protect computer from any irregularities in the AC line such as blackouts, brownouts, over voltages, micro-interruptions etc which often cause damage to hardware and software.

This is able to protect computers mainly because UPS EVO DSP PLUS TT is a double-conversion on-line UPS.

Under normal AC line condition UPS EVO DSP PLUS TT provides an automatic output voltage regulation from the rectifier and inverter blocks and filters out frequently occurring electrical disturbances (high voltage transients, spikes, interferences, etc.), thus protecting devices connected to its outlets. During a power failure, UPS EVO DSP PLUS TT continues supplying adequate AC power (with a true sine wave) to all connected devices through batteries and by its DC/AC converter (Inverter).

UPS EVO DSP PLUS TT protects devices

from accidental overload or inverter fault by an automatic bypass that directly connects the AC Input line with output line.

UPS EVO DSP PLUS TT models are factory-equipped with RS-232 and USB interfaces, which can be used to notify a power failure or a low battery condition, thus allowing automatic data backup during an extended blackout with the common operating systems such as Windows, Linux, Unix, etc. UPS EVO DSP PLUS TT can communicate several made measurements (Input/Output Voltage, batteries, absorption, Frequency, etc) and be programmed to start-up or shutdown automatically at fixed times.

This is constantly being developed and improved, said the company. Consequently, the unit may differ somewhat from the description contained in this manual. The manual includes the following models:

- UPS EVO DSP PLUS TT 100 KVA
- UPS EVO DSP PLUS TT 120 KVA
- UPS EVO DSP PLUS TT 160 KVA
- UPS EVO DSP PLUS TT 200 KVA

Stand No: H2.H21



Photo Credit: Tecnoware

The UPS EVO DSP PLUS TT.

Advanced monitoring solutions from EES for energy sector

ELEKTRA ELEKTRONIK GMBH & Co. Störcontroller KG (EES) will display the latest trends in switchgear monitoring and fault annunciating at Middle East Electricity (MEE) 2018.

According to EES, the UAE is leading the way in expanding infrastructure and renewable energy projects in the region. For many years, EES has been involved in numerous projects to reduce failures

and restart times of electrical switchgears. The systems are used in energy transmission and distribution as well as in district cooling and boiler plants. Where new infrastructure and buildings are constructed, electricity is always needed, and EES fault annunciating systems are successfully implemented.

EES will be showcasing its second generation of fault annunciators, which provide sophisticated functionality in LED and window-based devices. The series BSM/USM and WAP have a very compact design and scalability up to 192 signal inputs. They are fully parameterisable through software and are intuitively operated for fast commissioning.

The communication to superior or inferior systems can be carried out over the serial interface according to IEC 60870-5-101 /-104 and IEC 61850 standards. Further options include Modbus RTU / TCP integration, repeat relays or redundant power supplies. The security option offers and hardened system and an unmanned operation mode enlarge the application possibilities of the fault annunciators.

Stand No: H1.G35 in the German Pavilion



Photo Credit: EES

The flexible fault annunciator series BSM - easily and flexibly adapted to your application. The BSM is available in 6 different sizes from 8 to 48 signal inputs.



MIDDLE EAST
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Dubai World Trade Center

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HEAVY-DUTY COMPONENTS
PARTS AND SERVICE SUPPORT
APPLICATION INTEGRATION

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When you build standby or prime power generators, you need THE POWER OF CONFIDENCE built in to every John Deere generator drive engine. Our 35 years of experience in power generation provides you and your customers the assurance of heavy-duty engine components for long-lasting performance. Warranty and service support that is unmatched in the gen-set market. And extensive engineering and application integration support to save you time and money.

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AI and IoT will drive energy in near future

IN 2018, PROGRESS in renewable developments and storage, smart home technologies and artificial intelligence are expected to set the tone for the emerging advancements within the global energy industry.

Over the last few years the development of renewables has been a rapidly advancing area for the energy industry, with this continuing in 2018. Renewables, especially solar power, will continue to thrive as manufacturing costs continue to fall. As more companies and countries consider renewable energy as a supply option, technological advances allow for this to be achievable. This translates into lower costs for building, operational costs as well as maintaining renewable systems. The cost of producing a solar panel has fallen by 70 per cent since 2010, according to the International Energy Agency.

This decreased cost of solar production will help renewables become a much larger part of the global energy supply. BMI Research's *2017 Global Renewables Outlook* predicted that renewable energy capacity will double between 2016 and 2026. These outlooks are already proving accurate, as solar power increased by 30 per cent worldwide in 2016. Renewable energy made up more than half the world's new power generation capacity.

This increase in renewable energy will require amplified development of energy storage systems to support their full integration into the power mix. Energy storage systems can be anything from batteries to flywheels that help manage peak demand, provide backup power and become part of a larger on- or off-grid system. A variety of energy storage pilots focused on utilities storage popped up in 2017 and can be expected to continue in 2018.

Virtual power plants are one example of the exploration of innovative energy storage pilots. These systems are interconnected networks of independent solar panels, batteries and utilities that are remotely controlled by software and data systems. The group of storage systems are then



Photo Credit: malp/Adobe Stock

customised to help each consumer manage and control electric use and better offset electricity supply disruptions.

This unique use of software and technology can also be combined with the latest generation of smart home assistants to provide greater flexibility and control over energy consumption. We can expect these smart systems to play a larger role in consumer trends going forward. This includes the increased use of smart energy meters that allow people to calculate their real-time energy use and take appropriate steps to cut energy consumption and costs.

Artificial intelligence (AI), machine learning and the Internet of things (IoT) – a network of devices with electronics and sensors that connect the objects and exchange data – will add another aspect to consumer control over homes and operations. IoT systems, also known as 'Digital Twins', are used in the industry to make operations more efficient. They will likely continue to be used in coordination with AI. Gartner predicts that more than 80 per cent of enterprise IoT projects will have an AI component by 2022, which is a significant increase from the current 10 per cent.

"The applications running as part of these 'Twins' can reduce the unplanned downtime for power generation machines

by five per cent and reduce operations and maintenance costs by up to 25 per cent, resulting in millions of dollars in value," explained Ganesh Bell, chief digital officer for GE Power. "The analytics running Industrial IoT data on these virtual machines is creating that value."

These cloud-based projects could mean a future populated by machine-to-machine systems. Small-scale projects have already started to appear to test out the capabilities of this approach. In 2016, Microsoft worked on a grid-interactive electric thermal storage system that connected nearly 500 IoT home water heaters to the Microsoft Azure Cloud. The machines monitored performance and energy consumption while making smart decisions about when to use energy or when to store hot water depending on the amount of renewable energy available in the system. These interconnected smart machines could make these decisions based on current information and past data. This is how these intelligent systems can help deliver more reliable and more affordable energy in the year ahead.

For energy consumers and providers, the year ahead will be about finding ways to meet demand for increased control and information with new products focused on renewable energy sources and emerging smart technology systems. ■

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Big Rebrand: MEC / PMV Live returns as The Big 5 Heavy

A HEAD OF THE launch edition of The Big 5 Heavy in March 2018, event director Richard Pavitt speaks with *Technical Review Middle East* about the rebranding strategy and how would the independent show, separate from The Big 5 event, cater exclusively to the construction industry.

Technical Review Middle East (TRME): How are the preparations underway for The Big 5 Heavy?

Richard Pavitt (RP): Very well. We had a great response to the launch and are working hard to deliver another world class event for the construction industry. During the lead up to the show it becomes very busy, but we are used to this with large scale events like The Big 5.

TRME: In its first edition as a standalone event, separate from The Big 5 Dubai, how do you think the event will facilitate as much support from international and local players?

RP: We have seen a tremendous response from the industry. We decided to move away from The Big 5 because the types of industry and product we cover with The Big 5 Heavy are very different. Concrete equipment, tower cranes, earth moving machines, drilling and mining don't traditionally sit within a building materials show like The Big 5. There is a specific need for a standalone heavy construction exhibition that caters to the Middle East market. The GCC infrastructure expansion continues at a breathless pace despite recent headwinds and The Big 5 Heavy will bring all the major buyers and manufacturers together.

TRME: The Big 5 Heavy has received a lot of support from local and international players. How do event organisers utilise this support to improve the offerings?

RP: The reality is the more exhibitors at a show, the more choice for the buyers. With over 300 exhibitors including the biggest brands in the world, it's a very special platform for contractors to come and look at cutting-edge technology. For example, we have a Made In Germany pavilion of over 1,000 sq m. This kind of support from the

Concrete equipment, tower cranes, earth moving machines, drilling and mining don't traditionally sit within a building materials show like The Big 5, which takes place in November every year.



Richard Pavitt is the event director of The Big 5 Heavy.

Photo Credit: The Big 5 Heavy

German federal government really highlights the interest and investment they have in the region.

We also have the American Concrete Institute and the Deep Foundations Institute who is giving premium content in a series of workshops and conferences designed to educate and support the construction industry in the Middle East.

TRME: What does The Big 5 Heavy have in store this year?

RP: The Big 5 Heavy will be the largest international trade event in the Middle East focusing on heavy construction. Packed with content, all CPD certified, country pavilions, and a huge outside demonstration area, The Big 5 Heavy 2018 is set to be a fantastic launch. There will also be a large 'Grill and Chill' refreshment area for visitors and exhibitors to meet and network. If you are a consultant, civil engineer or contractor, we have created a must-attend exhibition that is completely free to attend.

The Big 5 Heavy 2018 will run from 26-28 March at the Dubai World Trade Centre and will feature over 350 local and international exhibiting brands. Organised by dmg events Middle East, Asia & Africa, this event is the largest dedicated heavy construction industry exhibition and a re-launch of the previously independent Middle East Concrete and PMV Live. ■

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Photo Credit : CAT

Cat® and Al-Bahar usher in a new era of construction

CONSTRUCTION MACHINERY MANUFACTURING giant Caterpillar®, along with Al-Bahar, its exclusive dealer in the region, will take part in the Middle East's largest event dedicated to the infrastructure and heavy construction industry in Dubai – The Big 5 Heavy.

From 26-28 March 2018, Cat machinery will be showcased by Al-Bahar at the Dubai World Trade Centre, which is expected to be **the biggest stand at the exhibition**, event organisers announced.

Speaking to *Technical Review Middle East* in an exclusive interview, Al-Bahar Product Manager – earthmoving and excavation, Samer Ismail discussed the company's focus for participation at The Big 5 Heavy 2018.

"Our focus will be to introduce and exhibit our revolutionary machine features, and our theme for this year shall be – **New Range.**"

New Rules – depicting the universal theme for Cat Next Generation Excavators, which is one among our primary launches during The Big 5 Heavy," Ismail revealed.

The company will be introducing two of its latest equipment – Next Generation Cat 320 Medium Excavator and Cat 962L Medium Wheel Loader at the show.

"The Big 5 Heavy, being one of the leading international construction

events, we anticipate exceptional exposure and a bigger platform to reach our customers," he added.

Discussing the technology trends driving Cat's advanced machinery in the Middle East, especially the GCC countries, Ismail stressed that technology adoption has always been a priority for Caterpillar. "CPM – Caterpillar Product Management – and Cat Connect are examples of this. The products being exhibited at The Big 5 Heavy will include technological advancements like Product Link, Assist package (Assist-Grade-Bucket-Boom-Swing), Payload Package, 2D (including 2D E-Fence) and 3D Advanced Systems, Rear View Camera, and more."

The nearly 60-year-old Al-Bahar and Cat relationship in the region is integral to the brand's success in the region.

"Al-Bahar and Caterpillar take pride in being instrumental to the

overall development of the region. Our dealer network is one of its kinds with 80 years of experience and expertise serving the GCC markets, with strengths including comprehensive after sales support with 24X7 online parts availability. Our dedicated team of sales consultants and specialists, work with the customers assisting them build ideal fleet for any and every kind of requirement, making us the most preferred dealer in the region," Ismail added. ■



Photo Credit : CAT

The new 966L Wheel Loader, with the 2017 product update, applies proven technologies systematically and strategically meets high expectations for reliability, productivity, fuel efficiency, and long service life.

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The new dust control cannon from EmiControls out now

AFTER TWO YEARS of intensive research and development, EmiControls has totally revamped its V22 dust control machines, which are ready to operate in mining areas, ports and construction sites all over the world.

According to the company, it took some time to optimise the V22 and develop a machine that fits perfectly the customer needs around the globe, but now the new V22 is finally finished.

The biggest difference between the new and the old V22 is the size: the new cannon is a lot smaller and, therefore, easier to transport and integrate into existing systems. The set-up has changed too: the whole machine is more stable and robust now and that makes it able to operate in very hard condition.

Another important feature is the speed. The focus was on making the machine much faster in starting, rotating and in changing the angles. The design is fitted with modern improvisations.

Due to its long projection range and integrated 350° pivot function, it is most suitable for dust-control applications covering large areas.

The patented nozzle head and the outer nozzle ring generate a finely atomised mist, which binds the dust particles and prevents them from spreading. The projection distance of the inside nozzle head can be limited to close range by switching off the turbine. The angle of incline can be set with the user-friendly remote control.

However, the key functions of the new V22 still remain the same. Due to the special nozzles the cannon can produce very fine water mist, which stays longer in the air and eliminates dust efficiently. At the same time, water consumption is very low, so you do not have a



Photo Credit : EmiControls

The new and restyled V22 is the most powerful dust-suppression machine in EmiControls' product range.

problem with water ponds on the floor.

Furthermore, there is a choice of three different levels to regulate the water consumption.

The spray pattern is narrower that helps face the dust source more directly and efficiently.

Typical fields of application for dust control with the V22 include opencast mines, demolition sites, recycling plants, storage depots, loading facilities, landfill sites and woodworking shops.

EmiControls will be showcasing its product portfolio during The Big 5 Heavy, which will run from 26-28 March 2018 at the Dubai World Trade Centre.

Stand no: Z4.B146

Pioneering NDT solutions by Proceq at The Big 5 Heavy

SWISS-BASED PROCEQ SA, a portable non-destructive testing (NDT) firm, will be displaying a range of solutions incorporating new technologies such as ground penetrating radar with the new Proceq GPR Live at The Big 5 Heavy event from 26-28 March at the Dubai World Trade Centre. The solutions serve multiple industries from construction and manufacturing to oil and gas.

In 2017, amongst a number of new products, Proceq released new portable Equotip® solutions such as a unique so-called 'UCI' hardness test probe for metal and a one-of-its-kind IoT hardness tester named 'Equotip® Live UCI'; the first fully connected Original Schmidt concrete hammer that streams data live via smartphone to a secure cloud; an ultrasonic array solution within Proceq's renowned Pundit product line that feature Artificial Intelligence; and the aforementioned Proceq GPR Live that is expected to set a new benchmark in radar testing of concrete structures. Proceq is also rolling out product models also as rental solutions, which remove barriers traditionally experienced in NDT inspection.

Supported by Proceq's artificial intelligence engine called 'PQ', Marcel Poser outlined reasons for embracing change to make a better future and then talked of Proceq's roadmap. He said, "We have set out to chase bold goals and gone where no one has gone before in Proceq's industry, both in terms of products and speed of development." Proceq SA manufactures quality non-destructive portable testing instruments for concrete properties and structural parameters, metal and paper roll hardness.

Stand No: Z5.F60

Keep cool with environmentally-friendly Cool Group

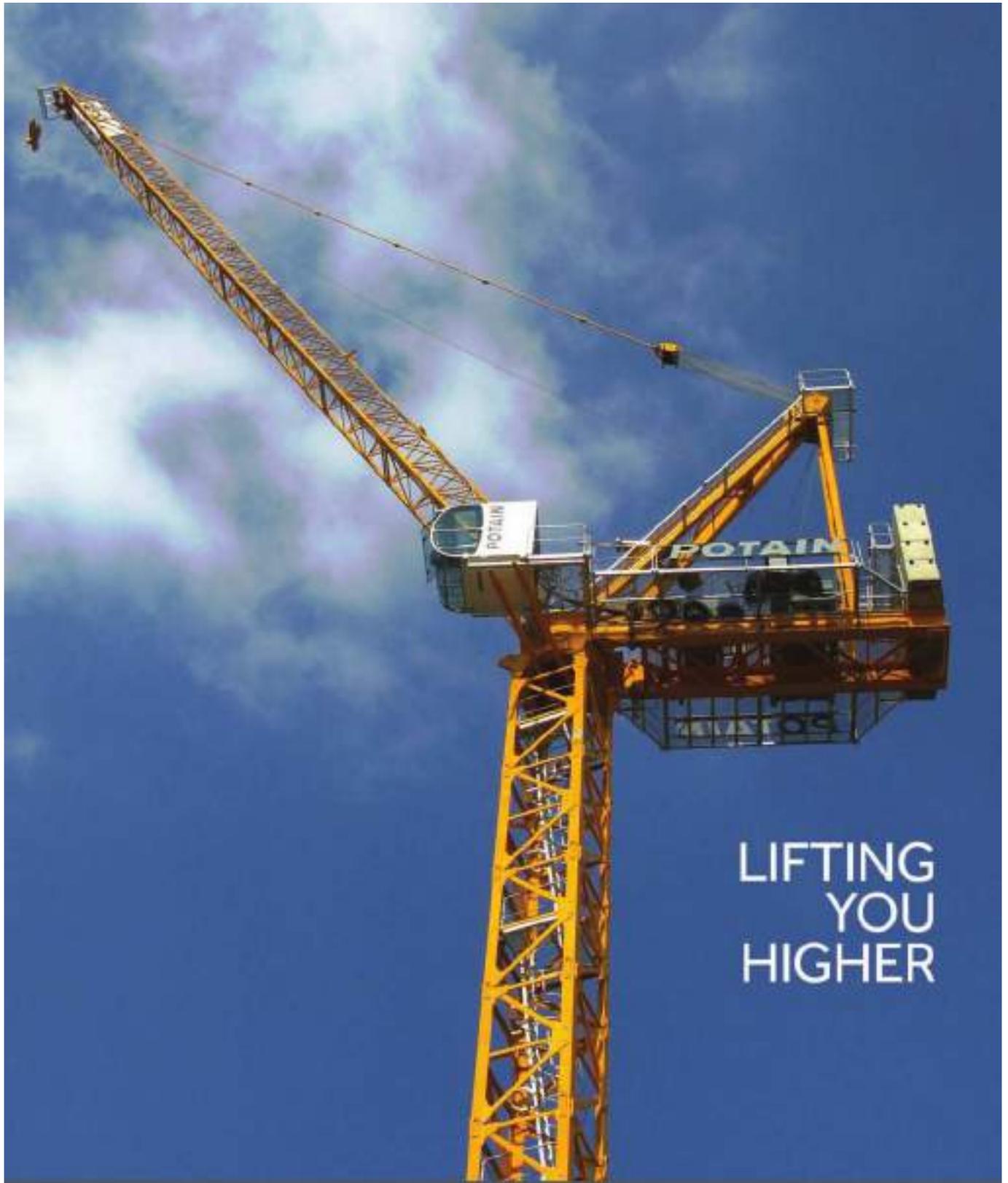
THE COOL GROUP will be showcasing its environment-friendly products and technology that can change the weather outdoors during The Big 5 Heavy that takes place from 26-28 March 2018. Some of the products at the show include:

- Inverter portable evaporative water cooling fan: The M-502-Cool is one of the larger models and can cool up to 6,200 sq feet area. It is ideal for cooling large spaces like a factory, warehouse or barn. Apart from cooling, the fan also filters the dust. Features include controllable with a stepless speed inverter with direct drive to fan blades, port for adding ice cubes to increase cooling effect. The fan is also easy to maintain drain out water tank twice a week, and the filters last three to five years, applicable to various dry and dusty environments, etc.

- Super Swing Positive Pressure Fan: It includes a stepless speed inverter with direct drive to fan blades. At 42 inches, it is the largest positive pressure fan with left and right swinging function in the world and the base can swing both left and right up to 90°. Thus, the fan can not only for fix direction but for various different directions covering more cooling area. The fan is single phase inverter driven, that is more energy saving with maximum efficiency.

The Cool Group has been serving clients in the Middle East for the past ten years and the technology is from Mist & Cool USA. The company's evaporative cooling units reduce the temperature drastically, while consuming only a fraction of the power consumed by conventional air-conditioning.

Stand No: Z5.F65



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NFT to launch Potain HUP tower crane for construction sector

AT THE BIG 5 Heavy 2018, the UAE based tower cranes specialist NFT, along with Manitowoc, will introduce the new Potain HUP tower crane launched in Bauma Munich in 2017.

In the UAE, a lot of villas are under construction and were traditionally built using a mobile crane or telehandlers. However, this is old fashioned and self-erecting tower cranes can do the job with more lifting capacity, according to the company.

NFT will also introduce the CCS range by Potain. NFT revealed that it has acquired a few CCS models for 2018 and the number will increase with the rise in contracts for new projects in the Emirates.

NFT has also acquired a new 300,000 sq m yard in Abu Dhabi's Al Dhafra area and around 80 per cent of the yard is allocated to stock up NFT equipment. The rest will be occupied by the administration building and work stations.

Nagham Al Zahlawi, strategy and marketing manager at NFT Specialized in Tower Cranes L.L.C, said, "With the Expo 2020 Dubai in progress, we have started bidding for more projects and some of our tower cranes are situated at the expo site. According to the Expo 2020 bureau, 47 construction contracts worth US\$3bn will be awarded by the end of 2018. So we're looking forward to be a part of this major opportunity. Expo 2020 and Dubai's ambition to be a global hub will bring about a significant growth for the construction sector in the next few years. Similarly, Kuwait is another market we have invested heavily in over the past year because it has a lot of potential due to its significant fiscal reserves. NFT Kuwait has achieved a significant



Photo Credit : NFT Tower Crane

This project is one of the many megaprojects for NFT in South Korea.

milestone by being awarded the biggest contract in Kuwait history to date by Turkish contractor Limak İnşaat, to construct the new International Airport, a project worth US\$4.34bn dollars.

"Oman and Bahrain too are looking promising, and we have always had a footprint in these countries because our vision for them is very optimistic. The Abu Dhabi Economic Vision 2030 is another major opportunity that we're looking forward to seeing come into development. We believe that GCC remains the best area for the construction industry when compared to global markets," Al Zahlawi added.

Recently, NFT won a Samsung megaproject to supply 30 tower cranes in six months for factory in South Korea, the largest placed at once for a single project in the history of the company.

This project is the Samsung Electronic Factory in South Korea where 51 tower cranes will be erected. This project is a significant investment for NFT in Asia.

The job requires the tower cranes to lift heavy steel structure of around 28 tonnes. After a feasibility study, NFT recommended an optimised package that includes a mix of Potain MR 608s and Terex Comedil CTL 630s. NFT signed the contract with Samsung to supply 20 MR 608s and 10 CTL 630 with final heights at 150 metres.

The giant luffers, lifting 32 tonnes, will be working for 14 months on a rental basis. NFT began delivery from January 2018, and this will continue until June 2018. The contract also includes full service and after-sale support, thanks to NFT's local partner.

As the only company able to deliver 30 tower cranes in six months, NFT is also appointed as the main tower crane supplier for the project. This win is further testimonial of NFT's forward thinking and risk taking approach, the company reiterated. It is exactly this competitive advantage that allows NFT to have a stock of 2,000 tower cranes across 20 depots worldwide.

"Every year, we forecast what kind of tower cranes the market will require, while working with manufacturer's production schedules so that when there is a demand, we are ready," says CEO MR Nabil Al Zahlawi with regards to his fleet management strategy.

This project is one of the many megaprojects for NFT in South Korea. A few miles away, NFT's tower cranes have helped build LG's display factory with 32 tower cranes, ranging from the MD 1100 to the MR 608 and MR 605.

As a leading supplier of tower cranes around the world, NFT continues to invest in its fleet to ensure that all project types can be attended to as quickly as possible. NFT prides itself in its global experience and its fleet size while ensuring it continues to serve its clients efficiently.

Stand No: Z5.A81

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Solintal to aid watering operations in Riotinto mine

SOLINTAL, A SPECIALIST in the manufacture of excavator buckets and tools for the public works and mining sectors, recycling equipment, and components and pipes for the engineering, industry and energy sectors, has been commissioned by Sánchez y Lago for a Komatsu HD 785-7 dump truck, which currently operates in the Riotinto copper mine in the province of Huelva. This piece of equipment, which is used for watering roads, is fitted with a water cannon on the upper part of the deposit and a series of sprinklers on the back. The entire watering operation is carried out by an independent motor, which can either be hydraulically operated or use diesel, which means watering can be done with the vehicle's engine turned off, plus one water pump. Everything is controlled from the operator's cabin.

Solintal always uses premium-quality materials, such as S690QL steel, which has high yield strength. It also applies different finishes and treatments according to the pH of the water and the requirements of each client. In the case of Sánchez y Lago, for the Riotinto copper mine, where the pH is highly acidic, the cistern has been given anti-corrosion treatment inside and out, by means of special paint for acid water, and it has been fitted with stainless steel pipes.

For over 50 years, the company has had a specific division for designing and manufacturing tanks, cisterns and deposits for



SolintalThe Komatsu HD 785-7 dump truck.

Photo Credit : Solintal

watering roads and storage areas for large earth-moving and mining projects. Its equipment is used by different mining operators around the world, in practically all mining countries across five continents.

Solintal designs and makes deposits and cisterns from 20,000 to 180,000 litres of capacity for all kinds of chassis.

Stand No: Z5.C51

Euro Auctions announces Middle East expansion

EUROPE'S LEADING AUCTIONEERS of industrial plant, construction equipment and agricultural machinery, has added a sale site in Dubai, thus placing Euro Auctions on four continents around the globe and adding another four sales auctions per year to the calendar.

Euro Auctions has leased a 91,000 sq m site from the Jebel Ali Free Zone Authority (JAFZA) that includes a purpose built auction complex covering over 3,000 sq m with a 360-seat, fully air conditioned enclosed auction arena as well as ancillary buildings, workshops and infrastructure. Euro Auctions has all the necessary services and logistic licences in place for the new venture and will trade under the Euro Auctions brand. "As part of the continued global Euro Auctions brand expansion, the Middle East, and in particular the UAE, was always the next country in which we

wanted to establish a strong and stable operating base," explained Jonnie Keys, commercial manager at Euro Auctions.

"We have many good relationships with buyers and sellers in the Middle East and Africa and this new auction location will enable us to create stronger relationships with our customers in this region and open the door to many new buyers and sellers."

Keys continued, "We have seen increased participation in our European and American auctions from the Middle East region over the past year and in particular in the last six months and, indeed, have had numerous customers who have requested that we take a larger part in this region which this facility will allow in addition to growing our customer base."

Stand No: Z5 E77

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Raimondi launches MRT234 flattop tower crane, latest in heavy lifting innovation

RAIMONDI CRANES HAS announced its newest and most innovative approach to heavy lifting technology – the flattop MRT234. Presented to Raimondi's exclusive agent network ahead of a wider release in October 2017, the MRT234 has already witnessed strong pre-sales due to its enhanced solution-based design. The MRT234 flattop tower crane officially began shipping in September last year to fulfil agent pre-sell orders, and has now launched for wider purchasing.



Photo Credit: Raimondi Cranes

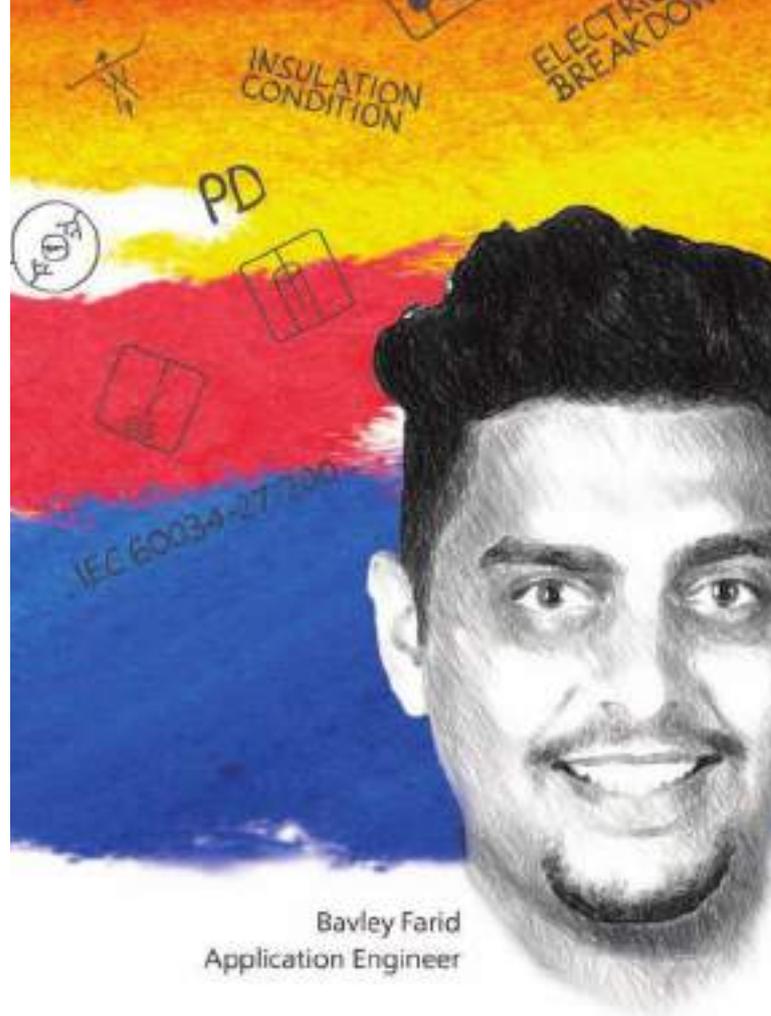
The MRT234 boasts the optimal match of mechanical, structural and electronic control design allowing for increased productivity and safety.

The Raimondi MRT234 is the newest flattop tower crane in the range with a maximum length jib of 70 metres and a maximum capacity of 12,000kg, with four falls configuration. At the maximum radius, it can lift 2250kg in Ultralift mode. Eight different jib length configurations, from 70 metres to 28 metres, satisfy all needs in terms of specific jobsite configurations. The MRT234 can be equipped with two different hoisting winches: standard installed power of 45kW or the more powerful 55kW.

When working with the MRT234, the crane operator will immediately notice a significant improvement in performance and control. Raimondi has worked to increase the speeds of the slewing and trolley movements, both of which have been improved by approximately 30 per cent. Smoothness of motion and heightening accuracy has also been enhanced, ultimately increasing productivity and reducing margin of error. The MRT234 boasts the optimal match of mechanical, structural and electronic control design that allows for increased productivity, safety, and better user-interface.

“Raimondi's newest product is heavily geared toward user experience, and these UI/UX centric features pioneered by Silicon Valley's technology companies, when applied to heavy lifting machinery result in a high-performance product that boasts extreme operator ease onsite,” said Domenico Ciano, technical director, Raimondi Cranes, remarking on some of the new product's most innovative design advancements.

Stand No: Z5.A93



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Hitachi Construction Machinery's mini excavators a huge hit

FROM ONE TO six tonnes – Hitachi Construction Machinery's mini excavators are made at its state-of-the-art factories in Japan and The Netherlands. Small on the outside, but big on the inside, they have a comfortable cab and are easy-to-operate. User-friendliness is at the heart of every Zaxis mini excavator. The smaller models are easy to transport by trailer and a suitable towing vehicle. Short-tail swing versions make light work of difficult jobs in confined spaces, and convenient maintenance features make them quick to clean and inspect. With fast cycle times and efficient hydraulics, the mini excavators make a big impression on the job site. The five- to six-tonne models can be used on more demanding sites, when space is limited.

According to Hitachi Construction Machinery, when it developed the Zaxis-5 range of mini excavators, one of its main aims was to enhance fuel efficiency. This would not only lower running costs, but also reduce the environmental impact.

To achieve this aim, Hitachi designed the ZX65USB-5 with an advanced energy saving system. This combines the ECO mode, auto idle and isochronous control features to significantly reduce fuel consumption, as well as lower noise levels and emissions. We also fitted a new engine and an electric governor, which works together with the efficient HHH hydraulic system, to ensure the excavator uses less fuel than the previous model (seven per cent less in PWR mode).



The ZX65USB-5 from Hitachi Construction Machinery.

Photo Credit: Hitachi Construction Machinery

Optimum performance

The ZX65USB-5 has been designed to work reliably, with minimum downtime, across a wide range of applications. Its convenient maintenance features help carry out cleaning and service tasks quickly on site.

The excavator's daily inspection points have been grouped together for easy access, and the covers open widely and conveniently to reach the radiator, engine and fuel tank. An optional tilting device for the floor provides even greater

access for service and maintenance jobs.

Keeping the ZX65USB-5 clean is simple, thanks to the two-piece floor mat, and an interior filter fitted to the air conditioning system that captures dust and air particles effectively.

With 23 models in operation worldwide, ranging from 800kg to 5,400kg, Hitachi mini excavators provide the right type of service whatever your construction needs. The increasingly-popular zero tail swing type has a reduced cabin back that doesn't hang over the crawler.

At The Big 5 Heavy from 26-28 March at the Dubai World Trade Centre, besides mini excavators, Hitachi Construction Machinery will also be displaying medium and large excavators, wheel loaders, rigid dump trucks and crane and foundation machines.

Stand No: OS.G41

Saudi Arabia's mining sector value set to quadruple by 2030

SAUDI ARABIA'S MINING strategy is set to nearly quadruple the sector's contribution to the GDP by 2030, from US\$17bn to US\$64bn, and Saudi Vision 2030 is also creating 25,000 jobs in the mining sector, according to Ventures Onsite report for The Big 5 Heavy. The Big 5 Heavy will feature a dedicated 'Mining & Quarrying' product sector.

The *GCC Mining Industry Report* notes that Saudi Arabia, Oman and the UAE are countries with vast opportunities for suppliers to the mining and metals industry in the region.

According to the report, Saudi Arabia currently dominates the GCC mining market with the most ambitious growth targets. Saudi Vision 2030 has also committed to creating 25,000 jobs in the mining sector as well. As a result, there are an estimated US\$16bn worth of ongoing mining projects in the kingdom focused on extracting minerals such as bauxite, copper, gold, iron, lead, silver, tin, zinc and a number of non-metallic



Preliminary estimates indicate that the total value of mineral resources in Saudi Arabia exceeds US\$1.3 trillion.

Photo Credit: Adobe Stock

minerals. It is worth noting that recent changes in Saudi Arabian mining law have paved the way in allowing greater access for foreign companies looking to invest in the kingdom's mining sector.

Other big players in the GCC mining sector, Oman and the UAE have both incorporated the mining industry into the core pillars supporting their ongoing economic strategies. Oman has the potential to become a minerals export hub, and the UAE Ministry of Energy is creating a mining industries federal

electronic and interactive database to encourage sustainable development of the sector.

"With the GCC mining industry expanding rapidly, it is crucial that we provide a dedicated product sector for the 'Mining & Quarrying' community, from suppliers to top mining and quarry owners, to network and do business at The Big 5 Heavy 2018," said event director Richard Pavitt.

"The scale of mining projects in the region, such as the Waas Al Shimal Mining City in Saudi Arabia (worth US\$9bn), and the Potash Mining Project in Oman (US\$500mn), as well as ongoing changes to law and regulation surrounding the mining sector, indicate the wealth of opportunities for suppliers of machines and equipment involved in the mining and metals industry."

Organised by dmg events Middle East, Asia & Africa, The Big 5 Heavy is a re-launch of the Middle East Concrete and PMV Live events.

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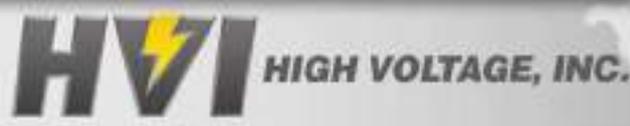
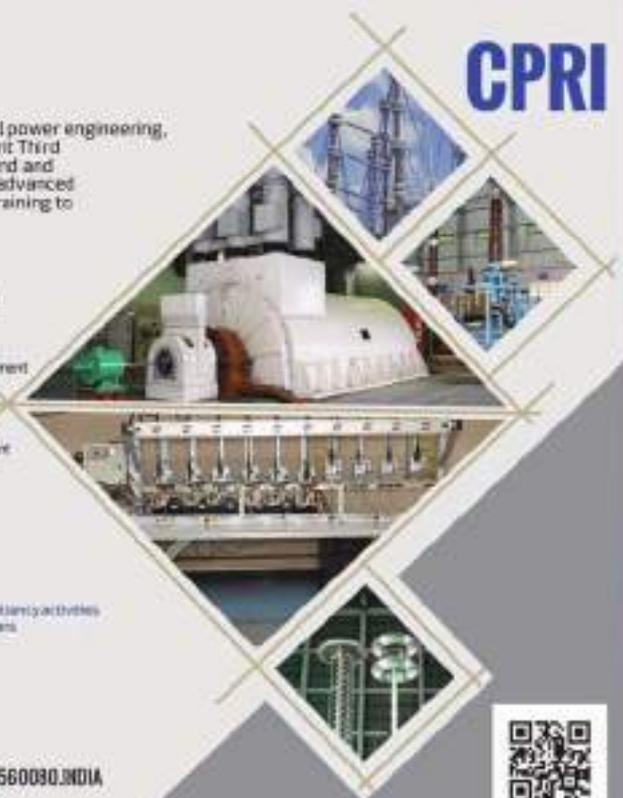
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Redevelopment defines Saudi building market

Saudi Arabia's US\$261bn budget demonstrates government's optimism for its economic diversification and highlights expansion plans in the kingdom.

A SIGNIFICANT NUMBER OF expansion and redevelopment projects populate the 10 highest value construction projects in Saudi Arabia, according to the latest *Top Projects in Saudi Arabia* report prepared by the BNC Network for The Big 5 Saudi. The multi-development expansion of Mecca's Holy Haram Mosque and the redevelopment of Jeddah's downtown are among the list, which also includes details on Riyadh's Mall of Saudi and the country-wide King Abdullah Security Compounds project.

The BNC report reveals that the expansion and redevelopment of existing structure and areas in Saudi Arabia are a main theme –

– **Al Faisaliya City:** The US\$25bn Al Faisaliya City concept for the western coast of Makkah tops the BNC list in value. The development will spread across an area of 2,450 sq km and will provide 995,000 housing units to accommodate 6.5mn people. It will include a governmental complex, an airport and a seaport.

– **Grand Mosque (Holy Haram Mosque Expansion):** With an estimated completion date of mid-2018, the US\$21.3bn expansion project will be divided into three phases. The expansion will include the addition of a new seven storey building with 74 prayer halls, an ornate prayer hall spread over 250,000 sq m and a 5000-sq m of central ceremonial area.

– **Dahiyat Al Fursan:** Valued at US\$20bn and due for completion by 2020, the residential project involves the construction of 100,000 houses and infrastructure works.

– **Al Ruwaid Redevelopment:** The Jeddah based project is expected to be completed by 2030 and involves the redevelopment of Al Ruwais district and involves transforming a slum area of 1,166,525 into an urban district.

– **King Abdullah Security Compounds (Phase 5):** Phase 5 of the King Abdullah Security Compounds, under development by the Ministry of Interior, is valued at US\$8bn and is expected to be completed this year.



Photo Credit: The Big 5 Saudi

– **Al Shamiya & Mataf Expansion (Holy Haram Mosque Expansion):** The US\$5bn project involves the expansion of a Mataf (the circumambulation area around the Holy Kaaba) by a width of 20 metres. A majority of the expansion will be used to accommodate more than 50,000 pilgrims per hour to 130,000 when it is completed.

– **Mall of Saudi:** Due to begin in 2020, the US\$3.2bn Riyadh-based project involves the construction of a mall spread over an area of 8666,000 sq m including indoor snow parks and 3000,000 metres of shops, restaurants, entertainment areas, residential units, offices, showrooms space, luxury hotels and services apartment buildings.

– **New Jeddah Downtown (Phase 1):** The mixed-use development, valued at US\$2bn, will incorporate a redesign of the waterfront area known as the Corniche of Jeddah. Additionally, the development is planned to build 12,000 housing units.

– **The Avenues (Al Malqa):** Another shopping mall on the BNC projects list and expected to be completed in 2019, The Avenues project will cover 1.7mn sq m and include two residential towers, two hotel towers, a medical tower and office units.

– **Riyadh Medical Village:** The US\$1.5bn project involves the construction of 10 hospitals, 33 clinics, a hotel, training centre, housing units and offices. It is expected to be

complete by 2018 and delivered by developer Tatweer for Real Estate.

Event director for The Big 5 Saudi, Roni El Haddad commented on the trends spotted in the BNC report, "The call made by Saudi Vision 2030 to diversify the kingdom's economy is driving construction activity across all markets; government plans to strengthen religious tourism anticipate an influx of pilgrims to the Grand Mosque and Mataf instigating its expansion, additionally there is increasing demand by young people for higher quality urban areas, the development of which currently makes up 70 per cent of all construction activities in Saudi Arabia.

"As a result we are seeing a huge increase in international exhibitors at this year's The Big 5 Saudi, each attracted to the potential that a transforming country like Saudi Arabia offers," Haddad added.

The Big 5 Saudi will run from 5-8 March 2018 at the Jeddah Centre for Forums & Event and is expected to attract 15,000 visitors and will bring under one roof over 500 manufacturers of construction products from around the world.

Organised by dmg events Middle East, Asia & Africa and MICE Arabia, The Big 5 Saudi is a premier trade event for construction professionals and is co-located with WoodTech Design & Expo. ■

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Hi-tech construction in focus at INTERMAT 2018

INTERMAT Observatory flags US\$1,886.8bn worth of projects in EMEA in the next 30 to 40 years.

THE UAE AND Qatar plan to invest a total of US\$293.03bn by 2033, with two most promising sectors being buildings and roads, according to INTERMAT Construction Industry Observatory.

While still dependent on revenue from petroleum exports, the economies of Middle East countries are beginning to diversify substantially. The UAE, Saudi Arabia and Turkey are the home to large scale projects, which are powerful levers for economic attractiveness and development.

In view of their continued development, the UAE, for example, continues to focus on Dubai, ideally positioned between Europe and Asia. As a true platform for the region, the city is to host Expo 2020, which should attract more than 25mn visitors between October 2020 and April 2021, and is already stimulating growth in the country (infrastructure, transport, hotels, etc). In this respect, several major projects have already commenced, such as the extension of the Dubai Metro over more than 15km, the construction of around 10 bridges and tunnels and of the new Al Maktoum International Airport where capacity will be increased to 160mn passengers. While lower oil prices have impacted growth, the country's fundamentals remain solid.

INTERMAT, the international trade show for construction and infrastructure officially unveiled its first Construction Observatory, in November 2017, produced in association with Business France. The INTERMAT Observatory provides construction equipment manufacturers with strategic research on 12 countries in the Europe, Middle East and Africa (EMEA) zone, handpicked for their planned investment levels in infrastructure and buildings.

Designed as a working tool to support the growth of firms, the report analyses each country's domestic investment plans, both ongoing and planned for 2025-2030, divided into application sectors – airports, buildings, railways, mining and quarries, ports, roads, transport – and offers an overview of the



INTERMAT hosted the first edition of the Construction and Infrastructure Meetings in 2017 in the run-up to INTERMAT 2018 edition.

Photo Credit : INTERMAT

major projects, the main imports and exports of construction equipment and the foreign brands established in each country.

"INTERMAT 2018 is the exhibition for economic recovery and technological innovation in the construction sector. The EMEA zone that we cover holds a wealth of opportunities for companies in the sector. With the INTERMAT Observatory, we are offering all our partners an up-to-date working tool to support them in their development plans on high potential markets," said Isabelle Alfano, exhibition director.

Main findings of the Observatory

– Europe: US\$1,132.7bn of investment planned up until 2030-2050. The six European countries studied – Belgium, France, Germany, Italy, the Netherlands and the United Kingdom – represent US\$1,132.7bn of projects, running up to 2030 for some and 2050 for others. Based on sourced master plans, Germany tops the list (US\$ 351.44bn up to 2030) followed by Italy (US\$273bn) and the UK (US\$204.5bn). France arrives fourth at US\$170.2b. The sectors offering the highest development potential for firms, in descending order, are: roads, railways and buildings.

– Africa: US\$375.93bn of investment between now and 2040. The four African countries studied, two in the Maghreb

(Morocco and Algeria), and two in sub-Saharan Africa (a Francophone country with Côte d'Ivoire and an Anglophone country with Kenya), account for US\$376bn of investment between now and 2040. Algeria (US\$224.95bn) and Morocco (US\$107.51bn) feature the highest investment plans to 2030. The sectors offering the highest development potential for construction firms are road and rail followed by buildings and ports.

Among the Middle East region's most noteworthy projects:

- **In Algeria:** the construction of 1.6mn dwellings between now and 2019 (US\$24.49bn) and the construction of the fourth southern bypass around Algiers
 - **In Morocco:** the construction of a high-speed line running more than 2,000km between the three countries of central Maghreb (Morocco, Algeria and Tunisia)
- Among the GCC region's flagship projects:
- **In the UAE:** road improvements in Dubai and Abu Dhabi (US\$897.59mn)
 - **In Qatar:** the Smart City of Lusail (US\$48.98bn, delivery between 2020 and 2022) and the road drainage programme (between US\$18.37bn and US\$24.49bn).

INTERMAT will be held from 23-28 April 2018 at Paris-Nord Villepinte Exhibition Centre. ■

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Adding value to KSA's waste management

TOROS KARDAŞ, FORD Trucks Country Manager responsible of Saudi Arabia, Bahrain and Jordan, explains what makes Ford Trucks superior over its competitors for waste management applications in the Kingdom of Saudi Arabia (KSA).

Superior products with exceptional performance

The new series reaches at the peak with its new generation Ecotorq engine which offers high driving performance with up 430hp and 2150 Nm of torque figure while shinning out with its high efficiency. 13L Ecotorq engine-powered trucks feature 12-speed, ZF Automated transmission options which are purposely-designed to provide an easier driving experience for drivers and deliver efficient fuel consumption for businesses.

According to tests conducted by independent institutions, the new Ford Trucks series reaches the significant fuel consumption values while offering high performance in all conditions with its improved torque and horsepower figures.

When it comes to waste management sector, the permissible weight of Ford's 4x2 truck – the 1833DC – is 19 tonnes and can be equipped with a seven cubic metres (cu/m) sweeper or 18.3 cbm garbage collector.

Also, Ford Trucks' warranty conditions are very favourable with a two-year unlimited mileage, and the customers appreciate that warranty is not confined to mileage, according to Ford Trucks.

Safety with no compromises

Ford Trucks does not compromise on its safety features. Some of the important safety features included in the 1833DC comprises of disc brake, electronic braking system (EBS) including anti-lock brake system (ABS), electronic stability program, hill launch assist, differential lock, immobiliser and front fog lamps.

Reduced total cost of ownership

Ford Trucks offers a total service interval of 30,000km. Over the life of a truck, the extended intervals can translate into potential savings. Offering extended service intervals demonstrate Ford Trucks' commitment to improving its customers' total cost of ownership (TCO) by reducing maintenance costs, due to Ford's EcoTorq engines. This savings opportunity is clearly highlighted with customized service contracts.

Also, the customers are free to choose between preventive maintenance and comprehensive maintenance packages.

In comprehensive maintenance, clutch, brake pad, wiper blade, fuses and bulbs are covered in addition to the preventive maintenance deliverables. On demand, battery and onsite maintenance services can be included. In addition to operating expenses, one should consider the value of second hand vehicles. The usual contract term is five years for cleaning projects in Saudi Arabia. After five years, Ford's trucks remain in good condition to



The Ford Trucks are now powered by the new EcoTorq Ford engine family that increases performance and lessens service intervals.

Photo Credit : Ford Trucks

fetch the best price in the second hand market.

Ford Trucks also encourages its customers to enrol for driver training at the Ford Driving Academy. This way, the customers gain improved driving skills with focus on fuel economy and environmental awareness. The courses cover subjects such as air resistance, speeding up, slowing down, selecting the right gear, braking on different road conditions, braking distance, avoiding obstacles, reaction time, blind spots, and sitting position.

Growing markets

Ford's high-quality product range and service ensures loyal customers. "We usually have repeat orders from our existing customers and we are proud of that. Our first customers were international companies that had positive experiences with Ford Trucks in different parts of the world. To attract new customers, we also have a test truck equipped with garbage collector at the service of waste management service companies," a company spokesperson said.

Ford Trucks are increasingly becoming popular across Saudi Arabia, particularly in cities like Jeddah, Dammam and Tabuk for waste management applications by municipalities, private airports, and compound projects.

A solutions partner

Ford Trucks is a customer-focused company. Its offerings are not limited to trucks alone. Ford positions itself as a solutions partner. As per customer demand, trucks are equipped with garbage collectors, sweepers, hook lifts, bin washers, skip loaders and deliver them to customer as complete units.

Ford Trucks also provide a flexible and reliable fleet management system along with the knowhow, skill and experience required to help customers achieve higher profitability. Everything from vehicle tracking systems to entire fleet management systems are customised to meet the specific needs of the customers. ■



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Idle mine shafts can house green energy

The start-up plans to build models from one to 20MW, and estimates each Gravitricity Energy Storage System will last up to 50 years.



Charlie Blair.

FORMER MINING COMMUNITIES across the UK could find a new lease of life with old mine shafts turned into hi-tech green energy stores. This is the plan of the UK-based energy start-up Gravitricity, which has recently received a US\$910,000 grant from Innovate UK to harness the power of gravity to store renewable energy.

The concept

Gravitricity uses a heavy weight – up to 2,000 tonnes – suspended in a deep shaft by cables attached to winches. When there is excess electricity, for example on a windy day, the weight is winched to the top of the shaft ready to generate power. This weight can then be released – in less than a second – and the winches become generators, producing either a large burst of electricity quickly, or releasing it more slowly depending on what is needed.

Later this year, the company will build and test a part-scale demonstrator, and are currently short-listing a number of disused mine shafts for their first full-scale working prototype in 2019/20.

In an exclusive interview with *Technical Review Middle East*, Gravitricity's managing director, Charlie Blair, explains how this futuristic technology can be a game-changer in green energy storage across the globe, including the Middle East and Africa.

Technical Review Middle East (TRME): What is the technology behind the 'push'? How is it different from companies that are already using gravity for energy storage?

Charlie Blair (CB): Gravitricity uses a system of electrical driven winches to raise a solid weight. This is very different from pumped hydro and some other gravity-based storage technologies that use water and hydraulics (pumps/turbines). Our system takes advantage of the constant torque on the system and can react in under a second. Like other mechanical technologies, it will have longer lifetime compared to batteries.

TRME: Have you focused on some regions that Gravitricity would employ its prototypes? What about the Middle East?

CB: We intend to deploy our first full-scale prototype in the UK, where we have identified a suitable shaft. After that, South Africa is a core focus area for us as it has multiple deep mines and an irregular power supply system.

Various countries in the Middle East have ambitious plans for up to 100 per cent renewables penetration. This means there is a good opportunity for storage technologies, particularly mechanical systems like ours that have long life, compared to electricity generating infrastructure. The Middle East also has the resources and real engineering enthusiasm. As we rely more and more on renewable energy, there is an increasing need to find ways to store that energy – so we can produce quick bursts of power when needed.

TRME: What are some trends that you may have identified that prompted Gravitricity to pursue such technology?

CB: Our system is good for power-based applications such as frequency response, which are currently the ones being deployed on most grids. We can increase the power to energy ratio very cheaply, which is much more difficult for chemical/hydraulic gravity systems.

TRME: Are you looking at government funding or private partnership for your project?

CB: Very much both. We have received grant from the UK government, but our main route to the market is via an industrial consortium. We are already partnering with winch and power electronics manufacturers and would like to speak with civil engineering and EPC contractors. ■

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Bobcat track loader makes UK's Project Elephant easy

A NEW BOBCAT T590 compact track loader has been purchased for use in the new Project Elephant development at Blackpool Zoo in the north of England.

Project Elephant is the next phase in the ongoing development of the zoo and the largest single investment it has ever made, increasing its overall footprint by a further three acres and providing a new home for elephants.

Supplied by Wigan-based Norwest Plant Ltd, the authorised Bobcat and Doosan dealer for North-West England and North Wales, the low ground pressure and stability of the tracked undercarriage on the new T590 provides the perfect solution for working on the deep fine sand that covers much of the floor surface of the new elephant enclosure.

Finding the right machine for the job proved to be a tricky problem for the zoo's head keeper, Luke Minns, and head of section for mammals, Adam Kenyan.

Unlike the competitors' machines, which failed the task because they buried themselves in the sand, the Bobcat T590 performed effortlessly and with great results. As well as the elephant enclosure, the combination of the T590 with several new Bobcat attachments such as a skeleton bucket, pallet forks and a hay bale spike purchased from Norwest Plant, forms a powerful and versatile tool to be utilised throughout the zoo.

Minns said, "It had to be a tracked machine due to the sand floors in the elephant house which need to be groomed every day. The build quality, size of the machine and the versatility proved that the T590 was a winning combination for the zoo's requirements."

Norwest's Garry Wheawall undertook the demonstration of the T590 at Blackpool Zoo and added, "The demo proved the Bobcat T590 was 100 per cent the machine for the job. There were a number of people from Blackpool Zoo and some from other zoos at the demo and all were impressed. A number of zoo staff tried out the machine and liked the operation and how simple it was to use. The machine ran well in the fine sand, manoeuvring up and down slopes and levelling off the sand with ease."

Minns was impressed with the simple operation of the new Bobcat T590 tracked loader. "Cleaning out the elephant house and grooming the sand is so much more efficient with the Bobcat machine and I



Photo Credit : Bobcat

The elephant enclosure has been specially designed around the complex welfare needs of the elephants and will feature a raised indoor viewing platform for visitors.

personally like the individual access codes for operators, which saves a lot of form filling."

The T590 at Blackpool Zoo is equipped with an optional Deluxe Control panel, which offers keyless ignition starting, and a keycode security system provides up to eight users with their own 10-figure keycode to start the machine and allows the zoo to monitor and record the operation of the track loader.

Bobcat compact track loaders

In a host of applications in construction, landscaping, forestry, agriculture, disaster relief and many other areas, there are no other machines that offer the combination of versatility and productivity than that provided by the Bobcat T590 and the rest of the company's compact track loader range. This is due to their unique characteristics as tool carriers and the wide array of attachments that they can work with, from trenchers, augers, graders, soil conditioners, scarifiers and dozer blades to more specialist attachments such as forestry cutters and stump grinders.

Emerson's control system helps bridge IT/OT divide for operational performance

EMERSON IS EXPANDING its Plantweb™ digital ecosystem with the launch of DeltaV Version 14, a cybersecurity-certified control system designed to deliver new value in capital projects and make plant operations more connected and productive. The latest release provides significant innovation to the entire DeltaV architecture and was built with customers' digital transformation initiatives in mind.

This major update to the DeltaV automation system includes several meaningful enhancements to eliminate costs and reduce complexity in capital projects, plus improve productivity during operations through enhanced access to production and equipment data, improved

usability and greater security.

Continuing to advance the impact of DeltaV Electronic Marshalling with CHARMs on capital project engineering, CHARM I/O Block takes CHARMs, which achieved more than one million deployments at more than 1,100 sites in only five years, closer to the field. Small enclosures with up to 12 CHARMs can now be installed closer to field devices, significantly reducing wiring and overall installation costs by as much as 60 per cent.

DeltaV Live Operator Interface is a modern, built-for-purpose operations experience that is easy to understand and modify. The HMI comes pre-engineered with the industry's best practices for user experience including ISA 101.01. The HTML5

interface enables scalable graphics and gives operators the flexibility to adjust their displays to focus on process data that is most important for each situation. The new operator interface helps improve overall situational awareness and decision-making speed. Emerson is helping companies prepare for the shift to mobility with DeltaV Live by building a foundation for graphics to be transferrable across desktops, laptops, and mobile devices, all without additional engineering or custom scripting. trained to write secure code and the system as a whole is hardened against cyber threats.

Emerson is making connecting a plant's OT systems with IT systems seamless by expanding OPC UA access in its DeltaV hardware and software offerings.

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Briefly

Megger celebrates a decade of DualGround™ safety

IT IS NOW 10 years since Megger launched the first circuit breaker test instrument featuring its unique and patented DualGround™ testing techniques, which make an outstanding contribution to the safety of engineers and technicians in the power industry. Sold in impressive numbers over the years, Megger instruments with DualGround™ capability make fast and accurate circuit breaker timing possible, with both sides of the breaker grounded, in more situations than ever before.

With DualGround™ measurements, engineers and technicians are protected against receiving dangerous shocks from voltages induced in the breaker by current flow in nearby live conductors. This is enormously important in the substation environment. Although it had been possible to measure timing with both sides of the circuit breaker grounded since 1992 thanks to dynamic resistance measurement (DRM) techniques, the results are not always consistent and reliable. Megger DualGround™ circuit breaker testers, however, use dynamic capacitance measurement (DCM) technology, which means that they are able to produce dependable timing results safely in an exceptionally wide range of conditions, even in challenging applications, such as those that involve GIS breakers.

Another key benefit of DualGround™ instruments is that they significantly reduce testing time, since it's no longer necessary to remove one of the ground leads before making a measurement and reattach it afterwards.

The test configuration for DCM testing is identical with that used for DRM measurements, but instead of looking at resistance changes in the main contact circuit during the operation of the breaker, DCM treats the contact assembly as a variable capacitor. As the breaker operates, the distance between the fixed and moving contacts changes, which means that the capacitance between them also changes. DCM evaluates these capacitance changes and uses them to provide accurate and repeatable timing measurements.

Potain's first hydraulic topless luffing jib crane out in the market

THE ALL-NEW POTAIN MCH 125 is the company's first hydraulic topless luffing jib crane. Its unique hydraulic technology makes it easier to assemble and faster to operate.

With a cutting-edge design and new technology, the crane combines the advantages of Potain's MCR luffing jib cranes and MCT topless cranes. Contractors will find it particularly straightforward to assemble and disassemble the crane on congested sites, making it an ideal choice for urban projects or other job sites where space is limited.

First previewed as a prototype at bauma China 2016 in Shanghai, the first units have since been tested on site with select dealers in Thailand, Australia and New Zealand ahead of the crane's launch into several international markets.

Thibaut Le Besnerais, global product director for tower cranes at Manitowoc, said that the new crane reinforces Potain's reputation for driving innovation and progression in the tower crane industry.

"The MCH 125 represents the very latest in tower crane design and is unlike any other crane on the market. The positive reception to the prototype at bauma China was followed by a series of highly successful early stage trials with customers in Asia-Pacific. We are already seeing strong interest in the crane for all kinds of applications."

The maximum capacity for the MCH 125 is eight tonnes, while the maximum jib length is 50 metres. Tip capacity is two tonnes and maximum line speed is 100 metres/min when fitted with the 60 LVF 20 hoist.

The crane's unique design offers a number of advantages, including fast erection and dismantling. The topless design means less space is needed on



Photo Credit : Manitowoc

The hydraulic luffing design also means the crane has a shorter counter-jib and out-of-service radius when compared with rope-luffing alternatives, freeing up space on congested job sites.

site, as there is no cathead to assemble at ground level before installation.

Uniquely, the crane also uses Potain's VVH hydraulic luffing technology for vertical movement of the jib, which eliminates the need for luffing wire ropes. With VVH technology, the MCH 125 is able to raise from a horizontal level to 87° in less than two minutes. The hydraulics are pre-connected at the factory, too, avoiding the need to perform this duty during the crane's on-site assembly. The hydraulic luffing design also means the crane has a shorter counter-jib and out-of-service radius when compared with rope-luffing alternatives, freeing up space on congested job sites.

Crane operators will enjoy the increased comfort and visibility that comes with the unit's Vision 140 cab, one of the largest cabs on the market. The entire upperworks of the crane, including its full 50 metres of jib, can travel on just four trucks. Assembly to a height of 40

metres can be achieved in less than six hours.

Operation is smooth and quiet and for better utilisation for fleet owners it can be mounted on existing 1.6 metres or two metres mast sections from the manufacturer's current range. Jib sections are from the MCR range of luffing jib cranes. There are five jib configurations available, ranging from 30 metres to 50 metres, in five metres increments.

"We used advanced simulation tools during the development of the MCH 125 to create a machine that will perform to the levels that Potain customers expect," Le Besnerais explained. "We are expecting strong interest in this crane from its launch markets."

The MCH 125 will be sold and supported through the extensive regional Potain dealer networks. The first production deliveries will begin in early 2018, with the crane available for sale throughout Asia, Africa, Oceania, the Middle East, Russia, the CIS countries and Latin America.

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Capturing a wider market

Global construction company, Rabiah & Nassar Group (RANCO)'s business development department is expanding the company's presence to industries including paint, energy and silica and silica derivatives, in a move to contribute to the Saudi government's mission to reduce the economy's dependence on oil and gas.

RANCO HAS APPOINTED highly qualified and experienced staff in its business development department (BDD) to lead and oversee professional development of new industrial business opportunities as well as to evaluate the efficiency of functioning of existing ones. The BDD is an important resource of the company to study businesses in a professional manner, using research and analysis as basic tools, thereby supporting the decision-making process to implement new business idea.

Under the guidance of the BDD, the company is foraying into new sectors. It has formed a JV with Europe's second and Germany's largest company in paints, CAPAROL (Germany). RANCO is currently in the process of establishing showrooms, warehouses and local agents across the regions of the country, for the distribution of the CAPAROL brand products, which will be followed by the establishment of paint manufacturing facilities in the country.

Harnessing energy

The BDD has also been responsible for the acquisition of a big share in SURE ENERGY SYSTEMS, a highly specialised company in the EPC of setting of solar power plants in India on a turnkey basis.

The company commented that it strongly believes in the future of solar energy and that it supports the Saudi Arabian government's mandate to diversify form the oil and gas sectors.

Silica holds immense potential

The company has been constantly working to develop silica sand derivative industries in the country. RANCO owns one of the largest high purity silica sand mine, in Riyadh. The total area of the mine is over five million sq m. BDD recently conducted a detailed geological survey of the land, which



Abdullatif Alrabiah, manager of RANCO's business development unit, which is overseeing professional development of the company's new industrial business opportunities.

Photo Credit : RANCO

RANCO wants to play its role in diversifying the country's economy from oil and gas base to minerals.

revealed that the land possesses much bigger reserves of high purity silica sand, as that shown in the Saudi Geological Survey (SGS) reports.

The BDD has big plans to ensure that the RANCO silica sand mine is fully utilised for establishing value added products for the country as well as for the export markets. RANCO wants to play its role in diversifying the country's economy from oil and gas base to minerals. Utilisation of silica sand in the country perfectly fits into such objectives of the government. For more info please visit www.rancogroup.com ■



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Volvo Construction Equipment launches its own range of rigid haulers

VOLVO CONSTRUCTION EQUIPMENT (Volvo CE) has announced that it will enter the rigid hauler market with its own Volvo brand of rigid haulers in Q2 2018. The development of the new four-model range has relied heavily on the longstanding rigid hauler expertise of Volvo CE's subsidiary Terex Trucks, combined with the technological strength of the Volvo Group. The range, which will initially be launched in less regulated markets, consists of the 45-ton R45D, 60-ton R60D, 72-ton R70D and the flagship 100-ton R100E.

The E-Series R100E is a completely new Volvo CE 100-ton (95-tonne) rigid hauler that combines a wealth of market and customer knowledge with proven components, new technologies and a striking new design – all providing a cost-effective and productive solution to fulfil the needs of today's mining and quarrying customers.

Based on the existing and well-proven Terex Trucks TR-Series, development of the D-Series R45D, R60D and R70D Volvo rigid haulers follows an in-depth engineering review, ensuring that the machines meet the standards expected from Volvo products in their target markets and segments. Improvements include greater visibility and safety systems, along with Volvo technical support and branding.

As a result of the launch of the Volvo-branded rigid haulers, production of Terex Trucks rigid haulers will cease over time.

"Our purchase of Terex Trucks in 2014 was a strategic decision that allowed Volvo to offer customers a rigid hauler option," said Thomas Bitter, senior vice-president of Marketing and Product Portfolio (MaPP) function at Volvo CE. "Since then, we have been working to design a completely new rigid hauler that builds on Terex Trucks' 84-year heritage, while also incorporating Volvo CE's industry-leading technology and core values of quality, safety and environmental care. Today we move to the next stage, and the new Volvo machines, especially the E-Series R100E, are the outcome of this work. We are confident that they will impress customers working in the mining and quarrying segments."



New machines in focus

The all-new flagship R100E has been designed to meet customer demand for a rigid hauler that delivers high performance and productivity, low total cost of ownership, easy serviceability and good operator comfort. With its high capacity and hauling speeds, new V-shaped body, efficient hydraulics, intelligent monitoring systems and operator environment, the R100E will help customers move more material in less time.

"Terex Trucks' rigid haulers are known for performing well in tough conditions, while also being easy to maintain and delivering low cost of ownership," says Paul Douglas, Volvo CE's vice-president of rigid haulers and Terex Trucks. "Our proven design has provided a strong DNA on which to help develop Volvo CE's innovative entry into this product line. The new E-Series R100E is a completely new machine that delivers stability, a long service life, high profitability, durability and comfort. And moreover, it's quick and simple to operate and maintain."

The new Volvo-branded rigid haulers will be manufactured at the rebranded Volvo Motherwell production facility in Scotland and sold exclusively through the Volvo dealer network.

New Z-PLUG field terminated plug for intelligent buildings from Siemon

SIEMON, THE GLOBAL network infrastructure specialist, has announced its new Z-PLUG™ category 6A field terminated plug in the Middle East.

The new plug allows for quick, reliable high-performance plug terminations in the field that enable custom-length direct connections to a variety of IP-based and PoE-enabled devices deployed in today's intelligent buildings.

With the proliferation of the Internet of Things (IoT), more devices than ever are communicating and receiving power via the network cabling infrastructure, including LED lights, wireless access points, security cameras, video displays, distributed antenna systems and building automation controls. Rather than connecting to the network via outlets and patch cords, many of these devices can be directly connected using plug-terminated

links for more efficient, rapid deployment.

Siemon's Z-PLUG field terminated plug exceeds all category 6A performance requirements and it can be terminated to shielded, unshielded, solid and stranded cables for maximum flexibility with only one part number required. Its intuitive termination process involves a user-friendly tool and hinged lacing module that eliminates the need to feed individual conductors through an opening, enabling best-in-class termination time and repeatable performance. Z-PLUG features a dual-purpose latch protector clip that protects the latch during routing and is available in nine different colours for easy colour coding of various systems. With a robust, low-profile design and the option to eliminate or shorten the boot, Z-PLUGs are also suitable for fitting into end devices with limited space such as

cameras and access points.

"With category 6A recommended for the latest 802.11ac Wi-Fi access points, digital displays and applications that require higher levels of power over Ethernet, combined with the efficiency of quickly plugging straight into a wide range of IP-based and PoE-enabled devices, Z-PLUG field terminated plugs are the ideal solution for connecting these devices in today's intelligent buildings," said Prem Rodrigues, director of sales and marketing for Middle East, India and SAARC at Siemon.

Siemon's Z-PLUG field terminated plugs support 10Gb/s system transmission performance for today's high-speed applications and the latest power over ethernet applications, including advanced four-pair Type 3 (60W), Type 4 (90W) and Power over HDBaseT (POH).

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Heralding clean energy solutions

Photo Credit: LIJAN

LIJAN Group, a leading contracting and trading company, is pushing a range of climatization and clean energy solutions with the aim of promoting sustainability in the industry.

“MAKING WORKING CONDITIONS more energy-efficient is an easy and proven way to reduce carbon footprint, thereby protecting the environment,” said Lijo George Kuttakaran, managing director, Lijan Group. It is a reputed contracting and trading company based in Dubai, the UAE, and provides turnkey solutions for all types of hot/cold insulation and renewable energy services for marine and industrial sectors.

Over the years, the group has diversified into the green energy sector and has introduced climatization solutions in the MENA region.

“In view of global warming, we emphasise the need for sustainable, renewable energy products and services for commercial and industrial establishments,” the company commented.

As a region with relatively high temperatures and humidity, the requirement of ample ventilation in factories and warehouses is a pre-requisite for comfortable working conditions. The company said that it supports sustainability by improving the living and working

environment by enhancing thermal and ventilation comfort, thereby saving energy and reducing the greenhouse gas emissions. The scope and scale of its capabilities include design, fabrication and installation of wind driven turbo ventilators. These ventilators are widely used in industrial and commercial facilities to bring fresh air and comfort to the working environment without power consumption and maintenance.

LIJAN has successfully executed turbo ventilators to various government, local and international clients and recently installed 1,500 ventilators to Dubai Textile City’s warehouse.

Utilising solar resources in the Middle East

“The Middle East is blessed with abundant sunlight throughout the year which is a source of energy. LIJAN recognises this potential and utilises this maximum for day lighting,” a company spokesperson said.

Conventional FRP strip lighting panels placed on the roof for lighting causes an increase in the heat inside facilities and localised hot spot and glare. Lijan supplies

UV resistant solar skylights and tubes which gives uniform natural day lighting. The sky light is made of poly carbonate lens at the top and diffuser at bottom. These energy efficient systems work without electricity and are highly durable without maintenance.

Energy efficiency with stainless steel modular chimney systems

The company also introduced the stainless steel modular chimney system, designed by renowned European manufacturers, to the UAE market and possesses 60 different CE-certified systems that cover various chimney, exhaust, smoke extraction and ventilation system. The group works with M/s Jeremias Germany, a leading manufacturer of high pressure, high temperature stainless steel flue gas systems without welding joints.

“The organisation recognises and manages its responsibility with regard to health, safety, environment and the community in which it operates. Our green initiatives aim at the economical use of resources for the sustainable growth of an ecofriendly social system for future generations,” the company commented. ■

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Briefly

New crawler cranes from Kobelco Construction Machinery



Photo Credit: Kobelco

The CKS3000 (Standard model).

KOBELCO CONSTRUCTION MACHINERY has launched new hydraulic crawler cranes with a maximum lifting capacity of 300 metric tons for standard crane and, 350 metric tons with an SHL specification. The models are CK3300G-2 (North American model), CKE3000G (European model) and CKS3000 (Standard model). The CK3300G-2, CKE3000G and CKS3000 debut as the largest models of Kobelco's multi-purpose crawler crane CK/CKE/CKS series, according to the company. The basic concept of this new model is Versatile and All Rounder.

Along with the recent increase in weights and dimensions of construction materials and heights of high-rise buildings, mobile cranes are required to have a higher lifting capacity as well as improved productivity and safety. In order to respond to such needs, the 'All Rounder' cranes were developed that can handle applications in different jobsites by utilising Kobelco's achievements and technologies.

Bee'ah's recovery facility now world-leading producer of recovered plastics

BEE'AH, THE MIDDLE East's award-winning environmental management company, has announced that its Material Recovery Facility (MRF) has become one of the world's largest producers of recovered plastics, following the installation of an advanced retrofit in April 2017.

The new retrofit introduced state-of-the-art technology such as automated bag breakers, polishing screens, debris roll screens, Nihot air separators and optical sorters. The automated bag breakers were the first upgrade and eliminate the need for manual bag opening. The facility's new Debris Roll Screen uses four sets of adjustable, compound discs for highly-accurate material sizing, while the Nihot Air Separator uses a combination of air and rotating drums to separate materials based on density and shape.

The new polishing screens separate mixed fibre, plastics and fine materials by evaluating the 2D and 3D characteristics of the materials. Increasing the efficiency of processing plastic bags and PET bottles, the optical sorters will use sensors, in combination with air jets, to separate these materials off conveyor belts.

Housed within Bee'ah's Waste Management Centre at Sharjah, the MRF is the largest in the Middle East and the third largest in the world. It plays an instrumental role in the environmental management company's master plan for a circular economy by processing more than 2.3mn tonnes of waste, collected from over a million households in Sharjah and from commercial establishments across the UAE.

The facility achieved this impressive feat by recovering 69mn pieces of plastic materials, equalling 1,700 tonnes, in the month of November 2017.



Photo Credit: Bee'ah

Housed within Bee'ah's Waste Management Centre at Al Saj'ah, the MRF is the largest in the Middle East and the third largest in the world.

US-based Bulk Handling Systems was responsible for designing, engineering, manufacturing and installing the retrofit, which features some of the world's most advanced recycling technology.

Every month, Bee'ah's MRF processes over 80 tonnes of household waste per hour; and recovers 27.3mn water bottles, 37.5mn plastic bags, four million hard beverage containers, 3.9mn used aluminium cans, 5.72mn containers of ferrous materials and 1,350 tonnes of fibres like paper and old corrugated cardboard.

Khaled Al Huraimel, group CEO of Bee'ah, said, "Right from its inception, Bee'ah has driven the ambition of achieving a circular economy in the UAE, and of zero diversion of waste to landfills in Sharjah. This retrofit and the remarkable results that have emerged as a result of its installation, brings us one step closer to this far-reaching ambition. Plastic materials have always been a cause of concern, thanks to their non-biodegradable nature. Thanks to our MRF's capabilities as a world leader in recovering plastics, we will be able to ensure that plastic consumption in the UAE does not lead to long-lasting repercussions for our economy."

Hormann launches lift barriers for Middle East and Africa

HORMANN, PROVIDER OF doors, gates, frames and operators in the Middle East and Africa, has introduced new lift barriers equipped with Emergency Fast Operation (EFO) functionality to secure passages of up to 10 metres in width. They are suitable for very frequent use, capable of managing approximately 2,000 movements in a day and come with a long service life equivalent to approximately 3,000,000 movements.

The new lift barrier H version from Hormann, along with its integrated hydraulic operator, is 1,300mm in height and up to 10 metres in length; and it fits with low foundation depths. Its speed lifting is the same as its speed lowering, which is 18.5 cm/s.

Commenting on the launch, Darius Khanloo, managing director, Hormann Middle East and Africa, said, "The lift barrier is a valuable addition to our perimeter protection systems. For optimised security of entrances and exits, lift barriers are recommended. Its integrated hydraulic operator provides automatic lifting and lowering. Our lift



Photo Credit: Hormann

Hormann has extended its perimeter protection offerings with lift barriers that meet stringent safety conditions.

barriers meet the high safety standards that Hormann products are known for."

Moreover, the lift barrier comes with reflector strips and optional LED lights, which make the barrier visible at night to prevent any vehicle from crashing into it.

IVECO's new on- and off-road range for Middle East and Africa

IN JANUARY 2018, Italian industrial vehicle manufacturer IVECO launched the new Stralis X-Way for the Middle East and Africa markets.

The Stralis X-WAY raises the stakes in light off-road missions with the biggest payload in its segment. It combines the best of IVECO's fuel-efficiency and safety technologies with the legendary off-road robustness of its toughest vehicles to deliver high productivity with low total cost of operation.

The Stralis X-WAY integrates IVECO's best, most advanced features for on-road missions: from the best-in-class transmission to specific features designed to enhance fuel economy and sustainability.

These include state-of-the-art systems that integrate driving assistance functions such as economy power/EcoSwitch functionality, adaptive cruise control, ESP and lane departure warning system (LDWS). The Stralis X-WAY also offers the ultimate comfort of the AS cabin, which has been designed around the driver for the long-haul missions of the Stralis.

The Stralis X-WAY offers ultimate flexibility with a choice of artic and rigid versions, three engines, three transmissions, and much more.

The modular, mission-oriented approach of the Stralis X-WAY provides ultimate flexibility in customising to the specific requirements of a wide variety of applications. It offers a choice of artic and rigid versions; different axles, suspensions, vehicle setups, engines and transmissions.



Photo Credit : IVECO

The Stralis X-WAY integrates IVECO's best, most advanced features for on-road missions.

The wide choice of features and components, the structural strength, and low kerb weight result in a vehicle that can be configured for an extensive variety of missions.

The Heavy range represents IVECO core business in most of the main markets in the Middle East and Africa; the needs of fleets are changing as are the types of vehicles required and IVECO's off-highway and on-highway ranges offer a superior offer choice for fleet owners.

IVECO is particularly strong in both the off-road construction segment (mainly tippers, pumps and cement mixers. Models include the 'Trakker' and the 'Astra' models and the on-road segment for the long haulage distribution with the 'Performer' and the flagship 'Stralis'.

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Huisman tests world's first 3D printed offshore crane hook

IN THE FIRST week of 2018, the world's first 3D printed offshore crane hook, manufactured by worldwide provider of step changing technical solutions Huisman, successfully passed its load test (80 metric tonnes) and all associated quality control check. Crane hooks are typically manufactured by casting or forging techniques. Huisman's 3D printing technology, however, catches up to what could become the new future manufacturing technology, according to the company.

Huisman actively employs the 3D printing technique – Wire & Arc Additive Manufacturing (WAAM) – to produce mid-size to large components with high grade tensile steel, including a large four-prong hook, with an own printed weight close to 1,000kg. An important benefit for larger crane hooks is the significant reduction in delivery time at a cost that competes with forgings and castings, and a more consistent level of quality.

WAAM can be used for crane hooks, but also allows Huisman to manufacture other components with complex shapes, short delivery times or local alternative material properties, to improve wear and corrosion resistance, for example.

The positive WAAM test results enable Huisman to manufacture reliable components that were physically impossible or commercially infeasible to produce before.

In the near future, Huisman aims to further improve the WAAM process by reducing the cost price for this technique and to increase manufacturing capabilities up to items of 2,500kg printed weight.

Renewable energy technologies from Innova Diesel Generators

INDIA-BASED INNOVA DIESEL Generators has developed and manufactured permanent magnet alternator (PMA) of robust and high efficiency output.

The PMA is compatible with various brands of engines and can be mounted directly on the engine fly wheel, which can be used as a variable speed DC generator for microgrid power stations, defence, telecom, railways and other sector applications.

The variable speed DC generators are fuel efficient with savings from 20 per cent to 40 per cent fuel. This hybrid system combines two energy sources – the sun and a diesel genset, where the genset supplies excess load and recharges the battery during overcasts.

The genset produces AC at very high frequency which is rectified to DC and can be used immediately to recharge the battery and satisfy load demand simultaneously.

Innova Diesel Generators is the authorised generator original equipment manufacturers (AGOEM) for Mahindra Powerol diesel gensets. Since the inception in 1995, the company has positioned itself as the top brand recall with good quality and effective aftersales service.



Photo Credit : Innova Diesels

The hybrid diesel gensets range from 3kW upto 22kW.

Bricsys® launches free 3D modelling software for architects and engineers

BRISCAD SHAPE IS a free 3D conceptual modelling tool for architects and engineers. It speeds up and streamlines schematic design and presentation work. Shape offers a clean, simple user interface that helps architects and designers capture, style and share their designs fast.

Speed up your design workflow

The multi-functional 'Shape' tool can be used for the easy creation of walls, slabs and structural elements. Direct modelling features makes drag, connect, push/pull and extrude easy. Wall connections are automatically mitred for the designers.

Designs made with BricsCAD Shape are saved as DWG files and can directly be used in other versions of BricsCAD for the design detailing process.

BricsCAD Shape comes with a library of materials and 3D components. Use the included collection of doors and windows, or create custom versions easily and one can control the appearance of their model with Visual Styles.

How is BricsCAD Shape different?

First, BricsCAD Shape is CAD-accurate from the start. Under the simple UI is a fast and proven parametric, 3D direct modelling engine. BricsCAD Shape creates solid models, stored in industry-standard DWG – just like BricsCAD BIM.

Unlike competing products, Shape's solid models are fully

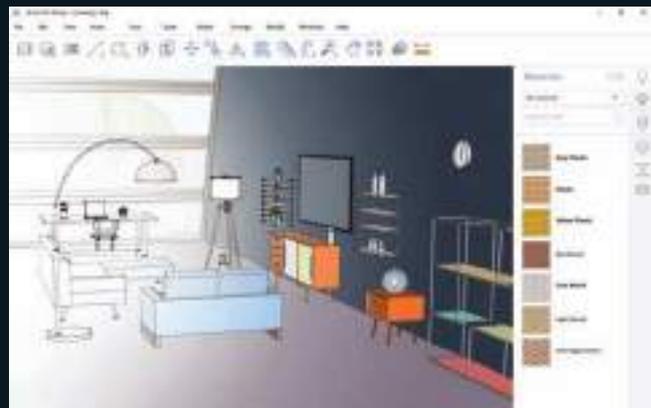


Photo Credit : Bricsys®

BricsCAD Shape helps accelerate BIM workflow.

accurate – never approximated. Every element that you create in Shape can be modified deeply, anytime, on the fly. Your concept models open directly in BricsCAD BIM.

BricsCAD Shape accelerates your BIM workflow

The Bricsys BIM workflow starts in 3D with Shape, and stays in 3D – speeding 2D construction documentation with the world's best drafting tools. No breaks or transitions in your workflow, with full DWG-accuracy from the start.



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SSAB wear plates reduce downtime for Star Cement

With the use of Hardox® Wear Plate, Star Cement has witnessed a sharp rise in production output and enhanced factory operations.

The Star Cement factory in Ras Al Khaimah.

Photo Credit : Star Cement

STAR CEMENT, A manufacturer with an ultramodern clinkerisation unit in Ras Al Khaimah, has announced a significant turnaround in its machinery downtime and increased output when switching from mild steel to SSAB's Hardox® Wear Plate steel grades. Hardox® Wear Plate is a flagship product of the Swedish steel giant SSAB, recognised globally for its strength, durability and ease of use.

"The mild steel that we were using earlier hardly lasted for two to three months. At our factory, we function 330 days per year, which is very high compared to market standards, and Hardox® Wear Plate helps us achieve that target. If we use a normal steel plate, it tends to breakdown in two to three months and then we have to take an intermediate stoppage – replace it or repair it. From the time we switched to Hardox® Wear Plate, we have been consistently running for 330-331 days in the last four to five years because of the low wear and tear," said Velayuthan, general manager, Star Cement.

He further credited Hardox® Wear Plate as a major contributor to Star Cement's capacity increase from 6,800 tonnes per day to 8,300 tonnes per day without any major modification.

"The fact that we are able to produce this capacity is owed to Hardox® Wear Plates. With Hardox® Wear Plate supporting us in some of key production areas, we are able to push the machine to the extreme and still survive the production," he added.

Since maintenance is one of the highest cost expenses (around 25

per cent) for cement plants, machinery and equipment play a central role in cement and clinker production. Breakdowns and stoppages can be costly affairs, not just because of the investment involved in replacing or repairing parts, but more so because of the negative impact on the output due to downtime. Hence, the quality of steel used in manufacturing these machines becomes critical in saving time, and maintaining/increasing output.

"Hardox® Wear Plate is our leading product globally for more wear-resistant solutions. We have always worked closely with the team at Star Cement to ensure our solutions are in line with their specific line of wear, from impact to squeezing or sliding. And we are very happy with their endorsement of the impact this has had on their operations – fewer maintenance hours, longer lifespan and enhanced overall productivity. We are looking forward to more collaboration with them for several other grades of Hardox® Wear Plate to suit their diverse needs," said Moideen Irshad, regional sales manager, Middle East, SSAB.

Endorsing the company for their focus on innovation to meet changing industry needs, Velayuthan lauded SSAB for the quality consistency in Hardox® Wear Plate products.

"Consistency is better in Hardox® Wear Plate compared to mild steels or even clad plates," Irshad added, "Hardox® Wear Plate performance remains consistent over its lifetime. That also makes its service life predictable, allowing you to rationalise your maintenance work." ■



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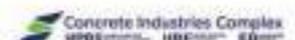


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Platooning in logistics applications: MAN Trucks & Bus hands over pilot vehicles

DB SCHENKER, MAN Truck & Bus and Hochschule Fresenius are deploying networked trucks for the first time in a practical application in the logistics industry. In February 2018, MAN Truck & Bus handed over the test vehicles for the joint platooning project to DB Schenker in Germany.

“Autonomous and networked driving will fundamentally change road haulage. This project will focus on testing platooning for the first time in daily logistics operations. We are excited that we can now integrate the vehicles into the operational test runs,” DB Schenker chief operating officer Ewald Kaiser said.

“We have already proved that platooning technology works in various predecessor projects, such as the European Truck Platooning Challenge in 2016. Adapting this technology to real every day conditions of the logistics sector is the challenge we are now tackling,” added Frederik Zohm, from the truck manufacturer’s perspective.

The cooperative venture established in May 2017 will test truck convoys over a period of several months as part of DB Schenker’s

scheduled operations in real traffic scenarios on the A9 freeway between Munich and Nuremberg. This will also be the first time that professional truck drivers from DB Schenker will replace test drivers at the wheel. Their experiences, assessments and evaluations of platooning are the focal point of the work at Hochschule Fresenius, which is providing the scientific support for the test drives as the third partner of the cooperative venture.

“We want to find out what impact the new technology has on the drivers. The study focuses on the neurophysiological and psychosocial levels,” explained Prof Dr Christian T. Haas, head of the Institute for Complex Health Research at Hochschule Fresenius. The results of the study at the human-machine interface will be fed back directly into developing the technology. “The scenario also offers the opportunity to make general findings in terms of digitalising working conditions and would thus serve as a forerunner for other projects.”

DB Schenker, MAN Truck & Bus and the Fresenius University of Applied Sciences are



Photo Credit : MAN Truck & Bus

(From left) Dr Frederik Zohm (left), member of the board of management for research and development MAN Truck & Bus AG; Ewald Kaiser, COO DB Schenker; and Prof Dr Christian T. Haas (right), vice-dean research at the Hochschule Fresenius.

bringing networked trucks into practical use in the logistics industry for the first time.

The vehicle handover signals the start of preparations for the road tests. While recent months have been occupied with producing the test vehicles and equipping them with the additional technical components required for deploying platooning, the focus is now on intensive training of the drivers for their tasks in the project and ultimately on facilitating integration with DB Schenker’s logistics operations.

Honeywell debuts Cloud Historian to increase plant uptime

HONEYWELL HAS LAUNCHED Honeywell Connected Plant Uniformance® Cloud Historian, and this new offering is a software-as-a-service cloud hosting solution for enterprise-wide visualisation and analysis, helping customers improve asset availability and increase plant uptime.

Uniformance Cloud Historian’s design is an industry first. It fuses the real-time process data analysis of a traditional enterprise historian with a data lake, enabling the integration of production, enterprise resource planning (ERP), and other business data coupled with analytics tools to provide business intelligence. This allows enterprise data to be analysed instantly on a scale not previously possible using tools and functions already in use at sites and plants.

“Uniformance Cloud Historian brings the full power of cloud and

big data to Honeywell’s traditional process historian for the first time, connecting even the most complex multi-site organisations effortlessly,” said Vimal Kapur, president of Honeywell Process Solutions. “The solution makes it possible to leverage insights found at one plant across all plants, allowing smarter, more strategic decisions to be made and action to be taken.”

Honeywell’s new offering collects, stores and enables replay of historical and continuous plant and production site process data and makes it visible in the cloud in near real-time. The historian combines a time series data store, which empowers plant and staff to execute and make decisions, with a big data lake, thus enabling data scientists to uncover previously unknown correlations between process data and other business data in the enterprise.



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AEG Power Solutions launches modular industrial grade UPS

AEG POWER SOLUTIONS has launched Protect Flex – a new, fully modular UPS complying with industrial standards. The system has a robust design suitable for demanding environments and is the only one in its category to be configurable to all electrical system schemes with the benefits of power modularity. Protect Flex features a

wide range of configurable options and a high level of scalability and flexibility.

As a global provider of power supply systems and solutions for industrial and critical infrastructure applications, AEG Power Solutions is

renowned as a premium supplier for ruggedised power solutions. This new concept of UPS system combines a modular architecture based on 10 and 15kVA/kW, hot swappable power modules, transformerless and IGBT based, with a customisable set of options and provides N+1 inbuilt power redundancy to maximise reliability.

Protect Flex is a simplified, flexible and highly cost-effective UPS, which can cope effectively with harsh environmental conditions, with an IP43 rating protection rating. The system is designed to maximise savings in terms of footprint and power installed. Its electrical and mechanical design, cabling and protection devices are engineered to maximise security and simplify maintenance operations. Benefiting from the extensive engineering experience of AEG PS in rugged systems Protect Flex achieves high reliability with optimum availability. Up time availability is maximised by high-quality equipment and design with the mean time to repair (MTTR)

minimised, thanks to its modular and hot-swappable architecture.

The scalable architecture of the UPS reduces CAPEX and optimises OPEX costs. The power modules are based on the latest IGBT double conversion technology, with a low input THDi and input power factor close to one, even when a low percentage of load is applied.

“Operations continuity is not an option in many industries or service businesses today,” said Alessandro Nalbene, product manager AEG Power Solutions. “Whenever highly reliable power is needed, Protect Flex provides a compact, flexible and robust solution, minimising costs and maximising availability. It is the ideal combination for many applications such as operations in the chemical and petrochemical industry, mining or any other demanding environment, but also for transport critical applications like control and signalling.”

Protect Flex is also answering healthcare environmental requirements (group 0-1 according to IEC 60364-7-710).



Photo Credit: AEG Power Solutions

ABB launches asset optimisation software to support digital transformation

ELECTRIC UTILITIES ARE increasingly challenged to maintain high asset availability, performance and reliability against the backdrop of aging infrastructure and financial pressures. In addition, the number of new assets entering the grid is exploding – from smart meters and switches, to distributed energy sources such as solar and wind, to electric-vehicle charging stations.

Meanwhile as grid complexity grows, utilities face rising customer expectations and new regulations requiring higher levels of service reliability and resilience.

ABB's new ABB Ability™ Ellipse software solution delivers a cross-enterprise approach to connected asset lifecycle management. The comprehensive solution suite will enable electric power utilities to optimise asset utilisation, drive down maintenance costs and reduce equipment failures and system outages.

“We understand the challenges electric utilities face in driving greater levels of performance in an increasingly complex grid,” said Massimo Danieli, head of ABB's Grid Automation business. “With ABB Ability Ellipse, utilities can now use a single, streamlined solution for the management, maintenance and monitoring of assets enabling a stronger, smarter and greener grid.”

The new ABB Ability Ellipse solution offers utilities a proactive approach for predictive maintenance that combines an asset management system with collection and analysis of performance data and a comprehensive workforce management solution for dispatching crews and maintaining critical assets. Specifically, the solution unifies the functionality of ABB's world-class solutions for Enterprise Asset Management (EAM), Workforce Management (WFM) and Asset Performance Management (APM).

“The biggest risk utilities face on the journey to digital transformation is the inability to unify applications and data,” said



Photo Credit: ABB

ABB Ability Ellipse is the latest offering in the ABB Ability™ family.

Kevin Prouty, V-P, IDC Energy Insights.

“One of the most obvious starting points for utilities is to address the silo approach to asset management and workforce management in their organisations. As asset performance management becomes a focal point for transforming the modern grid, it is vitally important that utilities manage their assets and labour with a cohesive strategy.”

ABB Ability Ellipse is the latest offering in the ABB Ability™ family. The solution embeds industry best-practices and business processes and leverages real-time equipment data and the Industrial Internet of Things (IIoT) to connect predictive analytics and asset management systems to the mobile worker in the field. It is available either as an ‘on-premise’ or ‘Software as a Service’ solution for electric utilities and other asset-intensive sectors like renewables, transport and mining.

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ازداد الطلب على الكهرباء في المنطقة خلال السنوات الأخيرة



سنواتاً حتى عام ٢٠٢٠، إذ تواجه المملكة العربية السعودية أكبر معدل طلب وتحتاج إلى استثمار ٧١ مليار دولار أمريكي لزيادة الطاقة الإنتاجية لتصل إلى ١١٤ جيغاوات.

وختتم ماثيوز حديثها بالقول: «تواصل الحكومات الإقليمية تركيزها على عملية التنويع الاقتصادي بشكل متزايد، ما يضعف احتمال تراجع أو تباطؤ الطلب لوقت طويل. وهو ما ساهم بدوره في زيادة تركيز واهتمام القطاع العالمي بالمنطقة، وهذا ما سيرهنه التفاعل الكبير بين العارضين الدوليين الذين ينشدون التواصل مع اللاعبين المحليين ضمن المعرض». وإلى جانب معرض الشرق الأوسط للكهرباء ٢٠١٨، ستطلق إنفورما «القمة العالمية للطاقة الذكية»، وهي أول قمة عالمية رائدة في مجال الطاقة الذكية تحتضن بعضاً من أهم اللاعبين والشركات التي ساهمت في تطور القطاع وتغييره، بما فيها «تيسلا» والمختبر الوطني للطاقة المتجددة في الولايات المتحدة ووزارة الطاقة الأمريكية و«ناسا». وستساهم جلسات القمة برسم ملامح مستقبل القطاع على المستوى الدولي، حيث من المتوقع أن تجتذب أكثر من ٧٠٠ شخص للاطلاع على أممات الإصلاح في جميع ميادين قطاع الطاقة.

علماً بأن المعرض الشرق الأوسط للكهرباء يقام تحت رعاية سمو الشيخ مكتوم بن محمد بن راشد آل مكتوم نائب حاكم دبي، وتستضيفه وزارة الطاقة بدولة الإمارات العربية المتحدة.



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الإقبال المتزايد على الحلول المركبة على الأسطح، والتي شهد الطلب عليها في الإمارات العربية المتحدة زيادة بمقدار ١٠ أضعاف خلال الأشهر الاثني عشر الماضية وحدها. ويوفر هذا القطاع المتقدم، الذي يستفيد اليوم من سياسات الطاقة النظيفة على مستوى المنطقة، فرصاً هائلة للمطورين ومقاولي الهندسة والمشتريات والبناء وموردي المعدات والممولين». هذا وسيستضيف المعرض - في نسخته لعام ٢٠١٨ - ما يزيد على ١٦١٥ شركة من ٦٦ دولة، مدعومة من قبل ٢٤ جناحاً دولياً متخصصاً. وتتوقع إنفورما أعلى نسبة مشاركة خلال المعرض بنسخته لعام ٢٠١٨، ستغطي خلالها الأجنحة المتخصصة الخمسة كامل سلسلة القيمة الخاصة بمنتجات وخدمات قطاع الكهرباء، مما يعكس التغييرات الحالية التي تخوضها جميع مجالات قطاع الطاقة في منطقة الشرق الأوسط وشمال أفريقيا.

وتابعت ماثيوز: «لا يتعدى حجم التطور الحالي كونه مرحلة للتقاط الأنفاس، وذلك في ظل تقارير بنك أيبكوروب التنموي متعدد الأطراف، التي تشير إلى حاجة دول مجلس التعاون الخليجي إلى استثمار ٨٥ مليار دولار أمريكي لإضافة ٦٩ جيغاوات من سعة التوليد الجديدة و٥٢ مليار دولار أمريكي لعمليات النقل والتوزيع على مدى الأعوام الخمسة المقبلة». وتشير الشركة العربية للاستثمارات البترولية «أيبكوروب» إلى أن الطاقة الإنتاجية لدول مجلس التعاون الخليجي تحتاج إلى التوسع بمعدل ٨ في المائة

وهي النقل والتوزيع، وتوليد الطاقة، وحلول الإضاءة، فضلا عن جناح الطاقة الشمسية الذي ينضم لمعرض الشرق الأوسط للكهرباء كجناح متخصص بعد أن كان فعالية مستقلة تنعقد في ذات المكان لمدة ست سنوات. وأردفت ماثيوز قائلة: «بات من المؤكد أن قطاع الطاقة الشمسية أصبح اليوم من أسرع القطاعات نمواً في المنطقة، مدفوعاً بجهود جمعية الشرق الأوسط لقطاع الطاقة الشمسية، التي قامت بوضع عدد من مشاريع الطاقة الشمسية قيد التنفيذ في جميع أنحاء منطقة الشرق الأوسط وشمال أفريقيا بلغ عددها ٣٦١٠ مشاريع، مع طرح ١٣٠٠ مشروع آخر للمناقصة».

«ويجري العمل على تنفيذ مشاريع كبيرة في شمال أفريقيا ودول مجلس التعاون الخليجي، بالتزامن مع

الشركات المصنعة حول العالم، بهدف استعراض أحدث التقنيات التي تعمل على تغيير وجه القطاع وتعزيزه أمام جمهور المنطقة».

وقالت ماثيوز: «يعتبر التغيير عنواناً رئيسياً لهذه المرحلة المهمة التي يمر بها القطاع في الشرق الأوسط وأفريقيا، وذلك مع سعي الحكومات الدؤوب إلى تلبية الطلب المتزايد (يتراوح بين سبعة إلى ثمانية في المائة سنوياً) نتيجة للنمو السكاني المطرد، وارتفاع عدد المشاريع الصناعية. كما يوجد توجه كبير لتبني تقنيات ومصادر الطاقة المتجددة لمكافحة التغير المناخي، وإنشاء مدن ذكية، وتعزيز مرونة النظم البيئية المحلية».

وبالإضافة إلى جناح حلول إدارة وتخزين الطاقة، سيحتضن المعرض أربعة قطاعات متخصصة أخرى،

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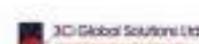
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أنيتا ماثيوز

مع زيادة الطلب عليها في المنطقة:

إقبال شديد على معرض الشرق الأوسط للكهرباء

يشهد معرض الشرق الأوسط للكهرباء، الذي يعد أكبر فعالية دولية سنوية في مجال الطاقة على مستوى المنطقة، توسعاً كبيراً في 2018 لمواكبة التغييرات الديناميكية للطلب على مستوى المنطقة. وللمساعدة على مواصلة النمو والتطوير، أطلقت إنفورما للمعارض، الجهة المنظمة للمعرض، جناحاً متخصصاً لحلول إدارة وتخزين الطاقة بالمعرض الذي تستضيفه وزارة الطاقة بدولة الإمارات العربية المتحدة في مركز دبي التجاري العالمي خلال الفترة بين 6 و8 مارس/آذار. وستطلق إنفورما أيضاً «القمة العالمية للطاقة الذكية» الرائدة إلى جانب المعرض.

ضمن المعرض الأكبر من نوعه في الشرق الأوسط وأفريقيا، مزودي خدمات الطاقة وإدارة التخزين من المستوى المحلي والإقليمي والدولي مع أهم

حجم التقدم الذي يحققه قطاع الطاقة في المنطقة، الذي يعتبر اليوم أحد أهم القطاعات الحيوية على مستوى العالم». وأضافت: «سيجمع جناحنا الجديد،

وبهذه المناسبة، قالت أنيتا ماثيوز، مديرة مجموعة إنفورما الصناعية للمعارض: «تشهد فعاليات معرض الشرق الأوسط للكهرباء تطوراً مطرداً ينسجم مع



بلغ حجم الصادرات
في الشهر التاسع
529348 طناً،
بزيادة سنوية تبلغ
10 في المائة.

نحو 851138 طناً من البلاطات، بزيادة سنوية بلغت خمسة في المائة. بينما احتفظت شركة فولاذ مباركة، الشركة الأم لشركة هرمزغان، بالمركز الرابع، حيث بلغ إجمالي حجم صادراتها 784612 طناً من الصلب المسطح المطلي بالقصدير والمغلف وذوي المربعات والمجلفن خلال الفترة الزمنية المذكورة، بانخفاض بلغت نسبته السنوية 43 في المائة، حسبما ذكر المصدر. ومن بين الشركات الأخرى المنتجة للصلب، شركة فولاذ كاوه جنوب، والتي بلغ حجم صادراتها 548000 طن، يليها شركة فولاذ خرسان التي تمكنت من تصدير 81623 طناً، وشركة إيران لسبائك الفولاذ التي بلغ حجم صادراتها 58712 طناً، فضلاً عن شركة صلب خوزستان أو كسين التي بلغ حجم صادراتها 7469 طناً.

تغيرات جذرية لقطاع الطاقة في الشرق الأوسط

من الهيدروكربونات منخفضة السعر نسبياً. وفي هذه الفترة التحويلية، من الأهمية بمكان أن تتعامل الدول وشركات النفط الوطنية مع انعدام اليقين عبر اعتماد عقلية استراتيجية استباقية في اتخاذ أهم قراراتها. وهو ما يكتسب أهمية خاصة في هذا القطاع الذي يحتاج عادة إلى عقود من الزمان للبدء بجني إيرادات رؤوس الأموال المستثمرة فيه». وخلص التقرير إلى وجوب أن تقوم الدول الغنية نفطياً بتركيز استثماراتها على الفرص التي تعزز مكانتها التنافسية، وعلى إعداد وتدريب القوى العاملة، والاستفادة من المزايا التي يتيحها الموقع الجغرافي المتميز.

قوة المستهلكين. وسيضي ذلك - مع مرور الوقت - إلى استقرار أسعار الطاقة وتقارب أسواقها». ويحدد التقرير ثلاثة مقترحات يتعين على الدول النفطية وشركات النفط الوطنية في المنطقة اتخاذها كي تواكب التغيرات الجذرية في قطاع الطاقة، مثل الإقبال على الطاقة المتجددة والاستفادة من مخزونات الغاز وتوسيع سلسلة القيمة. وقد بدأ العديد من اللاعبين في قطاع النفط الإقليمي - بالفعل - العمل على مشاريع بهدف الاستعداد للتحويلات الجذرية، وبما يغطي مجالات متعددة بدءاً من الاستثمار في الطاقة الشمسية والغاز، وصولاً إلى الاستثمارات - الآخذة في النمو - في الصناعات التحويلية للنفط والغاز. وفي سياق تعليقه على هذه الاستراتيجية، قال رودولف لومير، نائب رئيس مجلس سياسات الأعمال العالمية لدى «إيه تي كيرني»: «يتمتع الشرق الأوسط بميزتين مهمتين تتمثلان في موقعه الجغرافي ومخزوناته الكبيرة

تشهد المنهجيات ونماذج العمل التقليدية، في سلسلة القيمة ضمن قطاع الطاقة، تحديات ناجمة عن التنوع المتنامي لمزيج الطاقة العالمي، وزيادة الاعتماد على الغاز الطبيعي، ومصادر الطاقة المتجددة، وزيادة الطلب على الكهرباء. فقد كشف تقرير حديث صادر عن «إيه تي كيرني» الرائدة عالمياً في خدمات الاستشارات الإدارية الاستراتيجية بعنوان «النقلة الجذرية في قطاع الطاقة» عن أن الدول الغنية بالنفط ستجد أمامها فرصة كبيرة لإحداث تحولات جذرية تؤهلها للاستفادة من هذا التغير العالمي واسع النطاق على صعيد الطاقة. وقال إدوارد غارسيا، المدير في «إيه تي كيرني»: «إن القطاع يشهد تغيرات جذرية واسعة النطاق بفعل التوجهات في مختلف مكونات سلسلة القيمة ضمن سوق الطاقة. ومن المتوقع أن يسود السوق طلب متزايد بالتوازي مع تنامي الحاجة إلى الكهرباء وتجزؤ المعروض وازدياد

ازدادت أهمية الغاز والطاقة المتجددة في عالم يشهد تغيرات جذرية في قطاع الطاقة



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الشيخ حمدان بن محمد بن راشد آل مكتوم، ولي عهد دبي رئيس المجلس التنفيذي، أثناء حضوره القمة العالمية للحكومات

ولي عهد دبي يطلق ٢٦ مشروعاً ضمن مبادرة «دبي X ١٠»

النموذج المبتكر الذي تتجلى فيه إبداعات أبناء الإمارات، ما يؤكد على ريادة الدولة والتزامها باستثمار الموارد من أجل تقديم خدمات حكومية غير تقليدية ترتقي بحياة الأفراد وتصبح مستقبلاً أفضل للأجيال القادمة». وأضاف: «اليوم نطلق مرحلة جديدة لتطوير الخدمات الحكومية من خلال ترجمة الأفكار الإبداعية إلى حقيقة ملموسة. وسوف تعمل المشاريع التي أطلقناها على إعادة صياغة مفاهيم العمل الحكومي، وتعزيز مرونتها وقدرتها على التكيف مع تغيرات ومتطلبات المستقبل خلال 24 شهراً».

أطلق الشيخ حمدان بن محمد بن راشد آل مكتوم، ولي عهد دبي رئيس المجلس التنفيذي، 26 مشروعاً تقدمت بها 24 من الجهات الحكومية في إمارة دبي لمبادرة «دبي X 10». وقد تم تدشين هذه المشاريع على هامش القمة العالمية للحكومات التي انعقدت خلال الفترة بين 11 و13 فبراير/شباط في دبي. وفي معرض تعليقه على أهمية المشاريع، قال الشيخ حمدان: «تقدم دولة الإمارات للعالم نموذجاً عملياً للحلول المبتكرة التي يمكن للحكومات تقديمها لتطوير وإعادة صياغة منظومة العمل بما يحقق سعادة وجودة حياة المجتمعات. ونحن فخورون بهذا

نمو صادرات إيران من الصلب بنسبة ٢٦ في المائة

التاسع، انخفض حجم صادرات الشركة بنسبة اثنين في المائة، حيث بلغت 239037 طناً. وذكر محمد كشاني، مدير شركة فولاذ خوزستان، أن الشركة تهدف إلى تصدير 2,2 مليون طن من منتجات الصلب في 2018. وقد احتلت شركة فولاذ أصفهان المرتبة الثانية في حجم صادرات الصلب خلال الأشهر التسعة، حيث بلغت 805434 طناً من العوارض والقضبان والملفات وغيرها من المنتجات الأخرى. وقد حققت الشركة زيادة سنوية بلغت 87 في المائة عن نفس الفترة في العام الماضي. هذا فيما تمكنت شركة فولاذ هرمزغان من تصدير

من تصدير 1,94 مليون طن من الصلب على هيئة بلاطات ونورات وعروق خلال الفترة المذكورة، مسجلة زيادة سنوية بلغت 46 في المائة، وبذلك احتلت شركة خوزستان الصدارة بوصفها أكبر مُصدّر للصلب. وبلغت صادرات شركة فولاذ خوزستان من نورات الصلب ما يقرب من 861726 طناً بزيادة سنوية 150 في المائة. تلتها صادرات عروق الصلب التي بلغت 613242 طناً بزيادة 16 في المائة عن العام السابق، فيما تلتها صادرات بلاطات الصلب التي بلغت 499452 طناً بزيادة سنوية بنسبة خمسة في المائة. غير أنه في الشهر

بلغ مجموع ما قامت بتصديره أغلب الشركات المنتجة للصلب الإيراني 5,11 مليون طن من منتجات الصلب الجاهزة وشبه الجاهزة، وذلك خلال الفترة ما بين 21 مارس/آذار 2017 - 21 ديسمبر/كانون الأول 2017، مسجلة نسبة نمو 26 في المائة مقارنة بالفترة نفسها في عام 2016، وفقاً لما أوردته مؤسسة المناجم وتنمية وتحديث الصناعات المنجمية الإيرانية. وقد بلغ حجم الصادرات في الشهر التاسع 529348 طناً، بزيادة سنوية تبلغ 10 في المائة. وذكرت صحيفة «فاينانشيال تريبيون» أن شركة فولاذ خوزستان تمكنت

المحتويات

القسم العربي

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- ٤ ولي عهد دبي يطلق 26 مشروعاً ضمن مبادرة «دي 10X»
٤ نمو صادرات إيران من الصلب بنسبة 26 في المائة
٥ تغيرات جذرية لقطاع الطاقة في الشرق الأوسط

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- ٦ إقبالاً شديداً على معرض الشرق الأوسط للكهرباء



ملخص محتويات القسم الإنجليزي

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