

# TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

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Vol 35/Issue Two 2019

## Contemporary Kingdom

Multiple mega-projects in Saudi Arabia shaping its future

## Driving good business

Heavy-duty truck companies see upbeat market ahead

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Compressors  
HVACR  
bauma  
The Big 5 Saudi

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## EDITOR'S NOTE

Global power dynamics are changing and it's no different in the Middle East. The latest BP report (p36) states that renewables are set to take over the energy industry in the next two decades, and the sector is looking at 'smart' ways to fulfil the efficiency goals. This year's Middle East Electricity in Dubai will look at ways to improve electricity diversification and conservation. We preview the major launches and advance news (p46). The region's biggest economy, on the other hand, is on a revamp mode. The ambitious tourism projects in Saudi Arabia will give it a much-needed economic boost (p16). The Big 5 Saudi (p96) will provide crucial information to those looking to advance their businesses in the kingdom. Elsewhere, the triennial construction show bauma (p82) will bring the biggest companies together in Munich.

*At Technical Review we always welcome readers comments to [trme@alaincharles.com](mailto:trme@alaincharles.com)*

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SERVING THE REGION'S BUSINESS SINCE 1984

### MIDDLE EAST

النشرة التقنية - الشرق الأوسط

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## Briefly

### Oman's industrial sector contributes US\$14.54bn to 2017 GDP

OMAN'S INDUSTRIAL SECTOR contributed US\$14.54bn to the GDP in 2017, according to Ali bin Masoud Al Sunaidi, minister of commerce and industry.

As reported in the *Times of Oman*, the manufacturing industries reached US\$7.27bn by the end of 2017, while industrial activities grew by 1.2 per cent until the end of September 2018. Al Sunaidi further added that the industrial activities had contributed 10 per cent to the GDP by the end of 2017.

The minister also pointed out that Oman's 2040 Industrial Strategy should aim at better growth rates, using advanced means of production such as the use of modern technologies, raising worker productivity and exploring a range of markets.

The final phase of the strategy, in cooperation with the United Nations Industrial Development Organisation (UNIDO), is set to prioritise investment and financing requirements of various projects in the country.

### GCC project contracts' value down 22 per cent last year: Report

THE VALUE OF projects awarded in the GCC region last year fell by 22 per cent to a new low of just US\$97bn, said a new report.

Despite rising budget expenditure and higher oil prices, the value of contracts awarded in 2018 in the region declined by US\$27bn year-on-year, marking the lowest annual total recorded since 2004, according to the latest data from Meed Projects.

The UAE, the region's largest projects market, saw the value of work awarded fall by just under US\$5bn to US\$44.5bn.

Saudi Arabia fell by 10 per cent on the previous year to US\$26.4bn worth of awarded contracts, while Kuwait and Oman both decreased by more than 50 per cent to just US\$5.6bn and US\$5.1bn respectively.

Construction, the largest single sector, declined to US\$45.8bn last year, more than 40 per cent lower than its peak of US\$76.6bn in 2014, according to Meed.

## Ethihad Rail signs MoU to establish railway logistics facility at ICAD

ETIHAD RAIL, DEVELOPER and operator of the UAE's national railway network, has signed a MoU with ZonesCorp to establish railway and logistics facilities within the Industrial City of Abu Dhabi (ICAD).

The signing of the MoU comes as Etihad Rail prepares to embark on Stage Two of the Etihad Rail network, which will extend 605km from Ghuweifat on the UAE's border with Saudi Arabia to Fujairah on the east coast, through ICAD, Khalifa Port, Jebel Ali and Khor Fakkan, to be followed by further route additions.

Etihad Rail's logistic facility will complement the Higher Corporation's Abu Dhabi Logistics City Development Project, covering an area of approximately six million square meters. The projects will serve the industrial entities in ICAD and Mussafah, and will provide a point of departure for goods bound for Saudi Arabia.

Sheikh Theyab bin Mohamed Al Nahyan, chairman of Etihad Rail, said, "This agreement contributes to achieving our vision to connect cities and industries with a secure and sustainable railway network. It is also part of our mission to find economic logistics solutions for the rail network to connect the entire UAE and provide outstanding services to industries and society."

He added that the agreement reinforces the efforts by which Etihad Rail seeks to support alternative and new industries through establishing a new transport system that enhances the existing infrastructure and contributes to improving freight transport. "It also promotes the



Photo Credit: Etihad Rail

*The logistic facility will be the closest logistics point to the city of Abu Dhabi.*

UAE's leading role in shipping traffic, taking advantage of its geographical and economic position as a global logistics hub."

Falah Mohammad Al Ahabbi, chairman of the department of urban planning and municipalities, added, "Constructing a logistics facility and railway track, along with the necessary infrastructure, in ICAD will contribute to consolidating logistics operations in one place, which will bring further growth in the process of handling containers and cargos, as well as logistics services. This will help Abu Dhabi to consolidate its established position on the global trade map."

The agreement is in line with ZonesCorp's ongoing investment in its economic zones and promotion of its continued growth. It is currently home to 650 world-class manufacturing facilities from various industrial sectors in a prime location near Abu Dhabi.

## Ethihad ESCO completes Hatta solar retrofit project

WITH DEWA'S SUPPORT, Etihad Energy Services Company (Etihad ESCO) has announced the successful completion of the Hatta solar retrofit project, which included installation of 7,756 PV solar panels over the roofs of 554 Hatta villas.

The project, which forms part of DEWA's Shams Dubai initiative, aims to generate 3,612,357 kilowatt hour (KWh) of energy annually out of 554 newly retrofitted villas. The average peak power of the solar PV system installed (kWp) on each villa is 4.5KWp, with the total solar PV system installed for all villas amounting to 2,493KWp.


With the completion of the project, each villa will now generate 6,520KWh of power every year, which will result in the production of 3,612,357 KWh power in total. In addition, an annual reduction in CO<sub>2</sub> emissions by 2,159 tons, will be a remarkable achievement of the project. The project is part of the Shams Dubai

initiative, which encourages building owners to install solar panels on their rooftops to generate electricity from solar power and link it to DEWA's grid to allow transfer of surplus generation. The project's maintenance services will also be provided by Etihad ESCO for a period of one year from completion.

Ali Al Jassim, CEO, Etihad ESCO, said, "The initiative supports the Hatta Comprehensive Development Plan, which was launched by HH Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, with an aim to transform Dubai into one of the most sustainable cities in the world.

"We are confident that the project will lead to an annual reduction in CO<sub>2</sub> emissions by 2,159 tons and will further contribute towards achieving 30 per cent reduction in energy demand by 2030, taking us one step closer towards our sustainability goals."







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## Briefly

### Dubai Airports launches 'DXB' to transform airport experience

DUBAI AIRPORTS PLANS to elevate the airport customer experience as it unveiled a new brand for Dubai International Airport (DXB) that signifies the transition from airport operator to a consumer led company, committed to making the world's busiest international airport, the world's best.

The brand launch event was attended by HH Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, Ahmed bin Saeed Al Maktoum, chairman of Dubai Airports, and Paul Griffiths, CEO of Dubai Airports.

The new brand will transform DXB into a destination in itself by creating exciting, immersive virtual experiences that bring iconic Dubai landmarks into the airport as well as an array of music, art, dance and even fashion exhibitions that showcase local culture and celebrate diversity. DXB will also feature zones throughout the airport's concourses that cluster together retail, F&B and themed attractions to cater to DXB's diverse customer base.

### Kuwait emerges as second largest M&A target market in GCC

THE INVESTMENT BANKING department at Kuwait Financial Centre (Markaz) said Kuwait has emerged as the second largest M&A target market in the GCC between 2014 and 2018 in terms of the number of closed transactions, surpassing Saudi Arabia, which used to hold that position up until 2016.

Abdulrazzaq Talal Razooqi, assistant manager at Markaz, said, "The number of transactions in Kuwait grew by 163 per cent between 2014 and 2018, increasing from 16 to 42 transactions respectively. Most of the growth was witnessed in 2017 as the number of closed transactions increased by 131 per cent from the prior year.

"A total of 127 closed transactions involved Kuwaiti targets between 2014 and 2018, representing 23 per cent of the total number of transactions in the GCC during the same period. The top transactions involved targets from F&B, education telecommunications and technology sectors."

## Investcorp and ASI establish JV to invest in GCC infra projects

BAHRAIN'S INVESTCORP AND Aberdeen Standard Investments (ASI) have launched a joint venture that will invest in social and core infrastructure projects in GCC countries.

The joint venture is expected to benefit from ASI's strong track record of investing in 120 social infrastructure projects over the past 20 years and Investcorp's extensive private equity expertise and market reach in the GCC.

GCC countries have a population of around 57mn people and have almost half the world's oil reserves. The region has benefited from the world's demand for oil over recent decades but their governments are now taking steps to diversify economies away from oil. As part of this, various initiatives have been launched to prioritise the development of critical social and core infrastructure.

The joint venture will actively target greenfield and brownfield social and core essential infrastructure assets in sectors including healthcare, education, utilities, social housing, smart cities, roads and rail.

Mohammed Alardhi, executive chairman of Investcorp, said, "This joint venture is a milestone for Investcorp and is in line with our strategy of diversifying our offerings to clients. Our investment objectives in the GCC are aligned with government initiatives, and by investing in critical infrastructure we are supporting the growth of those economies. Our deep knowledge of the GCC markets coupled with ASI's expertise and strong track record in investing in infrastructure projects serves to strengthen our position as a crucial



*The global economy will see slower growth in 2019, but the overall outlook remains positive for the GCC, with many countries such as the UAE focused on their diversification strategies, experts have maintained.*

Photo Credit: David\_Steel/Adobe Stock

private investor in the GCC region."

Hazem Ben-Gacem, Investcorp's co-chief executive officer, added, "Infrastructure is a unique and highly sought-after investment, especially in times of global economic uncertainty, because it is typically characterised by stable and predictable long-term cash flow. Moreover, there is a healthy pipeline of infrastructure projects and deals in the GCC, which means there is a potential to generate real value for those types of investment."

Martin Gilbert, co-chief executive of ASI, stated, "The partnership brings together ASI's strong track record of more than 20 years in concession and social infrastructure fund management with Investcorp's excellent relationships and reputation in the GCC as well as wider asset management expertise. We are looking forward to working with Investcorp as part of this opportunity to invest in the long-term growth story of the GCC and to expand our geographic footprint."

## New projects worth US\$22bn in Saudi capital

SAUDI ARABIA'S KING Salman has launched an ambitious programme of projects in Riyadh worth billions, which is expected to enhance the living standards of residents.

The 1,281 development projects in the Saudi capital and surrounding towns will cost about US\$22bn.

They aim to enhance crucial infrastructure, such as transportation and housing, and improve amenities, the environment and education.

The programme includes 15 housing projects in Riyadh and its governorates, in line with the objectives of Vision 2030 to increase house ownership among citizens; the establishment of the largest Islamic museum in the capital; a huge environmental project for the lakes south of the

capital covering an area of 315,000 sq m; sports cities; seven medical cities; 16 educational projects; quality entertainment facilities; the expansion of airports; and the development and upgrading of the road network.

The projects was announced in February by Prince Faisal bin Bandar, governor of Riyadh region, during an official inauguration event at Qasr Al-Hukm, in the presence of King Salman, Crown Prince Mohammed bin Salman and other dignitaries. They are part of a wider programme of 2,830 projects planned for Riyadh at a total cost of US\$90bn, which are expected to create tens of thousands of job opportunities for young men and women.

## Kuwait inaugurates 70MW renewable energy project



Photo Credit: Adobe Stock

*Kuwait is pushing its renewables agenda to the fore.*

THE FIRST PHASE of the Shagaya Renewable Energy Park in Kuwait's northwestern governorate of Jahra was inaugurated with 70MW production capacity and connected to the national electricity grid recently.

The Shagaya solar energy plant is a joint initiative developed by the Kuwait Institute for Scientific Research (KISR) and the Ministry of Electricity and Water.

Minister of oil, electricity and water Dr Khaled al-Fadhel stressed that Kuwait is determined to produce 15 per cent of the total used energy from renewable energy by 2030.

He added that other projects will contribute to achieving Kuwait's target in the energy production from renewable sources, including the second phase of the Dibdibah solar energy project with 1,500MW capacity, noting that this project will provide 15 per cent of the oil sector's needs.

KISR director general Samira Omar said that the new complex is composed of a solar thermal power station, a wind power station and a photovoltaic station. "It is designed as a world-class facility with a mix of renewable energy technologies to maximise the efficiency of electricity production per square metre in the

Kuwaiti desert," she added.

It is capable of securing power for 1,000 residential units throughout the year, and it is highly feasible for it enables Kuwait to save more than 285,000 barrels of oil per year, she explained.

The power station also minimises CO<sub>2</sub> emissions at a proportion of five million tonnes per year.

The 2019-2020 development plan report submitted by the Kuwaiti government to the Parliament recently warned that fuel subsidies needed to operate power and desalination plants have grown to more than 10 per cent of Kuwait's annual oil revenues. The report also stressed that such a situation calls for more reliance on renewable energy projects as one of the main targets of sustainable development as well as a major aim of the state leadership represented by HH the Emir Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah, who called for generating at least 15 per cent of the energy needed in Kuwait through renewable and clean resources by 2030.

The report added that although Kuwait faces a major challenge, it can overcome it easily with using solar and wind power, in addition to biomass from solid waste.

## Briefly

### GE installs 9E gas turbine for Iraq's Al Qudus power plant

GE POWER HAS provided an advanced 9E gas turbine to Al Qudus Power Plant in Iraq.

Under the terms of the agreement, GE will also provide up to seven 9E gas turbines at the facility throughout 2019 including maintenance, supply of parts and rehabilitation. GE's new gas turbine is expected to generate up to an additional 125MW of electricity. The service agreement is expected to maintain a stable supply of up to 875MW of power over the course of the coming year, enhancing the reliability of operations.

Mussab al-Mudarris, director of the media department at the Ministry of Electricity, said, "The delivery of a new gas turbine at Al Qudus Power Plant and our new services agreement with GE will help deliver much-needed power to the national grid within a short time."

According to GE, the 9E technology is capable of running on more than 50 different kinds of fuel.

### Bee'ah and Hamriyah open Sharjah's first waste management portal

BEE'AH, ONE OF the leading sustainable solutions providers in the Middle East, has partnered with the UAE's Hamriyah Free Zone Authority to launch the first phase of a waste permit portal in Sharjah.

The portal is set to utilise blockchain technology to validate, process and store transactions.

Under this partnership, Bee'ah will serve as the integrated environmental solutions service provider, delivering 15 services such as audits, permits and lab services to all 14,000 members from 160 countries which operate at HFZA.

The services will be rendered under the management of Bee'ah's environmental consultancy and services unit that manage environmental projects and frameworks, as well as studies and assessments in compliance with local and federal regulatory requirements. The customised portal is expected to save time and money of the customers operating within the free zone when applying for permits, as well as help them by reducing the downtime it takes for permits to be issued.

## Russia to set up industrial zone in Egypt

CHAIRMAN OF THE Suez Canal Authority (SCA) and General Authority for Suez Canal Economic Zone (SCZone) Mohab Mamish has revealed that they are reaching an agreement with the Russian Export Center to establish a company to operate and administer the Russian industrial zone in Port Said before April 2019.

Mamish discussed with the Russian side the need for a joint committee to conduct the work and follow-up what is being carried out and implemented within the project.

"The Egyptian-Russian Joint Committee represented in the Economic Commission and the Russian Export Center will be held on a bi-monthly basis, between Cairo and Moscow, to follow up the developments and implement the procedures for establishing the company until completion," Mamish added.

The chairman also mentioned that SCZone agreed to Russia's request to prepare the land necessary for establishing the project which is expected to provide 35,000 job opportunities.

Agreed upon in May 2018, the Russian industrial zone is set to be established over three phases on a 5.25mn sq m plot of land, with the first phase to cost US\$190mn.

Following his talks with the Russian side, Mamish attended a workshop in the presence of representatives of about 200 major Russian firms interested in investing in the project.





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# EXECUTIVES' CALENDAR 2019

## MARCH 2019

5-7	<b>Middle East Electricity</b>	DUBAI	<a href="http://www.middleeastelectricity.com">www.middleeastelectricity.com</a>
5-9	<b>Kuwait Construction Week</b>	MISHREF	<a href="http://www.kuwaitconstructionweek.com">www.kuwaitconstructionweek.com</a>
10-13	<b>The Big 5 Saudi</b>	JEDDAH	<a href="http://www.thebig5saudi.com">www.thebig5saudi.com</a>
25-27	<b>The Big Show Oman</b>	MUSCAT	<a href="http://www.thebigshow-oman.com">www.thebigshow-oman.com</a>

## APRIL 2019

8-14	<b>bauma 2019</b>	MUNICH	<a href="http://www.bauma.de/index-2.html">www.bauma.de/index-2.html</a>
14-15	<b>HSE Forum Bahrain</b>	MANAMA	<a href="http://www.hse-forum.com">www.hse-forum.com</a>
15-17	<b>Oman Mining Expo</b>	MUSCAT	<a href="http://www.omanminingexpo.com">www.omanminingexpo.com</a>

## JUNE 2019

10-12	<b>Automechanika</b>	DUBAI	<a href="http://www.automechanikadubai.com">www.automechanikadubai.com</a>
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## SEPTEMBER 2019

9-12	<b>World Energy Congress</b>	ABU DHABI	<a href="http://www.wec24.org">www.wec24.org</a>
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## NOVEMBER 2019

5-8	<b>DPE</b>	ITALY	<a href="http://www.dpeurope.it">www.dpeurope.it</a>
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Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.

## Kuwait Construction Week aims to push for a better market

IN LINE WITH the New Kuwait 2035 vision plan, the country is seeing a heavy upsurge in construction activities, with projects ranging from building bridges, roads, homes, refineries, airport terminals, new ports and others.

According to BNC Network's 'Kuwait Construction Projects Report 2018,' the country has 709 active projects with a combined estimated value of US\$230.4bn. Of the 709 projects, approximately 58 per cent are under construction, which indicates a healthy flow-through of project investments. At the same time, newly announced projects in 2019 add to the pipeline of project investments in the country.

With this aim to transform Kuwait into a regional financial and commercial hub for the northern Gulf region, the country is all set to organise Kuwait Construction Week, one of the largest building and construction events in the country, from 5-9 March 2019 at Kuwait International Fair, Mishref.

### Connecting professionals with industry experts

Organised by ATEX International Exhibitions LLC, more than 5,000 trade visitors and 300 exhibitors are set to attend the event, which is expected to present four conferences featuring a variety of topics in the region's building and construction sector.

The event will also feature more than 1,000 products and services in the building, construction and design industries. The aim is to bring industry leaders and experts together and give them a platform to connect, collaborate, share knowledge, build partnerships and create solutions for their respective industries.



Photo Credit: ATEX International Exhibitions

The event will bring industry leaders and experts together to connect, collaborate, share knowledge, build partnerships and create solutions for their respective industries.

In addition to this, a wide range of speakers and delegates from regional governments, ministries, industries, organisations and agencies will discuss on various topics, projects and opportunities in Kuwait's building and construction industry.

Some of the topics that will be highlighted during the conference include:

- The extent of climate changes and their impact on the design of architecture and urbanisation in the coming years
- Green building movement in Kuwait
- Sustainability in design process
- Façade design tools for high-energy performance of buildings
- Occupant health and comfort in green buildings

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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](http://www.technicalreview.me)

## Averda wins waste recovery contract in Morocco

AVERDA HAS WON a 20-year contract for advanced waste treatment services in Tangier, Morocco. A team of local and international engineers is guiding the conception, construction and management of an ultra-modern site including the installation of a new waste treatment facility. The team will also lead the deployment of a new organic waste composting centre, sanitary landfill and gas recovery and leachate treatment units.



The ultra-modern site in Tangier.

Photo Credit: Averda

[www.technicalreviewmiddleeast.com/power-a-water](http://www.technicalreviewmiddleeast.com/power-a-water)

## First thin-film solar power industrial park in Saudi Arabia

CHINA'S HANERGY THIN Film Power Group, world's largest thin-film solar power solution company, has signed an MoU agreement with Ajlan & Bros to launch the first solar thin-film industrial park in the Middle East at a total investment cost of more than US\$1bn.

The agreement was signed at the launch event of Saudi Arabia National Industrial Development and Logistics Program (NIDL), which is one of the 12 programmes initiated as part of Saudi Vision 2030 focusing on transforming Saudi Arabia into an industrial powerhouse and a global leader in logistical services.

[www.technicalreviewmiddleeast.com/power-a-water](http://www.technicalreviewmiddleeast.com/power-a-water)

## APICORP invests US\$65mn to boost UAE's solar projects

THE ARAB PETROLEUM Investments Corporation (APICORP) has announced its investment towards the Series A shares of Yellow Door Energy, the UAE-based solar power developer.

The fund, as part of a consortium of international and regional banks and amounting to a total of US\$65mn, is expected to enable Yellow Door Energy to scale its investments in solar energy and efficiency solutions in emerging markets.

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The investment signing ceremony.

Photo Credit: APICORP

## Work on DEWA's M-Station project 'almost complete'

DUBAI ELECTRICITY AND Water Authority (DEWA) has completed 98 per cent of the M-Station expansion project, one of the leading power generation and water desalination plants in the UAE.

Saeed Mohammed Al Tayer, managing director and CEO of DEWA, made the announcement during his visit to review the progress of the M-Station expansion project.

During the tour, Al Tayer was briefed by representatives from Siemens about the construction, engineering and operational processes of the expansion project, with more than 19.5mn safe man-hours.

Currently, the total capacity of the M-Station is 2,185MW of electricity and 140mn imperial gallons of water per day (MIGD).

[www.technicalreviewmiddleeast.com/power-a-water](http://www.technicalreviewmiddleeast.com/power-a-water)

## Raysut Cement to upgrade clinker cooler for savings

RAYSUT CEMENT COMPANY, Oman's largest cement manufacturer, has signed an agreement with Oman-based Ayoki Engineering to upgrade of the company's clinker cooler line 3 at Salalah. Ayoki will source all the equipment for the clinker cooler upgrade from IKN GmbH, Germany, a statement from Raysut said.

[www.technicalreviewmiddleeast.com/manufacturing](http://www.technicalreviewmiddleeast.com/manufacturing)



Raysut has a customer base across Oman, Yemen, Somalia, Mauritius, Iraq, Tanzania, Sudan and beyond.

Photo Credit: Raysut Cement

## UAE and Saudi Arabia launch common digital currency

THE SAUDI ARABIAN Monetary Authority (SAMA) and the United Arab Emirates Central Bank (UAECB) have jointly launched a common digital currency project 'Aber' that will be used in financial settlements between both nations through blockchains and distributed ledgers technologies.

The initiative comes under the framework of 'Proof-of-concept', which studies the dimensions of modern technologies, their feasibility through practical application, impact on the improvement and reduction of remittances costs, the assessment of technical risks and how to deal with them.

In addition, the initiative will look at technologies of the future and understand the requirements of issuing a digital currency for use.

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## TESTIMONIAL

“ I have had an opportunity to share knowledge and ideas with other national and international experts in the field. There was a good range of informative presentations. The forum allowed me to form connections with other professionals. ”



Photo Credit: Qiddiya

*The Qiddiya project presents a strong economic case, helping to stem the US\$30bn a year which Saudis currently spend abroad on tourism.*

# THE MEGA MAKEOVER

The latest crop of numerous multi-million projects, including an entertainment hub, in Saudi Arabia are perhaps more ambitious than ever before. Martin Clark reports on the return of confidence in the kingdom.

Vision 2030 has set aside US\$64bn to invest in culture, leisure and entertainment projects over the next decade, which will significantly add to the attractiveness of the country as a tourist destination.

**J**EDDAH TOWER, NEOM City, King Abdullah Economic City, Riyadh Metro – these are just a few of the names that are mentioned today when we speak about Saudi Arabia’s development plans. A series of big ticket projects suggest that all is well in Saudi Arabia’s construction industry, despite any uncertainties facing the global economy or the depressed state of oil prices.

As always, there is plenty of activity going on across the oil and gas sector, which continues to underpin the nation’s economy.

Both upstream and downstream initiatives will consolidate the kingdom’s status as the world’s top energy producer for years to come.

But the government is likewise pushing expansion in other ways too as it seeks to deepen diversification efforts.

The construction sector received a timely boost at the start of 2019 with the approval of a scheme to reimburse contractors paying out for expat work permits in recent years.

The industry depends on large numbers

of foreign workers and was badly hit by the expat fees bill.

The government is allocating US\$2.9bn for reimbursements, which is expected to help local firms navigate any ongoing financial challenges.

And industry executives think it sends a very positive message to the sector.

“The decision will have a huge positive impact on the Saudi economy and especially the manpower-intensive construction sector,” said Osama al-Afaliq, head of the Saudi Contractors Association, speaking in an interview with *Reuters*.

It is estimated that 10mn foreigners are working in Saudi Arabia, typically taking on the strenuous, lower-paid jobs that are largely shunned by the nation’s own 20mn citizens.

## Economic uptick

A general uptick in the local economy is also being picked up by analysts, who detect a continued improvement in the health and

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direction of the Saudi Arabian economy.

Huge state support is providing an essential stimulus, guided by key strategic development blueprints such as Vision 2030 and the National Transformation Programme.

These efforts will be aided by the largest ever budgeted expenditure, for the second successive year.

According to analysis from Jadwa Investments in Saudi Arabia, the economy was largely able to absorb most of the disruptive effects of necessary economic reforms enacted last year, and looks better placed moving into 2019.

It forecasts relatively unchanged economic growth of around two per cent for the year, with any downside resulting from lower oil sector GDP as the kingdom complies with OPEC agreements.

"That said, we still see oil sector growth being helped along by a rise in gas output and the opening of the Jazan refinery," Jadwa noted in a recent research paper.

The start-up of the Fadhili gas complex in 2019 will further contribute to oil sector growth as well.

Meanwhile, Jadwa adds, the non-oil sector will continue to benefit from an expansionary fiscal policy, which is highlighted by the release of funds to help eligible private sector firms with expat fees.

### Bouncing back

Significantly, it sees construction sector activity bouncing back after contracting by more than three per cent in each of the past two years.

Cement and steel production, a gauge of construction sector activity, were also down in 2018, by 10 per cent and six per cent respectively.

"We expect this sector to see better performance in 2019," noted Jadwa, citing the continued roll-out of the Real Estate Development Fund (REDF) and the Ministry of Housing's (MoH) Sakani programme, plus a 20 per cent rise in yearly government capital spending.

The Sakani programme, by the Ministry of Housing and the REDF, aims to facilitate and accelerate access to diversified housing solutions through easy and seamless steps. It will also provide housing and financing solutions for Saudi families to increase the ownership rate for the beneficiaries of housing subsidy who are registered in the Ministry of Housing and REDF, in partnership with the private sector and financing parties.

Growth in real estate activities saw a modest 2.2 per cent growth in 2018, but the outlook going forward, especially for home building, seems far more positive.

The REDF recently announced a list of 100,000 citizens eligible for mortgages provided by the fund in 2019, double the number eligible last year.

And massive investment is pouring into Saudi Arabia's transport sector as well, which resulted in the inauguration of the high-speed Haramain train connecting Makkah, Madinah and Jeddah last September, and the completion of phase one of Jeddah's King Abdul Aziz International Airport.

The transport and communications sector grew by 1.7 per cent as a result of these and other new projects, including the opening of 823km of new roads last year.

Perhaps more exciting though are some of the kingdom's true mega projects shaping up, such as Neom, Qiddiya and the Red Sea project.

Backed by the state, these are poised to provide a lift to the construction sector for a decade to come.

### Paradise city: Neom

It is early days, and there are still doubters, but the development of Neom is surely one of Saudi Arabia's most ambitious projects to date.

With an eye-watering price tag of some US\$500bn, Neom is a futuristic and sustainable city plan for the northwest of the kingdom, with work set to get underway during the first quarter of this year.

A first phase residential development of Neom Bay is due to be completed in 2020, though the vision is far greater.

A symbol of Saudi Arabia's Crown Prince Mohammed bin Salman's ambitions for life after oil, the showcase city will boast state-of-the-art infrastructure and appeal to Saudis and foreigners alike.

Approximately 25,900 sq km of space has been allocated for the development, which includes a bridge spanning the Red Sea, connecting the city to Africa.

The Crown Prince has referred to the vision as the Neom Riviera, boasting white beaches, a mild climate and an attractive investment environment.

He has also said that the scheme will be fully completed in 2025, which would mean an enormous source of work for local construction firms.

On 17 January, the Neom board gave the green light for the development of key facilities to be completed by the end of 2019, including the current airport at Sharma, which will be upgraded to a commercial airport operating flights between Riyadh and Neom.

Nadhmi Al-Nasr, Neom's chief executive, called it a major milestone: "We are now preparing for the development of the Neom Bay area, which will provide a new concept of urban living that will enable it to become a platform for attracting the world's top minds for creating advanced economic sectors."

As well as a high-end residential and tourist destination, the area is being primed to become a hub for innovation and creativity in areas such as media, health and well-being.

*The MoH's Sakani programme delivered a total of 313,000 housing units in 2018.*



Photo Credit: Adobe Stock

## Disney in the desert: Qiddiya

Another monumental development to be unveiled last year was Qiddiya, an entertainment resort projected to be more than twice the size of Florida's Disney World.

Potentially, it has a cultural as well as strategic significance too in opening up the Saudi economy to more outsiders and easing social restrictions.

Qiddiya hopes to attract 1.5mn visitors annually when the first phase opens in 2022.

The scheme has been hailed as a first-of-its-kind capital for entertainment, sports, culture and the arts for the kingdom.

A former Florida Disney executive, Michael Reininger, has even been appointed to lead the charge as head of Qiddiya Investment Company (QIC).

He has said that 2019 will be about appointing other important staff as well as commencing early on-the-ground construction activities.

Developers have already broken ground on the vast 334 sq km site, a mere hour's drive from downtown Riyadh.

The project has an estimated cost of US\$8bn, which is expected to be for the infrastructure build, while the eventual resort complex could ultimately be worth many times more.

It will also involve a great deal of private sector participation, offering "huge opportunities" for would-be investors and partners, according to QIC's chief executive.

## VIP tourism - Red Sea Project

Another of Saudi's trio of mega projects is the Red Sea tourism initiative. Construction will get underway this year with the first phase of the development set to be unveiled in 2022.

The aim is to develop resorts on 50 islands off the Red Sea coast, with an emphasis on eco tourism, with a nature reserve, diving in coral reefs and heritage sites.

This project is being overseen by the Red Sea Development Company and is supported by the Saudi sovereign wealth fund, the Public Investment Fund.

The first phase of the project was signed off in January and includes 14 luxury and hyper-luxury hotels providing 3,000 rooms across five islands and two inland resorts.

It will also include yacht marinas and an airport to serve the destination, as well as supporting logistics and utilities infrastructure.

*In 2018, France and Saudi Arabia signed a 10-year deal through which France will assist in the development of the Al-Ula region as a cultural destination.*



Photo Credit: Adobe Stock

Red Sea Development Company chief executive, John Pagano, said the venture will position Saudi Arabia on the global tourism map.

It is also a major component of Saudi Arabia's Vision 2030 strategy, and is ultimately expected to create 70,000 new jobs and generate as much as US\$5.3bn to the nation's GDP.

Pagano also highlights the emphasis on sustainability and the balanced development in what is a pristine destination.

"Our plan not only envisions a stunning luxury destination, it also takes tangible, measurable steps to enhance that destination for future generations to enjoy and cherish."

The Red Sea Project is due to be fully completed in 2030.

## Treasure chest: Al-Ula

In February, Crown Prince Salman launched mega tourism projects in Al-Ula, including a resort designed by a renowned French architect Jean Nouvel who also designed Louvre Abu Dhabi, both called Sharaan.

Nouvel will build a resort in the mountains of Al-Ula as part of a plan launched on Sunday night to transform the home of ancient civilisations into a destination for

visitors from around the world.

The plan for sustainable development of the region includes the Sharaan Resort inside a designated nature reserve.

Al-Ula is home to spectacular sandstone rock formations and the archaeological site of Madain Saleh, the largest Nabatean settlement south of Petra that contains the ancient civilization's rock tombs with their carved facades. In 2008, it was designated as Saudi Arabia's first UNESCO World Heritage site.

The resort will include residential estates, a summit centre, a spa and restaurants. The full design of the project will be completed by the end of this year; construction is expected to begin in early 2020, with a completion in 2023.

While the details of the plan are new, it is very much in keeping with the Crown Prince's Vision 2030, which aims to develop the kingdom's tourism sector and provide the younger generation with the skills that they need for the future as it diversifies the economy away from its dependence on oil. The vision also pledges to celebrate the country's national identity by preserving its cultural sites, making them accessible and building world-class museums to "create a living witness to our ancient heritage". ■

*Data can help operators make more informed decisions about maintenance and performance.*



Photo Credit: Gardner Denver

# Improve your compressor's energy efficiency

A consistent supply of clean, dry compressed air is essential to many sectors, but it can require a considerable amount of energy to produce. Here, Gardner Denver details some simple steps that operators can take to improve energy efficiency and bottom-line profitability.

**O**PTIMISING COMPRESSOR PERFORMANCE and identifying inefficiencies can lead to sizeable financial and productivity benefits. By contrast, not remedying these issues could have a marked effect on site operations.

## Total cost of ownership

One of the first steps to improving efficiency is to analyse the total cost of ownership of the compressed air system. This incorporates a number of variables, including the initial purchase price and maintenance regime, but

the largest proportion – 80 per cent in fact – is the energy cost.

It is, therefore, vital that a compressor is correctly sized and specified to the site's demands. Installing a data-logging device to monitor and audit relevant performance metrics such as maximum and minimum air pressure and compressed air flow demand can help operators specify a more efficient compressor with reduced energy consumption.

The unit's initial purchase price should also be factored into its lifecycle costs. While

purchasing a less expensive compressor can seem like a shrewd business decision, a lesser-quality unit may require more maintenance across its working lifetime.

This ongoing maintenance can be more expensive, with rising service costs negating any initial savings over time. By considering purchase price alongside the longer-term service and maintenance required, total cost of ownership can be improved.

## Audits and leakages

Alongside energy costs, compressor

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efficiency should be taken into account when considering a unit's total cost of ownership. An energy audit will identify major factors affecting overall efficiency and highlight simple methods to reduce site downtime, increase productivity and safeguard product quality. Consequently, an audit can prove vital to improving compressor efficiency and reducing otherwise avoidable costs.

One such example is the identification of pipework leakages. A single three millimetre hole could cost as much as US\$775 a year in wasted energy and account for 35 per cent of total air consumption, making it clear that audits could prove vital to improving system performance.

An audit can also identify the compressor's possible heat potential. 94 per cent of compressor-generated heat can be recovered and reused for other site processes, resulting in pronounced efficiency gains.

### iConn and analytics

Industry 4.0 and the Internet of Things (IoT) offer further opportunities to improve compressor efficiency. By taking advantage of data-driven opportunities, operators can make more informed decisions about compressor maintenance and performance. Taking this into account, Gardner Denver

*Gardner Denver's new insertion and in-line flow meters offer a reliable means of evaluating compressed air generation and the associated costs from any downstream inefficiencies.*



Photo Credit: Gardner Denver

has introduced iConn, a cloud-based, air management platform that provides historic, real-time, predictive and cognitive analytics, allowing operators to rectify potential issues before they arise.

Using iConn, operators can monitor data in real-time and view in-depth reports and trends concerning potential energy wastage, including how, why and when it occurs. Access to this detailed level of information

enables plant managers to make more informed decisions regarding unit performance, optimising overall efficiency.

In conclusion, remedying inefficiencies and optimising performance can lead to pronounced benefits. By carrying out energy audits, using platforms like iConn and correctly specifying compressors, operators can ensure maximum energy efficiency and minimal wastage. ■

## ROTAIR's new range for roadworks

ROTAIR ENTERS INTO the compressors sector for utility trucks with a range that has proven to be the preferred choice in the USA and Australia, in sectors ranging from road maintenance to wet sandblasting.

Initial success of this new line is due to the fact that ROTAIR has the ability to listen to the users' needs in different parts of the world and kept their requests in mind while designing the machines, and therefore, blending these requests with its own strength of quality, safety, ease of use and maintenance.

The range is covered by seven models from 28 to 185 cfm, equipped with Kubota engines.

Dual pressure is available across the whole range, activated through a simple switch.

Specific models are designed to be used for sandblasting, with inbuilt after-cooler to cool down compressed air, and specific condensate separator to reduce humidity of the air. So the compressors are fit for all operations that are sensitive to humidity.

Although compact and light, these compressors feature all the key benefits provided by traditional ROTAIR portable compressors, including the 'INTELLIGENT SYSTEM' for correct and safe start/stop of the machine, preserving air and engine and improving the operational life of the compressor. The same applies to the exclusive ROTAIR pneumatic system, that adjusts automatically the engine revs to the air demand.

The footprint of these machines has been contained to the maximum to leave more space on

the van or truck loading area without compromising its accessibility.

The compressors are light so as to not impact overall tonnage of the vehicles and are equipped with lifting hooks and can be moved by forklifts from all sides.

Ease of use and maintenance is vital: all air outlets and controls are located on one side of the machine; the control panel is in a low position for ease of

access when operating from side of the truck; panels and inner space provide accessibility for an effective and easy maintenance.



Photo Credit: ROTAIR



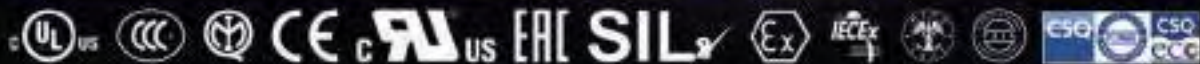


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# 'Local support is our biggest strength'

As compressed air specialist Kaeser Kompressoren turns 100 this year, Carl Briden, managing director at Kaeser Kompressoren FZE, talks to Technical Review Middle East about the German company's presence in the Middle East.

**Technical Review Middle East (TRME): What trends within the compressors industry are you excited about?**

**Carl Briden (CB):** At Kaeser Kompressoren, we continue to innovate and look at ways of how to reduce the cost of producing compressed air for our customers.

**TRME: What can you tell us about the strength of employees and dealership in the region?**

**CB:** Our dealer network is as strong as it has ever been, thanks in part to the local support we have been able to provide over the years from our regional head office and training facility in JAFZA in Dubai. Here, we have recently strengthened our numbers to further improve the support to our dealership network in the Middle East, which is necessary to drive forward with our goals and targets for the years ahead.

**TRME: In terms of innovations in the compressors sector, what has caught your attention recently?**

**CB:** Nothing has changed dramatically in the sector for a few years. Our main target is always to provide the best solution to meet the customer requirement with focus purely



Photo Credit: Kaeser Kompressoren

*With the opening of bauma in April, Kaeser starts shipping the new M255E with a powerful, energy-efficient IE4 electric motor, rated at 160 kW. The subject of Industrie 4.0 in combination with the Mobilair product range will also be prominently featured.*

on life cycle costs, ensuring these are kept to industry leading low levels.

**TRME: How important is Saudi Arabia market to your business and what are your thoughts about the current market situation?**

**CB:** Saudi Arabia will always be a critical market and we are continually looking at ways to increase business. This starts with continued support to our local partner as well as making regular visits to key customers to ensure the best possible service is being provided. The prospects for future growth are encouraging considering the kingdom's long-term Vision 2030 and we hope to take full advantage as this develops.

**TRME: What are the new products that Kaeser is extensively promoting in the Middle East, especially the GCC?**

**CB:** The entire Kaeser Kompressoren product range is suitable for the Middle East market. Our designers consider it essential that our equipment should be relevant for climates across the globe without the need for any specific modifications in the models.

**TRME: Can you share Kaeser Kompressoren's key strategies for 2019-20 in the region?**

**CB:** Our strategy is to continue to help our dealer network to further enable them to increase our market share and provide greater support to our existing and expanding customer base in the Middle East. ■



Photo Credit: Kaeser Kompressoren

Managing director Carl Briden.



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Photo Credit: UD Trucks

The UD Trucks' portfolio.

# UD Trucks sets its sights on new MEA markets

In the Middle East region alone, the Japanese truck manufacturer either increased its market share or recorded stable sales in five out of seven markets. Mourad Hedna, president of UD Trucks MEENA, in conversation with *Rhonita Patnaik*.

**Technical Review Middle East (TRME): How would you rate UD Trucks' heavy vehicles performance in Saudi Arabia last year? Also, what about other markets that you are responsible for?**

**Mourad Hedna (MH):** Last year was a positive year for us in the region, despite challenging market conditions we registered a nine increase across the entire region and this growth was led by our GCC markets – in particular, Bahrain, Qatar and Oman.

In Saudi Arabia we experienced another tough year, as the total market continued to drop. However, we managed to maintain a good level of sales and even improved our market share in some key segments such as waste management and construction.

Saudi Arabia will remain a key focus for us, and we have put in place aggressive

plans for 2019 and beyond to further grow and support our customers in the Kingdom.

Besides Saudi Arabia, the UAE market has been very tough over the past twelve months; however, UD Trucks once again performed well and saw its market share increase.

Qatar and Bahrain remain very strong markets for UD Trucks as the brand enjoys a significant market share, which it continued to strengthen further in 2018. In Qatar, UD Trucks is dominating the Japanese segment and, more specifically, the construction business. In Bahrain, the brand continues to hold the number one position in the market.

Both Lebanon and Jordan were reactivated in 2018 as the brand transitioned from the legacy trucks to the introduction of new models in both the heavy and medium duty sectors. UD Trucks

has high ambitions in these two markets as it leverages on the strong brand reputation built over recent years.

It also enjoyed an increased market share in two of its key East African markets – Ethiopia and Sudan. In Ethiopia, the challenge remains related to hard currency availability, yet despite these tough conditions, the brand performed very well, especially in Q4 2018. The brand has also registered good sales in Sudan, since it officially launched its new models in February 2018, both in logistics for medium duty and for mining and construction for the heavy duty.

The year 2019 is set to be an important year for the brand as it investigates entering new regional markets with significant potential such as Tunisia and Kenya, and many others in West and North Africa.

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# IVECO

Your partner for sustainable transport



Photo Credit: UD Trucks

**TRME: What do you believe are the catalysts for growth in the kingdom?**

**MH:** We have a strong offering for our partners in Saudi Arabia. We are a customer-centric organisation and place huge value on serving the best interests of our customers and partners. Our modern full product ranges and our dedication with our local partner to serve our customers with the highest standards of satisfaction are all tools that will help us to succeed and grow in the kingdom.

Our regional parts distribution centre, which delivers over 12,000 different spare parts to UD Trucks partners across the MEENA region, also means our customers

enjoy short lead times which maximises up-time.

**TRME: Can you list the key sectors that the UD Trucks is specialising in?**

**MH:** The waste management, distribution, and construction sectors have been, up until now, a key focus for UD Trucks. Our new heavy construction range for the Quester, with the 6X4 40 T 24' tyres and the 8X4, will continue to allow us to be a strong contender in the heavy-duty construction segment. And, our medium-duty Croner range allows us to covers a wide range of applications with capabilities from 10.4 to 80 tonnes. This diverse and extensive

product offering will bolster our already strong presence in the kingdom. This year will bring very good news to the KSA market with our new heavy-duty Quester offer for logistics and advanced construction.

**TRME: UD Trucks is investing a lot in smarter logistics solutions. Can you give us some details?**

**MH:** Our innovation roadmap – 'Fujin & Raijin. Vision 2030.' – will see us deliver a variety of smart logistics solutions including fully-electric, connected and autonomous trucks towards 2030. The roadmap focuses on meeting the challenges of the rapidly changing world and will see the introduction of automation and electromobility to the UD Trucks range from 2020.

We see automation, in different stages, reshaping the logistics industry and creating real-world benefits for both our customers and society in terms of productivity, safety, energy and fuel efficiency.

Since the launch of the New Quon in 2017, we have been moving steadily forward on our mission to drive the future of smart logistics, and by 2030 we plan to have a fully-fledged offering of 100 per cent electric and autonomous trucks.

Within UD Trucks we are future-ready, from emissions-free electric trucks to autonomous trucks and platooning logistic. The implementation of these solutions will be gradual and at different paces depending on each individual markets' readiness. ■



*Mourad Hedna is the president of UD Trucks MEENA.*

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# BKT

GROWING TOGETHER

# Scania reveals new truck range in Saudi Arabia

The new generation line-up is applicable for long-haulage, urban and construction sectors.



Photo Credit: Scania

**S**CANIA HAS ANNOUNCED the launch of its latest premium truck range in Saudi Arabia.

Scania's new line-up is extending its offering and can now, with its unique modular system, supply more performance steps, connectivity, and a comprehensive palette of productivity-enhancing services as well as customised transportation solutions.

With the new truck range, which includes the Scania XT and heavy tipper vehicles, Scania is hoping to set a new standard for what is premium in the transport industry.

Scania's heavy tipper is a robust partner developed for optimised performance in the toughest conditions, at a significantly lower cost per tonne and an excellent equipment-to-payload ratio, at a 25 per cent payload increase. The Scania XT offers a solid design that caters to customers who carry out challenging tasks with the toughest

demands in terms of uptime, productivity and robustness, with enhanced features to deal with the various challenges the vehicles face in their daily assignments.

Loaded with enhancements, the new range further improves Scania's already strong fuel performance due to factors such as improved powertrains and better aerodynamics. Another notable feature is the availability and offering of 24 different cab models. With driver's safety paramount to Scania, the new truck range provides rollover side curtain airbags.

Speaking at the launch, Özcan Barmoro, managing director of Scania Middle East, said, "Scania's new truck generation aims to drive the evolution of the transportation industry in line with Saudi Arabia's strategy to focus on safety, effectiveness, efficiency and technology. Inspired by our core value of putting customers' first, global trends and

challenges, this generation of trucks is designed to better meet the needs of our customers and the world we live in. It has efficiency in both fuel economy and performance incorporated into a design inspired by the Scania heritage. Our new truck range will contribute to the ambitions of Saudi Arabia to shape the future of its transport industry, powered by innovation."

Ibrahim Abudayeh, regional general manager of GCC Olayan, exclusive distributor of Scania in the kingdom since 1981, added, "GCC Olayan prioritises the delivery of complete effective solutions to our partners in Saudi Arabia. Having been the exclusive dealer for Scania for over 38 years, we welcome the new developments demonstrated by the new truck generation, which will transform the logistics, transport, construction, and mining industries in line with Vision 2030." ■



## Continental opens Middle East's first JV in Saudi Arabia

THE LAST OF the tyre companies to enter the Middle East market in 2015, Continental Middle East has quickly made its mark on the market by providing region-specific tyre range – a first for the Middle East.

The Generation 6 tyre range, designed for the Middle East market, offers car owners a selection of robust tyres designed to cope with the road conditions found across the region.

To expand its presence in the region, Continental Middle East announced its joint venture with Saudi Arabia-based Almutlak Trade and Industries to focus on its biggest market.

The partnership has been in existence since May 2018 in Jeddah with 28 employees to cater to the local market.

Speaking about the evolution of Continental's Middle East strategy Nikolai Setzer, member of the Executive Board and head of tyre division and corporate purchasing, Continental AG, said that the region has been unique for the company and therefore it was looking to develop an

integrated approach to the market by creating partnerships.

Continental Middle East has a warehouse in Jebel Ali, Dubai, to serve the customers in the Gulf region and improve service level. The facility will also serve as a connection of Europe/Americas plants with partners in the Middle East.

Continental Middle East is looking to develop presence of their second tyre brands within the group including General Tire and Matador. In line with GCC's vision about safety, Vision Zero is very much part of Continental's strategy in the Middle East that includes creating the safest products, awareness among the drivers and holistic approach to safer driving.

As one of the Top 3 automotive suppliers worldwide, Continental has transitioned from a tyre manufacturer to an integrated solutions provider. Globally, the manufacturer has invested more than US\$1.15bn for additional capacities, beyond tyres.

In addition, the company has launched a




*Jon Ander Garcia, director general Iberia and regional manager Middle East and Africa at Continental.*

Photo Credit: Continental AG

new digital tyre monitoring platform, ContiConnect. Designed for commercial vehicles, the new platform aims to help fleets to maximise efficiency and send alerts if tyre pressure deviates from the defined value.

The introduction of ContiConnect follows the arrival in the Middle East earlier last year of ContiPressureCheck, a first-of-its-kind monitoring system for buses and trucks that continuously monitors tyre pressure and temperature via sensors placed inside the tyre.




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# Rising to the future

Ammar Jawad, Middle East and Africa area manager at Giovenzana International B.V., speaks to *Fyna Ashwath* about the integral role of lift maintenance in buildings, the Italian company's presence in the region and future plans.

## Technical Review Middle East (TRME): Can you give us an overview of the lift industry in the UAE?

**Ammar Jawad (AJ):** Giovenzana serves worldwide in automation, elevators, handling system and explosion proof products. Our products have found application in important structures such as the Eiffel tower in Paris and the Burj Khalifa in Dubai.

The major lift manufacturers are in Europe, India and other countries. In the Middle East, however, there are no lift manufacturing companies but a lot of firms that do inspection and maintenance for lifts. Some companies also collaborate with big ones after procuring components from Italy, Spain and other major lift manufacturing nations. They obtain motors, cabins and other components from places such as Turkey, Italy and China and later the assembling is carried out.

The UAE is the largest market for lifts in the GCC region, being home to a large number of towering buildings and the mega construction projects. It is at the forefront of real estate developments and also among early adopters of latest technologies.

## TRME: Please tell us about the presence of Giovenzana in the Middle East and the facility in Jebel Ali.

**AJ:** Giovenzana International B. V. has been present in the UAE for more than a decade and Dubai is the hub for our operations in the Middle East, Far East as well as Africa.

We are in the process of growing our presence, developing the existing markets and expanding our operations into new markets in the region. Giovenzana has observed good potential in Africa as well.

The office in Jebel Ali is the biggest stock facility and products are shipped from here to many countries including India, China and others.

## TRME: What was the objective behind the 'Dubai Connecting People' event organised by Giovenzana International B. V. in Dubai last October? What did you hope to achieve?

**AJ:** Dubai Connecting People 2018 was a worldwide meeting with the goal of bringing Italian excellence in lift technology to the Middle East. It focused on the new standards for the elevators and escalators market, especially, EN81.20 & EN81.50, GOST

33984.1 – 2016 and ABNT NBR NM 207 – 267.

This was our first-time event of this type in the Middle East and people attended from across GCC, Africa, Russia, Turkey and others. We received excellent feedback about the convention and it offered great networking possibilities as well. There were several business opportunities that became available as a result of the convention and we were also able to get connected to some companies that we did not know very well.

The organisers helped to guide the participants through real case histories, showing how the new standards become big opportunities in the international market and how the choice of experienced partners can make the difference in winning market challenges.

'Dubai Connecting People' certainly helped the exchange of business experiences and ideas, and everyone is looking forward to the next edition.

## TRME: How do you assess building safety standards and the integral role of lifts in a building?

**AJ:** Customer satisfaction has always been a top priority with Giovenzana and we have

Photo Credit: KalaFoto/Adobe Stock

the best interests of the customer's requirements always in mind, while finding a suitable solution.

The safety of the passengers, lift technicians and the maintenance force is always at the forefront of all operations of our company. We are also receiving excellent support as well as feedback by the Dubai government authorities. The UAE is always open to new and innovative technological advances. Also, there are very stringent requirements as well as quality standards, making operations more efficient and technically competent.

**TRME: What are the current changes affecting the region and important future strategies for Giovenzana?**

**AJ:** There is rising demand for innovative and sustainable technologies in buildings. Though latest research indicates slow growth in recent years due to a slump in oil prices, which has hampered infrastructural development projects, the situation is likely to improve due to improving economic conditions in the UAE and several development projects by the government. Giovenzana is committed towards shaping a responsible future, together with the UAE.

Our office in Italy is always investing in research and development activities maintaining constant contact with market needs of major corporations, in order to provide solutions for enhancing customer safety and comfort. We are also continually involved in making available a new range of products.

Giovenzana is considering further possibilities for expansion and looking at suitable opportunities everywhere. ■



*Ammar Jawad is at the helm of business in the Middle East and Africa.*

Photo Credit: Giovenzana B.V.

**“Giovenzana is committed towards shaping a responsible future, together with the UAE. Our office in Italy is always investing in research and development activities maintaining constant contact with market needs of major corporations, in order to provide solutions for enhancing customer safety and comfort.”**

Photo Credit: Giovenzana B.V.



*Giovenzana's office in Dubai has a total of nine employees.*

# Lost in the ruins?

Currently, construction and demolition wastes are mixed with other types of waste and, therefore, made unsuitable for recycling, thus resulting in the waste being taken to landfill sites and losing opportunities to recover valuable resources.

**I**N FEBRUARY 2019, the UAE Ministry of Climate Change and Environment (MOCCA) issued the Ministerial Resolution No. 21 of 2019 on the use of recycled aggregates from construction and demolition (C&D) waste for road construction and other infrastructure projects carried out by the public and private sectors in the UAE. MOCCA developed the document in coordination with the Ministry of Infrastructure Development and the municipal authorities.

The resolution outlines environmental prerequisites for recycling cement, concrete, steel, bricks, gravel, sand, asphalt, timber, and gypsum waste into new high-value materials. The decree mandates concerned local departments to ensure that contractors collect and sort waste generated at C&D sites.

Depending on their size, the recycled materials can be used for paving roads, grading dirt roads and parking areas, or earth filling at construction sites.

The aggregates must undergo quality testing in laboratories to verify their compliance with UAE standards as well as LEED and BREEAM certification requirements. Under the resolution, government and private contractors can meet up to 40 per cent of their material requirements from recycled aggregates.

Recycling C&D waste supports a smooth transition to the circular economy and increases the efficiency of waste management, while easing the pressure on landfills.

According to Statistics Centre – Abu Dhabi (SCAD) data during the period of 2009-2015, the C&D sector was identified as one of the largest waste generator in the emirate. C&D waste collection and transportation is,

to a large extent, performed by construction firms themselves or private sector service providers.

As part of its efforts to support Abu Dhabi's mandate of diverting 75 per cent of waste from landfills, Abu Dhabi Waste Management Center (Tadweer), in 2018, opened a new facility to recycle construction and demolition waste in Ghayathi in Al Dhafra region of Abu Dhabi.

## Recycling C&D waste increases the efficiency of waste management, while easing the pressure on landfills.

Located near the Ruwais oilfields and the UAE-Saudi Arabia border, the new facility will help ease the pressure on Al Dhafra landfill, which is anticipated to receive incoming construction and demolition waste in the range of 60,000 to 70,000 tonnes per month with an average daily inflow of 1,500 to 2,000 tonnes.

With a minimum production capacity of 31,000 tonnes per month and 150 to 200 tonnes

per hour, the new facility recycles construction and demolition waste and provides recycled aggregate for the construction of roads and other infrastructure projects.

Dr Salem Al Kaabi, acting general manager of Tadweer, said, "Given the construction boom witnessed by Abu Dhabi over the past several years, it is important to continue our efforts to divert waste from landfills and encourage recycling. This becomes even more imperative with C&D waste accounting for a large proportion of solid waste in the emirate. In addition to complying with the latest global practices in waste treatment, the new facility is fitted with state-of-the-art systems and technologies that allow Tadweer to recycle larger volumes of construction and demolition waste in future."

The new facility seeks to support the Abu Dhabi Executive Council's resolution of utilising a minimum quantity of 40 per cent recycled material, if available, in road and construction projects. Recycling of C&D waste also helps conserve natural resources through reduced reliance on virgin aggregate, which, in turn, cuts transportation costs and CO2 emissions.

Out of total solid wastes generated in the UAE, the C&D wastes account for 70 per cent of the total weight. ■

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# Renewables will 'outdo' fossil fuels by 2040

A new BP report revealed that in the Evolving Transition (ET) scenario, carbon emissions continue to rise, signalling the need for a comprehensive set of policy measures to achieve 'less carbon'.



Photo Credit: anatoly\_gleb/Adobe Stock

**R**ENEWABLE ENERGY IS set to become the main source of power by 2040. It is already the fastest growing source of energy, contributing half of the growth in global energy supplies, the latest BP Energy Outlook 2019 edition has revealed.

Both wind and solar power grow rapidly – increasing by a factor of five and 10 respectively – accounting for broadly similar increments to global power. This rapid growth is aided by continuing pronounced falls in the costs of wind and solar power as they move down their learning curves.

According to the report, historically it has taken many decades for new fuels to penetrate the energy system. For example,

it took almost 45 years for the share of oil to increase from one per cent of world energy to 10 per cent in late 1800/early 1900. For natural gas, it took more than 50 years from the beginning of the 20th century. In the ET scenario, the share of renewables in world energy increases from one to 10 per cent in around 25 years. This is far quicker than any fuel that has ever penetrated the energy system in history.

Bob Dudley, BP's group chief executive said, "One of the biggest challenges of our time is a dual one: the need to meet rising energy demand while at the same time reducing carbon emissions.

The emissions-reduction side of this dual challenge will mean shifting to a lower-

carbon energy system, as the world seeks to move to a pathway consistent with meeting the climate goals outlined in the Paris Agreement. Much more progress and change is needed on several fronts if the world is to have any chance of moving on to such a pathway."

Home to more than half of the world's proven crude oil reserves, investment in renewable energy is picking up across the Middle East. The region's population growth and economic development have led to an increase in overall energy needs. "Primary energy demand in the region is expected to continue to rise at an annual rate of 1.9 per cent through 2035," according to the World Bank.

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The Middle East's largest economy Saudi Arabia plans to create 'a global hub of renewable energy capability' over the coming decades, producing upward of 200 GW of power. This was announced by the kingdom's energy minister Khalid al-Falih in January on the sidelines of Abu Dhabi Sustainability Week this year.

At the same time, IRENA director-general emeritus Adnan Z. Amin, added, "The GCC is among the most attractive regions in the world to develop large-scale solar and wind energy projects as a result of resource abundance and a favourable policy environment, a fact that is backed up by record low prices."

"As a fossil-fuel exporting region, the GCC's decisive move towards a renewable energy future is a signal to global investors and to the energy community that we are experiencing a step-change in global energy dynamics and a true energy transformation."

The BP report also pointed out that the buildings account for more than a third of global energy growth, driven by increased power demand in the developing world. Citing the Middle East as one of the power-hungry regions, the vast majority of the growth in energy used in buildings is provided by electricity, reflecting greater use of lighting and electrical appliances and the increasing demand for space cooling in much of the developing world (Asia, Africa and the Middle East) as living standards increase. In the ET scenario, energy used in buildings grows (1.5 per cent p.a.) more strongly than in industry or transport, with its share of overall energy consumption edging up to around a third by 2040.

In the UAE, the Emirates Green Building Council (EmiratesGBC), an independent forum aimed at conserving the environment by strengthening and promoting green

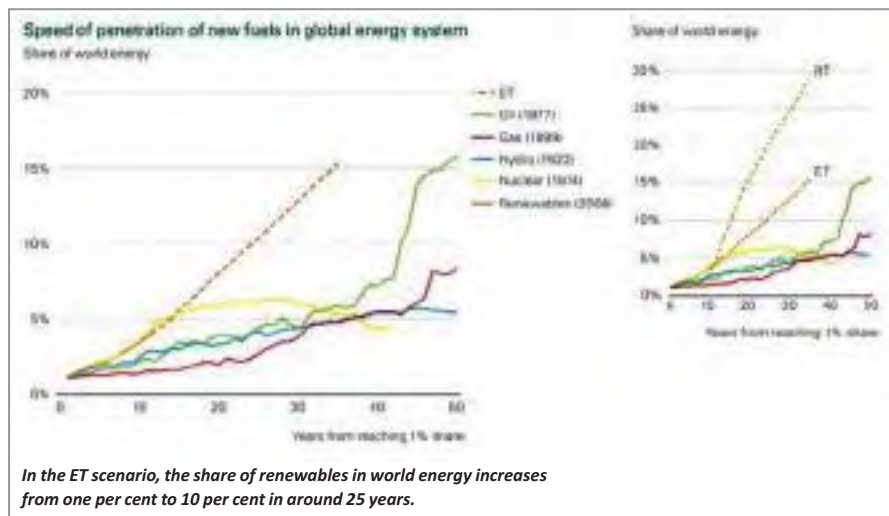


Photo Credit: BP

building practices, signed a memorandum of understanding (MOU) with the International Living Future Institute (ILFI).

Under the MOU, ILFI and EmiratesGBC will partner on the development of ILFI's Zero Energy (ZE) and Zero Carbon (ZC) certifications that will be adapted for the UAE market and launched during the Living Future unConference in 2019. ILFI and EmiratesGBC will also raise awareness around the ZE and ZC certificates among industry stakeholders, and the council will act as the exclusive auditor of the two certifications in the UAE.

Globally, almost 40 per cent of energy related greenhouse emissions come from buildings, with 28 per cent generated by a building's operation, which calls for the building and construction sector to play a key role in achieving large scale emission reduction.

Moving on from building to transportation, despite increasing penetration of alternative fuels, particularly electricity and natural gas, the transport

sector continues to be dominated by oil. However, non-oil energy sources account for over half of the increase of energy used in transport. "Natural gas, electricity and biofuels together will account for more than half of the increase in energy used in transport, with each providing around five per cent of transport demand by 2040."

The report stated that electric vehicles (EVs) continue to grow rapidly, concentrated within passenger cars, light-duty trucks (LDTs) and public buses. In the ET scenario, the number of electric vehicles will be around 350mn by 2040, of which around 300mn would be passenger cars. This is equivalent to around 15 per cent of all cars and 12 per cent of LDTs.

According to a recent survey conducted by the Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW), Tesla accounts for the largest number of newly registered vehicles, nearly 234,000, followed by the Chinese brands BYD and BAIC. As part of its objective to create the world's largest fleet of all-electric and self-driving taxis and limousines by 2020, the UAE's Roads and Transport Authority (RTA) purchased 200 vehicles from Tesla. The first of the deliveries took place in September 2017.

A further substantial reduction in net CO<sub>2</sub> emissions from energy use beyond 2040 would likely require further improvements and changes across a number of fronts.

A key development would be an (almost) complete decarbonisation of the power sector, together with greater electrification of end-use activities. Decarbonisation of the power sector would require more renewables – supported by improvements in energy storage and demand-side-response to ease the issues associated with intermittency – plus more carbon capture, utilisation and storage (CCUS) in conjunction with natural gas and coal. ■

Photo Credit: WFFS



The sustainable cars from Electric Vehicle Road Trip Middle East at The Sustainable City, Dubai, in January 2019.



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# 'Awareness is the first step towards sustainability'

Taqeef CEO Tariq Al Ghussein in conversation with *Rhonita Patnaik* about why achieving a zero carbon environment is not the responsibility of the UAE government alone.

**L**AST SUMMER, CLIMATE change was on everyone's mind when a new record for the hottest overnight temperature of 42.6°C was recorded in Oman. While that might seem like good news to an air-conditioning (AC) supplier – the predicted two to five degree Celsius global temperature rise by the end of the century is a worrying statistic. In our region, comfort cooling is a necessity and not just a luxury. Extreme heat will become more prevalent in many parts of the world due to the effects of global warming as well as the rising global population. However, HVAC systems can account for up to 70 per cent of electricity consumption during peak loads, which presents the AC industry with a big challenge. Can we provide advanced cooling solutions that are less harmful to the environment?

The UAE has always recognised the significant role played by standards and the importance of setting them, especially as it establishes itself as a global trade hub across multiple sectors. And it comes as no surprise that 'sustainability' is a sub-theme for Dubai's Expo 2020. The nation's determination to achieve efficiency and create a happy environment has never been stronger.

We welcomed the Dubai Clean Energy Strategy, which was launched by the Government in 2015, aiming to produce 75 per cent of its energy requirements from

**“Technology advancements mean there are cheaper and more efficient ways to keep our buildings comfortable and humidity-free throughout the summer. We need to change our habits and look at smarter, more thoughtful ways to control our energy usage.”**



Taqeef CEO  
Tariq Al Ghussein.

Photo Credit: Taqeef/Kange Studio

clean sources by 2050 and to make Dubai a global centre of clean energy and a green economy.

Following this, Emirates Authority for Standardisation and Metrology (ESMA) recently announced that the UAE is currently developing a regional regulation for AC systems focused on energy consumption in GCC countries.

We also saw efforts from DEWA last year when the company invested US\$114.3mn in electricity projects to support Expo 2020 Dubai, with a considerable portion of that to reduce HVAC's energy consumption. As a result, we expect a heightened awareness with an increase in investment in renewable technologies as well as sustainable practices in the coming years.

As HVAC represents the majority of a building's energy consumption, enhancing the design and efficiency of future systems is crucial in increasing building sustainability and reducing environmental impact. That's why sustainability legislation plays a vital role in motivating businesses in the HVAC industry to align their own strategies with green initiatives and meet required specifications to reach the standards set.

Concept designs should address the issue of HVAC from the outset to ensure the most efficient and effective solutions are put

forward. Boundaries are constantly being pushed when it comes to innovation and the technology available in today's market – it's transforming the way that buildings and infrastructure are operated and designed from the outset. Smart technologies including real time self-adjusting devices, implementing WiFi connections and smart thermostats mean that HVAC systems can play a large part in increasing energy efficiency and cost saving.

At Taqeef, we're committed to driving the environmental agenda in the region through innovation, investment and even educating potential engineers of the future. We only partner with companies that are as equally committed as us to drive the green agenda – that means suppliers and brands whose eco-friendly philosophy is evident in all aspects of their business.

The new and affordable technologies we bring to the region also contribute towards energy savings. The Nest Learning Thermostat, for example, can intuitively figure out exactly what cooling a space needs, saving up to 60 per cent on energy usage, therefore resulting in reduced costs for the bill payer.

Education is also vital to meeting the government's ambitions. It's important that contractors, consultants, managers and installers are knowledgeable about the latest developments as cooling solutions advances. It's also important that



*Photo Credit: Kange Studio/ Adobe Stock*  
**Concept designs should address the issue of HVAC from the outset to ensure the most efficient and effective solutions are put forward.**

consumers are aware of the impact of their AC so they can make informed buying choices. We're playing our part in driving awareness about sustainability and the environmental impact of the products we retail, through training and research. We regularly host professional VRF seminars to showcase the benefits of greener, cleaner technology in meeting the region's ambitious sustainability targets in building and retrofit. We also recently commissioned

our first YouGov consumer survey on AC usage habits in the region and are using this consumer insight to champion efficiencies.

We work closely with ESMA and Abu Dhabi Quality and Conforming Council (QCC) to help develop industry standards for labelling across the AC appliance sector in the region. In fact, in November 2018, we were recognised as one of the top 20 suppliers in the market by QCC. Taqeef's products meet the new labelling standards with energy consumption levels and environmental 'star' ratings visibly displayed and our entire range is compliant with the region's new building regulations.

The award is testament to our commitment to bring the best and most efficient products to the market and as we settle into 2019, we continue to aim high with a drive to achieve the region's first full five-star energy rated product portfolio. ■

**“We're playing our part in driving awareness about sustainability and the environmental impact of the products we retail, through training and research.”**

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# Farnek receives Middle East's first global green cleaning standard



Photo Credit: Farnek

The Farnek team headed by CEO Markus Oberlin (third from right) in Dubai.

**T**HE UAE-BASED TECHNOLOGY and sustainability-driven facilities management (FM) company Farnek has achieved ISSA Cleaning Industry Management Standard Green Building (CIMS-GB) certification, with honours, which is awarded for a two-year term.

A leading trade association for the cleaning industry, ISSA's CIMS-GB is a comprehensive programme that raises the level of commitment for the delivery of environmentally-friendly services. Farnek had to demonstrate its compliance with the six core principles of the standard: quality systems; service delivery; human resources; health, safety, and environmental stewardship; and management commitment.

Commenting on the award, Markus Oberlin, CEO, Farnek, said, "Having undergone a comprehensive assessment of our operation to deliver green cleaning services, Farnek is now the first company in the UAE to be certified by ISSA, inline with the CIMS-GB standard.

"This award underscores our

professionalism and adds credibility to our position as a sustainable leader in the Middle East's FM sector, while also giving us a distinct competitive advantage in future bidding processes. It is also proof that we are once again raising the bar by implementing a structured and international standardised approach to green cleaning."

The standard is also tailored to provide Farnek's customers with precisely what they need to secure points under the leadership in energy and environmental design (LEED) for existing buildings; operations and maintenance (LEED EB: O&M) green building rating system.

"LEED aims to encourage and support building owners and operators to become more environmentally responsible and use resources efficiently. As such, CIMS-GB certification demonstrates our capability to assist our clients to help achieve LEED EB: O&M points offer them partnership assurance or simply support as a CIMS-GB certified cleaning service provider," added Oberlin.

To comply, Farnek has also met various

criteria with the focus on sustainable cleaning practices. This included implementation of a green cleaning policy, resource conservation plans, environmental impact analysis of its operating procedures and enhanced staff training programmes for green cleaning.

Julian Khalil, director, Soft FM, Farnek, added, "Every aspect of our cleaning practice was assessed. This included ensuring that at least 60 per cent of the purchase value for our materials is spent on eco-friendly products. We redeveloped the entire supply chain across all product types, such as chemicals, equipment, machines, trash bags and janitorial paper products, soap and air fresheners in order to ensure compliance."

The certification also makes it easier for Farnek's potential customers, to find a contractor that understands the value of sustainability and one prepared to deliver professional services. In addition, Farnek will also be able to reduce costs and pass those savings on to its customers, while also ensuring a sustainable business model. ■

## Tafawuq Facility Management wins Abu Dhabi World Trade Center contract

TAFAWUQ FACILITY MANAGEMENT, a subsidiary of the UAE-based Eltizam Asset Management Group, has been awarded a significant facilities management services contract by the World Trade Center Abu Dhabi for a period of three years initially.

Under the terms of the agreement, Tafawuq's scope of work will include provision of permanent staff in specific locations; implementation of international cleaning standards as per BICS; disruptive cleaning; routine cleaning/housekeeping; periodic cleaning; reactive cleaning; graffiti and stain removal; cleaning of external areas; cleaning of exterior building fabric; window/glass cleaning; equipment and consumables; cleaning audits; zoning of premises; waste management; landscaping, irrigation and internal planting; high level cleaning of windows, roofs, façades and pest control.

Chris Roberts, CEO at Eltizam Asset Management Group, said, "Winning



Photo Credit: Tafawuq Facility Management

Eltizam Asset Management Group CEO Chris Roberts.

projects such as the World Trade Center Abu Dhabi reflects the success of our strategic roadmap for business growth and expansion in the region. By adhering to the highest international standards in FM, constantly training our employees and by conducting regular quality inspections of our sites and work places, Tafawuq aims to set the benchmark for quality and safety in the GCC facilities management sector. Designed to preserve and enhance the value of our clients' assets, our services provide the best facilities management outcomes, without disrupting the day-to-day activities at these sites. We look forward to announcing more such partnerships in the future."

Tafawuq Facility Management offers tailored solutions for communities, residential and commercial towers, individual homeowners, retail space, ports and aviation, IT and data centres and healthcare; and services more than 200 clients and 10mn sq ft of real estate.

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Photo Credit: AkzoNobel

*Specialty repair materials and cementitious coatings can help restore the original design life of water assets while ensuring optimal water quality and environmental sustainability.*

# The perfect cover-up

Protective coatings specialist AkzoNobel experts explain how and why new technologies can improve asset profitability.

**A**S THE WATER industry continues to navigate the challenges of managing environmental impact, meeting budget targets, maintaining assets and adhering to regulatory standards, a number of water companies are shifting their business focus from operations to the maintenance of water assets in order to achieve greater productivity and profitability.

In January 2019, AkzoNobel announced that it is expanding its international range with additional coatings and mortars for the repair and remediation of concrete. Following AkzoNobel's acquisition of Flexcrete Technologies Ltd in June 2017, the full range of advanced cementitious coatings is being made available as part of the Intercrete series.

## Essentials of maintenance and repair

From service reservoirs and desalination plants in the water supply process to storm water tanks and support chambers in wastewater treatment, most water-retaining structures are constructed from reinforced concrete. Regular maintenance and repair of these structures is vital, as chemical and mechanical influences can severely degrade concrete over time and cause interruption to water transmission, poor water quality and compromised structural integrity.

Specialty repair materials and cementitious coatings can help restore the original design life of water assets while ensuring optimal water quality and environmental sustainability. With many product options available, owners should make their selections based on a manufacturer's test data and proven in-service track

records backed by independent approvals, along with the expertise of technical staff who can recommend appropriate systems that provide a convenient and compliant, single-source solution.

## Impact on environment

Maintaining environmental sustainability is critical and engineered mortars and cementitious coatings such as water-based, ultra-low-odour and solvent-free formulas can make all the difference – even when facilities must remain in operation during installation. Cementitious polymer-modified coatings and mortars, which provide rapid cure and faster return to service, are also ideal for direct application to prepared surfaces.

## Reinforced concrete deterioration

Deterioration is caused by a number of chemical and physical influences, such as attack from soft water. Intercrete technologies, developed by AkzoNobel, incorporate materials like pozzolans and microsilica to boost resistance to soft-water attack. Adding polymers to select formulas also enhances the protective film on surfaces, offering additional chemical and physical resistance.

Following are types of damage and the products that address them. Intercrete 4841, a two-component water-based cementitious modified polymer coating, can be used in precast and in-situ structures to form a hard, highly alkaline barrier that protects concrete from aggressive acid gases, moisture and chlorides – while increasing asset lifecycles by up to 29 years.

### Water ingress

Water seepage that occurs through construction joints and cracks can lead to leaching, corrosion, chemical attack, freeze/thaw damage and, ultimately, leakage of fluids either into or out of a facility.

The certified Intercrete 4872 bandage system is solvent-free with 600 per cent elongation and achieves excellent bond when anchored directly onto an environmentally friendly cementitious coating.

### Chemical attack

Erosion to concrete is a problem in sewerage systems. While normal domestic sewage is slightly alkaline and doesn't attack concrete directly, the real culprit behind erosion is bacteria-causing sulphuric acids that proliferate as changes to sewage occur.

**In January 2019, AkzoNobel announced that it is expanding its international range with additional coatings and mortars for the repair and remediation of concrete.**

Intercrete 4840 is a two-component, water-based coating that harnesses thermoplastic polymers and epoxy resins to create a tough, protective barrier to chemical and abrasion attack. The coating can be applied without a primer and is ideal for use in digester tanks where severe conditions are common.

### Physical damage


Physical damage and substrate cracks can greatly affect the structural integrity and durability of concrete. Intercrete 4802 fast-cure repair mortar, based on a micro-fine Portland cement modified with sulpho-aluminate, has been successfully used for chemical and abrasion resistance and rapid return to service.

### Carbonation attack

Carbonation breaks down the alkaline environment surrounding steel reinforcement and creates a problem for untreated concrete exposed to weather. High-performance decorative coatings such as Intercrete 4890, are a cost-effective solution for protection against carbon dioxide, with a service life in excess of 10 years before the first major maintenance.


The industry shift toward asset maintenance versus new construction is important to growing productivity and profitability.


With the support of reputable coatings suppliers, investments in advanced, cost-effective coating technologies can help water companies protect water assets, while extending service life and increasing competitiveness. ■




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# Changing dynamics

The region's leading energy event takes place from 5-7 March at Dubai World Trade Centre. Claudia Konieczna, exhibition director at Informa Industrial Group, talks about the rapid growth of renewables and the adoption of digitalisation across the region and the globe.

**Technical Review Middle East (TRME): Can you comment on the futuristic outlook for renewable energy market in the GCC?**

**Claudia Konieczna (CK):** With the fluctuating oil prices in recent years, the renewable energy market in the GCC is primed for rapid growth and is expected to play a critical role in the region's ongoing diversification plans.

Amid rising population figures and increased urbanisation, the GCC will require power infrastructure investment totalling US\$109bn over the next five years, according to the *MENA Power Industry Outlook Report*. With the widespread adoption of renewables, the regional market is a lucrative option for power generation capacity, which reached US\$2.1bn in 2018 and is forecasted to hit US\$25bn by 2022.

GCC governments are now prioritising renewables and the UAE is leading the way

**Being highly oil dependent economies, the GCC countries have been strongly impacted by the recent oil price drop.**

thanks to mega projects such as the Mohammed Bin Rashid Al Maktoum Solar Park in Dubai, which is worth an estimated US\$968mn, and the 1.2 GW Adwea Sweihan plant in Abu Dhabi, which has been labelled the world's largest solar power plant. As part of its 'Energy Strategy 2050', the UAE has a bold objective to generate 44 per cent of its electricity needs from renewables by the middle of the century.

**TRME: What are the core sub-sectors in the power industry that the industry needs to focus on in the region?**

**CK:** Given the unprecedented demand for power in the region the industry requires innovation and new solutions across all sectors, and the Middle East Electricity (MEE) will provide a unique platform for power players, large and small, new starters and established leaders to demonstrate game-changing, across-the-board opportunities throughout the show's five focused sectors: power generation; transmission and distribution; lighting; solar and energy storage and management.

Smart grids will have a crucial role to play in the future of energy infrastructure, diversification and conservation.

In tandem, energy storage and management will have an important role to play in helping to drive smart grid adoption and ease government concerns on who to consistently meet the growing demand for reliable, on-demand power, with new effective storage solutions a major focus.

Such is the overwhelming global interest



*Claudia Konieczna is the exhibition director at Informa Industrial Group.*

Photo Credit: Informa

in energy storage and management, MEE 2019, which runs from 5-7 March at Dubai World Trade Centre (DWTC) will launch a dedicated technical seminar addressing solar and energy storage and management solutions – the latest addition to the show's powerful Knowledge Programme.

**TRME: What role can the T&D sector play in optimising energy efficiency?**

**CK:** Research from the Arab Petroleum Investments Corporation (APICORP) states regional power suppliers will require US\$34bn for transmission and distribution over the next five years. With such demand, there are a range of opportunities available for innovation in the sector. Automation is going to be key, specifically in solutions that require limited supervision and can control power loss and reduce emissions. These advanced solutions will result in energy efficiency. While all sectors across the power industry will undoubtedly have to embrace technology, T&D is one such sector that can significantly benefit from digitisation to help drive a smarter more sustainable future for energy.





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**TRME: How important is the role of a platform like MEE to further push the sustainability agenda in the GCC region?**

**CK:** As the world's leading power event, MEE brings together global industry leaders and major disruptors to focus attention on the key industry developments which are changing the entire face of the power industry across the Middle East and North Africa.

**T&D is one sector that can significantly benefit from digitisation to help drive a smarter more sustainable future for energy.**

"MEE takes the form of five dedicated shows within a combined mega-exhibition, with solar power having its own dedicated segment due to its high potential. Solar at MEE is the largest gathering of this specialised sector's professionals in the Middle East and Africa, offering the most effective trade focused platform to international manufacturers and distributors looking to meet regional buyers and driving the agenda for sustainability.

Solar will also feature heavily in the comprehensive knowledge programme



Photo Credit: Informa

*The impact of augmented and virtual reality is extensive in the energy industry because the equipment helps users control and navigate their actions in a simulated environment and allow them to make accurate decisions.*

Informa Exhibitions is mounting to coincide with MEE, including the much-anticipated Intersolar Conference.

**TRME: Are there any new additions to the MEE 2019 edition?**

**CK:** The MEE will represent the biggest regional industry gathering in the event's history, which now spans four decades with all aspects of the industry in focus and some of the biggest names in the power sector participating.

The exhibition will host a range of technological breakthroughs, while a comprehensive knowledge programme will

coincide with the show, including the much-anticipated, and CPD accredited, Power Generation O&M Conference.

Topics already listed for discussion include: Digital retrofits for improved power plant efficiencies, value-based maintenance, and redefining power plant performance using cloud-based analytics.

The show will also offer a diverse range of professional education and training opportunities where attendees will be able to learn about the latest technologies at exhibitor-led technical seminars.

Furthermore, a pioneering one-day conference focusing on IoT lighting, the first of its kind in the region, will be part of the expansive knowledge programme at the show. The conference will explore how smart lighting solutions, driven by the emergence of the Internet of Things (IoT), are on the way to the region as governments and municipalities across the Middle East pursue smart city goals.

The conference will take place on day one of the MEE with experts from the Middle East, South America, Europe, India and the USA probing the potential for leveraging IoT within the lighting sector and its ability to transform lifestyles.

We are also hosting a VIP Trade Mission Programme this year. Around 100 representatives comprising of influential ministers, buyers and business leaders from across the Middle East, Africa and Asia will be attending the event with a proven business to be conducted in the region. ■



Photo Credit: Informa

*Middle East Electricity is evolving in line with the regional industry, which is now one of the world's most vibrant.*

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# Perkins powers engines with Stage V standards

Machines for construction, agriculture, materials handling, industrial use and generators will be within the scope of these new standards.



Photo Credit: Perkins

**P**ERKINS IS OFFERING a complete range of EU Stage V engines designed to deliver efficient and reliable power for the European mobile generator set market.

The full engine range will cover Perkins 0.5-18L products, deliver a powerful 4-560 kVA and is designed to ideally suit a range of mobile electric power (EP) applications including light towers and rental equipment.

The first Perkins Stage V engines will be available early this year, with further products being rolled out over the next two years in line with the phased introduction of EU emission standards for mobile generator sets. The range is being built in Peterborough, UK; Seguin, Texas, USA; and Wuxi, China.

Jaz Gill, vice-president of global sales, marketing, service and parts at Perkins said, "As a leading engine provider in the EP market, we have the deep expertise and flexibility to meet individual customer requirements, ensuring our customers get the value and performance they need from their engine choice.

"We have made a significant investment across our Stage V engine range to provide power-dense and efficient engines, ensuring

low consumption of diesel exhaust fluid (DEF). Our extensive experience with the aftertreatment technologies that these engines require means customers can be confident they are selecting a reliable and efficient solution, which is simple to maintain while meeting the latest emissions standards."

Karan Ohri, EP product marketing manager, added, "The new Stage V emission standards, which apply to the European mobile generator set market, are a step change for a sector, which has been adhering to Stage IIIA standards for more than a decade. Generator set packagers have, therefore, had very limited exposure to the aftertreatment technologies, which must be fitted to the engines to ensure the new Stage V standards are met.

"At Perkins, we have been using these technologies for many years, and have the expertise to identify the best and most appropriate technology solution for each power node. Our collaborative approach means our engineering teams work closely with our customers to integrate the engine into their generator set to deliver optimum performance and ease of maintenance."

The latest generation of Perkins Stage V

EP engines have been designed to meet customers' key requirements regarding space constraints and simple, reliable and compact technology solutions with minimum connections.

Business development engineer James Reed, who works with customers to identify new ways to make their equipment ever more competitive, stated, "Our EP customers asked for compact and efficient aftertreatment systems to fit into a constrained space and ensure low DEF consumption, which is what we've delivered. They also requested a simple solution, so our engine mounted aftertreatment (EMAT) offers an easy way to install the engine in their generator set. It truly is a plug and play solution.

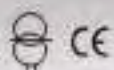
"Given where these generator sets are used, reliability is paramount. We have undertaken a significant research and development programme to optimise the system, ensuring we deliver the reliability our customers demand. We've used all these technologies for more than a decade, so it is proven, for example, that our diesel particulate filters can run on very light loads."

He continued that Perkins' product offering, collaborative approach and ongoing global service and support has already seen them win new EP business at Stage V. "We're focused on working closely with our EP customers to give them the best overall Stage V offering in the market place." ■

To know more, visit Perkins at Stand No: S1.C10

**Perkins' product offering, collaborative approach and ongoing global service and support has already seen them win new EP business at Stage V.**

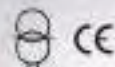
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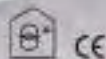
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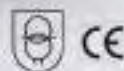
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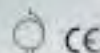
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# Evolving for a new generation

*FG Wilson engines are sourced from UK-based manufacturer Perkins, designed in the UK, and among the most modern and fuel-efficient engines available.*

*Photo Credit: FG Wilson*

Paul Creighton, managing director at FG Wilson, gives insights on the evolving nature of the genset business.

**“Thinking ahead, in countries where generator sets may be running for several hours a day, we can see solar panels, batteries, wind turbines and generator sets all linked and capable of powering settlements or customer applications.”**

**A** S A WAY of providing guaranteed electric power, generator sets have been around for a long time and the simple economics of securing reliable power supply mean that they are a strong consideration for many people.

FG Wilson has been manufacturing generator sets for more than 50 years, installing more than 640,000 worldwide since 1990. Paul Creighton is the newly-appointed managing director of FG Wilson, and with around 30 years of commercial and product background in the industry, he knows and understands the business very well: “When it comes to guaranteeing standby or emergency electrical power, in terms of cost, flexibility and responsiveness, for many people, the best option is a generator set.”

Diesel engines are the most common prime mover for generator sets and the reasons have always been practical: compared with other engines, they are economical to run, easier to service and maintain, fuel is safer to store and transport than petrol or gas and engines are durable. Because the engines operate at relatively

low RPM in power generation applications, they can expect a long working life, if well maintained, and in countries where usage is high, examples of generator sets with 30,000 operating hours are not uncommon.

The basic technology in a generator set today is well tried and tested: FG Wilson can point to a 70-year-old 50 kVA unit on display in one of their factories, which wouldn't look out of place at a customer site today. However, as Paul notes, “What has changed is the efficiency of the generator sets you see now. The 70-year-old 50kVA generator set is about the same size as a 250-300 kVA generator set today.”

That reduction in size, in other words the improvement in power density, means a corresponding reduction in both fuel consumption and in emissions from generator sets, with emissions further reduced by new engine technology. FG Wilson engines are sourced from UK-based manufacturer Perkins, designed in the UK, and among the most modern and fuel-efficient engines available. All meet or surpass standards wherever the engines are being used.

Rightly, there's a growing interest in renewable sources of energy. Paul remarks "We're seeing this in many applications where a generator set may be running for four or five hours a day and customers are seeking to reduce operating costs by adding a renewable element. We're working with some global telecoms networks and for one of them, we're supplying hybrid generator sets with solar panels as part of the package. Thinking ahead, in countries where generator sets may be running for several hours a day, we can see solar panels, batteries, wind turbines and generator sets all linked and capable of powering settlements or customer applications. In countries where the mains supply is more secure and power outages are less common, energy storage is starting to become an option for some users. These are usually domestic or other light users of electricity, who may have enough electrical energy stored to see through short outages. However, where you have a facility which requires substantial electric power, like a data centre or hospital, current renewable and energy storage technology is not well enough developed to be a commercially viable option for standby power. For guaranteed continuity of power, you still need a generator set, but that might exist along with some renewable energy sources, so you could end up with a slightly smaller generator set installed or perhaps run on

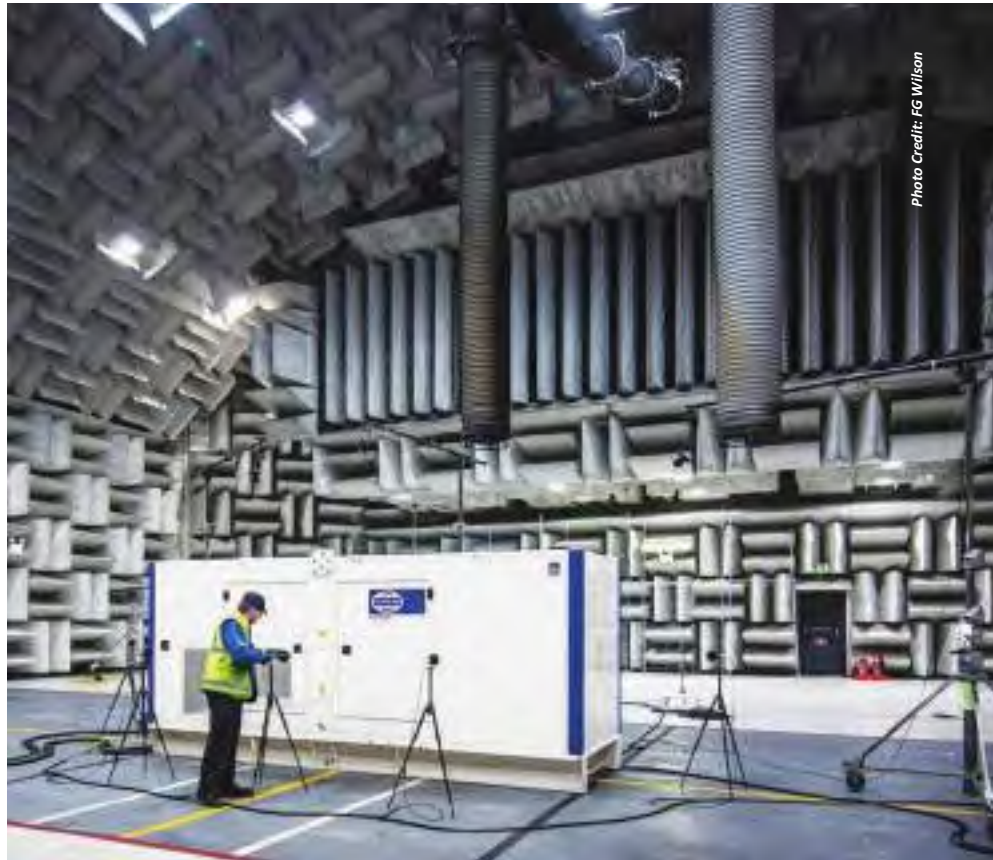


Photo Credit: FG Wilson

**Reliability in service is a big priority: every new FG Wilson design is thoroughly validated at the UK facility including 500 hours of testing at full load power rating, covering maximum cold load step and hot load step.**

batteries for a very short outage." For FG Wilson products today, the

watchwords which design engineers live by are customer operational efficiency and keeping customer operating costs low. That means long service intervals, up to 1,000 hours on some of the popular small models with fewer parts consumed and fewer maintenance calls.

Reliability in service is also a big priority: every new FG Wilson design is thoroughly validated at the UK facility including 500 hours of testing at full load power rating, covering maximum cold load step and hot load step and further testing for vibration, engine/alternator cooling, electromagnetic compatibility, noise, water ingress and rating/transient performance.

Coming from an engineering background, Paul sees this as especially important. "We're a volume manufacturer and we take reliability extremely seriously. We know that thorough upfront design, testing and validation all lead to superior reliability throughout a product's lifetime and that this can really save customers a substantial amount of money over time. If you add to this the wide and efficient FG Wilson dealer network with fast delivery of parts, it really does make a difference." ■

Stand No: S2.D10



*FG Wilson Genuine Parts are designed to complement the other components of a genset, optimising product performance, fuel efficiency and life span.*

Photo Credit: FG Wilson

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# Meet the heavyweight O&G specialist



Two Coelmo gensets for the oil refinery in Iraq.

The Made-In-Italy manufacturer continues to pursue the Middle East market with its customised equipment.

**C**OELMO HAS BEEN designing and manufacturing in Italy industrial and marine gensets from 3 to 3,000kVA since 1946, representing a unique model of engineering company and manufacturing excellence.

With three production plants located in Italy, an integrated management system for engineering and production, a wide distribution network and international after sales service, Coelmo manufactures gensets for different applications such as residential and commercial, telecommunications and oil and gas, military and humanitarian organisations, leisure and commercial marine, while supporting aftersales services in more than 36 countries in the world.

Coelmo constantly invests in industrial and technological R&D to combine reliability of traditional energy sources with innovative green technologies.

## Oil refinery in Iraq

One of the most recent Coelmo projects for the oil and gas sector consists of 21 gensets rated from 320 to 1,500kVA each at site condition, 380V three phase and 50Hz frequency, to be installed as emergency backup for oil processing plants in the oil refinery.

Each genset is equipped with a synchronisation control panel, the electrical engine start up is by electric 24V DC starter motor and Ni-Cd battery system, each system is rated for six times consecutive starts. The gensets are installed in IP55 containers suitable for aggressive environments with the fire detection systems in compliance with NFPA standards.

The gensets are suitable for unattended operation, automatic black-starting on external mains failure start signal or on detection of failure of the Mains supply and testing in synchronisation with the Mains.

## Two new lines for extreme weather

Coelmo has recently increased the production capacity by investing in a new 8,000 sqm plant in Acerra, Italy, including a new metal sheet cutting, bending and painting facility. The new production plant is highly automated plant with the aim of increasing efficiency reducing production times and costs.

Coelmo has designed two new product lines – GK and DK series – that will be showcased at the MEE to guarantee electrical continuity in areas where difficult climatic conditions arise.

The new lines, from 20 to 500kVA, have been designed to ensure reliability in desert areas and construction sites with temperatures exceeding 55°C and a strong presence of dust and sand (DK series).

Coelmo GK and DK series are made of galvanised steel with a special air filtration system with mechanical traps and anti-sand filters to guarantee a high IP rating (as optional). The large opening of the doors allows a quick and easy maintenance. The integrated fuel tank, with a capacity up to 1000L, allows great autonomy at full load. They are the best choice to meet the needs of EPC customers in Middle East and Africa.

With more than 70 years of experience and several projects successfully completed worldwide, Coelmo is also able to design and manufacture gensets also for ATEX Classified Area Zone 2 temperature class T3 or Class II division 2, either in enhanced safety and weatherproof enclosures according to EN 50019, or in pressurised enclosures according to EN 50016. ■

Stand No: S2.C39

Photo Credit: Coelmo



# Making strides in the Middle East

During the MEE show, Marelli Motori will showcase its state-of-the-art alternators and AVR's.

**M**ARELLI MOTORI RECENTLY announced that its alternators will grant 50MW emergency power to the new Al-Zour Refinery in Kuwait.

Two joint ventures led by Fluor and Hyundai have been selected for executing major EPC activities related to the construction of the new Al Zour Refinery, a new world-class grass roots refinery, designed to produce low sulfur fuel oil by processing up to 615,000 barrels of light and heavy crude oil per day.

The refinery is located 90km south of Kuwait City and, once completed in May 2019, it will be one of the largest refineries in the world.

In 2017, Intergen has won the contract to provide emergency power to the refinery through the installation of 22 diesel generator sets that will go into operation by the end of 2019. The complete system counts 20 x 3,000kVA and 2 x 1,000kVA gensets delivering a total of 50MW of emergency back-up power.

Intergen, well-known for its excellent reputation in complex oil and gas installations, have selected Marelli Motori for the supply of high voltage alternators.

Marelli Motori, a world-class alternator and electric motor manufacturer, is headquartered in Arzignano (Italy) with facilities, extended sales, distribution and service networks across four continents.

Marelli Motori is also officially listed in the Kuwait National Petroleum Company (KNPC) vendor list and can, therefore, bid and successfully win projects within the Middle East.

For the Al-Zour project, Marelli Motori has supplied MJHV 710 and MJHV 500 alternator models to pair with GE and Cummins engines, respectively.

Some of the key elements, which make Marelli Motori stand out in the energy business market, are the extensive experience in HV coil technology and an expert use of innovative and sophisticated software tools (Ansys) for



Marelli Motori's alternator is installed in the Al-Zour Refinery project in Kuwait.

Photo Credit: Marelli Motori

carrying out multiphysics simulations that guarantee a proven optimal design that best combines optimal structure integrity with cost reduction.

When using large frame products, vibrations from the diesel engine could strongly excite natural frequencies and harmonic responses of the system. Therefore the use of modal analysis through advanced R&D tools is crucial to make sure that the dynamic behaviour of the alternator is analysed and reliability of the machine is guaranteed according to the actual operating conditions. Structural and dynamic simulations ensure that the optimal design is achieved. In addition, thermo-fluid dynamic analysis also helps to increase the cooling efficiency and thermal exchange of the core components with the surroundings by optimising the air flow through the machine. This is a crucial aspect in air to air cooled machines like those designed for the Al-Zour project.

A very specific experience in designing and manufacturing high voltage electrical machines (6,600V) with form wound technology is a reference that very few players have and this Marelli Motori continues to develop with state-of-the-art

HV winding and impregnation equipment, coupled with a new automated department for coil manufacturing and insulation.

All the Al-Zour alternators also come fitted with anti-condensation heaters, tropicalisation treatment for resistance to temperatures up to 50°C, customised supports, separated terminal boxes for main phases, neutral point and auxiliaries to reduce vibrations, transformers for connecting to the customer's monitoring system and totally integrated lube oil systems.

"We rely on Marelli Motori as they always deliver high-end technology and experience to help maintain our leadership position in complex projects especially in oil and gas remote locations where clients require reliable equipment, technical support and continuous teamwork," says Enrico Ragni, sales area manager, gensets and power plants, Intergen SpA.

The Al-Zour refinery is operated by KIPIC, a subsidiary of the Kuwait Petroleum Corporation, and the contract has been awarded to FDH, a JV of Fluor in partnership with Daewoo Construction & Engineering and Hyundai Heavy Industries. ■

**Stand No: S2.D40**



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**JCB**  
**POWER PRODUCTS**

# John Deere's new range of drives support ME market

The power systems specialist offerings will be displayed during Middle East Electricity in Dubai.

**F**ROM 5-7 MARCH at the MEE 2019, John Deere Power Systems (JDPS) will showcase various power nodes from its updated range of non-regulated generator drive engines. The extended range provides OEMs greater freedom in machine design and end-users reliable engines at an optimised total cost of ownership.

## Updated non-certified engine range offers broad choice

A trusted partner for generator set OEMs worldwide, JDPS offers bare engines and power units for a wide range of applications. The updated range of non-certified engines now covers all recognised power nodes from 30 to 500kVA, with displacements of 2.9L through 13.6L.

New features include dual frequency (50Hz and 60Hz), longer maintenance intervals and single-side service access.

"We specifically revamped this range to meet our OEM customers' strategic and commercial requirements," said Sandrine Couason, manager, marketing services and sales engineering for Europe, Africa and the Middle East at JDPS.

Updating the range involved downsizing various power nodes, allowing generator set manufacturers to use smaller canopy sizes. The downsized engines deliver impressive power density in a compact design. This is true for the 60kVA node moving from a four-cylinder 4.5L to a three-cylinder 2.9L and the 120kVA, which was

downsized from six-cylinder/6.8L to four-cylinder/4.5L. Both engines will be on display at the MEE.

## Stage V-ready engines: Innovating to drive the EU market

JDPS's ongoing dedication to the generator set market is reflected in its advanced emissions technologies for previous tiers,

which provide a proven foundation for its Stage V-ready engines. The company's range of generator drive engines with ratings of 36 to more than 500kW meets worldwide emissions regulations while delivering quick-starting, clean-running, and fuel-efficient performance. OEM customers can rely on JDPS support as they move into the next emissions stage.

"Like the non-certified range, the Stage V-ready engines offer end-users reliable operation even in the most extreme conditions, long engine life and exceptional fuel economy," added Patrick Thil, manager OEM engine sales EAME, Asia and Australia. "OEMs benefit from design flexibility and low cost of operations, helping them to stay competitive," Thil mentioned.

The Stage V technologies used on these engines are built upon years of engine and application engineering expertise. As both an engine and machine manufacturer, John Deere boasts one billion hours of global experience with diesel particulate filter technologies.

Stage V aftertreatment technologies from John Deere are optimised for flexible integration and several offer reduced packaging and weight from previous Stage IV solutions. And because the technologies are built on the same engine platform as current Stage IV solutions, the need for OEMs to re-engineer due to hardware or mounting changes is reduced. ■

Stand S2.C30

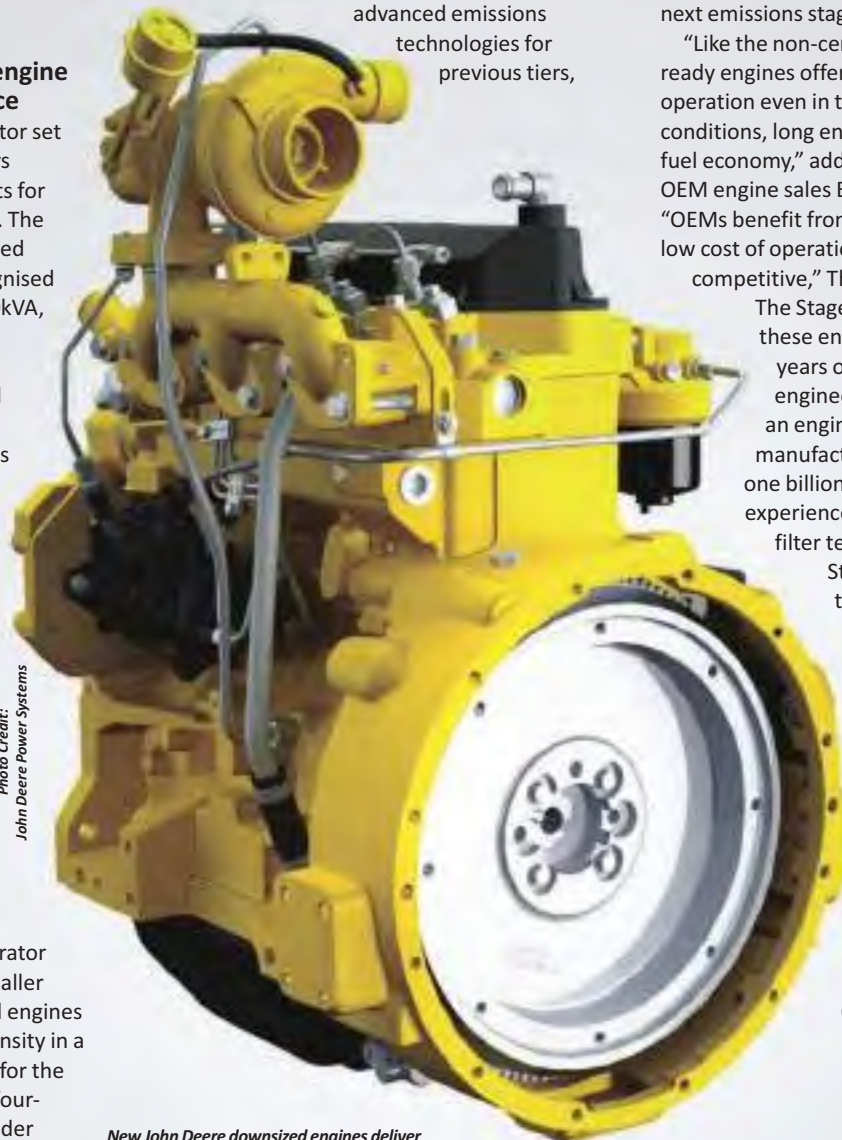


Photo Credit:  
John Deere Power Systems

New John Deere downsized engines deliver impressive power density in a compact design.

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# VX25: The ultimate System Perfection

**R**ITTAL MIDDLE EAST, a subsidiary of Rittal GmbH & Co. KG and one of the leading system suppliers for industrial enclosures, power distribution, climate control, IT infrastructure and software and services, will participate at MEE 2019 with its new and popular products.



Joseph Najjar, managing director, Rittal Middle East.

At its Innovations Stand, the key highlights of this year will be:

- VX25: The new large enclosure
- Power distribution (Ri4Power) solutions
- World's first 'Blue e+' cooling solutions

According to Joseph Najjar, managing director, Rittal Middle East, all the showcases elevate Rittal's promise that 'Everything is going to get Easier, Better and Faster'. "The visitors can experience the industrial and electrical portfolio including the new VX25 large enclosure. It is the first enclosure system that has been fully developed to meet the requirements for increased productivity in control and switchgear manufacturing and along the Industry 4.0 value chains. With the 'SYSTEM PERFECTION' slogan, Rittal promises a major innovative leap, which has been made possible by depth of experience and intensive customer dialogue. The VX25 offers the highest possible quality and consistency of data, reduced complexity and savings in time, as well as safe assembly. More than 25 registered property rights demonstrate the high level of innovation involved."

Other portfolio products at the event include the AE enclosures, CM enclosures, stainless steel product, EX enclosures, RiLine components complying to global standards and certifications along with Ri4Power (Form-4, Type Tested MCC's according to IEC 947), SE enclosures, cooling units with 'Blue e+' technology, and more.

Joseph also stressed that the MEE platform is a highly recognised platform worldwide and Rittal welcomes channel partners, consultants and end customers to witness the latest innovations on industrial and electrical products and network with its experts. ■

Stand No: H5.D10

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**Come and see us  
Stand S2.C30**



**JOHN DEERE**



*The HSK78 engine will be seen for the first time at MEE 2019 in Dubai.*

Photo Credit: Cummins

# Making a bold move

Cummins to debut latest technology in a new natural gas series of generators.

**O**N-SITE POWER PRODUCER Cummins Inc. will launch the HSK78G natural gas generator series during Middle East Electricity (MEE) at the Dubai World Trade Centre that will take place from 5-7 March 2019.

Fuelling the next generation of power, the series offers a total package of gas generator capabilities and innovative gas technology for prime and peaking power applications.

With a power density of up to 2MW from a 78L engine, the HSK78G generator series is designed to provide reliable power, regardless of the natural gas source or the climate, including extreme heat up to a blistering 55°C, ideal for the Middle East region, and extreme altitudes. This new technology represents a bold step into the gas arena for Cummins that pushes new levels of efficiency, transient performance and gas variation well beyond former natural gas generators.

Craig Wilkins, director of Cummins prime power segment and global sales support, said, "The HSK78G models are suitable for a diverse set of industries from mining and manufacturing to shopping malls and hospitals. The new generator series has been designed to push the boundaries of performance to extremes while achieving a low total cost of ownership. A high electrical efficiency of up to 44.2 per cent (50Hz) and

43.5 per cent (60Hz) is achieved on a wide range of pipeline natural gas down to 70 methane number (MN) without impacting power output and efficiency.

"In addition, the barrier-breaking fuel flexibility of the HSK78G enables the utilisation of low-cost, low-BTU and free fuel sources, that would otherwise be considered waste products, delivering robust power even with very aggressive fuels with minimal derating."

Alongside the physical HSK78 engine showcased on stand, an interactive touchscreen will be available, allowing visitors to explore the complete HSK78 generator model in 360-degree mode, while learning more about the key features and benefits of this new series.

To complement this display, visitors will be able to step into the HSK78G Experience Pod room, which will take them through a journey of different extreme and urban environments from blistering hot deserts to cityscape settings to highlight the extreme capability of the HSK78G series.

The C2250D5 cut-away generator set will also be at the stand, available at 2250kVA and powered by the heavy-duty Cummins diesel QSK60 HPI engine. This model delivers reliable power and fast response to load changes, making it an ideal choice for the commercial and industrial

and data centre markets.

The new 4BTAA3.3-G14 Coolpac generator set, the latest addition to the Cummins medium-duty B3.3 engine series. The Coolpac package performs well under severe duty cycle applications and has environmentally friendly exhaust emissions, 50°C cooling capability, low noise and high-power output per litre for best in class reliability.

Cummins is also displaying the digital master control (DMC) 8000 remote monitoring simulator, a fully automatic, distributed logic controller suitable for remote applications, making it easier for users to integrate and adapt their varying power needs. 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.

Alongside the DMC display, the Cummins load control module (LCM) will be showcased, a load management controller, regulating loads on standby generators to maximise their power potential via a smart and cost-effective package deal for the light commercial building industry. On stand visitors will be able to experience a simulation in real-time of how all system components are monitored. ■

**Stand No: S3.D30**



## INMESOL looks to make some noise with its 'noiseless' gensets

IN ITS EIGHTH year as an exhibitor at MEE, Spanish electric utility manufacturer INMESOL will present latest developments in its ultra silent gensets.

It is one of the most robust and silent generators in the market, according to INMESOL.



The ultra silent genset from INMESOL.

Equipped with a special canopy, they keep the width required to transport as many units as possible and optimise logistics. This new canopy has the capacity to house generators from 85kVA to 130kVA PRP.

The new design:

- Reduces noise emissions: Depending on the power of the group inside, the sound emissions measured at seven metres and 75 per cent of the load have been reduced from 60-64dB (A) to 50dB (A)
- Is more robust canopy and chassis
- Is equipped with four lifting hooks and channels for forklifts, which facilitate their handling for transfers
- Incorporates a double-walled metal fuel tank with large autonomy

Another focus of attention at the event would be the latest lighting tower developed by INMESOL – IT06.

This lighting tower with four LED spotlights is compact, stable, and at the same time, light; occupies very little volume when folded, and greatly facilitates the transportation of several units; can be connected to any available power source and be used both outdoors and indoors without the need to worry about gas or noise emissions. Also, several units can be connected in series and increase the number of lumens required by the application.

Stand No: S3.A45



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05 - 07 March 2019  
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Austrian pavilion, Hall 2, Booth No. B19

# Power-packed engines back Baudouin's success

The MEE Gold Sponsor will bring to the show in Dubai some of the toughest and reliable ranges for marine and power generation professionals.

**F**OR 100 YEARS, Baudouin has manufactured the highest quality engines for marine and power generation applications. In the hostile environment of a marine operator, reliability and durability are paramount, and Baudouin has been successfully serving this market since 1918.

It's from this marine heritage that Baudouin has a reputation for quality, flexibility and reliability.

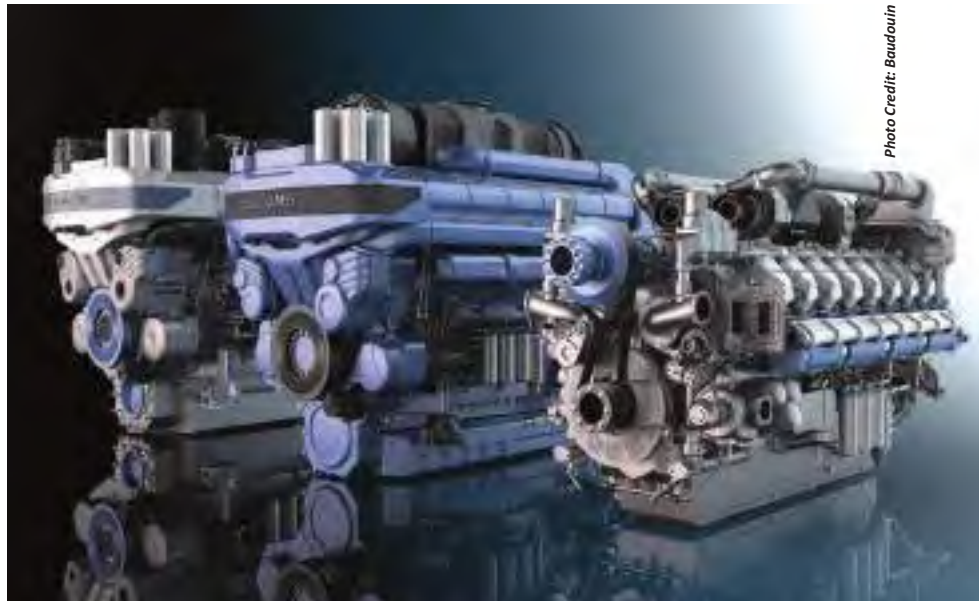
Today, Baudouin engines operate in some of the toughest environments around the world and it's why marine and power generation professionals trust Baudouin to stay up and running. Its combined expertise in research and development, precision manufacturing, superior quality and reliability, and expansive sales and service support, make Baudouin the ideal partner in the power generation industry.

## A wide range of power

"In 2018, we presented four new engines at Middle East Electricity, which extended our range up to 2,000kVA. Now, our PowerKit engines cover 18 to 3,125kVA – a range that few engine manufacturers can match. With R&D centres across the world, we are constantly developing new products and improving the range based on local customer and regulatory requirements," highlighted Fabrizio Mozzi, president of Moteurs Baudouin.

"Baudouin offers huge flexibility to customers with comprehensive power ratings as well as providing mechanical and common rail engines to suit the needs of our global customers," he maintained.

Every product includes 50°C radiators, heavy duty components, heaters and other options. The engines also have best-in-class single step load acceptance values, minimal derating at altitudes and provide transient response and operational stability allowing for unrivalled power quality. All of this, with the lowest fuel consumption and extended



*Baudouin's star at the show is the brand new 16M55 engine.*

mean time between overhauls.

From high altitudes to hot and dry climates, PowerKit engines are proving their durability and reliability in every environment.

With a Baudouin engine, one can be assured of certified European quality and excellent total cost of ownership. "We are so confident in our products that we deliver best-in-class warranties and warranty extensions for all PowerKit engines – two-years unlimited hours for prime power and four years 800 hours for standby power."

## Presenting 16M55 and industrial engines for agricultural applications

This year at MEE, Baudouin is exhibiting the power and diversity of its product range. The stars are the brand new 16M55 engine, delivering power from 3,000-3,750 kVA, and the new line of industrial engines for agricultural applications.

Visitors can also take a look at three strong performers in the 4M06, 6M21 and 12M26 engines.

"The 16M55 is the latest product in our range, delivering high power in a very compact package. It offers market leading power density, highly-efficient fuel consumption, and like every Baudouin product, long intervals between servicing. The 16M55 engine is optimised for critical protection and large power projects.

We are also launching a new range of industrial engines, showcasing the 4M11 engine coupled to a water pump. These variable speed engines are suited to agricultural applications due to their simple mechanical injection systems and their strong tolerance to fuel quality. With these new engines you can expect durability and excellent total cost of ownership backed by a best in class warranty. Baudouin will release eight engine platforms for this market in 2019," Mozzi added.

The PowerKit engines are available for global delivery within days, thanks to significant stock available in France. ■

**Stand No: S3.B40**

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**Nidec**  
All for dreams

*Product support remains a key selling point for JCB Power Products, with JCB's LiveLink telematics system supplied as an option on all gensets.*

Photo Credit: JCB

# Rapidly growing demand generates expansion

Genset manufacturer JCB will debut at this year's show and announce new launches for the Middle East region.

**J**CB POWER PRODUCTS will be participating for the first time at the Middle East Electricity (MEE) exhibition from 5-7 March.

Demand for power generators has been growing steadily throughout the Middle East, with JCB Power Products recording a 30 per cent increase in sales over the last three years. The company has been working closely with large contractors and rental companies such as rental solutions and services in the UAE who have, until now, received more than 700 JCB rental generators to build their business.

At the MEE, JCB will demonstrate its broad portfolio of products with generators from 8-2,750kVA alongside a range of lighting towers. JCB generators can be supplied with a variety of engines, including the JCB Dieselmax, to suit individual customer requirements. All customers will benefit from the same market-leading levels of support from JCB's 13 world-class power dealers in the territory; as well as support from the JCB Middle East office and parts distribution in Dubai and JCB's UK headquarters.

Adam Holland, managing director of JCB Power Products said, "The Middle East Electricity exhibition is a brilliant platform for JCB to meet many potential new customers from across the Middle East, as

**"We have some exciting new products to showcase to the region and we will be launching these at the stand."**

**Adam Holland,  
MD, JCB Power Products**

well as neighbouring regions.

"We have some exciting new products to showcase to the region and we will be launching these at the stand in March."

Holland added that as regulations for back-up power become more stringent, rental companies and contractors are looking to leading manufacturers like JCB to provide the next generation of both prime and emergency standby power generation equipment. There has been major expansion in the rental industry, to support growing infrastructure developments throughout the Middle East, along with an expansion in event support.

Adam Snelson, general sales manager,

also added, "Our flagship QS generator range has had fantastic success around the world, particularly in the Middle East and Africa. We've seen sets powered by the JCB four-cylinder and six-cylinder ranges, double in sales over the last two years.

"We continue to see repeat business from customers in many sectors who are choosing the QS models to supply the power for both prime and standby solutions. What sets this range apart is the robust and durable design and the JCB engine. Not only are these engines built to perform, our dealers are very familiar with the engine range, which makes service and support efficient, while spare parts are readily available through our many parts distribution centres."

Product support remains a key selling point for JCB Power Products, with JCB's LiveLink telematics system supplied as an option on all generators, allowing customers to remotely manage and monitor their power generation equipment.

Middle East Electricity brings together the world's leading manufacturers, global experts, governments, contractors and project managers to drive efficiency and cost-effective use of power generation equipment. ■

**Stand No: S2.C19**

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## BEAMA

H2.G13 & H2.G25

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www.beama.org.uk

Contact: Vera Pokoo

BEAMA represents and works with manufacturers of vital products, technologies and services that deliver a safe, reliable and smart end to end energy system. As an association, BEAMA represents manufacturers in the energy, power and electrical installation sectors, a UK industry with a turnover of £13 billion and employing 137,000 people.

## BG Electrical

H2.G18

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Email: zoe.nh@luceco.com  
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Contact: Zoe Newland Hodges

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## BPC Energy

H2.F16

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Contact: Emily Digweed

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H2.F29

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**IPEC Ltd****H2.F28**

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Contact: Mr Paul Brighton

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**PASS Ltd H2.G17**

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Email: [sales@p-and-b.com](mailto:sales@p-and-b.com)  
[www.p-and-b.com](http://www.p-and-b.com)

Contact: Danielle Pike

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Contact: Phil York

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Contact: Graham Gardner

REPL International Ltd are a global manufacturer of low and medium voltage cable joints and terminations. The company is headquartered in the UK with a worldwide sales presence and global manufacturing sites. We are one of the largest companies specialising in heat-shrink, cold-shrink, smart termination and push-on products.

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Contact: Carl Siviter

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Email: [salesdubai@scolmore.com](mailto:salesdubai@scolmore.com)  
[www.scolmoredubai.com](http://www.scolmoredubai.com)

Contact: Tim Piggott

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Email: [marketing@terasaki.co.uk](mailto:marketing@terasaki.co.uk)  
[www.terasaki.com](http://www.terasaki.com)

Contact: Jamie Halliday

(Europe) Ltd. was founded in 1972 in Scotland. We operate in over 50 countries worldwide with the help of our partners and branches. In Glasgow, we assemble, modify and test Terasaki high quality circuit breakers. We are present in all industries. Terasaki is the worldwide market leader for switchgear for marine systems.





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## New BAUR software simplifies condition-based monitoring

THE NEW BAUR Software 4 combines functions for cable testing and diagnostics that support both asset managers and engineers in their everyday duties on-site. It is suitable for cable testing (VLF truesinus, VLF square wave and DC voltage), cable sheath testing and diagnostics using the dissipation factor or partial discharge testing. The comprehensive measurement methods and new features of the BAUR Software 4 allows to further optimise the condition-based maintenance of cable networks.

### Cable condition evaluation based upon diagnostics philosophy

Operators have the choice of either using standardised diagnostics sequences or defining their own procedures for the various application cases and cable routes within the software. All measurement and evaluation parameters are thus stored at the start of a measurement and the engineer starts the measurement procedure with just a few clicks. This not only speeds up work in the field, but also gives rise to reproducible results regardless of the measurement equipment and the current operator. Moreover, the software produces evaluations even during the measurement cycles, and its new automated report functions simplify subsequent report preparation. Thanks to the new software functions, cable testing and diagnostics can now be performed even more quickly and reliably.



Photo Credit: Baur

### Better decision-making criteria for network expansion and maintenance

Thanks to standardised measurement cycles and the comparability of results, asset managers receive an objective condition evaluation of the cable network – condition-based maintenance. Measures can be prioritised and budgets used more cost effectively. Measured values obtained under the same conditions also permit the reliable evaluation of historic data for a trend analysis. This, in turn, provides empirical values that can be transferred to similar cable routes.

To know more, visit Stand No: H2.B19

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## French electricity sector experts at MEE 2019

TWENTY SEVEN FRENCH companies will be exhibiting at the 2019 edition of Middle East Electricity in Dubai.

According to Business France, the national agency supporting the international development of the French economy, the trade event is a springboard for companies looking to expand in the broader Middle East, sub Saharan Africa and South Asia.

Many opportunities exist in this very fast-growing market, driven by the staggering development in several sectors – retail distribution, transport, logistics, infrastructure and residential. With major international events such as the Expo 2020 Dubai to be hosted in the region and the return of major real estate projects announced by public contractors, French experts attending the show will have many opportunities to seize.

The exhibitors on site will cover the full range of the industry: equipment and applications for power generation transmission and distribution, protection and security products and systems, and lighting.

France is home to leading players recognised across the world, in each link of the value chain, whether electrical and telecom network operators, engineering companies, integrators, equipment manufacturers, component producers or ICT companies.

Some of the exhibitors include 3X ENGINEERING, ADDEV Materials, AEG Power Solutions, AOIP, ARC Informatique, Arras Maxeï France, AUD INNOV, Augier, CAHORS INTERNATIONAL, Chauvin Arnoux, CITEL 2CP, Delta Box, Enerdis, Ensto Novexia, GS Yuasa Battery France, INDUSTRIELLE DE CONTROLE ET D'EQUIPEMENT, Infosec Communication, JST transformateurs, MADE, METAL DEPLOYE RESISTOR, Michaud Export, NILED, Obsta, RS Isolsec, Saft, Sediver, Tecnor Middle East.

Hall 7

# Keep your SAS under control

**D**URING THE COMMISSIONING of substation automation systems (SAS) with protection, automation and control (PAC), traditionally the focus of testing is on the protection system and its settings.

Protection testing uses established methods such as parameter testing per IED or new approaches like system-based testing. Standardisation and proper testing tools dramatically increase the efficiency and reliability of protection testing.

When looking at the time spent during commissioning, testing the automation and communication system nowadays consumes even more time than testing the protection. Automation systems have become increasingly complex and the efforts for testing communication and the proper operation of all signals transmitted to Supervisory Control and Data Acquisition (SCADA) systems have grown dramatically.

A new and innovative approach, implemented in StationScout, offers a way out of this dilemma in all phases of the life cycle of modern SAS. By utilising the capabilities of the IEC 61850 engineering process and the data available in substation configuration description (SCD) files, it is possible to introduce new and more efficient methods for factory acceptance testing (FAT) and site acceptance testing (SAT). One of its essential functionalities is to simulate a SAS at any stage, for example to test the communication during the installation phase when some IEDs are not yet implemented.

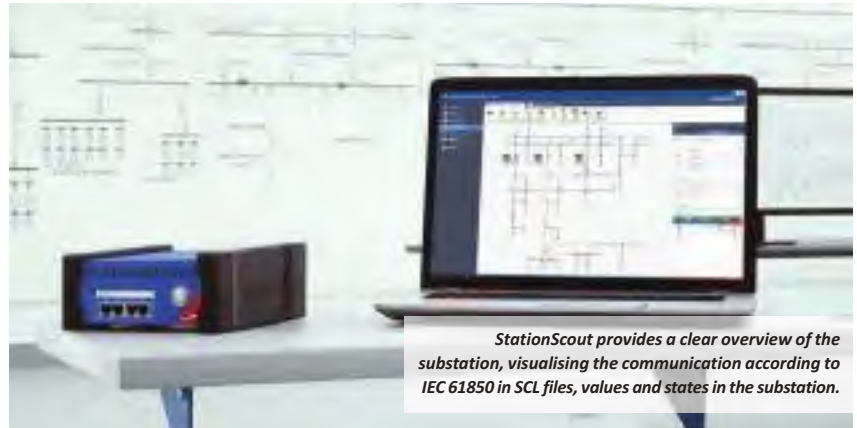
**With its powerful functions,  
StationScout is a specialist  
for the whole lifecycle of a SAS  
– from engineering to  
continuous maintenance.**

## System under test

Within a SAS, the messages are transferred from their source to all receivers. If any error occurs during this communication, the commissioning engineers need to follow the signal on its way through the SAS.

StationScout visualises the entire SAS using all the information available in the SCD file. This also covers the information in the substation section such as voltage level and bay, etc. Furthermore, it visualises all links and allows engineers to view how signals propagate through the SAS. To reduce complexity, filters focus the display on the relevant elements. Additionally, StationScout recognises the names of the respective elements in their data model, detects their purpose and visualises them accordingly. These names could be adapted, for instance, into the local language.

Cyber security is very important when connecting a universal software based test system, such as a laptop, directly to a SAS. That's why OMICRON has implemented a firewall system to the MBX1 that separates the testing system from the critical environment. This



*StationScout provides a clear overview of the substation, visualising the communication according to IEC 61850 in SCL files, values and states in the substation.*

Photo Credit: OMICRON

unique testing solution consists of software and hardware. While the software offers a toolbox for the different tasks, the use of a dedicated test set (MBX1) instead of just another PC software opens up a number of advantages to the test engineer. ■

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View of the outside of the backup power plant in the foreground with two fuel tanks (left), and the building housing the four generating sets (centre).

# KD Series powers new Ghana port

Photo Credit: MPS Tema, Do Do Graphix Media

The award-winning KOHLER-SDMO gensets are a part of the leading maritime hub project in West Africa.

**T**HE TEMA PORT in Ghana receives significant volumes of container traffic, particularly from neighbouring landlocked countries such as Burkina Faso or Mali. A project to extend the current installations was launched in 2014 with an aim to reducing congestion at the harbour and enabling it to manage even greater maritime traffic. The plan is to build a new, larger port terminal to manage the increased trade flow, thereby making the Tema Port in West Africa more competitive.

Meridian Port Services (MPS) is a joint venture between APM Terminals, Bolloré Africa Logistics and the Ghana Ports & Harbours Authority (GPHA). This joint venture is managing the extension project before taking charge of the port's operations. The project involves dredging the channel, constructing a breakwater measuring 3,550 metres, 127 hectares of port platform, new berths, buildings and a standalone power station.

The Tema Port currently has a capacity of 1 million TEU (twenty-foot equivalent units). The extension project will expand the capacity of the port almost fourfold to 3.7mn TEU. The project will also extend the port's current docks from 574 metres to 1,400 metres, and will double the number of berthing spaces for container carriers from two to four.



Inside view of the power plant with its four generating sets. The new port will be operational from June 2019 and, in future, the backup power plant may be extended to include 10 generators, if necessary.

## Partner teams for installations

The project includes a backup power plant to provide the new port with a secure electrical power supply. This plant must supply power to the entire port including the gantry cranes, equipment for handling the containers, workshops, administrative buildings and lighting, etc.

The Eiffage Group is working on several aspects of the project, especially the electrical part of the port via its German subsidiary RMT. Thus, KOHLER-SDMO partnered with RMT to offer the backup power plant to equip the new Tema Port.

The backup power plant includes four KD SERIES 3100-kVA fuel efficient diesel generating sets, which may be extended to six in Phase 1 of the project. The power plant is housed in a purpose-built installation divided into several areas: Generator hall, fuel oil processing plant room, medium voltage switchroom, low voltage switchroom, which includes the generators' control-synchronising panels.

The power plant has a voltage of 20,000V. The installation is completed with bus ducts, electrical transformers on a retention container and medium-voltage switchgear.

The motors are cooled by vertical dry-coolers installed in the building.

Sound trap enclosures reduced the sound level of the power plant to 85 dB(A) at seven metres.

## Designed for marine environment

The power plant includes processes and equipment specially designed for coastal operations. The alternators have been tropicalised and the generating sets feature anti-condensation pre-heating elements.

In terms of ventilation, the dry-coolers have undergone a special treatment to protect the wiring harnesses, and the ventilation grilles for the air inlets and outlets are made from stainless steel, as is the external exhaust piping. The two external fuel tanks are coated in category C5M paint. The generator power plant was installed by RMT under the supervision of KOHLER-SDMO.

Ghanaian operators, supervisors and managers received and benefited from training provided by the KOHLER-SDMO teams on how to run, operate, monitor and maintain the power plant. ■

Stand No: S1.A30

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# World's first from IGEL Electric makes debut

The German company brings its newly developed medium voltage softstarter to the Middle East first.

**I**GEL ELECTRIC GMBH, provider of controlled soft-starting of medium voltage in the Middle East with nearly 1,000 units delivered and installed, is expanding its range of medium voltage softstarter systems. At the MEE 2019, the Germany-headquartered specialist will introduce the world's first fully withdrawable SST System MV-CW in the voltage range of 3-6.6kV and 10/11kV.

The new and advanced feature in this new system is the ROLL on FLOOR Trolley. The trolley is equipped with line fuses, line contactor, softstarter power electronic and bypass contactor.

Michael Kleiboehmer, CEO of IGEL Electric GmbH, said, "We launched the 3-6.6kV system last year with the promise to extend the product line into the 10/11kV power range. With the introduction and release in the market, we are now offering the full line to cover the



*The world's first fully withdrawable SST System MV-CW by IGEL Electric.*

Photo Credit: IGEL Electric GmbH



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major applications. The design and engineering philosophy has strictly followed the guideline 'Maintenance in Mind' and 'Production First'. With the main components mounted on the ROLL on FLOOR Trolley, the exchange of the trolley will take less than 20 minutes and the system is ready for operation again. The detailed failure analysis can then be made without any pressure from production."

He further explained that exchanging the trolley does not require any special tools or instruments. "There is a single industrial grade plug connection where all control signals and control power is interfaced between the trolley and the starter control electronic. The exchange does not require any new programme changes in the control electronic – just connect and start again."

In addition to this innovative design, in 2018 IGEL Electric also introduced its new multi-motor softstarter system, allowing multiple motors to be started with just one electronic softstarter. The multi-motor system provides a more cost-effective solution compared to the typical one starter/one motor system. This system design has been successful in the Middle East market, according to Kleiboehmer. ■

Stand No: H1.F18



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# Genmac powers Saudi railways in desert

The robust Italian-made gensets are a preferred choice in the kingdom.

**I**N SAUDI ARABIA, two railway lines for a total of 2,400km, connect Al-Jalameed to the coast of Ras Al Khair, and Hail to Riyadh and up to Dammam, crossing the desert.

Every 20km along the rail lines, communication and signaling centres are located that are powered exclusively by Genmac generators.

Due to high temperature and sandstorms, these gensets are often covered by sand and require clean-up afterwards. Nevertheless the gensets must work 24/7.

Genmac, Italian manufacturer of gensets sets since 1983, has found a solution that required a dedicated engineering and design, radically rethinking the concept of generator in all its structural details to ensure the proper functioning in the desert.

The units come with special canopies with mechanical sand rejection filters that protect the heart of the generator and do not require specific maintenance or replacement but only removal of sand from the surrounding areas.

*Despite extreme conditions, Genmac generators continuously work since 10,000 hours on an average and some of these have been working for more than 20,000 hours at full performance.*



Photo Credit: Genmac

The Genmac gensets onsite in Saudi Arabia.

As a result, despite these difficult environmental conditions, Genmac generators continuously work since 10,000 hours on an average and some of these have been working for more than 20,000 hours at full performance.

In addition to the harsh climatic conditions, since these locations are also difficult to reach and isolated, the gensets should, therefore, be entrusted with an expert aftersales that can both maintain the equipment and prevent faults.

In Saudi Arabia, Genmac's trusted local partner is Ayoun Al-Badr Contracting (ABC) who performs regular maintenance to Genmac generators and ensures the continuous operation and safety of the railway line. ■

Stand No: S2.C01



## Italian expertise comes to the Middle East

IMEQUADRI DUESTELLE HAS been operating in the Middle East and North Africa (MENA) market, particularly in the UAE, for more than 20 years.

In the oil and gas sector, the company is a qualified supplier to IOCs such as SAIPEM and ENI and regional companies such as ADNOC group that includes ADCO, ADWEA, Al Hosn Gas, Borouge, FERTIL, ADNOC Gas Processing (GASCO), TAKREER and ZADCO in the UAE, ENPPI and PETROBEL in Egypt, Electricité du Liban (EDL) in Lebanon.

According to Imequadri, MENA is an interesting market, thanks to the strong industrial development and the growing demand for electricity and the increasing demand for renewable energy.

In recent years, the company has been supplying low voltage (LV) and medium voltage (MV) switchboards and MV busbars for important projects like the MIRFA independent water and power plant (IWPP) in Abu Dhabi, Bu Hasa NGL extraction plant, Shah Gas development project and Habshan gas processing plants in Abu Dhabi; Soda ash and calcium chloride production facility in Saudi Arabia; Ibri independent power project and SOHAR and ORPIC Liwa Plastic Complex in Oman; and the recent acquisition of orders for a KAHRAMAA project in Qatar.

Since 1962, Imequadri has been working as a technical and commercial partner providing technical support during the design phase and producing quality products.

The company is located in Bergamo, near Milan, where it is strategically connected to ports and airports, with around 180 employees. The company also deals in design and production on-site.



The MIRFA IWPP in Abu Dhabi.

Photo Credit: Imequadri Duestelle

The production consists of a wide range of LV and MV switchboards, MV equipment, MV and LV busbars and prefabricated substations in containers.

The focused products for the MENA market, in particular, include the Normoclad Series, MV protected electrical switchboards for primary distribution, and the LV Polimeta power centre and multicontrol motor control centres.

The company's sales primarily focuses on the development and expansion of existing power plants and the strengthening of energy distribution networks established by Italy's Ministry of Energy, but also on other important industrial projects.

The strength of the company is represented by good value for money given by the flexibility and the ability to customise the products.

**Stand No: H2.H11**



# imequadri duestelle spa





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**Polimeta - LV Power Center**  
up to 1000V 5000A 100kA



**Multicontrol - LV Motor Control Center**  
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- ▶ Substations in containers



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# FPT Industrial highlights best-in-class engines

The brand offers wide range of solutions for unregulated and regulated emissions.

**A**T MIDDLE EAST Electricity 2019, FPT Industrial is strengthening its position as a worldwide provider of advanced powertrain solutions focused on power generation, both for unregulated and regulated markets, with an extended portfolio covering from 30 to 600kVA.

From 5-7 March, visitors at the Dubai World Trade Centre can take a look at FPT Industrial's 150 years of experience and know-how translated into efficient, reliable and value-added solutions that meet customers' needs.

FPT presents, for the first time in power generation configuration, the F34 55 kVA Stage V, focused on customers and markets that need to comply with the most stringent emissions standards, such as Stage V in Europe and Tier 4 Final in North America.

The 3.4-litre engine delivers a prime power of 48.5 kWm at 1,500 rpm and complies with the most recent emission standards thanks to FPT's advanced engine calibration and the after-treatment system: external cooled exhaust gas recirculation (ecEGR), diesel oxidation catalyst (DOC) and diesel particulate filter (DPF).

Alternatively, the other three



*The F34 55 kVA Stage V.*

engines exhibited at MEE serve markets that do not require compliance to emission regulations.

Designed for emergency and prime power applications, the S8000 (2.9 litres) G-Drive meets many customers' needs in terms of simplicity, high power output levels and low total cost of ownership (TCO). The engine has three cylinders in-line for a compact architecture, which also guarantees a 13 per cent lower fuel consumption in comparison to competitors' four-cylinder engines. Engineered with FPT Industrial's renowned

reliability levels, the S8000 G-Drive delivers an output of 30kVA and best-in-class maintenance intervals, which are up to 600 hours.

Next, designed for high power generators, the N67 250 kVA was developed leveraging FPT's technological leadership. It is the most compact 250kVA G-Drive in the market, capable of delivering this power in a 6.7-litre displacement with a six-cylinder architecture. This engine is the best-in-class for specific load acceptance and fuel consumption and can operate in the most severe conditions, up to 57°C, with its compact tropical cooling package.

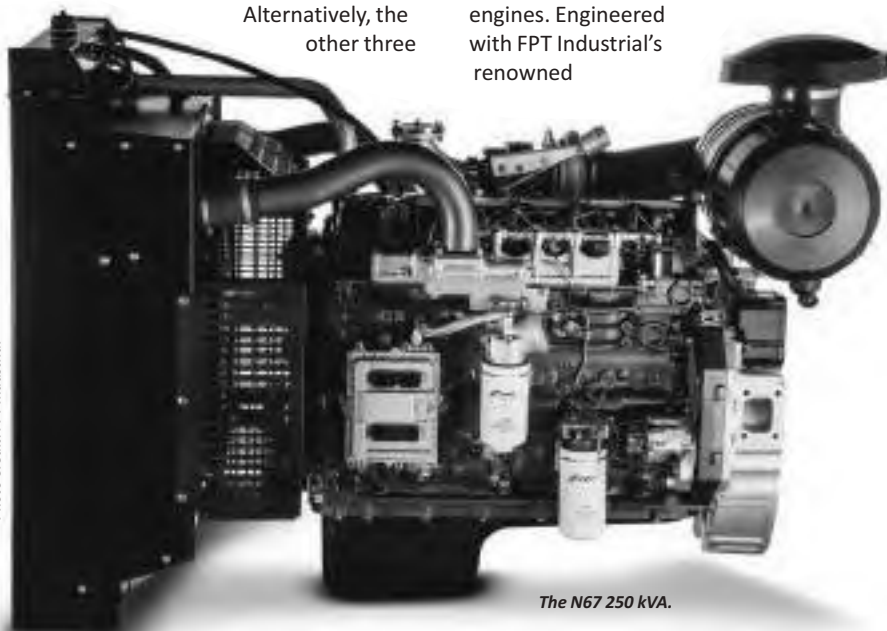
Because of its advanced technologies and premium components, the N67 has a maintenance interval of 600 hours – 30 per cent better than competitors' average, and an oil circuit capacity of 17.2 litres, which ensures 50 per cent less times of oil change vs. competition.

The last engine exhibited at the Middle East Electricity this year is the Cursor 16 600kVA (15.9 litres), based on an award-winning architecture. Top power, fast load response, high power density and low fuel consumption are the highlights of this engine. It provides up to 578kW, delivering the power of an 18-litre engine within the package of a 13-litre.

Cursor 16 is the best-in-class in fuel consumption, thanks to the second generation of FPT's common rail fuel injection system and a precise displacement approach. Contributing even more to a lower TCO, the unit has an oil service interval of 600 hours and the smallest oil system capacity comparing to competitors.

The six-cylinder engine has undergone 22,000 hours of bench validation, proving its reliability and durability with highly resistant components. Finally, it is also 22 per cent smaller than the 16-litre competitor average, being able to integrate 600kVA within the package of 400kVA. ■

**Stand No: S3.D19**



*The N67 250 kVA.*

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**POWER GENERATORS  
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Photo Credit: Messe München

*The willingness to invest in the construction machinery industry is on a high level globally and continues to be regarded cautiously optimistic in the coming years, according to Klaus Dittrich, chairman and CEO of Messe München.*

# Building tomorrow

bauma 2019 will focus on the digitisation of the construction industry.

**Digital innovations are increasingly shaping our everyday lives – including in the construction machinery industry.**

**D**IGITISATION IS GAINING ground in the construction machinery industry. More technologies are making their way into the industry. Cloud-based infrastructures, digital services portfolios and security solutions are part of a change of paradigm.

From 8-14 April, the world's leading manufacturers will be presenting their developments at Messe München in Munich for bauma 2019.

It is possible to realise and automate construction projects more efficiently, faster and more cost-effectively without having to sacrifice quality. To achieve this, all stakeholders must, for instance, be connected with each other, and the processes handled electronically. Initial

systems for these purposes already exist. They can be seen at bauma in a month's time, the world's leading trade fair for construction machinery, building material machines, mining machines, construction vehicles and construction equipment.

"The digitisation of the construction industry is becoming increasingly important.

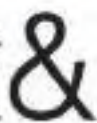
Many construction machines are already equipped with communication interfaces that provide comprehensive data, e.g. on location and consumption. This development is reflected at bauma 2019.

At this year's show, visitors will not only be able to find out about initial technologies, but also exchange views with the exhibitors about their potential," says Mareile Kästner, project manager at bauma.

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**LIEBHERR**

### Off into the cloud

Coordinating all the activities of several construction sites, sometimes located thousands of miles apart, at the same time—this is no longer a vision of the future. Already today, cloud-based solutions enable projects like these.

Planning, implementation, monitoring and optimisation of construction projects are consequently running fully digitised.

### Remote control

Construction site vehicles can now be controlled and managed by various technologies. For example, special sensors register the direction of rotation of concrete mixing vehicles and thus record the unloading process. And digitisation does not stop at height either. Cranes at various locations, for instance, are already controlled remotely from a central control center so that they can carry out their work “driverless”.

### Digitally yours

Digital innovations are increasingly shaping our everyday lives – including in the construction machinery industry. Thanks to virtual and augmented reality (VR/AR), users can now experience construction sites virtually and be part of the story in the middle of the action. It is not just an experience with deceptively real sensations and high entertainment value. VR and AR can be used to present products in the development phase, prototypes, or future scenarios and explain them in a completely new way. This opens up a host of opportunities for companies.

“With our digital construction site, we have created a platform that enables exhibitors’ products to be experienced not only at the actual exhibition stand but in any location. We offer the virtual exhibition space within a VR experience. For the first time, companies at bauma 2019 will be able to present themselves completely digitally,” adds Kästner.

It is a virtual experience with high added value for daily business, opening up completely new possibilities for planning and development, as well as basic and further training.

“Anyone wanting to train their apprentices under realistic conditions – in machine maintenance, for example – or looking to explain the inner workings of a crane to the customer, no longer has to even leave the site,” explains the exhibition director.

Companies such as Doka (formwork experts), Trimble (measuring instruments specialists), GEDA (mechanical engineering company), Bobcat (construction machinery



Photo Credit: Messe München

*At bauma 2019, the digital construction site and construction machines will be brought to life with the help of virtual and augmented reality.*

manufacturer), and uvex (manufacturer of protection and safety products) are already using the virtual offer “made by bauma”.

### Alternative drives are the future

The construction machinery industry is increasingly opting for alternative drives. In the future there will no longer be one single typical drive system but instead an increasing wide range of competing drive systems on the market. Electromobility and driverless vehicles in particular are seen as strategic future drivers.

“We have identified that electromobility and driverless vehicles are two areas that are increasingly gaining traction with manufacturers and service providers in the construction machinery industry. As such, we intend to provide these hot topics with a platform at bauma 2019. The important thing to note is that we won’t only be showcasing the diverse range of possible applications of leading exhibitors’ products but will also be providing a platform for discussing the aims, potential and sustainability of new technology,” reveals Kästner.

Producing cleaner, quieter and more efficient machinery is the future aim of electrification, according to many manufacturers of construction machinery.

In fact, more companies are already upgrading smaller machines in the lower power range with electric drives. There is growing interest in hybrid vehicles. As such, systems, which can handle light work but then engage a combustion engine where maximum power is required, are already under development.

Solutions to enable driverless construction machinery already exist in certain areas of the mining industry and other related areas. They are particularly suitable for use in quarries as the same routes are always followed from the actual quarrying site to the processing area. There are also future plans for excavators, which, for example, will be able to dig excavation pits autonomously. Although a lot of preparatory work has already been done, driverless machines are not yet something which can be fully accomplished or implemented due to the safety issues at complex construction sites. The latest developments of leading manufacturers all around the world will therefore be a hot topic at bauma 2019.

Leading exhibitors in the field of electromobility and driverless vehicles include Doosan Bobcat, MAN Truck, Mecalac, Liebherr, Perkins Engines and Bosch Rexroth, Komatsu, Deutz and Paus. ■



Manitowoc will occupy a 3,300 sq m area with a two-storey office building and terrace.

# Manitowoc to reveal new cranes and lifting tech

**T**MANITOWOC WILL DEBUT six new models from its Grove and Potain lines at bauma 2019 in Munich, Germany. It will also present a technology pavilion that highlights a significant number of customer-focused innovations. While six cranes will be unveiled at the show, several additional models on display will give visitors the chance to see more than 10 new cranes.

The 32<sup>nd</sup> edition of the world's leading construction equipment trade fair takes place from 8-14 April 2019 and promises to be bigger and better than ever, with two new exhibition halls and an optimised outdoor area. Manitowoc is matching the increased energy of the show with a presentation of products and industry-leading services to deliver excellent total cost of ownership for customers. The company will be exhibiting at stands FS 1201, FS 1202 and FS 1302/1.

Several new Potain cranes will be on the

company's stand, including those from its topless tower crane and self-erecting Hup ranges. For Grove, the company will introduce new cranes from its all-terrain and rough-terrain lines.

The upgraded three-axle Grove GMK3060 all-terrain crane or the new GMK3060L is based on its predecessor's design but has a longer boom (157.5 feet instead of 141 feet) and offers the strongest taxi load charts in its class.

Like the original, the GMK3060L features the most compact dimensions in the three-axle segment, enabling it to access tight job sites, manoeuvre easily around city centres, and even work indoors.

The chassis is almost as compact as a two-axle model and up to one metre shorter than competitive three-axle cranes, with a carrier length of only 8.68 metres and a minimum overall height of 11.41 feet with the suspension fully lowered. The new model features a longer,

157.5 feet seven-section twin-lock hydraulic pinned main boom and boasts significantly stronger load charts.

Manitowoc's tower crane brand Potain will show the Hup 40-30 self erecting tower crane, new high speed hoist winches and an operator hoist that fits inside the tower crane's mast.

The manufacturer will also present new technologies for the industry, with one highlight involving a recent advancement in telematics.

"Since we became a standalone crane company nearly three years ago, we have bolstered our new product pipeline, developing products that our customers want to purchase," said Barry Pennypacker, president and CEO of Manitowoc.

"We are confident that the bauma 2019 tradeshow will showcase our ability to incorporate the voice of the customer into our cranes, utilising the principles of The Manitowoc Way," he added. ■

# Open the door to the formwork world

PASCHAL-Werk G. Maier GmbH will be presenting 'Efficiency in Combination' with solutions, software and services at bauma 2019.

**F**ORMWORK AND SHORING expert PASCHAL will be presenting its innovative and customer-oriented formwork solutions in its 1,000 sq m exhibition space at bauma 2019 in Munich, Germany.

## Achieve more with LOGO.3 and LOGO alu

PASCHAL LOGO.3 is the centre-point of bauma 2019. Large panels, a small number of connecting pieces and simple handling enable quick and economic formwork with this system. Furthermore, thanks to the large-size panels with a formwork height of 340 cm and continuous plywood, LOGO.3 is ideally suited for exposed concrete and industrial construction. Additionally, the solid flat steel frame and high-quality processing give the LOGO.3 wall formwork one of the longest service lives on the market.

In the LOGO corner "Wünsch dir was" (make a wish), the classic LOGO.3 panels will be displayed alongside LOGO.S with its steel facing and platform brackets with guard rail posts for special areas of application and LOGO alu manual formwork. As the lightweight formwork with the aluminium frame can also be moved by hand, it is ideally suited for any construction site without a crane and for work in existing buildings.

The LOGO tie point-saver model will demonstrate to all visitors that no other formwork system can operate with so few tie points as LOGO.3 – saving time, material costs and wage costs on construction sites.

PASCHAL will also take advantage of bauma 2019 to present a new product in the LOGO product range – the new multi waler for LOGO.3. This innovation can be used as an extension post or as a highly versatile waler, with the advantage of light weight.

## Comprehensive occupational safety

PASCHAL provides both maximum occupational safety and maximum cost effectiveness, as their ideal handling and implementation options when pre-

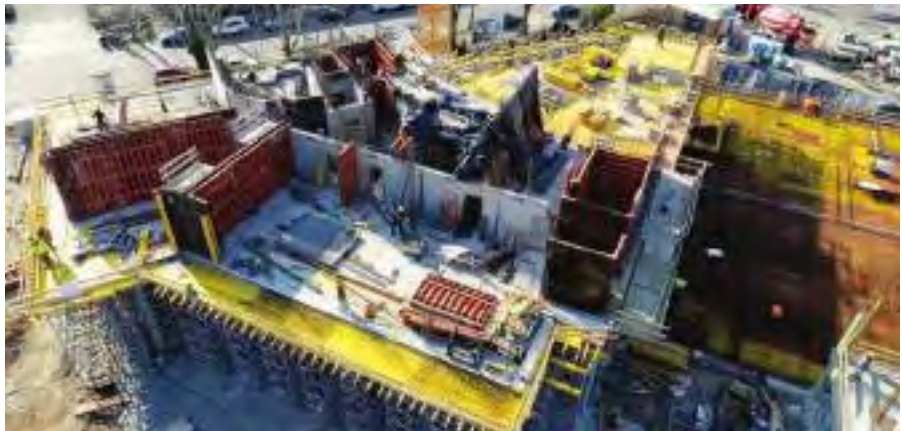


Photo Credit: PASCHAL

*The flexible LOGO.3 wall formwork system can cope with all formwork jobs because of its comprehensive range of panels with system parts only.*

assembled ensure a fast and problem-free construction process. Alongside the LOGO concreting platform and the Multip multi-functional working platform for straight and circular wall form-works, PASCHAL will make use of bauma 2019 to present its new PASCHAL lateral protection that can be used for a range of different applications.

## Working on concrete shafts

The PASCHAL anchoring system has been developed from practical experience and greatly simplifies work on shafts. With the anchor cone, approved by the building authorities, PASCHAL can now offer a unified anchoring system suitable for all climbing and platform systems: whether the 240 climbing system, 200 climbing installation, KBK 180 climbing platform, SPK 270 dam bracket or the PASCHAL lifting platform.

## Not just an off-the-shelf system

Special requirements, such as customised panel sizes, functional profiles for connecting pieces or manufacturing of galvanised panels, mean that PASCHAL formwork systems can be specially adapted to a wide range of customer requirements. You may also like to take advantage of the almost unlimited options offered by specialised formwork solutions.

PASCHAL will also have additional highlights from its product range to display to visitors:

- Using systems to form concrete haunches or underground car park exits – with the continuously variable TTR/TTK/TTS circular formwork systems
- Numerous efficient solutions for foundation areas with the LOGO and Modular formwork systems
- Circular and square column formwork for effective and economical concreting without concrete bleeding
- The tried and tested PASCHAL Deck slab formwork with main and cross girder construction, H20 beams and slab props
- LOGO.3 and Modular dismantling inside corner posts for particularly fast and simple forming and dismantling in shafts
- Functional profiles for connecting pieces are standard for large-size LOGO.3 formwork panels from February 2019

## BIM-compliant PPL 12.0 software

With the fully automatic PASCHAL-Plan light 12.0 formwork planning software and its IFC4 inter-face, PASCHAL Group company planitec will offer customers a BIM-compliant software tool that can also be used for inventory control. ■



# Electric display from Bobcat

The showcase at bauma 2019 will be complemented by advanced augmented reality technology.

Photo Credit: Bobcat



The new E27, E34 and E35z R-Series mini-excavators will form the core of the earthmoving zone.

**A**T BAUMA 2019, the Bobcat stand will promote every area of Bobcat's business, with a mix of new and existing Bobcat products and their applications. One of the star attractions at bauma will be the launch of the new Bobcat E10e electric mini-excavator, the industry's first commercially available fully electric, zero tail swing (ZTS) mini-excavator in the one tonne class.

## Compact solution for indoor work

The new E10e is based on the design of the successful conventional E10 mini-excavator. Confirming this market leadership, Bobcat has sold well more than 10,000 E10s in just 10 years (the E10 is now called the E10z to reflect that it is a ZTS mini-excavator). With its ZTS profile, no emissions, a low noise operation and a width of just 72cm, the new E10e can easily pass through standard doors and in and out of lifts, making it ideal for indoor applications such as demolition and basement construction. In addition, by coupling the E10e to an optional external Bobcat super-charger while operators are on normal work breaks, the E10e can operate for a full eight hour working day.

## Material handling zone

Bobcat will be showing new high performance Bobcat TL43.80HF model for the first time at bauma. The TL43.80HF offers a high lift capacity of 4.3 tonne and a maximum lift height of almost eight metres, for handling applications in general industry and recycling.

Bobcat's TL30.70 compact telehandler is also a newcomer to bauma. The TL30.70 provides a maximum lift capacity of three tonne and a maximum lift height of seven metres, for a wide range of applications found in the construction and rental industries.

## Earthmoving zone

The new E27, E34 and E35z R-Series mini-excavators will form the core of the earthmoving zone. Even with its optional heavy counterweight, the conventional swing E27 model offers just 280mm of tail overhang which allows the machine to be operated in confined spaces. This makes the machine an ideal tool for highly demanding applications where performance with transportability have a priority over compactness.

The 3.4-tonne E34 features a new roomy premium cab with optional powerful air conditioning to ensure an ideal operator environment in all weather conditions. When transportability on a trailer and ZTS are not needed, this machine offers a great mix of performance, stability and operator comfort.

Also in the earthmoving zone will be the T450 compact track loader. The T450 is powered by the Bobcat D24 45.5kW (61HP) turbocharged diesel engine.

## Roadwork zone

The roadwork zone features the new R-Series E27z ZHS mini-excavator and Bobcat S630 and S770 skid-steer loaders equipped with the new Bobcat WS-SL20 wheel saw and PSL120 self-levelling planer attachments.

Being shown for the first time at bauma,

the new WS-SL20 wheel saw is designed to cut efficiently through asphalt, rock and concrete surfaces. The PSL120 is one of two new model sizes that will expand the success of Bobcat's portfolio of self-levelling planer attachments. The PSL50 (50 cm width) and PSL120 (120 cm width) planers are designed for use with Bobcat high flow compact loaders.

## Landscaping zone

The fifth member of the new R-Series – the E26 – can be seen in the landscaping zone. To overcome a common issue in the rental market and thus protect uptime, the E26 is equipped with extra features such as the cylinder-inside-boom (CIB) workgroup and also offers increased protection against bucket collision with the cab.

Bobcat's top-of-the-range T870 compact track loader will also be shown for the first time at bauma in the landscape zone. The T870 features a new torsion suspension undercarriage, with torsion axles that dampen vibration, combining the comfort of roller suspension and the stability of a solid mount undercarriage with other new features to provide a tracked loader that outperforms all other machines on the market. The new T870 torsion suspension machine offers 10 per cent more lift capacity than the previous model.

## Demolition zone

The final zone on the Bobcat stand is the demolition zone featuring the best-selling Bobcat E10z mini-excavator. ■

# Connected to the future

At bauma 2019, PALFINGER will be showcasing more than 20 different installations on two trade fair stands covering a total area of 1,900 sq m.

**P**ALFINGER WILL BE at bauma 2019 to showcase the latest developments and innovations in the field of digitalisation and service all under one roof.

The fully comprehensive PALFINGER Connected telematics system comprises two applications: fleet monitor and operator monitor. Fleet monitor is a web application for managers, schedulers and service managers, while operator monitor is a mobile app for crane operators. In practice, these two digital tools help to boost efficiency and productivity by showing not only which equipment is in operation, where and for how long but also how the crane and load can be optimally deployed.

Smart Boom Control is the new boom tip controller for loader cranes. All the operator has to do is specify the direction of movement of the boom tip, while PALTRONIC calculates the necessary movement combination.

## New PCC crawler crane series

Following the world premiere of the PCC 115.002 at the IAA in Hanover, PALFINGER will now be unveiling the new PCC series at bauma. The crane and crawler can be transported separately and then combined in different ways during operation. This means that depending on the application, the crane can be either mounted on a truck or operated on its own stabilisers without any need for the crawler.

## New TEC and SOLID models

The high-tech TEC cranes offer a large selection of comfort and assistance systems. The polygonal P-profile significantly increases performance while maintaining a low dead weight. Ten new TEC models in the 25 to 37-tonne-metre class offer all the features of a PALFINGER heavy-duty crane and will be available from 2019.

In the heavy-duty crane segment, PALFINGER will be showcasing the PK 135.002 TEC 7. Thanks to its outstanding ratio of lifting capacity to dead weight, this model specialises in heavy loads and tasks that require long outreach. Its diverse range of applications includes everything from



Ten new TEC models in the 25 to 37-tonne-metre class offer all the features of a PALFINGER heavy-duty crane and will be available from 2019.

Photo Credit: PALFINGER

heavy-duty jobs through to intricate installation work.

## Electrification at PALFINGER

With the P 370 KS E, PALFINGER is launching the first ever electrically operated access platform. This premium-class platform is quiet, efficient and emissions-free, making it ideal for night-time and indoor work as well as for use on construction sites in urban areas.

Also set to be presented is the concept of the PK 18502 SH loader crane, which can be operated not only with a plug-in electric drive but also fully autonomously with a battery pack.

## New access platforms

For the first time ever in the history of PALFINGER access platforms, the company will be showcasing a selection of models from the entire global platform portfolio.

User-friendly light class NX will be represented by two new models: the P 220 BK and P 280 CK. These two light class NX models, which are designed for use in municipal applications and can be operated by anyone holding a standard driving licence, feature an impressive range of operator assistance systems that enable flexible outreach calculation (LMB), high basket loads (300kg), easy stabiliser control

at the vehicle base and, as a result, almost completely intuitive operation. The P 180 BK is also now available.

With the P 130 A, PALFINGER has brought the Smart class to the pick-up – with a maximum working height of 13 metres, a maximum lateral outreach of 6.30 metres and a total weight of 3,200 kg.

With the P 200 AXE, PALFINGER has developed an extremely compact design for access platforms in the Smart class. At a gross weight of 3.5 tonnes and with a length of just 5.39 metres in the transport position, this is the perfect solution for tight spaces.

It was at bauma 2016 that PALFINGER unveiled the P 150 AJTK, demonstrating just how easily access platforms can be deployed, even on crawlers. Now, PALFINGER is presenting the biggest platform in the Tracked class: the P 250 AJTK, which is designed for working heights of up to 25 metres and rounds off the range.

Other highlights in PALFINGER's platform portfolio include the new insulated lifting platform with an outreach of almost 14 metres. These are already being successfully deployed by a number of energy supply companies and, thanks to the many optional features available, they can be very easily adapted in line with highly specialised requirements. ■

# New flat-top EC-B Series from Liebherr

New models with fibre rope feature that has four times longer service life than steel rope and enables fibre cranes to work with a significantly higher load capacity.

**T**HE FIRST EIGHT units of the new series already cover a wide range of services—from small city to large handling cranes. As a result, the maximum load capacities range from six to 16 tonnes and the maximum jib head load capacities range from 1.6 tonnes to 2.8 tonnes—working at a maximum radius. At full jib length, the units are among the largest in their class. The 125 EC-B 6 itself reaches 58 metres. The two largest cranes in the series, the 340 EC-B 12 and the 370 EC-B 12 Fibre each have a reach of up to 78 metres. In addition, all cranes are optimised for assembly.

When developing the new series, the construction machinery manufacturer also focused on the comfort of crane operators and safety on the construction site: The new LiCAB cabin is significantly larger and also has a greater field of vision. In addition, the new top-slewing cranes have a new, central control element: a multi-touch display. Last but not least, a new design with integrated advertising panels guarantees an improved impact over distance.

Particular highlights of the new EC-B series are the 240 EC-B Fibre and 370 EC-B Fibre cranes. These are equipped with soLITE high-tensile fibre rope, which has been developed over a period of more than 10 years by Liebherr and the rope manufacturer Teufelberger.

## Increased comfort

With more than two square metres of space, the new cabin has more room than any EC-B cabin before. Because of its larger field of vision, crane operators have a better overview of the construction site—a crucial aspect for site safety.

As well as ergonomically positioned operating elements, crane operators will find a variety of storage options and surfaces—including details like a cup holder. As well as this, the new cabin has several power sockets to plug in small electrical



Photo Credit: Liebherr

appliances such as a kettle or radio equipment. In addition to the standard 230 V sockets there are also USB interfaces to provide power for items such as smartphones.

The new 12-inch multi-touch display ensures all devices in the cabin are networked together. This means that all control settings such as scaling via the newly developed scaling assistant, setting the enhanced ABB operating-range limiting system and using the trolley camera can all be done via the display.

The cabin is available in three options: The LiCAB Basic, the LiCAB Air with air conditioning, and the premium LiCAB AirPlus version with air conditioning, double glazing and tiltable side windows.

## Optimised steelwork

The new EC-B's compact head, jib and trolley are lighter than their predecessors. In addition, the jib is now so narrow that three jib sections fit onto a truck bed. Compared with similar Liebherr cranes, even the

shortest jib requires one whole transport truck less—and at least two less at maximum radius. This saves both time and money.

The new EC-B series makes optimal use of the tower systems' performance capacity. Even the largest, new EC-B, the 370 EC-B 12 Fibre, works using the 21 HC 290 tower system with corner posts measuring only 2.1 metres. This is particularly interesting as it is one of the most widely used Liebherr tower systems.

Liebherr has also developed a new tower system, the 12 EC 125, for the 125 EC-B 6 as part of the new series. With its extremely slim corner posts measuring 1.2 metres, the 12 EC tower system is particularly suitable for construction sites where a very limited amount of space is predicted. The 12 EC tower system comes in two lifting capacities: the 12 EC 100 and the 12 EC 125.

The first eight cranes in the new EC-B series are the 125 EC-B 6, the 220 EC-B 10, the 220 EC-B 12, the 240 EC-B 10 Fibre, the 240 EC-B 12 Fibre, the 340 EC-B 12, the 340 EC-B 16 and the 370 EC-B 12 Fibre. ■

# Versatile range of power solutions from Yanmar

The Japanese diesel engine manufacturer will exhibit new line-ups at this year's bauma.

**D**URING BAUMA, YANMAR will, for the first time, display its 4TN88G and 4TN98G gas-powered engines. Furthermore, Yanmar will be showing its latest entries into the high-power diesel range, up to 155kW, with the 4TN101 and 4TN107. Rounding out the show will be the L series of industrial diesel engines – a workhorse that meets the needs of a diverse range of customers.

“Each model showcased at bauma 2019 is our promise to meet the distinct needs of our different customers,” said Carlo Giudici, sales director, Yanmar Europe industrial power train.

## Industrial gas engines: 4TN88G, 4TN98G

The two newly developed models which run on liquid petroleum gas (LPG) and are compliant with US EPA Tier2, CARB Tier4 and EU Stage emissions regulations, are being shown here at bauma 2019 for the first time. The addition of these clean burning, low noise engines allows Yanmar to strengthen its product portfolio. Furthermore, Yanmar has plans to introduce bi-fuel specification models that can run on both LPG and gasoline.

Yanmar can now provide customers with a ‘One-Stop Solution’, whereby Yanmar can offer either a diesel or gas power source in one-sales contact, with maximum compatibility to the customer's equipment.

## Industrial diesel with a maximum output of 155kW

The two new high-output, industrial diesel that made their world debut at Intermat in Paris in April 2018 – the 4TN101 (maximum output: 105kW) and the 4TN107 (90-155kW) with two-stage turbocharger, will be shown once again at bauma. This time, the 4TN107 with single-stage turbocharger



Photo Credit: Yanmar

Yanmar's industrial diesel engine: 4TN107FHT.

will, for the first time, feature its DOC+DPF+SCR emissions after-treatment system.

The after-treatment system utilises Yanmar's proprietary DPF regeneration technology already successfully fitted to the common rail TNV series and renowned for its reliability.

Yanmar has also developed a mixer-less SCR solution, which results in lower back pressure than the mixer configuration and consequently allows more freedom in the designing of the exhaust tailpipe on the vehicle.

The standard after-treatment units are a compact design to match the width of the engine, which allows Yanmar to offer a range of optimum layout options for different construction equipment, agricultural equipment and materials handling applications.

## EU-compliant L-V Series of air-cooled industrial diesel engines

From the first sales of the L Series in 1983,

the world's smallest and lightest air-cooled industrial diesel engine has been praised for its outstanding performance in compact

construction equipment, agricultural equipment and for power generation.

Now, the L48V (maximum output: 3.4kW) has been redeveloped to achieve European Stage V emissions certification.

To meet the new strict regulation limits for below 19kW range in a bore of only 70mm, the L48V utilises a proprietary fuel injection technology based on Yanmar's direct injection system, together with a diesel oxidation catalyst (DOC), while maintaining the reliability and fuel efficiency the engine is well known for.

Not only the new L48V, but also the L70V (maximum output: 4.8kW) and L100V (maximum output 6.8kW) are certified to EU Stage V by the adaption of an exhaust gas recirculation (EGR) system from the current L-N series. The L-V series will be presented at bauma.

## EU Stage V compliant TNM/TNV Series

In addition to the new models featured, Yanmar will also be showing a range of the EU Stage V compliant TNM/TNV Series.

With six years' experience in DPF mounted TNV common rail engines in the over 19kW class and more than 400,000 units in the market, Yanmar's proprietary DPF regeneration technology prevents clogging of the DPF and is recognised worldwide as the most reliable after-treatment system in its category.

The EU Stage V emissions regulations come into effect from 2019 at the range of below 56kW and 2020 at the range of 56kW to 130kW. ■

## SSAB's structural steel to tackle lifting challenges



Photo Credit: SSAB

*Strenx 1100 Plus is ideal for lifting equipment such as cranes, as well as lighter transportation solutions and advanced structures that require matching strength in the welds.*

FLEET AND EQUIPMENT owners continue to face the pressure of doing more with less. To this end, SSAB has created a new addition to the 1100 MPa range of Strenx performance steels. Strenx 1100 Plus is a new hot-rolled, high-strength strip steel that possesses unique weld properties and delivers outstanding welding and bending performance. And due to its improved weld seam strength, it contributes to lighter, stronger and more environmentally friendly equipment with better performance in the transportation and lifting industries.

### Weld weaknesses virtually eliminated

As the "Plus" in its name suggests, Strenx 1100 Plus offers customers something a bit extra. Traditionally, weld seams can represent weak links in the highest grades of structural steels. But with Strenx 1100 Plus, such weld weaknesses are virtually eliminated because the strength, elongation and impact toughness properties of the welded area meet the minimum guarantees of the parent material. The optimal combination of strength and toughness of the welded and heat-affected area offers a major benefit to the design engineering process: the design can be based on the same minimum static strength for the entire application, depending on the design rules.

### Reaching higher and farther with performance steel

Strenx 1100 Plus is ideal for lifting equipment such as cranes, as well as lighter transportation solutions and advanced structures that require matching strength in the welds. It actually has higher strength than in the Strenx 1100 parent material. This translates into cranes that reach higher, trailers that carry more payload and trucks that use less fuel and emit less CO<sub>2</sub>.

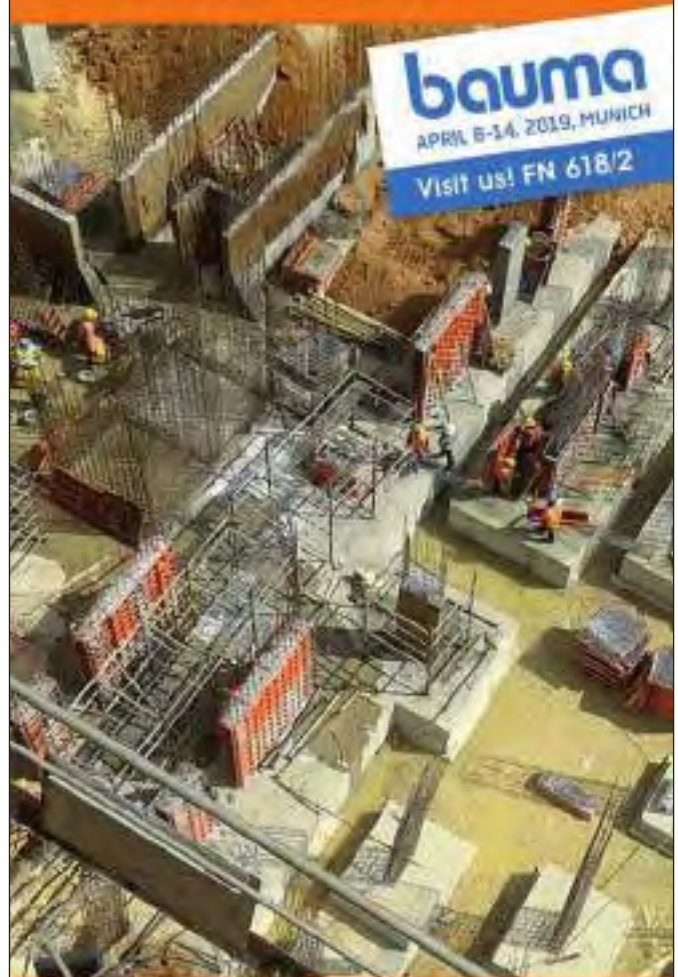
The product will be offered in thicknesses of four to eight mm, widths up to 1,600mm, and lengths up to 13,000mm.

Added benefits also include:

- An exceptionally clean steel and a precisely controlled production process mean consistently high quality and predictable results
- Guaranteed flatness, thickness and bendability properties
- Tight tolerances, guaranteed
- Welding can be done at room temperature (based on CTS tests according to ISO 17642-2:2005)
- Optimal combination of strength and toughness in welded area and heat affected zone

Strenx 1100 Plus is making its official debut at bauma in April.

## THE UNIVERSAL FORMWORK



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# Lifting equipment in safe hands

AMCS technologies will exhibit its popular anti-collision systems at bauma 2019.

**A**MCS TECHNOLOGIES, SPECIALIST in anti-collision safety systems for lifting equipment, will reveal its latest innovations at bauma to take place in Munich from 8-14 April 2019.

AMCS will be displaying its flagship product – the DCS 60 (Driving Control System). This anti-collision system for lifting machines has demonstrated its efficiency, robustness, ease of installation and programming in many construction sites around the world including Dubai Creek Harbour, Statue of Unity in India, Santiago Airport in Chile, Roland Garros in Paris, and many others.

## Among other novelties, visitors can take a look at:

- The DCS 61-S (Drive Control System Safety), new anti-collision and zoning system. It is a complete safety system designed with a higher level of requirement to ensure the safe execution of orders to manage the machines in interference, operating in the area of the tower cranes. This new device will offer new features in addition to the three essential functions such as anti-collision, zoning and display/data logger.
- The company will preview its own telematics called IoT Lifting. The DCS 61-S anti-collision systems can be equipped



Photo Credit: AMCS technologies

AMCS technologies' telematics IoT Lifting.

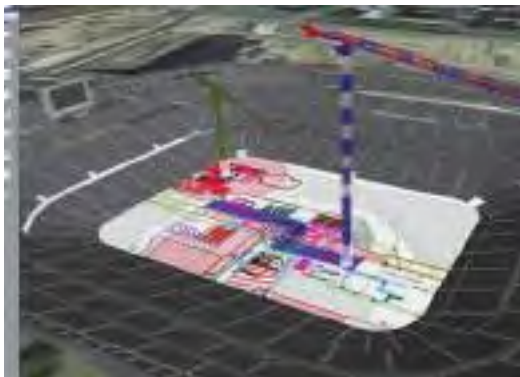
with a SIM card that can be used to collect precise data on each crane on a web portal (when the crane is powered, in motion, by weathervane, etc.) and generate personalised statistics for each job site and company. The main objectives of the IoT Lifting are to follow the productivity of the construction site

with precision and remotely and to know the activity of the cranes every day.

- Currently in the prototype stage, the company will reveal at bauma the SUP BIM, AMCS technologies' construction site supervisor in BIM. The system will help follow, in real-time, the evolution of the construction site in 3D from

anywhere. It will also gather, record and visualise the movements and the information of all the cranes equipped with the systems DCS 61-S or DCS 60 on a single screen.

These products illustrate the company's ability to keep up with market developments, whether it is new standards, new generations of cranes, innovations and technological advances in the industry. ■



SUP BIM allows users to record and visualise the job site on a single screen in real-time of cranes equipped with DCS 61-S and DCS 60.



New anti-collision and zoning system DCS-61.

Photo Credit: AMCS technologies

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*Volvo CE is the first construction equipment manufacturer to commit to an electric future for its compact machine range.*

Photo Credit: Volvo CE

# Volvo CE goes electric on smaller machines

Demonstrating the breadth of the Volvo Group, Volvo CE will be joined by sister companies Volvo Penta, Volvo Trucks and Volvo Financial Services.

**I**N AN INDUSTRY first move, Volvo Construction Equipment (Volvo CE) has announced that in 2020 it will start to launch a fully electric range of Volvo branded compact wheel loaders and compact excavators.

In a commitment to future technology, Volvo CE has announced that by mid-2020 it will begin to launch a range of electric compact excavators (EC15 to EC27) and wheel loaders (L20 to L28), stopping new diesel engine based development for these models.

With this move, Volvo CE is the first construction equipment manufacturer to commit to an electric future for its compact machine range. This follows a favourable reaction from the market after the successful unveiling of a number of concept machines in recent years and by working closely with customers. The move is aligned with the Volvo Group's strategic focus on electromobility in all business areas.

The first machines will be unveiled at bauma 2019, followed by a staged market-by-market introduction and ramp up in 2020. While the company stresses that diesel combustion currently remains the most appropriate power source for its larger machines, electric propulsion and battery technology is proving particularly suited to Volvo's smaller equipment. With research and development investment now focused on the rapid development of its electric compact wheel loaders and excavators, Volvo CE is taking a step towards diesel free compact equipment in the future.

"Volvo CE is delivering on its commitment to 'Building Tomorrow' by driving leadership in electromobility and delivering sustainable solutions that support customer success," said the company's president, Melker Jernberg.

"The technology we have been developing is now sufficiently robust and this, together with changes in customer behaviour and a heightened regulatory environment, means that now is the right time to commit to electromobility in our compact equipment ranges going forward."

Excavators are the stars of the show, continuing the thrust of Volvo CE's worldwide 'Excavators For Any Challenge' campaign. New excavators that will be launched at the show include the all-important 20 tonne EC200E, alongside the EC15-EC20E compact excavators. Demonstrating not only the breadth of Volvo's excavator line, but also its length, will be the new EC750E high-reach demolition excavator. There will also be the game-changing launches of the EC300E Hybrid hydraulic-hybrid excavator and an EC220E that features Volvo Active Control automated boom and bucket movements for a more efficient digging process.

Demonstrating the breadth of the Volvo Group, Volvo CE will be joined by sister companies Volvo Penta, Volvo Trucks and Volvo Financial Services. The companies' participation at the show is much more than a static display – it's a live event. Under the theme of Building Tomorrow, Volvo's 2,293 sq m indoor stand in Hall C6 and 5,870 sq m outdoor stand at FM714 will be a non-stop interactive performance featuring the complete product and service portfolio.

Volvo CE is not yet taking pre-orders for the machines, and will unveil the final models at the bauma equipment trade exhibition in Munich in April. They will initially be manufactured at Volvo CE's facility in Bellay, France, but production may shift if demand increases. ■



## MB Crusher's big reveal at bauma 2019

ITALY-BASED MB CRUSHER, one of the leading providers of crusher buckets, has announced to showcase a range of crushing solutions at bauma in Munich, Germany, from 8-14 April 2019

MB Crusher provides solutions adaptable to all work sites including construction, demolition, quarrying, trenching, and to all types of machines such as excavators, skids, loaders, backhoes and telehandlers.

MB Crusher will be present in three areas.

In the outdoor area, #FN 832/9, a working yard will be set up, displaying buckets at work such as crusher, screener, cutter including the latest release, the small MB-R500. The showroom in the Atrium between the pavilions A6 and B6 will be the company's promotional point during bauma 2019. MB will also be present in an internal booth, hall B5, number 424.

As crushing and recycling become key aspect also for roads construction operations and the need to make the most of all available material has prompted operators to use the waste material, it is important to find new solutions to recycle inert waste at low cost, according to MB Crusher.

MB Crusher product ranges crush, sift, grind and process material directly on site, thus saving transport costs, maintenance costs, purchase cost of inert material and time. These are certified and designed to reduce noise and dust.

An MB Crusher customer from Lebanon reiterated that MB crusher buckets can process all extracted material in order to render



The 3.5-tonne BF90.3 bucket crusher is crushing more than 180cbm of materials per day.

Photo Credit: MB Crusher

it re-usable directly on-site or sold for other applications. The precision of production allows for materials which were previously destined solely for disposal to be processed

"We chose an MB Crusher Bucket for this reason," said Abdallah from Abdallah General Contracting Company (AGCC). According to him, the MB bucket crusher was the solution for reducing costs and speed up work.

He added, "We saw the MB units in 2012 and were impressed. They got my attention, a smart innovation with lots of benefits. That's why we decided to buy one unit from MB Crusher local dealer Abdelmassih Trading Company (AMTRAC) and install it on our Volvo excavator."

The 3.5-tonne BF90.3 bucket crusher is crushing more than 180cbm of materials per day, six days per week filling on average five to six trucks per day. AGCC is using five bars on the MB crusher to get the ideal particles size to be used as first and second base course layers.



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# The Big 5 Saudi returns to the biggest market

The event, taking place from 10-13 March, will provide crucial information to those looking to advance their businesses in the kingdom.

**T**ODAY, SAUDI ARABIA'S construction sector is in the spotlight following news of mega-urban developments such as NEOM and The Red Sea Tourism Project, as well as social reforms that welcome a fresh commercial entertainment industry.

More than 5,200 construction projects are currently being rolled out in the kingdom. Valued at US\$819bn, these account for 35 per cent of the total value of active projects across the GCC.

The Big 5 Saudi is returning to the Jeddah Centre for Forums & Events from 10-13 March 2019 with a record number of free workshops, product sectors and official country pavilions.

An ideal platform for construction industry professionals to network, secure qualified leads and close business deals in the largest and most populous GCC country, the exhibition is expected to attract 15,000 visitors, hosting over 300 manufacturers of construction products from around the world.

## Growing international participation and product sectors

Marking a growing international participation, the event will feature, for the



The Big 5 Saudi is an ideal platform for buyers and sellers to connect.

Photo Credit: dmg events



Photo Credit: dmg events

dmg events predicts that more than 100 Saudi construction players will exhibit at The Big 5 Saudi 2019.

first time, official country pavilions from Egypt and Pakistan, alongside Germany, Italy, Spain, Greece, India, Turkey and China, among others. More than 100 top Saudi construction players will also exhibit at The Big 5 Saudi 2019, displaying the latest technologies and building solutions across eight dedicated product sectors.

**With a 6.13 per cent annualised average growth expected between 2018 and 2022, opportunities for global and local industry players in Saudi Arabia are massive.**

Roni El Haddad, event director for The Big 5 Saudi, said, "This year, the event will bring decision-makers even closer to relevant suppliers by offering new dedicated product zones across the floorplan."

Beyond the traditional MEP Services, Building Interiors & Finishes, Construction Tools & Building Services, Building Envelope & Special Construction, in fact, The Big 5 Saudi 2019 will introduce the all new Heavy Equipment, HVACR Equipment, Smart City Technology, Solar Equipment, and Urban Design & Landscaping Equipment zones.

El Haddad continued, "The diversification of Saudi Arabia's construction portfolio, which now spans smart cities to hospitality infrastructure, from housing to entertainment facilities and parks, calls for a wide range of new building solutions and equipment. The Big 5 Saudi's expanded product sectors reflect this growing need and offer an ideal platform for buyers and sellers to network and find new products and solutions."

## Broad educational offer

At the event, the Saudi Standards, Metrology and Quality Organization (SASO),

the Saudi Building Code National Committee (SBCNC) and the GCC Standardization Organization (GSO) will provide crucial intelligence to local and international participants, paving the way for the future development of the Saudi construction industry.

Announcing GSO's participation at The Big 5 Saudi 2019, Saud Al-Khusaibi, GSO secretary general, stated, "The GSO is working to disseminate and promote knowledge of standardisation and related activities and quality for industrial, commercial and public consumers. It is also committed to improving the quality of products, goods and materials locally manufactured or imported to the GCC Common Market."

Al-Khusaibi added, "In this context, GSO is participating in The Big 5 Saudi to raise awareness about sustainable and green buildings and constructions by presenting Gulf standards and technical regulations related to this sector. We will also present our efforts in developing the GCC Building Code for a healthy environment, as well as for the stability of buildings."

Alongside the exhibition, The Big 5 Saudi



Many workshops will be held alongside the event.

Photo Credit: dmg events

2019 will also offer more than 80 CPD certified and free-to-attend workshops, a 48 per cent increase year-on-year. Delivered by renowned industry experts, the educational sessions will focus on four major themes – general construction, project management, sustainability, and architecture and design.

"The construction sector's immediate outlook is extremely promising. The launch of the public investment fund backed multi-

billion dollar Amaala resort in 2018, as well as the already announced NEOM and Red Sea Project, is a proof of that.

"Saudi Arabia's Vision 2030, along with significant investment in housing and infrastructure development promoted across the country by local authorities, are revitalising the construction industry and generating interest in a growing number of international players," El Haddad concluded. ■

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# VÖGELE brings precision on pathways

The wheeled paver meticulously paves any surface, much to the benefit of the users.

**T**HE 'GREEN GATEWAY' in Baden-Baden is an ideal route into the town for pedestrians and cyclists. Established as a green corridor for the State Horticultural Show in 1981, the 3.1metre-wide path is lined with trees. The new, natural-looking, three cm-thick surface course of sand-coloured asphalt was precision-paved with a crown of +2.5 per cent.

Paving coloured asphalt on the gateway was particularly challenging, said Oliver Weiss, site manager and member of the board of directors at Weiss GmbH Tief- und Straßenbau, a civil engineering and road construction company. This is because coloured asphalt requires high-precision paving with no room for mistakes, and because work space was extremely constricted on long sections of this tree-lined avenue. In other words, this could not have been achieved by any other machine except the VÖGELE SUPER 1303-3i wheeled paver. This compact class machine boasts compact dimensions combined with a high performance.

With a basic width of 1.85 metres, the SUPER 1303-3i has a total length of just 4.95 metres. It is extremely agile, allowing easy and fast manoeuvring even on confined job sites. With the Pivot Steer steering brake activated, the outside turning radius reduces to a minimum of 3.8 metres, which was a major advantage since six side paths and several bends also had to be paved within three job-site sections along the narrow route. Thanks to the AutoSet Basic repositioning function, this task presented no problems whatsoever.

## Precision paving for coloured asphalt

Coloured asphalt requires meticulous and highly precise paving. The paver's material hopper, material handling systems and screed must be thoroughly cleaned and no residual black bitumen allowed to get into the paver from the lorry that delivers the mix. The paving crew's footwear and



*The Green Gateway foot and cycle path in Baden-Baden was paved with a crown. The slope was 2.5 per cent on each side. Two HAMM tandem rollers were used for final compaction: HD 10 and HD 14.*

Photo Credit: VÖGELE

shovels likewise have to be absolutely clean, or else there is a risk of black spots appearing on the sand-coloured asphalt.

Furthermore, to achieve the highest level of quality, the paving process must be continuous and absolutely faultless. "With coloured asphalt, the crew has only one chance to get it right; the whole process has to run smoothly," stated Weiss. If the job site is challenging, too, with narrow paths and trees, then world-class pavers are required on the job.

## Feeding mix under difficult conditions

With little space to manoeuvre and narrow access roads, the material feed process became a real challenge in Baden-Baden. The lorries were not always able to dump their load because of the trees lining the road. It was extremely helpful that the compact SUPER 1303-3i has a large, 10 tonne material hopper, which supplied enough mix at all times to support continuous paving of the surface course.

The VÖGELE paver's professional material management system also contributed to assuring quality. The oscillating push-rollers ensured shock-free docking. The large conveyor tunnel, proportional control of

conveyors and the powerful augers ensured an optimum flow of mix and even spreading in front of the screed.

## Manoeuvrable, powerful and user-friendly

The SUPER 1303-3i owes its outstanding steering and manoeuvrability to the proven ErgoPlus 3 operating system, which is installed in all Premium Line machines from VÖGELE. Numerous convenient and automatic functions facilitate operation from both the ergonomically designed operator's platform and the screed operator's consoles.

The crew was further impressed with the powerful drive. With a 74.4kW diesel engine, the SUPER 1303-3i could easily push the lorry in front of it. Another plus they noticed was that the machine ran very quietly, and not just in ECO mode.

## Paving a crown with the perfect screed

The AB 340 Extending Screed is the perfect screed for pavers in the compact class. With a basic width of 1.8 metres and a maximum pave width of five metres, the screed is ideal for paving combined foot and cycle paths. On this job, the SUPER 1303-3i used a screed with tamper and vibrators. ■

## Janhavi Solar's tower lights are energy-efficient and cost-effective

POWERED BY THE philosophy – “Green Energy Powering Our Future”, Janhavi solar tower light, by Janhavi Solar, is an innovative product designed to meet the demanding lighting needs of the large-scale construction and projects sector.

At the same time, it contributes to enhanced operational and financial performance with its superior performance in comparison to the fuel generator powered tower light. An eco-friendly product with zero-carbon footprint, the solar tower light is easy to operate and low on maintenance. The ‘completely’ silent unit adds this advantage as another feather in its cap.

Another benefit is the significant amount of money that is saved in fuel and maintenance costs – a comparative analysis by Janhavi Solar finds that the unit achieves a 100 per cent (ROI) in 15 months and generates more than US\$25,000 in savings over a three-year project usage period.

The solar tower lights come with a full three-year warranty and free maintenance. The portable and mobile six to nine metre-



Photo Credit: Janhavi Solar

Janhavi Solar tower lights aid in night construction.

high tower masts are equipped with 400W to 800W LED lights with a guaranteed performance of up to 18 hours on a single full charge.

The parent company of Janhavi Solar was established in 2010 with a factory area of 6,000 sq m in Hamriyah Zone, Sharjah.

The group includes the Green Prefab FZE company in the UAE as well as Janhavi Readymade Homes and Janhavi Colour

Profile Sheet Industries in India.

Janhavi Solar has an in-house facility for production and testing, with a capacity of more than 100 products per month.

In the UAE, the company has supplied products and installation worth more than US\$27.23mn and provides support to some of the most prestigious clients and projects in the region. In India, the company has delivered readymade homes, resorts and units across different states for both individual and institutional clients.

The overall client base of the combined entities is more than 1,000 customers across private, public, corporate and government segments. The business also exports products to more than 22 countries across the region covering GCC, Africa and India.

Janhavi Solar produces solar lighting towers, mobile surveillance trailers, trailer parts and telescopic masts, etc. Further, the enterprise holds adequate stock to provide prompt shipment and takes pride in the customer-driven, efficient pre-sales and effective post-sales service.

### 100% Return on Investment in just 15 months\*



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\* Calculation on total costs over a 3 years project including fuel consumption, maintenance and operations required for performance of a generator tower light sized for similar output / Fuel and Labour rates assumed 4000\$/barrel and 4\$/hr. respectively.

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Photo Credit: Brady

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## TE Connectivity completes offering for new generation solar plants

TE CONNECTIVITY (TE), provider of connectivity and sensors, has introduced the new TE ENTRELEC PI-Spring range of terminal blocks ZK-PV, dedicated to large commercial and utility-scale photovoltaic installations.

The PI-Spring range have voltage of 1,500V DC (IEC) / 1,000V DC (UL), complementing the existing 1,500V offering including DBL distribution blocks and SNK screw power terminal blocks ZS150 / ZS240.

The ZK-PV range of terminal blocks makes connecting photovoltaic systems quicker and more reliable. The smart two-in-one connection gives installers more flexibility, real-time savings and higher quality results.

The ZK-PV range for photovoltaic installations is as compact as the rest of the PI-Spring terminal block range, adding only two mm to the unit's depth. The distribution blocks are suitable for conductors with maximum cross-sections of 10 sq mm/6AWG and 16 sq mm/4AWG. The range provides two and three connections so that two circuits can be grouped in parallel in one line. To group more than two circuits, several ZK10 PV terminals (10 sq mm/6AWG) can be interconnected by means of convenient plug-in jumpers.

The range's unique design gives installers two different ways to connect wires quickly and securely. A Push-In mode lets installers just push solid wires into the terminal – ENTRELEC's patented design automatically clamps the wire to create a strong, reliable connection. In Spring Mode, non-prepared, stranded wires can be inserted just as easily. The installer just needs to slide a screwdriver into the adjacent slot, insert the wire and the connection is secured.



Photo Credit: TE

*The ZK-PV range of terminal blocks makes connecting photovoltaic systems quicker and more reliable.*

## New TCT turbocharger series from MAN Energy Solutions

MAN ENERGY SOLUTIONS unveiled its new TCT turbocharger series to accompany and replace the TCA generation whose design has been continuously updated since its introduction but is now some 15 years old. With TCT turbochargers, MAN Energy Solutions can significantly reduce turbocharger dimensions to meet current market requirements.

The company reports that a key focus during the design phase was a reduction in manufacturing and operating costs while maintaining compliance with thermodynamic requirements.

MAN Energy Solutions' vice-president Ralph Klaunig said, "We anticipate a positive market reception for the TCT series as we've targeted a smaller, lighter design with a superior charging efficiency, and a high air-pressure in this new generation. As our guests have just seen, the TCT concept is so service-friendly that even a pair of managers can take a unit apart."

The launch of the TCT series means that MAN Energy Solutions' two-stage turbocharging solution can now achieve efficiency levels of up to 80 per cent, a market leading accomplishment.

MAN Energy Solutions is currently offering just the TCT40 and TCT60 types, but expects the other TCT sizes to come on stream by 2020 and 2021. According to MAN Energy Solutions, the TCT40 was already sold to two customers and is currently undergoing its first field test, while the TCT60 will be delivered to its first customer mid of 2020. The TCT is not only aimed at low-speed engines, but is also eminently suitable for two-stage turbocharging on four-stroke engines.



Photo Credit: MAN Energy Solutions

*MAN TCT turbochargers are suitable for conventional fuel and dual-fuel engines in both marine and power applications ranging from 6MW up to 24MW output per turbocharger.*

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## New clever and compact dry screw vacuum pump from Atlas Copco

ATLAS COPCO HAS launched the DHS 065-200 VSD+ dry screw vacuum pump offering lower lifecycle costs, higher productivity, less energy consumption and easy maintenance.

Built for rapid cycling and continuous operation applications, the DHS VSD+ is a truly clean, zero contamination dry vacuum pump that requires no water or oil cooling.

Certified as oil-free in the category 'Class Zero' according to ISO standard 8573-1, the pump is free of oil emissions, including aerosol oil content in the outlet air stream. The reduced number of parts within the pump, combined with the variable pitch screw design, help increase efficiency and reduce maintenance.

### Best-in-class performance

Alexander Frerichs, product manager dry pumps, commented, "The new screw profile of the DHS 065-200 VSD+ offers best-in-class performance in its category. We set out to build a pump that would create a safer, cleaner and smarter industrial environment. The robust design, clean operations and

remote monitoring and control capabilities makes it the perfect pump for industrial applications."

### No oil migrates in pump environment

Due to the completely dry operation of the DHS 065-200 VSD+, no oil migrates in the pump environment. It helps to create a cleaner and safer working environment. "This is a great advantage especially in applications such as vacuum drying and cleaning, paper converting, sensitive and regulations-driven electronics manufacturing and food packaging industries, because there are no reactions with other process media or deposits inside the vacuum pump," Frerichs maintained.

### Integration in plant management system

Housed in a noise reducing canopy ensures a noticeably quiet, vibration-free operation with a low pitch sound level, the pump is equipped and controlled with the MK5 Elektronikon. This integrates the pump to



The DHS 065-200 VSD+ has a compact noise-reducing canopy with a quiet, vibration-free operation and low pitch sound level.

Photo Credit: Atlas Copco

plant management systems. Users get the latest status updates on running and stopped hours, warning, and fault and shutdown indications. Combined with Atlas Copco's SMARTLINK, the pump offers unrivalled remote monitoring capabilities.

### Easy belt change

Reduced maintenance is an integral feature of the DHS VSD+ series. The grease lubricated bearings and the belt are the only parts which require replacement. The belt itself can be changed without external service support within 30 minutes. The robust canopy retains the integrity of the internal parts and can be removed easily. This greatly reduces installation complexity and associated costs.



Photo Credit: Eaton

The Eaton 93E UPS has enhanced compatibility with generators and other critical equipment on the same network.

and are amongst the most energy-efficient UPSs in their class, with up to 96.1 per cent efficiency in double conversion mode and up to 99.3 per cent in high-efficiency mode, which reduces power loss and enables high energy conservation.

"The 93E UPS series is designed to give practical and affordable

## Eaton launches new generation of 93E UPS

POWER MANAGEMENT COMPANY Eaton has introduced of the second-generation of its Eaton 93E uninterruptible power supplies (UPS).

The Eaton 93E UPS offers high availability, energy efficiency and a compact footprint for advanced power protection in small and medium-sized data centres and other applications at a lower total cost of ownership. The second generation of Eaton 93E UPS series includes ratings of 100 to 200kVA, with an internal maintenance bypass switch option for 100-120kVA units. The range will be available today onwards.

Eaton 93E UPSs are designed to be practical and simple to use, while providing a level of performance and the features required to protect mission-critical applications. The second generation of Eaton 93E UPS features a three-level topology design

power protection for ever-expanding loads and applications," said Karim Refas, regional channel manager, Eaton.

"With a power rating range from 15 to 200kVA and improved efficiency for the second generation of 100 to 200kVA range, it will appeal to a broad audience looking to modernise their electrical, IT and data centre infrastructure."

The Eaton 93E UPS includes several features that are unique to Eaton and designed to provide the highest possible availability for critical infrastructure.

These include:

- Hot Sync, Eaton's patented technology for load sharing between UPSs to increase capacity and redundancy
- Advanced battery management (ABM), which enables intelligent charging to preserve and prolong the battery service life
- Eaton's intelligent power manager (IPM) software, which is used for remote monitoring and managing of the UPS
- Multilingual graphical LCD display to see quick and precise UPS status updates

The Eaton 93E UPS has enhanced compatibility with generators and other critical equipment on the same network thanks to an active power factor correction (PFC) that provides an input power factor of 0.99, which makes the UPS installation more cost-effective, and an ITHD of less than three per cent for the second generation. The 93E UPS also includes pre-designed, pre-tested and pre-installed integrated backfeed protection safety components to ensure safe installation and use.



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الإنتاجية، بل إن لها أيضاً تأثيراً بعيد المدى يتمثل في زيادة الصادرات وتعزيز القدرة التنافسية، وبوجه عام، حقق القطاع نمواً بلغت نسبته 6,2 في المائة خلال الأرباع الثلاثة الأولى لعام 2018.

وأورد التقرير أن « الأداء القوي لقطاع الأعمال الإنشائية لا يتوقف عند هذا القطاع فحسب، بل إن له أيضاً تأثيراً مضاعفاً مهماً يمتد ليشمل النظام الاقتصادي للمملكة ككل، ولا سيما القطاعات الأخرى غير النفطية، مثل العقارات والتمويل والتصنيع والتجارة، وقد أصبح النمو في قطاع الأعمال الإنشائية محركاً إضافياً يُضفي زخماً على القطاعات المرتبطة به.»

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المستمر لقطاع البنية التحتية، تشهد البحرين الآن زيادة في الاستثمارات الموجهة نحو التحديث التكنولوجي والابتكار، وتقود هذه العوامل على وجه الخصوص التغيير ضمن قطاع التكنولوجيا المالية سريعة النمو، كما تعد عاملاً أساسياً للتوسع المستمر في قطاع التصنيع.

وقد جاء على لسان دكتور جارمو كويلين، كبير الخبراء الاقتصاديين في مجلس التنمية الاقتصادية البحريني: «إنه مع ارتفاع درجة عدم الاستقرار الاقتصادي حول العالم، وتراجع معدلات النمو في منطقة الشرق الأوسط بوجه عام، يكون من المتوقع أن تشهد البحرين نمواً قادراً على الصمود بفضل التزامها بالتنوع والاستدامة، وباعتبارها المدخل إلى منطقة الخليج، فليس من المستغرب أن تتدفق الاستثمارات في قطاعات مثل البناء والتشييد، وتكنولوجيا المعلومات والاتصالات، والتكنولوجيا المالية، بفضل الموقع الاستراتيجي المهم الذي تتمتع به المملكة، هذا فضلاً عن مزاياها الاقتصادية، وسهولة جزاولة الأعمال التجارية فيها.»

وقد انعكست التركيبة الديموغرافية للمملكة، إلى جانب تنوع مصادرها الاقتصادية، على قطاع الأعمال الإنشائية الذي يعتبر عاملاً مهماً يساهم في تحقيق النمو. وقد شهد توسعاً بنسبة 5,4 في المائة على أساس سنوي في الربع الثالث.

هذا، ويأتي افتتاح مشروع خط الإنتاج السادس لشركة ألنيوم البحرين «ألبا» التي تسعى الآن إلى إقامة مصهر الألنيوم الأكبر على مستوى العالم، وبرنامج تحديث شركة نفط البحرين «بابكو»، كمثالين فقط على مشاريع البنية التحتية العديدة التي يجري تنفيذها على نطاق واسع في شتى أنحاء المملكة، ولا تقتصر مزايا هذه المشاريع فقط على خلق فرص عمل واستثمارات جديدة خلال العملية



برنامج بانكو التحديثي يساهم في النمو

## البنية التحتية تعزز اقتصاد البحرين غير النفطية

أفاد مجلس التنمية الاقتصادية في بيان صحفي له أن مملكة البحرين واصلت تحقيق النمو المتوازن عبر اقتصادها المتنوع. فقد شهد الربع الثالث من سنة 2018 تحقيق النمو الاقتصادي مدفوعاً بالقطاع الاقتصادي غير النفطي. وقد نشر مجلس التنمية الاقتصادية البحريني - مؤخراً - تقييماً لأداء المملكة في التقرير الاقتصادي الربع سنوي لمملكة البحرين. وجاء في هذا التقرير أن إعادة التوازن المالي في دول مجلس التعاون الخليجي يعزز الثقة ويسهم في تحقيق الاستفادة الاقتصادية على نطاق أوسع في المنطقة.

الويدروكربونيات. خلص التقرير الاقتصادي الربع سنوي المملكة إلى أن معدل نمو الناتج المحلي الإجمالي السنوي، البالغ 1,6 في المائة في الربع الثالث، كان مدعوماً بالتوسع في قطاعي الأعمال الإنشائية والتصنيع، بالإضافة إلى زيادة الإنفاق على البنية التحتية.

وقد شهدت المشاريع الممولة من جانب مجلس التعاون لدول الخليج العربية وحدها نشاطاً ملحوظاً، فقد ارتفع إجمالي التراكمي للمشاريع التي يجري العمل على تنفيذها بنسبة 16,3 في المائة على أساس سنوي. ويعيدنا عن الزخم

أبرز التقرير أن هذه الثقة تنعكس في النمو المتسارع لبلدان مجلس التعاون الخليجي. غير أنه أشار إلى أن متوسط معدلات النمو سوف يتراجع بشكل ملحوظ عما كان عليه خلال فترة ما قبل عام 2008، التي تميزت بازدهار غير مسبوق في مشاريع البنية التحتية بالمنطقة. فيما أشار التقرير الاقتصادي الربع السنوي لمملكة البحرين إلى أن البنية التحتية لا تزال هي المحرك الرئيسي للنمو، فضلاً عن أنها تساند جهود تعزيز الإنتاجية العالية التي تشهدها منطقة الشرق الأوسط. ومع استمرار الاقتصاد البحريني في تنويع مصادره بعيداً عن قطاع

# المحتويات

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البحرين تشهد نهضة اقتصادية



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إنشاءات: الشاحنات، المصاعد، قوالب الخرسانة والسقالات

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