في خدمة شركات المنطقة منذ ١٩٨٤

SERVING THE REGION'S BUSINESS SINCE 1984

TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط MIDDLE EAST

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Construction

Five disruptive technologies at play

Power

Opportunities for growth and innovation

THE GCC

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INSIDE

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THE GCC ECONOMY is at a crossroads. Economist Moin Siddiqi analyses how the regional governments are stepping up efforts to usher in reforms and develop new strategies (p16).

With the markets remain challenging in the post-covid era, businesses are trying to keep costs down by embracing digital tools. Our reports highlight how construction and mining sectors can leverage disruptive technologies to improve efficiencies and productivity (p20 and 29). Turn to page 36 to gain insights on the future of hydrogen economy, with the UAE aiming to boost green hydrogen capabilities. We look at the trends of site power that help build a greener and better-connected world while bridging the energy divide.

Elsewhere in the issue, we have updates on machinery such as excavators, crushing and screening and cranes.

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

TECHNICAL REVIEW MIDDLE EAST
النشرة التقنية - الشرق الأوسط
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Briefly

Total and Zahid Group join forces to progress solar energy in Saudi Arabia

ALIGNING WITH THE Kingdom of Saudi Arabia Vision 2030, Total and Zahid Group have partnered, comitting to bring affordable and reliable solar energy solutions to commercial and industry consumers across Saudi Arabia.

The companies have estabished a joint venture, named Saudi French for Energy Efficiency and Renewables, or SAFEER.

SAFEER's mission is to lead the way in developing an affordable and reliable ecosystem for state-of-the-art solar solutions whilst maintaining a second-to-none commitment to safety and quality.

Group president of Energy at Zahid Group, Majid T. Zahid, explained, "Zahid Group is built on long-standing partnerships and associations with globally renowned brands and its adherence to the highest levels of professionalism and operating standards. Across our 11 sectors of operation, Zahid Group has illustrated its commitment to our Kingdom's future."

QS Monitor partners with Elgressy to deliver safer chemical-free water supply

MASDAR TECH PARK company, QC Monitor Limited, has partnered with Elgressy Engineering Services, pioneer in electrochemical water disinfection and treatment, aiming to implement systems and infrastructure to deliver safer chemical-free water to the UAE.

Elgressy founder and owner, Gaby Elgressy, said, "We see ecological water treatment as a responsibility and obligation and we are proud to have innovated a safe solution which utilises advanced chemical and electrical engineering techniques as a viable and much safer alternative to chemical dosing. It is a great honor to partner with QS Monitor to bring our technologies to the United Arab Emirates where local water is a scarce resource."

As well as aiming to deliver a chemical-free water supply, the two companies will together target validated and innovative water treatment and cooling solutions to benefit the UAE's industry and population.

DuPont and Waterise target subsea desalination

SUSTAINABLE SOLUTION SPECIALIST DuPont has formally partnered with Waterise. Together, the two companies will aim to improve current subsea desalination, using DuPont's reserve osmosis membranes and expertise to enhance Waterise's current infrastructure and systems in subsea desalination plants.

Subsea reverse osmosis (RO) desalination represents a more economical and sustainable innovation to turn seawater to freshwater, which, once installed, will allow Waterise to improve the efficiency of their operation.

Subsea desalination utilises the natural hydrostatic pressure at the depths of the sea to power the reverse osmosis, reducing the energy requirements of RO desalination by 40%. The subsea process also requires 80% less coastal land than land-based plants, meaning the innovation is likely more viable for limited space operations and communities.

"I am delighted to announce that Waterise is collaborating with DuPont as part of our program to identify and establish collaboration with world leading companies which produce components needed to construct a Waterise desalination unit," said Niels Petter Wright, CEO, Waterise.

Considering its environmental impact, subsea desalination requires lower volumes of pretreatment chemicals and eliminates brine discharge into coastal waters.

In addition to the exclusive use of DuPont's FilmTec seawater membranes across all systems, DuPont and Waterise will share knowledge, expertise and insight to collaborate on research and development projects towards their shared mission to advance the sustainability and efficiency of subsea desalination operations and performance.

Photo Credit : Adobe Stock

Subsea desalination requires 80% less coastal land than land-based plants.

Global vice president and general manager of Dupont Water Solutions, HP Nanda, explained, "As we look to increase access to fresh water and enable a water optimised world, we are energised by opportunities to collaborate on innovative solutions to water purification, conservation and reuse. We are excited about Waterise's new approach to desalination that not only reduces water scarcity, but also minimises energy consumption and environmental impact."

Along with exclusive usage rights to DuPont's FilmTec seawater membranes across its systems, DuPont and Waterise will collaborate on research and development across the subsea sector.

Desalination removes salt and other various chemicals from seawater to provide freshwater for municipal, agricultural, energy or industrial purposes. Globally, oceans contain over 97% of the planet's water resources, providing industry with essentially unlimited raw material for desalination. and repurposing.

Zahid Tractor opts for Infor systems to aid digitalisation

INFOR HAS ANNOUNCED Zahid Tractor, the Saudi Arabia-based Zahid Group subsidiary specialising in the supply of construction machinery, has selected Infor enterprise resource planning (ERP) to streamline its digital transformation. By integrating Infor M3 for its equipment, Zahid Tractor will gain visibility for its customer-centric offering.

Infor's M3 solution will help Zahid Tractor to tap high levels of growth in Saudi Arabia's construction equipment market, which is projected to achieve an estimated compound annual growth rate of 4.79% from 2020 to 2025.

Barig Siraj, Zahid Group's vice president of group affairs, explained, "As a leading supplier of construction machinery and commercial vehicles, the Zahid Group of companies is committed to supporting important initiatives. By deploying solutions such as Infor M3, Zahid Group is increasing its ability to respond quickly and efficiently to customer demand while also improving our overall agility and business success."

Photo Credit : Adobe Stock

Infor will aid in Zahid Tractor's digital transformation.

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Briefly

Honeywell and IDEMIA announce strategic partnership

HONEYWELL, GLOBAL LEADER in connected buildings, and IDEMIA, leader in augmented identity, announced a strategic alliance to cultivate an intelligent building ecosystem to provide a seamless experience for operators and occupants. The alliance will integrate Honeywell's security solutions and building management systems with IDEMIA's biometric-based control systems to create enhanced, safer and more efficient buildings.

IDEMIA's AI-based solutions include MorphoWaveTM, a contactless fingerprint device than can scan up to four fingerprints in less than a second, VisionPass, a facial recognition terminal, and Augmented Vision, a biometric video analytics platform.

Fahmi Jabri, general manager, Honeywell Commercial Security, Middle East, Turkey and Africa, explained, "By combining Honeywell's expertise in security and building management systems with IDEMIA's biometric-based access control systems, we have the ability to create an intelligent building ecosystem for regional operators and occupants."

Metito constructs world's largest agricultural wastewater treatment plant in Egypt

METITO, INTERNATIONAL PROVIDER of water management and alternative energy solutions, has been awarded the design, supply, construction, operation and maintenance of the El-Hammam agricultural wastewater treatment plant in Egypt, alongside Hassan Allam, Arab Contractors and Orascom Construction.

The treatment plant has a daily capacity of six million cubic metres, meaning it is the world's larget of its type. The system will collect and transport agricultural drainage water from the north of Nile Delta to the plant, before the treated water then irrigates up to 500,000 feddans west of the Nile Delta area. The plant will receive the wastewater gathered in the north of Delta from the agricultural drainage, through digging a 120 km pathway connecting the two points.

RTA completes construction of model bus stations

DUBAI'S ROADS AND Transport Authority (RTA) has completed the construction of two commercial model bus stations, located at Oud Metha and Al Satwa.

Photo Credit : Adobe Stock

The stations can accommodate 7,800 passengers every day.

The stations feature unique designs that aim to form a blend of creative and practical solutions to engineering designs and a new concept of mass transit means across Dubai.

Mattar Mohammed Al Tayer, director-general, chairman of the board of executive directors of the Roads and Transport Authority explained, "The construction of stations for public bus riders complements RTA's efforts to upgrade public transport infrastructure to encourage people to use public transit means in their daily movement.

"The new stations boast contemporary designs that cater to the needs of sustainability and people of determination, yet coherent with the identity and shape of RTA's stations."

The building of Oud Metha Bus Station comprises a ground floor and three floors in addition to a rooftop car park. The design of the station befits the public transit systems in the area. It has parking spaces for buses, private vehicles and taxis.

The average number of riders using the station is expected to reach 10 thousand riders per day.

Al Satwa Bus Station can accommodate up to 7800 passengers across its premises every day. In the future, this can be expanded to accommodate up to 15,000 riders per day if future expansion plans go ahead as planned.

The station has 15 operational parking for buses, 14 parking slots for out-of-service buses, and 228 parking for vehicles.

The station includes a pick-up and drop-off point, parking for waiting and standby buses, parking for taxis, staff and visitors as well as bike racks.

The facilities also include furnished public rest area, prayer rooms for gents and ladies, staff offices, and public toilets. It has areas for investment, self-service kiosks, card machines, bus information display panel, customers happiness' index, ATMs, refreshment and snacks vending machines.

RTA has recently opened four bus stations across the nation: Al Jafiliya, Al Ghubaiba, Etisalat and the Union.

Al Ghubaiba Bus Station comprises six buildings with an area of 2,452 square metres and a capacity to serve 15,000 daily riders per day.

Al Jafilya Bus Station has a building for the station and a multi-level building comprising of a ground floor, two levels and rooftop car parking. The built area spans 19,000 square metres and the station can serve 7,000 daily riders.

Volvo Autonomous Solutions partners with Foretellix

VOLVO AUTONOMOUS SOLUTIONS has signed an agreement with verification specialists Foretellix, aiming to address the challenges currently arising from large-scale verification of autonomous driving solutions on highways and confined areas, such as mines.

The partnership will focus on guaranteeing the highest possible levels of safety and productivity of Volvo Autonomous Solution vehicles and machines. The orchestration of large scale simulation tests and big data analysis will significantly reduce Volvo's costs and time to market across their project range.

Ziv Binyamini, CEO and co-founder of Foretellix, explained, "This partnership is a significant milestone for the industry as it is the first time that large scale Coverage Driven Verification will be used for verification of ADS in confined areas. Our partnership will combine the expertise of the two companies and set a new standard in the verification of automated driving systems, boosting both safety and productivity."

Photo Credit : Volvo Autonomous Solutions

The partnership will reduce costs and time to market.

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Briefly

Ecoppia unveils new project in BenBan Solar Park, Egypt

ECOPPIA, A PIONEER in robotic solutions for photovoltaic solar, has announced a new project in BenBan Solar Park, Egypt.

Located near the south Egyptian city of Aswan, the park has a total capacity of 1,650MWp, corresponding to an annual production of approximately 3.8 TW. While the facility enjoys very high radiation rates, it also suffers from major soiling and desert sands, and requires frequent cleaning for steady and optimal production.

In the past, Ecoppia's robotic solutions have proven to be extremely effective, cleaning nearly 10 million solar panels every night in harsh climatic conditions, spread across roughly 2,500 MW of installations globally. The robots have proven safe and reliable on all module types, including glass on glass and bifacial.

This project in BenBan will feature the light-weight Ecoppia T4 solution, designed especially for Single Axis trackers. This is yet another vote of confidence in Ecoppia by a multinational energy company, following the long-term engagements already in place with market leaders such as Engie, EDF, First Solar, Fortum, ReNew Power, Azure Power and others.

"We are excited to take part in the sustainability revolution in the Middle East," said Jean Scemama, CEO of Ecoppia. "As leaders in robotic cleaning solutions for solar, entering a new country is a great milestone in the company's growth, especially when the project is in one of the largest and most significant solar parks in the world," he added.

"Our unparalleled experience in the region, operating in the Middle East since early 2014, enables us to deliver great value to such projects, as we see more and more energy companies advancing towards full automation of their operations and maintenance (O&M) activities" he concluded.

Ecoppia's robotic solutions are completely autonomous, water-free and energy independent, allowing site owners to enjoy the benefits of year-round peak performance while lowering their operations and maintenance (O&M) expenses and overall, their LCOE.

Hitachi ABB Power Grids launches Smart Digital Substation

HITACHI ABB POWER Grids has announced the launch of its Smart Digital Substation, which brings together the latest in digital substation technology, combined with the predictive and prescriptive capabilities of Hitachi's Lumada Asset Performance Management (APM) solution.

The Smart Digital Substation is a part of a new wave of innovation, that began with the integration of Hitachi ABB Power Grids' Digital Enterprise software, with Hitachi's Lumada ecosystem.

The new substation replaces copper wires with fibre optic cables for a smaller site, and enables companies to reduce their carbon footprints. Operators will also have more data now, on every aspect of their facility; from the composition of a circuit breaker's insulation; to using unstructured video footage; to determining the probability of unplanned downtime for primary equipment throughout the substation.

Substations help transform voltage levels, from high to low, or vice versa, and secure and dispatch power flow. They play a vital role in transmitting and distributing electricity safely across the grid from the point of generation, to the end-consumer. The digital substation market is projected to grow at a CAGR of 7.1% over the next five years, from US$6.4bn in 2020, to US$9.1bn by 2025.

Photo Credit : HITACHI ABB POWER GRIDS

The Smart Digital Substation helps companies reduces their carbon footprint.

Actionable insights and 24/7 expert support

By harnessing data generated by devices and sensors, the Smart Digital Substation provides owners and operators with next-level capabilities, including actionable insights and a complete view of their operations.

The integration of Lumada APM adds a layer of analytics and simulations, enabling decision-makers to address issues on an asset, before any disruption to operations. In addition, the global network of digitally connected Collaborative Operations Centers (COCs) ensures prompt customer service from experts, and some new digital service offerings, such as the customer asset base lifecycle management programme.

Defense-in-depth cybersecurity

The Smart Digital Substation is purpose-built to balance resources, conserve cash, and increase reliability and security. Highly secure communication using quantum-safe encryption enables real-time connectivity, and the modular software suite seamlessly combines visibility into asset performance, maintenance history, workforce and resource location.

Wärtsilä secures five-year contract with Umm AlQura Cement Co

WÄRTSILÄ HAS SIGNED a five-year operation and maintenance (O&M) agreement with the Saudi Arabian cement producer Umm AlQura Cement Co. The 47 MW plant is located in Taif City, in western Saudi Arabia, and operates with five Wärtsilä 32TS engines; a two-stage turbocharged version of the standard Wärtsilä 32 engine series which works on low fuel and lube oil consumption.

The plant supplies power for operating the cement production facility and receives extensive support from the Wärtsilä Expertise Centre in Dubai. The 24/7 support consists of remote guidance, with augmented reality video streaming, operations surveillance, performance deviation alerting, remote troubleshooting and data analysis and asset diagnostics with advanced tools.

Photo Credit : Wärtsilä Corporation

The 47MW plant in Taif City operates with Wärtsilä 32TS engines.

"We are satisfied in the way that Wärtsilä has operated and maintained the power plant, which has allowed us to focus on producing cement with an uninterrupted supply of electricity," said Fawaz Al Mutairi, CEO, Umm AlQura Cement Company.

Al Dhafra PV2 solar power project reaches financial close

THE AL DHAFRA PV2 solar project has reached financial close, with total project costs of approximately US$1bn.

The project was procured by the Emirates Water and Electricity Company (EWEC) and developed by EDF Renouvelables and Jinko Power (HK), a subsidiary of Jinko Power Technology Co, in partnership with the Abu Dhabi National Energy Company (TAQA) and Masdar. BNP Paribas was sole lead bank for the winning consortium bid for the project, the world's largest single-site solar power plant under construction with a capacity of 2GWp.

The new solar site is located 35 km outside of Abu Dhabi City, and will deploy the latest innovations in crystalline bifacial solar technology, which will enable the generation of more power by using both sides of the solar panel.

Photo Credit : Adobe Stock

The project will be the world's largest single-site solar power plant under construction.

The project will supply power directly to EWEC. It will use approximately four million solar panels to generate enough electricity to sustain power for up to 160,000 homes across the UAE. Upon full commercial operations, the plant is expected to reduce Abu Dhabi's CO_2 emissions by more than 2.4mn metric tons per year. The project is expected to be commercially operational by 2022.

At financial close, the project had yielded one of the most competitive levelised costs of electricity for solar PV (1.32 c$/kWh), reinforcing the environmental, commercial and operational value of transitioning towards renewable energy.

Amine Bel Hadj Soulami, head of BNP Paribas, Middle East & Africa said, "Scaling up the energy transition through finance is essential to tackling the climate crisis, and BNP Paribas is committed to supporting this vital shift towards a low carbon economy. Renewable energy is a strategic pillar of the UAE's sustainability strategy, and the Al Dhafra PV2 solar plant will significantly contribute to the 50% clean energy-sourcing objective by 2050."

New appointment

SCHNEIDER ELECTRIC HAS appointed Manuel Alzugaray Rodrigues as vice president for the company's Secure Power division in the Gulf region. Rodrigues, who has more than 16 years' experience in the technology channel space, will now lead the company's data centre business across Bahrain, Kuwait, Oman, Qatar and the United Arab Emirates.

"Manuel has excelled in a variety of sales roles throughout his time with Schneider Electric, and he's exceptional in engaging with customers and partners," said Ziad Youssef, MEA vice president for Secure Power at Schneider Electric.

"We're excited about the capabilities that he's going to bring to this role, and how he'll take our Secure Power business to the next level," he added.

Partnership for service workshop

AL MASAOOD POWER Division, an expert in marine propulsion and power generation systems, and Nidec Leroy-Somer, a global leader in industrial alternators, electric motors and drives, have joined forces to establish a one-stop service workshop in the Gulf region and provide aftersales support for alternators that are manufactured under Leroy-Somer and Kato Engineering brands.

Photo Credit : Nidec Leroy-Somer

The new venture will involve the establishment of a service workshop and aftersales support for alternators.

The new agreement is an expansion to the existing partnership of both parties, combining their efforts and expertise to address the growing demand for world-class aftersales support platforms within the regional electrification market.

Rasso Bartenschlager, general manager, Al Masaood Power, said, "The specialised world of electrification demands a whole new aftersales service. Our support platform, which will be available in the UAE, Bahrain, Oman and Kuwait, will be specifically designed to cater to the complex requirements of this expanding industry in the region. This latest partnership forms part of the shared commitment of both companies to continuously enhance their capabilities necessary for them to become the leaders in the future of the global and regional electrification markets."

Under the partnership, Al Masaood Power and Nidec Leroy-Somer will jointly have progressive in-house service capabilities as its differentiating factor to offer superior services in diagnostics, repair and overhauls. These include spare parts and retrofitting of alternators on-site or in the repair and overhaul workshop.

Briefly

Tadweer boosts recycling

ABU DHABI WASTE Management Center (Tadweer) has announced that it has recycled 1,915,724 tons of construction and demolition (C&D) waste in Abu Dhabi in 2020, accounting for 80% of the total C&D waste handled by its facilities.

Over the past year, Tadweer collected 2,400,000 tons of C&D waste from the emirate of Abu Dhabi, which accounts for 32% of the total waste handled by the Center.

To reduce waste resulting from construction and demolition activities across the emirate, the Center is implementing various programmes that aim to enhance its recycling capabilities according to the highest local and international standards. This aligns with Abu Dhabi Executive Council's decision that mandates the use of at least 40% of recycled materials in road and construction projects across the emirate's three regions.

Tadweer's C&D recycling facilities can produce four different sizes of recycled aggregate measuring 0 mm to 37.5 mm, as well as treated sand. These materials are used in the construction of roads and vital infrastructure projects in Abu Dhabi.

New company established

RUBBER WORLD INDUSTRY, leading manufacturer and supplier of HVAC and MEP products and accessories in the UAE, has launched United Air Conditioning, a specialised company with an investment of Dh90mn (US$25mn) into a production plant in Al Jurf industrial area, Ajman, to meet the growing demand for its environmentally-friendly products.

The new manufacturing unit, spanning 10,000 sq m, is part of the company's expansion plans backed by the rising demand for the company's cooling, heating and now coronavirus-related products. At the onset of the Covid-19 pandemic, the company saw a sharp increase in health and environment-related products such as disinfectant chambers, HVAC filters, air cleaners, optimised HVAC products, configured rubber insulation and ducts to limit the virus spread.

Rubber World has two units in UAE and one in Sri Lanka, and plans further new production facilities in South Asia and the Middle East.

Scania transports top football players for FIFA Club World Cup

ARABIAN AGENCIES COMPANY, part of Alfardan Group, the authorised dealers of Scania Trucks and buses since 2003 has delivered 10 Scania Touring Coaches to Mowasalat (Karwa), the major transport services provider in Qatar.

The buses were first used during the FIFA Club World Cup Qatar 2020, which took place in February 2021. The agreement will further augment the region's brand too, as Scania is a prestigious world-wide name backed by full support for all parts, maintenance and repairs. This means downtime and associated costs can be kept to the bare minimum. With a global service network, Scania can always deliver to ensure a beneficial operating economy to its transportation partners across the globe.

Michael Nagy, bus sales manager at Scania Middle East adds, "Indeed it is a remarkable achievement for Scania Middle East to have successfully delivered Scania Touring coaches to Mowasalat, the major transport services provider in Qatar. Operating Scania Touring in Qatar will have a positive impact in terms of promoting the luxury transportation service concept backed by comprehensive support from a single point of contact since all parts, maintenance and repairs are provided by Scania global network."

Photo Credit : Scania

Arabian Agencies Company delivers 10 Scania Touring Coaches to Mowasalat (Karwa).

CEO of Mowasalat (Karwa), Fahad Saad Al Qahtani and COO of Alfardan Automotive, Dr. Ma'n Al-Hamawi, acknowledged this deal is an exciting development for both companies. He said, "It is an honor to partner with Mowasalat (Karwa) and deliver the state-of-the-art environmentally friendly Scania Touring Coaches."

Al Mariah General Transport expands fleet with luxury buses

BIN BROOK MOTORS & Equipment L.L.C.handed over 29 units Scania Euro 6 buses to Al Mariah General Transport, Abu Dhabi.

Al Mariah General Transport, one of the pioneers in passenger transport services in the UAE, has expanded their fleet with another 29 Scania Marcopolo luxury buses, with the latest European Emission standard of Euro 6. They set another standard for executive staff transport at the time of pandemic, by opting for BioSafe buses. This has been the first in the UAE, which comprises of multiple features such as integrated sanitising points, driver protection shield, disinfection of the air and the surfaces inside the toilet by means of UV-C and many more, to be benchmarked as the most safest and most environment friendly coach fleet in the country.

"The story starts the first quarter of the year, when we won a prestigious project for executive staff's transportation in the Western Region of Abu Dhabi emirate. Bin Brook's Sales & After Sales team, have been actively participating in the discussion since the beginning, providing all technical and commercial solutions, as a reliable partner. Our experience together was more than a decade old and we complimented each other for a successful execution of the project," shares Ahmed Al Naggar, group managing director.

Photo Credit : Al Mariah General Transport

New Scania fleet for Al Mariah General Transport in Abu Dhabi.

Hino introduces automatic transmission model to MDT line-up in Middle East

HINO MOTORS, the commercial vehicle arm of Toyota Group, has introduced an automatic transmission variant to its line-up of Hino 500 Series Medium Duty Truck (MDT) range in the Middle East. The latest version of the versatile vehicle is available in Euro 3 (GCC) engine variants and includes multiple features to enhance safety and comfort for drivers and passengers.

Every aspect of the Hino 500 Series MDT's cabin has been engineered to bring greater convenience, from the two-level steps and large inside door handle grips that give easy access to the driving seat to the brightly illuminated combination meter and LCD screen that offer a clear view of the vehicle's instrument readings. The semi-floating cabin structure is mounted using a special bush that greatly reduces the amount of vibration experienced during driving, leading to increased passenger comfort and lessening the need for maintenance. Occupants are protected by a number of advanced safety features, including a collapsible steering column, shock-absorbing steering, a steel-plate door impact beam and robust mainframe reinforcement. The chassis incorporates a web frame structure that ensures greater durability levels, while a metal bumper reinforcement is installed behind fibre bumper frame for enhanced collision protection. The full air-brake system provides a high level of initial braking force and features a dual-circuit brake line for improved safety, as well as easier maintenance due to the fluidless nature of the system.

Photo Credit : Hino Motors, Ltd

Hino 500 Series MDT comes in Euro 3 and Euro 4 engine variants.


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31 March – 1 April	**Middle East Smart Landscape Summit**	UAE	www.landscapesummit.com
APRIL			
6-7	**HSE UAE**	UAE	www.hse-forum.com
6-8	**Building Materials and Construction Technologies**	UAE	www.bmctdubai.org
MAY			
04-06	**Minexpo Rwanda**	RWANDA	minexpo.expogr.com
11-13	**African Utility Week and POWERGEN Africa**	SOUTH AFRICA	www.african-utility-week.com
24-26	**CABSAT**	UAE	www.cabsat.com
30 May-1 June	**COMEX**	OMAN	comex.om/2020
JUNE			
1-2	**Construction Technology Festival**	UAE	ctf-uae.com
7-9	**Oman Design & Build Week**	OMAN	www.omandesignandbuildweek.com
14-16	**Middle East Energy Dubai**	UAE	www.middleeast-energy.com/en/home.html
14-16	**Intersolar Middle East Conference**	UAE	www.intersolar.ae/en/home
22-23	**HSE Oman Forum (Virtual)**	VIRTUAL	register@hssreview.me

Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.

The Big 5 Saudi show postponed to March 2022

THE DMG EVENTS have announced the postponement of The Big 5 Saudi, HVAC-R Expo Saudi, FM Expo Saudi, Saudi Clean Expo and Stone & Surface Saudi exhibitions in Riyadh from May of this year to 28-31 March 2022.

This decision has been made in close consultation with major stakeholders due to the ongoing circumstances surrounding the COVID-19 pandemic, and in full support of measures taken by the Saudi Government to protect the country and safeguard the future business.

The organiser is confident that with the positive global vaccine roll-out programme well underway, the new dates can guarantee a seamless and productive business platform that benefits both local and international construction players invested in the development of Saudi Arabia.

"The situation regarding quarantine and world travel is evolving rapidly and we are in contact with the relevant local authorities to ensure we continue to deliver the event in a safe and conducive condition. We will continue to update all parties as and when necessary," the organiser stated.

Photo Credit : thebig5saudi

The new dates can guarantee a seamless and productive business platform that benefits both local and international construction players.

dmg events take the health and safety of its visitors, exhibitors, employees very seriously and will be implementing the "All Secure" Health protocol at the event that has now proven to be very successful in live-events – measures include compulsory face masks, enhanced hygiene sanitisation, physical distancing and self-print registration measures to name a few.

The Big 5 Saudi, one of the largest construction trade fair, is a meeting place for international and local building and construction professionals.

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*

Global mining market to reach US$1845.55bn in 2021

Photo Credit : Adobe Stock

Government policies to support the mining industry is expected to drive the mining market.

THE GLOBAL MINING market is expected to grow from US$1641.67bn in 2020 to US$1845.55bn in 2021 at a compound annual growth rate (CAGR) of 12.4%, according to a report by Research and Markets. The growth is mainly due to the companies rearranging their operations and recovering from the COVID-19 impact. The market is expected to reach US$2427.85bn in 2025 at a CAGR of 7%.

https://www.technicalreviewmiddleeast.com/construction/mining

Bentley Systems to acquire Seequent

Infrastructure engineering software company Bentley Systems has entered into a definitive agreement with investors led by Accel-KKR to acquire Seequent, a specialist in software for geological and geophysical modelling, geotechnical stability, and cloud services for geodata management, visibility, and collaboration, for US$900mn.

The acquisition of Seequent will deepen the potential of infrastructure digital twins to help understand and mitigate environmental risks, advancing resilience and sustainability. Upon closing, Seequent will operate as a stand-alone Bentley subsidiary, with Seequent's current Chief Operating Officer Graham Grant, succeeding its retiring CEO Shaun Maloney.

https://www.technicalreviewmiddleeast.com/it/software

Trina Solar introduces the 670W Vertex module

Photo Credit : Trina Solar

The 670W Vertex module achieves a total power increase of up to 18,760W per string.

TRINA SOLAR HAS unveiled a new generation of ultra-high power Vertex module with a single panel power of 670W. The series has obtained the IEC certification from the TÜV Rheinland after passing a complete reliability test, and realised the mass production. Trina Solar's 670W Vertex bears non-destructive cutting, high-density interconnection, multi-busbar (MBB) and other forward-looking innovative technologies, with low voltage and high string power.

https://www.technicalreviewmiddleeast.com/power-a-water/renewables

The 7th World Green Energy Summit at Expo 2020 Dubai

THE DUBAI ELECTRICITY and Water Authority (DEWA) and the World Green Economy Organisation (WGEO) will organise the 7th World Green Economy Summit (WGES) from 6-7 October 2021 at Expo 2020 Dubai.

HE Saeed Mohammed Al Tayer, vice-chairman of the Dubai Supreme Council of Energy, and Chairman of WGES, made the announcement, noting that WGES will be held in conjunction with the Water, Energy, Technology, and Environment Exhibition (WETEX) and Dubai Solar Show, which is organised by DEWA from 5-7 October 2021 at Expo 2020 Dubai.

The 6th WGES in 2019 attracted several local and global high-profile participation, including heads of states and governments.

https://www.technicalreviewmiddleeast.com/events

Mainspring Energy launches Mainspring linear generator

Photo Credit : Mainspring Energy

Reliable, affordable, and low-carbon electric grid is driving demand for new power generation technologies

GREEN ENERGY SUPPLIER Mainspring Energy has launched the Mainspring Linear Generator, the first product in a new category of power generation technology for commercial and industrial buildings, utilities, and microgrids.

The growing mandate for a reliable, affordable, and low-carbon electric grid is driving demand for new power generation technologies.

https://www.technicalreviewmiddleeast.com/power-a-water

Arburg to exhibit turnkey system at Hannover Messe Digital Edition 2021

THE HANNOVER MESSE Digital Edition 2021 will see Arburg present a new turnkey system that is set to raise the bar in aspects of digitalisation, automation and the circular economy in plastics processing.

Digitalisation, automation and smart assistance systems are all tools that make it easier to work on, and with, injection moulding machines on a daily basis. Based on an electric Allrounder 370 A with a clamping force of 600 kN, Arburg's exhibit will demonstrate a system that not only documents production processes seamlessly, but also enables them to run smoothly, efficiently and reliably.

The handling work will be the responsibility of a new vertical robotic system, the Multilift V 20, with a 20kg load capacity and a transverse design.

https://www.technicalreviewmiddleeast.com/manufacturing/

"The completion of the first 10,000 moves demonstrates that the BoxBay concept (DP World's JV with the German industrial engineering specialist SMS group works) in the real world. This technology has the potential to revolutionise how ports and terminals operate around the world. BoxBay adds value for our operations and customers and demonstrates DP World's strengths as a global provider of smart and innovative logistics solutions."


Photo Credit: DP World

SULTAN AHMED BIN SULAYEM
Group Chairman and CEO
DP World

"Industrial data flow through AI algorithms in combination with human insight, which deliver transformational benefits. Predictive solutions and operational data reduce cost and improve processes in real time."

CRAIG HAYMAN
CEO
Aveva

"Ritchie Bros. has seen increased interest from crane owners, particularly in its quarterly Online Timed Auctions. In these online auctions the seller gets access to a global audience of motivated buyers."

PIET KRAAIJEVELD
Strategic account manager, heavy lift and crane sector
Ritchie Bros. International

"In line with Tadweer's strategic goal of promoting integrated waste management, the Center has stepped up efforts to achieve the optimal utilization of waste. Such efforts help us ensure the preservation of natural resources and keep Abu Dhabi's environment clean, safe and sustainable. Through promoting efficient C&D waste recycling and treatment, we aim to promote the use of recycled aggravate in the construction of strategic projects to support the national economy and accelerate sustainable development."

ABDULMOHSIN ALKATHEERI
Engineer and acting director, projects and facilities department
Tadweer

(On Tadweer recycling 1,915,724 tonnes of construction and demolition waste in 2020)

"While the pandemic has clearly caused many industries around the world to change tack, the prevailing construction trends are ultimately ones that were long overdue prior to the challenges of 2020. Today, we stand in a unique position to transform our industry into a healthy ecosystem, where all stakeholders are able to succeed by utilising the latest technology and a collaborative approach."


Photo Credit: ALEC

KEZ TAYLOR
CEO
ALEC

"As we dawn upon a new era driven by advances in data analytics, artificial intelligence, and alternative energy, we hope to utilise innovation and the application of disruptive technology to generate greater value for Enoc and the communities where we operate."


Photo Credit: Enoc

SAIF HUMAID AL FALASI
Group CEO
Enoc

(On Enoc Group achieving US$23.7mn in cumulative savings from the implementation of innovative ideas)

"The global construction equipment rental sector is poised for solid growth over the next five years with its market value likely to surge to more than US$155bn by 2026 from its present US$120bn, gaining remarkable traction over the 2020 to 2026 period."

Global Market Insights

"The metro is part of Bahrain's Economic Vision 2030 strategy, which aims to enhance the country's economic sustainability, competitiveness and fairness over the next 10 years."

KAMAL AHMED
Minister of Transportation and Telecommunications
Bahrain

(On unveiling US$2bn metro project plan of Bahrain at global event 'Bahrain Metro Market Consultation')

“Our key goals for this year include the completion of our Stage V compressor range with the introduction of a new family of small compressors, enhancing our product offering for MEA markets and to continue to strengthen our dealership network and to fulfill all of our customer's needs in the EMEA region.”


Photo Credit: Portable Power EMEA

JAN MORAVEC
General manager
Portable Power EMEA, Doosan Bobcat

(On his new appointment as general manager of Portable Power EMEA, Doosan Bobcat)

“Mitsubishi Power continues to lead the market share for heavy duty gas turbines in the Americas, and today we are proud to have claimed the title of the leading OEM in the Middle East with 52% market share of large frame heavy duty gas turbines in 2020.”

KHALID SALEM
President, Middle East and North Africa.
Mitsubishi Power

(On Mitsubishi Power securing the number one market share position in the Middle East in 2020 for 100 MW and above heavy-duty gas turbines, according to McCoy Power Reports)

“This meeting represents an advanced step towards entrenching the leadership of our two countries globally, and bringing the transport sector to the highest levels of competitiveness and attractiveness, by expanding the exchange of knowledge, experiences and best practices, and opening broad horizons for closer bilateral relations in a way that serves forward-looking trends and visions and ambitions of our wise leadership to take the sector to advanced levels."

SUHAIL BIN MOHAMMED AL MAZROUEI
Minister of Energy and Infrastructure
UAE

(On discussing ways of strengthening relations in the transport sector with Iraqi Minister of Transport, Nasser Hussein Al-Shibli at a virtual meeting)

“The people-centric Plan aims to address the growing needs of citizens, residents and visitors over the next 20 years. It will also enhance the emirate’s investment appeal and attract fresh FDI inflows into all its sectors. Under the Plan, the area devoted to economic activities will increase to 168 square km, with a major focus on hi-tech industries."


Photo Credit: WAM

MATTAR AL TAYER
Chairman, Dubai 2040 Urban Master Plan Higher Committee
UAE

(On the launch of the the Dubai 2040 Urban Master Plan)

“The GCC’s strategic geographic location and state-of-the-art infrastructure has enabled port operators to play a vital role in global maritime trade. As the world battles geopolitical trade tensions and the coronavirus pandemic, ports are playing a vital role in keeping the flow of goods moving. Port operators are building a presence across the supply chain to enhance their value proposition.”


Photo Credit: KPMG Lower Gulf

SHAHNAWAZ NAKHODA
Partner, Ports and Logistics
KPMG Lower Gulf

“We are delighted to announce the successful addition of United Arab Chemical Carriers Limited’s (UACC) nine IMO2 MR (medium range) chemical tankers to our fleet under a long-term time charter agreement.”

ABDULLAH ALDUBAIKHI
Engineer and CEO
Bahri Chemicals

“The tariff, with its competitive advantages, strengthens the kingdom's position as a focal point for digitally connecting continents by expanding the scope and capacity of data processing in the kingdom. The tariff will stimulate investment in data centres and cloud computing services.”

ABDULLAH BIN AMER AL-SAWAHA
Minister of Communications and Information Technology
Saudi Arabia

(On Saudi Arabia approving reduced electricity tariff for the kingdom cloud computing operators)

The GCC: Challenges and changes in post-Covid era

Economist Moin Siddiqi analyses how the GCC governments are ushering in reforms and developing new strategies as economic recovery gathers steam.

Increased infrastructure spending will help the non-oil sector to recover in 2021-22.

Photo Credit: Adobe Stock

THE GULF COOPERATION Council (GCC) countries – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE) – coped well with simultaneous crises in the health, trade, and oil sectors thanks to unprecedented policy responses, which proved more supportive compared to other emerging market and developing economies (EMDEs), according to the World Bank.

Kristalina Georgieva, managing director International Monetary Fund (IMF), commended them when she said, "You have enhanced already-strong public health systems that has kept fatality rates in the GCC among the lowest in the world. And that is precious because this crisis is above all a human tragedy. You have taken as good care as possible of your people. Bahrain and the UAE rapidly deployed some of the largest per capita testing and contact tracing regimes in the world. Fiscal packages and liquidity support have protected incomes and livelihoods, and the financial sector. Timely and innovative measures included tax exemptions and deferrals, cash transfers, and subsidies to small and medium-sized enterprises."

> The probability of moderate oil prices and the transition to a low carbon future underscore the need for the GCC governments to lay the foundations for a sustainable growth model.

However, the region has not escaped this turbulent phase unscathed, with current account balances shifting from surplus to deficit and private capital flows (including foreign direct investment) recording substantial falls over the past year. The service, retail, hospitality and tourism sectors were hard hit by containment measures, raising challenges for those countries where these industries command a large share of output (Bahrain and UAE). Manufacturing has also slowed, and investment plans are being delayed across most of the region.

Table1: GCC: Selected Macroeconomic Indicators (%)*

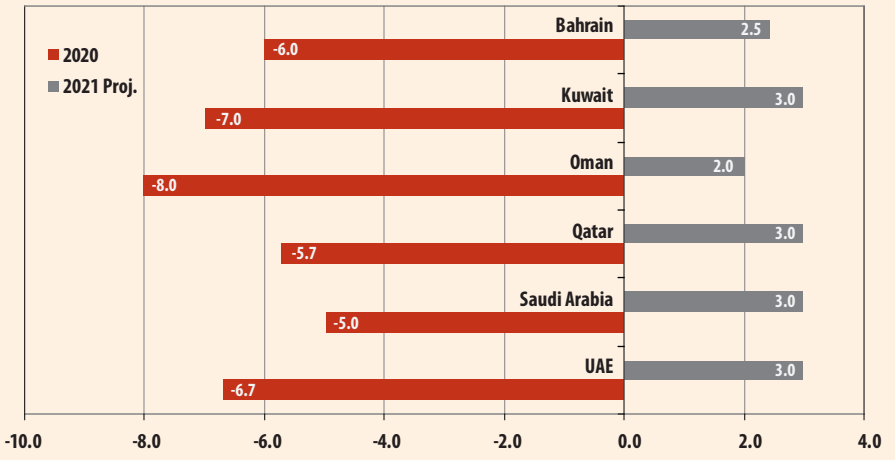
			Proj.	
	2018	2019	2020	2021
Real GDP Growth	1.9	0.7	-6.0	2.3
Non-Oil GDP Growth	1.7	2.4	-5.7	2.9
Consumer Price Inflation	2.2	-1.5	1.5	2.9
Government Fiscal Balance (% of GDP)	1.5	-2.0	-9.2	-5.7
Current Account Balance (% of GDP)	8.6	5.8	-1.8	0.4

*Aggregate for GCC reflects weighted average numbers.
Population (2020 est) Bahrain (1.53mn); Kuwait (4.88mn): Oman (4.32mn); Qatar (2.80mn): Saudi Arabia (34.76mn): UAE (11.07mn).

Sources: National authorities & IMF staff calculations.

Sovereign Credit Rating (Standard & Poor's)
Bahrain (B+): Kuwait (AA): Oman (B+); Qatar (AA-); Saudi Arabia (A-); UAE (AA).

Real Non-Oil Growth (%)



Source: IMF staff estimates & projections.

New development strategies

The Covid-19-related global recession (the deepest since 1930s) calls for swift policy actions needed for a resilient economy. The probability of moderate oil prices and the transition to a low carbon future underscore the need for the GCC governments to lay the foundations for a more sustainable growth model – the main criteria of which are:

***Investing in digital technologies:** the full 5G wireless adoptions in Gulf region will enable more remote work, education, telemedicine, and e-government. The UAE, Qatar and Saudi Arabia are already advanced in the ICT sector and in digital skills. Average ICT adoption in the GCC is close to that of advanced economies.

A continued increase in e-government is evident with the UAE ranking 21 in the 2020 UN e-government survey, while other GCC states rank among the top 50. Countries embracing digital revolution and encouraging companies to move towards digital business models will be better equipped for the recovery phase.

***Accelerating energy transition:** Saudi Arabia, UAE and Oman have set ambitious targets to increase the construction of clean energy facilities and deployment of renewables in energy mix over the long term. The UAE plans to invest US$163bn with a target of achieving 44%, 38%, 12%, and 6%, respectively, of energy needs provided by renewables, gas, cleaner fossil fuel and nuclear power by 2050. It is building the world's largest solar power plant; Oman aims to generate 10% of installed capacity from onshore wind and solar by 2025; Saudi Arabia 2023 target is 9.5 gigawatt (GW), equivalent to 10% of generation capacity. The Kingdom launched plans to build NEOM, a zero-carbon city.

***Strong educational systems:** This is key to preparing young people for productive jobs and supporting diversification agendas. GCC countries devote around 8% of GDP on average to social spending (IMF data). School enrolment rates are broadly on par with advanced country levels but standardised international test scores

> Saudi Arabia, UAE and Oman have set ambitious targets to increase the construction of clean energy facilities and deployment of renewables in the energy mix over the long term.

Oman aims to generate 10% of installed capacity from onshore wind and solar by 2025.

Photo Credit : Adobe Stock

Photo Credit : Adobe Stock

Nearly 2.5mn young GCC nationals are expected to join the workforce by 2025.

indicate a need for higher efficiency of education spending in the region. School curricular should increasingly focus on science, technology, engineering and mathematics (STEM) in order to teach the core skills demanded in today's sophisticated global economy – thus boosting the quality of human capital.

***Efficient labour market:** 2.5 million young GCC nationals are expected to join the workforce by 2025. Job creation measures such as funding small and medium-sized enterprises and scaling up competencies in emerging skills through new, quality focused apprenticeships will help to create jobs and "markets of tomorrow" (World Economic Forum 2020). The IMF advised: "To create such a transformation towards the jobs of tomorrow, economies must fundamentally upgrade technical/ vocational training and university education for both students and workers on an ongoing basis." The challenge is equipping future generations with skills more suited to private sector since further growth in government employment is not feasible due to fiscal constraints.

***Structural reforms:** They are needed to boost non-oil growth and diversify government revenues. Medium-term fiscal framework is pivotal for macroeconomic stability. Most countries have gradually implemented energy subsidy cuts in recent years, reflected in increased prices of electricity, gasoline, and other fuels sold in the domestic market. However, energy consumption per capita in GCC region still remains high. Phasing out subsidies, reforming public-sector wage bills and increasing the non-oil revenue base will reduce deficits and strengthen fiscal buffers. The IMF noted: "Long-term prosperity will significantly depend on how public budget and fiscal policies are managed as well as on the structural capacity to grow more rapidly.

***Innovating new and cutting-edge knowledge:** by expanding public investments in research and development (R&D) and incentivising venture capital to support the creation of new firms and employment in 'markets of tomorrow'. It is estimated that in advanced economies five new good-quality jobs are created with every one million dollars invested on public R&D, and twice as many when the investment is channelled through higher education institutions.

> Strategies to foster the growth of dynamic private sectors are critical to accelerate economic diversification.

***Investor-friendly environment:** Strategies to foster the growth of dynamic private sectors are critical to accelerate economic diversification. Besides macro prudential policies, businesses flourish on a predictable legal framework, robust state institutions, favourable climate for both domestic and foreign investors, appropriate fiscal incentives, low red tape, and a skilful labour force, among others. Sophisticated domestic capital markets would also increase private sector's access to capital and funding for strategic projects, whilst providing more options for savers and investors within the countries.

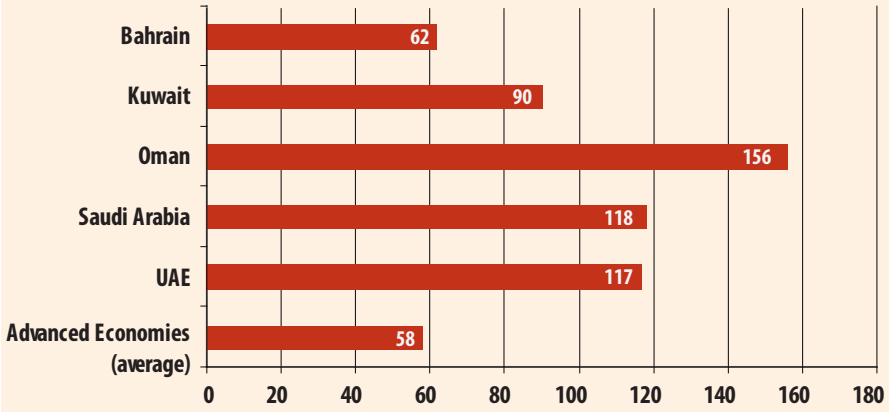
***Growth-enhancing public investments:** GCC countries boast a high quality infrastructure and rank better than the average advanced economy. Prioritisation on strategic sectors – chiefly network industries and services such as transport, logistics, distribution, finance and ITC, as well as healthcare and education – not only

Most GCC Countries Rank High on Global Indicators Relative to Global Peers (1-141 countries)

	National Competitiveness Index A	Quality of Infrastructure B	ICT Adoption C	Trade Openness D	Public Sector Performance E	Skills of Workforce F
Bahrain	45	31	46	20	22	28
Kuwait	46	66	37	42	42	80
Oman	53	28	66	30	15	34
Qatar	29	24	8	19	17	11
Saudi Arabia	36	34	38	41	20	23
UAE	25	12	2	7	4	15

A: National competitiveness factors market size, financial sector development, business sophistication, efficiency of goods & labour markets, capacity of state institutions and technological innovation, among other factors.
B: Utilities (power & water supplies), ports, air and road transportation.
C: Measured in terms of number of mobile-cellular; fixed & fibre internet broadband subscriptions per 100 population.
D: Prevalence of non-tariff barriers, trade tariffs and border clearance efficiency.
E: Institutional quality within government, efficiency of legal/regulatory framework, e-participation.
F: Extent & quality of vocational training, digital skills among active population.
Source: The Global Competitiveness Report 2019.

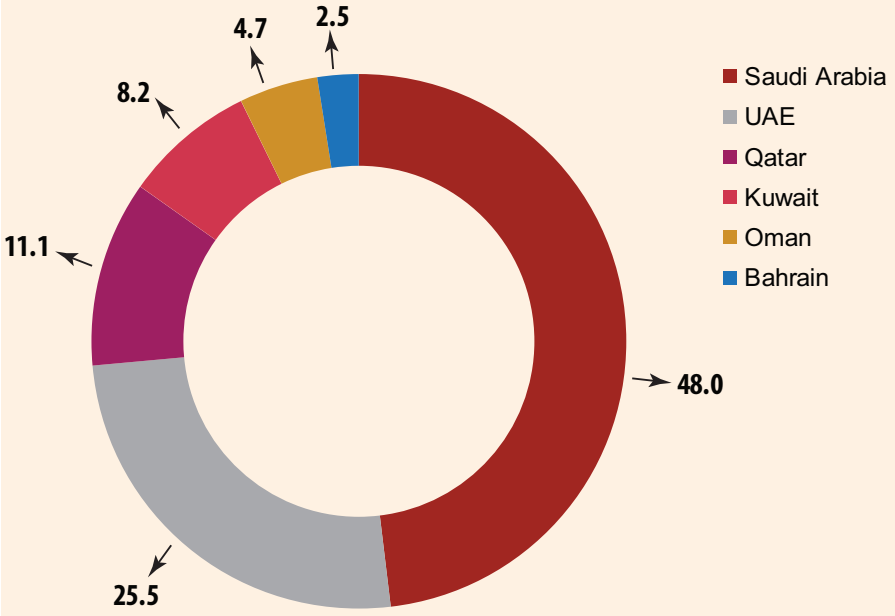
Public Capital Stock (% of GDP) 2019



Source: IMF FAD Expenditure Assessment Tool.

Who Generates the Lion's Share of Regional Output

GCC 2019 Aggregate Gross Domestic Product: US$1.65 trillion Percent



Source: World Bank.

improve national competitiveness, but also protect production capacity and support a future recovery – hence preparing countries becoming more resilient and sustainable.

***Towards a greener energy system:** Climate change adoption requires investing in 'green investment' to reduce greenhouse gas and air pollutant emissions. This demands not only stronger political commitment (in terms of official funds and regulations), but also far-reaching changes to urban planning, increased access to green public spaces, less energy-intensive buildings and upgrading public transport, as well as greater protection of biodiversity. The UAE is a major renewable energy developer. Fiscal incentives (mix of subsidies or tax breaks) for green projects, new pioneering technologies and new taxes (e.g. emissions) will contribute towards a low carbon economy.

***Reducing trade barriers:** Under the 2003 GCC Customs Union Agreement, intra-GCC non-oil trade remains modest, at around 10% of total non-oil trade. Further reducing non-tariff barriers such as quotas, licenses and sanitary/ phytosanitary barriers would help boost intra-regional trade and investment.

In sum, while the hydrocarbons-rich GCC faces significant challenges, however, having a proven record of good governance, sustainable development and strong regional cooperation offers optimism based on a vibrant-diversified Gulf economy. The near-term outlook depends on a rebound in global trade/travel and on structural reforms that can reinvigorate productivity and innovation. ■

Footnotes:

- The GCC member-states are among the financially strong countries in the Emerging Market & Developing Economies (EMDEs) region. They are able to "afford more significant fiscal support" during the current global crisis. Although budget deficits have soared due to low oil prices, most Gulf countries have significant financial assets (sovereign wealth funds) upon which to draw.
- Saudi Arabia has diversified revenues by establishing excises and a value added tax (VAT). The UAE and Bahrain have also introduced VAT.
- Increased infrastructure spending will help non-oil sector to recover over 2021-22.
- The GCC region holds 30.4% and 19.6%, respectively, of the globe's proved oil and natural gas reserves (BP, 2020).

Photo Credit : Adobe Stock

Technology is transforming traditional practices.

Five disruptive technologies for construction industry

The cutting-edge technologies are drastically changing how the Gulf's construction industry operates and how future projects will be completed. Martin Clark reports.

IT HAS BEEN a trying year for construction, like other industries, but one thing is clear: the technology shaping this sector continues to advance relentlessly. Virtual reality and artificial intelligence are no longer the stuff of science fiction, and are helping to drive work in other areas of the construction chain, from sustainability and environmental awareness to greater collaboration and the evolution of the circular economy. "While the pandemic has clearly caused many industries around the world to change tack," notes Kez Taylor, chief executive of ALEC, one of the UAE's most diversified construction groups, "the prevailing construction trends are ultimately ones that were long overdue prior to the challenges of 2020."

And the Gulf is at the forefront of many of these shifts, he adds. Today, we stand in a unique position to transform our industry into a healthy ecosystem, where all stakeholders are able to succeed by utilising the latest technology and a collaborative approach. Below, we look at some of the key areas of innovation driving change in the Gulf region's construction sector.

"The prevailing construction trends are ultimately ones that were long overdue prior to the challenges of 2020."

Kez Taylor, chief executive of ALEC

1. Lidar

Laser technology is routinely used in the construction sector for mapping, surveying and related areas. Lidar (Light Detection and Ranging), a remote sensing method that uses light in the form of a pulsed laser to measure variable distance, is now well established in the Gulf, as it is elsewhere. As well as measuring distance, differences in laser return times and wavelengths can also be used to make digital 3D representations of a particular target. Airborne Lidar sensors are now being used by companies to create digital models and hydrographic surveying, with the likes of Middle East Survey Engineering (MESE) and Falcon 3D deploying the technology on drones. MESE launched its Lidar-based unmanned aerial system (UAS) at the 2019 Adipec show in the UAE. The technology looks set to play a role in the emergence of so-called 'smart cities' around the world. Velodyne Lidar, Inc, a US firm pioneering in this market, recently tied up with Outsight, a specialist in 3D spatial intelligence, to develop technologies for smart cities and smart machines, including mobile robots and autonomous vehicles. It builds on an earlier partnership to improve analysis and management of people flow and assets in large, crowded environments, which could emerge as a major theme in the post-Covid era.
Velodyne Lidar's Ultra Puck is a device that creates high-density, long-range images,

Experience the Progress.

www.liebherr.com
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www.facebook.com/LiebherrConstruction

LIEBHERR

used for mapping and smart city applications, among others, including autonomous navigation driver assistance, another key focus area for many Gulf states.

2. Drones

Drones have been used in the construction sector for some years now, but continue to add value as the number of tasks carried out widens and the level of complexity of work increases. Aerial drones have long been used for survey work and also for monitoring building safety; they have become an invaluable tool for high-rise work. But as well as collecting real-time data, drones are also being used for construction work itself. Not just airborne drones either. On the ground, a great example is a collaboration between ALEC and Hilti, which yielded the region's first autonomous drilling robot. Since its implementation, site teams have reported significant improvements in productivity thanks to the robot's ability to follow digital plans, while alleviating site teams from the strenuous work of overhead drilling, allowing them to upskill and operate the robot itself. Drones can be packed with high-tech kit and sensors, and can also be evolved with new state-of-the-art technology as it emerges, growing the list of potential new applications and uses.

3. Predictive Analytics

The collection and use of big data is opening new doors and opportunities for construction firms.

Predictive analytics uses data, statistical algorithms and machine learning techniques to identify the likelihood of future outcomes based on historical data. The intention is to go beyond knowing what has happened to providing a best assessment of what will happen in the future.

Elevator expert, Kone, offers what it calls 24/7 connected services, using AI applications for remote monitoring and servicing. Information in its lifts and elevators is gathered from a multitude of sensors along with usage statistics and faults, and sent in real-time to a cloud service where analytics are performed.

It can also make a real difference to personnel working on a building site. The Red Sea Development Company recently awarded a contract to leading national Internet of Things (IoT) service provider, MachinesTalk, for smart wearable technology and wireless tagging solutions for its construction workforce and vehicles fleet at its site on Saudi Arabia's west coast. It means a LoRaWAN network, covering more than 35,000sq km will monitor up to 36,000 workers and tracking 3,000 vehicles of multiple contractors across the vast construction site, delivering materials, tools and transporting employees each and every day.

Velodyne Lidar's ultra puck drone.

Photo Credit : Velodyne Lidar

Nawaaf Alshalani, chief executive of MachinesTalk, said it showed real forward thinking and care for employees when a company wants to implement such solutions at scale. "Using IoT technologies will keep the workforce safer and support secure and more efficient operations."

There are other implications too. From a process efficiency perspective, all tagged vehicles will have an estimated time of arrival to ensure there are no delays between required tasks. In addition, alerts will be triggered for idle workers or vehicles to enable improved worker supervision.

4. Virtual and Augmented Reality

Virtual reality (VR) and augmented reality (AR) are garnering huge interest and excitement across all industries, including tourism and gaming. These tools also have the potential to be used in any number of applications in the construction sector, from project planning to training. As an immersive technology, it can transport users into an interactive 3D environment, giving them the opportunity to explore a virtual representation of a room, floor, or even a whole building design. While this technology advances rapidly, driven by ever-greater computer power, it presents clear and exciting opportunities long-term. One of the best ways of building VR models is using laser scanning, or Lidar, highlighting the interconnection of many of these new technologies – a trend that is likely to accelerate. By combining laser scan technology with drones, for instance, it's possible to create precise, detailed models for the VR environment that can be viewed anywhere, anytime – essential tools for architects, engineers and other professionals and decision makers.

5. Artificial Intelligence

Artificial Intelligence (AI) is another disruptive technology now shaping construction activity, with lots more to come. This is a breakthrough technology that is yielding a practical change in a number of key ways. One area is in the scheduling of a project, which can be notoriously difficult – so many construction plans will not keep to time. But by analysing thousands of different options, a Generative Adversarial Network (GAN) – a class of machine learning frameworks – could recommend the best course of action in order to minimise the probability of incurring delays, and hence to deliver the project on time.

Another example, cited by UK data specialists Qflow, is in keeping track of all materials arriving and leaving a site, a tedious work job, and one that can be prone to human error. However, an Optical Character Recognition (OCR) combined with a Natural Language Processing (NLP) algorithm could digitise items in a consistent manner, and automatically track the movement of materials on a site. It could also decrease chances of theft and misuse of assets.

Smart cities and construction are both areas ripe for growth in the AI sector, but there is still massive potential for learning, growth and uptake. "AI can affect the construction industry in powerful ways, helping companies to cut costs, respect timelines and improve efficiency," Qflow notes. "Yet, AI offerings in this industry are still modest at best. By far the most significant of these is the lack of available data, both in terms of quantity and quality – a non-negotiable pre-requisite necessary for AI to work and learn."

While the rise of data, the use of sensors and information collection is growing exponentially across the construction site, this must all be treated in a seamless, uniform way that an be utilised for AI. The potential for future applications is immense. ■

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The sustainable path.

www.wirtgen-group.com/sustainability

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Caterpillar's Next Generation Large Excavators

Construction giant Caterpillar launches three new Next Generation large excavators for Africa, Middle East and Eurasia markets — the strongest excavator line ever delivered in its history.

Photo Credit : Caterpillar

Cat 345 GC

Up to 30% lower maintenance costs | Up to 25% more fuel efficient | Telematics Technology

345 GC

CAT 345 GC Caterpillar's Next Generation excavator 345 GC can increase fuel efficiency up to 25% and lower operating costs up to 30% compared to the 349D2. In addition, the new model incorporates significant engineering advances for safety and operator convenience. The 345 GC's overall efficiency is further enhanced with telematics technology, ProductLink, which can remotely monitor machine health, location, hours, and fuel consumption on demand through the VisionLink online interface.

The 345 GC's cab environment is designed to reduce effort. All controls are in front to eliminate twisting in the seat. The ISO-certified, sound-suppressed ROPS cab is sealed and pressurised; large glass areas enhance all-around visibility. Narrow pillars at the front corners of the cab further contribute to forward visibility. A standard rearview camera extends rearward visibility.

345 GC Specifications

Engine: Cat C9.3B Net Power: (ISO 9249) **258kW Operating weight:** 42,200kg
Bucket capacity, std: 2.41m3
Hydraulic relief pressure: 35,000 kPa
Hydraulic flow: 630 L/min
Max. dig depth*: 7,200mm
**R6.9m boom with R2.9m stick*

Cat 374

Loads up to 33 x 40 ton trucks per hour | Up to 2X more structural durability | Up to 20% lower maintenance costs

THE NEXT GENERATION Cat 374 excavator offers contractors high production, two times more structural durability, and up to 20% less maintenance costs than the industry leader it replaces, the 374F.

It has a new hydrostatic swing circuit, which enables regenerating swing brake energy and independent management of cylinder oil flow. "What that means for owners and operators is higher operating efficiency and smoother, more predictable performance when multitasking with the excavator," explained Brian Abbott, worldwide product manager for Caterpillar large excavators.

Booms, sticks, and frames are twice as strong as those on the previous model – aimed at giving owners reliable performance for the life of the machine.

Image Credit: Caterpillar

Booms have increased top and bottom plate thickness; sticks have increased side, bottom, and bracket plate thickness; and frames have increased base frame and counterweight mounting plate thickness.

Cat Payload helps operators increase loading efficiency with on-the-go weighing; real-time payload estimates can be calculated without swinging to help prevent overloading and underloading trucks. The monitor's USB port lets operators download results from a single shift all the way up to 30 days of work with no need for an internet connection or VisionLink subscription.

Lift Assist is a new safety feature that helps prevent the excavator from tipping. 2D E-Fence prevents the excavator from moving outside operator-defined points.

374 specifications

Engine: Cat C15
Engine power (ISO 14396): 362kW (485hp)
Operating weight: 71,700kg (158, 200lb)
Max. dig depth*: 8,570mm (28'1'')
Max. reach at ground level*: 13,160mm (43'2'')
Max. loading height*: 8,430mm (27'8'')
**7.8m (25' 7") boom, 3.6m (11'10") stick, SD 3.3 m3 (4.32 yd3) bucket.*

Cat 395

Up to 10% more productive | Up to 2X more structural durability | Up to 20% lower maintenance costs

THE NEXT GENERATION Cat 395 excavator offers contractors up to 10% more production, two times more structural durability, and up to 20% less maintenance costs than the industry leader it replaces, the 390F.

"We increased swing torque and stick force by 10%," said Brian Abbott, worldwide product manager for Caterpillar large excavators. "These increases enable contractors to use larger buckets for much greater productivity."

It has a new dedicated hydrostatic swing circuit – a feature found only on larger Cat mining shovels like the 6015B. Like the 374, there are three modes of operation available: Power, Smart, and ECO.

Image Credit: Caterpillar

"The 395 has the industry's most comprehensive offering of factory-installed technology in its size class," said Abbott. "Our goal is taking an owner's operating efficiency to a much higher level." The technologies include Cat Payload, Cat Grade with 2D with upgrades to 3D available, Lift Assist and Auto Hammer Stop that prevents wear and tear on the attachment and machine.

395 specifications

Engine: Cat C18
Engine power (ISO 14396): 405kW (543hp)
Operating weight: 94,100kg (207,400lb)
Max. dig depth*: 7,190mm (23'7'')
Max. reach at ground level*: 12,260mm (40'3'')
Max. loading height*: 7,960mm (26'1'')
**Mass 7.25m (23'9") boom, 2.92m (9'7") stick, SDV 6.5 m3 (8.5 yd3) bucket, 650mm (26'') shoes*

Amco Veba adds 60tm family to New Generation line

AMCO VEBA HAS added a 60tm family of cranes to its New Generation Line. Like other cranes in this Line, the 60tm family improves operator efficiency and safety, while increasing productivity. These include:

- Dynamic Load Diagram – which provides advance verification of crane lifting capacity based on truck stability.
- Magic Touch – which allows automatic folding and unfolding to transport and working positions.
- Operator Auto Detection – which automatically activates the operator's closest stabiliser, avoiding the need for operator contact.
- Auto Levelling System – which automatically keeps the truck frame in a horizontal position, enabling best crane performance.
- Front Stabilizer control – which allows possible load in the front area, avoiding stress and overload of the truck frame.
- Compact Installation Kit – which guides the hoses through a different route, allowing a more compact installation of the crane on the truck.

One of the new VR60 tm heavy cranes offered by Amco Veba.

Photo Credit : Amco Veba

These cranes, which are the strong, light and compact, and have the best lifting capacity currently available in this segment of the market, will further strengthen Amco Veba's position in truck-mounted cranes. The Amco Veba 60tm family of Heavy Cranes comprises two models and a wide range of accessories and options to fit all the applications and markets demand:

- VR60NG - Standard Lifting Control System
- VR66NG - Proportional Lifting Control System - Lifting capacity 10% greater than Standard features include: double linkage, negative angle, Up to eight extensions, endless slewing, multifunction radio remote control.

Manitowoc launches Potain MCT 185 topless tower crane

MANITOWOC HAS LAUNCHED the Potain MCT 185, an eight-tonne capacity topless tower crane designed for urban and infrastructure projects that require speed and flexibility in transport and assembly.

Manufactured at Manitowoc's factory in Zhangjiagang, China, the MCT 185 has a compact design which allows transportation of the entire upper works of the crane in five containers. Each crane section benefits from minimised component dimensions and weight to simplify assembly, as demonstrated by the shorter, simpler ballast shape on the counter-jib. This section is available in two lengths – 13.5 m for use with a 30–45m jib or 16 m for the 50–65 m configuration. This choice in configuration allows projects to plan crane positioning more efficiently, a useful feature as jobsites become more congested.

A variety of counter-jib, winch and trolley options enable setup to be precisely matched to the demands of each jobsite.

Photo Credit : Manitowoc

For assembly, users can choose from Potain's existing 1.6 m (L46) and 2 m (L68) mast sections, both of which use pinned joints for fast, easy connection. Also available is the newly introduced 7.5 m-high S46JR reinforced basic mast for taller setup, with freestanding heights for the MCT 185 stretching up to 59.2 m. On a well-prepared site, the MCT 185 can be assembled in 1.5 days.

A capacity of 1.5 t achievable at the end of the jib and a selection of the latest LVF hoists offer close load control and customisable lifting operations, depending on jobsite requirements. Supplied as standard, the newly introduced 30kW 40 LVFC 20 Optima winch comes with a 456 m rope capacity and is capable of hoisting 1 t at speeds of up to 98 m/min. The optional 37 kW 50 LVF 20 Optima lifts 1.1 t at up to 121 m/min, while the 45 kW 60 LVFC 20 Optima can move 1 t at up to 120 m/min and comes with a 553 m of wire rope.

The LVF and LVFC winches offer continuously variable speed control that enables operators to fine-tune each pick from the comfort of their standard S110 Smartview – or optional V140S Vision – cab. For horizontal movements, there are four trolley mechanism options, offering speeds of up to 80 m/min.

Kwong-Joon Leong, regional product manager for Asia – tower cranes, Manitowoc, said, "Topless cranes are becoming the go-to solution for the speed and flexibility they bring to jobsites. With the launch of the eight-tonne capacity MCT 185, customers now have a greater choice than ever before, backed by the industry-leading technical support that is synonymous with Potain."

Things to know about dismantling scaffolding

The process of dismantling scaffolds remains a high-risk activity, not only to those carrying out the work, but to other workers and the general public.

IF WE'VE PROVEN anything by this point, it's that a properly erected scaffolding tower is an entirely safe structure. It's built to be a temporary array of metal and wooden elements, that's true enough, but that expertly constructed staging will remain stable for as long as it's required. What about after the completion of the work project? The scaffolding needs to come down in a safely controlled manner, right?

Defining dismantling dangers

A scaffolding contractor is responsible for removing the work platform, but there are no shortcuts available here, not when wooden planks and long metal tubes are suspended at a great height. Even if the project is finished and all of the workers have moved onto the next project, a poorly initiated dismantlement procedure will cause damage, both to the property and any lingering site workers. No, only systematic scaffolding dismantling methods can be allowed. With that said, where do we begin?

A systematic breakdown strategy

First of all, dismantlement work is every bit as hazardous as the erection process. A competent person must be on hand to oversee the process. Start by running a structural check. All components should still be firmly attached, which is to say none of the at-height work has caused parts to destablise on any of the levels of the structure. Wooden planks should be firmly seated and all fasteners must still be optimally anchored. Starting from the top, obviously, the ties and braces are dismantled. A minimally equipped fall prevention system is advised as the dismantling procedure continues. After all, the breakdown still involves a height hazard, so the fall prevention frame should remain until all other staging elements have been removed.

Photo Credit : Adobe Stock

Returning the scaffolding to the ground

All of these safety points would seem to be obvious, but sometimes common sense takes a break. Never assume a prudential work ethic is on hand. Instead, assume the worst. In this case, the worst possible course of action would be to drop or throw the dismantled parts down to the ground. That's not an acceptable work procedure. Let's face it, that's not a process at all, not when the scaffolding requires a safe lowering mechanism. Its platforms and ropes, hoists and level-to-level manpower lowering that properly gets those pieces back on the ground.

Before dismantling the scaffolding, remove all tools and construction materials from the wooden platforms. Also, disengage the support assemblies that bind the framework to a wall or window. Finally, and this should be another self-evident matter, don't conduct this potentially hazardous process if strong winds or a heavy storm is blowing overhead. ■

Source: C&N Scaffolding Hire

Terex Finlay launches mamoth LJ-130 hybrid jaw crusher

TEREX FINLAY HAS introduced LJ-130 hybrid jaw crusher, which is the largest mobile jaw crusher in its range and has been developed for large-scale quarry and mining operations. The machine can operate as standalone primary crusher or integrated into a mobile or static crushing and screening plant.

The machine incorporates a Terex 1300 x 1000mm (51" x 39") high performance electrically driven single toggle jaw chamber. The large chamber inlet opening has been engineered to accept the coarsest feed including large boulders in the feed material and the chamber cavity depth of 2.3m (7' 5") provides high reduction ratios and maintains an efficient material flow through the plant.

The machine features a 13.5 cu/m (17.64yd^3) hopper with an integrated pan feeder and heavy duty VGF feeder with automatic power monitoring to regulate and automatically increase or decrease material flow to prevent overload and ensure continuous choke feeding of the jaw chamber for optimum and uninterrupted productivity.

The machine can be powered either by the integrated 500kVA genset powerpack configuration or connected to an external power source. Both power options provide operators with significant power, servicing and maintenance cost savings in direct comparison to a diesel/ hydraulic powered plant.

When operated using the onboard genset the integrated alternator generates sufficient energy that can be used to power downstream screening plants or stockpile conveyors further improving overall fuel consumption and efficiencies of production trains.

The LJ-130 hybrid jaw crusher has been developed to provide a robust and powerful mobile solution.

Photo Credit : Terex Finlay

Key features:

- The plant's electrically driven power systems provide significant cost advantages and environmental efficiencies.
- The large feed width and gape enables the crusher to accept larger and coarser material reducing the need for hammering of oversized product in the virgin feed material.
- Automatic variable speed VGF ensures continuous choke feeding of the crushing chamber for optimal productivity.
- High powered electric drive ensures precise chamber controls and reverse functionality for clearing blockages and assisting in construction demolition, asphalt and recycling applications.
- T-Link telematics hardware and software along with free seven year data subscription are fitted and installed as standard.

Kleemann upgrades its screen programme

IN ORDER TO also guarantee effective screening of large volumes, Kleemann is offering two new mobile classifying screens with a feed capacity of up to 750 t/h.

The MOBISCREEN MS 1202 and MS 1203 are available with two or three screen decks and have screening surface areas of 12 sq m in the upper and middle deck and 11 sq m in the lower deck. They thus make hourly outputs of up to 750 tonnes possible. But what else does it come down to with such screening plants apart from a high maximum output? Aiko Fischer, Product Manager for screening plants at Kleemann, answers this, "To achieve these high outputs, the material flow must be well designed. Kleemann has thus generously dimensioned the feed hopper with a holding volume of 10 cu/m. This makes feeding both with a crushing plant as well as with a large wheel loader possible. Despite discontinuous feeding by the wheel loader, the large hopper volume ensures continuous material supply to the screen. Correspondingly wide feeding and discharge conveyors guarantee an unobstructed material flow over the screen. The high-torque diesel engine also ensures that the plant does not 'run out of steam'."

MOBISCREEN MS 1202

Photo Credit : Kleemann

Both screens can be combined very well both with the crushing plants from the Kleemann EVO series as well as the PRO series.

Efficient drives

As with other screening plants in the MOBISCREEN series, the MS 1202/MS 1203 are driven by efficient and powerful hydraulic power units. The Dual Power option also allows the screens to be driven by electric power only, which further increases the efficiency and reduces the load on the environment by decreased noise and exhaust gas emissions.

Flexible in application

Kleemann offers a large selection of screen surfaces with different mesh shapes – square, rectangular or harp-shaped – as well as the correct characteristic, for example, steel or plastic. To ensure that this flexibility relates not only to the screen applications but also to the different job sites, good transport properties and fast set-up and dismantling times are very important. This is also an advantage of the MS 1202/MS 1203 as one of the largest mobile screening plants in the world that can be transported in one piece.

Digital solutions for the mining industry

Ammar Wahab, global sales director of Mining, Minerals and Metals at AVEVA, presented an online webinar on how AVEVA can help mining and metal companies optimise business performance by embracing digitalisation. Robert Daniels reports.

IN A GROUP STUDY conducted last year, Wahab began, 73% of enterprises failed to provide any business value from their digital transformation and yet studies from companies such as PwC and Deloitte have repeatedly concluded that the potential economic impact enabled by digital technologies by 2025 is estimated to be around US$370bn per year.

AVEVA have provided the opportunity for a range of companies across the mining and metal industry to seize this value by maximising production, increasing asset reliability and improving workforce safety by guiding them along the path to digitalisation.

AVEVA's goal is to uniquely integrate engineering operations and asset management enabling end-to-end digital transformation. They cover the entire asset and operations life cycle from engineering and design through to providing real time visualisation of production. To do this, as Wahab explained, the company focuses on four key business benefits:

Photo Credit : AVEVA

AVEVA Solutions can guide any mining company along the path to digitalisation.

Engineering

Enabling a data centric approach, with the creation of a digital twin, and fostering collaboration, AVEVA's engineering solutions support owner operators to manage their capital investment lowering the total installed cost (by a potential 10%), reducing time and risk on project execution (from FEED to commissioning) and setting the foundations for effective operations. AVEVA can provide 1D, 2D and 3D designs seamlessly handed over to the owner operator through web and centralised access.

> AVEVA's goal is to uniquely integrate engineering operations and asset management enabling end-to-end digital transformation.

Operations

Through an end-to-end solution AVEVA can help to integrate all the different components of the value chain both horizontally and vertically, improve visibility through the removal of data silos and improve overall performance. The creation of an optimised and dynamic plan will help customers understand their bottom line, adjust it as needs be and provide the ability to react to an unexpected downtime to re-plan, re-schedule and re-shift to get as close to the target state as possible.

Performance

AVEVA offers to develop a risk-based maintenance strategy to optimise the performance of all critical and non-critical assets. As an example, AVEVA deployed its predictative maintenance technology to a few sites ownded by the largest cemement producer in South America. At just the PoC phase, in its first month, the customer was able to achieve savings of US1mn a month and has now implemented this as standard across all of their operations.

Visualisation

Combining these three elements is the Unified Operations Centre, unifying IT, OT and IoT data systems into a single unified interface to provide end-to-end visibility. In the centre, situation awareness is provided by the digital twin (connected to all edge and physical devices) while all functions are relayed and displayed giving a full 360° insight across the entire business.

As Wahab concluded, it does not matter how far along the digitalisation journey a company is, AVEVA is ready to speak to them, produce a plan to move them forward and help them realise the benefits digitalisation can bring. ■

Wirtgen 220 SMi 3.8 surface miner for high-performance chalk mining

Successful performance tests were conducted at HeidelbergCement in Couvrot, France with the 220 SMi 3.8 surface miner from Wirtgen.

ON BEHALF OF the HeidelbergCement Group, Wirtgen conducted a performance test with the 220 SMi 3.8 surface miner at a chalk quarry in Couvrot. The goal was to increase production output compared to the current mining method using a crawler dozer, while simultaneously reducing operating costs.

During the demo, several tests were conducted to convince the customer that the smallest Wirtgen surface miner is a viable and more efficient alternative. To do so, the surface miner's cutting performance, turning time, and fuel consumption were recorded, among other parameters.

Validates high expectations

Up until now, the company has used a bulldozer to break up the chalk in Couvrot, before a scraper loads the material into the hopper (also known as the bowl) and transports it to a temporary storage facility. From there the chalk is transported to the adjacent cement factory, where it is immediately processed.

Since the pieces of rock mined by the dozer are relatively large, with a grain size of up to 80cm, this mining method causes several problems at once. On the one hand, it creates an uneven surface that must first be levelled by the dozer so that the scrapers can be used to load the material in the first place – an additional, extremely time-consuming task. On the other hand, the coarse grain means that the scrapers require considerable energy and force to load the mined material. This primarily causes considerable traction issues for the scraper, which results, among other negative effects, in an extremely high-level of wear and tear to the machine's tyres. As a result, two to three dozers are currently required per shift to level the excavated area and push the scrapers. In addition to the customer's expected output of at least 500 cu/m per hour, the objective was to eliminate the aforementioned problems with the help of the surface miner.

Photo Credit: Wirtgen

Wirtgen's powerful milling drums can produce significantly smaller grain sizes than, for example, drilling and blasting or, as shown here, using a dozer.

The 220 SMi 3.8 surface miner is capable of selectively mining raw materials at cutting depths of up to 350mm and a uniaxial compressive strength of up to 35 MPa. Thanks to its 3.8m wide cutting drum designed specifically for soft-rock mining, the surface miner achieves maximum productivity at low operating costs, making the compact 220 SMi 3.8 perfect for use in small to large mining operations – a fact that it impressively demonstrated in France.

During the performance test in Couvrot, cutting zones with a length of 150m and 300m as well as a width of around 40m were first mined using the 3.8m wide cutting drum. The drum was then replaced with a 2.2m wide drum and tested for one more day.

Proves its superiority under difficult conditions

According to the customer, the Couvrot region receives significantly more rainfall between October and April than in the summer months. Huge puddles make it difficult to mine the chalk and the moist material has a negative effect on further processing. These conditions were simulated at the beginning of the tests. The 220 SMi 3.8 had to perform a variety of cutting tasks in muddy and wet terrain. Needless to say, the machine also mastered this challenge without any loss in performance. All of Wirtgen's surface miner models feature adjustable longitudinal and cross slopes, which ensures that rainwater drains off and keeps the working surface dry.

Photo Credit: Wirtgen

The 220 SMi 3.8 can easily handle difficult conditions – thanks to its adjustable longitudinal and cross slope, larger puddles are no problem for the machine.

Photo Credit: Wirtgen

While the high-performance miner extracts the chalk non-stop at an extremely high speed, the scrapers push the material into their hoppers to transport it away.

Even when cutting on slopes with a gradient of up to 16%, the production output of the 220 SMi 3.8 remained high. The machine achieved a peak cutting performance of 1,400 cu/m per hour. This represents an outstanding result for the customer, since most of the quarry's mining areas are located on such steep slopes.

The fact that Wirtgen's surface miner can easily handle the average rock hardness of 20-30 MPa was clear even before the tests began. After all, it is designed for rock with a compressive strength of up to 35 MPa. But how would the machine perform under even harder rock conditions? Some areas of the quarry contain deposits of blue marl with a hardness of up to approximately 40 MPa. Another challenge for Wirtgen's miner that the 220 SMi 3.8 mastered with an advance rate of 5-10 m/min. ■

Wirtgen surface miners increase production output

IN THE FINAL and probably most important test, the surface miner was used for an entire shift at the quarry. As part of a fleet with three scrapers and one dozer, the 220 SMi 3.8 cut at two cutting depths of 20cm and 30cm.

Thanks to its powerful cutting drum and an engine output of 963 PS at a weight of 59,000kg, the miner was able to produce significantly smaller and more uniform grain sizes than the dozer. The advantage of this is that the material cut smaller is easier to load than the large pieces of rock, so the scraper and dozer need less power to load the scraper hopper. In addition, the milled material lies flat on the surface, which means it no longer needs to be levelled with the dozer, saving additional time and therefore, cutting costs. In addition, the surface miner produces level surfaces that make it easier to load the scraper and provide stable road surfaces for fast material transport.

After completing the test, the quarry operator was more than satisfied with the results achieved by the 220 SMi 3.8. The surface miner far surpassed the target output rate of 500 cu/m per hour. In fact, at times, the machine was able to extract almost three times the specified amount of chalk per hour. Due to its outstanding cutting performance and its production of fine grain sizes and flat surfaces, the operator no longer needs to use a dozer, which increases output and reduces costs at the quarry. In addition, the flat surfaces reduce traction problems and scraper tire wear. Since the chalk is pre-crushed by the 220 SMi 3.8 at the quarry, further costs resulting from the use of crushers can be saved during further processing at the cement factory. In other words, the smallest surface miner delivers what it promises: "maximum performance and cost-effectiveness."

Photo Credit : Adobe Stock

Intelligent buildings require an intelligent process indicating the importance of collaborative process in design, implementation, and management.

How to reduce energy consumption

What sort of power demands should we expect from intelligent buildings – now and in the future? It's a question that will matter more and more as smarter systems become the norm. Dinesh OP, technical manager for Africa at IT infrastructure solutions company Siemon, tells Phil Desmond why.

"The more intelligent a building becomes, the greater the opportunity to achieve power savings."

ACCORDING TO THE International Energy Agency (IEA), the buildings sector accounts for 30% of total final energy use globally, more than 50% of global electricity consumption and 25% of energy-related CO2 emissions.

Can this consumption be reduced? Dinesh OP, technical manager for Africa at IT infrastructure solutions company Siemon, says, "One of the most effective ways of reducing energy consumption in buildings is through the implementation of integrated systems that allow a complete understanding of a building's energy usage. Intelligent buildings monitor and control energy use and are therefore able to significantly lower energy consumption."

This is where remote power comes in. The term remote power or remote powering refers to how power is being supplied to low-voltage building systems and devices including surveillance cameras, wireless access points, lighting and so on.

Traditionally, AC power runs (separate power cables and outlets) would supply the power required. However, many building systems and devices have become IP-enabled, meaning that they can connect to the IT infrastructure built on structured cabling and that they can receive power over the standard twisted-pair copper cabling infrastructure. The electrical infrastructure is no longer needed – with power cables and power outlets becoming obsolete.

OP explains, "This leads to tremendous savings on material and labour (notably installation work). The benefits that remote powering delivers includes faster

deployment, 75% less cost than an AC power run and the ability to receive centralised back-up power, to name just a few."

Power over Ethernet (PoE) is a specific remote powering technology. The first generation of PoE – IEEE 802.3af Type 1 (15W) – was used for powering lower-power devices like IP clocks, VoIP phones and simple security cameras. Then came the development of IEEE 802.3at Type 2 (30W), higher level IEEE 802.3bt Type 3 (60W) and Type 4 (90W), and POH (100W) for AV applications.

OP says, "Remote powering technology now powers everything from wireless access points, advanced pan-tilt-zoom cameras, access control devices and LED lights to video displays, point-of-sale machines and even desktop computers and laptops.

The opportunity for the devices powered up to 90W / 100W in a building to adopt PoE are endless," he adds.

Besides lighting, wireless access points and access control, there are now devices like thin clients, desktop computers and large mobile devices that are also starting to take advantage of PoE. OP says, "PoE computers are among the most energy-efficient computers in the world; they consume less than half the power of an equivalent desktop computer on average.

"Also," he adds, "the availability of 90W Type 4 PoE will enable larger screens (up to at least 42") or multiple screens and may even expand the role of PoE computing in digital signage applications."

As for challenges, there is a potential for heat build-up within cable bundles and electrical arcing damage to connector contacts that can be caused by higher levels of remote powering. "It is therefore important to deploy cabling infrastructure that is designed to provide superior remote powering support," says OP.

He continues, "To ensure reliable performance and contact integrity it is important to ensure that the connecting hardware has been independently certified for compliance to the standards IEC 60512-99-001 (PoE Types 1 & 2) and IEC 60512-99-002 (PoE Types 3 & 4). They were specifically developed to ensure reliable connections for remote powering applications deployed over balanced twisted pair cabling and minimal or zero de-rating of cable length at an operating temperature of 60°C and above."

Photo Credit : Siemon

Siemon's Cat6A Z-MAX outlet with PowerGuard technology. To combat the effects of heat build-up, Siemon has incorporated PowerGUARD technology into its Category 6A and 7A cables.
For more information: go to: siemon.com/powerguard

There are of course specific requirements that the cabling infrastructure needs to fulfil in order to support power delivery.

We've mentioned temperature build-up. Here it may be wise to select shielded – rather than unshielded – copper cabling systems. As OP points out, "Shielded category 6A or category 7A copper cabling for example will maintain cabling performance as these solutions are qualified for mechanical operation of up to 75°C and provide greater thermal stability."

In addition, to avoid possible damage to contact seating surfaces when the cabling is disconnected from a live device under PoE lead, he recommends the deployment of connecting hardware that complies with IEC 60512-99-001 (PoE Types 1 & 2) and IEC 60512-99-002 (PoE Types 3 & 4).

Do not forget too, that many of the devices that benefit from remote powering technology reside in the ceiling (such as PoE lighting fixtures and IP cameras). Therefore cabling designers must become familiar with new configurations, such as zone cabling topologies.

Overall, the intelligent building concept itself aims to reduce energy consumption

"Policies increasing the availability of affordable internet need to include improving the availability of electricity."

Photo Credit : Siemon

Siemon's Cat6A Z-PLUG with PowerGuard technology.

while enhancing user experience. According to the EPA [Environmental Protection Agency], intelligent 'green' buildings can reduce energy use by up to 70%. "This will translate into reduced energy load on local power service providers and backup generators," says OP.

Another important policy consideration relates to the synergies between electricity access and internet adoption. "Enterprise and business access to electricity is an important driver of internet adoption," OP points out. "Policies increasing the availability of affordable internet need to include improving the availability of electricity."

"So," he says, "with PoE gaining a lot of ground in Africa, especially in sub-Saharan Africa, it is key that the cabling infrastructure is installed properly, is future-proof and is scalable."

He adds, "Remote powering including Power over Ethernet is a key technology supporting the Internet of Things (IoT). The IoT in turn forms an integral part of smart city developments. Whilst smart city projects in Africa are still a vision for the future, the African continent is experiencing a wave of rapid urbanisation. With more people migrating to cities, cities will need to find new ways of tackling the problems that are likely to affect quality of life, including growing power demands and strained infrastructure, as well as the need for safety and security." ■

Established in 1903, Siemon specialises in the design and manufacture of high-quality, high-performance IT infrastructure solutions and services for data centres, LANs and intelligent buildings. www.siemon.com

Survive and thrive with digitalisation

Tariq Bakeer, regional managing director of Endress+Hauser Middle East, says digitalisation is all about the added value it brings.

I COME FROM a telecommunications industry background where the word 'digital' has long been the industry standard; computer network protocols, such as Ethernet and Wireless LAN as well as mobile networks standards, such as Global System for Mobile communication (GSM), General Packet Radio Service (GPRS) and Universal Mobile Telecommunications System (UMTS) were all based on digital communication. It has been more than 20 years since digital was already at the core of the telecommunications industry.

The automation industry, on the other hand, was more conservative in adopting digital communication and all the benefits that come with it. Throughout my journey in this industry over the past 15 years, I have seen the introduction of many digital standards such as FF, PROFIBUS and WirelessHART to integrate the field transmitters with control/monitoring systems. In my point of view, this had very limited success in terms of industry acceptance as well as the applications in use. Even the HART digital protocol, which came as a standard protocol in the field transmitters, was mainly used to configure and commission a device rather than to make higher value information-based decisions. Analogue stayed at the core of the automation industry.

I am very proud to be working for a company, which is well ahead of its time in terms of understanding the power of digitalisation and digital transformation and further utilising it as a differentiator in the industry in specific applications to create higher value for our customers. For instance, for more than 10 years, we have addressed topics such as conditional monitoring as means of preventive maintenance for higher plant availability; digital sensors (Memosens technology) in liquid analysis, which disrupted the traditional analogue sensors and drastically improved the way we maintain them; and HART communication on top of the tank as means of safety in tank gauging applications, among many other innovations. Endress+Hauser has constantly built the architecture and foundation for digital transformation.

Photo Credit: Endress+Hauser

Tariq Bakeer, regional managing director, Endress+Hauser Middle East.

> "Adopting, adapting and managing digital transformation will decide which businesses survive and thrive and which do not."

In the last few years, the words digitaliation and digital transformation have gained momentum, and now it is stronger than ever. They came along with many terminologies, such as Industry 4.0, IoT, M2M, Big Data and many others. All of us started talking about this, each one probably referring to something different depending on our backgrounds and understanding. It felt that all industries were merging together, and what was not relevant some years back, became highly relevant. This was, and probably still is, an overwhelming topic and experience.

The way I define digitalisation today goes way beyond the basic connectivity and the communication which has already existed for many years. I would define it based on the added value it brings and the ways it has drastically and positively changed:

- The way we interact with one another: whether with a customer, a partner or a colleague, digital transformation makes us more efficient, more collaborative and certainly more available. COVID-19 taught us a lesson on how important this value is.
- The way we make decisions: whether this is to optimise a process, proactively predict and prevent or a go/no go for an investment, digitalisation allows us to better utilise the data and make more intelligent, informed and even faster decisions.

Consequently, I categorise the topic of digitalisation as a survival topic, for individuals as well as for businesses alike. It is a long-term game. Adopting, adapting and managing digital transformation will decide which businesses survive and thrive and which do not. ■

LG Electronics: Smart energy solutions provider

By supplying advanced air solution technology, LG Electronics has captured 20% of the UAE's US$5mn air purification market in 2020 alone.

DURING A YEAR in which comprehensive yet efficient HVAC solutions have become increasingly crucial, LG Electronics (LG) has focused on strengthening its ties with industry leaders such as ASHRAE (American Air Conditioning Association) and REHVA (European Air Conditioning Association) to deliver new standards of comfort and care to all.

LG's commitment to championing innovation has allowed the company to successfully negotiate the challenges of 2020 while empowering businesses and individuals across the Middle East and Africa as a complete smart energy solution provider.

Sangmin Lee, leader of LG's business solution division for the Middle East and Africa (MEA) reiterated the company's commitment to the region, "Our success comes as a result of having a clear understanding of local market demands, responding by bringing new technologies to the market at rapid pace and scale. We will continue to accelerate our focus on becoming a trusted HVAC partner in MEA, based on the values of integration, expertise and customer service to create a positive impact."

Variable refrigerant flow (VRF) systems are representative of LG's HVAC solutions and have been at the forefront of new installations in schools, hotels, offices, and entertainment hubs across the region. These systems are equipped with powerful and reliable inverter compressors, which enable them to offer maximum efficiency in part-load as well as full-load conditions.

This track record of advanced air solution technology has allowed LG to capture 20% of the UAE's US$5mn air purification market in 2020 alone. LG's advanced VRF systems have been installed at several sites across the region, including Dubai's Sustainable City and Abu Dhabi's Saadiyat Beach Villas.

To ensure LG remains at the forefront of air solution technology and provides unparalleled customer service, the company has been training technicians at its state-of-the-art LG Air Solutions Academy in Jebel Ali since 2010.

Photo Credit: LG Electronics

Sangmin Lee, leader of LG Electronics business solution division, MEA

> Our success comes as a result of having a clear understanding of local market demands, responding by bringing new technologies to the market at rapid pace and scale.

In recent months, LG has introduced purification and sterilisation kits onto existing air conditioning units to improve comfort and indoor air quality. Customers looking for more aesthetically-pleasing solutions have also been introduced to the advantages of LG's Dual Vane and Round Cassette air conditioning units.

Building on the long-standing success of its PuriCare air purifier line-up, LG has introduced a host of new iterations, including a commercial model for office spaces and more recently, the PuriCare Wearable Air Purifier. LG's wearable device, which uses two H13 HEPA filters and a patented respiratory sensor to filter air and regulate airflow on-the-go, has been received with great interest and is already serving government bodies and hospitals in other markets. While the PuriCare Wearable had been in R&D since 2017, the pandemic also revealed a need for new, more affordable air solutions with hygiene at the forefront and LG has been focused on bringing the right, cost-effective technologies to market to meet this demand.

LG has continued its longstanding tradition of supporting healthcare facilities by delivering tailored solutions that meet the differing temperature, humidity and air pressure requirements of operating theatres, patient rooms and intensive care units. LG's Multi V system offers optimum efficiency during peak and partial load hours across the entire facility while the LG control solution also makes operation much more efficient. This gives healthcare providers the ability to manage facilities while reducing operating costs.

The company continues to provide smart energy management with its BECON (Building Energy Control) Cloud Solution, an IoT-based platform. This enables greater visibility and convenience via remote real-time monitoring and energy efficiency management. ■

Green hydrogen is pure hydrogen produced using renewable energy sources such as wind or solar power.

Photo Credit : Adobe Stock

UAE gives new push for green hydrogen

Slava Kiryushin and Joshua Coleman-Pecha, DWF (Middle East) LLP discuss about the launch of the Abu Dhabi Hydrogen Alliance and what it means for the region.

The UAE aims to boost Abu Dhabi's green hydrogen capabilities and pursue its targets for carbon reduction and development of a hydrogen economy.

ON 18 JANUARY 2021, Mubadala Investment Company (Mubadala) and Siemens Energy (Siemens) signed a Memorandum of Understanding (MoU) to explore and investigate commercial opportunities in clean energy and green hydrogen. The stated aim of the MoU and the alliance is to establish Abu Dhabi as a global hub for low-carbon fuels.

The MoU has two, specific, strategic aims:

- to boost Abu Dhabi's green hydrogen capabilities, as the United Arab Emirates (UAE) pursues its targets for carbon reduction and development of a hydrogen economy. Once the technology is established the hope is that it can be sold to international markets; and
- channel investment into the development of advanced technology for the manufacturing of equipment and synthetic fuel production.

It is anticipated that Abu Dhabi will provide a suitable venue for the production and sale of synthetic fuels and green hydrogen. Once the business case for production is established, the hope is that the project will attract investment to develop additional facilities and fund further research. Once the technology is proven, green hydrogen will be supplied/sold to global markets.

Certainly, financial projections in respect of green hydrogen are encouraging. Aurora Energy Research suggests that the hydrogen market could be a US$140bn industry in Europe by 2050. McKinsey estimates that the hydrogen market will reach this value in the United States by 2030 and approximately 700,000 American jobs could be supported by the hydrogen industry.

Developing green hydrogen technology

The first step in the UAE will be to construct a demonstration plant at Masdar City. Masdar, the renewable energy company, is

already working to complete Abu Dhabi's solar energy farm at Al-Dhafra.

In order to construct the demonstration plant at Masdar City, and develop the necessary hydrogen technology, Masdar will initially work with the Abu Dhabi Department of Energy, Etihad and Lufthansa Group airlines, the Khalifa University of Science and Technology, Siemens Energy of Germany and Japan's Marubeni Corporation. This consortium will aim to develop green hydrogen, sustainable fuels and e-kerosene. All of which will support Abu Dhabi's transport, shipping and aviation industries.

The initial phase of the project will focus on producing green hydrogen for passenger cars and public buses in Masdar City. A kerosene synthesis plant will also be constructed to convert green hydrogen into sustainable aviation fuel. In a second phase, the consortium will explore fuel production for the shipping industry.

Once these objectives are complete, the consortium will hope that it can capitalise on the technology and export green hydrogen around the world.

Supporting the UAE's clean energy and carbon emissions commitments

There is no doubt that the UAE will aim to deliver on its clean energy commitments by tackling the issue of where it sources its energy supply. International Energy Agency statistics show that, in 2018, the UAE's total energy supply was (approximately) sourced 88% from natural gas, 8% from oil, 3% from coal and 0.3% from renewable sources such as wind and solar.

The UAE has targeted a 25% cut in its carbon emissions by 2030. In addition, the UAE's Energy Strategy 2050, sets out ambitious plans to derive 44% of its energy from clean sources (mainly solar power), 35% from gas, 12% from 'clean' coal and 6% from nuclear by 2050.

In pursuit of these targets, the UAE already boasts 79% of the region's installed solar power generation capacity. Noor Solar Park in Abu Dhabi is the largest in the world and produces 1.2 GWh of energy. Abu Dhabi is set to complete the Al-Dhafra Solar Park in 2022, which will produce 3.2 GWh of energy, and, in Dubai, the Mohammed Bin Rashid Al Maktoum Solar Park will be complete in 2030. When finished, the latter will be the largest solar park in the world, producing 5 GWh of energy and supplying approximately 25% of the Emirate of Dubai's power needs.

Further, Shiekh Mohammed bin Rashid al Maktoum (the Vice President of the UAE and Ruler of Dubai), has publicly stated the importance of the UAE developing a 'green economy'. He called for a green economy so that the UAE preserves its natural resources, reinforces its biodiversity, creates food diversity and achieves high levels of productivity. Developments such as high-yield crops that can withstand hot and dry conditions are a specific element to the overall strategy.

Clearly, the UAE's plans for improving its green credentials are impressive. Nonetheless, the nation faces a significant challenge in delivering on promises to reduce reliance on fossil fuels and create its green economy. The MoU, and stated intent to develop green hydrogen power, is of potentially huge significance for the UAE in its drive toward meeting the requirements of its Energy Strategy 2050.

Conclusion

There is no doubt that the UAE, and the world, needs to develop additional sources of clean fuel if environmental targets, such as the UAE's Energy Strategy 2050, are to be met. While there is, clearly, a significant technological challenge to developing green hydrogen as a viable source of energy there also appears to be little doubt that green hydrogen has huge potential if the technology is proven.

It appears that the UAE, by signing the MoU and building its consortium, has taken a very positive step toward overcoming barriers to supplying energy and fuel derived from green hydrogen. It does not seem likely that the lights will go out on the UAE's motivation to secure its environmental and economic future any time soon. ■

Hydrogen deployment picks up with more than US$300bn in project pipeline

A NEW REPORT released by the Hydrogen Council shows rapid acceleration of hydrogen projects in response to government commitments to deep decarbonisation. Developed in collaboration with McKinsey & Company, "Hydrogen Insights 2021: A Perspective on Hydrogen Investment, Deployment and Cost Competitiveness" offers a comprehensive perspective on market deployment around the world, investment momentum as well as implications on cost competitiveness of hydrogen solutions.

As of early 2021, over 30 countries have released hydrogen roadmaps and governments worldwide have committed public funding in support of decarbonisation through hydrogen technologies. No less than 228 large-scale projects have been announced along the value chain, with 85% located in Europe, Asia, and Australia. These include large-scale industrial usage, transport applications, integrated hydrogen economy, infrastructure, and giga-scale production projects. If all announced projects come to fruition, total investments will reach more than US$300bn in spending through 2030. Of this investment US$80bn can currently be considered "mature" – meaning that these projects are in the planning stage, have passed a final investment decision (FID), or are under construction, already commissioned, or operational.

Anticipating continued growth in scale, the report confirms that – from a total cost of ownership (TCO) perspective – hydrogen can become the most competitive low-carbon solution in more than 20 applications by 2030, including long haul trucking, shipping and steel.

Photo Credit : Adobe Stock

More than 30 countries have national hydrogen strategies in place, and public funding is growing.

Deployment through clusters with strong off-takers will help suppliers share both investments and risks while establishing positive reinforcing loops. Three cluster types are already gaining traction: 1) Industrial centres that support refining, power generation, and fertiliser and steel production; 2) Export hubs in resource-rich countries; and 3) Port areas for fuel bunkering, port logistics, and transportation. The reduced costs from clusters will enable global trade in hydrogen, connecting future major demand centres such as Japan, South Korea, and the European Union to regions of abundant low-cost hydrogen production means like the Middle East, North Africa, South America, or Australia.

Photo Credit: Adobe Stock

Huawei Site Power aims to provide guidance for technology and industry development as well as industry digitisation.

Technology and industry: Top 8 trends of site power

Sanjay Kumar Sainani, SVP and CTO of Huawei Global Data Centre Facility Business, outlines eight trends to provide guidelines for the growth and innovation of the energy industry.

AS EMERGING TECHNOLOGIES, such as 5G, Internet of Things (IoT), cloud computing, and artificial intelligence (AI) are rapidly commercialised, there is an uptick in digital transformation across various industries. The epidemic and carbon neutrality goals further accelerate the transformation towards a smart society. What does it mean for the site power? What will happen if energy technologies are combined with power electronics technologies and digital technologies?

Deep insights into the industry trends help enterprises to better adapt to future challenges. Eight key trends can guide technology and industry development, and industry digitisation, help build a greener and better-connected world, and bridge the energy divide.

Trend 1: Power digitalisation

The full power link from power generation, conversion, storage, to load will be digitalised. The entire energy network will change from the traditional watt flow to watt+bit collaboration, driving the digital transformation of site power from points, chains, and networks with the concept of Bits Manage Watt or (Bit Manages Watt). The convergence of digital technologies and energy technologies will make energy networks more visible, manageable, controllable, and optimisable.

Trend 2: "Zero-Carbon" network

Green and sustainable development is a global campaign. Clean energy application and energy saving have become mainstream around the world. In the future, the full link of power generation, load consumption, and power conversion and storage will be green, efficient, and energy-saving. From the top-level network planning and design, construction and capacity expansion, to the reconstruction and optimisation, digital O&M and energy efficiency management, and zero-carbon evaluation, a zero-carbon network will be realised through the integration of power electronics, digital, and AI technologies. Carbon emissions of networks will also be cleared through simplified network construction, intelligent O&M, and full-lifecycle management of energy networks.

Trend 3: Lithium for all

Lithium batteries will gradually replace lead-acid batteries in large-scale applications in various industries around the world. After the power electronics and digital technologies are combined, the local BMS and cloud BMS will collaborate. With the help of AI and big data technologies, standard lithium batteries will become intelligent and cloud-based. From a single component to a cloud-based smart energy

storage system, lithium batteries will be safer, applicable to more scenarios, and with more efficient O&M, maximising the value of site energy storage.

Trend 4: Telecom site to social site

5G will be the backbone for many industries. As a result, a large number of digital sites are emerging. Varied scenarios require more flexible and diversified sites. Traditional sites with the single function of communication connection will evolve to social sites with comprehensive functions, maximising the site value.

Trend 5: Energy supply diversification

The diversification of energy supply is embodied in three aspects: power supply sources, application scenarios and deployment modes.

Firstly, new energy, especially solar energy, will gradually shift from supplementary to primary. In addition, more power supply solutions with optimal configurations will be available thanks to the combination of new energy with a mains and energy storage system. Secondly, site power is no longer just the power source of IT or CT equipment. Instead, it changes to ICT converged power supply and begins to power people's livelihood and production. Thirdly, site power can be deployed in multiple modes in the future.

Photo Credit: Huawei

Sanjay Kumar Sainani, SVP and CTO of Huawei Global Data Centre Facility Business

Trend 6: Full link intelligence

With the gradual digital transformation of the energy industry, the traditionally siloed architecture and isolated management of energy subsystems will evolve towards integrated smart energy. The software-defined subsystems for power generation, conversion, storage, distribution, consumption, and temperature control will use AI algorithms to achieve full-link collaboration and optimal power supply systems.

Trend 7: Simple and convergent

As a large number of sites will be deployed, IT and CT services are further integrated at one site, and the power supply and battery will be combined. The AC and DC power modes are integrated into one power supply. Therefore, multiple power systems will converge. Sites will evolve from equipment rooms to cabinets and poles, reducing the footprint and power consumption. The site power efficiency will be further improved, and the electricity consumption will also decrease, achieving low carbon emission throughout the entire network and realising a simplified power supply during the lifecycle.

Trend 8: Autonomous driving

Autonomous driving is the development theme of site power in the future. First, the application of AI technologies will simplify energy O&M, implement remote O&M, self-learning, and automatic O&M, and improve O&M quality and efficiency. Second, intelligent IoT connection technologies and intelligent sensing technologies will enable the digital management of site power. The original management of dumb devices will be eliminated. With digital sensors and the intelligent management platform, all components and devices in the energy network can be sensed and interconnected. ■

Cummins' C2750D5BE diesel generator designed to meet wide range of requirements

CUMMINS POWER SYSTEMS has introduced the C2750D5BE model to complement the successful QSK60 series, extending its standby power range from 2500kVA to 2750kVA for 50Hz markets.

With the lowest engine displacement in its power class, the C2750D5BE model provides the highest power density and lowest footprint for its rated power output; its size results in reduced space required at the installation phase and lower operating costs, providing the most competitive offering in the marketplace.

"We have designed the C2750D5BE to be as flexible as possible to meet a wide range of customer requirements. The addition of the model to our portfolio builds on Cummins' position as a market leader," said Sarah Griffiths, director of Cummins Data Center Segment.

The new model is highly efficient with 100% load step capability: typically, within 10 seconds and availability up to and including ambient temperatures of 50˚C before de-rate, providing exceptional power from the QSK60-G23 engine. In addition, voltage and performance options are designed to reduce runtime maintenance and improve fault redundancy resulting in the ability to perform whenever, wherever.

Photo Credit : Cummins

The C2750D5BE diesel generator from the QSK60 series.

The C2750D5BE meets EPA Tier 2 emissions standards, designed to enhance air quality and reduce particulate matter to provide significant environmental benefits. In addition, the system enables comprehensive real-time fault detection and a fully integrated control system which enables the flexibility to respond and adapt to a variety of applications including data centers, commercial facilities, and manufacturing plants, while providing outstanding performance.

Project Databank

Compiled by Data Media Systems

CONSTRUCTION AND INFRASTRUCTURE PROJECTS, SAUDI ARABIA

Project	City	Sector	Facility	Budget	Award Date	Status	Start Date	Completion Date
Saudi Railway Company - Saudi Railway Masterplan	Various	Infrastructure	Mass Transit Systems	97000000000	2010-Q4	Construction	2010-Q2	2040-Q4
Ministry of Housing - Housing Units Development - Overview	Various	Construction	Residential Development	40000000000	2019-Q2	Construction	2018-Q4	2024-Q3
RCJY - Saudi Aramco - Jizan City for Basic & Downstream Industries - Overview	Jizan	Construction	Mixed-Use Development	30000000000	2007-Q4	Construction	2004-Q1	2021-Q1
EMAAR - MISA - King Abdullah Economic City (KAEC) - Overview	Rabigh	Construction	Mixed-Use Development	27000000000	2007-Q2	Construction	2005-Q4	2035-Q4
Ministry of Transport & Communication - GCC Railway Network	Eastern Region	Infrastructure	Railway	25000000000	2017-Q1	Construction	2005-Q2	2025-Q4
NEOM - Neom City - Rail Network - Overview	Neom	Infrastructure	Railway	23000000000		Design	2020-Q3	
Royal Commission for Riyadh City - Riyadh Metro - Overview	Riyadh	Infrastructure	Railway	23000000000	2013-Q3	Construction	2004-Q1	2021-Q4
Jeddah Economic Company Ltd. - Jeddah Economic City - Overview	Jeddah	Construction	City	20000000000	2011-Q1	Construction	2007-Q3	2025-Q1
Ministry of Housing - Dahiyat Al Fursan Housing Development	Riyadh	Construction	City	20000000000	2016-Q1	Engineering & Procurement	2014-Q2	2025-Q2
DCOMM - Makkah Mass Rail Transit (MMRT)	Makkah	Infrastructure	Railway	16500000000	2017-Q3	Construction	2010-Q2	2023-Q4
DCOMM - Makkah Public Transport Programme (MPTP) - Metro Network - Phase 1 - Line B and C	Makkah	Infrastructure	Mass Transit Systems	16500000000	2020-Q3	Feasibility Study	2010-Q4	2024-Q4
HOJDC - KDC Limited - Heart of Jeddah	Jeddah	Construction	Mixed-Use Development	11000000000		Design	2012-Q1	2034-Q4
Maaden - Sabic - Mosaic - Waad Al Shamaal Phosphate City - Overview	Ras Al Khair	Mining, Infrastructure	Phosphate	9600000000	2013-Q3	Construction	2010-Q1	2022-Q4
Royal Commission for Riyadh City - Riyadh Metro - Phase 1 - Package 1 - Lines 1 and 2	Riyadh	Infrastructure	Railway	9500000000	2013-Q3	Construction	2004-Q1	2021-Q4
Royal Commission for Riyadh City - Riyadh Metro - Phase 1 - Package 3 - Line 4, 5 and 6	Riyadh	Infrastructure	Railway	8000000000	2013-Q3	Construction	2006-Q3	2021-Q4
Seera City Real Estate Development Company - Saudi Arabian General Investment Authority (SAGIA) - Knowledge Economic City - Overview	Medina	Construction	Mixed-Use Development	8000000000	2011-Q2	Construction	2006-Q3	2025-Q4
PIF - Rayadah InvestmentCompany - King Abdullah Financial District (KAFD)	Riyadh	Construction	Mixed-Use Development	7800000000	2009-Q4	Construction	2007-Q1	2023-Q4
GACA - King Abdul Aziz International Airport (KAIA) Expansion - Overview	Jeddah	Infrastructure	Airport	6000000000	2007-Q1	Construction	2005-Q3	2035-Q4

CONSTRUCTION AND INFRASTRUCTURE PROJECTS, SAUDI ARABIA

Project	City	Sector	Facility	Budget	Award Date	Status	Start Date	Completion Date
Metro Jeddah Company - Jeddah Public Transport Program - (Program)	Jeddah	Infrastructure	Railway	5600000000	2021-Q2	EPC ITB	2010-Q2	2023-Q4
Saudi Aramco - King Salman International Complex for Maritime Industries & Services - Marine Works	Ras Al Khair	Infrastructure	Dredging/ Reclamation	5300000000	2017-Q3	Construction	2013-Q1	2021-Q4
Saudi Aramco - King Salman International Complex for Maritime Industries & Services - Overview	Ras Al Khair	Offshore, Infrastructure	Ship Yard	5300000000	2017-Q3	Construction	2013-Q1	2022-Q1
Ministry of Transport - (Saudi Arabia - Egypt) King Salman Causeway	Ras Hamid	Infrastructure	Causeway	5000000000		Feasibility Study	2016-Q1	2022-Q4
Royal Commission for Riyadh City - Riyadh Metro - Phase 2 - Metro Line Extension	Riyadh	Infrastructure	Railway	5000000000		Feasibility Study	2020-Q1	
SLCC - LandBridge Rail Link	Various	Infrastructure	Railway	5000000000		Design	2006-Q3	2026-Q1
SRECO - Arabian Dream - Al Widyan Development Scheme - Entertainment Complex	Riyadh	Construction	Theatre/ Entertainment/ Leisure Facilities	5000000000		Project Announced	2019-Q4	
PIF - New Jeddah Downtown	Jeddah	Construction	Mixed-Use Development	4800000000		Project Announced	2017-Q3	2022-Q4
Saudi Aramco - King Salman Energy Park (SPARK) - Overview	Abqaiq	Construction	City	4400000000	2019-Q3	Construction	2017-Q1	2035-Q1
Ministry of Transport - GCC Railway Network - Bahrain - Saudi Link	Khobar	Infrastructure	Railway	4200000000		Design	2013-Q4	2025-Q4
Royal Commission for Riyadh City - Riyadh Metro - Phase 1 - Package 2 - Line 3	Riyadh	Infrastructure	Railway	4000000000	2013-Q3	Commissioning	2004-Q1	2021-Q4
Saudi Aramco - King Salman International Complex for Maritime Industries & Services - Phase 2 - Dry Docks, Basins, Piers, and Utility Buildings	Ras Al Khair	Infrastructure	Port	4000000000	2018-Q3	Construction	2013-Q1	2021-Q4
Ministry of Finance - Abraj Kudai	Makkah	Construction	Mixed-Use Development	3500000000	2014-Q4	Construction	2011-Q1	2021-Q4
QIC - Qiddiya Entertainment City - Phase 2	Riyadh	Construction	Mixed-Use Development	3500000000	2024-Q1	Project Announced	2017-Q2	2026-Q4
QIC - Qiddiya Entertainment City - Phase 3	Riyadh	Construction	Mixed-Use Development	3500000000	2027-Q1	Project Announced	2019-Q2	2031-Q4
GACA - Jeddah Airport City	Jeddah	Construction	Mixed-Use Development	3200000000	2016-Q3	Engineering & Procurement	2015-Q1	2024-Q1
Majid Al Futtaim - Mall of Saudi	Riyadh	Construction	Malls/Retail Outlets	3200000000	2021-Q2	EPC ITB	2016-Q1	2024-Q4
Ministry of Transport - King Hamad Causeway (Saudi - Bahrain Link)	Dammam	Infrastructure	Causeway	3000000000	2021-Q4	Feasibility Study	2012-Q2	2024-Q1
PIF - Amaala Resort	Red Sea	Construction	Beaches and Resorts	3000000000	2020-Q4	Engineering & Procurement	2018-Q4	2028-Q1
Modern Mining Holding Trafigura - Ras Al Khair	Ras Al Khair	Mining	Copper	2800000000		Project Announced	2018-Q4	

Project Databank

Compiled by Data Media Systems

Project Focus

Compiled by Data Media Systems

Project Summary

Name of Client	GACA - General Aviation Civil Authority
Estimated Budget (US$)	500,000,000
Revised Budget ($US)	685,000,000
PMC	Netherlands Airport Consultants B.V Saudi Diyar Consultants
Main Contractor	Modern Construction Company Safari Company Limited Al-Subaie & Brothers Company
Contract Value ($US)	667,000,000
Award Date	Q2-2014

Project Schedules

Facility Type	Sector	Status	Location	Project Start	End Date	Last Updated
Airport	Infrastructure	Construction	Jizan	Q4-2012	Q4-2022	24-02-2021

Background

General Authority for Civil Aviation (GACA) is planning to build the King Abdullah bin Abdul Aziz airport in Jizan Economic City. The new airport will have the capacity to handle up to 2.4 million passengers per year. The scheme is part of their plans to spend $10.66 billion on building new airports until 2030.

Project Status

Date	Status
Feb 2021	Terra Drill Company is executing piling works for the King Abdullah bin Abdul Aziz Airport project.
Jan 2021	Works on the airport project are 19% complete. 42% of the budget has been allocated for the infrastructure, soil treatment, and dredging.
Jan 2021	A contract has been signed with a power company to develop a substation with the Saudi Electricity Company. The substation project is expected to be completed within 18 months.

Project Schedules

Project Announced	EPC ITB	Engineering & Procurement	Construction	On Hold	Construction	Construction
2Q-2005	2Q-2008	1Q-2025	1Q-2030	1Q-2018	3Q-2018	4Q-2022

Project Scope

King Abdullah bin Abdul Aziz airport will be located 30 kilometers away from Jizan Economic City. The construction of the new 52,000 square meter airport will have a capacity to handle up to 3.6 million passengers per year.

The scope of work involves:

- Building a three-story passenger terminal with 10 gates and a VIP lounge
- A control tower
- Air cargo zones
- Associated facilities
- Runways
- Taxiways

The consortium of Saudi/Lebanese Modern Construction Company, Safari and Al-Subaie will build a three-story passenger terminal, a control tower, air cargo zones and other facilities. The terminal will have 10 gates and a VIP lounge.

Project Finance

General Authority of Civil Aviation (GACA) is the client on the scheme.

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Achieving energy security with renewables

Renewables readiness assessment report by the International Renewable Energy Agency (IRENA) highlights seven key action areas to accelerate Jordan's uptake of renewables.

A NEW REPORT PUBLISHED by the International Renewable Energy Agency (IRENA) has identified a series of policy measures that can help advance the energy transition towards renewable energy in Jordan.

The Renewables Readiness Assessment: The Hashemite Kingdom of Jordan – developed in co-operation with Jordan's Ministry of Energy and Mineral Resources, suggests opportunities exist to deepen private sector engagement in national efforts to reach a 31% share of renewables in total power by 2030.

"The recommendations of this report comply with the newly issued Energy strategy 2020-2030 and its action plan," said Hala Zawati, minister of Energy and Mineral Resources in Jordan. "We are fully aware that to achieve all these ambitious targets, a strong partnership between the public and private sectors is needed. We are also eager to work with international friends and partners to make renewable energy a main pillar of the Jordan energy sector."

The report presents policy action areas to increase energy security and boost supply diversity through the accelerated uptake of renewables and includes ideas to boost end-use electrification and increase the availability of energy transition investments from domestic institutions.

Jordan's share of electricity from renewables grew from almost zero in 2014 to around 20% in 2020, thanks to enabling frameworks and policies that have supported the deployment of renewable energy technologies, including solar photovoltaic (PV) and onshore wind.

"Jordan boasts significant renewable energy resource potential that if realised will reduce consumer energy costs, improve national energy security, create jobs and stimulate sustainable growth – boosting post COVID-19 economic recovery efforts," said IRENA director-general Francesco La Camera. "This report highlights a series of policy and regulatory measures that will allow Jordan to build on its energy transition progress to date and align it with 2030 national decarbonisation goals."

Jordan boasts significant renewable energy resource potential that if realised will reduce consumer energy costs.

Photo Credit: IRENA

Capacity building in local financing institutions and project developers can drive their engagement in the energy transition, the report says, while helping the country to meet its needs in important areas such as the build-out of electric charging infrastructure for the transport system.

> Jordan's share of electricity from renewables grew from almost zero in 2014 to around 20% in 2020.

Challenges associated with integrating higher shares of renewables in Jordan can be addressed by building and upgrading transmission and distribution infrastructure, deploying storage, promoting demand-side management and incentivising electrification of heating, cooling and transportation.

Renewables Readiness Assessment: Jordan lists concrete recommendations around the following seven action areas:

- Provide the conditions for renewables to grow in the power sector
- Foster continued growth of renewable power generation
- Plan for the integration of higher shares of renewable power
- Incentivise the use of renewables for heating and cooling
- Support renewable options for transport and mobility
- Catalyse renewable energy investment
- Strengthen local industries and create jobs in renewables ■

PASCHAL's new NeoR lightweight formwork finds application in housing construction

CONSTRUCTION COMPANY RELIES on new NeoR lightweight formwork from PASCHAL to build new apartment building in Kleefeld, Hanover.

Photo Credit : PASCHAL

The new NeoR lightweight formwork from PASCHAL is used as formwork for the stairwell and lift core.

A five-storey apartment building, complete with underground car park, is currently in progress as an inner city infill site in Kleefeld, Hanover. A total of 11 modern condominiums with high-quality fittings are being erected, while its architectural features ensure that the building itself blends seamlessly into the surrounding residential area. The developer for the project is WBK Wohnbau Konzept Hannover GmbH. To manufacture the reinforced concrete structures for the basement and ground floor, WBK Wohnbau Konzept Hannover GmbH is relying on three different formwork systems from PASCHAL.

LOGO.3 and TTR in combined use of formwork

The LOGO.3 wall formwork system was rented out in combination with the TTR Circular trapezoidal girder formwork to form the basement walls together with the entrance to the underground car park.PASCHAL supplied the LOGO.3 wall formwork with a formwork height of 270 cm to produce the straight wall sections. The circular ramp and basement walls were completed using the TTR Circular trapezoidal girder formwork.

Due to the infill site, some of the formwork had to be single-sided in order to be formed against existing buildings. PASCHAL supporting jacks were used to safely dissipate the pressure of the concrete and lifting forces in the ground.

NeoR lightweight formwork impresses

The new NeoR lightweight formwork was chosen for the staircase and lift core, instead of the wooden formwork that had been originally planned. With approximately 183 m² of NeoR lightweight formwork with different panel widths and a formwork height of 150 cm, WBK Wohnbau Konzept Hannover GmbH is now fully equipped for a wide range of formwork constructions – whether to build foun-dations, beams, columns or walls. The system can be further extended with the NeoR large-size panel 180 x 300 cm to form large sur-faces quickly and economically.

NeoR lightweight formwork: light, functional and robust

The new NeoR lightweight formwork system from PASCHAL combines the benefits of the proven Modular/GE universal formwork and of the LOGO.3 wall formwork system, while at the same time offering all the system properties of modern lightweight formwork.

In addition to the reduced maximum weight of only 40 kg, the formwork panels convinced through significantly higher fresh concrete pressure absorption of 50kN/m², compared to the Modular/GE universal formwork.

Liebherr's LiTiU tilt unit for wheeled and crawler excavators

WITH THE LITIU tilt unit, Liebherr presents an innovative attachment, which extends the swing angle of various attachments. Fixed attachments can reach swing angles of up to 2 x 75°, thanks to the LiTiU unit. In addition, hydraulic attachments, such as sorter grabs, swivel-mounted ditch cleaning buckets and tilt buckets can be combined with the LiTiU unit for an even bigger swing angle. LiTiU is compatible with attachments from other manufacturers and the new unit is available in different versions and sizes.

Photo Credit: Liebherr

As a direct mounting, the LiTiU 18 unit is mounted directly to the stick end of the wheeled or crawler excavator and makes swing angles of up to 2 x 75° possible.

The new Liebherr LiTiU attachment is designed for applications where the swing angle represents an extension of the working area. It allows more applications of wheeled and crawler excavators.

Apart from classic excavation works, the machines can be used for levelling and modelling banks, levelling and ditch cleaning, as well as demolition and recycling, without the need to reposition the machine or change the attachment.

Innovative technology

LITIU IS AN attachment developed by Liebherr with a protected swivel motor. It is available as a direct mounting or sandwich attachment in two different sizes. As a direct mounting, LiTiU 12 or LiTiU 18 is mounted directly to the stick end of the wheeled or crawler excavator. The connection between the bottom of the LiTiU unit and the attachment is realised either with the Liebherr quick coupling system SWA 33 / SWA 48 or the fully automatic Liebherr quick coupling system SWA 33 LIKUFIX / SWA 48 LIKUFIX.

Depending on the quick coupling system, swing angles of up to 2 x 75° are possible in this version. With the optional extended hydraulic circuit, the LiTiU 18 unit can also be activated directly.

New Age Line: F.LLI Ferrari adds heavy cranes

F.IIi FERRARI HAS added a 60tm family to its New Age Line to further strengthen its position in large size truck-mounted cranes improving the full product portfolio, which now spans from 1 to 165tm.

The 60tm family comprises two models, each with two jib options – the J1206 light jib for lifting horizontally, and the J2006 heavy jib for lifting vertically:

- 9601C – Standard Lifting Control System
- 9661C – Proportional Lifting Control System – lifting capacity 10% greater than 9601C

These strong, light and compact cranes have the best lifting capacity currently available in this segment of the market. The rewards for the customer are higher payloads and faster operation.

Photo Credit : F.lli Ferrari

All F.IIi Ferrari cranes are designed in accordance with EN12999 and are ISO 9001:2008 Quality Management and ISO 14001:2004 Environmental Management certified.

Standard features include double linkage, negative second boom angle, up to eight extensions, endless slewing, multifunction radio remote control. A range of accessories and options available in the 60tm family allow to optimise the cranes configuration, according to all applications. New Age innovations, which improve operator efficiency and safety, while increasing productivity include:

- Auto Levelling System, which automatically keeps the truck frame in a horizontal position, enabling best crane performance.
- Operator Auto Detection, which automatically activates the operator's closest stabiliser, avoiding the need for operator contact.
- Front Stabiliser control, which allows load in the front area, avoiding overload of the truck frame.

Demag's new AC 80-4 all terrain crane

DEMAG ALREADY HAD an 80-tonne crane at one point: The AC 80-2. "The worldwide success that this model had, showed that there's significant interest in a crane with this kind of lifting capacity. In fact, a large number of customers kept confirming this time and time again. That's why we decided to add the AC 80-4 to our product portfolio in the segment of up to 100 tonnes," explained Michael Klein, the product marketing manager in charge.

Accordingly, the Demag AC 80-4 features a main boom that is 60m long and that, with some configurations, makes it possible to have the longest main boom reach in the class of up to 120 tonnes.

Photo Credit: Demag

The new Demag crane aims high when it comes to power and performance.

There is more, in the class of up to 100 tonnes, no other crane comes close to its lifting capacity with a fully extended boom up to a radius of 30m. The AC 80-4 can lift an impressive 5.4 tonnes at a radius of 14m.

It also raises the bar with its main boom extended to 50m: At a radius of 10m, it can lift 9.7 tonnes, which is 2.2 tonnes more than the next most powerful competitor. In terms of line pull, the Demag AC 80-4 is also ahead of the pack with 6.8 tonnes.

If the main boom length of 60m is not enough, the reach can be expanded with a 6.5m main boom extension that can be offset by 25° and 50°. Its capacity is a generous 23.8 tonnes, meaning that it can be used to lift heavy loads over obstacles. Since the extension can be folded and carried on the main boom, it can be ready for use.

There is a 1.5m runner with a capacity of 26.6 tonnes for the Demag AC 80-4. Accordingly, the AC 80-4 is recommended for indoor projects. The main boom can be lowered up to 3° below its horizontal position so that work at height can be eliminated and the jibs can be installed quickly.

Cat Lift Trucks launches new models in EP-CB electric range for heavier jobs

CAT LIFT TRUCKS has added 3.0 and 3.5 tonne 72V models to its EP-CB 4 wheel electric counterbalance forklift range. The company had launched the smaller 1.5 to 2.5 tonne 48V lift trucks last year in Africa, the Middle East and CIS, which was met with positive customer response. The two new models provide extra lifting power for the heaviest applications. With the addition of new models, there are now nine economical and easy-to-handle models, suitable for medium to heavy warehouse duties, as well as outdoor tasks.

Rapid and refined performance

Drivers can work comfortably and smoothly with Cat EP-CB forklifts, as it comes equipped with a high-stability design, and a host of ergonomic features. The features include pitching control, which minimises shaking of loads when travelling over uneven or humped surfaces and automatic torque increase, which maintains smooth movement when climbing slopes or carrying heavy loads.

High productivity and safety

The models come with advanced electric hydraulic steering which makes manoeuvring fast, precise and easy, as well as safe. Automatic safety systems – some standard, some optional – continuously monitor the truck's activities and adjust travel, lift and tilt speeds when necessary. On inclines, the safety cruise function can be used to keep speed at a low level. Standard performance mode selection varies from normal to high power and speed, but the driver can customise the options to suit his ability.

Lower costs and increased profits

By making drivers more productive and reducing the total cost of ownership, EP-CB trucks increase business profitability by making drivers more productive and reducing the total cost of ownership. The energy consumption is also lowered as the battery runtime from each charge is extended through the ECO performance mode, with efficient regenerative braking, and an auto power off feature. The trucks' robust design and construction reduce the repair and maintenance bills, while an easy-to-read liquid crystal display (LCD) encourages correct usage and servicing.

Photo Credit : Cat Lift Trucks

Cat EP-CB forklifts come with a high-stability design and a host of ergonomic features.

Specialised options

In addition, the EP-CB range offers optional features for more specialised applications and extremely harsh environments. For example, there are separate cold store modification options for temperatures as low as -35°C and -55°C. Trucks can also be rustproofed, dustproofed and fitted with roofs, windows and vinyl cabins.

Mammoet adds eight new cranes in the Middle East, Africa and Caspian region

MAMMOET, AN ENGINEERED heavy lifting and transport services provider, has expanded its fleet with the addition of eight cranes in the Middle East, Africa and Caspian (MEA) region.

Mammoet MEA provides equipment day hire through to turnkey mega-project solutions and it is represented in eleven countries across the region: United Arab Emirates, Oman, Saudi Arabia, Bahrain, Qatar, Egypt, South Africa, Mozambique, Nigeria, Kazakhstan and Azerbaijan, with the regional headquarters in Dubai, UAE.

With the addition of one 600 tonne crawler crane, one 400 tonne, two 250 tonne and 100 tonne capacity all-terrain cranes, as well as three 35 tonne rough terrain cranes to the regional fleet, Mammoet's capacity has expanded for projects and day rental jobs in the region; adding more flexibility and greater availability for work in several high-demand geographic areas.

Photo Credit : Mammoet

The addition of new cranes has expanded Mammoet's capacity for projects and day rental jobs in the region.

Rough terrain cranes

The cranes will support Mammoet's range of engineered heavy lifting work – from small construction sites to handling complex lifts in industrial plants. They will be available for customers across all sectors, including the power, petrochemical, mining, renewables and civil construction sectors throughout the Middle East, Africa and the Caspian region.

Shortly after arrival, all cranes have been deployed on various construction projects: a short term- substation transformer installation and infrastructure construction activities throughout the UAE.

"We are excited to complement our current regional fleet with these additional cranes in the region as we are continually looking for ways to improve the efficiency of our operations and equipment ready availability for construction and maintenance projects; thus reinforcing our emphasis on service to our customers," commented Michel Bunnik, commercial director Mammoet Middle East and Africa.

والتشييد في البحرين ستتعافى وتنمو بنسبة 2.1% في عام 2021».

تقلص ناتج صناعة البناء والتشييد في البحرين بنحو 0,2 في المائة بالقيمة الحقيقية في عام 2020. فقد واجهت الصناعة اضطرابات بسبب جائحة فيروس كوفيد19- وقيود الحركة لمنع انتشاره. وأدى انخفاض أسعار النفط إلى تفاقم هذه المشكلة، حيث تعتمد البحرين ـ بشكل كبير ـ على عائدات النفط. ومع ذلك، من المتوقع أن تنتعش الصناعة في عام 2021 بمعدل نمو حقيقي متوقع يبلغ 2,1 في المائة مدفوعا بالاستثمارات في قطاعات البنية التحتية والنفط والغاز والطاقة المتجددة، وهو ما أوضحته شركة جلوبال داتا، وهي شركة رائدة في مجال البيانات والتحليلات.

فتقرير شركة جلوبال داتا «البناء والتشييد في البحرين – الاتجاهات والفرص الرئيسية حتى عام 2025» يكشف عن أنه من المتوقع أن تنمو صناعة البناء في البلاد بمعدل 4,3 في المائة في المتوسط بين عامي 2022 و2025. وسيتم دعم ذلك من خلال الاستثمارات في تطوير البنية التحتية الشاملة للبلاد بما يتماشى مع الرؤية الاقتصادية 2030.

وقد علق دانانجاي شارما، المحلل في شركة جلوبال داتا قائلا: «على الرغم من جهود التنويع الاقتصادي، لا تزال الهيدروكربونات تشكل أكثر من 70 في المائة من الإيرادات المالية. ونتيجة لذلك، فإن الأحوال المالية العامة معرضة لتقلبات أسعار النفط. وتوفر توقعات صندوق النقد الدولي بارتفاع أسعار النفط بنسبة 21 في المائة ـ خلال عام 2021 ـ راحة لحكومة البحرين. ذلك لأنها ستسهل المزيد من الاستثمارات في الصناعات والطاقة والمرافق وقطاع البنية التحتية، مما سيساعد في جهود التنويع الحكومية».

وتبلغ قيمة المشروعات في دولة البحرين، وفقا لإحصائيات شركة جلوبال داتا، ما يصل إلى 80,2 مليار دولار أمريكي. وتتجه المشروعات قيد التنفيذ، والتي تشمل بدورها جميع المشاريع بداية من التخطيط المسبق إلى التنفيذ بقيمة تزيد عن 25 مليون دولار أمريكي، إلى المرحلة النهائية من المشروع، حيث تمثل المشروعات في مرحلة التنفيذ 63,1 في المائة من قيمة المشروعات قيد التنفيذ، وذلك اعتبارا من شهر يناير/ كانون الثاني الفائت من هذا العام.

ويضيف شارما: «تمثل المشروعات السكنية ومشروعات التنمية المختلطة النسبة الأكبر من المشاريع قيد التنفيذ بحصة تبلغ 39 في المائة من إجمالي المشروعات قيد التنفيذ. وهذا يعكس الإمكانات

وصلت قيمة مشروعات البحرين مجتمعة إلى 80,2 مليار دولار

الهائلة في القطاع السكني، والتي تعتبر مدفوعة حتى الآن بالاستثمارات الحكومية. ومما لا شك فيه أن جهود الحكومة في جذب اللاعبين من القطاع الخاص، وكذلك الاستثمارات الأجنبية، ستعزز النمو في هذا القطاع خلال الفترة المتوقعة».

وقال رياض بصيبص، الرئيس والمدير التنفيذي لشركة أمانة للاستثمار: «يتعين على شركات البناء الاستثمار في التحول الرقمي لإثبات أعمالها في المستقبل، وتعزيز الربحية في سوق ديناميكي. كما أننا نشهد ميلا أكبر نحو الاستدامة، وسيكون التقارب بين التصنيع والتكنولوجيا والبناء من أهم قصص الاتجاهات في عام 2021. وسنرى أن البناء المعياري يكتسب قوة دفع لأنه يقلل من النفايات، ويقلل من تكاليف المشروعات والجداول الزمنية، مع الامتثال لبروتوكولات الصحة والسلامة الجديدة في الموقع».

ومن جانبه أشار الرئيس التنفيذي لشركة «إيه إل إي سي»، كيز تايلور إلى أنه «الرغم من أن الوباء تسبب بشكل واضح في تغيير العديد من الصناعات في جميع أنحاء العالم لمسارها، فإن اتجاهات البناء السائدة هي ـ في نهاية المطاف ـ تلك التي طال انتظارها قبل تحديات عام 2020. واليوم، نحن في موقف فريد لتحويل صناعتنا إلى نظام بيئي صحي. إذ يمكن لجميع أصحاب المصلحة تحقيق النجاح من خلال الاستفادة من أحدث التقنيات والنهج التعاوني».

مفكرة الفعاليات 2021

أبريل/نيسان		
6 ـ 7	منتدى الإمارات للصحة والسلامة والبيئة	دبي
مايو/أيار		
6/7 ـ 17	معرض الشرق الأوسط للطاقة	أونلاين
يونيو/حزيران		
14 ـ 16	معرض طاقة الشرق الأوسط	دبي
سبتمبر/أيلول		
28 ـ 30	معرض ومؤتمر الشرق الأوسط للإضاءة	دبي

مشروعات البنية التحتية جزءٌ رئيسيٌ في توسع اقتصاد الإمارات

نظرة مستقبلية واعدة لصناعة البناء والتشييد

من المتوقع أن تنتعش صناعة البناء – خلال عام 2021 - في دولة الإمارات العربية المتحدة. فقد نمت بنسبة 3,1 في المائة هذا العام بعد أن سجلت انخفاضا بنسبة 4,8 في المائة عام 2020، وفقًا لتقرير جديد صادر عن شركة «ResearchAndMarkets». ومن المتوقع أن تتوسع الصناعة بمتوسط سنوي يبلغ 3,8 في المائة بين عامي 2022 و2025. كذلك تعتبر الموافقة على قانون البناء الجديد في دبي تطوراً إيجابياً. إذ يحدد هذا القانون الجديد مجموعة منقحة من قواعد ومعايير البناء، ويسعى إلى تقليل تكاليف البناء من خلال تبسيط قواعد البناء والتشييد.

في شهر أغسطس/آب 2020 أعلنت دولة الإمارات العربية المتحدة أنها ستقدم «حزمة مرنة» من الإجراءات على ثلاث مراحل لتعزيز الاقتصاد، بما في ذلك خطوات لدعم سوق العمل ودعم الاستثمار. ولاتزال التوقعات على المدى المتوسط تبدو واعدة، حيث تواصل الحكومة خطط تنمية البنية التحتية نظرا لمختلف المبادرات الحكومية مثل استراتيجية الطاقة 2050، وبرنامج الشيخ زايد للإسكان واستراتيجية دبي للسياحة.

فمشروعات البنية التحتية تعتبر جزءا رئيسيا من التوسع الاقتصادي لدولة الإمارات العربية المتحدة. ولا تقتصر الحاجة إلى بنية تحتية ضخمة على دولة الإمارات العربية المتحدة فحسب، ولكن تمتد إلى منطقة دول مجلس التعاون الخليجي ككل. إذ أنها تسعى إلى بناء شبكات نقل وخدمات لوجستية فعالة، بالإضافة إلى إمدادات موثوقة من الطاقة النظيفة. وبالإضافة إلى ذلك، توصلت كل من إسرائيل والإمارات إلى اتفاق تاريخي لتطبيع العلاقات وفتح فرص استثمارية، حيث اتفقت الدولتان على وضع استراتيجية مشتركة لتعزيز التعاون في قطاع الطاقة.

صرحت شركة جلوبال داتا بأن «صناعة البناء

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في خدمة شركات المنطقة منذ ١٩٨٤

نظرة مستقبلية واعدة لصناعة البناء والتشييد

من المتوقع أن تنتعش صناعة البناء والتشييد في الإمارات خلال عام ٢٠٢١