

TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

Annual Construction Review 2022

ANNUAL CONSTRUCTION REVIEW 2022

Infrastructure

Digital
transformation

Crushing

Maximising
efficiency

ENDURING OPTIMISM

RESILIENCE REIGNS IN THE REGION'S
CONSTRUCTION INDUSTRY

Inside

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EDITOR'S NOTE

MANY SPECTACULAR MEGA-PROJECTS such as Saudi Arabia's Red Sea tourism project are underway in countries across the Middle East and North Africa.

These, combined with opportunities in sustainability and digital construction, as well as the bounce-back of the real estate sector, are constantly redefining the region's construction industry, finds our construction analysis on pages 16-19.

This issue explores innovations in the crushing and screening industry, which is witnessing growth fuelled by the recovery in construction.

Hydrogen, as a fuel for the transport industry is gathering momentum. Read the insights on p 28.

Finally, do not miss our Annual Construction Buyers' Guide (p36), offering a comprehensive overview of the region's construction suppliers and manufacturers.

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



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١٩٨٤ إلى الخدمة شركات المنطقة منذ 1984

TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

SERVING THE REGION'S BUSINESS SINCE 1984

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Briefly

Emerson expands manufacturing facility in Saudi Arabia

EMERSON HAS INAUGURATED an expanded facility in Dammam, Saudi Arabia to manufacture its Rosemount pressure and temperature transmitters and manifolds to meet customer demand and reduce logistics costs.

The inauguration was attended by Emerson executives, as well as Saudi Aramco and SABIC stakeholders from critical teams such as procurement and local content. Emerson has a longstanding collaborative relationship with Saudi Aramco and SABIC to support localisation initiatives.

"This constitutes another milestone in Emerson's commitment toward Saudi Vision 2030 and localisation programmes such as IKVA and Nusaned. This facility will improve efficiency not just in production, but also in logistics and delivery costs, providing better value to our customers and partners," said Liam Hurley, vice president and general manager of Emerson's western region in Middle East and Africa.

"Emerson is thrilled with this expansion because we are able to strengthen our manufacturing capabilities to our key customers in the area and have the opportunity to support local communities by providing continuous business opportunities and the development of local talent," said Mounir Taleb, Emerson's vice president for measurement solutions in the Middle East and Africa.

Senior manager for procurement of SABIC for the instrumentation category, Khalil Ramul, also commended Emerson for being soldiers of technology and leaders of excellence, in his keynote speech delivered during the inauguration.

The new instrumentation facility is designed to offer expanded production capacity of transmitters to support future demand from Emerson key customers in Saudi Arabia.

This investment follows Emerson's recently launched Fluid & Motion Control manufacturing facility in Jubail and adds to its five other manufacturing sites across the Kingdom that manufacture valves, electrical products, pneumatic components, and control systems.

SOHAR Port to develop container freight station

SOHAR PORT AND Freezone has partnered with Arkan Sohar Logistics to develop a port-based container freight station (CFS) and logistics complex that will occupy 26,000sq m. Through this agreement, Arkan Sohar Logistics will offer bonded and non-bonded facilities, ambient and covered storage, as well as temperature-controlled, dry, chilled and frozen storage facilities. They will also provide value added services such as cross stuffing for import, re-export and transshipment cargo, lashing, crating, staging, labeling, re-packing, kitting and order processing. An Oman-based company, Arkan Sohar Logistics has become one of the fastest-growing logistics service providers in the region.

The CFS will allow importers and exporters using SOHAR Port to securely store goods and products for consolidation and expedited shipping. Its services have become a landmark success for the company, offering state-of-the-art customs-bonded areas for cargo, a racked warehouse facility and custom-built dock levelers to facilitate easy access to trailers for safe and efficient loading and unloading.

Omar bin Mahmood Al Mahrizi, chief executive officer of SOHAR Freezone, DCEO SOHAR Port, said, "As we continue to expand and position Oman as a world-class logistics hub, it is important that we consolidate and de-consolidate shipments coming into SOHAR by offering CFS services within the port and in close proximity to the container terminal. This will speed up the clearance and processing functions in order to move goods and products on to their next destination efficiently."

Ali Al Muttawa, chief executive officer of Arkan Sohar Logistics, said, "Our experience in operating CFS and warehousing facilities for frozen commodities will benefit SOHAR Port's clients and



Photo Credit : SOHAR Port and Freezone

SOHAR Port has partnered with Arkan Sohar Logistics

ensure they can meet the needs of a growing consumer market by handling goods safely and securely and providing end-to-end logistics solutions. Our facilities can be customised to suit their requirements, and by maintaining shipping containers, we are able to increase cost efficiency and keep businesses moving without delays caused by damaged goods, during processing or transportation. Our presence here aims to add significant value to Oman's supply chain capabilities and shipping lines choosing SOHAR."

SOHAR Port and Freezone, an important logistics hub within the region and across the world, offers a wealth of attractive incentives designed to make doing business easier and more efficient. In addition, SOHAR Port operates a customs clearing service, bonded transport corridor, with an on-site shop service available to assist with the acquisition of all necessary registration, licenses and visas.

ACWA Power and POSCO join hands to develop green hydrogen

ACWA POWER SIGNED a memorandum of understanding with POSCO Holdings. The agreement will involve the joint development of green hydrogen and its derivatives such as green ammonia, to decarbonise POSCO Group's power generation, and its steel manufacturing processes, along with serving other Korean clients of POSCO Group.

Green hydrogen and ammonia produced by the partners through new green field investments will support to meet POSCO Group's targets to produce 500,000 tonnes of hydrogen globally by 2030. Its output will be used in applications across diverse industries including the company's own power generation



Photo Credit : Adobe Stock

The agreement will help decarbonise POSCO Group's power generation and its steel manufacturing processes

needs, among others.

ACWA Power, alongside Saudi Arabia's NEOM and Air Products, is developing the first at-scale green hydrogen project in Saudi Arabia. When complete in 2026, the project will produce 1.2mt of green ammonia per year for the purposes of decarbonising industries, making it the world's largest facility of its kind.

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Briefly

DEEP SEA ELECTRONICS Ltd has appointed Simon Nadin as managing director.

SIMON NADIN JOINS Deep Sea Electronics following a successful career at Rolls-Royce, Siemens and over the last four years as managing director of Flender UK.

Simon has worked in the corporate, PE and SME environments, giving him broad business experience. He started his career at Siemens, in the electronics industry and has gained significant operational experience in a variety of roles since then. In recent years at Flender, he has demonstrated a strong focus on customers, making him a well-rounded fit for Deep Sea Electronics Ltd.

The appointment of Simon represents another step in the company's journey of continued growth and illustrates DSE's commitment to deliver great value, support, and innovation to customers.

Deep Sea Electronics is one of the leading manufacturers of generator controllers, auto transfer switch controllers, battery chargers as well as vehicle and off-highway controllers.

DHL Global Forwarding and Hapag-Lloyd pledge to use advanced biofuels

DHL GLOBAL FORWARDING, the air and ocean freight specialist of Deutsche Post DHL Group, has signed an agreement with Hapag-Lloyd, a liner shipping company, for the use of advanced biofuels.

As an initial step, Hapag-Lloyd will ship 18,000 TEU of DHL's volume using advanced biofuels, which is equivalent to a reduction of 14,000 tons of Well-to-Wake CO₂ emissions. The two companies share the vision of decarbonising container shipping and logistics.

Advanced biofuels are based on raw biological materials, such as used cooking oil and other waste products. This material is used to manufacture a fatty acid methyl ester (FAME), which is then mixed with varying proportions of low sulphur fuel oil. Compared to standard fuels, this pure biofuel product lowers greenhouse gas emissions by more than 80%.

EGA to install multi-functional cranes in Jebel Ali

EMIRATES GLOBAL ALUMINIUM, the largest industrial company in the UAE, outside oil and gas, has announced that it will install highly automated, multi-functional overhead cranes in Jebel Ali in a step towards full automation of cranes used for reduction cell tending, and securing operations for decades ahead.

EGA is replacing 16 cranes that have completed their 25-year useful lives with 14 new models that incorporate auto-positioning and advanced sensing capabilities, to be supplied by French industrial engineering group, Fives.

The increased automation capabilities of the new cranes will improve safety, efficiency and reliability. The technology brings closer EGA's future ambition of operating cranes remotely from a central control room and ultimately fully-autonomous crane operation.

The first new crane is expected to be delivered before the end of 2023 with all 14 new cranes in operation by the beginning of 2025.

Reduction cell tending cranes at EGA perform complex tasks including anode replacement and metal tapping in a harsh environment with high heat and magnetism.

Abdulnasser Bin Kalban, CEO of EGA, said, "Pot tending cranes are the workhorses of any aluminium smelter, and driving automation offers significant potential to reduce risks for people and improve efficiency and cost. Our new cranes will boost automation in our potlines from the day



Photo Credit : EGA

The first new crane is expected to be delivered before the end of 2023.

they are installed, and we expect to make great progress in further automation during these cranes' working lives. These cranes are an investment in the long-term robustness of our operations, and will help enable us to create value for many decades to come. Using technology to enhance operations is at the heart of EGA's Industry 4.0 strategy."

Sébastien Gauguier, aluminium division president of Fives Group, said, "Fives has worked with EGA since aluminium production began in the UAE in 1979 and we are pleased to continue to earn the trust of the largest 'premium aluminium' producer in the world. Through our partnership with EGA we will together lead the industry in crane automation in aluminium smelters."

EGA has more than 80 reduction cell tending cranes in total, across its Jebel Ali and Al Taweelah sites.

Mitsubishi Power completes world's largest hydrogen fuel blending project

MITSUBISHI POWER, A power solutions brand of Mitsubishi Heavy Industries Ltd (MHI) and Georgia Power, alongside the Electric Power Research Institute (EPRI), has successfully validated fuel blending of hydrogen and natural gas at both partial and full load on a natural gas turbine at Georgia Power's Plant McDonough-Atkinson in Georgia, USA.

The project was the first and largest to validate 20% hydrogen fuel blending on an advanced class gas turbine globally. Mitsubishi Power provided full turnkey service for this project including engineering, planning, hydrogen blending hardware, controls, commissioning and risk management.

This announcement is in line with the recent Mitsubishi Power agreement with leading Egyptian O&G Company Alexandria National Refining & Petrochemicals Company (ARNPC) to provide advanced hydrogen fuel conversion technology solutions supporting the company to achieve its decarbonisation goals. The solution will be installed at the ARNPC refinery



Photo Credit : Mitsubishi Power

The project was the first and largest to validate 20% hydrogen fuel on an advanced class gas turbine globally.

plant in Alexandria, which provides 30% of Egypt's gasoline supply for domestic consumption.

As part of the project, Mitsubishi Power will be responsible for the design, engineering, procurement, construction, and commissioning of fuel conversion solutions for the existing 100 ton per hour boiler, enabling it to fire up to 100% hydrogen by the end of 2023.

This includes the installation of state-of-the-art hydrogen burner technology and advanced control solution to ensure efficient and safe

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Optimising HSE and ESG strategy

The Middle East's industry heavyweights are lining up to support the MENA HSE Forum, taking place from 6-7 September at the Grosvenor House, Dubai.

THE MENA HSE Forum is gaining momentum, as leaders from key industries have joined the leading HSE event to share critical insights on new best practices as well as access the latest innovations to advance HSE in the Middle East. More than 200 stakeholders from the HSE community in UAE, Saudi Arabia, Qatar, Oman and Bahrain are expected to attend.

This edition features five key sessions including:

- 1. Process Safety Frameworks** – Aramco, Cheiron, Abu Dhabi Waste Management Center (Tadweer) and Kuwait Energy Egypt will demonstrate how to deliver an effective process safety management strategy to increase efficiencies while reducing lost time incidents
- 2. Role of HSE Leadership in Crisis Management** – ADNOC, Drydocks World and Zawawi Powertech Engineering will address the challenges faced by companies during any emergency and identify strategies to maintain consistent HSE standards
- 3. Future of Digitalisation in HSE** – Petrofac and Fujairah Natural Resources Corporation will analyse the impact of disruptive technologies which can help your organisation create a holistic culture of risk identification
- 4. Learning about Occupational Health & Behavioural Safety from Global Transforming Events** – Asyad Drydock, Be'ah, John Energy and Oman Electricity Transmission Company will examine the effect of the pandemic on OHSE to best position your organisation to address these in 2023 and beyond
- 5. How ESG moved from a Cost Centre to a Value Driver** – Other key players will share insights on the relationship between ESG and investment returns to help you drive your investment decisions and integrate environmental sustainability in your business.



The MENA HSE Forum will bring together key stakeholders from across the region.

Speakers include Tahir Azhibek, corporate HSE manager, ADNOC; Dr Naseem Mohammed Rafee, director of health and safety department, Dubai Municipality; Eng Raed Mohammed Al-Marzooqi, manager of studies and system section, health and safety department, Dubai Municipality; Dr Eng Hani Hossni, EHS director Abu Dhabi Waste Management Center (Tadweer); Gerardo Daniel Abalde, group head, Saudi Aramco; Lynn Hobballah, head of health & safety, Petrofac; Saleh Al Balushi, head of HSE, Drydocks World; and Peter Michael

Hamel, department head OHSE, Be'ah.

The growing list of sponsors includes Vin Technology Systems, MILWAUKEE, Benchmark ESG, BSI, Clyde & Co, Fugro, GTSC, iOmniscient, ITT-Innovations, MACS-G, ARASCA Medical Equipment Trading and Al Hoty-Stanger.

Vinay T, head of Business Development at Alain Charles Events, commented, "Our research with stakeholders from the oil and gas, construction and tourism sectors revealed that end users are seeking disruptive technologies that will continue to cut LTI and optimise productivity.

"We identified a need to access the latest safety solutions for the workforce across the board which led us to create this exclusive platform for HSE companies to display and demonstrate their services and solutions to key players in the region. This is also a premier opportunity to build new relationships and network in person with the MENA HSE community." ■

"End users are seeking disruptive technologies that will continue to cut LTI and optimise productivity."

Please register for the HSE Forum at <https://www.hse-forum.com/mena/register>

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

EGA and 'K' Line Group to cooperate on decarbonisation of bulk cargo shipping

EMIRATES GLOBAL ALUMINIUM (EGA), the largest industrial company in the United Arab Emirates outside oil and gas, and Kawasaki Kisen Kaisha, Ltd ('K' Line Group), one of the world's largest shipping groups, have signed an agreement to cooperate on research and pilot projects to decarbonise bulk cargo shipping.



Photo Credit: EGA

The cooperation is expected to focus on new marine decarbonisation technologies.

The cooperation is expected to focus on the development and implementation of new marine decarbonisation technologies suitable for EGA's bulk cargo shipping routes in the eastern Atlantic Ocean, Mediterranean Sea and Indian Ocean. <https://www.technicalreviewmiddleeast.com/logistics/>

Sharjah Sustainable City hosts top management delegation from AUS



Photo Credit: Sharjah Sustainable City

The delegation from AUS toured the site to gain insights on sustainable housing.

SHARJAH SUSTAINABLE CITY, an eco-friendly community developed by Sharjah Investment and Development Authority (Shurooq) in partnership with Diamond Developers, hosted a top management delegation from the American University of Sharjah (AUS), who toured the site to gain in-depth knowledge about sustainable housing solutions. <https://www.technicalreviewmiddleeast.com/construction/buildings/>

Kepeco appointed for Saudi Aramco's Jafurah power and steam project

SOUTH KOREA'S KEPCO has been selected by Saudi Aramco to develop an independent steam and power producer (ISPP) project in Jafurah. Energy & Utilities reported in February that Saudi Aramco had received bids from three groups for the Jafurah ISPP project. The project was re-tendered in 2021 after the original tender was cancelled in 2020.

The Kepeco consortium saw off competition from the local ACWA Power and local Al-Jomaih consortiums to be appointed for the Jafurah ISPP scheme. The project will be developed under a public-private partnership (PPP) structure, with the successful developer signing offtake agreements for power and steam production. <https://www.technicalreviewmiddleeast.com/power-a-water/power-generation/>



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20-25	IAA Transportation	HANOVER	www.iaa-transportation.com
27-29	WETEX and Dubai Solar Show	DUBAI	www.wetex.ae

OCTOBER 2022

24-30	bauma	MUNICH	www.bauma.de
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NOVEMBER 2022

14-17	Saudi Elenex	RIYADH	www.saudielenex.com
14-17	Saudi Build	RIYADH	www.saudi-build.com
15-16	The Mining Show	DUBAI	www.terrapi.com

DECEMBER 2022

5-8	The Big 5	DUBAI	www.thebig5.ae
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JANUARY 2023

16-18	World Future Energy Summit	ABU DHABI	www.worldfutureenergysummit.com
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Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.

'People and goods on the move' at IAA TRANSPORTATION

FROM THE 20-25 September 2022, Hanover will be host to the revamped IAA TRANSPORTATION – presenting the current and future trends in logistics and transport.

Industry professionals from across the globe are preparing to descend on one of the most important platforms for the future of the commercial vehicle industry which, this year, is being held under the overarching theme of 'people and goods on the move'.

At the IAA Conference – the content heart of IAA TRANSPORTATION – organisers Verband der Automobilindustrie e.V. (VDA) have worked with leading industry associations and partners to present on respective theme days including:

- 'Future Logistics' on 20 September, led by the Bundesverband Spedition und Logistik e.V. (DSLVL)
- 'Trade and Logistics' on 21 September, directed by the Handelsverband Deutschland e.V. (HDE)
- 'Infrastructure' on 22 September, guided by the Bundesverband der Energie- und Wasserwirtschaft e.V. (BDEW)
- 'Communal Transport' on 23 September, conducted by the Verband Deutscher Verkehrsunternehmen e.V. (VDV)

These curated theme days will be focused on the Main Stage which will be running in tandem with the exhibitor programme of the Industry Forum in Hall 13. Here, exhibitors and partners of IAA TRANSPORTATION will present exciting topics, discussions, presentations, and pitches to display their visions and solutions for the transportation industry. While Industry Forum is smaller than the Main Stage it is also more approachable, offering participants the chance for more intimate discussions.



Photo Credit: IAA TRANSPORTATION

Industry professionals and visitors from across the globe will descend on one of the most important platforms for the future of the vehicle industry.

Compared to past years, the range and number of international exhibitors and partners has increased. However, the organisers will be welcoming back several exhibitors who have participated earlier, including BYD, DAF, Daimler Truck, Ford, Ford Trucks, Iveco, MAN, Renault, SAIC, Scania, Siemens, Volkswagen Commercial Vehicles, Volvo, numerous manufacturers of trailers, enlargements and additions, as well as established vendors.

Ticket sales have begun and can be ordered on the website at iaa-transportation.com.

This year, the range of tickets is aimed at different visitor groups and offers numerous options for an optimal visit.



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“The use of electric vehicles has become a reality, and our collaboration with the private sector and leading international companies is accelerating the pace to develop technology and software related to how electric vehicles work and the infrastructure they need. Given that the UAE is a pioneer in the use of EVs, we decided to enter such an ambitious partnership that support the country’s adoption of electric vehicles.”

Photo Credit : MoEI



SHARIF SALIM AL OLAMA

Under-secretary

Ministry of Energy and Infrastructure (MoEI)

(On the agreement between Siemens, Audi and MoEI to boost EV charging capacity across the UAE)

“The Middle East region has always been an inspirational market for Rolls-Royce Motor Cars, especially when it comes to bespoke. What we inaugurate today is of great significance as it represents the first Rolls-Royce private office outside the UK and further confirmation that Rolls-Royce is a true house of luxury. Our private office in Dubai is an extension of the home of Rolls-Royce at Goodwood in West Sussex, and is the first in a number of similar facilities that will be opened around the world. This is not a dealership, it is a unique experience where clients can bring their ideas to life and explore our home and our people in real-time, using seamless technology.”

HENRIK WILHELMSMEYER

Director of sales and brand
Rolls-Royce Motor Cars

“The region is in a unique position to take advantage of the current situation and accelerate its energy transition, particularly hydrogen. The global community has begun to take net zero targets more seriously, and if the Middle East can proactively lead this transformation, then the 2030s are likely to be a boom decade for hydrogen in our region.”

STEPHEN ANDERSON

Middle East strategy and markets leader
PwC

“The Middle East is at the centre of the global energy transition with a huge influx of investment for renewables, including the solar energy sector. We, as a leading power solutions provider understand our role in facilitating the transition to clean and renewable energy sources, with GCC countries switching to green and sustainable economies. The GCC solar photovoltaic (PV) market is expected to grow at a CAGR of around 12.5% during the coming years with the countries in the region targeting to increase the share of renewable energy in their energy mix by 2050. This partnership also represents an important short-term and long-term business opportunity as the GCC countries are an ideal market for renewable energy deployment.”

RASSO BARTENSCHLAGER

General manager
AI Masasood Power Division

“Masdar City is already home to one of the world’s largest clusters of green buildings with Estidama and LEED certifications. With the completion of MC2, and its seven new green buildings, including Abu Dhabi’s first net zero energy office building, we are further demonstrating how urban development can be both economically and environmentally sound and sustainable. Masdar City is proud to serve as a testbed for sustainable urban development and we look forward to seeing how MC2

enriches Masdar City, Abu Dhabi, and the UAE.”

AHMED BAGHOUM

Acting executive director
Masdar City

“The region’s first AI Centre of Excellence at Hub71 will provide a robust ecosystem for innovative technology ideas to grow and scale, and will allow startups to benefit from Hub71’s community, programmes and knowledge sharing platforms. AI could unlock US\$5.5 trillion to US\$12.6 trillion in value globally by 2030 and offer immense potential in sectors that are of strategic importance to Abu Dhabi’s socio-economic growth. In support of the objectives outlined in the UAE Centennial 2071 strategy that focuses on entrepreneurship, innovation and creativity, we at Hub71 are committed to further developing technologies that act as a catalyst in progressing a dynamic and diversified economy.”



Photo Credit : Hub71

BADR AL-OLAMA

Acting chief executive officer
Hub71

“The cooperation between the UAE and India has long served as a model for international relations and strategic partnerships, sharing strong historical, geographical, and economic ties. Emirates Post Group commits to supporting the economic and trade relations by employing our leading expertise in post and parcel solutions, offering businesses, industries, and investors innovative logistics services. We will also continue to harness commemorative stamps as means to strengthen international relations and promote ties between people and cultures of the world.”

Photo Credit : Emirates Post Group



ABDULLA M ALASHRAM

Group CEO
Emirates Post Group

“AD Ports Group continues to build up our presence in Egypt as part of our wider strategy for global expansion. The acquisition of Transmar and TCI, which both have strong regional presences and deep client relationships, is another key

step in increasing our geographical footprint and bringing the benefits of our integrated portfolio of services to more customers. Egypt and the Red Sea coast are increasingly important parts of our global maritime offering, and we believe we are well-placed, thanks to the guidance and continuous support of our wise leadership, to boost trade and economic growth for customers and communities along these routes.”

MOHAMED JUMA AL SHAMISI

Managing director and group CEO
AD Ports Group

“In order to realise our digital ambitions and support the New Kuwait Vision 2035, it is crucial for government entities and private enterprises to adopt robust, secure cloud-based products and services to drive innovation. We have recognised the effort that Microsoft has made towards delivering these solutions, and we are confident that these and other technologies will unlock unprecedented opportunities for a cloud-first Kuwait.”

SALIM MUTHIB AL-OZAINAH

chairman and CEO
CITRA

“It is a very positive time for the Middle Eastern markets and, with the great work from our local team, we are managing to achieve our goals while demonstrating our long-term commitment to the region and the local government's strategy. The opening of the new factory comes after a careful analysis and study of the Saudi market. It aligns with the Saudi Vision 2030, which encourages foreign companies to invest in the local market. Today, we look forward to providing the citizens and residents in the Kingdom with products of the highest quality.”

LORIVAL LUZR

Global CEO
BRF Sadia

“Our latest compact station in Dubai South is a testament to our commitment to energising the nation through safe, smart and sustainable fuelling options. Dubai South's strategic location and its close proximity to Al Maktoum International Airport and the nearby areas makes it a prime location and our compact station will support in fuelling the needs of commuters to the area. We will continue to invest in the UAE's infrastructure to meet the growing demand for fuel.”

HE SAIF HUMAID AL FALASI

Group CEO
ENOC

“The strong digital growth of the UAE has catapulted cybersecurity to the top of the agenda for business leaders today. Our collaboration will strengthen our joint market positioning and enhance both our service portfolios through the work of a team of experts in cyber-consulting, system engineering, cloud services and cybersecurity technology.”



Photo Credit : KPMG Lower Gulf

NADER HAFFAR

Chairman and CEO
KPMG Lower Gulf

Accelerating agritech in the UAE

Technical Review Middle East spoke to Zada Haj, CEO & co-founder and Katie Wachsberger COO & co-founder of venture builder and investment platform, DANA.



Photo Credit : Adobe Stock

DANA has served as a platform for women-led desert tech startups since its establishment.

MASDAR CITY, THE regional home of technology innovation and R&D in Abu Dhabi, and DANA, the Abu Dhabi-based venture builder and investment platform, have signed an agreement for building the first Abu Dhabi-based beta site.

The beta site will test the feasibility of early stage agritech projects that can be developed and piloted in Abu Dhabi, focusing on local and regional startups with solutions between the 'pre-seed' and 'Series A' development phases upon completion.

Operating for nearly two years, DANA – founded by three women – has served as a venture builder and investment platform for women-led desert tech startups since its establishment.

“DANA Venture Builder offers the startups access to an international network of experts, addressing the teams’ needs from the technical to the financial, through to governance and company structure. The emphasis on in-house Proof of Concept allows us to work with the companies to ensure their feasibility across the board, increase their valuation, and establish market inroads at the earliest stage possible, reducing the risk for a notoriously capital- and time-intensive sector, explained Zada Haj, DANA’s CEO and co-founder.

When completed, the site will consist of

1,700 sq m of greenhouses, net houses, and open field farming, displaying diverse approaches to the sustainable production of crops in the desert. Furthermore, the beta site will focus on developing solutions with potential to overcome water scarcity, irrigation, greenhouse cooling, soil cultivation and regeneration challenges, as well as testing the resilience of new seed varieties.

The beta facility will promote local innovation and provide a next-generation platform for startups to showcase the potential of their homegrown agrifood solutions ahead of market entry. It will also ensure companies from the UAE and wider MENA region have the infrastructure and guidance required to overcome food security challenges and resource scarcity in desert locations.

“DANA was born out of a need to promote practical, scalable tech-based solutions that can act as game changers in terms of altering consumption and production patterns, working hand in hand with corporate entities to make sure that the solutions in our pipeline are not only technologically feasible, but simple to implement. The choice to use this strategy to empower women was an obvious one, as one out of four entrepreneurs in the climate-tech sectors is a woman (in contrast to one in seven in more established,

software-based sectors of technology business),” said Haj.

“We find women to be natural leaders in innovating solutions for the desert climate as we are naturally mindful of the collective. Whether by nature or nurture, we tend to measure our success not exclusively based on financial ROI, but also on positive impact on our surroundings. This is especially strategic as impact investing and ESG taxonomy become increasingly significant in the global economy’s measurements of corporate success,” she added.

“Promoting female leadership is also a means of bringing our entire region ahead of the development curve, as GDP would increase by 3-6 %, if women participated equally in the regional economy , yet according to the World Economic Forum Global Gender Gap Report 2021, the region will need 143 years to close the gender gap at its current rate of progress. By giving more women the tools they need to succeed – thus empowering more women to strive for success in the business world – we believe our mission is inherently aimed at benefiting the collective. After all, DANA itself is a women-led venture, so it is obvious that our success is also measured by the change we instill in those around us,” Katie Wachsberger, DANA’S COO and co-founder observed. ■



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Middle East construction industry shows resilience

There are still plenty of reasons to be bullish about the Middle East's construction market, despite supply chain disruptions, mounting costs and an unsettled global economy, finds Martin Clark.



Residential communities such as Jubail Island's Ain Al Maha contribute to growing opportunities in the sector.

STRONG PUBLIC INVESTMENT programmes continue to drive work in the sector, with a number of flagship mega projects catching the eye, while soaring energy prices in recent times have provided further uplift to the major Gulf economies.

That is good news for the contractors and suppliers in an industry that is expanding fast, and one that is faced with a growing number of other threats, from environmental and sustainability concerns to the impact of new technology.

Many of the Gulf's leading construction firms are choosing to turn these challenges into opportunities, in a period marked by rapid change and innovation.

Fortunately, it is an industry underpinned

by some of the world's grandest mega projects — typically mixed-use developments covering hundreds of thousands of square metres, launched with a broad socio-economic agenda.

The greatest of them all is NEOM in Saudi Arabia, a futuristic new eco city estimated to be worth US\$500bn, with the first phase of construction set to be completed in 2025.

The UK's Buro Happold was appointed as the NEOM programme manager, with US construction giant Bechtel landing a contract to build key transport infrastructure — it has been involved in other high-profile Saudi projects, including Jubail Industrial City and the Riyadh metro.

Most recently, NEOM awarded some of the largest-ever drill and blast tunneling

contracts for work on the region's infrastructure, covering over 28 km in length, to cater for high-speed and freight rail services.

The work was picked up by two joint venture groups — the first comprising FCC Construction SA, China State Construction Engineering Corporation and Shihb Al-Jazira Contracting Company Joint Venture and the second consisting of Samsung C&T Corporation, Hyundai Engineering and Construction Co. Ltd and Saudi Archirodon Company Ltd.

Other Saudi mega projects underway include the Red Sea tourism project, Qiddiya entertainment city, and Amaala, another ultra-luxury tourism scheme on the north — western Red Sea coast.

However, Saudi Arabia is not alone in thinking big, with other major countries in the Gulf and across the wider Middle East and North Africa similarly planning spectacular developments of their own.

In Egypt, this includes the new capital — New Administrative City — located 35km east of Cairo, that has been underway since 2015 and is set to become the future seat of government.

All of these so-called mega projects provided much-needed positivity at a key moment in the wake of the Covid-19 lockdowns, which brought whole economies to an abrupt halt worldwide.

Industry grapples with Covid aftermath

The legacy of that is still being felt on the ground, and all along the supply chain, and far away from the glitz and glamour of these government-backed super schemes.

With costs rising, supply chains squeezed, and projects interrupted, it was a perfect storm especially for those companies with debt on the books.

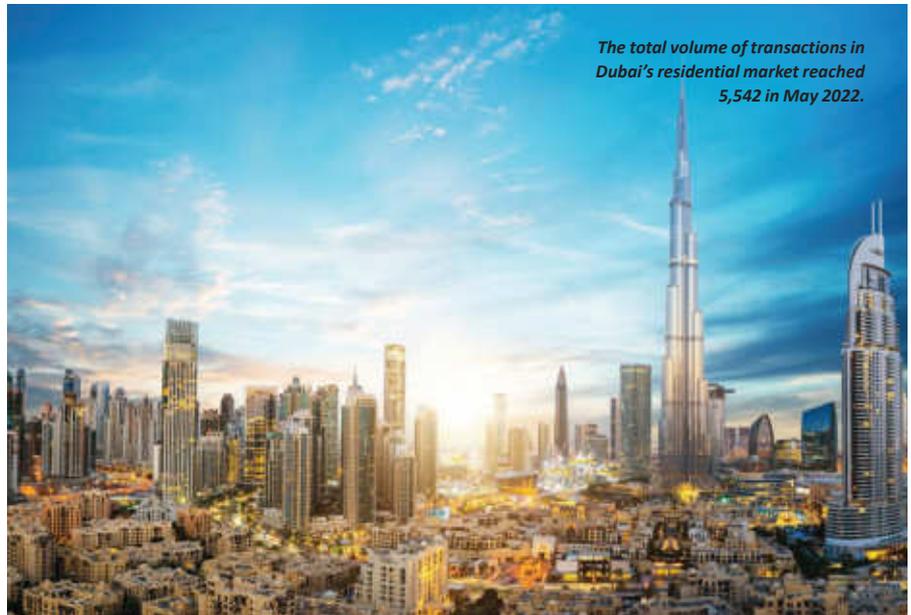
In February, Deloitte was appointed by Azmeel Contracting & Construction Corporation as advisors and to provide support in the restructuring of more than SAR7.73bn (US\$2bn) of its debt.

Azmeel Contracting is one of Saudi Arabia's biggest builders, securing more than US\$4.4bn worth of large-sized projects between 2014-2018 with prominent governmental entities across the oil and gas, industrial, infrastructure, residential and commercial sectors.

Deloitte's bankruptcy team also recently advised on the financial restructuring of Eastern Trading and Contracting Company and Eastern Precast Concrete Company — two Saudi-based contracting firms with more than SAR 1.2bn (US\$320mn) of debt across seven Saudi Arabian banks and over 2,400 creditors.

Eastern Trading and Contracting Company, established in 1971, is one of the largest construction groups in Saudi's Eastern Province, with a project portfolio of around US\$346mn.

Residential rents in Dubai have increased at their fastest rate since late 2014.



The total volume of transactions in Dubai's residential market reached 5,542 in May 2022.

Photo Credit : Chesterons MENA

Eastern Precast Concrete, established in 2008, offers precast concrete solutions to various types of structures.

Nonetheless, while these financial entanglements will take time to resolve, companies are looking ahead with renewed confidence as the economies of the Gulf regain momentum.

It is resulting in some new investments as the industry tools up for the next wave of expansion.

South Korea's Doosan Heavy Industries & Construction this year signed an engineering, procurement and construction (EPC) contract worth around US\$834mn to build a new casting and forging facility in Saudi Arabia via the Tuwaiq Casting & Forging joint venture.

The 400,000sq m facility will be able to produce 60,000 tonnes of castings and forgings per year, with construction due to be completed by the first quarter of 2025.

It will produce equipment for the pumps and valves of petrochemical plants, and equipment for shipbuilding and offshore plants, and eventually for wind farms and power plants.

According research firm, Frost & Sullivan, the GCC casting and forging market is forecast to grow by US\$1.8bn per year through to 2028.

There was some welcome news for ETE Readymix as well, after it signed a contract to supply concrete for the new Tuwaiq facility, 150 km north of Dammam.

Real estate sector roars back to life

One of the enduring barometers of confidence and optimism levels in the Gulf construction market is, of course, the real

estate sector, especially in Dubai.

And there are plenty of grounds for optimism here, with sales and rents picking up fast.

The total volume of transactions in Dubai's residential market reached 5,542 in May 2022, up 33% from a year earlier, according to global real estate firm CBRE.

Total transaction volumes in the year to date to May 2022 reached 30,903, it added — this is the highest total recorded since 2009, over this period.

Residential rents in Dubai have increased at their fastest rate since late 2014.

Large residential-focused communities in both existing and planned cities are also contributing to the growing opportunities in the region's construction industry. The Jubail Island Investment Company's latest project, Ain Al Maha village, for instance, marks a significant milestone in the development of Jubail Island into a luxurious residential community in the UAE capital.

It is a similar story in Qatar, where the real estate residential market is also witnessing strong growth due to high demand.

Hosting the FIFA World Cup 2022 in November and December will continue to drive the market throughout the year, experts reckon.

Elsewhere in the UAE, CBRE reported strong activity and performance levels across all strands of the real estate sector, including offices, retail, residential, hospitality and industrial and logistics, during the first quarter of 2022.

Taimur Khan, CBRE's head of research, MENA, in Dubai, expects more to follow, despite some possible obstacles coming up.

"Looking ahead, there are some potential

headwinds which may impact performance, namely higher interest rates and persistently high inflation. However, given the raft of changes to social and regulatory policies and the enactment of a range of federal and local government initiatives, we feel there are strong fundamentals underpinning future performance in the UAE's real estate sector."

CBRE itself was recently appointed by Jubail Island Investment Company to provide support with the leasing strategy and day-to-day leasing of the retail component within Phase 1 of Jubail Island, Abu Dhabi's own new mega project.

The first phase of this development is scheduled for completion by the end of 2023.

Sustainability: challenge and opportunity

Even so, with the markets now seemingly in recovery mode, it's still not quite business as usual for contractors, developers and suppliers.

For all companies, large and small, it is a fast-evolving sector, a point noted in Deloitte's 2021 construction trends report for the Gulf Cooperation Council (GCC) region.

It focuses on sustainability, a central theme for the industry going forward — though this presents as many opportunities for businesses as it does potential threats.

With its considerable environmental, social and economic impact, and potential force for good, construction firms can thrive through embracing sustainability at the heart of their processes.

Retail group Majid Al Futtaim is actively charting its moves toward greater environmental, social, and corporate governance (ESG) with a target to be carbon

“Given the raft of changes to social and regulatory policies and the enactment of a range of federal and local government initiatives, we feel there are strong fundamentals underpinning future performance in the UAE's real estate sector.”

Taimur Khan, CBRE's head of research, MENA.

'net positive' by 2040 — becoming one of the first three signatories to the World Green Building Council's Net Zero Carbon Buildings Commitment.

Major achievements in the past year include securing a US\$1.5bn Sustainability-Linked Loan (SLL) — a first in the region — highlighting a growing trend in green financing for eco-friendly projects.

Sustainable buildings have become a focal point in the company's ambitions, according to Ibrahim Al-Zu'bi, Majid Al Futtaim's chief sustainability officer.

"The rise of ESG on the corporate agenda has transitioned quickly from a niche interest to a mainstream requirement for companies seeking to lead across all industries today," he noted in a press statement.

Part of this strategy includes the provision of clean energy solutions across its asset portfolio.

Its shopping malls, communities and retail assets expanded their renewable energy generation to 21.4 mn kWh in 2021, compared to 17 mn kWh in 2020, an increase of 26%.

An agreement was also signed which will

provide the largest private solar plant in Bahrain, spanning more than 40,000 sq m, to generate 50% of its shopping mall's energy needs.

Technology providers are aiding the drive to embed sustainability into buildings and projects.

Honeywell's new Carbon & Energy Management software enables building owners to track and optimise energy performance against carbon reduction goals.

"In the UAE, where electricity consumption within commercial buildings stands at 36%, the government has set a 2050 target of improving energy efficiency by close to 40 % and cutting CO2 emissions by nearly 70 %," said Sultan Chatila, chief commercial officer, Honeywell Building Technologies, Middle East, Turkey and Africa.

He said that with such momentum to reduce its carbon footprint, the commercial buildings sector is in "urgent need" of readily available technologies that can help lower energy-related emissions.

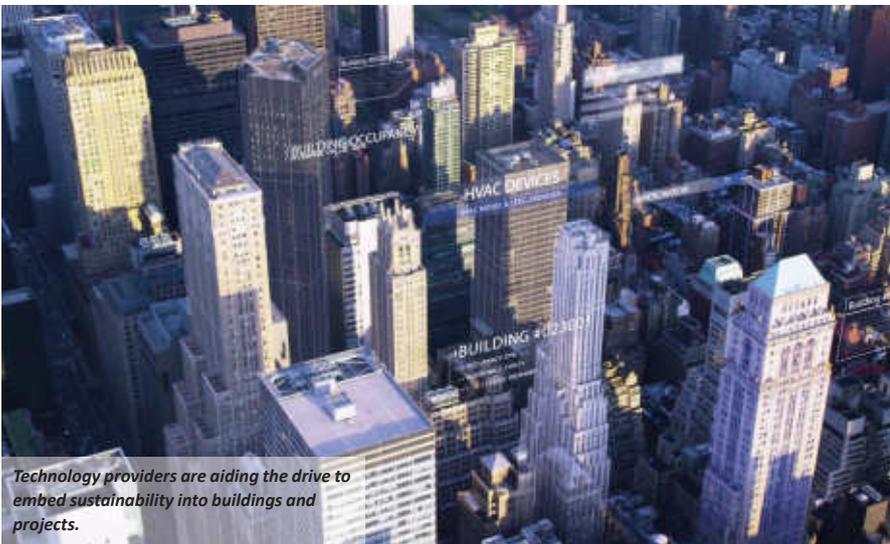
Connectivity and digital construction

At the same time, the industry continues to face up to the challenges posed by digitalisation and other new and emerging technology trends, from 5G connectivity and Big Data, to artificial intelligence (AI), automation and virtual reality (VR).

Some of these trends are deeply embedded already, such as the use of drones for mapping and surveying work.

But, like the case of reducing a building's energy footprint with the aid of smart software, it is this very technology that can assist construction firms in achieving key environmental goals as well as reap performance and efficiency benefits.

On the ground, access to accurate real-time data relating to the status of a construction project can bring with it huge cost savings arising from better, quicker decision making.



Technology providers are aiding the drive to embed sustainability into buildings and projects.

It means the shift to ‘connected’ construction, with processes digitised, more visible, transparent and accessible is something we can expect to see more of in the region.

Potentially, this new technology also allows architects to take risks and push the limits more than ever before — exciting times for innovative new developments.

NEOM, for instance, will be the first ‘cognitive city’ where world-beating technology is fuelled with data and intelligence to interact seamlessly with the population.

Coming out of the Covid-19 crisis also means that it may be a good time for construction firms to further embrace and even accelerate the adoption of digital technologies and other transformational processes.

The UAE has already launched a national guide for smart construction to assist firms in their journey along the technology path

The shift to ‘connected’ construction, with processes digitised, more visible, transparent and accessible is something we can expect to see more of in the region.

in the hope of transforming the sector.

The Ministry of Energy and Infrastructure in the UAE recently signed a Memorandum of Understanding with FBR Australia, a construction robotic technology company, to further explore opportunities for deployment and usage in the industry.

It will focus on the application of modern building methods, smart support systems and other construction technologies in the housing and construction sectors of the UAE, with a particular focus on the Hadrian X robot and what it could deliver to the region.

Hadrian X is the world's first mobile robotic block-laying machine and system, capable of safely working outdoors in uncontrolled environments and with speed.

It does, of course, raise big questions over the future of workers in the sector, but no more so than in any other industry where technology is similarly making rapid advances.

FBR plans to set up an operating entity locally to facilitate the introduction of Hadrian X into the GCC market, in order to meet the demand for robotically-constructed walls in the region, likely within the next couple of years. ■

‘The key to construction project efficiency is connectivity’

DIGITAL CONSTRUCTION SOLUTIONS PROVIDER, TRIMBLE, HAS WORKED ON major projects in Saudi Arabia, such as the Riyadh Metro and The King Abdullah Petroleum Studies and Research Centre (KAPSARC). Through the company’s participation in BIM Saudi Arabia Conference and Expo 2022, in line with its vision to drive technology deployment in the construction sector across the Middle East, Trimble aimed to educate professionals on the importance of Constructible BIM technology and its effects on cost reduction, improving complex projects, and handling tasks more efficiently.

The BIM Saudi Arabia Conference and Expo 2022 is the country’s leading event for digital construction and building information management technology. Saudi Arabia’s construction sector is playing an important role in its efforts to diversify the economy and decrease reliance on oil resources. This is further evidenced by the surge in construction activities in the country, including the Red Sea project and other development initiatives such as NEOM and Qiddiya.

During the event, Paul Wallett, regional director of Trimble Solutions, Middle East shared insights on Constructible BIM, in addition to serving on a panel discussion titled, ‘Future trends in adoption of digital technology and innovation and what it means



Connectivity plays a vital role in delivering projects on time.

for the industry’.

Wallett highlighted that the core problem in the construction sector is productivity, and that it is essential to have a well connected construction solution in place.

He said, “The industry is moving ahead and there are many different solutions every day, there is also abundant information available in the market, as well as modern construction technologies such as BIM, 3D Modeling, AI and more, but what the industry needs to consider is how to connect all these solutions to improve holistically. Connectivity plays a vital role in delivering these projects on time efficiently, it is the key to a successful project.”

Wallett went on to explain the effects of

modern technology on sustainability.

“Today, as projects seek sustainability, it is essential to understand that new methods of working produce new results naturally and hence companies need to start investing in construction technology. While 20 % of projects are already impacted by sustainable regulations, 90% are expected to be impacted through these changes and adoption of technology,” he added.

As more industry players are recognising the value of BIM and digital construction data as the key to improving overall project efficiency, the construction solutions provider aims to continue sharing its expert insights on these emerging construction technology trends, and its advantages in the Saudi Arabian construction market.

Photo Credit : Trimble

How the construction industry can outperform itself

Kenny Ingram, vice president, engineering, construction and infrastructure at IFS looks at three key opportunities that are now possible with modern software inside the construction industry, including new services, modern methods, and project planning.

WITH MANY CENTRAL governments firmly setting their recovery plans on infrastructure projects the wheels are already in motion, and this creates a huge opportunity for the entire industry to meet industry demands and stimulate a global bounce back. To do this, construction companies will need to focus their attention on what matters most – their customers and ensuring their long-term future.

Delivering services and maintenance

An increasing number of asset owners are seeking to outsource service and maintenance contracts for their assets, putting contractors who focus on the entire asset lifecycle at a significant advantage.

A survey of construction customers by IFS shows that 25% now include service, maintenance, and facilities management as part of their offering, and this is expected to increase to 50% by 2025.

These contracts are usually awarded to asset management specialists. However, given the contract value for service and maintenance can typically be 120% - 200% greater than the value of the actual construction contract alone, if service and maintenance is also secured by the same contractor this can not only increase their revenue margins but also provide a more predictable and reliable revenue stream. This trend is more commonly called Asset Lifecycle Servitisation: The New Business Revenue Model For The Construction Sector. It is an opportunity for constructors and manufacturers to gain visibility into their future performance and as such significantly grow their business, so it is no coincidence that a recent report by McKinsey estimates that construction sector disrupters could share the industry's US\$265 bn annual profit pool.

However, winning these coveted service and maintenance contracts and delivering the full asset lifecycle, requires construction



Photo Credit : Adobe Stock

companies to become more customer centric and change their outlook. This starts with a desire to increase build quality and remain focused on delivering the final asset on time and most importantly on budget.

The operating model also makes construction companies design the asset from a total asset lifecycle cost and performance perspective – changing their mindset to think more about what outcome the asset delivers.

Modern methods of construction

With practices such as offsite and modular construction continuing to become a method of choice due to their ability to reduce the construction time and improve quality, this trend will continue to be a differentiating factor for many.

Construction companies must think about standardisation of materials and components. They must consider logistics, shipping and storage requirements when designing the asset to make sure it is practical, low cost and eco-friendly. Finally, constructors need to have a more structured approach to managing and executing construction work packages for erection, installation and construction tasks moving towards a final assembly mindset.

A long-term outlook will eventually result in 80% of the work being done offsite and 20% onsite, so the winners will be the

companies who can optimise this new way of working. Approximately 85% of all construction projects are predicted to use modern methods of construction in some capacity by the end of 2022.

Integrated project planning

It is crucial that engineering and construction companies who want to grow and deliver projects successfully develop a more integrated planning process that starts from the initial project inception.

Most engineering and construction companies use project planning tools to navigate the planning minefield and the use of these tools is likely to increase – but they will need to develop in line with requirements.

The new world needs a single master project plan for different departments such as engineering, procurement, plant and equipment, manufacturing and installation and construction to be in sync. 4D BIM scheduling tools also need to be integrated and together provide the capability to generate time-phased resource requirements and provide active availability monitoring, not just produce a Gantt chart with a timeline.

For most companies this transition requires a shift in mindset, processes and business systems and a move to a more integrated world. ■

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Photo Credit: Witrgen

By preventing machine damage and production downtimes, the overload systems from Kleemann guarantee increased operational reliability.

Crushing it with maximum efficiency

The growing recovery in the construction industry is fuelling demand for innovations in Crushing.

THE MOBILE CRUSHERS and screeners sector has been witnessing significant growth in industries such as mining, construction and others. In the Middle East, the growing recovery of the construction industry in the recent times has led to the increasing demand for advanced mobile crushers and screeners market.

We take a look at some innovations enhancing the crushing and screening industry, worldwide.

Kleemann

In rock and stone processing, during the crushing process, various short-term or prolonged overload situations can arise. The overload systems of the MOBICAT MC 110 EVO2 and MOBICAT MCO 90 EVO2 pursue an important goal – increase in the

operational readiness of the plant in a sustainable manner by guaranteeing a crushing process that is as continuous as possible. Both crushing machines are equipped with mechanically and software-supported overload systems.

With its multi-stage overload system, the jaw crusher MOBICAT MC 110(i) EVO2 provides more safety with uncrushable material. If, for example, metal enters the crushing process, the crushing gap (CSS) opens automatically in up to two seconds over the complete gap range. The crusher itself does not have to be stopped during the temporary overload situation, which means that the crushing chamber is empty and manual clearing of the crusher is not necessary, saving work and time. When the overload situation is corrected, the system then moves back to the original crushing gap and the crushing process is continued.

The pressure plate installed as a predetermined breaking point is preserved. The consequences are reduced downtimes and increased crushing capacity.

The cone crusher MOBICONE MCO 90(i) EVO2 has two different systems installed. The overload system ‘Tramp Release’ protects the crusher against uncrushable material such as wood or metal. The bowl including the bowl liner lifts automatically to allow uncrushable material to fall through. The ‘Ringbounce Detection’ on the other hand, reacts to an excessively high share of fines in the feed material and prevents ‘briquetting’ – which means the clogging of the crusher or sticking together of the material. Here, the hydraulic pressure of the crusher is monitored continuously. The system reacts as required and therefore prevents latent overloads. Depending on the machine application, the ‘Ringbounce

Detection' can be oriented via the control system to output ('Mixture Mode') or product quality ('Precise Mode').

By preventing machine damage and thus production downtimes, the overload systems from Kleemann therefore guarantee increased operational reliability for the users.

Omega Crushing and Screening

The Northern Ireland-based manufacturer exhibited a model from their range of jaw crushers at Hillhead 2022. Omega Crushing and Screening has developed a range of plug-in, dual power, electric-drive jaw crushers which deliver reliability, fuel savings and low or zero-emissions operation.

With other manufacturers now offering diesel-electric hybrid machines, Omega Crushing and Screening has chosen to take the next step in this direction and make its offering fully electric. The crushers can be plugged into the power grid and run without any diesel power input. Alternatively, when an external power source is not available, the wheeled and tracked models have a dual-power option. This means the machines can run off an onboard 220 kVa powerpack with a Stage V/Tier 4- Deutz engine.

The company's J1065S static electric jaw crusher consists of the J1065 jaw crusher fitted in a modular assembly which includes a vibrating feeder with a stepped grizzly section and galvanised walkways and handrails. The J1065S is suited to applications such as municipal recycling and C&D waste recycling, or can be used as part of a quarry or mining installation. The plant can even be set up inside a building, thanks to its ability to run emission-free on mains power. Omega's machines all use the J1065

single toggle jaw crusher unit. The J1065 has a large feed opening of 1,000 x 650 mm (39.4 x 25.6"). It is driven by a 90 kW (121 hp) electric motor and uses a simple drawback tensioning system. Some other noteworthy points are the heavy-duty shaft installed with premium bearings, the large jaw ejector cylinder, and the bolted mainframe, which provides strength and durability. The crusher achieves an output of approximately 200 tonnes (220 tons) per hour.

Omega Crushing and Screening Sales Director Colin Daly commented, "The J1065S static electric jaw crusher offers various benefits to users in sectors from recycling to quarrying, including emissions-free operation, reduced fuel costs, and the ability to run at maximum efficiency in any climate."

While the Omega machines themselves are powered by either the mains electrical supply or an onboard generator, all of their main components are also electrically driven, such as the head and tail drums of the conveyors and the motors that run the feeders.

Anthony Carlin, technical support director, elaborates on the crusher's simple design. "Many quarry machines today have become very high-tech, whereas the user often wants a simple, user-friendly machine. The control panel is very straightforward – there are no parameters or PLCs that you need to look at. It also uses a three-phase electrical system which is quite easy for electricians to work on. We have also done away with the complicated hydraulic toggle tensioning system on the crusher and gone back to the single drawback rod tensioning system. This, combined with hydraulic wedge adjustment makes it simple and reliable", he says.

In addition to the static J1065S, the

Omega range also includes the J1065M – an easily transportable, wheeled model and the J1065T – a tracked machine. The wheeled J1065M delivers the benefit of being easily transported from one site to the next. The most recent addition to the lineup is the J1065T tracked crusher. The introduction of a second crusher unit model is scheduled for late 2022.

Metso Outotec

Metso Outotec, provider of end-to-end solutions and services for the aggregates, minerals processing and metals refining industries, added an impact crusher to its Nordtrack mobile crushing and screening range. The Nordtrack I1011 mobile impactor has compact dimensions and a powerful, high-performance crusher, ideally suited for contractors and rental work. Equipped with a large hanging screen, it combines high crushing capacity with calibrated end product accuracy.

The versatile Nordtrack I1011 crusher is suitable for working in jobsites ranging from rock crushing to concrete and demolition waste recycling. It is transported on a standard trailer, making it cost-effective and quick to move between sites. Thanks to its agility, moving the equipment in tight places inside the jobsites is easy. With Metso Outotec's service support and global inventory of parts like different blow bar options, Nordtrack I1011 is a dependable choice for contractors and as a rental machine.

"The I1011 has a more powerful crusher and engine, resulting in a capacity as high as 300 tph. As a mobile crusher it is well suited for the recycling of demolition and concrete waste, or reclaimed asphalt," said Vesa Tuloisela, head of Nordtrack at Metso Outotec. ■



Photo Credit: Omega Crushing and Screening

Omega Crushing and Screening has developed a range of plug-in, dual power, electric-drive jaw crushers.



Volvo Days 2022 embodied its ethos, showcasing how Volvo CE can lead the way for the industry's transition to net zero.

Volvo Days 2022: 'Change Starts Here'

Volvo CE is pushing the envelope of sustainability and next-generation construction equipment, as showcased when *Technical Review Middle East* was invited to the first Volvo Days event in four years. Matthew Hayhoe reports.

THE ETHOS OF 'Change Starts Here' permeated Volvo Days 2022, as the event returned to Volvo CE Eskilstuna.

Volvo Construction Equipment hosted the event to showcase its purpose-driven mission of industry transformation, with its sustainability, electromobility and services portfolio at the forefront, as worldwide partners took to the event.

In his opening address, Melker Jernberg, the president of Volvo Construction Equipment said, "Volvo Days is the perfect opportunity to show how we are achieving our ambitions with ready-today sustainable power solutions."

Jernberg showcased key figures from the company's 2021 operations, with sales of

99,871 units sold across the year. As the industry begins the long journey to e-mobility with an end goal of net zero operations, 321 of the company's small compact e-mobility machines, showed impressive performance year-on-year despite accounting for a relatively smaller proportion of overall sales.

Machines of tomorrow paving the way

A centrepiece of the vehicle show, which preceded the opening address, was the A30G Articulated Hauler. Beyond its payload capacity of 29,000 kg and maximum engine gross power of 265KW, the A30G was noted for its fossil-free steel construction. The machine was spotlighted

for the innovative approach to reaching net zero. Volvo CE emphasised the need to embed the net zero approach throughout the value chain, including the raw materials used in its machinery. Future rollout of fossil-free steel currently depends on steel availability and changes required in manufacturing.

Another debut marking Volvo CE's transition to efficiency was the EC230, the company's largest electric excavator. While not available on the market yet, the excavator was on show. Ahead of customer tests in South Korea and China, Volvo CE was keen to highlight an expected reduction in energy costs of 60-70% compared to the diesel-powered EC220, and a daily capacity of eight hours (provisional on a high-power charge during a lunch break).

Sister models in the electric equipment range include the L20 Electric Compact Wheel Loader, with a 1.8 tonne payload and parallel-type linkage, permitting optimal lifting height and 100% parallel movements across six hours of active work per charge.

Debuting for the public at Volvo Days

"Volvo Days is the perfect opportunity to show how we are achieving our ambitions with ready-today sustainable power solutions."

Melker Jernberg, president, Volvo Construction Equipment

2022 was the company's new demo and test track, where the battery-electric and autonomous transport solution TA15 hauler (part of the TARA autonomous vehicle range) is currently being tested and demonstrated.

Adriano Merigli, the head of sales for region international, said, "As a solutions-based company, we take this challenge seriously – driving real change today while securing a better world for tomorrow."

Nowhere was this clearer than with the TA15, which is run on a battery-electric drivetrain and uses GPS, Lidar, Radar and multiple senses to manoeuvre without a cabin. The unit currently operates with a 15 tonne hauling capacity, and can be connected in series with models from the wider TARA autonomous transport concept for maximum loading and hauling efficiency. The current model is being tested on both the Eskilstuna site and a

"We take this challenge seriously – driving real change today while securing a better world for tomorrow."

Adriano Merigli, the head of sales for region international



Volvo's expanding fleet of electric vehicles was a key component of Volvo Days 2022.

Photo Credit : Alain Charles Publishing

limestone quarry as part of Volvo Autonomous Solutions' partnership with Holcim Switzerland.

Services in the spotlight

Beyond the machines, Jernberg noted the 14% service sales of the year's entire figures, showing a 20% year-on-year increase and reflecting the growing demand for Volvo's aftercare and complementary services.

"Services, as you know, are very important to our customers and the resilience of the business," added Jernberg.

Services shared the spotlight with the machine innovations, with Volvo CE noting their growing importance in the transition to net zero.

Volvo CE is aiming to expand its supply from machine-only orders to site-optimal

service solutions. Those on show at the event included the CO₂ reduction programme, which offers customers tailor-made plans to cut carbon emissions across sites. The tailored support programme avoids a one-size-fits-all approach, and is fuelled by four pillars. Volvo CE gathers insights; analyses machine data and site studies; improves efficiency and reduces CO₂ emissions by implementing specific services (such as Eco Operator and Efficient Load Out, designed to make every load more efficient with 95-99% fill rates); and sustains the implemented changes with continuous monitoring and further ways to reduce emissions in the future.

Volvo Days 2022 embodied its ethos, showcasing how Volvo CE can lead the way for the industry's transition to net zero in the coming decades. ■

Genie announces return of the Z-45/25J RT articulated boom lift in the Middle East

GENIE HAS ANNOUNCED that the new Z-45/25J RT equipped with a 24 hp (18.5 kW) Kubota engine is available now, for customers in Europe, the Middle East, Africa and India – with a new 24 hp (18.5 kW) engine configuration, updated design language, and enhancements that improve maintenance and lower the total cost of ownership.

The popular 49 hp (36 kW) Z-45/25 J RT will continue to be offered for customers in Latin America, Asia and China.

"The new Z-45/25J RT has all of the same features our customers have known and loved for more than 30 years, including a durable design and 99.99% reliability rate, based on three decades of data," said Corrado Gentile, product manager at Genie. "At the same time, we've introduced some enhancements and upgrades, including a new 24 hp engine that is clean and powerful, and offers best-in-class maintenance while lowering the machine's carbon footprint."

The new Z-45/25J RT, features a DPF-free 24 hp Kubota engine that is Stage V/IIIA compliant, eliminating the need for after-treatment, making the boom easier to maintain, and lowering engine maintenance costs by as much as 57% compared with larger engines found in comparably sized booms. The 24 hp engine on the new Z-45/25J RT delivers all the power needed to tackle rough



The 24 hp Z-45/25J RT further complements the Genie boom product lineup.

Photo Credit : Genie

terrain with 45% gradeability, 4WD, traction control, and active oscillating axle. Contributing to ease of service, 90% of the hydraulic hoses are easy to access.

The new Z-45/25J RT delivers the benefits of Genie Lift Connect telematics technology, which provides equipment owners with actionable data to maximise productivity and minimise downtime. Two additional standard features — Lift Guard Contact Alarm and Lift Tools Work Tray — contribute to safe and productive work practices.

Enhancing development with seamless data



Photo Credit: Bentley Systems

Erica Coulehan, enterprise product marketing manager, Bentley Systems.

Erica Coulehan, enterprise product marketing manager, Bentley Systems, presents a case study on how digitising assets in education and healthcare across the region helps unify data and accelerates decision-making.

THE UNIVERSITY OF Birmingham is undergoing a major redevelopment of US\$1.18bn, across its campus in the UK and Dubai.

The University looked for a solution that would enable it to carefully manage all project data and securely support delivery and transition from planning to operations.

Fast facts

- The University of Birmingham's 10-year redevelopment programme, begun in 2016, will create new facilities for students, staff, and the community.
- Information for the wide-ranging project was scattered within various data silos, slowing access.
- University officials customised Bentley's Common Data Environment (BCDE) to accommodate the regulations, security requirements, and workflows. It would help combine all types of information, from drawings and historical data to compliance and health and safety information, to improve decision-making.

Working closely with Bentley experts, university officials set up and customised BCDE to accommodate the university's regulations, security requirements, and workflows. The teams also took care to ensure that the CDE meets ISO standards for both construction and data security.

ROI

- Within BCDE, the university can store information on the history and current condition of more than 200 buildings of different ages, complexities, and uses.
- The time to data handover for completed construction to operations was reduced from the average of six months to one month.



Photo Credit: University of Birmingham

The time to handover data for completed construction to operations has greatly reduced, falling from the average of six months to one month.

“The university continues to migrate more information into the CDE each day, including legacy documentation that can be uploaded with appropriate metadata and hard copy information scanned in. All of this activity means we will always be in the best possible position to surface information about our assets quickly without the risk of single points of failure and information losses.”

- Improved decision-making will help the university reduce costs while working toward the goal of generating 75% of power on-site and reducing their carbon footprint by 3,000 tons per year.

Seamless data access

Additionally, university officials developed a trackable process within the CDE to clearly define and communicate what deliverables are needed, eliminating ambiguity and error. Through the use of the CDE, the university has achieved savings of approximately US\$ 33,600.

By establishing clear workflows, university officials have greatly improved visibility into the design and construction progress. Establishing a golden thread for all university assets provides the university with a record, or Golden Thread, of information when resolving faults or refurbishing buildings, as well as provide the key elements toward building a campus-wide digital twin.

“The university continues to migrate more information into the CDE each day, including legacy documentation that can be uploaded with appropriate metadata and hard copy information scanned in. All of this activity means we will always be in the best possible position to surface information about our assets quickly without the risk of single points of failure and information losses,” commented Rich Draper, head of BIM and digital assets, University of Birmingham Estates. ■

Stable production with AAC technology

How the German manufacturer WKB Systems GmbH equipped the greenfield project of one of the largest AAC manufacturers of Turkey – a plant for the production of a wide range of products including blocks, panels, lintels and reinforced elements.

THE WKB SYSTEMS solutions ensured that the manufacturer of autoclaved aerated concrete (AAC) received a plant with state-of-the-art technology for efficient and reliable production of a large variety of products. The team of WKB engineers worked out a tailor-made solution for the AAC plant, comprising the complete engineering, equipment production, dry test run at the premises of WKB in Germany, assembling and commissioning at the customer's site, personnel training as well as the whole project management after the production start.

WKB technology

The WKB experts developed an aluminium dosing system for rough and fine paste, with an accuracy of 10 grams, in response to the customer's requirement for production of AAC elements under strict production efficiency regulations.

WKB Systems GmbH delivered a wide range of transporting, forwarding and lifting equipment for the handling of moulds, hardening carriages and grates as well as the complete transport units for the reinforcement area.

For instance, WKB Systems' fully automated pin manipulator, used to insert or pull the staple pins during the loading or unloading of the hardening carriages significantly optimises the plant logistics and ensures a smooth production process without any manual interruptions.

Green Cake Separating Machine

To avoid sticking of AAC blocks during the autoclaving process, WKB engineers advised the AAC manufacturer to use the Green Cake Separating Machine (GSM) which helped to considerably reduce production wastes and increase the output.

The Green Cake Separating Machine is steplessly adjustable from the smallest (50mm) to the largest brick thickness (400 mm). Mixing formats is also possible.

The grate with a green AAC cake is fed into the GSM via driven rollers. As far as the grate with the AAC cake is on the GSM., the grate is lowered and the AAC cake remains on the separation trusses which are arranged depending on the block format needed. After the separation process, the grate is cleaned of fallen debris using an air blaster and lifted again. The crane removes the grate with the separated AAC cake and forwards it to the next production area.

After the discharge of the grate with the separated AAC cake, the separation trusses are cleaned with a steerable, rotating brush.

Reinforcement area

For the production of reinforced elements such as panels and lintels,



Photo Credit: WKB Systems GmbH

WKB Systems delivered all the equipment needed to make an automated production process possible, including the supply of portal units for automatic insertion and removal of reinforcement frames with cages, dip tanks for anti-corrosive coating and paraffin.

The WKB technology makes the production of AAC blocks and panels in one casting mould possible.

The dry cutting plant for reinforced panels and lintels developed by the WKB expert team to process different AAC elements, ensures cutting accuracy of +/- 1 mm. The plant consists of two separate lines, each equipped with saw blades for longitudinal and vertical cuts. Further, any displacement of the reinforced elements (relative movements between the belt and a reinforced element) is eliminated.

More flexibility for more efficiency

The WKB specialists worked out a special concept for the packing area of this plant – separate packing lines for common AAC blocks and AAC panels or lintels, including a sorting area. The shuttle transport system moves the whole AAC cake to separate the blocks into half-pack groups so the needed gaps for a palettising robot arises. The AAC products are forwarded to the packing area by cranes equipped with sectional grippers.

Goals achieved

During the whole project duration, the WKB specialists provided guidance to the manufacturer, to ensure a stable production process for the production of AAC blocks as well as reinforced AAC panels and lintels, through the use of innovative technology. ■

For more information, visit: www.wkb-systems.com

Mercedes-Benz Econic launches in the region

Daimler Commercial Vehicles MENA brings the Econic trucks to the Middle East market.

THE REGION'S MOBILITY and logistics sector has an expanded choice of vehicles with the recent addition of the Mercedes-Benz Econic to Daimler Commercial Vehicles MENA's portfolio.

The Econic has seen success across a number of European markets for three decades, boasting increased safety and efficiency, suitable ergonomics and a reduced impact on the environment. Since its introduction, the Econic has become a proven choice for airport ground services, municipality, and waste management applications.

Econic is a versatile low-entry truck, designed in response to growing urban scapes and an increased demand for mobility, logistics and the environment. The trucks are efficient, powerful and reliable choice, offering maximum safety for those in surrounding environments and optimal working conditions for drivers and crews.

A choice of engine outputs and transmissions is available, meaning the Econic can suit a variety of applications.

Olaf Petersen, general manager at Daimler Commercial Vehicles MENA, explained, "After the success of the Mercedes-Benz Econic worldwide, we are excited to bring it to the region. Since its launch in 1989, it has proven itself to be a reliable truck across numerous industries and markets due to its versatility, safety and efficiency.

"With the MENA launch of the proven Econic, DCV MENA is inviting interested parties to reach out for a demonstration of the vehicle and is pleased to note that production slots are immediately available,

The Econic has become a proven choice for airport ground services, municipality, and waste management applications.



Photo Credit : Daimler Commercial Vehicles

thus allowing for short delivery timelines of only a few months."

A choice of either high or low cab can be selected depending on the intended application, with the cab offering an expansive vision of the road and surrounding areas regardless of specification. A Direct Vision Study commissioned in 2016 found that the cab design offers a 23% reduction in reaction times and braking distances, reducing the number of collisions compared to other standard cabs on the market.

The vehicle is capable of being equipped with as many as 10 safety assistance image and sensor-based systems, designed specifically for urban operations. Along with boosting the safety of those in the surrounding environment, the overlapping imaging and sensory systems can aid the driver in dangerous situations and foster a more relaxed working environment.

Available in two-axle (4x2 traction) and three-axle (6x2/4 or 6x4), with wheelbases ranging from 3450mm to 5700mm and permissible gross weights of 18 to 26 tonnes, the Econic is a versatile choice for operators.

The trucks, along with their use in municipality, waste management and airports, can be frequently applied tackling short-radius distribution jobs, construction site transport and fire & rescue.

Econic can be optioned with one of two transmission choices depending on the intended field of operations – an Allison 6-speed fully automatic transmission or the Mercedes-Benz engineered semi-automatic PowerShift transmission. The former transmission is offered as standard and designed to relieve strain on the driver in busy environments that call for absolute safety and precision such as airport flight operations and logistics. This transmission's crawler function enables a precise and smooth pull-away, which is also a key requirement in the waste disposal sector. The optional PowerShift gearbox makes it possible to boost efficiency even further; the weight-optimised transmission is equipped with 12 forward and four reverse gears. ■

"Since its launch, it has proven to be a reliable truck across numerous industries and markets due to its versatility."

Olaf Petersen, general manager at Daimler Commercial Vehicles MENA

Hydrogen: Fuel of the future?

What role can hydrogen play in the future energy supply for trucks and the transportation sector at large?
Insights from IAA Transportation 2022 delve into the facts.

HYDROGEN IS RISING in plausibility as a fuel for the future, meeting the demand of the rising numbers of trucks on the road.

Despite the pandemic's impact across the supply chain, experts expect an increase in goods transportation in the medium term.

The growing numbers of lorries taking to the roads undoubtedly lead to greater traffic, more noise pollution, increased fuel consumption and, imperatively, higher carbon monoxide emissions. Road traffic with heavy and light vehicles, including buses, issues around a third of traffic emissions in 2019, totalling 58.3 mn tons of CO₂.

Rising emissions caps to reduce climate change, no doubt present a challenge to the current logistics and transportation landscape, but the solutions are varying in success and plausibility.

Electric vehicles are becoming more common on the streets, but they, too, present a number of issues. Electric engines are proving worthwhile for lorries with up to 2.8 tons of payload, but heavy and long-distance traffic is proposing an

issue to the success of these vehicles in the logistics sector.

The added weight for batteries and costs involved are major hurdles for widespread implementation. Along with that, insufficient ranges, long charging times, and lack of charging infrastructure accentuate the issues.

Improvements are also required in the heavy-load sector, that with the greatest CO₂ output. Developing and implementing charging infrastructure is a must, but other technologies, such as hydrogen, must also be on the table.

Hydrogen is utilised in vehicles through conversion into power via a reaction with oxygen in a fuel cell, propelling an electric motor. This means the exhaust emits steam rather than carbon monoxide.

The advantage of this technology is clear – larger tanks can facilitate longer ranges with one filling (depending on tank size) and emissions are, undoubtedly reduced.

The efficiency of the reaction is also a benefit, at around 60%, compared to just half that for a combustion engine.

Fuel cells, however, do have a long service

“Rising emissions, no doubt present a challenge to the current logistics and transportation landscape, but the solutions are varying.”

life of approximately 10,000 operating hours, but they remain complex and expensive to operate and maintain.

Hydrogen can be used as fuel in another way as well, with companies working on solutions to use hydrogen to fuel combustion engines. This can be implemented into existing structures, with costs saved on development and storage. Combustion engines can be retrofitted, such as by IAA Transportation exhibitor Clean Logistics, and can work even with lower-quality hydrogen.

However, the efficiency is not as great as the fuel cell method; burning lubricants can also generate minor emissions. However, post-treatment of exhaust offers one possibility to completely filter these emissions out.

Daimler Truck and Volvo are working to deliver a fuel cell system for lorries, the serial production of which is expected to begin in the second half of the decade. Daimler Truck itself has the heavy-load lorry prototype GenH2, with two fuel cells, two e-machines, and two 80kg stainless steel tanks, which gained road approval in October 2021 and are continuing intensive testing.

With plenty of research and development underway, hydrogen may not be as far from the industry's reach as once expected. ■

Hydrogen is rising in plausibility as a fuel for the future.

Photo Credit : Adobe Stock

Charging into the future

Rasso Bartenschlager, general manager at Al Masood Power Division speaks to Technical Review Middle East about the company's charging solutions for the region's burgeoning EV market.

Technical Review Middle East (TRME): What makes Al Masood's smart solution for EVs, unique?

Rasso Bartenschlager (RB): SHAMS+ is the first UAE-built ultra-fast and smart charging solution that marks a new chapter in our sustainability journey. It will not only help decarbonise the transport industry but will also foster EV adoption in the industrial, construction and marine sectors. With an extensive network of universal charging stations that can cater to all battery needs of the automotive and maritime sectors, we intend to make our services available even in remote, hard-to-reach or hard-to-connect areas.

The SHAMS* Network of charging is an ideal solution for marine docks, the desert, agricultural fields, and interstate highways, and can also be implemented in the city. With smart internet-based and mobile ventures, the solution will provide sustainable charging through solar energy at the highest charging speed starting from 25 minutes. What makes the solution special is that it does not require a traditional source of electricity as it is based on a solar power solution. SHAMS+ also operates cordless for better flexibility and easier installation in various urban and rural locations.

TRME: How is it contributing to the UAE's decarbonisation goals and enabling green mobility?

RB: As a pioneer in the sector, we are committed to assisting in the transition to sustainable and green energy by providing best-in-class technologies and innovation that help reduce carbon emissions and fast-track the goals of the UAE Net Zero 2050 strategic initiative. The fully-fledged, solar-powered charging solution for electric vehicles (EVs) – including cars, buses, trucks,



and marine vessels – SHAMS+ will contribute to electrification and green mobility, which is the future of transportation.

TRME: What factors, are contributing to increasing EV adoption in the Middle East? And how do they help expand the market for Al Masood's electric vehicle charging solution?

RB: The GCC countries are taking serious measures to diversify their energy sources by shifting from heavy dependency on oil to investing in sustainable energy, especially solar energy. Backed by a large customer base, the adoption of EVs is picking up pace due to governments and investors channelling funds to develop the infrastructure required to popularise green mobility and electrification as the future of transportation. The awareness and concern of consumers about climate change are also acting as a catalyst for the transition to eco-friendly alternatives from internal

combustion engine vehicles. This trend has encouraged automobile manufacturers to bring more EV models to the market every year, giving more options to consumers.

With countries exploring ways to accelerate the transition to net zero CO₂ emissions, Al Masood is committed to facilitating economies to shift to clean and renewable energy sources. Mostly what discourages people from buying EVs is the fact that it is complicated with different charger types and a lack of charging stations. Through our solar-powered SHAMS+, we intend to make charging stations readily available for consumers for all types of electric vehicles – including cars, buses, trucks, and marine vessels. With smart internet-based and universal charging ventures, the solution operates with better flexibility and easier installation in various urban and rural locations. SHAMS+ runs on solar energy, making it an ideal solution for the GCC as there is little presence of clouds, 20% around the year, in the region.

The popularisation of EVs in the region will in turn help us further expand, as with our SHAMS+, we provide the ultimate solution to key challenges to achieving decarbonisation goals.

TRME: How is the solution integrating remote monitoring and control systems to ensure uninterrupted power?

RB: SHAMS+ is a smart connected modular charging solution with a distinct automatic matching voltage recognition for stable charging. Even though a smart charging solution shares the same fundamental design as a regular EV charger, the most distinguishing feature is its ability to be connected and transmit data for a convenient operation. This feature, which gives the smart charging solution a competitive edge over others, requires a modem to link to a network. The EV drivers can use a charging app to locate and manage their charging requirements. This enables drivers to book and control charging sessions remotely and get accurate energy-usage insights to help optimise performance and reduce costs. ■

The popularisation of EVs in the region will in turn help us further expand. We provide the ultimate solution for key challenges in achieving decarbonisation goals.

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SAFETY
QUALITY
SERVICE
EFFICIENCY



Making compressors sustainable and green

ULTIMA compressors from CompAir are 100% oil and silicone- free and meet the ISO 8573-1 Class Zero standard.

THE GLOBAL AIR COMPRESSOR market size was valued at US\$33.31bn in 2021 and is expected to grow rapidly owing to the surging demand for the air compressors across various end use verticals such as food and beverages, mining, electronics, healthcare/medical, oil and gas, construction and others.

The constant product launches by major market players is further fuelling the growth of the market across the globe. The demand for the highly durable air compressor is rising for applications in the drilling process.

However, it is important to create compressors that are sustainable and environment-friendly. Compressed air accounts for a significant part of total energy costs for Europe's industrial manufacturers – typically around 10% and as high as 40% in some plants. That equates to more than 10TWh of electricity every year and some 4.3 mn tonnes of CO₂. Energy costs make up 80% of a compressor's total cost of ownership so investing in environment-friendly machines, and optimising existing systems that use less energy, can significantly reduce the production cost of compressed air.

Beyond adhering to industry standards there are further steps site owners operating in production-sensitive environments can take to guarantee clean and reliable compressed air supply with environmental benefits. In the past, high-quality air and energy savings have been achieved by using oil-lubricated compressors that rely on filtration to protect products and equipment from the effects of contamination. However, for a growing number of operators seeking absolute assurance that there is no risk of contamination, oil-free solutions are the preferred option.

ULTIMA oil-free technology

Delivering significant increases in efficiency and exceeding environmental targets, ULTIMA compressors from CompAir are 100% oil and silicone- free and meet the ISO 8573-1 Class Zero standard (2010), making them the ideal choice for stringent oil-free applications for instance, within food and beverage, pharmaceutical,

ULTIMA has two permanent magnetic motors that replace the gearbox design. The variable-speed motors can achieve speeds of up to 22,000rpm.



While conventional models still use oil to lubricate and cool a system's motors and airends, ULTIMA uses water in a closed-loop circuit to cool these components.

and electronic industries.

A major drawback that traditional two-stage oil-free compressors have is their reliance on a gearbox. Not only does this consume large amounts of energy but requires high volumes of oil to lubricate the gears. ULTIMA has two permanent magnetic motors that replace this gearbox design. The variable-speed motors can achieve speeds of up to 22,000rpm and efficiencies greater than IE4, also allowing the airends to be driven at different speeds dependant on demand. Also, while conventional models still use oil to lubricate and cool a system's motors and airends, ULTIMA uses water in a closed-loop circuit to cool these components. This allows greater heat transfer and cooling efficiencies, as well as ensuring as little oil as possible is used in the system for assured air purity.

CompAir's new 160, 200 and 250 kW FourCore compressor has been designed with reducing waste and improving sustainability throughout the entire product lifecycle in mind. This has resulted in a system that not only runs more efficiently than alternative compressor technologies, but one that has been created with sustainability at its heart.

Atlas Copco, a world-leading provider of sustainable productivity solutions has also stated the reasons to switch from diesel portable compressors to zero-emission electric. Here is a look at some.

Versatile: The combination of zero emissions and almost zero noise means compressors can work indoors, and the lack of moving parts (and their insulation from the elements) compared to an ICE compressor means they can work in extreme conditions of temperature and dust with total protection from the elements.

Consumer demand: Carbon reductions will become a more important differentiator as more and more companies publicly commit to more ambitious targets, and the industry is now waking up to the fact that compressors are perfect to go electric. It is likely that ambitions to go green will accelerate rather than slow down because the people demand it.

The combination of zero emissions and almost zero noise allows compressors to work indoors, and the lack of moving parts allows them to work in extreme conditions.



Atlas Copco's electric motors work at more than 90% efficiency.

Photo Credit: Atlas Copco

Maintenance: Electric compressors have far fewer parts than their diesel alternative, period. This means less to go wrong and maintain. Service intervals are four times longer for diesel compressors – from 500 hours – compared to 2,000 for the E-Air range.

Efficient: Atlas Copco's electric motors work at more than 90% efficiency, leaving diesel engines' 35% efficiency in the dust. For sites that use gensets, they are often working at very low levels of capacity- inefficiently low in fact.

Cost effective: Over the course of their lives, the total cost of ownership for an electric compressor is cut considerably in comparison to diesel-run variations. Atlas Copco's E-Air H185 compressor working at 75% load will, for example, cost US\$20,374 less to run over the course of its life than a comparable ICE powered unit – cutting 41,400 kg of CO2 in the process. ■

IEA report emphasises role of nuclear power in energy transition

AS THE WORLD contends with a global energy crisis, nuclear power has the potential to play a significant role in helping countries to securely transition to energy systems dominated by renewables, according to a new special report by the IEA.

In countries that choose to continue or increase their use of nuclear power, it can reduce reliance on imported fossil fuels, cut carbon dioxide emissions and enable electricity systems to integrate higher shares of solar and wind power.

Building sustainable and clean energy systems will be harder, riskier and more expensive without nuclear, according to the new report, *Nuclear power and secure energy transitions: From today's challenges to tomorrow's clean energy systems*.

Nuclear is today the second largest source of low emissions power after hydropower, with nuclear plants in 32 countries. About 63% of today's nuclear generating capacity comes from plants that are more than 30 years old, since many were built in the aftermath of the 1970s oil shocks. But a range of both advanced and emerging economies have recently announced energy strategies that include substantial roles for nuclear power as well



Building sustainable and clean energy systems will be riskier and expensive without nuclear power, says IEA report.

Photo Credit: Adobe Stock

as considerable financial incentives to invest in it.

"In today's context of the global energy crisis, sky-rocketing fossil fuel prices, energy security challenges and ambitious climate commitments, I believe nuclear power has a unique opportunity to stage a comeback," said IEA Executive Director Fatih Birol.

"However, a new era for nuclear power is by no means guaranteed. It will depend on governments putting in place robust policies to ensure safe and sustainable operation of nuclear plants for years to come – and to mobilise the necessary investments including in new technologies. And the nuclear industry must quickly address the issues of cost overruns and project delays

that have bedevilled the construction of new plants in advanced economies. As a result, advanced economies have lost market leadership, as 27 out of 31 reactors that started construction since 2017 are Russian or Chinese designs."

In the IEA's global pathway to reach Net Zero Emissions by 2050, nuclear power doubles between 2020 and 2050, with construction of new plants needed in all countries that are open to the technology. Even so, by mid-century, nuclear only accounts for 8% of the global power mix, which is dominated by renewables.

Despite moves to extend the lifetimes of some existing plants, the nuclear fleet operating in advanced economies could shrink by one-third by 2030 without further efforts. While plant lifetime extensions require substantial investment, they generally yield a cost of electricity that is competitive with wind and solar in most regions. Robust policies are needed to support the use of nuclear power and enhance its safety, but the industry also must do a better job at delivering projects below cost and within budget to guarantee that nuclear-generated electricity is competitive, the report stated.

Efficient cooling with LG Inverter Ducted Split

The air solution offers energy-saving technology, powerful performance, easy control, and antimicrobial treatment for any business space.

The LG Inverter Ducted Split is equipped with LG Inverter Compressor which ensures high energy savings and enhances its durability and reliability.



Photo Credit : LG Electronics

IN THE INTENSE summer heat, many organisations look for efficient air solutions that would provide powerful cooling performance without consuming intolerable amounts of energy and affecting interior aesthetics. Understanding those needs, LG Electronics (LG) offers the LG Inverter Ducted Split which provides highly efficient cooling and heating performance while saving energy and being easy to control and integrate into the business interiors.

Energy efficiency

Designed to provide optimal temperature control and at the same time optimise

energy consumption, the LG Inverter Ducted Split is equipped with LG Inverter Compressor which ensures high energy savings and enhances its durability and reliability. It adjusts the output according to the outside temperatures, thus offering maximum energy efficiency. Additionally, the Dual Sensing Technology senses both humidity and temperature to ensure comfortable operation by providing a pleasant and comfortable cooling environment with reduced energy consumption.

Easy installation and control

The LG Inverter Ducted Split is easy to

install, as well as easy to control with the ESP (External Static Pressure) control function with a remote controller. This allows users to control the air volume rate and fan speed regardless of the external static pressure. The LG Inverter Ducted Split can also be controlled via wi-fi using Android or iOS based smartphones.

Antimicrobial treatment

Understanding the need for increased air quality in the summer, LG equipped its Inverter Ducted Split with Safe Plus Insulation (available in select models), an antimicrobial treatment applied to the internal components of the indoor unit to prevent the growth of mold. This allows the Inverter Ducted Split to deliver a cleaner, healthier airflow and ensure pleasant cooling environment in the business space. ■

*To learn more about LG Inverter Ducted Split, please visit:
<https://www.lg.com/ae/business/single-split-concealed-duct>*

The Dual Sensing Technology senses both humidity and temperature to ensure comfortable operation by providing a pleasant and comfortable cooling environment with reduced energy consumption.

Briefly

Honeywell to help realise carbon neutral buildings

HONEYWELL, THE BUILDING technologies, performance materials and technologies, and safety and productivity solutions company is working on its new 'Carbon & Energy Management', a carbon energy management software, that enables building owners to track and optimise energy performance against carbon reduction goals, down to a device or asset level.

Carbon & Energy Management is the centrepiece of Honeywell's new 'Sustainable Buildings' solutions portfolio, which is geared to help building owners and operators meet two pressing, yet often conflicting, objectives: reducing the environmental impact of buildings while optimising indoor air quality to support occupant well-being, with the aim of helping them to meet carbon neutral goals.

According to Honeywell, companies face increasing pressure today – from stakeholders as well as regulatory agencies – to curb energy consumption, reduce carbon emissions and create more sustainable, healthier facilities. There's an urgent reason for this: commercial buildings currently account for almost a third of global energy consumption and 37% of global energy-related CO₂ emissions.

Continental and Y K Almoayyed & Sons partner in Bahrain

CONTINENTAL HAS SIGNED a partnership with YK Almoayyed & Sons as the official distributor for Continental tyres in the Kingdom of Bahrain.

The signing ceremony was held at the YK Almoayyed & Sons head office in Manama by Karel Kucera, managing director of Continental Middle East, and Farouk Yousuf Almoayyed, chairman of YKA Group, in the presence of Werner Grohe – deputy head of mission, German Embassy Bahrain. The agreement between the two companies follows a series of developments that have seen the German tyre manufacturer significantly enhance its support for customers across Bahrain.

Omnix collaborates with Abu Dhabi for smart infrastructure projects initiative

OMNIX, AN END-TO-END digital solutions and services provider, has taken the lead in highlighting the importance of Building Information Modelling (BIM). This comes at a time when BIM is ready to be mandated by the Abu Dhabi Municipality across all infrastructure projects irrespective of size, stage or discipline. Over the past few months, Omnix along with Abu Dhabi Municipality and Autodesk, has developed and conducted several online as well as in-person panel discussions and roundtables that have provided Architecture, Engineering and Construction (AEC) customers with deeper insights into making the smooth transition to BIM.

BIM is an intelligent 3D model-based process that gives architecture, engineering, and construction (AEC) professionals the insight and tools to plan, design, construct and manage buildings and infrastructure more efficiently. BIM collaboration software makes the construction process more accessible by putting models into the hands of the entire project team in a coordinated fashion to accelerate reviews and identify and resolve challenges earlier. This eliminates many inefficiencies in the planning phase, saving costs during the construction process. McKinsey found that 75% of companies that have adopted BIM reported positive returns on their investments.

Speaking on the education process, Simran Bagga, head of engineering, Omnix International, said, "We understand how important it is for us to educate customers on the upcoming BIM mandates. The events that Omnix has been conducting are not only facilitating this objective but are also playing a huge part in bringing together industry leaders and peers and enabling discussions around BIM software and how the city can benefit from it."



Simran Bagga, head of engineering, Omnix International.

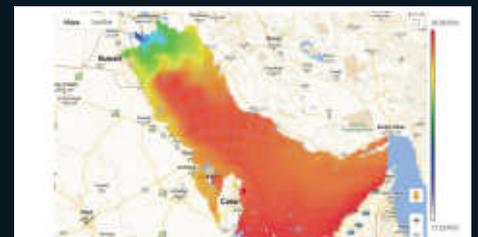
Omnix has made major inroads into educating customers by facilitating platforms, where they can interact with industry leaders and understand the importance of BIM. The company has helped organisations embark on their digital transformation journeys, where all stakeholders ranging from designers to consultants, contractors and architects understand how their role will be transformed and the protocols they need to adhere to. Additionally, it is necessary for all CAD users to learn and understand how they can leverage different Autodesk software solutions to round off the implementation process and close the loop.

Photo Credit : Omnix International

ACCIONA deploys satellites to forecast seawater quality

ACCIONA, ONE OF the leading operators of desalination plants in the Middle East, has developed a predictive model for seawater quality that is improving the operation of Sea Water Reverse Osmosis (SWRO) plants in the region.

The predictive model uses satellite measurements and Artificial Intelligence (AI) tools to forecast the quality of water reaching desalination plants. Algae bloom, oil spills and jellyfish are just some of the phenomena that can clog the filtering systems of desalination plants and cause operations to shut down. But with sufficient warning, desalination plants can stop the extraneous matter from entering filtering systems. Guillermo Hijós, operations and maintenance director of ACCIONA water



The predictive model uses satellite measurements and Artificial Intelligence (AI) tools to forecast the quality of water reaching desalination plants.

solutions, Middle East said, "With this model, we can forecast the future turbidity of seawater, and this gives our operations teams advance warning of any event that could compromise operations or scheduled maintenance activities."

Photo Credit : ACCIONA

Construction Buyers' Guide 2022

The Middle East's annual where-to-buy guide

Section One: Listings by category

Section Two: Suppliers of construction & mining equipment and services

Section Three: Contact details of MENA region agents, distributors and subsidiaries listed alphabetically by country

Section One: Listings by category

AIR COMPRESSORS

Cummins Middle East FZE
Doosan Portable Power
Rotair Spa

AIR CONDITIONING

Aggreko Middle East Ltd.
LG Electronics Gulf FZE

ALTERNATORS FOR GENSETS

Linz Electric S.p.A.

ASPHALT PLANT

Ammann Group
ERMONT
Lintec & Linnhoff Holdings Pte Ltd
Marini S.p.A.

ATTACHMENTS AND ACCESSORIES

Bobcat
Caterpillar SARL Dubai Branch
MB Crusher

BACKHOE LOADERS

Balkrishna Industries Ltd. (BKT)
Bobcat
Caterpillar SARL Dubai Branch

BATCHING PLANT

Ammann Group
CIFA S.p.A.
Lintec & Linnhoff Holdings Pte Ltd
Vortex Hydra S.r.l.

BLOCK/TILE - MAKING EQUIPMENT

Vortex Hydra S.r.l.

BREAKERS

Bobcat
Doosan Portable Power
Keestrack

BUILDINGS

COELMO spa
Polycon Gulf Ltd.

COMPACTION EQUIPMENT

Ammann Group
Caterpillar SARL Dubai Branch
Doosan Portable Power

COMPONENTS AND ACCESSORIES

Deep Sea Electronics Ltd
Eland Cables
Hi-Force Ltd.

COMPONENTS AND SPARE PARTS

COELMO spa
Eland Cables
ENEXIO Water Technologies GmbH
Leroy-Somer Nidec Group
Liebherr-Export AG
Marini S.p.A.
WIRTGEN GROUP, Branch of
John Deere GmbH & Co. KG

CONCRETE

CIFA S.p.A.
Liebherr-Export AG

CONCRETE EQUIPMENT - OTHER

Bobcat
CIFA S.p.A.
Doosan Portable Power
Lintec & Linnhoff Holdings Pte Ltd
Vortex Hydra S.r.l.

CONCRETE PUMPS

CIFA S.p.A.

CONCRETE EQUIPMENT

Iveco Astra
Liebherr-Export AG
Trelawny Spt Ltd.
Vortex Hydra S.r.l.

CONSTRUCTION VEHICLES - OTHER

Caterpillar SARL Dubai Branch
Iveco Astra
Liebherr-Export AG
TII SCHEUERLE

CONSTRUCTION VEHICLES

Caterpillar SARL Dubai Branch
Goldhofer AG
Iveco Astra
Liebherr-Export AG
Perkins Engines Company Limited.
ROKBAK (formerly Terex Trucks)
Volvo Construction Equipment
Germany GmbH

CONSULTANCY SERVICES

Cummins Middle East FZE
ENEXIO Water Technologies GmbH

CRANES

Balkrishna Industries Ltd. (BKT)
Liebherr-Export AG
Raimondi Cranes

CRUSHING, SCREENING AND WASHING

Keestrack
MB Crusher
Rockster Austria International GmbH
Terex Minerals Processing Systems
WIRTGEN GROUP, Branch of
John Deere GmbH & Co. KG

DEMOLITION EQUIPMENT

Bobcat
Doosan Portable Power
Liebherr-Export AG
MB Crusher
Volvo Construction Equipment
Germany GmbH

DIESEL DRIVEN

Aggreko Middle East Ltd.
Deep Sea Electronics Ltd
Doosan Portable Power
Kirkoskar Oil Engines Ltd.
Perkins Engines Company Limited.
Rotair Spa

DOZERS

Caterpillar SARL Dubai Branch
Liebherr-Export AG

DRILLING

Eland Cables
ENEXIO Water Technologies GmbH

DRILLING - OTHER

Doosan Portable Power

DRILLING MACHINERY AND PLANT

Herrenknecht AG

DUMP TRUCKS AND HAULERS

Balkrishna Industries Ltd. (BKT)
Caterpillar SARL Dubai Branch
Iveco Astra
Kleyn Trucks
ROKBAK (formerly Terex Trucks)
Terex Washing Systems

DUMPSTERS

Liebherr-Export AG
Terex Washing Systems

EARTHMOVING EQUIPMENT - OTHER

Bobcat
Caterpillar SARL Dubai Branch
Kirkoskar Oil Engines Ltd.
Liebherr-Export AG
Terex Washing Systems

EARTHMOVING EQUIPMENT

Bobcat
Caterpillar SARL Dubai Branch
Iveco Astra
Liebherr-Export AG
MB Crusher
Perkins Engines Company Limited.
Volvo Construction Equipment
Germany GmbH

ELECTRIC

Aggreko Middle East Ltd.
COELMO spa

ENGINES, COMPONENTS AND ACCESSORIES

Aksa Power Generation
Caterpillar SARL Dubai Branch
COELMO spa
Deep Sea Electronics Ltd
Jubaili Bros
Kirkoskar Oil Engines Ltd.
Kleyn Trucks
Perkins Engines Company Limited.
Volvo Penta

EQUIPMENT

Jubaili Bros
Vortex Hydra S.r.l.

EXCAVATORS

Bobcat
Caterpillar SARL Dubai Branch
Liebherr-Export AG
Yanmar Europe B.V.

FABRICATION AND STRUCTURES

Kirby Building Systems

FORMWORK

Herrenknecht AG
PASCHAL-Werk G. Maier GmbH
Sucoot Co., LTD

GRINDING EQUIPMENT

Trelawny Spt Ltd.

HOISTS

Liebherr-Export AG

HYDRAULIC

Hi-Force Ltd.

JACKING EQUIPMENT

Hi-Force Ltd.

LIFTING EQUIPMENT

Eland Cables
Hi-Force Ltd.
Liebherr-Export AG
Perkins Engines Company Limited.

LIGHTING MASTS/TOWERS

Aksa Power Generation
Doosan Portable Power
Jubaili Bros
Kohler Power Systems EMEA
SAB, Standard Aggregatebau
Evers GMBH & CO. KG
Visa S.p.A.
Yanmar Europe B.V.

LOADERS - OTHER

Bobcat
Caterpillar SARL Dubai Branch
Liebherr-Export AG
Yanmar Europe B.V.

MATERIALS

Eland Cables

MECHANICAL

Hi-Force Ltd.

MINI-EXCAVATORS

Bobcat
Caterpillar SARL Dubai Branch
Liebherr-Export AG

MOBILE MIXING PLANT

ERMONT
Lintec & Linnhoff Holdings Pte Ltd

MOBILE POWER SUPPLY UNITS

Aggreko Middle East Ltd.
Aksa Power Generation
Cummins Middle East FZE
Doosan Portable Power
Eland Cables
Jubaili Bros
Kirkoskar Oil Engines Ltd.
Kohler Power Systems EMEA
Linz Electric S.p.A.
SAB, Standard Aggregatebau
Evers GMBH & CO. KG
Visa S.p.A.

MOTOR GRADERS

Balkrishna Industries Ltd. (BKT)
Caterpillar SARL Dubai Branch

OTHER SITE EQUIPMENT AND MATERIALS

Bobcat
COELMO spa
Cummins Middle East FZE
Doosan Portable Power
Eland Cables
ENEXIO Water Technologies GmbH
Polycon Gulf Ltd.

PAVERS

Ammann Group
Caterpillar SARL Dubai Branch

PETROL DRIVEN

Rotair Spa

PIPE MAKING EQUIPMENT

MB Crusher

PIPES

ENEXIO Water Technologies GmbH
Polycon Gulf Ltd.

PNEUMATIC

Doosan Portable Power
Hi-Force Ltd.
Trelawny Spt Ltd.

PUMPING EQUIPMENT - OTHER

Deep Sea Electronics Ltd
Kirkloskar Oil Engines Ltd.
Yanmar Europe B.V.

PUMPING EQUIPMENT

Eland Cables
ENEXIO Water Technologies GmbH
Polycon Gulf Ltd.
Visa S.p.A.

QUARRYING

Doosan Portable Power
Liebherr-Export AG
Terex Minerals Processing Systems

RECYCLING

Keestrack
Liebherr-Export AG
Marini S.p.A.
MB Crusher
Terex Minerals Processing Systems

RENTAL EQUIPMENT

Aggreko Middle East Ltd.
Aksa Power Generation
Caterpillar SARL Dubai Branch
Cummins Middle East FZE
Herrenknecht AG
Hi-Force Ltd.
Jubaili Bros
Peter Berghaus GmbH
ROKBAK (formerly Terex Trucks)
Rotair Spa
Visa S.p.A.

ROAD BUILDING EQUIPMENT - OTHER

Bobcat
Caterpillar SARL Dubai Branch
Doosan Portable Power
Lintec & Linnhoff Holdings Pte Ltd
Marini S.p.A.
Peter Berghaus GmbH
Rotair Spa

ROAD MARKING

Peter Berghaus GmbH
Rotair Spa

ROAD BUILDING EQUIPMENT

Bobcat
Caterpillar SARL Dubai Branch
Doosan Portable Power
Liebherr-Export AG
Polycon Gulf Ltd.
Volvo Construction Equipment Germany GmbH
WIRTGEN GROUP, Branch of John Deere GmbH & Co. KG

ROLLERS

Ammann Group
Caterpillar SARL Dubai Branch

SAND BLASTING EQUIPMENT

Doosan Portable Power
Rotair Spa

SCAFFOLDING

PASCHAL-Werk G. Maier GmbH
Sucoot Co., LTD
Wilhelm Layher GmbH & Co KG

SCRAPERS

Caterpillar SARL Dubai Branch
Trelawny Spt Ltd.

SERVICES

PASCHAL-Werk G. Maier GmbH

SITE DUMPERS

Caterpillar SARL Dubai Branch
Kleyn Trucks

SKIDSTEER LOADERS

Balkrishna Industries Ltd. (BKT)
Bobcat
Caterpillar SARL Dubai Branch

SOFTWARE

PASCHAL-Werk G. Maier GmbH

TELESCOPIC HANDLERS

Bobcat

TOOLS

Doosan Portable Power
Hi-Force Ltd.

TOOLS - OTHER

Hi-Force Ltd.

TRACTORS

Caterpillar SARL Dubai Branch
Goldhofer AG
Kleyn Trucks

TRAILERS

Cometto S.p.A.
FAYMONVILLE DISTRIBUTION AG
Goldhofer AG
Kleyn Trucks
TII SCHEUERLE

TRUCK MOUNTED

CIFA S.p.A.

TUNNELLING

Herrenknecht AG
Liebherr-Export AG

USED EQUIPMENT

Caterpillar SARL Dubai Branch
Herrenknecht AG
ROKBAK (formerly Terex Trucks)
Terex Minerals Processing Systems
Visa S.p.A.
Vortex Hydra S.r.l.

WELDING EQUIPMENT

Kohler Power Systems EMEA
Linz Electric S.p.A.

Section Two: Suppliers of construction & mining equipment and Services

Aggreko Middle East Ltd.

PO Box 16875
Jebel Ali Free Zone
Dubai
United Arab Emirates
Tel: +971 4 8086100
Fax: +971 4 8831825
Web: www.aggreko.com
E-mail: rentals@aggreko.ae

Aksa Power Generation

Rüzgarlıbahçe Quarter
Ozalp Stalemate No: 10
34805 Kavacik
Beykoz - Istanbul
Turkey
Tel: +90 216 6810000
Fax: +90 216 6815791
Web: www.aksa.com.tr/en-us/
E-mail: aksa@aksa.com.tr

Agents:

Iraq - Aksa Power Generation IRAQ
Sudan - Aksa Power Generation (Sudan)
United Arab Emirates - Aksa Power Generation FZE

Ammann Group

Eisenbahnstrasse 25
Langenthal
4901
Switzerland
Tel: +41 62 9166161
Fax: +41 62 916402
Web: www.ammann.com
E-mail: info.aag@ammann.com

Agents:

United Arab Emirates - Ammann NME FZE

Balkrishna Industries Ltd. (BKT)

BKT House
C-15, Trade World
Kamala Mills Compound
Lower Parel
Mumbai
400013
India
Tel: +91 22 66663800
Fax: +91 22 66663898
Web: www.bkt-tires.com
E-mail: mena@bkt-tires.com

Bobcat

PO Box 262688
JLT Platinum Tower
Cluster I
Level 18
Office 1802
Dubai
United Arab Emirates
Tel: +971 4 2767206
Fax: +971 4 2767204
Web: www.bobcat.com
E-mail: gaby.rhayem@doosan.com

Agents:

Bahrain - Yusuf Bin Ahmed Kanoo Co. WLL
Egypt - Otrac Heavy Equipment
Iraq - Vara Company for General Trading LTD
Kuwait - Bahrah Trading Co. WLL
Libya - Danah for Import of Road Equipment and Heavy Machinery
Oman - International Heavy Equipment LLC
Qatar - Jaidah Motors & Trading Co.
Saudi Arabia - General Trading & Equipment
United Arab Emirates - Kanoo Machinery LLC
Yemen - Blue Triangle Trading LTD

Brentwood® | ENEXIO Water Technologies

Robert-Bosch-Str. 2a
Huerth, 50354,
Germany
Tel: +492233 39828 0
Fax: +49 2233 39828 20
Web: www.enexio-water-technologies.com
E-mail: info@enexio-water-technologies.com

Agents:

Egypt - Orbis Trading
United Arab Emirates - KELVION FZCO

Cat Lift Trucks

Hefbrugweg 77, Almere
1332 AC, Netherlands
Tel: +31 36 5494411
Web: www.catlifttruck.com
E-mail: info@catlifttruck.com

Agents:

Bahrain - Mohamed Abdulrahman Al-Bahar Bahrain
Iraq - Mantrac Group Iraq (Cat)
Jordan - Jordan Tractor & Equipment Co. Ltd. (Cat)
Kuwait - Mohamed Abdulrahman Al-Bahar Kuwait
Lebanon - M. Ezzat Jallad & Fils (Lebanon)
Oman - Oasis Trading & Equipment Co. LLC
Qatar - Mohamed Abdulrahman Al-Bahar Qatar
Saudi Arabia - Zahid Tractor & Heavy Machinery Co. Ltd.
United Arab Emirates - Mohamed Abdulrahman Al-Bahar Al Ain
United Arab Emirates - Mohamed Abdulrahman Al-Bahar Dubai
United Arab Emirates - Mohamed Abdulrahman Al-Bahar Abu Dhabi
United Arab Emirates - Mohamed Abdulrahman Al-Bahar Sharjah
Yemen - The Tehama Trading Co. (CAT Lift Trucks)

Caterpillar Electric Power

USA
Web: www.cat.com/demand_cat
E-mail: Electric_Power@cat.com
Agents:
United Arab Emirates - Caterpillar SARL Branch

Caterpillar SARL Dubai Branch

PO Box 262147
Jebel Ali Free Zone (South)
Dubai
United Arab Emirates
Tel: +971 4 8106464
Fax: +971 4 8106465
Web: www.cat.com
Agents:
Bahrain - Mohamed Abdulrahman Al-Bahar Bahrain
Egypt - Mantrac SAE
Iraq - Iraqi Co. for Machinery and Equipment Service (Cat SRL)
Jordan - Jordan Tractor & Equipment Co. Ltd. (Cat)
Kuwait - Mohamed Abdulrahman Al-Bahar Kuwait
Lebanon - M. Ezzat Jallad & Fils (Lebanon)
Morocco - Tractraffic Equipement
Oman - Oasis Trading & Equipment Co. LLC
Qatar - Mohamed Abdulrahman Al-Bahar Qatar
Saudi Arabia - Zahid Tractor & Heavy Machinery Co. Ltd.
Tunisia - Parenin
United Arab Emirates - Mohamed Abdulrahman Al-Bahar Dubai
United Arab Emirates - Mohamed Abdulrahman Al-Bahar Abu Dhabi
United Arab Emirates - Mohamed Abdulrahman Al-Bahar Sharjah
Yemen - Tehama Trading

CIFA S.p.A.

Via Stati Uniti D'America 26
Senago
Milano
20030
Italy

Tel: +39 02 990131
Fax: +39 02 9981157
Web: www.cifa.com
E-mail: info@cifa.com

CIFA is a company that for more than 90 years has been designing, producing and distributing innovation in the concrete field. It is a full liner with a complete range of products for production, transportation and laying of concrete. CIFA belongs to the Zoomlion group.

Agents:
United Arab Emirates - Zoomlion Gulf FZE

COELMO spa

Via Delle Industrie, 278
Agglomerato Industriale ASI
Acerra (NA), 80011, Italy
Tel: +39 081 8039731
Fax: +39 081 8039724
Web: www.coelmo.it
E-mail: sales@coelmo.it
info@coelmo.it

Agents:
United Arab Emirates - COELMO (DMCC Branch)

Cometto S.p.A.

Via Cuneo, 20, 12011 Borgo San
Dalmazzo (CN), Italy
Tel: +39 0171 26 33 00
Fax: +39 0171 26 63 35
Web: www.cometto.com
E-mail: cometto@cometto.com

Cummins Middle East FZE

PO Box 17636
South Zone 2, Jebel Ali Free Zone
Dubai, United Arab Emirates
Tel: +971 4 8809911
Fax: +971 4 8860518/9
Web: www.cummins.com
E-mail:
cummins.middleeast@cummins.com

Deep Sea Electronics Ltd

Highfield House, Hunmanby
Industrial Estate, Hunmanby
North Yorkshire
YO14 0PH, United Kingdom
Tel: +44 (0) 1723 890099
Web: www.deepseaelectronics.com
E-mail: sales@deepseaelectronics.com

UK designed & manufactured single-set and multi-set genset controllers, hybrid genset controllers, lighting tower controllers and specialist remote communications solutions, programmable displays and controllers for off-highway vehicles, commercial battery chargers and automatic transfer switch controllers.

Agents:
United Arab Emirates - Deep Sea Electronics
(DMCC Branch)

Doosan Portable Power

PO Box 262688, JLT Platinum Tower
Cluster I, Level 18, Office 1802
Dubai, United Arab Emirates
Tel: +971 4 2767206
Fax: +971 4 2767204
Web: www.doosanportablepower.com
E-mail: gaby.rhayem@doosan.com

Agents:
Bahrain - Mohammed Jalal & Sons WLL
Egypt - Otrac Heavy Equipment Co. (Doosan Portable)
Ethiopia - My Wish Enterprises PLC
Iraq - VARA machinery
Jordan - Toolbox
Kuwait - Bahrah Trading Co. WLL
Libya - Gunny Oilfield Services
Mauritius - Prime Plant Company Limited
Oman - General Engineering Services (GENSERV)
Qatar - Jaidah Group
Saudi Arabia - Saudi Diesel Equipment
Saudi Arabia - The Machinery Group LLC
United Arab Emirates - Al Futtaim Auto & Machinery Co. LLC
Yemen - Blue Triangle Trading LTD

Eland Cables

120 Highgate Studios
53-79 Highgate Road
NW5 1TL, United Kingdom
Tel: +44 20 72418787
Web: www.elandcables.com
E-mail: sales@elandcables.com

ERMONT

Rue JP Timbaud, 42420 Lorette, France
Tel: +33 477735265
Fax: +33477734885
Web: www.ermont.fayat.com
E-mail: info@ermont.fayat.com

FAYMONVILLE DISTRIBUTION AG

Duarrefstroos, 8
9990 Weiswampach, Luxembourg
Tel: +352 26 90 04 421
Fax: +352 26 90 04 425
Web: www.faymonville.com
E-mail: info@faymonville.com

Goldhofer AG

Donaustrasse 95
87700, Memmingen, Germany
Tel: +49 8331 15-0
Web: www.goldhofer.com
E-mail: info@goldhofer.com

Herrenknecht AG

Schlehenweg 2
Schwanau, 77963, Germany
Tel: +49 7824 3020
Fax: +49 7824 3403
Web: www.herrenknecht.com
E-mail: pr@herrenknecht.com

Agents:
United Arab Emirates - Herrenknecht Middle East FZE

Hi-Force Ltd.

Prospect Way, Daventry
Northants, NN11 8PL, UK
Tel: +44 1327 301000
Web: www.hi-force.com
E-mail: daventry@hi-force.com

Agents:
Saudi Arabia - Jassem Ibrahim M. J Al Shikar Est.
United Arab Emirates - Ebrahim Al Shaker Industrial
Equipment Trading LLC
United Arab Emirates - Hi-Force FZE
United Arab Emirates - Hi-Force Hydraulics

IVECO S.p.A.

Via Puglia 35
10156
Turin
Italy
Web: www.iveco.com

Agents:
Israel - Samelet Motors Ltd.
Iraq - MTT - Machine Technology Trading Co.
Jordan - Global Brand For Trucks Ltd.
Kuwait - Kuwait Automotive Imports Co. W.L.L.
(KAICO)
Lebanon - Omatra Liban S.a.r.l.
Oman - International Integrated Equipment LLC
Palestine - TOMECO - Tower Mechanical Equipment
Qatar - Ibin Ajayan Trading Co. W.L.L.
Saudi Arabia - Arabian Auto Agency Company
W.L.L. - Jeddah
United Arab Emirates - Al Ghandi Automotive Group
United Arab Emirates - United Alsaqar Heavy
Equipment L.L.C.

JCB

J C Bamford Excavators Ltd.
Rocester
Staffordshire
England
ST14 5JP
United Kingdom
Tel: 0800 083 8015
E-mail: olga.kvokova@jcb.com
Web: www.jcb.com

Agents:
Turkey - SIF
United Arab Emirates - GB Equipment Solutions
Saudi Arabia - A. Abunayyan Trading
Saudi Arabia - WSCO
Egypt - Teckman Heavy Equipment

Jubaili Bros

Jebel Ali Free Zone
United Arab Emirates
Tel: +971 4 8832023
Fax: +971 4 8832053
Web: www.jubailibros.com
E-mail: jbdubai@jubailibros.com

Agents:
Kuwait - Jubaili Bros (Kuwait)
Lebanon - Jubaili Bros (Lebanon)
Qatar - Jubaili Bros WLL

Keestrack

Taunusweg 2
Bilzen
3740
Belgium
Tel: +32 89 515851
Web: www.keestrack.com
E-mail: info@keestrack.net

Agents:
Jordan - Green & Grey
Lebanon - Green & Grey
Qatar - Green & Grey

Kirby Building Systems

Kuwait HQ and Manufacturing
Facility
PO Box 23933
Safat 13100
Kuwait
Tel: +965 23262800
Fax: +965 23261793
Web: www.kirbyinternational.com
E-mail: Kirby@alghanim.com

Kirloskar Oil Engines Ltd.

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Khadki, Pune
Maharashtra
411003, India
Tel: +91 20 25810341 / 66084000
Fax: +91 20 25813208 / 25810209
Web: www.kirloskaroilengines.com/
E-mail: info@kirloskar.com /
nikhil.rao@kirloskar.com

Agents:
Kuwait - Boodai Trading Co. (Kirloskar)
Saudi Arabia - Abdullah Hashim Company Ltd.
United Arab Emirates - Al Shirawi Enterprises

Kleyn Trucks

Industrieweg 2
Vuren
4214KZ
Netherlands
Tel: +31 18 3668222
Fax: +31 18 3668243
Web: www.kleyntrucks.com
E-mail: salestrucks@kleyn.com

Kohler Power Systems EMEA

270 rue de Kerervern
29490 Guipavas
France
Tel: +33 2 98414141
Fax: +33 2 96416307
Web: www.kohler-sdmo.com

Agents:
United Arab Emirates - KPS-SDMO Middle East

LG Electronics Gulf FZE

Life's Good
34th Floor, Shatha Tower
Roud #82, Sofouh 2nd
TECOM, Dubai Media City
Dubai
United Arab Emirates
Tel: +971 4 2799222
Web: www.lge.com/ae
www.lg.com/ae.ar
E-mail: maryjane.zulueta@lge.com

LG Electronics Middle East & Africa is the regional headquarters for LG Electronics based in Dubai that oversees operations in 23 countries comprised of 12 subsidiaries, 11 branch offices & 3 manufacturing facilities. LG's world-leading products are an investment for the future that are made up of 4 forward-looking business units - Home Entertainment, Mobile Communications, Home Appliance & Air Solution, & Vehicle Components. For more information about LG Electronics, please visit www.lgnewsroom.com

Agents:
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Iran - Fan Va Tose EH Co. Ltd.
Jordan - Space for Technical Solutions - Global Smart Co
Oman - Saud Bahwan Projects & Equipment LLC
Qatar - Oriental Trading Co. Ltd.
Saudi Arabia - Arabian Trucks & Construction Equipment Co
Turkey - Marini Makina AS
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Iraq - Al-Ghalib Co. Ltd.
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Heavy Equipment and Machines
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Saudi Arabia - Abdullah Hashim Co. Ltd.
Tunisia - Sotradies
United Arab Emirates - Al-Futtaim Auto &
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Project Name	Country	City	Facility	Budget (US\$bn)	Status
Custodian of the Two Holy Mosques - Wellbeing Project	Saudi Arabia	Riyadh	Mixed-Use Development	23.0	PMC
DAEP - Al Maktoum International Airport Expansion - West Terminal Building & Concourse 1	U.A.E.	Dubai	Airport	33.0	EPC ITB
Dubai Holding - Mall of the World	U.A.E.	Dubai	Malls/Retail Outlets	22.0	PMC
EMAAR - MISA - King Abdullah Economic City (KAEC) - Overview	Saudi Arabia	Rabigh	Mixed-Use Development	27.0	Construction
Etihad Rail - Trans - Emirates Rail Network - Dubai to Northern Emirates	U.A.E.	Abu Dhabi	Railway	11.0	PMC
Gebze Organized Industrial Zone - Turkish Industrial Zone Announced	Oman	Duqm	Industrial Park	10.0	Project
HOJDC - KDC Limited - Heart of Jeddah	Saudi Arabia	Jeddah	Mixed-Use Development	11.0	Design
Jeddah Economic Company Ltd. Jeddah Economic City	Saudi Arabia	Jeddah	City	20.0	Construction
LREDC - Lusail City Development	Qatar	Lusail	Mixed-Use Development	45.0	Construction
Makkah Region Development Authority (MRDA) - Makkah - Al-Faisaliah City	Saudi Arabia	Makkah	City	145.0	Design
MASDAR - Masdar City	U.A.E.	Abu Dhabi	Mixed-Use Development	15.0	Construction
Ministry of Housing - Dahiyat Al Fursan Housing Development	Saudi Arabia	Riyadh	City	20.0	Engineering & Procurement
Ministry of Housing - Housing Units Development	Saudi Arabia	Various	Residential Development	40.0	Construction
Ministry of Interior (MOI) - Security Forces Riyadh Medical City	Saudi Arabia	Riyadh	Medical/Health Facilities/Spa	12.0	Construction
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Neom - Neom City - Overview	Saudi Arabia	Neom	City	500.0	Construction
Neom - Neom City - The Line - Overview	Saudi Arabia	Neom	Mixed-Use Development	200.0	EPC ITB
Neom - Oxagon - Overview	Saudi Arabia	Neom	Economic Zone, Port	10.0	EPC ITB
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Roshn - Sedra Housing Development	Saudi Arabia	Riyadh	Residential Development	10.0	Construction
Royal Commission for Al-Ula - Afalula - Al-Ula Development	Saudi Arabia	Medina	Mixed-Use Development	20.0	PMC ITB
Rua Al Madinah Holding Company (RAMH) - Rua Al Madinah Project	Saudi Arabia	Medina	Mixed-Use Development, Roads, Telecommunications	10.0	Engineering & Procurement
Supreme Committee for Delivery and Legacy - 2022 FIFA World Cup Stadiums	Qatar	Various	Sports Stadium/Facilities	16.0	Construction
Wasl Properties - Wasl Gate	U.A.E.	Dubai	Mixed-Use Development	10.0	Construction

Project Databank

Compiled by Data Media Systems

Project Focus

Compiled by Data Media Systems

Miral - SeaWorld Abu Dhabi

Name of Client	Miral Asset Management
Estimated Budget (US\$)	1,000,000,000
Contract Value (\$ US)	817,000,000
Award Date	2019-Q1
Main Contractor	ALEC
Facility Type	Theatre/Entertainment/Leisure Facilities
Status	Construction
Location	Yas Island, U.A.E.
Project Start	2016-Q4
End Date	2023-Q1

Background

Miral and SeaWorld Parks & Entertainment have confirmed the partnership to develop SeaWorld Abu Dhabi, a first-of-its-kind marine life themed park on Yas Island. The park will include marine life research, animal rescue and rehabilitation centre, which will open ahead of the park, and the theme park will focus on educating visitors about ocean conservation. The research centre will serve as a hub for scientists to broaden their understanding of indigenous marine species in the Gulf.

Project Status

Date	Status
Jul 2022	Miral has partnered with Emerge to deliver clean energy to SeaWorld Abu Dhabi. Solar photovoltaic (PV) systems will be installed at the rooftop of the marine-life mega development, including the main building, and will have a capacity of 8.2 megawatts.
Apr 2022	Construction works are set to be completed in Q4 2022. The project is slated for a 2023 opening.
Jan 2022	The final opening date of the SeaWorld Abu Dhabi is yet to be announced.
Oct 2021	SeaWorld Abu Dhabi project is on track. The client is working on the digitisation of the theme park.

Project Scope

The park will be indoors over five levels. The theme park is divided into six major areas, Abu Dhabi Ocean, Polar Ocean, Tropical Ocean, Endless Ocean, Sea of Delight, and Blue World. In addition to the main building, there are ancillary buildings outside the main building.

Works on the project include:

- Detailed designing and planning
- Construction
- Marine works
- Other associated works and facilities

Touted as the next generation of marine life theme parks, SeaWorld Abu Dhabi will also feature the new Yas SeaWorld Research and Rescue Centre, when it reaches completion.

ربع الطلب العالمي على الهيدروجين سيتوفر بحلول عام ٢٠٥٠



نصف الهيدروجين يُنقل من خلال خطوط أنابيب الغاز مما يوفر مبالغ طائلة من تكاليف النقل.

الأولى بعد إعادة استغلالها، مما يوفر مبالغ طائلة من تكاليف النقل، وسيتمثل شحن الأمونيا الخضراء معظم النصف الآخر؛ تجارة الهيدروجين العابرة للقارات بالدرجة الأولى. وبما أن الهيدروجين بات سلعة يتزايد تداولها دولياً، فليسوف يجذب قطاع الهيدروجين استثمارات كبيرة. إذ يتطلب تلبية الطلب العالمي استثمار ما يقارب 4 تريليونات دولار أمريكي بحلول عام 2050، وسيتعين على أدوات التمويل الراحية، لهدف التخلص من الانبعاثات الكربونية، زيادة الاستثمارات المطلوبة.

ويرى تقرير الوكالة الصادر بعنوان «آفاق تحولات الطاقة العالمية» أن الهيدروجين سيغطي نسبة 12 في المائة من الطلب العالمي على الطاقة، وسيقلل نسبة 10 في المائة من انبعاثات ثاني أكسيد الكربون بحلول عام 2050. ولكن لا يمكن أن يغدو الهيدروجين حلاً مناخياً عملياً إلا إذا كانت الطاقة اللازمة لإنتاجه مصاحبة لإنارة نظام الطاقة، مما يتطلب زيادة استغلال الطاقة المتجددة في عملية التحول.

وتشير التقارير الجديدة إلى أن نصف الهيدروجين يُنقل من خلال خطوط أنابيب الغاز الموجودة بالدرجة

لكي تصبح تكاليف إنتاج الهيدروجين الأخضر وتداوله أقل من الإنتاج المحلي لتعويض ارتفاع تكاليف النقل بحيث تصبح تجارة الهيدروجين مجدية من حيث التكلفة، ترى سلسلة تقارير جديدة للوكالة الدولية للطاقة المتجددة أن تجارة الهيدروجين سيكون لها دورٌ عظيم الأثر في جعل نظام الطاقة يتمتع بقدر أكبر من التنوع والصلابة.

يكشف تقرير «تجارة الهيدروجين العالمية ستحقق هدف وصول المناخ إلى 1,5 درجة مئوية» أهمية تجارة الهيدروجين في المستقبل. إذ تسمح هذه التجارة للبلدان بالاستفادة من الهيدروجين المتوفر بأسعار ميسورة في ظل تقدم حجم المشاريع ونضوج التكنولوجيا. ويمكن تلبية ربع الطلب العالمي على الهيدروجين من خلال التجارة الدولية عبر خطوط الأنابيب والسفن.

وفي ظل انخفاض تكاليف الطاقة المتجددة، وقدرة إمكانات الهيدروجين على تجاوز الطلب العالمي على الطاقة بمقدار 20 ضعفاً، فسوف تظل عملية إنتاج واستخدام ثلاثة أرباع الهيدروجين على مستوى العالم محلية خلال عام 2050، وهذا تغيرٌ كبيرٌ عن سوق النفط السائدة اليوم، حيث يجري تداول الجزء الأكبر منه دولياً.

وقال فرانسيسكو لا كاميرا، مدير عام الوكالة: «لن يكفي استغلال مصادر الطاقة المتجددة الوفيرة للفوز بسباق الهيدروجين، ولا بد كذلك من تطوير تجارة الهيدروجين. والحق أن تجارة الهيدروجين توفر فرصاً لا حصر لها؛ بدايةً من قطاع نزع الكربون ووصولاً إلى تنويع الإمدادات وتحسين أمن الطاقة. بل يمكن أن يصبح من يستوردون الطاقة اليوم مصدريها في الغد». واستطرد قائلاً: «ولكن على الحكومات أن تبذل جهوداً كبيرة لتحويل التطلعات التجارية إلى واقع ملموس. إذ يمكن أن يؤدي الجمع بين الابتكار ودعم السياسات وحجم الإنتاج إلى خفض اللازم للتكلفة، وإنشاء سوق عالمية للهيدروجين.

ولسوف يتوقف إدراك الإمكانات التجارية على سياسات البلدان وأولوياتها الاستثمارية وقدرتها على نزع الكربون من أنظمة الطاقة»

← مفكرة الفعاليات 2022

سبتمبر/أيلول

7 - 6 منتدى الشرق الأوسط وشمال أفريقيا للصحة والسلامة والبيئة دبي

أكتوبر/تشرين الأول

20 - 18 معرض ويتكس ومعرض دبي للطاقة الشمسية دبي

نوفمبر/تشرين الثاني

16 - 15 معرض التعدين دبي

ديسمبر/كانون الأول

8 - 5 معرض بيع فايف دب دبي



تهدف بلدية دبي إلى مساعدة الشركات على استخدام تقنية الطباعة ثلاثية الأبعاد

دبي تطلق أنشطة مقاولات البناء بتقنية الطباعة ثلاثية الأبعاد

أطلقت بلدية دبي عدة أنشطة فنية تركز على تقنية الطباعة ثلاثية الأبعاد؛ كاستشارات هندسة البناء ومقاولات البناء وصب الخرسانة الجاهزة، وذلك تماشياً مع «استراتيجية دبي للطباعة ثلاثية الأبعاد» التي أطلقها سمو الشيخ محمد بن راشد آل مكتوم، نائب رئيس دولة الإمارات ورئيس مجلس الوزراء وحاكم إمارة دبي.

والمصانع لبناء كافة أنواع المباني، من البداية إلى النهاية، وذلك باستخدام الطباعة ثلاثية الأبعاد وتقنية الذكاء الاصطناعي.

مسؤوليات البلدية

وفقاً للمرسوم رقم (24) لسنة 2021 بشأن تنظيم استخدام الطباعة ثلاثية الأبعاد في أعمال البناء في الإمارة، تعتبر بلدية دبي مسؤولة عن تنظيم هذه التقنية ومنح التراخيص ومراقبة أعمال البناء. كما تشمل مسؤولياتها تحديد الاختبارات الخاصة بالمواد الأولية والإضافات الصناعية والخلطات المستعملة في أعمال البناء وأي اختبارات أخرى للعناصر الإنشائية للمباني المشيدة باستخدام تقنية الطباعة ثلاثية الأبعاد. وستشرف البلدية على إنشاء قاعدة بيانات لأعمال البناء المنفذة في الإمارة باستخدام تقنية الطباعة ثلاثية الأبعاد، من أجل توفير المعلومات والبيانات اللازمة لوضع المواصفات والمقاييس الفنية، كما ستقوم البلدية بإجراء الدراسات والتجارب الفنية والتعاون مع الجهات البحثية والعلمية والهندسية المختصة في هذا المجال، وجدير بالذكر أن بلدية دبي دخلت «موسوعة جينيس للأرقام القياسية» لبناء أكبر مبنى مشيد بتقنية الطباعة ثلاثية الأبعاد في العالم. ويتكون هذا المبنى من طابقين بارتفاع 9,5 متر ومساحة إجمالية تبلغ 640 متراً مربعاً.

وفقاً للمرسوم رقم (24) لسنة 2021، تتولى بلدية دبي إنشاء وتطبيق نظام متكامل لتخطيط وتصميم وتنفيذ أعمال البناء باستخدام تقنية الطباعة ثلاثية الأبعاد حسب المعايير والمواصفات الهندسية المعتمدة.

وتعد هذه خطوة مهمة نحو الارتقاء بمكانة دبي الريادية كأول مدينة في العالم تعتمد استراتيجية للطباعة ثلاثية الأبعاد وتنظيم استخدام هذه التقنية المتقدمة في قطاع البناء. وقال المهندس داوود الهاجري، مدير عام بلدية دبي: «تعمل البلدية على تنظيم استخدام تقنية الطباعة ثلاثية الأبعاد عبر تنظيمها والتشجيع عليها وإعطاء الدعم والمشورة للشركات الناشئة في هذا المجال، ودعوة الشركات العالمية إلى الدخول في هذا المجال في دبي، فنحن نعمل على أن تكون دبي مركزاً لهذا النشاط».

وأضاف قائلاً: «تقنية الطباعة ثلاثية الأبعاد من التقنيات الحديثة التي أصبحت تتطور بدرجة ملموسة عالمياً في الكثير من القطاعات، ومن المفترض أن يساهم ذلك في تقليل الكلفة والوقت، وهو ما نسعى لتعزيزه وتشجيعه من خلال الأنشطة الجديدة التي استحدثتها بلدية دبي لقطاع الاستشاريين والمقاولين».

المزايا والأهداف

تهدف الأنشطة الجديدة لبلدية دبي إلى النهوض بدور الشركات الاستشارية والمقاولين

المحتويات

القسم العربي

تحليلات

دي تطلق أنشطة مقاولات البناء بتقنية الطباعة ثلاثية الأبعاد ٤
ربع الطلب العالمي على الهيدروجين سيتوفر بحلول عام 2050 ٥



ملخص محتويات القسم الإنجليزي

تحليلات: صناعة البناء في الشرق الأوسط تستعيد حيويتها.

الكسارات: ابتكارات.

المكثفات: استدامة المباني.

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التقرير السنوي للإدشاءات 2022

دبي تطلق أنشطة مقاولات البناء بتقنية الطباعة ثلاثية الأبعاد

تقنية الطباعة ثلاثية الأبعاد أصبحت تتطور سريعا في الكثير من القطاعات وتساهم في تقليل الكلفة والوقت