

TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

Vol 39/Issue One 2023

Mining

Sustainable solutions through digitalisation

Hydrogen economy

Exploring the potential

DYNAMIC GROWTH

SAUDI ARABIA WITNESSES
TRANSFORMATIVE STRUCTURAL REFORMS

Inside

The Big 5 Saudi
Smart Grids
Desalination
Digital Twins

SEE US AT THE SHOW



www.technicalreview.me

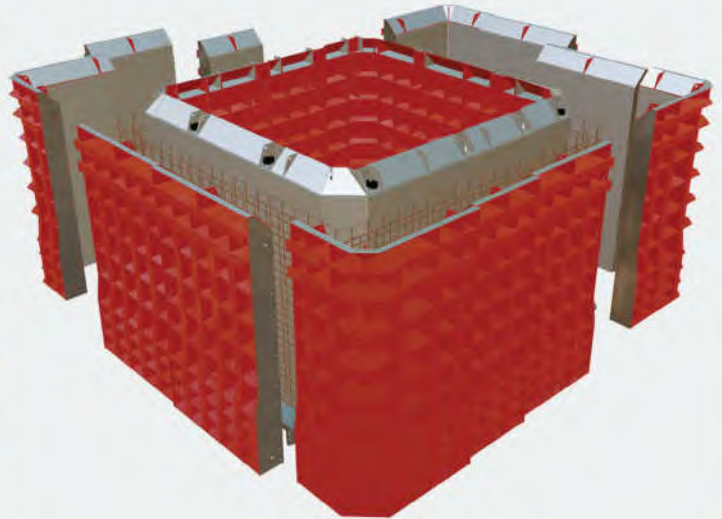
39 Years

1984 - 2023

Serving Middle East
Business

HawkeyePedershaab Modular Box Culvert Forms

One Mold Set. Many Sizes.



System Benefits:

The molds can be used in different plant configurations - either in a machine or egg-lay solution with many advantages over traditional wetcast production:

- **Make all box sizes with higher productivity and less labor.**
- **Pegged and machined mold components facilitate precise assembly.**
- **Strong design withstands vibration and stripping forces and dead-weight stresses without flexing or sagging.**

afinitas.com



Intelligent
Infrastructure
Solutions

Afinitas is a global, comprehensive and customer-oriented infrastructure equipment and services platform that brings together the expertise of HawkeyePedershaab, BFS, New Hampton Metal Fabrication, Spillman and CAM Products.

North America - +1 (319) 394-3197 | Denmark - +45 9645 4000 | Germany - +49 7344 96030

CONTENTS

BUSINESS & MANAGEMENT	
News	4
Sharjah Sustainable City celebrates milestones in sustainable living; CDE supports land remediation in Kuwait; Masdar to develop clean energy projects in Krygyzstan	
ANALYSIS	
Saudi Arabia	16
The economy is witnessing phenomenal transformation	
MINING	
Interview	22
FLSmith looks for sustainable solutions through digitalisation	
CONSTRUCTION	
Equipment	24
Doosan introduces wheel loader for ceramic floor tile industry	
The Big 5 Saudi	25
The 11th edition will be held from 18-21 February 2023	

POWER	
Smart Grids	28
Towards improved performance	
WATER	
Desalination	32
World Future Energy Summit report	
WASTEWATER	
ACCIONA recognised for construction, operation and financing three wastewater treatment plants in Saudi Arabia	33
TECHNOLOGY	
Digital Twins	36
Transforming cities and the future of construction	
AUTOMATION	
Digital Transformation	40
Advancements in the EMEA region	
ARABIC	
Analysis	48

EDITOR'S NOTE

TECHNICAL REVIEW MIDDLE East's first issue for this year takes a look at the leap that the Saudi economy is taking into the future. Our economist Moin Siddiqi explains how the country is preparing for the post-hydrocarbon age, while paving the way for all-encompassing economic development in the coming decades. (Refer pages 16-19).

As The World Future Energy Summit explores the green hydrogen economy realities, read about how it is set to change the region's energy mix, on pages 29-30. On pages 36-37, Trimble explains in detail, how the digital twin technology is continuing to transform cities.

We also hope you enjoy reading the articles on desalination, smart grids and more!

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



22



38



43

١٩٨٤ - خدمة شركات المنطقة منذ

TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

SEVING THE REGION'S BUSINESS SINCE 1984

Country	Representative	Telephone	Fax	Email
India	Tanmay Mishra	+91 98800 75908		tanmay.mishra@alaincharles.com
Nigeria	Bola Olowo	+234 8034349299		bola.olowo@alaincharles.com
UK	Richard Rozelaar	+44 20 7834 7676	+44 20 79730076	richard.rozelaar@alaincharles.com
USA	Michael Tomashefsky	+1 203 226 2882	+1 203 226 7447	michael.tomashefsky@alaincharles.com

Editor: Fyna Ashwath - Email: fyna.ashwath@alaincharles.com

Editorial and Design team: Prashanth AP, Fyna Ashwath, Miriam Brtkova, Praveen CP, Robert Daniels, Shivani Dhruv, Matthew Hayhoe, Leah Kelly, Rahul Puthenveedu, Madhuri Ramesh, Madhurima Sengupta, Louise Waters and Minhaj Zia

Publisher: Nick Fordham

Sales Manager: Vinay Nair - Email: vinay.nair@alaincharles.com

Special Projects Manager: Jane Wellman - Email: jane.wellman@alaincharles.com
Tel: +44 (0) 20 7834 7676, Fax: +44 (0) 20 7973 0076

Production: Rinta Denil, Ranjith Ekambaram, Eugenia Nelly Mendes and Infant Prakash
Email: production@alaincharles.com

Subscriptions: circulation@alaincharles.com

Chairman: Derek Fordham

US MAILING AGENT: Technical Review Middle East ISSN 0267 5307 is published eight times a year for US\$99 per year by Alain Charles Publishing, University House, 11-13 Lower Grosvenor Place, London, SW1W 0EX, UK. Periodicals postage paid at Rahway, NJ.

POSTMASTER: Send corrections to Alain Charles Publishing Ltd, c/o Mercury Airfreight International Ltd, 365 Blair Road, Avenel, NJ 07001. US Agent: Pronto Mailers International, 200 Wood Avenue, Middlesex, NJ 08846.

Printed by: Buxton Press **Printed in:** January 2023

Arabic Translation: Ezzeddin M. Ali - Email: ezzeddin@movistar.es

Arabic Typesetting: Lunad Publicity, Dubai

© Technical Review Middle East ISSN: 0267-5307

Head Office: Alain Charles Publishing Ltd
University House, 11-13 Lower Grosvenor Place, London, SW1W 0EX, UK
Tel: +44 20 7834 7676, Fax: +44 20 7973 0076

Middle East Regional Office: Alain Charles Middle East FZ-LLC
Office L2- 112, Loft Office 2, Entrance B, Dubai Media City, Dubai, UAE
Tel: +971 4 448 9260, Fax: +971 4 448 9261

Briefly

Hamriyah Free Zone participates in SteelFab 2023

THE HAMRIYAH FREE Zone Authority in Sharjah had participated in the activities of the 18th edition of the steel exhibition 'SteelFab 2023', which was organised by the Sharjah Expo Centre from 9 to 12 January.

SteelFab 2023 brought together steel industry leaders, experts and industry stakeholders from the most important leading countries. The exhibition featured national pavilions that include the largest commercial and industrial companies in the world, as well as a selection of the most prominent local and regional companies.

The Hamriyah Free Zone, through its pavilion at the event, showcased its leading role in global and regional trade in iron and steel, as well as its competitive advantages and services, which are a source of attraction for investors from inside and outside the country, especially since it includes more than 180 companies working in welding and mining and takes the region as a starting point for its business to the scientist.

HE Saud Salem Al Mazrouei, director of the Hamriyah Free Zone Authority in Sharjah, said that the Steel Fab 2023 exhibition is an ideal platform for Hamriyah Free Zone. It can extrapolate the latest market information and the requirements of the industry and the needs of manufacturers and investors in this sector, in addition to holding meetings with major companies in this sector to introduce the advantages of investing in the authority, establishing businesses and facilities provided to investors, enabling companies wishing to build a strategic presence in the UAE and the Middle East and North Africa region, and highlighting the development process pursued by Sharjah and making it a global centre for business.

HE Al Mazrouei pointed out that the Hamriyah Free Zone seeks, through its participation in the exhibition, to highlight the region's position as a leading centre in the Middle East and the world in the field of iron and steel industry, especially since this industry is one of the most important main sectors within the Hamriyah Free Zone.

Sharjah Sustainable City marks milestones in sustainable living

THE SHARJAH SUSTAINABLE City – the first sustainable master-planned community developed by the Sharjah Investment and Development Authority (Shurooq) in partnership with Diamond Developers – has announced that the year 2022 was a year of milestones following an overwhelming response to the city's movement toward a sustainable way of life.

Over the past year, the city's first two phases, including 604 spacious and modern villas, have been entirely sold out, and it also launched the third phase comprising 324 villas. What's more, the phase 1 handover has been completed, with handovers of phase 2 and phase 3 expected to take place in 2023 and 2024, respectively.

One of the city's most significant milestones of 2022 was the handover of the first villas to homeowners, marking the city's transition from a real estate project into an active community. Over 110 families have moved in and started enjoying their new sustainable homes and the many benefits they offer – both environmental and economical.

Extended over an area of 7.2 mn sq ft in Sharjah's Al Rahmaniya Area, Sharjah Sustainable City is a leading eco-friendly residential community, promoting a lifestyle that is compatible with the future. With a total of 1,250 sustainable villas, the city is divided into blocks of three-, four- and five-bedroom properties ranging between 2,035 sq ft and 3,818 sq ft in a built-up area.

The development is in line with national efforts related to the food-energy-water nexus as it provides practical solutions related to food security, water and energy management, as well as



Photo Credit : Sharjah Sustainable City

Over the past year, the city's first two phases have been entirely sold out.

natural resources conservation. The city is equipped with renewable energy produced from rooftop solar panels and built with sustainable materials and passive designs that reduce utility bills and operational costs. As a result, residents can save up to 50% on water and electricity bills. On top of that, the city offers zero service fees for the first five years, as well as complimentary energy-efficient kitchen appliances and smart home features.

The city also offers a host of other key amenities such as parks, gyms, a swimming pool, a shopping center, walking and cycling paths and green mobility. Additionally, to support food security efforts, the city is home to indoor farming facilities and partially solar-powered greenhouses called biodomes that annually produce about 10,000 kg of chemical-free leafy greens and vegetables, which is expected to increase to 15,000 kg in the future.

The city contributes to several United Nations Sustainable Development Goals.

CDE to support land remediation in Kuwait

WET PROCESSING EXPERTS CDE, in partnership with Gulf Centre United Industrial Equipment Co and KAK-LAMOR JV/C have announced plans to supply two contaminated soil wash plants to support the clean-up effort of an estimated 114 sq km of polluted land in Kuwait as part of one of the largest environmental projects of its kind.

Following the destruction of some 700 oil wells in the early 1990s, approximately 26,000,000 cu/m of soil was contaminated with crude oil, signalling the launch of one of the most extensive remediation programmes involving the cooperation and expertise of a consortium of international partners.

CDE wet processing technology will be utilised for the treatment of up to 800,000 tons



CDE solution render.

Photo Credit : CDE

of contaminated soil per year. It will design and engineer a turnkey wash plant for each of the North Kuwait Excavation, Transportation and Remediation (NKETR Zone 1) and South Kuwait Excavation, Transportation and Remediation (SKETR Zone 1) projects.

Be a part of the energy transition.

20,000+ energy professionals | 800+ exhibitors

170 countries represented | 18,400 SQM

-  Renewable & Clean Energy
-  Transmission & Distribution
-  Backup Generators & Critical Power
-  Energy Consumption & Management
-  Smart Solutions



Scan to register for free
#MEE2023

Diamond Sponsor



Platinum Sponsor



Gold Sponsor



Silver Sponsor



Technology Partner



Supporting Exhibition Partner



Briefly

Carrier Middle East showcases latest HVAC solutions

DURING THE TECHNOLOGY for the Future Forum in the UAE, the company outlined its latest HVAC solutions backed by digital controls and servicing. Carrier Middle East is a part of Carrier Global Corporation, global provider of healthy, safe, sustainable and intelligent building and cold chain solutions.

During the event, Carrier discussed its variable refrigerant flow (VRF) technology for residential and small commercial buildings designed for reliable performance in the Middle East's harsh climatic conditions.

Carrier also identified how it continues to innovate with the BluEdge service platform, providing customers real-time monitoring, diagnostic alerts and data analysis to help minimise losses from downtime caused by unknown failures. At a time where data centres are in great demand, the consultants learned about lifecycle solutions to optimise sustainability, while ensuring increased uptime and operation for critical technology.

Carrier provided information on controls and building automation systems demonstrating ways to visualise, analyse and display building parameters. Using a QR code on their own mobile phones, attendees viewed live data from the sustainability dashboard at Carrier's Center for Intelligent Buildings located in Palm Beach Gardens, Florida, which displays indoor air quality and energy status on the i-Vu building automation system with the EcoReports platform.

Carrier's digitally enabled products, systems and solutions align with our customer's sustainability goals, energy needs, operating specifications, changing business requirements, comfort needs and health concerns," said Sathya Moorthi, managing director, Carrier Middle East.

Consulting engineers were trained on the latest version of Carrier's Hourly Analysis Programme (HAP v6), its peak load and energy modeling software. HAP v6 integrates a streamlined workflow with a wide range of advanced 3D building modeling features, all woven into a core design.

Masdar to develop clean energy projects in Kyrgyzstan

MASDAR, LEADING RENEWABLE energy companies, has signed an agreement with the Kyrgyz Republic's Ministry of Energy to develop a pipeline of renewable projects in the Central Asian nation, with a capacity of up to 1 gigawatt (GW), starting with a 200-megawatt (MW) solar photovoltaic (PV) plant.

The implementation agreement was signed by HE Ibraev Taalaibek Omukeevich, Minister of Energy of the Kyrgyz Republic and Mohamed Jamel Al Ramahi, chief executive officer of Masdar. The 200 MW plant is scheduled to begin operation by 2026.

Ibraev Taalaibek Omukeevich, Minister of Energy of the Kyrgyz Republic, said, "Today, the energy system of the Kyrgyz Republic faces challenges meeting the significant demand for electricity from all categories of consumers with our existing resources. At the same time, Kyrgyzstan has good solar energy potential. The successful implementation of projects to develop solar power plants of up to 1 GW capacity will help to ensure our nation's energy security. The large-scale development of the renewable energy system will also help to improve employment, living conditions and energy supply for the population of the republic, reduce poverty in rural areas, and improve the level of education, as well as introduce new modern technologies."

Mohammed Jameel Al Ramahi, chief executive officer of Masdar, said, "Masdar has considerable experience in Central Asia and we will leverage our expertise to support the Kyrgyz Republic's clean energy objectives. Kyrgyzstan is blessed with abundant solar resources and we see this 200 MW plant being the first of a number of projects that will support the nation's goals on emissions reductions, while increasing clean energy access and security."



Photo Credit : Adobe Stock

Kyrgyzstan is looking to reduce its greenhouse gas emissions by as much as 44 % by 2030 and achieve carbon neutrality by 2050.

Kyrgyzstan is looking to reduce its greenhouse gas emissions by as much as 44 % by 2030 and achieve carbon neutrality by 2050. While the country already generates around 90% of its electricity from clean energy resources, this is almost exclusively from aging hydropower plants. The country's high solar irradiation levels provide the opportunity to increase clean energy access and security.

The implementation agreement builds upon a memorandum of understanding signed by the two sides in April last year, in which Masdar agreed to explore renewable energy opportunities in the Kyrgyz Republic. Under the agreement, Masdar would explore and invest in a wide range of renewable energy projects.

Masdar recently announced a new shareholding structure and additional focus on green hydrogen, making it one of the largest clean energy companies of its kind. With a goal of achieving 100 GW renewable energy capacity and green hydrogen production of 1 million tonnes per annum annually by 2030, the new Masdar is a clean energy powerhouse that will spearhead the UAE's Net Zero by 2050 Strategic Initiative and drive the global energy transition.

Recapp by Veolia and Spinneys partner to make recycling more rewarding

RECAPP IS TO offer shoppers incentives for returning recyclable items such as plastic bottles, metal cans, and tins to its stores

This is to be done through a new partnership with locally-owned supermarket, Spinneys, in order to provide in-store collection points aimed at making recycling in the country more effortless, sustainable and rewarding. Moreover, the initiative seeks to generate valuable data on the volume of materials returned for recycling, which will help better understand the future recycling solutions needed in the retail industry.

The waste will be sent to local manufacturing facilities, inspected, and

industrially cleaned, ready to be reused and made into new materials, including cushions and quilts.

Jérôme Viricel, general manager of RECAPP at Veolia Near & Middle East, said, "While contributing to the UAE's efforts to reduce all forms of pollution, our aim is to benefit both the environment as well as the customers.

The new collaboration with Spinneys will further strengthen RECAPP's mission to keep recyclable materials within the UAE and support the country's efforts in reducing plastic and other forms of pollution both inland and in the sea.

The UAE has adopted several environment-friendly waste management solutions.

Ammonia spills pose a danger to diverse habitats says study

A JOINT STUDY conducted by Environmental Defence Fund (EDF), Lloyd's Register (LR) and Ricardo PLC, examined the potential marine environmental impacts of ammonia spills during its use as a shipping fuel.

Ammonia generated from renewable energy is considered a sustainable alternative to fossil fuels as the shipping industry decarbonises.

"The shipping industry must make a rapid energy transition to address the climate emergency. But it is also clear that we must proceed with caution. We owe it to future generations to ensure we are championing true

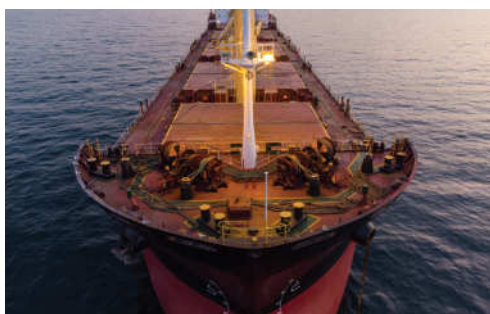


Photo Credit: Lloyd's Register

Ammonia spills can threaten mangrove, wetland and estuary regions.

climate solutions that will not negatively impact our rivers, our oceans or our health," said director of Global Shipping, EDF, Marie Hubatova.

The study found that estuaries, mangroves and wetlands are particularly sensitive to potential ammonia fuel spills compared to polar regions and the deep sea. Within these habitats, it is typically fish which are most affected to fuel spills.

Senior consultant, Water and Environment Practice, Ricardo PLC, Lauren Dawson, commented, "Examining the impact of ammonia is a challenge because of the vast conditions a ship might face while at sea or even when bunkered. Critical factors to consider include various ship and storage types, the underlying principles which determine the fate of ammonia in the environment, and the diversity of aquatic habitats and species that could be affected."

"Ultimately, what we found is that ammonia is more threatening to fish species, and particularly to ecosystems with less saline water and higher temperatures. It is therefore important to study the impact of ammonia carefully for particular regions where these habitats intersect with major shipping channels and ports, such as the Strait of Malacca," added Dawson.

KEZAD Group supports Abu Dhabi Industrial Strategy

INTEGRATED TRADE, LOGISTICS and industrial hub, KEZAD Group, has signed a preliminary agreement with Dana Steel to establish the company's first hot and cold rolling steel complex in Abu Dhabi.

Dana Steel, the flagship manufacturing unit of Dana Group, will invest in the development of a 50,000 sq m facility in KEZAD (Khalifa Economic Zones Abu Dhabi). The new complex will facilitate backward integration of the company's continuous colour coating lines and will have a 500,000 mt rolling capacity. This approach will help boost Dana Steel's manufacturing capacity in the GCC by replacing imported raw materials with a new 'Made in the UAE' supply.

By signing the agreement, KEZAD Group is extending its support for the Abu Dhabi Industrial Strategy, which looks to more than double the size of the emirate's manufacturing sector to AED172bn (approximately US\$46bn) by 2031 through transformational programmes.

Mohamed Al Khadar Al Ahmed, chief executive officer, KEZAD Group, said, "Owing to the modern infrastructure and efficient transportation network offered by KEZAD and Khalifa Port, investors such as Dana Steel are selecting our industrial ecosystem as a base from which to grow their operations in the UAE and globally. By enabling vertical integration of their manufacturing supply chain, we look forward to supporting Dana Steel on its journey to serve customers and expand its international reach."

CEO of Dana Steel Industry, Dr Ankur Dana, said, "With worldwide demand for quality steel products set to grow, we are quite excited to start this milestone project in KEZAD, which builds upon our efforts to enhance value for our customers across continents. This project will be our ninth Industrial Facility within the UAE, several unique factors led us to choose KEZAD for this venture, including the world-class infrastructure on offer, in addition to seamless connectivity to global markets and easy access to natural gas at competitive rates."



Photo Credit: AD Ports Group

Fatima Mohamed Al Hammadi, chief commercial officer and Dr Ankur Dana, CEO of Dana Steel Industry.

Briefly

Aspen Technology partners with Aramco on CCU software

GLOBAL LEADER IN industrial software, Aspen Technology (AspenTech), has announced its partnership with one of the world's leading integrated energy companies, Saudi Aramco.

The partnerships allows AspenTech to introduce a unique integrated modelling solution to optimise and enable capital-intensive industries to achieve economical solutions for Carbon Capture and Utilisation (CCU).

The new solution is based on technology originally developed by Aramco collaboratively with the Korea Advanced Institute of Science & Technology (KAIST). Through its subsidiary Saudi Aramco Technologies Company (SATC), Aramco has licensed the technology to AspenTech as part of its broader mission to optimise carbon emissions reduction.

The solution will aim to address the identification of the most promising carbon capture and utilisations paths by considering economics, process design, operation constraints and CO2 reduction. The goal for both companies is for this innovation to enable businesses to make evidence-based decisions in support of adopting carbon management strategies to optimise sustainable operations.

Director of Technology Strategy and Planning, Aramco, Dr Bashir Dabbousi, said, "Aramco and AspenTech will combine their strengths to bring together integrated modelling and optimisation to help make informed decisions on carbon strategies and ultimately to help meet sustainability targets."

Dr Vikas Dhole, general manager of sustainability, Aspen Technology, commented, "Our agreement with Aramco demonstrates the importance of technology innovators working together to address the biggest challenges in ensuring a sustainable future.

"The AspenTech solution, based on this partnership between AspenTech and Aramco, will aim to help companies rapidly evaluate potential opportunities and new innovative solutions that mitigate carbon footprints while ensuring profitability," he added.

Jubail Island introduces The Souk

LEAD DEVELOPMENT ANNOUNCED the launch of The Souk – Jubail Island, which is the main link connecting the six villages across the island, providing residents with a central hub that combines wellbeing, connectivity, leisure, retail and commercial services.

The Souk will also provide increased connectivity to other destinations on the island, such as Jubail Mangrove Park, Jubail Beach Club, and the Marina.

The Souk contains an integrated set of service and entertainment facilities with designs that blur the boundaries between architecture and nature, guaranteeing absolute comfort and convenience for residents.

Offering complete enjoyment and luxury living, it provides residents with the opportunity to own a property in a vibrant destination situated among breathtaking nature, overlooking picturesque sea views and with the convenience of first-class facilities at the doorstep. It offers options for potential buyers – with a wide range of luxury housing units distributed over low-rise buildings consisting of three or four floors known as Jubail Terraces.

As well as the location which combines the lively atmosphere of the city with the tranquility of nature, the Jubail Terraces residential units are characterised by their modern architectural designs, created in harmony with the natural surroundings. This is combined with spacious interiors, and wide terraces overlooking the stunning skyline of Abu Dhabi as well as the town centre.

“The launch of The Souk community brings another unique addition to Jubail



Photo Credit : Lead Development

The Souk provides residents with the opportunity to own a property in a vibrant destination.

Island, through which we seek to integrate a high-quality and sustainable way of life for residents and visitors alike to experience. Thanks to its prime location situated at the main gate of Jubail Island, and containing all the convenient elements for living, work and entertainment, The Souk will be a major destination that redefines the living experience for residents of the island,” Mahmoud Dandashly, chief business officer of Lead Development, said.

The Jubail Island, a project developed and managed by LEAD Development, will be home to an idyllic collection of six residential village estates located between Yas Island and Saadiyat Island.

Nestled among natural beauty and rich biodiversity of the mangroves, the landmark community will offer residents every convenience and amenity, seamlessly blending sustainable living, luxury and wellness in an iconic addition to Abu Dhabi’s real estate landscape.

ACWA Power signs agreements for wind plant in Uzbekistan

ACWA POWER, A leading Saudi developer, investor, and operator of power generation, water desalination and green hydrogen plants worldwide, signed on December 23, 2022, the power purchase agreements (PPAs) and investment agreements (IAs) with the government of the Republic of Uzbekistan to develop the 1.5 GW Kungrad wind farm in the republic of Karakalpakstan, Uzbekistan, formerly referred to as the Karakalpakstan Wind IPP. The wind farm will comprise three 500MW wind power projects owned by three subsidiaries – ACWA Power Kungrad Wind 1 LLC FE,

ACWA Power Kungrad Wind 2 LLC FE and ACWA Power Kungrad Wind 3 LLC FE.

Each of the three projects will also incorporate a 100MW capacity battery energy storage system. Regarded as the largest single-site wind farm in Central Asia to date, and one of the largest of its kind in the world, the wind farm is expected to reach an investment value of US\$ 2.4 bn.

Located in Kungrad district, Republic of Karakalpakstan, in Uzbekistan, the wind farm is expected to offset 2.4 million tonnes of carbon emissions per year and will have minimum environmental impact due to the utilisation of the latest

mitigation technologies, including bird detecting technology, that combines cutting edge technology in both image sensors and software to prevent bird collision or fatality.

The Kungrad wind farm will bolster the Uzbek government’s long-term strategy to diversify the country’s energy mix, which targets 8GW and 12GW of solar and wind capacity by 2026 and 2030, respectively.

The project is due to achieve financial close by 2024 and will be fully commissioned in 2027. When complete, the facility is expected to power 1.65 million households.

ALEC Group furthers expansion through acquisition

ALEC ENGINEERING AND Contracting LLC (ALEC), a part of the Investment Corporation of Dubai (ICD), announced that it has signed a share purchase agreement to acquire TARGET Engineering Construction Company LLC. With this agreement, the companies will have a joint turnover of close to US\$2bn.

“This acquisition further advances ALEC’s position in the regional construction industry while simultaneously enabling it to enter and fast-track its strategy of becoming a key player in the



Kez Taylor, CEO at ALEC.

Middle East Oil & Gas, and Energy and Renewables sectors by drawing from the extensive expertise, and resources that TARGET Engineering has developed over its celebrated 40-year history,” said Khalifa Al Daboos, deputy CEO at ICD. “For the Investment Corporation of Dubai, this move enables us to align strongly with the UAE government’s ongoing investment into developing world-class critical infrastructure facilities that support its ambition of being an advanced, sustainable economy.”

By acquiring 100% of the company, ALEC will enhance its resources with the significant assets held by TARGET Engineering, including its 11,000 strong workforce, more than 30 marine vessels, and 52,000 sq m of API/ASME-certified fabrication facilities.

Additionally, this includes TARGET’s controlling stake in IDROTEC srl, an Italian specialised marine design engineering firm renowned worldwide for its specialist marine, hydraulic and environmental design for the Oil & Gas sector and marine developments. TARGET Engineering will continue to operate as an independent entity, while drawing on the skills and resources of the broader ALEC Group.

Photo Credit: ALEC Group

Weatherford and DataRobot to progress AI advancement

WEATHERFORD SIGNED A multi-year agreement with DataRobot to deliver advanced AI solutions in its digital platforms, including the ForeSite production optimisation and Centro well construction platforms.

These digital platforms from Weatherford provide solutions powered by Industry 4.0 technologies, including big data analytics, IoT, and cloud and edge computing. Through this new relationship with DataRobot, Weatherford will accelerate the development of machine learning and AI-enabled offerings within its Digital Solutions portfolio to deliver disruptive and innovative technologies to the market.

Red Hat to modernise enterprises

RED HAT INC announced the general availability of Migration Toolkit for Applications 6, based on the open source project Conveyor, aimed at helping customers accelerate large-scale application modernisation efforts. The toolkit enables customers to better assess, prioritise and modernise their applications across hybrid cloud environments on Red Hat OpenShift, the industry’s leading Kubernetes platform.

According to Red Hat’s 2022 State of Application Modernisation Report, organisations plan to modernise 54% of their custom applications during the next year, and more than a quarter of these workloads during the next six months. In the medium term, respondents also reported that 80% of applications will be modernised in the next two years. Organisations are embracing cloud-native technologies to meet heightened user expectations and market competition, but this does not happen overnight. With Migration Toolkit for Applications and related services and offerings, Red Hat is helping customers modernise applications at their speed and on their timelines.

Migration Toolkit for Applications is an integrated assembly of tools that support Java application modernisation and migration projects at scale across a broad range of use cases. Now designed to help migration leads and developers find the best and most reliable modernisation path forward, Migration Toolkit for Applications 6 includes: new application inventory and assessment modules, full integration with source code and binary repositories along with proxy integration, improved analysis capabilities, enhanced RBAC powered by Red Hat Single Sign-On, and administrator perspective.



James Labocki, senior director, Red Hat.

Photo Credit: Red Hat

Briefly

STRYDE expands presence in the Middle East

SEISMIC TECHNOLOGY COMPANY, STRYDE, is expanding its presence in the Middle East with a new multi-purpose warehouse in Dubai.

The site, located in the Jebel Ali Free Zone, has the capacity to stock more than one million land seismic nodes, available to purchase or lease, and hold the company’s containerised node management systems, designed specifically for large-scale seismic surveys across the Middle East, Africa, India, Australia, and the Far East.

The warehouse will also offer classroom and practical training facilities for STRYDE users along with the ability to learn node deployment and retrieval activities in its secure yard. The new Middle East hub will enable the business to support fast mobilisation to its customers and continue its growth across the globe.

As the world’s smallest, lightest, and most affordable nodal seismic imaging system, STRYDE’s seismic solutions are used widely across the energy sector during E&P. The nimbleness and affordability of the technology is also playing an increasingly vital role in the development of emerging new energies and geotechnical risk studies.

Kevin O’Connell, head of Field Operations at STRYDE said, “We’re very excited to be opening our multi-purpose warehouse in Dubai to service recently awarded contracts. Having a dedicated training facility and a base for our team of expert field support engineers will enable us to provide real-time support to our customers.”

STRYDE, which currently employs 63 people across the world, has already recruited two new employees for the site, who will join Sam Moharir and Kevin O’Connell in Dubai, with plans for further recruitment in 2023.

Mike Popham, CEO, commented, “I am delighted that STRYDE is moving into our new home in Dubai. We look forward to increasing our workforce in the Middle East over the next year as we continue to support the unrivalled demand for our game-changing land seismic technology and our fast-track data processing solutions.”

EXECUTIVES' CALENDAR 2023

FEBRUARY 2023

18-21 **The Big 5 Saudi** RIYADH www.thebig5saudi.com

MARCH 2023

7-9 **Middle East Energy** DUBAI www.middleeast-energy.com

14-18 **CONEXPO-CON/AGG** NEVADA www.conexpoconagg.com

APRIL 2023

17-21 **HANNOVER MESSE** HANNOVER www.hannovermesse.de

MAY 2023

8-10 **World Utilities Congress** ABU DHABI www.worldutilitiescongress.com

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

Global security industry to gather at Intersec 2023

MORE THAN 1,000 exhibitors from 120+ countries will come together at the 24th edition of Intersec, the world's leading trade fair for safety, security and fire protection. The show takes place at the Dubai World Trade Centre from 17-19 January, with exhibitors providing access to more than 10,000 products across the complete security value chain.

Advanced technological innovation will dominate the exhibition's five key segments. Commercial and Perimeter Security caters to the need of governments and the private sectors, who are increasingly focused on security products and solutions such as access and border control protective barriers, locks, access control protocols and security guards. Homeland Security is supported by Dubai Police and the Security Industry Regulatory Agency (SIRA) and is dedicated to products and solutions for homeland security, law enforcement, airports and aviation security.

Fire & Rescue will showcase the latest firefighting technologies along with the best international standards and practices, and is supported by the Dubai Civil Defence. Safety and Health will be divided into environmental, industrial and public health and safety; and lastly, Cyber Security will host cyber solutions and discussions with experts.

"We anticipate up to 30,000 security, emergency response, safety and cyber security professionals attending Intersec 2023, where technological breakthroughs will



Photo Credit : Messe Frankfurt

Around 10,000 products will be showcased across the complete security value chain.

take centre stage and attract an influential participant profile," said Alex Nicholl, show director, Messe Frankfurt Middle East.

"Industry experts, influencers, decision and policymakers, and distributors are uniting to explore the strategies and technologies that will govern the safety and wellbeing of future generations."

The event takes place against a backdrop of anticipated sector growth. Research firm 6W Research forecasts the Middle East's

commercial security market will grow 16% a year until 2025, to reach US\$8.4bn, while the region's fire and safety sector will advance 7.5% annually to reach US\$16.76bn by 2026.

"This huge potential has attracted a line-up of leading industry heavyweights, including Honeywell, Bosch, Hochiki, Drager and AXIS Communications," added Nicholl.

For further information see the website at www.messefrankfurt.com

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

AD Ports Group records best-ever performance at Harvard business council awards

AD PORTS GROUP has been awarded seven Harvard Business Council International Awards achieving top winner status for the 2022 second cycle.

The Harvard Business Council International Awards is the global standard for total quality management and continuous improvement.

<https://www.technicalreviewmiddleeast.com/business-a-management/>



AD Ports Group celebrates its employees' consistent commitment to excellence.

Photo Credit : AD Ports Group

ENOC Group opens compact station in Umm Al Quwain

ENOC GROUP, A leading integrated global energy player, has announced the opening of its latest compact station in the Al Aqran area of Umm Al Quwain

The new site is strategically located to offer greater convenience to motorists, catering to traffic coming to and from Umm Al Quwain and Ras Al Khaimah, and from the Umm Al Thuob Industrial Area in Umm Al Quwain towards Emirates Road.

Saif Humaid Al Falasi, group CEO at ENOC, said, "The addition of our newest compact station underscores our commitment to fulfil the UAE's energy needs with efficient and safe fuelling options" <https://www.technicalreviewmiddleeast.com/business-a-management/>

Trend Micro and SCCC Alibaba Cloud to strengthen cybersecurity resilience in Saudi Arabia

TREND MICRO, A global leader in cybersecurity solutions, has signed a Memorandum of Understanding (MoU) with Saudi Cloud Computing Company (SCCC) Alibaba Cloud to protect the enterprises of Kingdom of Saudi Arabia from the evolving threat landscape and to promote the localisation of cybersecurity solutions in Saudi Arabia.

In 2022, Alibaba Cloud became the world's first hyperscale cloud provider to enter the Saudi Arabian market

<https://www.technicalreviewmiddleeast.com/it/information-security/>

New Bobcat L85 wheel loader for optimal paper recycling

BOBCAT HAS PURCHASED a new Bobcat L85 compact wheel loader for its Sant Andreu de la Barca paper recycling centre.

In this plant, some 38,000 tonnes of paper and cardboard from printing presses are processed annually and for this they needed a machine with power and versatility, but at the same time to be compact enough to manoeuvre easily inside the warehouse and between the rows and columns of stored paper bales.

<https://www.technicalreviewmiddleeast.com/construction/machinery/>



CL85 Rua Papel Gestión pic4 redThe Bobcat L85 loader is used to handle materials to feed the presses.

Photo Credit : Bobcat



A unique experience: the digital construction site.

The service and product worlds of AVS and Berghaus can now be experienced in a virtual showroom with a live drive through a highway or urban construction site! Without noise and risk, comfortably on your PC or mobile device, you can experience a 360° panoramic view of a construction site.

berghaus-verkehrstechnik.de/en/



Click here to visit our digital showroom
www.avs-showroom.com



“As the world shifts to renewable energy and a decarbonised economy, the establishment of the Solar & Renewable Energy Business Group is timely and relevant. It comes at the heels of UAE’s COP28 presidency, highlighting the importance of the country’s Energy Strategy 2050 and Dubai’s Clean Energy Strategy. The business group will foster better understanding of these clean energy targets amongst local businesses while providing them insights to drive the shift to renewable energy. This will boost their efforts to support and accelerate Dubai’s energy transition and the ambition of making the emirate a hub for the green economy.”



Photo Credit : Dubai Chambers

MAHA AL GARGAWI

Executive director of business advocacy
Dubai Chambers

“Saudi Arabia is the largest e-commerce market in the Middle East, and the end-consumers expect flexibility, late-night deliveries, and ease of payment, with cash-on-delivery representing more than 30% of e-commerce. Our expertise in delivering residential areas in the Kingdom has made our services very attractive to our Chinese and international customers.”

NATHALIE AMIEL-FERRAULT

Chief marketing & experience officer
AJEX

(Following the launch of two new solutions to provide businesses in China, Saudi Arabia, UAE and Bahrain an enhanced portfolio of cross-border delivery services)

“Under the direction of our wise leadership, AD Ports Group is looking to deploy our expertise in support of agreements that boost trade and economic relations with brotherly nations. This new joint venture with KMTF opens the door to enormous opportunities in the Caspian Sea, which plays a key role in global energy production, and is serviced by prominent players within the energy sector. By providing maritime services in this key market, AD Ports Group has reached a new level of internationalisation and development.”

FALAH MOHAMMED AL AHBABI

Chairman

AD Ports Group

(On the joint venture launched with Kazmortransflot to provide offshore shipping services for energy companies in the Caspian and Black Seas)

“The addition of our newest compact station underscores our commitment to fulfil the UAE’s energy needs with efficient and safe fuelling options, catering to the country’s growing population. The launch of this compact station is aligned with our overall growth strategy to improve customer experience and offer convenient refuelling services to commuters. Since the start of 2022, we have added four compact stations to our network in the UAE, signifying our



Photo Credit : ENOC

dedication to catering to the increasing demand for fuel.”

HE SAIF HUMAID AL FALASI

Group CEO
ENOC

“Saudi Arabia is a significant market for us. With more than a fifth of the country’s food imports coming through King Abdulaziz Port in Dammam, we wanted to establish a state-of-the-art cold storage facility that will help us serve the food industry better. Our ambition is to connect and simplify our customers’ supply chains. To achieve this, we must be close to our customers, collaborate with trusted and reliable partners and build a network that truly enables global trade. With our new facility in Dammam, we are setting ourselves up to achieve all three goals.”

MOHAMMAD SHIHAB

Managing director

Maersk Saudi Arabia

(At the signing ceremony between Maersk and Refad Real Estate to operate a new cold storage facility at King Abdulaziz Port in Dammam)

“We are pleased to launch UAE’s first in-country OT CDC as a fully managed service model in collaboration with EY. Cyber threats targeting critical infrastructure are growing at an alarming rate, which may pose threat to human life, environment and operational assets. The launch of this service will assist organisations dealing with OT/IoT systems to protect from cyber threats and manage cybersecurity incidents through timely threat detection and swift incident response. We are confident that this new OT Cyber Defense Centre will not only strengthen the region’s cybersecurity resiliency and response capability, but its cutting-edge services and its team expertise, and will offer better business efficiency and streamline critical infrastructure safety, reliability, and productivity.”

AHMED ALKETBI

Chief information security officer
Moro Hub

“With worldwide demand for quality steel products set to grow, we are quite excited to start this milestone project in KEZAD, which builds upon our efforts to enhance value for our customers across continents. This project will be our 9th Industrial Facility within the UAE, several unique factors led us to choose KEZAD for this venture including the world-class infrastructure on offer, in addition to seamless connectivity to global markets and easy access to natural gas at competitive rates.”



Photo Credit : Dana Steel

ANKUR DANA

CEO

Dana Steel Industry

(On the preliminary agreement signed between Dana Steel and KEZAD Group to establish Dana’s first hot and cold rolling steel complex in Abu Dhabi)

“AI is already having incredible impact driving efficiency and optimisation in the energy industry, and it’s exciting to see the massive potential for even more transformative impact in the future. DataRobot is uniquely positioned to address challenges facing the industry today, and we’re thrilled to collaborate with a leader like Weatherford to accelerate their delivery of AI-enabled solutions and gain the most value from data.”

DAVID RUSSELL

Senior vice president of North America sales
DataRobot

“Uber Travel forms an integral part of Uber’s vision to make local and international travel more seamless. We’re excited to introduce Smart Itineraries to the MENA region, as an enhanced offering to help ease

the stress of travel, and we will continue to expand our services to accommodate increasing travel needs through the power of our technology.”

NORHEN ALI

Head of communications for MENA
Uber

“Our efforts to operate more sustainably apply to all areas throughout our network and we are continuously innovating to reduce the environmental impact from daily operations. This first EV trial in the Middle East and North Africa region is a step towards shaping the future of delivery. It requires identifying the right technology to ensure the successful integration of electric vehicles into the FedEx Express fleet, and ultimately enhancing how we support our business, customers, and team members. The increasing popularity of e-commerce means transforming our operations to be more sustainable is more important than ever.”

TAAREK HINEDI

Vice president
FedEx Express Middle East and Africa

“We support the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum... to make Dubai a smart and sustainable city and a global centre for clean energy and green economy. We are committed to achieving a balance between development and the environment to protect the rights of future generations to live in a clean, healthy, and safe environment... DEWA contributed to reducing carbon emissions in Dubai by 21% in 2021, exceeding the target in the Dubai Carbon Abatement Strategy 2021, which aimed to reduce 16% of carbon emissions by 2021. We spare no effort to make Dubai a model for clean and renewable energy, sustainability, green economy, carbon reduction, and finding sustainable solutions to mitigate the adverse effects of climate change.”



Photo Credit : DEWA

HE SAEED MOHAMMED AL TAYER

Managing director and CEO
DEWA

“These LNG agreements are a testimony to Oman’s commitment to supply the world with energy. Our partnership with Japan goes far and beyond since inception of Oman LNG. This milestone will not only unlock growth opportunities, but will also sustain and expand our LNG business beyond 2024. Oman will continue to be a reliable supplier of LNG, and a global preferred destination for sourcing clean energy.”

HE SALIM AL AUFU

Minister of Energy and Minerals
Government of Oman
(On the signing of agreements between three Japanese firms and Oman LNG for the delivery of LNG, starting in 2025)

“Abu Dhabi Islamic Bank (ADIB) continues to roll out innovative digital payment services as we further develop our digital capabilities. We are proud to launch the region’s first tokenised, contactless payment clasp with our partners, Tappy Technologies and Visa. ADIB PAY demonstrates our commitment to offering simplicity and convenience to our customers. This is a significant milestone for the bank, and we won’t stop there. Customers can expect more solutions that will help them bank with ease and simplicity.”

SAMIH AWADHALLA

Acting global head of retail banking
ADIB



'AI can enable a new era in manufacturing sector'

New white paper by the World Economic Forum together with the Centre for the Fourth Industrial Revolution Türkiye, provides decision-makers with a better understanding of how to unlock the potential of industrial artificial intelligence (AI).

'UNLOCKING VALUE FROM Artificial Intelligence in Manufacturing' with input from industry, technology and academic experts, highlights more than 20 case studies from organisations on the impact, feasibility and scalability of AI in manufacturing. It identifies several opportunities and lessons from the community on how to increase operational efficiency, sustainability and workforce engagement in manufacturing and value chains by using AI.

The white paper is an output of the ongoing partnership between the Forum's Platform for Shaping the Future of Advanced Manufacturing and Value Chains and the Platform for Shaping the Future of Technology Governance: Artificial Intelligence and Machine Learning, with the Centre for the Fourth Industrial Revolution (C4IR) Türkiye. C4IR is hosted by Turkish Employers' Association of Metal Industries (MESS) and its Technology Centre MEXT.

"The complexity of current challenges impacting manufacturers calls for the need to go beyond the traditional means of driving productivity. Artificial intelligence can help companies unlock innovation, resilience and sustainability. We look forward to working with the Network of Centres for the Fourth Industrial Revolution and the global manufacturing community to support its deployment at scale," said Francisco Betti, head of advanced manufacturing and production, member of executive committee, World Economic Forum.

"This paper showcases the tremendous value potential of AI in manufacturing. Not only in terms of efficiency but also in terms of sustainability and worker engagement. The insights were generated thanks to a collaborative effort by the Centre for the Fourth Industrial Revolution affiliate in Türkiye, the Forum's Platform for Shaping the Future of Advanced Manufacturing and Value Chains and the Platform for Shaping the Future of Technology Governance:

Artificial Intelligence and Machine Learning," said Kay Firth-Butterfield, head of artificial intelligence and machine learning at World Economic Forum.

The use cases were collected from industries including automotive, electronics, energy, textiles, cement, steel, food and chemicals. These cases demonstrate how leading manufacturers have successfully captured value from AI applications in manufacturing and cover six main areas: health and safety, quality, maintenance, production process, supply chains and energy management.

This white paper summarises the six main barriers to the deployment of AI in manufacturing and presents a step-by-step process to overcome barriers.

Efe Erdem, head of C4IR Türkiye and executive director of MEXT Technology Centre, said, "With a granular understanding of the industry pain points in their digital transformation journey and the need for the deployment of the AI use cases, we took a leading role in led this initiative globally. For the next step, MEXT has been positioned as a global testbed. We are looking forward to conducting pilot studies and developing solution-oriented and scalable applications with the public, private, academia and start-ups."

The World Economic Forum's Centre for the Fourth Industrial Revolution global network is a platform for multi-stakeholder collaboration, bringing together the public and private sectors to maximise technological benefits to society while minimizing the risks associated with Fourth Industrial Revolution technologies.

The World Economic Forum, committed to improving the state of the world, is the International Organisation for Public-Private Cooperation. The Forum engages the foremost political, business and other leaders of society to shape global, regional and industry agendas. (www.weforum.org). ■



Co-located with:



Introducing:



Organised by:



18 - 21 FEBRUARY 2023, RIYADH FRONT EXHIBITION & CONFERENCE CENTER

REGISTER TO ATTEND SAUDI ARABIA'S LARGEST CONSTRUCTION EVENT!

Why you can't afford to miss out?



500+
Exhibiting companies



15,000+
Innovative products



28,000+
Expected attendees



Explore the **interactive features**



Free-to-attend certified industry talks

REGISTER NOW



SCAN ME

WWW.THEBIG5SAUDI.COM

f | t | in | #BIG5SAUDI



Platinum Sponsor



FM Expo Platinum Sponsor



Gold Sponsor



Gold and Lanyard Sponsor



FM Expo Gold Sponsor



FM Workshop Sponsor





Phenomenal transformation in the world's fastest-growing economy

As the country's economy rapidly grows, Saudi Arabia seeks more measures for a sustainable future. Moin Siddiqi reports.

THE KINGDOM OF Saudi Arabia (KSA) has successfully navigated bearish headwinds associated with the Covid-19 pandemic, global slowdown and fallout from the Ukraine war, while preparing for a 'post-hydrocarbon age' by diversifying and liberalising the economy, thus paving the way for all-around economic development in the coming decades.

The Kingdom is in the middle of a transformative agenda (Vision 2030) that is likely to see higher levels of non-oil activity, leading to long-term, sustainable growth. It seeks to achieve these interrelated goals by nurturing growth potential in areas such as tourism, manufacturing, and ICT, and positioning Saudi Arabia as a regional and international destination for foreign direct investment (FDI) and global value chains (GVCs).

Diversification is a key pillar of Vision

2030, with the expansion of diverse industries to end dependency on a single volatile commodity. "With oil prices high and considerably above previous forecasts over the medium term, policies in line with the "2030 Vision" to open and diversify the

The kingdom is in the middle of a transformative agenda that is likely to see higher levels of non-oil activity.

economy — and supported by a national investment strategy — will help avoid procyclicality associated with past oil-driven boom and bust cycles," reported the International Monetary Fund (IMF).

The powerhouse behind Vision 2030 is the Public Investment Fund (PIF), a major economic stimulant, plus strategic investor in 'giga-projects,' like the super-city of NEOM, the Diriyah Gate project, tourism developments on the Red Sea coast, and in Riyadh and its surroundings. By 2025, the new PIF strategy sets six key goals, including spending US\$40bn yearly in the local economy and contributing US\$320bn to non-oil GDP.

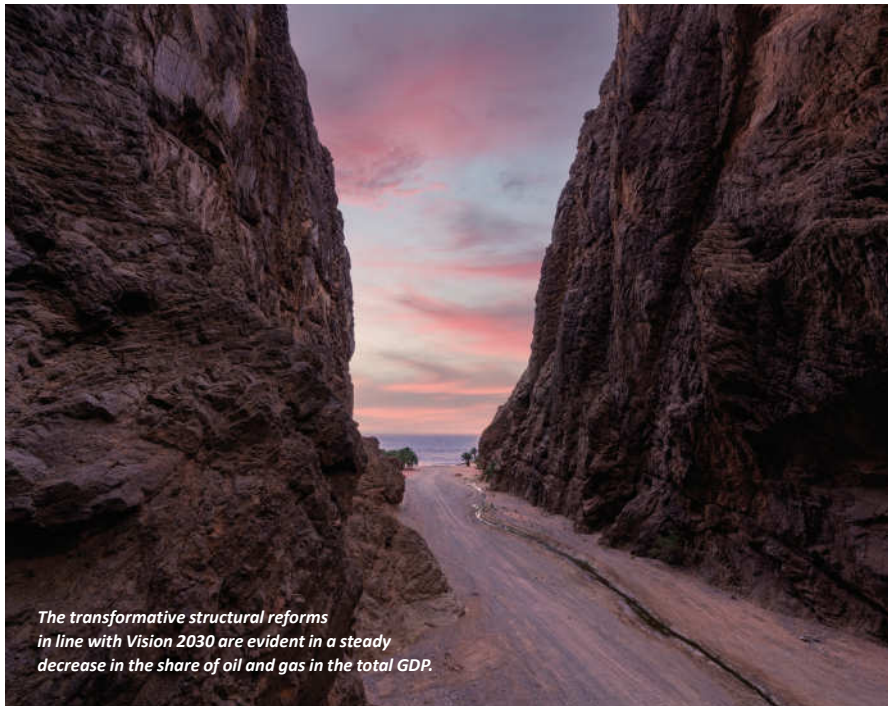
Solid fundamentals

Saudi Arabia is being powered by strong reform momentum, ample liquidity, prudential macro-policies, resilient (well-

capitalised) banking sector and a real estate boom, among other factors. In 2022, KSA recorded the highest growth among G-20 economies, surpassing Asian giants, China and India, as well as muted growth in G-7 and other large emerging economies (Figure1). Real GDP growth will be close to a solid 5% in 2023 before slipping back to decent 3% growth in 2024-26, according to Economist Intelligence Unit (EIU).

“Maintaining reform momentum is pivotal for prosperity in the long run,” says IMF

Fundamentals are moving in a positive direction with ‘twin’ surpluses (government budget and current account) and public debt shrinking in 2022, while consumer price inflation is contained (Table1). Economic performance is supported by buoyant non-energy business activity thanks to pro-business reforms coupled with rising hydrocarbons production. The twin surpluses are expected to persist into 2023-24 fuelled by oil windfalls – which in turn, will contribute to accumulation of large buffers, with forex reserves projected by IMF at almost



The transformative structural reforms in line with Vision 2030 are evident in a steady decrease in the share of oil and gas in the total GDP.

Photo Credit : Adobe Stock

Table 1 - The Kingdom's Key Macroeconomic Indicators (in US\$bn, unless otherwise indicated)

	Projections				
	2020	2021	2022	2023	2024
DOMESTIC ECONOMY					
Nominal Gross Domestic Product (GDP)	703	834	1029	1020	1026
Non-hydrocarbons sector (%) GDP	72.3	64.0	55.8	59.7	62.7
Real GDP Growth (%) *	-4.1	3.2	7.6	3.7	2.9
Private-sector Growth *	-3.4	6.2	5.8	5.3	5.4
Consumer Price Inflation (average)	3.4	3.1	2.8	2.2	2.0
Fiscal Balance /	-11.2	-2.3	5.5	4.9	
Central GOVT Gross Debt /	32.4	30.0	24.3	24.5	24.4
EXTERNAL SECTOR					
Exports, FOB	173.9	276.2	426.1	392.2	367.6
o/w: Oil & Oil products (%) of Total-exports	68.6	72.2	81.5	79.3	77.2
Average Saudi Oil-export Price (US\$/bbl)	42.7	74.1	105.9	91.1	82.3
Imports, FOB	125.9	139.7	157.7	172.2	189.3
Merchandise Trade Balance	48.0	136.5	268.5	220.0	178.3
Current Account Balance	-22.8	44.3	177.3	141.1	110.7
Gross Official Reserves					
	449.2	438.2	535.5	610.3	685.5
Saudi Riyals per US\$ (period average) ~	3.75	3.75	3.75	3.75	3.5

*Annual percent change; /Percent of GDP; ~Exchange-rate is pegged to the U.S. dollar.

Sources: Saudi Arabian authorities and IMF projections.

Table 2 - Increasing diversification of Saudi Economy - (Annual percent change)

	2020	2021	2022	2023	2024	2025
Oil	-6.6	0.2	13.1	3.3	1.3	1.4
Non-oil	-2.5	4.9	4.2	3.8	4.0	4.0

Sources: Saudi Arabian authorities and IMF projections.

US\$700bn by end of 2024. However, public debt stock is now on a declining trend after reaching one-third of GDP during the 2020 pandemic downturn year.

“Maintaining reform momentum is pivotal for prosperity in the long run,” advised IMF.

Emerging new economy

The KSA is making notable progress in terms of fiscal adjustment and reorganisation of public finances, as well as socio-economic reforms to flourish in a post-oil future.

The transformative structural reforms in line with Vision 2030 are evident in a steady decrease in the share of oil and gas in total GDP from historical levels of 50%. This reflects the expansion of non-oil sectors, which contributes to GDP in areas such as hotel and retail (8.4%); non-oil related manufacturing (8.3%); real estate (5.9%); transport, storage, and communications (5%); and construction (4.8%), according to Oxford Business Group data. In 2021 for example, while overall real GDP growth stood at 0.2%, non-oil growth was 4.9% (Table2).

More than 300 initiatives and regulations have been implemented to enhance business environment (aligning with global standards), attract FDI and create private sector jobs. The newly formed National Competitiveness Centre focuses on reducing cost of business setups, governance, and labour market reform. Regulatory changes led to ‘one-stop’ shops to register a business in three minutes, foreign investors owning controlling stakes in Saudi firms, plus easing of FDI in financial services, thereby opening domestic markets to competition.

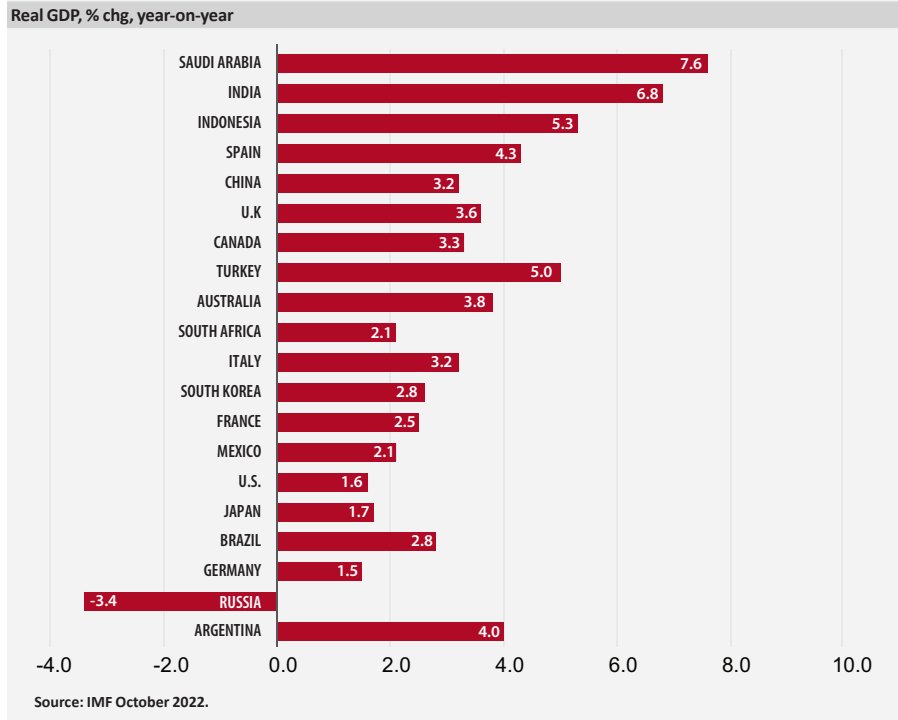
“Saudi Arabia’s economic outlook appears promising, especially if the reform process can remain on track and finance continues to flow into the kingdom’s strategic projects and growth sectors,” noted the London-based EIU.

Potential medium-term non-oil growth is estimated at 4%, led by retail (including e-commerce), trade, manufacturing, ITC, tourism, and healthcare services as well as accelerated reform implementation and investments.

The government has directed the National Development Fund (NDF) to target a ‘threefold’ increase of non-oil GDP to reach US\$161.25bn (SAR 605bn) by 2030. The NDF until now has injected over US\$183.9bn (SAR 690bn) through its affiliates, becoming one of the largest development finance funds in terms of the ratio of assets to GDP in G20 economies, with assets amounting to US\$132.3bn (SAR 496bn).

According to a McKinsey report, the Kingdom has potential to double its non-oil economic growth and create as many as 6mn new jobs by 2030, however, contingent on mobilising nearly US\$4 trillion in investment. A new investment drive in March 2021, the Shareek (Partner) initiative, was launched to achieve such a goal. This programme aims to inject SR12trn (US\$3.2trn) into the domestic economy by 2030, with SR5trn (US\$1.3trn) coming from top-24 Saudi companies, and SR3trn (US\$799.8bn) coming from PIF, with the remainder mobilised via a new National Investment Strategy that seeks to boost (net) annual FDI flows to US\$103bn.

Economic Growth in 2022 places Saudi Arabia at top of the G-20 Economies



“The kingdom has the potential to double its non-oil economic growth and create as many as 6mn new jobs by 2030.”

Building industrial capacity

The expansion of Saudi Arabia’s industry is a core goal of Vision 2030, with heavy focuses on strategic industrial segments: downstream oil and gas, petrochemicals, and mining. The number of industrial facilities rose by 50% to 10,640 in 2022. Currently, KSA ranks as the fourth largest manufacturer of petrochemical products. The country’s natural gas reserves (the world’s eighth largest), plus untapped raw materials (see Fact File) bode well for heavy industries such as steel-making, cement, fertilisers, gold refineries and aluminium smelters.

More recently, a new Industrial Strategy was launched to make KSA a manufacturing hub by tripling industrial output and doubling the value of industrial exports, including high-tech products to SR557bn/year. It also seeks to attract SR1.3 trn (US\$350bn) of additional manufacturing-based investment and create high-value jobs. “We have all the capabilities we need to enable a competitive and sustainable industrial economy – from ambitious young talent, a distinguished geographic location, rich natural resources and the presence of leading national industrial companies,” said Crown Prince & Prime Minister, Mohammed bin Salman.

Saudi’s manufacturing industry has expanded in recent years, with a growing electric vehicle (EV) market.



With a US\$4 trillion investment, 6mn new jobs can be created.

Photo Credit: Adobe Stock

“With solid fundamentals, Saudi Arabia is expected to witness long-term expansion.”

Leveraging new opportunities

Saudi Arabia is rapidly developing its construction sector, with the total value of real estate and infrastructure projects launched since 2016 exceeding US\$1.1 trillion, according to property consultancy, Knight Frank. Around 211 projects mostly through private public partnerships (PPPs) are at various stages of development – thus providing opportunities for global banks, engineering procurement and construction firms (EPCs) and consulting services.

Saudi Arabia aspires to become a top five global tourist destination over the next decade with grand projects like the Red Sea tourist development, Qiddiya entertainment city and a US\$703mn (SR2.64bn) funding plan to develop Darin and Tarout Island - contributing 10% of GDP by 2030. Ongoing investment in hotel facilities and other amenities bode well for business tourism, which is on the rise as more people attend conferences, meetings, and exhibitions.

The Saudi Green Initiative (announced in 2021) is also key to Vision 2030, offering investors untapped potential while ensuring sustainable development in a post-oil economy. Ambitious targets include installing 27.3 gigawatts (GW) and 57.8GW of renewable capacity respectively by 2025 and 2030, and becoming a global leader in hydrogen generation with a production target of 4mn tonnes/year. It aims to increase the share of renewables up to 50% of energy mix for power-generation (with the remainder from natural gas) by 2030. Achieving such a target requires investments of US\$50-100bn/year, according to the IMF.

The National Transport and Logistics Strategy seeks to turn Saudi Arabia into a major regional transport and logistics hub.

Moody's predicts Saudi economy growing at 3.9% over the next few years. The credit-rating agency said ongoing structural economic, legal, and social reforms to improve business environment will begin to bear fruit by way of higher private sector



Photo Credit : Adobe Stock

With sustained investments in the country's future, Saudi Arabia can expect long-term expansion.

investment growth.

In summary, with solid fundamentals, Saudi Arabia is expected to witness long-

The Saudi Green Initiative is key to Vision 2030.

term expansion, especially as mega-projects are realised and investments in the country's future are sustained. Growth sectors are manufacturing, oil derivatives (chemicals), retail/services trade, agro-processing, real estate development, finance, digitalisation, tourism/hospitality, and green infrastructure. Overall, KSA maintains a favourable risk-reward profile. ■

Fact File on the Middle East's No.1 economy

Total Area: 2.2mn sq km.

Population: 35.8mn (2022) – median age (27.5 years).

Gross National Income (Purchasing Power Parity): US\$1.66 trillion (2021).

Workforce: 16mn (2020).

Manufacturing sector: 12% of GDP (2020). **Manufacturing value-added:** US\$85.2bn (2020).

Installed power-generation capacity: 79.67 GW (2020).

Foreign Direct Investment stock: US\$261bn (2021).

Sovereign Credit-ratings: Moody's Investors Service (A1); Standard & Poor's (A-); Fitch Ratings (A);

Proven Hydrocarbons reserves (end-2020): Crude oil (297.5bn barrels); Natural gas (six trillion cubic metres). **Sustainable oil production capacity:** 12mn bpd (2022).

Mineral resource endowment: gold; silver; zinc; copper; phosphates; iron-ore; bauxite; potash; limestone; magnesium; high-grade silica; kaolin; granite; pozzolan
Saudi Arabia has identified 1,273 and 1,171 sites of precious metals and industrial raw materials.

Sovereign Wealth Fund (PIF): US\$620bn (July 2022) – 5th largest in the world in terms of assets under management.

Economic development: high level of economic resilience.

(Sources: World Bank, United Nations, BP, Saudi Aramco. BP, Mining Journal and World Investment Report (2022)).

Providing mining solutions for the Middle East

In an interview for *Technical Review* at The Mining Show 2022 in Dubai, Sakala Muyikwa Adolph, general manager, Christina Trading SARL, revealed the company is looking to establish itself in the Middle East, using Dubai as a gateway into multiple regions.

SPECIALISED IN SUPPLYING industrial equipment spare parts, logistics, and civil engineering, Christina Trading is headquartered in the Democratic Republic of Congo. The company also provides services such as the development of mining scheme and excavation works related to the mining sector and others.

“We need to have greater representation in the UAE, because it is a trade hub for different continents,” said Sakala Muyikwa Adolph, general manager, Christina Trading.

The company has operations in Congo, Angola, Tanzania, and South Africa.

“We are most interested in building a brand name for ourselves in Tanzania and Zambia,” said Adolph, adding that these two markets have the most potential to bring in business for the DRC as they are its immediate neighbours.

The company was launched in 2011 when it began supplying spare parts for different brands. In the last 12 years, Christina Trading has gained clients including Frontier SA, Société d'exploitation de Kipoi (SEK), Kipushi Corporation and Ruashi Mining apart from others. Recently, the company became the exclusive and authorised distributor of perma-tec GmbH & Co. KG products in the Democratic Republic of Congo, Angola, Tanzania and Zambia as well.

Most of the clients are involved in cobalt mining, said Adolph, stressing that his country is rich in natural resources, with an abundance of natural wealth, including a multitude of minerals such as diamonds, gold, copper, cobalt, cassiterite (tin ore) and coltan, as well as timber, coffee and oil.

“We [DRC] have a lot of resources which means that we have big opportunities in the mining sector. We already have a growing mining sector, and our company is looking to develop easy solutions for the mining sector in the region.”

However, facing supply issues has caused



Photo Credit : Christina Trading

At The Mining Show 2022, Christina Trading general manager, Sakala Muyikwa Adolph revealed that the company is looking at establishing operations in the Middle East.

Christina Trading to look towards the Middle East, explained Adolph. For example, he said, if the company needs to order spare parts to the DRC, it would be quicker to do so via Dubai.

“It can take less than three weeks, maybe one month, if you bring spare parts to the DRC from Dubai. But if you were to order it from say, South Africa, it can take up to two or three months.”

With regards to digitalisation, Adolph revealed that his company is always finding solutions before any issue comes up.

“We need to have greater representation in the UAE as it is a trade hub.”

“We are always looking for problems that can come up and as soon as we identify the problem, we seek digital tools to solve the issue, because we cannot wait until a project begins to start finding or developing a program. We are usually prepared two or three months in advance.”

The company also has a deep commitment to safety, said Adolph, adding that ‘zero danger’ is the company’s motto. It protects all its agents on site, ensuring the safety of its clients.

Finally, Adolph spoke about the future of Christina Trading. “We have a few contacts, but not all partners can support our projects. So we need to have a lot of representation outside of Africa as well, because we have plenty of mining opportunities here. We hope that if we are based in Dubai we can get more contacts for our Africa projects. We also hope that we can start providing mining solutions to clients in Europe and Asia as well, not just for the DRC.” ■



You know why.

Visit
our website



We keep companies on the move with the best tyre solutions.

No matter where in the world, our customers can count on our superior service and knowledge. Magna Tyres is the fastest growing brand in the earthmoving segment in Africa.

The best reasons to choose Magna Tyres:

- Local personal presence
- Key sizes always available in local warehouse
- Most favorable cost of ownership
- Chosen by OEM manufacturers





Photo Credit : FLSmidth

FLSmidth's devices help customers reduce energy and resource consumption.

FLSmidth looks for sustainable solutions through digitalisation

In an interview for *Technical Review ME* at The Mining Show in Dubai, FLSmidth regional heads Deon de Kock and Alistair McKay spoke about the importance of digitalisation and sustainability in the mining industry.

The mining industry needs to shift focus from a specific to a holistic approach.

ALISTAIR MCKAY, VICE president of site and service sales, sub-Saharan Africa, Middle East and South Asia, explained the type of digital solutions the customers are looking for. "There is a lot of development on the technology side, but it takes a period of time to get past pilot skill testing and to get these types of technologies widely implemented into the mining environment."

How can the existing installed base be optimised? How do we look at the existing equipment, existing technologies and then start utilising all the aspects of artificial intelligence? And can they be brought together in terms of a platform that improves the efficiency of the technology? But then over and above that, how do we start bringing together the entire flow sheet?

These are the questions McKay often asks while looking at the digital space, adding that the mining industry has for too long focused on specific items of equipment rather than on the holistic approach in terms of what makes a processing plant work. Moreover, linking digitalisation with expert services for FLSmidth's mining customers to help them reduce energy consumption, lower resource consumption, and improve efficiencies are also major factors in driving digitalisation.

On-site safety is also important, said McKay, adding, "I think it is important to have improved safety on site and improved skills transfer. Online training to access the equipment remotely to be able to give guidance remotely when there's a shutdown, even when there's an emergency problem on the site and to bring in experts around the world specific to that."

With regards to technology, McKay said that "the PerformanceIQ Services is something we believe to be the future... because it's all encompassing from data to all the way through to the training of personnel on site."

Meanwhile, FLSmidth is also heavily focused on sustainability efforts for its customers. Deon de Kock, president of sub-Saharan Africa, Middle East and South Asia region, explained that sustainability targets also need to be linked to digitalisation in a way that services are all integrated.

"I think the sustainability agenda is more than lowering the carbon emissions, reducing water waste and reducing energy consumption. The technology already exists to monitor, to analyse, to do remote conditioning, remote monitoring or even running remote diagnostics. But if you combine all of those technologies in the flow sheet with digitalisation as the enabler, that's when you can optimise it to really take in the marginal improvements of energy."

de Kock also explains that digitalisation is linked to PerformanceIQ Services. "It's not rocket science, but it's just about how to integrate that, and how to extract the information, so that you can optimise the plant. I don't think there's one silver bullet

Integrating sustainability with digitalisation will deliver optimal effect.

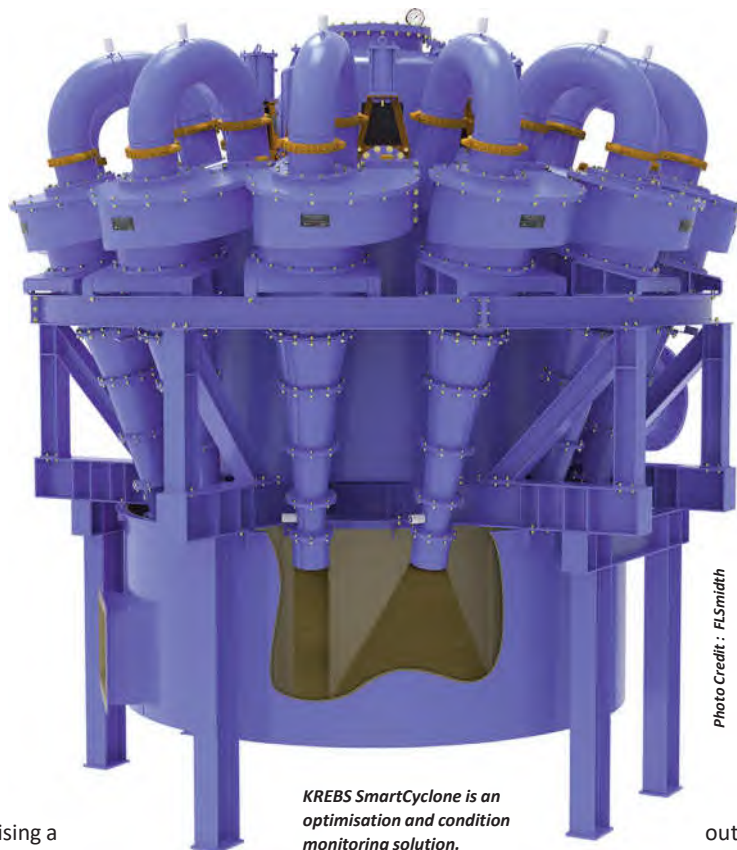


Photo Credit: FLSmidth

for optimising a plant. It's the sum of many small things. But the enabler to put it all together is digitalisation."

Speaking of innovation in technology, de Kock explained that nowadays, digitalisation is built into the equipment.

"If we talk about a dry grinding as opposed to a wet milling circuit or the REFLUX flotation technology, digital solutions are built into the equipment. The way we monitor it, control it and the way we analyse the data links in with remote diagnostics and monitoring.

"Whereas in the past if you had a piece of analog technology, it couldn't communicate in the digital space. It was basically a piece of hardware and you had to monitor it."

Adding to the conversation, McKay said that there is a shift away from traditional technology. "New technology now comes with a digital platform that's already established." Giving an example of KREBS SmartCyclone, FLSmidth's cyclone sensor technology, McKay said that "it is an optimisation and condition monitoring solution that we have developed which is really a digital application onto a standard cyclone."

These sensors can report the wear status of the cyclone components, allowing for more precise planning of parts purchases and maintenance operations.

With regards to business expansion

outside of Africa, the company is focused on growing in the UAE and Saudi Arabia. "In the past four years, we've done significant transactions with our customers here, which means that our installed base has grown and we have to support that installed base."

"So we are certainly expanding into Saudi Arabia. Besides, we are also strengthening our position in Ghana and West Africa. And we will do the same now, but on a smaller scale in Zambia and Central Africa. We are already well established in South Africa and in India."

"But our focus would certainly be in Saudi Arabia and the Middle East to support our fast growing install base, which is predominantly in copper, gold and phosphate," explained McKay.

Both McKay and de Kock confirmed that the company has continually added value to its existing customer base in the Middle East, which requires local expertise, understanding of the operating conditions and the nature of the customers.

"It is because the value that we've demonstrated was not on greenfield projects; it was on existing brownfield projects, where as a technology partner, we could optimise that operation," said de Kock. "Step one in the sustainable operation and green transition is to just use your asset better," he concluded. ■

Doosan introduces new wheel loader for ceramic floor tile industry

THE DL380-7 IS part of the new generation DL-7 wheel loader family, which offers maximum capacities from 2.8 to 6.4 m³. In addition, the Z-bar lift arm provides high breakout forces and lifting capacities, especially for heavier materials, and a large dumping angle to efficiently unload materials.

The Doosan DL380-7 wheel loader features a Stage V engine that primarily uses Selective Catalytic Reduction, plus a longer lasting Diesel Particulate Filter, with a fully automatic regeneration process designed to manage itself, without operator intervention. Eliminating exhaust gas recirculation (EGR) from the engine leads to much lower fuel consumption and fewer particulates in the exhaust.

With no EGR needed and a new selection of power modes available - SAT2, Standard or Power - the new generation Situation Awareness Technology (SAT2) power management system automatically scans the machine's activity and adjusts the engine's output according to real time analysis of the boom pressure, pump



Photo Credit: Doosan

pressure and output shaft.

Inside the cab, the DL380-7 wheel loader offers enhanced operating comfort, an enhanced steering system and advanced electronic controls. Using the new Doosan Smart Key system on the control panel in the cab, the operator can start the machine

using a keyless device, helping to prevent machine theft.

The new cab has a Grammer Actimo XXL seat with fully adjustable horizontal and vertical suspension settings, a pneumatic lumbar function and seat heating as standard.

Genie expands service solutions in EMEA region

GENIE ANNOUNCED THE expansion of Genie Service Solutions (GSS), a comprehensive service agreement plan, for Genie equipment owners of all fleet sizes throughout the EMEA region (Europe, Middle East, Africa and India). GSS allows equipment owners to feel confident in the quality of their service and maintenance, while optimising the timing and cost of servicing their equipment and increasing fleet uptime.

Riwal France, a large rental company, has undertaken a GSS maintenance contract for four 43 m / 141 ft Genie ZXTM-135/70 articulating boom lifts and a 40 m / 131 ft Genie S-125 telescopic boom lift.

"Genie's technical expertise has multiple benefits, including machine maintenance, recalibration, analysing recorded alerts, sending reports to our company, and quoting for any repairs," said Stéphane Colas, technical director of Riwal France. "The programme helps the rental company meet specific business objectives and frees our own technicians up to handle other daily tasks. Genie equipment is already known for its strong residual value, and because the machines are being serviced and maintained properly, it contributes to an even stronger resale value."

In addition to the Preventative Maintenance Plan selected by Riwal, there are two other options: the Annual Health Check Plan with full functional tests, as well as speed and calibration checks, and the Reactive Maintenance Plan, which additionally covers all repairs to the machine resulting from component failure.

GAM Rentals, a large rental company with more than 75 branches in Spain, selected the Annual Health Check Plan for 30 of its mid-sized hybrid and high-rise diesel boom lifts that are located across the peninsula. Joan Dalmau, corporate technical director, commented, "Genie Service Solutions gives us the confidence that the hybrid and high-rise units in our fleet are 100% up to date from a legal, regulatory and functional standpoint, through regular inspections carried out by the manufacturer."

Plataformas Ber S.L. (MAXBER), a mid-sized rental company with six locations in Spain, also selected the Annual Health Check Plan for high-rise boom lifts in its fleet. Bernardo Raúl Gómez, general manager, said, "At Maxber we carry out periodic preventative maintenance on our equipment, but we decided to invest in Genie Service Solutions in order to

offer our customers the assurances that only inspections from the manufacturer can provide. In addition to providing peace of mind for our customers, we believe the inspections also will reduce the chance of breakdowns."

Likewise, Toni Garcia, general manager of Rent Wheeler S.L. (Alpesur), added, "We consider that we reduce risks for our customers and improve the image of our company when we are directly supported by the manufacturer."

But GSS is not just for rental companies. End users who own as few as one or two units also can benefit from a Genie Service Solutions plan.

"These companies often own smaller MEWPs, such as our GS-1932 scissor lifts or GR-12 Runabouts, which are frequently used for routine maintenance in the manufacturing business or operational tasks in retail. Many times, these Genie owners don't have in-house MEWP maintenance expertise. Using manufacturer-certified technicians to perform inspections relieves them of the burden, increases safety, and improves uptime," says Matt Brint, Genie service director for the EMEA (Europe, Middle East, Africa and India) region.

Saudi Arabia's largest construction event is back bigger and better!

The 11th edition of The Big 5 Saudi will be held from 18 – 21 February 2023 in the Riyadh Front Exhibition & Conference Centre.

THE EVENT IS a key platform that will align the industry with Saudi Vision 2030 by unleashing opportunities contributing to the new and vibrant landscape of the Kingdom. The organisers have confirmed that at the event, visitors can expect more than 500 exhibiting companies from around 40 countries, discover over 15,000 innovative products and solutions, learn from more than 90 experts at the free-to-attend CPD certified industry talks and explore the newly launched interactive live demonstration zone.

There are five other co-located events to source products for the complete construction cycle. These include HVAC R Expo Saudi, Stone & Surface Saudi Arabia, FM Expo Saudi, Windows, Doors & Facades and Saudi Glass events.

The Big 5 Saudi and co-located events have a strong line up of local and international leading manufacturers and suppliers including NAFFCO, Diesel



Photo Credit : The Big 5 Saudi

The Big 5 Saudi and co-located events have a strong line up of local and international leading manufacturers and suppliers.

Machinery, Steeco, Coolex, SCHNELL, System Air, Dosan, RMEA Manufacturing, Al Majal Al Arabi, Dar Almasalla, Al Zarabi Technical Trading Co., Al Mawrid Manpower Company, Schüco, Alumil, Gutmann, Reynaers, Technoform, Aluk, Tecfire, Talco, and many more along with confirmed pavilions from Italy, Germany, Greece, Poland, Spain, Egypt, China, Kuwait, Türkiye, Qatar and India.

Running alongside the exhibition are The

Big 5 Saudi's free Continuing Professional Development (CPD) certified educational sessions, encompassing all disciplines in the construction industry, which will support the ongoing development of the industry's young professionals helping discover industry best practices and advancing careers.

The Big 5 Saudi is sponsored by Afaq Woods, Carrier, Saudi Services Company Limited, Zamil Industrial, Al Jadd Real Estate Development & Investment, SRACO, Midea.

The Big 5 Saudi continues to serve as a testament to the country's growing attractiveness in the global construction arena, bringing together industry players in support of the Kingdom's ambitious Vision 2030 objectives.

The event brings The Big 5 brand's 40+ years' experience and success to the Kingdom's construction and infrastructure projects market. ■

Register at www.thebig5saudi.com/register or visit www.thebig5saudi.com

TURN TO THE FUTURE

Do you agree that **high production targets** and more **sustainable building** should go hand in hand? If yes, choose precast with the the automated **ELEMATIC EDGE DOUBLE WALL** production line.



Take a look at a 360° view
Elematic EDGE Double Wall
production line

Together we can make sure your precast production hits its targets in capacity and sustainability.

Meet us at the **BIG 5 Saudi, STAND 3E99**






Please visit elematic.com for more information and follow us



Reducing emissions in the concrete process

ACCIONA HAS DEVELOPED an app that ensures full control of the entire concrete process, from production to the concrete being cast.

The objective of this new technology is to monitor everything that happens in real-time from production to transport and to the final delivery. The result is higher quality, less wastage, lower cost and reduced CO2 emissions.

This app has been developed and tested in a project that ACCIONA is carrying out in Norway. Extra high demands are placed on the quality of the concrete due to changing weather conditions. Considering the hot and arid weather in the Middle East region and the need to use high strength concrete, brings forward the problem of concrete durability under these climate conditions. It can be seen that concrete structure tends to deteriorate more rapidly exhibiting greater problems with cracking control in temperate regions of the world. The company now wants to use this technology in several projects, both in Norway and other countries.

It is estimated that the world's concrete use annually is 12.5-14 billion cubic meters - which makes concrete the world's most used building material. This material is very versatile but requires very short delivery time and proper handling. If it takes too long from production to use or if it is handled incorrectly, its quality will deteriorate. In the worst case, the concrete must be destroyed, which leads to unnecessarily high emissions and costs.

"To be able to document that the concrete holds the quality we promise, we saw a clear need to monitor all steps of the process. In addition to being able to document the quality, the new technology also provides several other positive synergy effects, such as reduced costs and CO2 emissions," commented Ignacio Calvo, transformation director of ACCIONA's construction business.

Around 90% of CO2 emissions from concrete come from cement.



Photo Credit: ACCIONA

The new technology results in higher quality, less wastage, lower costs and reduced CO2.

During production, 700-800 kg of CO2 are emitted per ton of pure cement. Thus, it is crucial that the concrete produced has a long life to reduce the need for new cement production. In addition, it is important that the concrete produced can be used.

In any project there is waste of concrete due to inefficiencies and several other reasons. Minimising them contributes to reduce costs and CO2 emissions. In the future, climate change will lead to more frequent extreme weather, which will place higher demands on the use of materials so it will be even more important to think about climate adaptation in construction projects.

"We believe this technology will become increasingly important. The use of high-quality concrete will reduce the need for rehabilitation, which will save society both cost and CO2 emissions in the years to come," concluded Calvo.

Regional construction industry to prioritise sustainability in 2023

AS PART OF the participation in this year's international building and construction show in the UAE, The Big 5 – construction chemicals company Al Muqarram Industry showcased how the regional construction sector's commitment to sustainability is delivering sustainable yet functional projects.

According to Emmanuel de Smedt, the managing director, the company's involvement in The Big 5 under the theme - Taking steps towards sustainability - demonstrated its strong commitment to transforming the construction industry through sustainable processes, technologies and the development of need-driven building materials.

"The Big 5 showcase has always been an important platform for the regional construction industry. Apart from participating in this year's event to build stronger business partnerships and foster robust global and regional networks, we also aimed to drive the sustainability agenda by reiterating its importance and benefits. To demonstrate this, we highlighted some of our flagship products that are helping players in the industry to shift to sustainable construction seamlessly," said Emmanuel.

Al Muqarram Industry revealed its newly-developed construction adhesives and hybrid sealants. Dolphin Power Bond and Dolphin Fix & Seal - as part of its growing portfolio that includes sealants, tapes, and aerosols.

During the four-day exhibition, Al Muqarram Industry also discussed its strategies for the upcoming years, its AED 40 million investment in developing its factories, and the changes



Photo Credit: Al Muqarram Industry

Al Muqarram at The Big 5.

implemented to stay relevant to the market.

As part of its showcase, Al Muqarram Industry, acquired by Soudal Group (Belgium), also exhibited product demos and introduced new tools designed to make construction processes more efficient.

"Apart from unveiling a new line-up of hybrid sealants, construction adhesives and polyurethane gun foam, we were delighted to announce that our flagship product – Dolphin 200 – is now FDA certified (through Ianeso lab in France), making it a food-grade silicone," noted Emmanuel.

Al Masaood Bergum showcases construction solutions at Construction Technology Festival KSA

AL MASAOOD BERGUM – a part of Al Masaood Group and one of the UAE's modular building system providers, participated in the Construction Technology Festival, KSA in December 2022.

Al Masaood Bergum focused on two innovative construction solutions - Cross Laminated Timber (CLT) and Hybrid Modular Building Systems (HMS). CLT is an engineered solid wood panel that is prefabricated and produced from sustainable carbon-sequestering substance. In addition to offering strong structural capabilities, thermal and acoustic qualities, and other advantages, it also speeds up construction by 40%, makes better use of labour and decreases waste.

HMS is a cold-formed material used by Al Masaood Bergum to make the construction process easier and products more sustainable. The construction solution, used in residential and commercial building structures, is recyclable, easily transported and installed, with minimal requirement for manpower on site.

Jens Otterstedt, general manager of Al Masaood Bergum, said, "The Construction Technology Festival provides an excellent platform for players in the sector to highlight their recent offerings to the up-and-coming Saudi projects. After decades of success in the United Arab Emirates, Bergum is establishing itself in Saudi Arabia's growing construction sector. Construction industry in KSA is anticipated to grow by 3.2 % in 2022 and 4 % between 2023 and 2025.

"Our recent wins in the kingdom with major developers reflect our commitment to creating sustainable and environmentally



Al Masaood Bergum's portfolio of services includes end-to-end modular building systems.

friendly construction solutions that cater to the kingdom's ambitious sustainable projects and vision to build new futuristic and prosperous communities."

Al Masaood Bergum's portfolio of services includes end-to-end modular building systems that are known for their high quality, sustainability, safety, and cost-effectiveness. The company is one of the major industry players in the UAE. It aims to adapt sustainable construction practices through innovative solutions.

Honeywell launches Healthy Building Services programme

HONEYWELL LAUNCHED THE Healthy Building Services programme to help building owners and operators track and improve indoor environmental quality, improve overall building health and occupant well-being, and gain industry recognition for their efforts. The programme enables owners and operators to assess building performance, take steps to improve indoor air quality, and assure their efforts have made a difference.

Indoor environmental quality (IEQ) refers to the operations of a space to make it healthier, comfortable and energy efficient, including factors such as indoor air quality (IAQ), lighting and thermal conditions, among others.

"The importance of improving indoor air quality will not go away as the pandemic subsides," said Umar Khan, general manager of sustainability, smart cities and energy, Honeywell Building Technologies, Middle East, Turkey and Africa. "As more workers return to offices on a full-time or hybrid schedule, they are wanting reassurances from their employers that their well-being is being prioritised. We are working to give building owners greater confidence in their building health data, more affordable ways to make improvements with innovative solutions, and an opportunity to take credit for the work they have done to make their buildings healthier.

Honeywell Healthy Buildings Services allows building owners to:

- Gain unbiased assessments from third-party organisations: Independent, third-party IEQ assessments with UL Solutions, aligned with the scope requirements of its UL Verified Healthy Building program as well as DNA-tracer based IAQ performance



Honeywell's Healthy Building Services Programme enables building owners to assess building performance.

verification with SafeTraces provide a clear, unbiased perspective on the improvements required to improve overall building health.

- Take action to visualise, optimise and control IAQ: offer monitoring, analysis and improvement of IAQ performance supported by maintenance support and calibrations, allowing companies to address IAQ upgrades as operating expenses instead of capital outlays.
- Evaluate progress and assure quality of efforts: Honeywell's WELL Accredited Professionals (WELL APs) evaluate 500+ evidence-based interventions as a part of the WELL standard throughout a building and recommend WELL strategies to help building owners and operators achieve WELL Certification or WELL ratings from the International WELL Building Institute. Honeywell is one of the first building technologies companies to hold the WELL Enterprise Provider designation, enabling it to provide this service to its customers.

Towards improved grid performance

Technologies such as smart metering and AI hold the potential to increase the efficiency of power grids.



Photo Credit: Adobe Stock

A NEW STUDY FROM Juniper Research has found cost savings from smart grid deployments will exceed US\$125bn globally in 2027, increasing from just over US\$33bn in 2022. This 279% growth will be driven by rising energy prices, with smart grid technologies playing a critical role in increasing network efficiency and optimising resource management.

The research identified smart grid deployments as key to decarbonisation of electricity production. Smart grids will enable energy sources that produce electricity based on external elements, such as solar and wind power, to meet energy requirements more effectively, by actively balancing load and predicting surges in demand and production.

Research co-author Nick Maynard explained, “By leveraging AI, electricity networks can ensure spikes in demand are predicted and mitigated. Smart grid vendors must focus on enhancing their models to more accurately predict usage patterns to maximise these benefits.”

Smart grids are electricity networks using advanced technologies to monitor and manage transport of electricity from all generation sources to meet varying

electricity demands of end users. Performance, cost, and future-proofness of the chosen connectivity are the most critical elements of a smart grid.

Smart metering

Several new technologies are paving the way towards improved grid efficiency.

By leveraging AI, electricity networks can ensure spikes in demand are predicted and mitigated.

Nick Maynard, research co-author, Juniper Research

POWERCOM is a turnkey smart grid solution provider, supplying millions of smart meters and end-to-end solutions. Its Dashboard System provides BI and AI reporting with real-time visibility of all Key Performance Indicators (KPIs). POWERCOM Smart Grid Solution supplies accurate data

in near real-time and provide configurable demand response and remote disconnection. POWERCOM Smart Grid Platform provides monitoring, analysis, control, and communication within the electrical grid to help improve efficiency and minimise energy consumption and cost.

Today’s smart metering projects aim to connect thousands and millions of meters to collect data cost-efficiently.

Powercom recently selected Wirepas Mesh RF connectivity to connect its smart meters wirelessly and speed up rollouts.

Wirepas Mesh and the new non-cellular 5G connectivity standard for IoT, DECT-2020 NR, based on the Wirepas technology, were developed to meet the future needs of smart grids.

“We have seen an exponential interest in the Wirepas Connectivity Suite. While significantly lowering the cost of deployments, it also has the potential to speed up smart metering and smart grid rollouts for a decentralised energy grid management,” said Jani Vehkalahti, head of smart metering from Wirepas.

“During 2023 we are expanding in the US, LATAM, the Middle East, and Africa,” he added. ■

WFES explores green hydrogen economy realities

The potential of a globalised green hydrogen economy is examined by the World Future Energy Summit in Abu Dhabi.



Photo Credit : Adobe Stock

Green hydrogen is gaining significance in the energy mix of the region.

THE IMPORTANCE OF green hydrogen to the regional energy mix has never been more prevalent. With the recent hosting of COP 27 in Sharm el-Sheikh, Egypt, not only were new deals brokered to boost green hydrogen capacity, including Elsewedy Electric and ReNew Power signing a partnership to develop a green hydrogen project in Egypt capable of producing 220,000 tonnes per annum of green hydrogen, but countries such as Chile securing millions in funding to bolster their green hydrogen output.

“If we look at the recent news coming out of COP 27 in Egypt from our partners and the industry, there are incredible opportunities happening across the region and internationally around green hydrogen. We hope to expedite collaboration, spur investment, and demonstrate the potential for regional projects, initiatives, and partnerships through this new feature at the show,” explained Leen Alsebai, head of World Future Energy Summit, organised by RX Middle East.

The Summit is the leading business event for future energy and sustainability. It provides opportunities to discover the latest

technologies driving the hydrogen revolution at the new Hydrogen Innovation Hub, which consists of SMEs and startups, speed networking dedicated to green hydrogen professionals, and live podcast recordings focused on green hydrogen. Attendees will also witness the inaugural Green Hydrogen Summit organised by Masdar in partnership with IRENA and the Atlantic Council. The Summit demonstrates Abu Dhabi’s achievements to date and its ambitions to become a global hub for innovation and investment in this sector, while providing a platform for leading hydrogen players worldwide to meet and exchange views.

Event partner, Masdar, one of the world’s fastest-growing clean energy companies, has also identified Africa as a continent that could capture as much as 10% of the global green hydrogen market, thereby helping to create up to 3.7 million jobs while adding as much as US\$120bn to the continent’s gross domestic product. This is according to a landmark report, ‘Africa’s Green Energy Revolution: Hydrogen’s role in unlocking Africa’s untapped renewables,’ issued on the sidelines of COP27 by Masdar and its Abu Dhabi Sustainability

Week (ADSW) platform, with analytical support provided by McKinsey & Company.

“Our report provides a blueprint for African nations to harness green hydrogen’s game-changing potential to decarbonise industries, drive sustainable economic growth, and accelerate the deployment of renewable energy across the continent. The grid-connected renewables used for green hydrogen production can feed energy into the grid to provide affordable clean energy to under-resourced areas – notably, in sub-Saharan Africa, which has an average electrification rate of only 48%,” said Mohammad Abdelqader El Ramahi, Masdar director of asset management, technology and green hydrogen.

A panel of experts at the Solar & Clean Energy Forum examine the pros and cons of hydrogen types, why governments and organisations are focusing on green, examples of planned green hydrogen use, and how green hydrogen’s electrolyser market is being scaled.

Among the panellists is Stephan Gobert, senior vice president of hydrogen at ENGIE, who is looking to lead in the production of large-scale renewable hydrogen. He believes the huge potential needs to be fully explored and understood if it is to be successful.

“Falling costs for green hydrogen will open opportunities to expand into new

Masdar has identified Africa as a continent that could capture as much as 10% of the global green hydrogen market.

applications, especially heavy-duty trucking, off-grid power generation, and many other applications in sectors like mining,” said Gobert. “In the future, it will also expand into household and industrial heat, stationary power generation, and long-term electricity storage applications.

“The business viability of these applications depends on the long-term outlook for costs, the interplay between market size, regulation, voluntary Net Zero commitments, and other decarbonisation drivers. Successfully understanding and navigating these challenges can mean the difference between a prescient investment and a reckless one,” he added.

The World Future Energy Summit also explores the water cost of hydrogen, given the large volumes used in manufacturing processes and for cooling electrolysers.

It examines how the need for clean water can be married with economic ambitions and investigate the availability of research for alternative technological approaches to water usage in green hydrogen production.

Saudi Arabia’s NEOM has launched its own Green Hydrogen Project, which is the world’s largest utility scale, commercially based hydrogen facility powered entirely by renewable energy.

“This project, which is a joint venture with Air Products and ACWA Power, is based on proven, world-class technologies that will include the innovative integration of a combined capacity of more than four gigawatts of renewable power from solar, wind, and storage,” explained Roland Kaepfner, executive director of hydrogen & green fuels - energy & water for NEOM. “We will use this as a case study for the sustainability of green hydrogen by demonstrating how – when commissioned in 2026 – the project will mitigate the impact of three million tonnes of carbon dioxide per year.”

The World Future Energy Summit inspires the advancement and transfer of ideas, technology, and investment across borders and between the public and private sectors worldwide. ■

FMI’s new research provides insights on battery energy storage system market

ACCORDING TO AN analysis by Future Market Insights (FMI), the battery energy storage systems market is expected to be valued at US\$ 44.86 bn in 2032, with 26% CAGR during the forecast period.

The market’s expansion can be attributed to rising demand for grid energy storage systems due to ongoing grid modernisation, increasing penetration of lithium-ion batteries in the renewable energy sector, and the rising trend of adopting a low-carbon fossil-fuel-free economy, as well as the ongoing renewable energy revolution.

The most common renewable energy kinds stored in grids are solar and wind energy. However, the energy generation process is disrupted when the sun is obscured by clouds or by changing wind currents. Moreover, the significant financial investment necessary to build battery energy storage devices, on the other hand, is limiting industry expansion.

Such oscillations necessitate the deployment of flexible grid solutions for

energy storage. Grid modernization is increasingly using battery energy storage technology.

However, utility application growth has been hampered by the abrupt breakout of the pandemic. In 2021, there was a decrease in battery energy storage systems installed in various projects. In addition, the shutdown of manufacturing facilities throughout the world in the first and second quarters of 2020 contributes to the market’s fall in growth in 2020.

Various governments around the world, particularly in developing countries, are attempting to develop distant places like isolated rural areas and peri-urban areas and small islands cut off from national grids. Bringing electrical power to rural and remote locations is known as rural electrification. Rural electrification can benefit from battery energy storage devices.

Due to the contributors mentioned above, the battery energy storage systems

market is likely to rise to US\$15.1 bn by 2027, says the research.

Key Takeaways:

- Lithium-ion batteries had the most significant market share in 2021, which is expected to continue throughout the projection period.
- In 2021, the on-grid category will hold the most significant share of the battery energy storage systems market, with a substantial CAGR projected over the forecast period. The segment’s growth is likely to be fuelled by lower energy bills for clients who rely on the utility system for electricity.
- The necessity to meet peak electricity needs is a fundamental factor driving the growth of the utility sector.
- From 2022 to 2027, the APAC market is predicted to develop at the fastest rate. In 2021, the region will have the most significant share of the battery energy storage systems market.

BASEC invests in medium voltage cable testing facility in Dubai

THE NEW MEDIUM voltage testing laboratory will significantly increase BASEC's scope of testing to further complement the recent investments made in Solar, EV, Data Communication and compound analytics testing and support manufacturers in the competitive MV cable market to verify competitive designs and raw materials to ensure that quality is not compromised.

This facility continues BASEC's roadmap in becoming the preferred testing and certification partner to the worldwide cable industry and builds upon other recent investments to add capability, technology, and global reach.

Tony Lioveri, BASEC's CEO, states, "BASEC has been working in partnership with cable manufacturers for over 50 years and has a strong brand and heritage of being the mark of quality & safety. Phase 2 investment and extension into medium voltage testing is another milestone on this journey. The Dubai facility is strategically located to support the global market, as seen from the opening of the LV lab in 2021. We continue to push our roadmap to establish BASEC as a worldwide partner delivered through our regional offices of dedicated teams of technical experts and superior customer care. Our goal is to give end users and manufacturers confidence that by using the BASEC mark, they can be assured of guaranteed quality and safety throughout the supply chain. When Quality matters, use BASEC."

Akram Abdelwahab, BASEC's group technical manager & medium voltage expert, states, "With the increase in demand for manufacturing higher volumes of MV cable, BASEC MV laboratory will enhance the quality of the MV cable industry by helping both cable manufacturers and stakeholders. BASEC offers a full testing solution for the MV cable industry by bringing European quality and cable testing speciality to the Middle East. The unique location will make it easier for all cable manufacturers worldwide, especially those in the Middle East, to send their heavy MV cable samples to Dubai; It will save time and money."

We purpose-built the lab to achieve our objective of the highest quality testing in our NEW MV facility with four earth electrodes to get a low PD sensitivity in the presence of background noise (< 1 pC). Our construction is one of many enhancements to ensure our labs'



At the new medium voltage testing laboratory certifying cables with BASEC, cables are subjected to rigorous recurring tests and audits.

wiring layout is optimised with power isolation. Improved grounding provides effective noise suppression with market-leading lab equipment to improve our offering. BASEC is the global leader in product testing and certification services for the cable industry across numerous sectors, including construction, electrical installation and power distribution, rail, marine, oil and gas and renewables.

Benefits

By certifying cables with BASEC, cables are subject to rigorous recurring tests and audits with annual surveillance.

Low, medium and high voltage cable testing and certification, including quality management systems is provided.

Critical tests for MV:

- Partial Discharge test
 - Bending test
 - Tan Delta - concerning voltage
 - Tan Delta - concerning temperature
 - Heating Cycle test
 - Impulse Voltage test
 - D.C. Voltage test on over sheath
 - Screens at Short Circuit Temperature test
- BASEC gives the assurance of quality and safety.

NGK introduces solar power generation equipment

NGK INSULATORS has decided on a policy of introducing photovoltaic equipment (PV) with a total capacity of 40 MW at manufacturing sites in Japan and overseas by fiscal 2025. Consuming renewable energy generated in-house will contribute to the realisation of carbon neutrality by cutting annual CO2 emissions by 22,000 tons.

The NGK Group aims to realise net zero CO2 emissions by 2050 through the NGK Group Environmental Vision formulated in April 2021. To achieve this goal, it has drawn up its Carbon Neutrality Strategic Roadmap which sets cutting emissions by 25% compared to fiscal 2013 levels by fiscal 2025 as an intermediate target. As one of its strategies for meeting this target, the Group is installing PV within the Group and working to procure renewable energy.

As part of PV installation efforts, a decision has been made to install PV at the Group's main overseas manufacturing subsidiaries in Poland and Thailand. NGK CERAMICS POLSKA SP. Z O.O. will install large-scale PV with a total capacity of 15.1 MW on the roof of the buildings and on land at its first factory (Gliwice, Silesia Province), as well as on land neighboring its second factory (Dąbrowa Górnicza, Silesia Province). It is anticipated that these will produce an annual output of 15,240

MWh, which will reduce annual CO2 emissions by an estimated 10,000 tons in fiscal 2024, the first full year after the installation. NGK CERAMICS (THAILAND) CO., LTD. (Samutprakarn Province) will install large-scale PV with a total capacity of 4.25 MW on the rooftops of its buildings, which is expected to produce an annual output of 5,560 MWh. Operation is due to start in fiscal 2023 and it will reduce annual CO2 emissions by an estimated 2,630 tons. The Group's plan is to switch all energy consumed by overseas manufacturing sites to renewable energy by fiscal 2025, including by actively installing PV.

In addition to efforts for reducing CO2 emissions currently underway, such as installing PV, acquiring Renewable Energy Certificates (REC), and introducing carbon-neutral city gas, the Group is also launching initiatives including developing technology for manufacturing ceramics using clean energy sources that do not emit CO2, such as hydrogen and ammonia. To achieve net zero CO2 emissions by 2050, NGK will advance various initiatives in regions around the world, including the further installation of PV within the Group and the effective use of renewable energy through storage using NAS batteries, to contribute to the realisation of a carbon neutral society.

Addressing water security in the Middle East

Saudi Arabia, UAE and Türkiye identified as growth hotspots in new World Future Energy Summit Report.

Photo Credit : Adobe Stock



The report says the region will increasingly ditch high energy consuming thermal desalination technologies in favour of reverse-osmosis-based (RO) plants powered by renewables, including solar.

A NEW REPORT commissioned by the World Future Energy Summit, a global platform for future energy and sustainability – has highlighted desalination, wastewater treatment and digitisation as key growth opportunities for the Middle East’s water sector. The report, by business consultancy Frost & Sullivan, has identified Saudi Arabia, the UAE, and Türkiye as water sector growth hotspots.

The report says that despite the Middle East and Africa being the world’s desalination leader, with 48% of global operational capacity, there is still room for growth as the region battles with insufficient groundwater, low per capita water availability and growing water requirements.

The report says the region will increasingly ditch high energy consuming thermal desalination technologies in favour of reverse-osmosis-based (RO) plants powered by renewables, including solar.

A high potential opportunity in the wastewater sector is identified as zero liquid discharge (ZLD) solutions, which enable the recovery of usable water and treated contaminants from wastewater before reducing it to solid waste without any harmful environmental impact. The report forecasts compound annual growth of 8% in the Middle East’s ZLD market to 2025, by when it could account for up to US\$100mn in revenue.

Leen AlSebai, head of World Future Energy

Summit and general manager of RX Middle East, which organises the event, commented, “The Middle East and North Africa is now the world’s most water-scarce region with only 1.4% of its freshwater resources. Yet the region, currently with 6.3% of the global population, is witnessing rapid population growth and increasing water demand. Countries throughout the region are looking urgently for technologies to increase supply, manage demand, and reduce long-term water pressures. The Water Forum will drive forward the global and regional water security conversation, while facilitating public and private sector business partnerships to enable innovation and sustainability in the region’s water sector.” ■

ACCIONA recognised for financing, construction and operation of three wastewater treatment plants in Saudi Arabia

ACCIONA, A GLOBAL company in regenerative solutions for a decarbonised economy, has gained recognition for a further year in the PFI Awards by the Project Finance International magazine.

ACCIONA won in the 'PPP Deal of the Year in the Middle East and Asia' category for the contract to finance, build and operate, for 25 years, three wastewater treatment plants in Saudi Arabia. The project was awarded by the public Saudi Water Partnership Company (SWPC) in 2021, and the three plants included in the project are Medina-3, Tabuk-2 and Buraydah-2.

Following the construction phase, which will last for two to three years, the plants will handle a combined treatment capacity of 440,000 cubic metres/day – with potential expansion up to 615,000 cubic metres – to serve the cities of Medina, Buraydah and Tabuk. The contract represents the first Green Loan for a wastewater treatment plant (WWTP) in the MENA region, the first Project Finance deal based on the SOFR in Saudi Arabia and the first financing arrangement from a Muslim country for ACCIONA.

The prize recognises the main environmental characteristics of the project such as the recycling of wastewater for agricultural purposes, the use of renewable electricity to supply energy to the plants, and the contribution to national initiatives for the conservation and re-use of water under Saudi Arabia's Vision 2030 programme.



The contract represents the first Green Loan for a wastewater treatment plant in the MENA region.

The project

Once the construction of the plants has been completed, Medina 3 will provide a service to up to 1.5 million people in the existing and future residential areas near the city of Medina. The plant will initially have a daily treatment capacity of 200,000 m³, which could be extended to 375,000 m³/day. Buraydah 2 will provide a service to 600,000 residents and will support the expected growth of the city and nearby locality of Ash Shimasiya. Its capacity will be 150,000 m³/day. Tabuk 2, which will provide a service to 350,000 people, will have a capacity of 90,000 m³/day. It will cover

most of the existing and future residential areas together with the Tabuk 1 WWTP, which is already operational.

The treated water will replace the use of raw water for agriculture, saving this very scarce resource and directly contributing to water security in the country. The expected daily saving of water is 190,000 m³/day in Medina 3, 142,500 m³/day in Buraydah 2 and 85,500 m³/day in Tabuk 2. Around 95% of the wastewater treated will be available for use in agriculture, and the remaining 5% will be used in the treatment plants themselves. Only a small amount of water will be lost during the sludge drying process.

Innovation hub to improve food security and water solutions for Morocco and UAE

ABU DHABI-BASED DESERT tech venture builder and investment platform, DANA Global, has partnered with Agadir Horticultural Complex to establish an innovation hub for resilient and eco-efficient agriculture in the Agadir region.

The Agadir region is crucial to the government of Morocco's Génération Green strategy to increase the country's food output.

Shirley Shahar, co-founder of DANA Global, commented, "Our partnership with the Agadir Horticultural Centre aims to bring a new innovation hub and centre of excellence to Morocco, and is a huge step for DANA. Two years ago, we decided to establish our base in Abu Dhabi

- which has led the way in progressive food security and sustainability policy, and acted as a hub for scaling solutions to the entire MENA region. Complementing our recent partnership with Silal, ADQ's agrifood arm, we want to contribute to a new R&D hub for agrifood solutions hosted by our partners from CHA and the Institute Agronomique et Vétérinaire Hassan II.

"This new project is a milestone in DANA's efforts to scale up sustainable desert tech solution to the region's largest markets. Agadir specifically harbours huge potential for rapid adoption. The UAE and Morocco are ideal partners to jointly tackle food security, and DANA is proud to play a

role in strengthening this cooperation.

The new hub's strategic goal is to boost agrifood and smart water solutions R&D, addressing the technological needs of Agadir's farmers to improve food security, food quality, and sustainability. Although Morocco is situated between two large bodies of water, the country's water production infrastructure only produces 20% of its water, missing out on huge potential. To meet growing domestic demand, this capacity will have to increase fast.

DANA will operate an incubation and acceleration program, bringing technological know-how from the region's leading agritech ecosystems.

SteelFab 2023 promotes use of AI in iron and steel industry



Photo Credit: SteelFab 2023

The exhibition featured a collection of premier companies that use artificial intelligence in the bending and cutting of iron and steel utilising smart robots.

THE 18TH EDITION of SteelFab 2023 hosted by the Expo Centre Sharjah (ECS), provided a unique experience for industry professionals and individuals interested in utilising artificial intelligence (AI) in the industrial and transformative sectors.

The exhibition featured a collection of premier companies that use artificial intelligence in the bending and cutting of iron and steel utilising smart robots. The companies displayed live demonstrations of their cutting-edge robotic arms, which accomplished a quantum jump in steel cutting and soldering, a key pillar in many industries such as the automotive and electronics sectors.

HE Saif Mohammed Al Midfa, CEO of Expo Centre Sharjah stated, "Our goal is to make this event a valuable addition to the UAE's economic landscape to support the country's future vision of making a 100% use of artificial intelligence in the provision of services by 2031, which is a part of the

UAE's AI strategy. This 18th edition of the exhibition brought together local and international companies to network with one another and showcase their most recent innovations and advanced robotic arms used in the iron and steel sector."

SteelFab 2023 exhibition is the largest commercial event of its kind in the Middle East and North Africa region. Organised by ECS with the support of Sharjah Chamber of Commerce and Industry, the event's 18th edition brought together companies from 33 countries, representing the world's top manufacturers and suppliers. The exhibition provided insights on the future of the steel industry, sustainability, changes in the steel forming and fabrication industry, and the latest developments at the global level.

The exhibition boasts the participation of more than 400 local and international brands, the latest global products, solutions and technologies in the steel industry, presented by the industry's largest

commercial and industrial companies from countries like the UK, China, Italy, India, Germany, and Turkey. It also hosted some of the most prominent local and regional companies.

ABB, one of the exhibitors at the event, a leading company in energy and automation technologies, showcased the latest technology in the iron and steel industry, including modern and smart technical products and solutions. They emphasised that the integration of robots and modern technology in this industry ensures secure global manufacturing processes, competitive and flexible productivity, reducing environmental impact and achieving sustainability.

Additionally, Engineer Majed Khalil, a sales engineer at Dubai-based KAWASAKI Robotics, stressed that the company is committed to participating in every new edition of SteelFab to showcase its latest technologies in the field of artificial intelligence and robotic arms. ■

PDO and SP3D to assess 3D printability

PETROLEUM DEVELOPMENT OMAN (PDO), the national oil company for Oman, partnered with the French startup, Spare Parts 3D (SP3D), to assess the 3D printability of 150,000 unique spare parts.

In six months, the team processed 150,000 coded spare parts to define a 3D printing adoption matrix based on technical feasibility and economical attractiveness. This was made possible thanks to SP3D data-driven funnel approach methodology, its unique machine-learning based software DigiPART, the availability of material coding information records and the commitment of a multidisciplinary PDO team.

PDO now has an agile decision-making tool to enable its 3D printing deployment roadmap, speeding up additive manufacturing (AM) deployment by an estimated two years, and helping the company to remain at the forefront of innovation in the Middle East.

Despite having extensive master data records, PDO did not have the ideal set of data available containing all technical and



In six months, the team processed 150,000 coded spare parts to define a 3D printing adoption matrix.

economic data points, technical drawings, 3D files in one place and readily accessible. For example, it was a challenge to scope the AM journey given that circa 80% of the parts lacked dimension and weight information.

The information provided was extracted from PDO ERP (Inventory management; Purchase Orders and Material Coding) limiting the time required to collect data on such a large number of parts.

Thanks to DigiPART's semantic recognition algorithms combined with extensive AM databases the team optimised the original data set to allow running the

algorithm to identify printability.

"After having selected non-suitable parts, ourselves, we contracted SP3D for their ability to enrich our partial dataset. This helped to select the right spare parts to focus on for PDO's AM journey," said Mohammed Yahyai, 3D scoping workstream lead, lead rotating equipment engineer.

To efficiently sift through 150,000 coded parts, DigiPART runs a number of algorithms among which is the Semantic Recognition Algorithm (SRA). The SRA reads through the parts descriptions and identifies part names that are earmarked for further printability analysis. In parallel, DigiPART precisely defines the functional specifications of a part.

For example, having recognised an Impeller, DigiPART automatically associated more than 10 functional specifications relevant to PDO's equipment and operating environment for a particular application (for example, operating temperature, fluid service, corrosion levels, pressure, wear, resistance, etc.).

SRTI Park invests in 3D printing to drive innovation in manufacturing sector

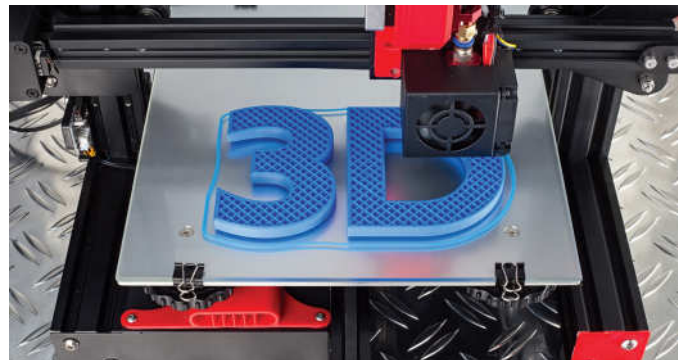
THE SHARJAH RESEARCH, Technology and Innovation Park (SRTIP) has increased the investment in 3D printing with the goal of promoting innovation in a number of sectors and industries, including the crucial manufacturing sector.

With the UAE becoming a global competitor in the field of 3D printing, Sharjah is steadily moving toward taking a frontline position in this field. SRTI Park, as part of its ambition to be the hub for 3D printing technology, has built a unique structure on its premises using 3D- technology, which is one of the prominent technologies of the Fourth Industrial Revolution related to construction.

Hussain Al Mahmoudi, CEO of SRTIP, said, "3D printing is a priority area in our investment plan for 2023, because we see great potential for transforming the manufacturing sector through this technology. Integrating 3D printing into production processes reduces costs and eases logistical challenges related to shipping and product scarcity as the required parts can be printed immediately. It also provides unlimited freedom in designing any piece or geometric shape, and allows it to be produced with various materials such as metal powders, plastics, ceramics, and others."

As part of SRTIP's vision to be one of the largest and most advanced 3D printing technology platforms in the region, it has collaborated with global companies to establish a unit specialised in additive manufacturing.

The complex has attracted a number of leading international companies in this field, among them General Electric, the American industrial and technology giant, which operates within SRTI's additive manufacturing unit through a number of advanced devices; and 3DTIV Tech, a division of Modest Company Group, which has been providing a range of products and services to companies in the



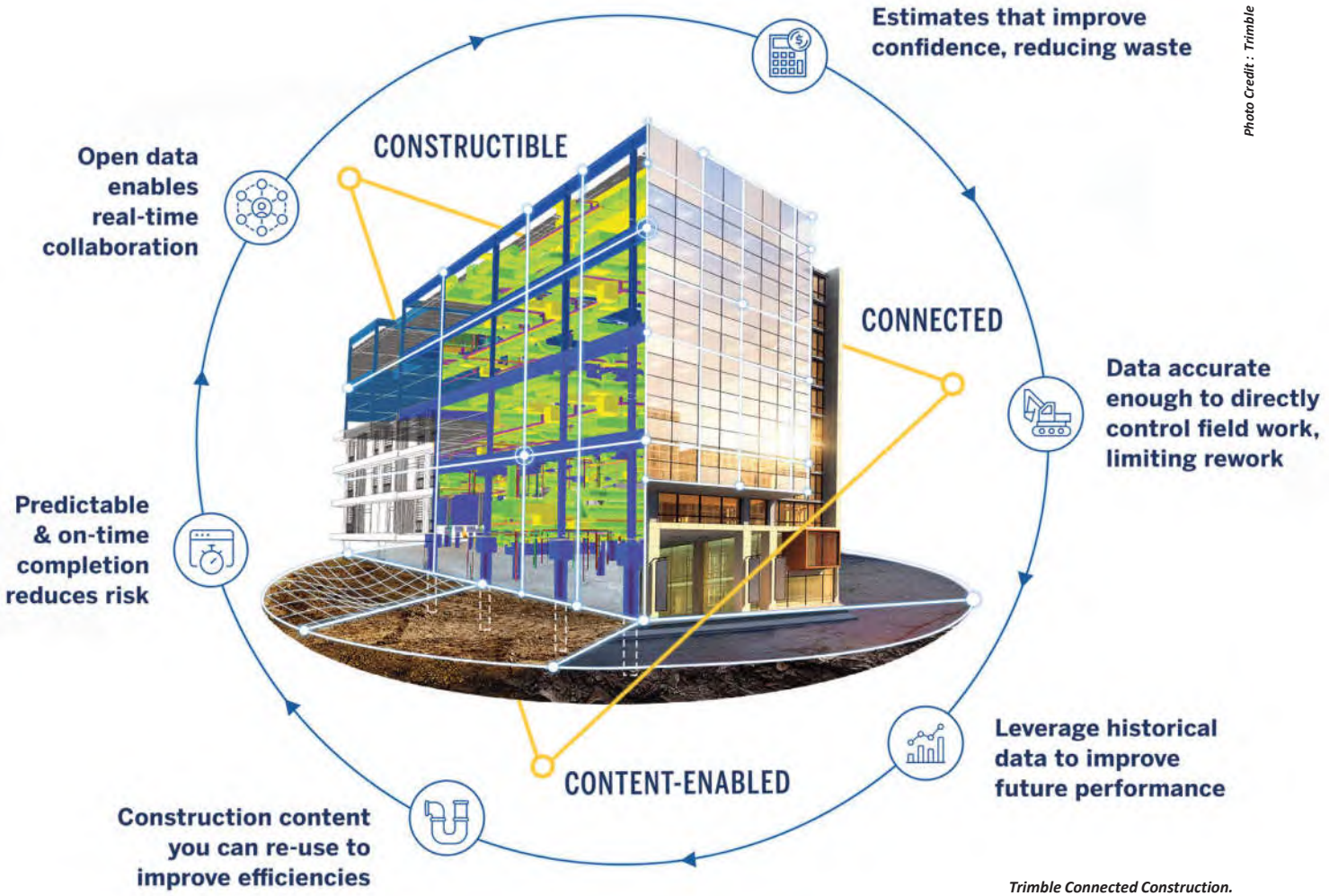
SRTI Park, as part of its ambition to be the hub for 3D printing technology, has built a unique structure on its premises using 3D- technology.

MENA region, including clients in the oil, gas and construction industry for several years.

Driving the forward-looking companies is SRTI Park's Sharjah Open Innovation Lab (SOILAB), the first applied incubator for start-ups and innovative companies to create prototypes, in addition to the Middle East Center for additive manufacturing, which was launched to advance the UAE's goal of becoming a global hub for 3D printing.

According to an international survey conducted in February 2022, the overall 3D printing market will grow by 24% to reach US\$44.5bn by 2026, and 68% of engineering businesses surveyed said they used 3D printing more in 2021 than in 2020.

There is also a phenomenal growth in the demand for 3D printing in the automotive industry as it continues to innovate in creating components and patterns for metal castings, parts and other vehicle components.



Transforming cities and the future of construction with Digital Twins

Trimble talks to *Technical Review Middle East* on cutting-edge technologies that are enabling a number of industries to build resilience and achieve objectives that were previously impossible.

DIGITAL TWINS, ONE of the emerging trends today, are supporting several large and complex projects in ensuring better and more efficient workflows. This makes it crucial to comprehend Digital Twins and their applications, which have the potential to transform cities and the future of

construction.

As a leading digital construction solutions provider, Trimble defines Digital Twin, also known as Data Twin, as a digital representation of a real-world physical object. Outside of the built environment, Digital Twins are used in a variety of industries, including healthcare, aerospace,

and systems engineering. Essentially, a Digital Twin in construction is the exact digital representation of a construction project or asset, be it a building or group of buildings, bridge, highway, city block, or even an entire city.

Digital Twins are produced by compiling and combining real-world data about the

structure or building using tools like 3D laser scanners, drones, sensors, cameras, and other IoT-related devices. They can give stakeholders a deeper understanding of their asset in real-world conditions and can learn from multiple sources and automatically update to reflect the changes made to its real-world counterpart, with the support of IoT and AI. This includes the flow of energy, design changes, environmental conditions, the properties of its materials, and security threats.

There are a number of projects in the Middle East that have made use of Digital Twins. For instance, the innovative technology was used during the Expo 2020 Dubai, to create a Digital Twin of the site for better structural planning. In the EXPO city, the creative architectural design and structural path are evident today. Digital Twins are also changing cities like NEOM, which is the Kingdom of Saudi Arabia's USD 500 billion high-tech city. The Digital Twins technology is supporting the development of this new space, which combines physical architecture, hyperconnected technologies, and artificial intelligence. Additionally, Dubai Municipality announced plans to collaborate with private sector companies and investors to create a Digital Twin of the city in the Metaverse, referred to as 'One Human Reality.'

Photo Credit: Trimble



Paul Wallett, regional director of Trimble Solutions, Middle East and India.



Specialised software such as Trimble Connect, Quadri, Agile Assets, or Tekla offer project stakeholders a centralised, single source of information.

Digital Twins are produced by compiling and combining real-world data about the structure or building using tools like 3D laser scanners, drones, sensors, cameras, and other IoT-related devices.

Paul Wallett, regional director of Trimble Solutions, Middle East and India, said, "In the construction industry, Digital Twins help improve the analytical capabilities of Building Information Modelling (BIM). With Digital Twin integration, construction teams can easily monitor, update, and predict tasks, allowing them to work smarter. Project owners and managers can reconstruct every metric of a physical structure in a digital environment, experiment digitally, as well as analyse outcomes before making changes that affect the actual structure."

"By converting 3D models to Digital

Twins, users can improve their analytical capabilities across the entire construction process. In addition to making on-the-spot data collection and design verification easier and less resource-intensive, Trimble's solutions improve the efficiency of digital models by ensuring that they accurately represent their real-world counterparts," he added.

NASA's Apollo 13 mission in 1970 was the first to use data twins, despite its unpopularity at the time. Today, an entire city can be digitally modelled for planning purposes, including population growth and climate change modelling for accurate information. These models, which can track, store, and display complex data instantly, aid in providing useful, comprehensive information across all phases of construction to boost planning and operational efficiency.

The adoption of effective technologies and their applications are essential for the construction industry to thrive. Trimble provides businesses and cities with the right technology required to enhance construction activities and streamline operations through its advanced suite of solutions. Digital Twins can be accessed through specialised software, such as Trimble Connect, Quadri, Agile Assets, or Tekla. These systems offer project stakeholders a centralised, single source of information relating to digital twin storage and sharing. As a result of these new trends and advancements, the industry can look forward to more intricately designed structures that are developed with improved efficiency. ■

Moving forward with AI

As mobile robots become more popular, it is important to understand the major challenges and benefits they provide.

MOBILE ROBOTS HAVE seen a rise in popularity in many areas, from warehouses to hospitals and even on the street. Their popularity is easy to understand – they are cheaper, safer, easier to find, as compared to actual workers. They are also easy to scale or combine with other machines. As mobile robots collect a lot of real-time data, companies can use them to start their IIoT journey.

What are Mobile Robots?

Mobile robots transport materials from one location to another and come in two types, automated guided vehicles (AGVs) and autonomous mobile robots (AMRs). AGVs use guiding infrastructure (wires reflectors, reflectors, or magnetic strips) to follow predetermined routes. If an object blocks an AGV's path, the AGV stops and waits until the object is removed.

AMRs are more dynamic. They navigate via maps and use data from cameras, built-in sensors, or laser scanners to detect their surroundings and choose the most efficient route. If an object blocks an AMR's planned route, it selects another route. As AMRs are not reliant on guiding infrastructure, they're quicker to install and can adapt to logistical changes.

However, to work efficiently, mobile robots need safe and reliable communication. Manufacturers can face certain challenges in keeping mobile robots operational and working effectively.

Establish a wireless connection

The first challenge for mobile robot manufacturers is to select the most suitable wireless technology. The usual advice is to establish the requirements, evaluate the standards, and choose the best match. Unfortunately, this isn't always possible for mobile robot manufacturers as often they don't know where the machine will be located or the exact details of the target application.

In some situations, a Bluetooth



Photo Credit : HMS Networks

As mobile robots collect real-time data, companies can use them to start their IIoT journey.

connection will be ideal as it offers a stable non-congested connection, while other applications will require a high-speed, secure cellular connection. It would be useful for mobile robot manufacturers to have a networking technology that's easy to change to meet specific requirements.

The second challenge is to ensure that the installation works as planned. Before installing a wireless solution, complete a predictive site survey based on facility

drawings to ensure the mobile robots have sufficient signal coverage throughout the location. The site survey should identify the optimal location for the Access Points, the correct antenna type, the optimal antenna angle, and how to mitigate interference. After the installation, use wireless sniffer tools to check the design and adjust APs or antenna as required.

Connecting mobile robots to industrial networks

Mobile robots need to communicate with controllers at the relevant site, even though the mobile robots and controllers are often using different industrial protocols. For example, an AGV might use CANopen while the controller might use PROFINET. Furthermore, mobile robot manufacturers may want to use the same AGV model on a

“To work efficiently, mobile robots need safe and reliable communication.”

different site where the controller uses another industrial network, such as EtherCAT.

Mobile robot manufacturers also need to ensure that their mobile robots have sufficient capacity to process the required amount of data. The required amount of data will vary depending on the size and type of installation. Large installations may use more data as the routing algorithms need to cover a larger area, more vehicles, and more potential routes. Navigation systems, such as vision navigation, process images and thus require more processing power than installations using other navigation systems such as reflectors. As a result, mobile robot manufacturers must solve the following challenges:

1. They need a networking technology that supports all major fieldbus and industrial Ethernet networks
2. It needs to be easy to change the networking technology to enable the mobile robot to communicate on the same industrial network as the controller without changing the hardware design
3. They need to ensure that the networking technology has sufficient capacity and functionality to process the required data.

Creating a safe system

Creating a system where mobile robots can safely transport material is a critical but challenging task. Mobile robot manufacturers need to create a system that considers all the diverse types of mobile robots, structures, and people in the environment. They need to ensure that the mobile robots react to outside actions, such as someone opening a safety door or pushing an emergency stop button, and that the networking solution can process different safety protocols and interfaces. They also need to consider that AMRs move freely and manage the risk of collisions accordingly. The technology used in sensors

is constantly evolving, and mobile robot manufacturers need to follow the developments to ensure their products remain as efficient as possible.

Ensuring a Reliable CAN Communication

A reliable and easy-to-implement standard since the 1980s, communication-based on CAN technology is still growing in popularity, mainly due to its use in various booming industries, such as E-Mobility and Battery Energy Storage Systems (BESS). CAN is simple, energy and cost-efficient. All the devices on the network can access all the information, and it is an open standard, meaning that users can adapt and extend the messages to meet their needs.

For mobile robot manufacturers, establishing a CAN connection is becoming even more vital as it enables them to monitor the lithium-ion batteries increasingly used in mobile robot drive systems, either in retrofit systems or in new installations. To overcome certain challenges, mobile robot manufacturers would first need to establish a reliable connection to the CAN or CANopen communication standards to enable them to check their devices, such as monitoring the battery's status and performance.

They should also protect systems from electromagnetic interference (EMI), as EMI can destroy a system's electronics. The risk of EMI is significant in retrofits as adding new components, such as batteries next to the communication cable, results in the introduction of high-frequency electromagnetic disturbances.

Accessing mobile robots remotely

The ability to remotely access a machine's control system can enable mobile robot vendors or engineers to troubleshoot and resolve most problems without traveling to the site. The challenge is to create a remote

access solution that balances the needs of the IT department with the needs of the engineer or vendor.

The IT department would need to ensure that the network remains secure, reliable, and retains integrity. As a result, the remote access solution should include the following security measures:

- Use outbound connections rather than inbound connections to keep the impact on the firewall to a minimum
- Separate the relevant traffic from the rest of the network
- Encrypt and protect all traffic to ensure its confidentiality and integrity
- Ensure that vendors work in line with or are certified to relevant security standards such as ISO 27001
- Ensure that suppliers complete regular security audits.

An easy-to-use and dependable system is desirable for engineers and vendors. It should be simple for users to connect to the mobile robots and access the required information. If the installation might change, it should be easy to scale the number of robots as required. If the mobile robots are in a different country from the vendors or engineers, the networking infrastructure must have sufficient coverage and redundancy to guarantee availability worldwide.

Mobile robot manufacturers rarely specialise in communication or safety. Subsequently, they can find it time-consuming and expensive to try and develop the required communication technology in-house. Enlisting purpose-built third-party communication solutions not only solves the communication challenges at hand, it also provides other benefits.

Modern communication solutions have a modular design, enabling mobile robot manufacturers to remove one networking product designed for one standard or protocol and replace it with a product designed for a different standard or protocol, without impacting any other part of the machine. For example, Bluetooth may be the most suitable wireless standard in one installation, while Wi-Fi may provide better coverage in another installation. Similarly, one site may use the PROFINET and PROFIsafe protocols, while another may use different industrial and safety protocols. In both scenarios, mobile robot manufacturers can use communication products to change the networking technology to meet the local requirements without making any changes to the hardware design. ■

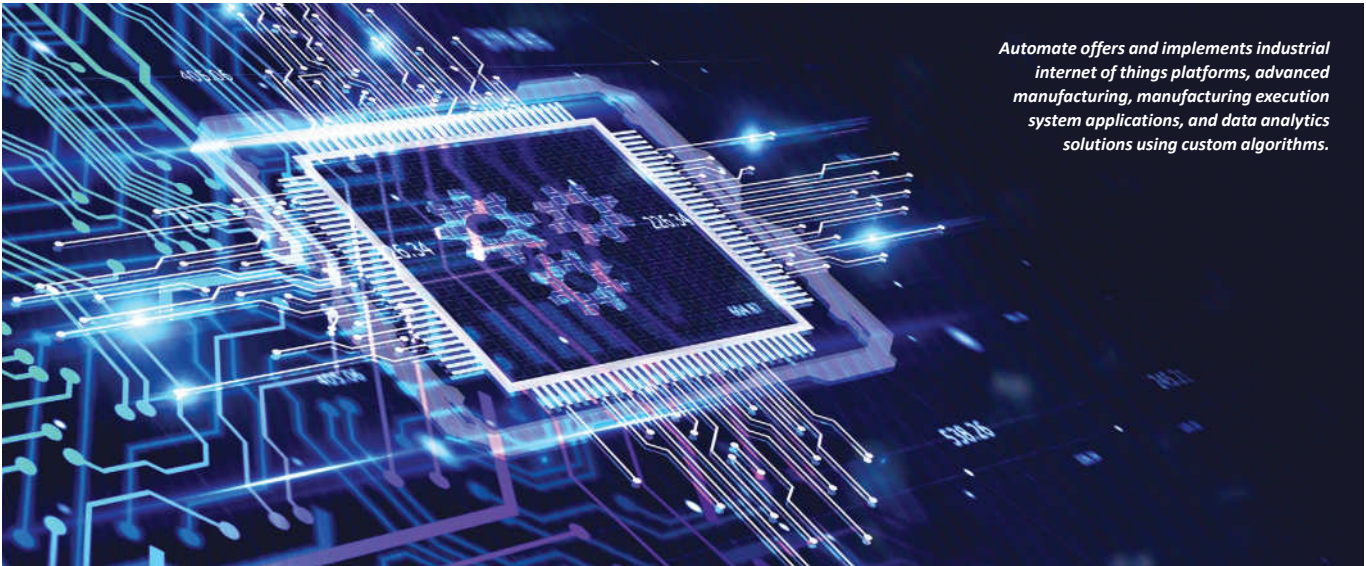
Wireless Standard	Advantages	Disadvantages
Bluetooth	Stable	Low bandwidth
Cellular	Secure Easier to control traffic Low latency Offers high or low bandwidth options	Expensive to install Requires expertise to configure the network
Wi-Fi	Cheap to install and scale	Prone to congestion Sensitive to interference

When choosing a wireless standard, it is important to weigh up the pros and cons of each. When may be the most suitable wireless standard in one installation, while Wi-Fi may provide better coverage in ano

Photo Credit : HMS Industrial Networks

Advancing digital twin technology in the EMEA region

Rockwell Automation, a company dedicated to industrial automation and digital transformation, has announced that Automate has been certified as a Software System Integrator for Rockwell's class-leading Emulate3D digital twin software.



Automate offers and implements industrial internet of things platforms, advanced manufacturing, manufacturing execution system applications, and data analytics solutions using custom algorithms.

Photo Credit : Adobe Stock

ROME-BASED AUTOMATE SPECIALISES in the design and implementation of integrated systems for industrial automation new builds or refreshes in the logistics, airport, chemical, pharmaceutical, food, manufacturing, and automotive industries. It offers and implements industrial internet of things platforms, advanced manufacturing, manufacturing execution system applications, and data analytics solutions using custom algorithms. As an existing user of Emulate3D technology, it is in an ideal position to deploy and support other customers in the region, across a wide range of industries.

Qualified members of the PartnerNetwork programme represent an elite group of companies that meet programme criteria for operational excellence, application expertise and customer focus. They possess industry and application expertise that complements Rockwell Automation capabilities in a specific market and geography. All PartnerNetwork members have committed to an active, extensive relationship with

Rockwell Automation to provide the most productive and cost-effective automation solutions for customers.

"We are delighted to see Automate gain this certification," said Klaus Schwarz, system integrator program manager EMEA

**As well as
unlocking the
potential of existing
designs, we can look
to the future and
add the capabilities
to enhance
performance**

**Eugenio d'Ursi, managing director,
Automate**

at Rockwell Automation. "As a user and now a reseller of Emulate3D software, Automate is perfectly placed to support other companies in their own digital transformations. Virtualisation is gaining significant traction, as companies appreciate the time and cost savings on offer, so with Automate onboard we will be able to help a great many others exploit their digital information."

Eugenio d'Ursi, managing director of Automate, explained, "We have helped many companies with upgrades and new builds over the years, and have always looked at ways of increasing efficiency and value for our customers. Emulate3D gives us these capabilities, and so much more. As well as unlocking the potential of existing designs, we can look to the future and add the capabilities to enhance performance. This is not over design, it's clever design and can only really be realised using advanced digital twin software such as Emulate3D. It gives us more tools, more power, more competence, and more capabilities. Something which we will help to impart to our commercial customers." ■

The Cloud is a growing target for cyberattacks: Sophos survey

SOPHOS, A GLOBAL company in innovating and delivering cybersecurity as a service published findings of a new survey, 'The Reality of SMB Cloud Security in 2022.' The survey found that, among Infrastructure as a Service (IaaS) users, 56% experienced an increase in the volume of attacks on their organisation when compared to the previous year, and 67% were hit by ransomware. In addition, 59% experienced an increase in complexity of attacks.

For many of these users, a lack of visibility into their infrastructure, unpatched vulnerabilities and resource misconfigurations make them susceptible to various types of attacks, including ransomware. Of those surveyed, only 37% track and detect resource misconfigurations and only 43% routinely scan IaaS resources for software vulnerabilities. What's more, 65% of cloud users reported not having visibility of all resources and their configurations, and only 33% said their

organisation has the resources to continuously detect, investigate and remove threats in their IaaS infrastructure.

"It is imperative that security is prioritised as organisations continue to adopt cloud services. This includes implementing traditional threat-based protections, as well as risk-based mitigations. Unpatched vulnerabilities and misconfigured resources are both preventable mistakes and avoidable risks that make life easier for attackers. Most attackers are not unstoppable criminal masterminds, but rather opportunistic cyberthugs looking for an easy payday," said John Shier, senior security advisor, Sophos. "However, the survey also found that more advanced IaaS users are twice as likely to report a decrease in attack impact than beginners, suggesting the appropriate defense mechanisms can go a long way in deterring threat actors. For users who need help, we recommend security services that have the 24/7 experts



John Shier, senior security advisor, Sophos

who can detect and quickly respond to active attacks."

To learn more about 'The Reality of SMB Cloud Security in 2022', read the full report on [Sophos.com](https://www.sophos.com).

Photo Credit : Sophos

CommScope launches home networking solutions

COMMSCOPE ANNOUNCED THE launch of HomeVantage home networking solutions, a portfolio of high-performance gateways powered by advanced, open-source firmware stacks. The HomeVantage portfolio delivers leading-edge services and features to meet global market demands and enables service providers to simplify broadband deployment, effectively manage software applications, and accelerate their time to market.

HomeVantage solutions offer features from the open-source RDK and OpenWrt communities with carrier-grade enhancements to meet the specific requirements of the service provider

industry. This allows service providers to harness the innovation of industry-wide communities and ecosystems. These solutions support containerised applications that enable an efficient delivery of value-added services and applications on the home gateway, with the flexibility to add and remove applications without the need to update the gateway platform software.

"With more than 70 million RDK devices deployed globally, service providers continue to trust CommScope Home Networks to enhance open-source platforms and develop high quality, secure solutions that improve the consumer experience," stated Ken Haase, vice

president of product management, CommScope Home Networks. "By broadening our portfolio to include OpenWrt and solutions in development by the prpl Foundation, the HomeVantage portfolio enables service providers to consistently deliver new, developing consumer services to the home – no matter what the access technology may be."

HomeVantage solutions are based on open standards that enhance interoperability, simplify the deployment of multi-source solutions, and enable full device management from the cloud. The HomeVantage portfolio is supported by CommScope Home Network's HomeAssure service delivery platform, which can fully manage the capabilities of the broadband devices, including containerised application orchestration, Wi-Fi management and other advanced services. With full compliance of Broadband Forum standards, HomeVantage solutions can be supported by other service delivery platforms.

The HomeVantage portfolio consists of gateways and modems for PON, DOCSIS, Ethernet and Wi-Fi extenders, including support for the emerging Wi-Fi 7 standard. This provides cost-effective solutions for service providers with the ability to continually deliver next generation features and advanced services to elevate the connected home experience.



HomeVantage solutions offer features from the open-source RDK and OpenWrt communities.

Honeywell and Nexceris collaborate to improve safety for electric vehicles

HONEYWELL IS EXPANDING its strategic alliance with Nexceris, developer of Li-ion Tamer lithium-ion gas detection solutions, to help make electric vehicles (EVs) safer. Honeywell and Nexceris will offer advanced automotive sensing technology to help prevent conditions leading to thermal runaway in EV batteries, a phenomenon that causes extremely high temperatures within the battery cell and can result in a fire.

Several industries are moving to electrified power sources, and for the automotive industry specifically, global sales of EVs doubled in 2021 from the previous year to nearly seven million. Many of these vehicles today use lithium-ion batteries as an energy source, which can pose rare but significant safety risks including fires that can impact drivers on the road, homeowners who may have EVs parked in their garages and shipping handlers transporting EVs to their final destinations. To help mitigate these

risks, automobile manufacturers are looking to incorporate technology to provide enhanced safety.

“As the world transitions to electric powered vehicles, automakers are faced with the need to provide lithium-ion batteries that function properly and safely during all stages of their lifecycle. At Honeywell, we are supporting this transition with ready-now solutions to help our customers mitigate safety risks as they expand their electric vehicle portfolios,” said Victor Verissimo, general manager of the transportation line of business of Honeywell Sensing and Safety Technologies. “By adding the Li-ion Tamer technology to our suite of battery monitoring sensors, we will help automotive manufacturers strengthen their battery health monitoring systems with the ability to detect thermal runaway conditions even earlier.”

“Our work with Honeywell will help us empower the global transition to electric



Photo Credit: Honeywell

Honeywell offers a range of lithium-ion battery safety and performance solutions.

vehicles through enhanced battery monitoring,” said Kyle Shen, president and CEO, Nexceris. “Fires from lithium-ion batteries are dangerous and often difficult to contain after they start. By combining our shared expertise in battery sensing and gas detection technology with Honeywell’s extensive manufacturing capabilities, we will be working toward offering our vehicle manufacturing customers a more advanced safety solution and meeting the growing demand for lithium-ion batteries.”

Dubai leads in region’s urban mobility readiness

DUBAI RANKS NUMBER one in the Middle East and Africa in terms of urban mobility readiness, according to an annual global study of 60 cities by management consulting firm, Oliver Wyman Forum and the University of California, Berkeley Institute of Transportation Studies (ITS).

The Index is a forward-looking ranking of 57 quantitative and qualitative key performance indicators (KPIs) that measure social impact, infrastructure, market attractiveness, system efficiency and innovation. Findings of the Index show that efficient and equitable mobility networks are important engines of economic vitality and environmental sustainability. Other measures in the overall Index include electric vehicle (EV) charging station network investment and incentives, the number of car-free zones, autonomous vehicle adoption, and public transport ridership and affordability.

Dubai ranks #30 on the 60-city Index, moving up from #32 in 2021. Each city is given a rating out of 100 based on a range of KPIs – at a ranking of 58%, Dubai surpasses the global average of 54%, while the Middle East average is 47%.

The report noted that preference for cars across the Middle East contributes to the region’s low score for utilisation of non-

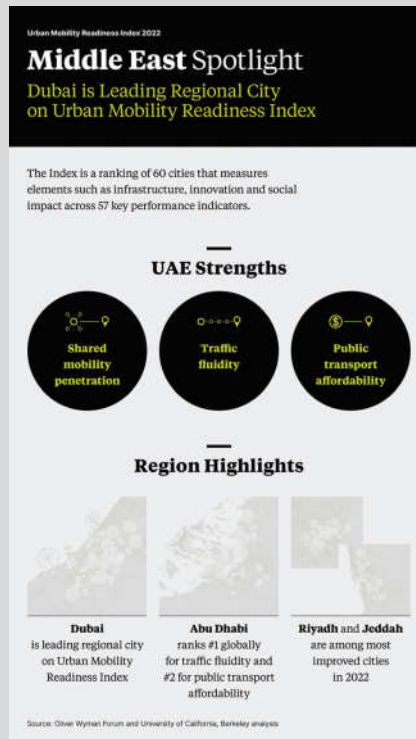


Photo Credit: Oliver Wyman Forum

such as car-sharing, helps to lower congestion levels.

The 2022 report highlights that Dubai is institutionally friendly to new paradigms in mobility; is a key aviation hub; and has invested in scooter-sharing pilots. It also points out that the city is developing a leading public transport package, with a mature multimodal app – the system includes the city-wide metro, which is one of the largest automated metro systems in the world. However, geographical spread and summer temperatures remain a challenge across the region.

Although Abu Dhabi dropped one place from #36 in 2021 to #37 in 2022, the city was ranked #1 globally for traffic fluidity (in terms of how well the municipal government’s mobility network enables this) and #2 for public transport affordability.

André Martins, partner and India, Middle East and Africa head of transport services and operations said, “Exploring fresh ideas and piloting new technologies is in the DNA of Dubai, and of the UAE overall. The Emirates will likely be used in the future as a case study in how to pilot new solutions – from the testing of autonomous corridors to the smart monitoring of traffic and driving behaviour.”

HAMM presents fully electric battery-driven tandem rollers

HAMM PRESENTS A new generation of pivot-steered tandem rollers: The HX series. Replacing the previous DV+ series, it is impressive thanks to intuitive operation with Easy Drive, high performance data, many comfort features and sustainable operation, as well as the 'Smart Compact' digital compaction assistant. Furthermore, HAMM has put many detail improvements, new options and interfaces into practice in the HX series. All models are available in countries with the EPA Tier 4/EU Stage V emissions regulation.

The HX series is the new flagship for the HAMM fleet. Designed for asphalt compaction, the HX 70i model (7 t/55.4 kW) and HX 90i (9 t/74.4 kW) achieve high surface outputs on large construction sites. What's more, they also impress in tasks such as compaction in curves with a high degree of precision. Here, the pivot steering shows its strengths with a large turning angle, large track offset and four different steering modes.

Intelligent drive control with automatic reversing

A foundation for high compaction quality is



The HX series is the new flagship from HAMM for asphalt construction.



Photo Credit: Wirtgen

intelligent drive control with automatic reversing. In combination with the electrically adjustable seat operating unit, it guarantees quality and comfort. It brakes and accelerates the rollers quickly, but smoothly. The seat also turns automatically in the direction of travel when reversing. This is unique in the market. It produces first-class surfaces and ensures ergonomic working with safety at all times.

Improved field of vision

New LED turn indicators and details around

the cab give the HX series its distinctive design. The fully glazed panoramic cab offers a vastly improved field of vision with an excellent view of the drum edges. Optionally, lighting for drums and drum edges can be added. A camera system with two robust monitors (IP 67) are integrated as standard to provide optimal vision. Thanks to division of the screen, views to the front and to the rear are always visible regardless of seat position. Still unique is the cab floor's glass window for viewing the drums. It can be folded in for cleaning.

IDIS unveils range of video solutions

IDIS, A GLOBAL security company that designs, develops, manufactures, and delivers surveillance solutions unveils its new range of NDAA-compliant edge AI cameras and new appliances, including the DV-3200 AI in the Box, that leverage the power of the IDIS Deep Learning Engine, which is trained on vast datasets to deliver up to 98% accuracy and is designed to meet any budget and application.

The new flexible and scalable range of deep-learning options lets organisations of any size reap the benefits of AI-powered analytics by eliminating the inefficiency of false alarms with more accurate alerts. This supports more proactive real-time monitoring and faster responses, while delivering on the IDIS promise of a low total cost of ownership (TCO).

The AI Box for Surveillance, also being launched, is a simple and affordable 4-channel add-on appliance that comes without any license fees, and provides unlimited scalability. It delivers all the benefits of AI object detection – including people, cars, and bikes - along with line crossing, loitering detection, and face detection. An easy upgrade option, it lets



Photo Credit: IDIS

Add-On 4-Channel Surveillance AI Box



The range of deep-learning options allows organisations of any size reap the benefits of AI-powered analytics.

organisations leverage their existing investments in IDIS cameras by simply connecting the DV-1304-A box to their NVRs. And for new systems it enables a more proactive approach to security.

For the banking sector, the IDIS range includes a 64-channel NVR pre-configured with IDIS Solution Suite VMS and IDIS Deep Learning Analytics, and the IDIS Intelligent Video Wall Station. A new 8-channel encoder and HD-TVI recorder lets banks

securely migrate to full IP surveillance without interruption to coverage. IDIS offers the option to retain analogue equipment, and to integrate with Bosch's popular intrusion and fire detection technology, eliminating siloed systems and reducing operating expenditure.

For logistics and retail customers, IDIS video innovations are cutting shrink, improving health and safety, and transforming customer service.

Briefly

Magos Systems enhances perimeter detection for site safety

MAGOS SYSTEMS, A PROVIDER of advanced radar detection technology, is introducing new features to reduce false alarms at the perimeter and help streamline security operations at a variety of different types of sites

The introduction of Blue Force GPS and speed and direction-based filtering to the Magos perimeter detection solution provides facilities with increased situational awareness of their site, while reducing nuisance alarms that add to the operator's information overload and distract them from responding to actual events.

Blue Force tracking leverages GPS technology to recognise authorised personnel as 'friendly forces' when their presence is detected by the Magos radar. This feature is particularly useful for facilities that require security staff to regularly patrol the premises. Using a dedicated application installed on the mobile device carried by security personnel or contractors, the Magos MASS+AI management software correlates GPS data from the device with radar detection data and signals to security system operators that the person is not a threat. 'Friendly' status can be easily added or revoked in the MASS+AI software or in an organisation's integrated video management software platform.

Astra Tech's PayBy disrupts fintech solutions

PAYBY, A LEADING fintech innovator, acquired by Astra Tech in August 2022, has been licensed by the Central Bank of the UAE to conduct Stored Value Facility (SVF) and Retail Payment Services (RPS) operations. The license represents one of the country's highest levels of financial services approvals. Customers and merchants will experience ultra-fast and secure services, such as international money transfers, seamless payment solutions, wallet top-ups, and more on Astra Tech's upcoming app to be launched in the coming months.

Founder and CEO of Astra Tech, Abdallah Abu Sheikh, commented, "We are excited to launch our secure payment solutions to customers and merchants in the UAE to enable smoother digital transactions and make everyday commerce friction-free. We have always aligned with the UAE's vision of creating a cashless ecosystem and are thankful to the Central Bank for trusting us with our secure technology. Astra Tech will stay true to its mission of offering a more robust value proposition to customers and merchants by eliminating the burden of unfavorable & compounded commission structures that are usually passed on to suppliers, partners, and consumers by today's super apps."

Astra Tech is acquiring and equipping sector-leading customer-centric businesses with disruptive and progressive technologies that will enrich merchants' and users' lives with effortless usability and efficiency, a gap that currently remains unfulfilled in the UAE digital commerce space today.

Astra Tech is one of the biggest additions to the MEA's ever-growing tech ecosystem aiming to raise US\$500mn from various strategic investors and partners, bringing the company one step closer to its vision of launching an app. PayBy is one of the largest fintech companies in the region and aims to build an all-in-one mobile payment ecosystem in the UAE and GCC, offering a safe and contactless payment solution. Astra Tech's acquisition of PayBy follows the company's recent acquisition of Rizek, a platform for on-demand personal and home services.



Astra Tech is acquiring and equipping sector-leading customer-centric businesses with disruptive and progressive technologies.

Honeywell and Microsoft provide software to support mobile workers

HONEYWELL HAS ANNOUNCED a new integration with Microsoft to help highly mobile workers by providing a set of digital tools enabling enhanced communication and collaboration, all on one platform.

Users of select Honeywell mobile computers in the warehousing, logistics, healthcare and retail fields can download Microsoft Teams for frontline workers application. Through Teams, workers can turn Honeywell devices into a walkie talkie with a dedicated button. This push-to-talk solution enables clear, instant and secure voice communication over the cloud, allowing employees to better serve customers or patients on demand.

"A customer -or patient-centric

approach can be improved through technology-led productivity and mobility solutions," said Karen Bomber, senior



Through Teams, workers can turn Honeywell devices into a walkie talkie with a dedicated button.

director of marketing at Honeywell Productivity Solutions and Services. "As mobile workers are being challenged to know more at a moment's notice than ever before, the combination of Honeywell's rugged, versatile mobile computers with Microsoft Teams gives workers access to the answers they need by connecting with each other to coordinate the right outcomes."

"Frontline workers are the backbone of many organisations, and this solution empowers the frontline workforce to deliver agility in responsiveness and optimise productivity, all on a single, secure enterprise platform," said Kristina Behr, vice president of product, frontline and workflows at Microsoft.

Project Databank

Compiled by Data Media Systems

CONSTRUCTION PROJECTS, SAUDI ARABIA

Project Name	City	Facility	Budget (US\$)	Status
Almadinah Almunawwarah Dev't Authority - Madinah Public Transport	Medina	Railway	4,000,000,000	Design
Custodian of the Two Holy Mosques - Wellbeing Project	Riyadh	Mixed-Use Development	23,000,000,000	PMC
DCOMM - Makkah Mass Rail Transit (MMRT)	Makkah	Railway	16,500,000,000	Construction
DCOMM - Makkah Public Transport Programme (MPTP) - Metro Network - Phase 1	Makkah	Mass Transit Systems	8,000,000,000	Feasibility Study
EMAAR - MISA - King Abdullah Economic City (KAEC) - Overview	Rabigh	Mixed-Use Development	26,670,000,000	Construction
GACA - Jeddah Airport City	Jeddah	Mixed-Use Development	4,500,000,000	Engineering & Procurement
HOJDC - KDC Limited - Heart of Jeddah	Jeddah	Mixed-Use Development	11,000,000,000	Design
Jeddah Central Development Company - Jeddah Central Project	Jeddah	Mixed-Use Development	20,000,000,000	Construction
Jeddah Economic Company - Jeddah Economic City - Overview	Jeddah	City	20,000,000,000	Construction
King Salman Park Foundation (KSPF) - Wellbeing Project	Riyadh	Mixed-Use Development	5,750,000,000	EPC ITB
Maaden - Phosphate 3 Complex - Overview	Waad Al Shamaal	Phosphate	6,400,000,000	Construction
Majid Al Futtaim - Mall of Saudi	Riyadh	Malls/Retail Outlets	4,000,000,000	Engineering & Procurement
Makkah Region Development Authority (MRDA) - Makkah - Al-Faisaliah City	Makkah	City	10,000,000,000	Design
Matarat - King Abdul Aziz International Airport (KAIA) Expansion - Overview	Jeddah	Airport	7,200,000,000	Construction
Ministry of Housing - Dahiyat Al Fursan Housing Development	Riyadh	City	20,000,000,000	Design
Ministry of Housing - Housing Units Development - Overview	Various	Residential Development	40,000,000,000	Construction
Ministry of Interior (MOI) - Security Forces King Abdullah bin Abdulaziz Jeddah Medical City	Jeddah	Medical/ Health Facilities/Spa	6,700,000,000	Construction
Ministry of Interior (MOI) - Security Forces King Abdullah bin Abdulaziz Riyadh Medical City	Riyadh	Medical/ Health Facilities/Spa	12,000,000,000	Construction
Ministry of Transport - (Saudi Arabia - Egypt) King Salman Causeway	Ras Hamid	Causeway	5,000,000,000	Feasibility Study
Ministry of Transport - GCC Railway Network - Bahrain - Saudi Link	Khobar	Railway	15,400,000,000	Design
Ministry of Transport & Communication - GCC Railway Network	Eastern Region	Railway	25,000,000,000	Construction
Neom - Neom City - Overview	Neom	City	500,000,000,000	Construction
Neom - Neom City - Rail Network - Overview	Neom	Railway	23,000,000,000	Design
Neom - Neom City - The Line - Overview	Neom	Mixed-Use Development	200,000,000,000	Engineering & Procurement
Neom - Oxagon - Overview	Neom	Economic Zone, Port	10,000,000,000	Construction
PIF - Rayadah Investment Company - King Abdullah Financial District (KAFD)	Riyadh	Mixed-Use Development	7,800,000,000	Construction
QIC - Qiddiya Entertainment City - Phase 1	Riyadh	Mixed-Use Development	7,700,000,000	Construction
Roshn - Al Arous Housing Development - Overview	Jeddah	Residential Development	5,300,000,000	Design
Roshn - Sedra Housing Development - Overview	Riyadh	Residential Development	10,000,000,000	Construction
Royal Commission for Al-Ula - Afalula - Al-Ula Development - Overview	Medina	Mixed-Use Development	20,000,000,000	PMC ITB
Royal Commission for Riyadh City - Riyadh Metro - Overview	Riyadh	Railway	23,200,000,000	Construction
Royal Commission for Riyadh City - Riyadh Metro - Phase 1 - Package 1 - Lines 1 and 2	Riyadh	Railway	9,500,000,000	Construction
Royal Commission for Riyadh City - Riyadh Metro - Phase 1 - Package 3 - Lines 4-6	Riyadh	Railway	8,000,000,000	Construction
RSG - The Red Sea Project - Phase 1 - Infrastructure and Construction Facilities	Tabuk Province	Beaches and Resorts	9,000,000,000	Construction
Rua Al Madinah Holding Company (RAMH) - Rua Al Madinah Project	Medina	Mixed-Use Development, Roads, Telecommunications	10,000,000,000	Engineering & Procurement
Saudi Aramco - King Salman Energy Park (SPARK) - Overview	Abqaiq	City	4,400,000,000	Construction
Saudi Railway Company - Saudi Railway Masterplan	Various	Mass Transit Systems	97,000,000,000	Construction
SCLC - LandBridge Rail Link	Various	Railway	26,000,000,000	PMC ITB
Seera City Real Estate Development Company - Knowledge Economic City	Medina	Mixed-Use Development	6,700,000,000	Construction
URB - Alnama Smart City	Riyadh	City	13,300,000,000	Project Announced

Project Databank

Compiled by Data Media Systems

Project Focus

Compiled by Data Media Systems

Midad Real Estate Investment and Development Company - Four Seasons Jeddah

Name of Client	Midad Real Estate Investment and Development Company
Estimated Budget (US\$)	480,000,000
Award Date	2019-Q1
Main Contractor	HATCO - Al-Hashimiah Establishment for Trading & Contracting
Facility Type	Hotels
Status	Construction
Location	Jeddah, Saudi Arabia
Project Start	2015-Q1
End Date	2023-Q4

Background

Four Seasons Jeddah is part of a progressing initiative as the government plans to develop the coastal areas as touristic destinations. Saudi Arabia's Vision 2030 looks to capitalise on the government's reserves of real estate and allocate prime areas within cities for educational institutions, retail and entertainment centres. Large areas along coasts will be dedicated to tourist projects and appropriate lands will be allocated for industrial schemes. The kingdom is also looking to double the number of religious tourists.

Project Status

Date	Status
Dec 2022	Hirsch Bedner Associates (HBA) has designed the hotel project's food and beverage destinations.
Dec 2022	HATCO has begun installing the southern steel bridge and facade stone cladding.
Nov 2022	Hilti is providing design, engineering, and supply for the building's ventilated facade system and the cavity fire barrier solution.
Oct 2022	Sarens is executing the heavy lifting operations onsite.

Project Scope

Located in a district of Al-Shate'e in Jeddah, the mixed-use building lies on a plot area of 18,812 square metre, encompassing 34 floors and a basement.

With a total built-up area of 218,409 square meters, the project will consist of the following:

- 269 rooms and suites 21 hotel apartments
- 64 private residences
- 8-storey retail podium: retail shops, meeting rooms, a ballroom, Back Of House (BOH) services and a parking area (754 cars). The podium roof is designed as hanging gardens hosting an outdoor jacuzzi and swimming pool, pool lounges and cabanas, a spa, restaurants and children's facilities.
- Basement for parking and services (960 cars)
- Ground Floor: the main entrance and a parking area (115 cars)

Stay one step ahead of your competitors

with the DMS Projects Matrix

A critical and essential **business intelligence** tool, updated daily to ensure you are constantly at the top of your **commercial strategies**, allowing you to **maximise your returns** in today's ever **growing global market**.



REGIONS COVERED

- Asia Pacific
- Middle East
- Latin America
- North America
- Central America
- Russia & CIS
- East Africa
- North Africa
- West Africa
- India
- China
- Europe

SECTORS COVERED



SUBSCRIBE TODAY

or contact us for further information

- www.dmsprojects.net
- info@dmsglobal.net
- +971 249 161 71 (UAE Headquarters)
- +973 1740 5590 (Bahrain Office)



مشروع ميتال بارك يفتح آفاقاً جديدة في منطقة كيزاد

مشروع ميتال بارك في منطقة كيزاد

سيتم تجهيز مشروع ميتال بارك القادم في مناطق خليفة الاقتصادية بأبو ظبي - مجموعة كيزاد، المركز التجاري واللوجستي والصناعي المتكامل في أبو ظبي - والذي يغطي مساحة إجمالية قدرها 450,000 متر مربع، بأحدث المرافق لدعم أنشطة التخزين والمناولة والمعالجة والتصنيع. كما سيوفر المشروع إمكانية الوصول إلى مرافق البحث والتطوير، ومساحات المكاتب المستأجرة، والخدمات المالية المرتبطة به. كما سيوفر المشروع، نظرا لقربه من المياه العميقة لميناء خليفة وموقعه الاستراتيجي على مفترق الطرق بين الشرق والغرب، منصة مثالية للصناعات المعدنية لخدمة العدد المتزايد من مشاريع البناء والتشييد، والبنية التحتية، والتنمية الصناعية في أسواق الشرق الأوسط وأفريقيا. وصرح محمد الخضر الأحمد، الرئيس التنفيذي لمناطق خليفة الاقتصادية بأبو ظبي - مجموعة كيزاد، قائلا: «بينما نواصل دعمنا لاستراتيجية أبو ظبي الصناعية الطموح (ADIS)، تفخر مجموعة كيزاد بالبناء على عروض مناطقنا الاقتصادية المتخصصة مع تطوير ميتال بارك الجديدة. حيث تعد أبو ظبي حاليا موطنًا لبعض أكبر موردي المواد الخام الأولية في المنطقة، وهدفنا هو أنه مع تطوير هذا المشروع الشامل، ستمكن المزيد من الشركات من النظر إلى منطقة خليفة الصناعية كموقع رئيسي، حيث يمكنها توسيع عملياتها وتنمية وصولها الدولي». وقد أشار وحيد فولادكار، الرئيس التنفيذي لشركة ميتال بارك، إلى أنه: «من خلال تقديم الابتكار في صميم عروضنا، استحوذ الحل الذي تقدمه ميتال بارك على انتباه المتخصصين في الصناعة على الصعيدين الوطني والدولي، والذين يؤكدون على أن التحول والتقدم الذي حققته ميتال بارك، يهدف إلى التيسير. وقد بدأنا رحلتنا متجددة في الأسس المثالية لمنطقة خليفة الصناعية، ونتطلع إلى التطوير والتطور أكثر لتلبية احتياجاتنا صناعتنا والاستمرار في التركيز على مهمتنا المتمثلة في تحويل التحديات الماثلة إلى فرص قائمة بالفعل».

← مفكرة الفعاليات 2023

يناير/كانون الثاني

الرياض	معرض التكنولوجيا الدولي - LEAP	6 - 9
الرياض	معرض بيغ فايف السعودية	19 - 22

مارس/آذار

دي	معرض طاقة الشرق الأوسط	7 - 9
----	------------------------	-------

الصين اليوم، وفقا للتحليل المعني بمصادر الطاقة المتجددة لعام 2022، الإصدار الأخير من التقرير السنوي للوكالة الدولية للطاقة عن القطاع. وقد وجد التقرير أن مصادر الطاقة المتجددة ستشكل أكثر من 90 في المائة من التوسع العالمي للكهرباء على مدى السنوات الخمس المقبلة، متجاوزة الفحم ليصبح أكبر مصدر للكهرباء العالمية بحلول أوائل عام 2025.

وصرح فاتح بيرو، المدير التنفيذي للوكالة الدولية للطاقة قائلا: «كانت مصادر الطاقة المتجددة تتوسع بسرعة بالفعل. لكن ظهور أزمة الطاقة العالمية دفعها إلى مرحلة جديدة غير عادية من النمو الأسرع. إذ تسعى البلدان للاستفادة من مزايا أمن الطاقة لديها. ومن المقرر أن يضيف العالم قدرا كبيرا من الطاقة المتجددة في السنوات الخمس المقبلة كما فعل في السنوات العشرين الماضية». وأضاف قائلا: «هذا مثال واضح على أن أزمة الطاقة الحالية يمكن أن تكون نقطة تحول تاريخية نحو نظام طاقة أنظف وأكثر أمانا. فالتسارع المستمر لمصادر الطاقة المتجددة يعتبر أمرا بالغ الأهمية للمساعدة في الحفاظ على الباب مفتوحا للحد من ظاهرة الاحتباس الحراري إلى 1,5 درجة مئوية».

وتعد الطاقة الشمسية الكهروضوئية، على نطاق المرافق وطاقة الرياح البرية، أرخص الخيارات لتوليد الكهرباء الجديدة في غالبية البلدان في جميع أنحاء العالم. ومن المقرر أن تتضاعف قدرة الطاقة الشمسية الكهروضوئية العالمية ثلاث مرات تقريبا خلال الفترة من 2022 إلى 2027، متجاوزة الفحم لتصبح أكبر مصدر لقدرة الطاقة في العالم. ويتوقع التقرير أيضا تسريع عمليات تركيب الألواح الشمسية على الأسطح السكنية والتجارية، مما يساعد المستهلكين على تقليل قيمة فواتير الطاقة. كما تتضاعف طاقة الرياح العالمية تقريبا في فترة التنبؤ، حيث تمثل المشاريع البحرية خمس النمو. فستشكل طاقة الرياح والطاقة الشمسية معا أكثر من 90 في المائة من قدرة الطاقة المتجددة التي ستتم إضافتها خلال السنوات الخمس المقبلة.



من المقرر أن تتضاعف قدرة الطاقة الشمسية الكهروضوئية العالمية ثلاث مرات تقريبا خلال الفترة من 2022 إلى 2027

الإسراع بنمو الطاقة المتجددة وتأمينها

تدفع أزمة الطاقة العالمية الحالية إلى حالة من التسارع الحاد في منشآت الطاقة المتجددة، حيث من المقرر أن تتضاعف السعة الإجمالية في جميع أنحاء العالم تقريبا في السنوات الخمس المقبلة، متجاوزة الفحم باعتباره أكبر مصدر لتوليد الكهرباء على طول الطريق، والمساعدة في الحفاظ على إمكانية الحد من الاحتباس الحراري إلى 1,5 درجة مئوية، وذلك وفقا لتقرير جديد صادر عن الوكالة الدولية للطاقة.

تنمو قدرة الطاقة المتجددة العالمية بمقدار 2400 جيجاوات خلال الفترة من 2022 إلى 2027، وهو مقدار مساوٍ لقدرة الطاقة الكاملة لدولة مثل

مثل الطاقة الشمسية وطاقة الرياح، وذلك لتقليل الاعتماد على الوقود الأحفوري المستورد، الذي ارتفعت أسعاره بشكل كبير. ومن المتوقع الآن أن

دفعت المخاوف المتعلقة بالأمن في مجال الطاقة، والناجمة عن الغزو الروسي لأوكرانيا، البلدان إلى التحول بشكل متزايد إلى مصادر الطاقة المتجددة؛

المحتويات

القسم العربي

تحليلات

الإسراع بنمو الطاقة المتجددة وتأمينها ٤
مشروع ميتال بارك في منطقة كيزاد ٥



ملخص محتويات القسم الإنجليزي

تحليلات: تحول هائل في أسرع الاقتصادات نموًا في العالم.

تعدّين: الاستدامة من خلال الرقمنة.

إنشاءات: مستقبل البناء مع «التوأّم الرقمي».

تصنيع: تحديات الاتصال والسلامة تواجه مُصنّعي الروبوتات المتحركة.

Country	Representative	Telephone	Fax	Email
India	Tanmay Mishra	(91) 80 65684483	(91) 8040600791	tanmay.mishra@alaincharles.com
Nigeria	Bola Olowo	(234) 8034349299	-	bola.olowo@alaincharles.com
South Africa	Sally Young	+ 27 (0) 824 906 961		sally.young@alaincharles.com
UK	Richard Rozelaar	(44) 20 7834 7676	(44) 2079730076	richard.rozelaar@alaincharles.com
USA	Michael Tomaszewsky	(1) 203 226 2882	(1) 203 226 7447	michael.tomaszewsky@alaincharles.com

الوكيل البريدي بالولايات المتحدة: النشرة التقنية - الشرق الأوسط
Technical Review Middle East ISSN 0267 5307
تشرها ست مرات في العام، لقاء 99 دولاراً أمريكياً، شركة آلان تشارلز للنشر
Alain Charles Publishing, University House, 11-13 Lower Grosvenor Place, London, SW1W 0EX, UK
يتم سداد ثمن المجلات لدى: Rahway, NJ.

مدير البريد: أرسل التصحيحات إلى: Alain Charles Publishing Ltd, c/o Mercury
Airfreight International Ltd, 365 Blair Road, Avenel, NJ 07001, US
Agent: Pronto Mailers International, 200 Wood Avenue, Middlesex, NJ 08846

الإنتاج: سرندي شيكارز، نلي مينديز، باكشيت شيفاكومار
بريد إلكتروني: production@alaincharles.com

الإشراكات: بريد إلكتروني: circulation@alaincharles.com



رئيس مجلس الإدارة: دريك فوردهام

© Technical Review Middle East ISSN: 0267-5307

النشرة التقنية abc

TECHNICAL REVIEW MIDDLE EAST

الشرق الأوسط

في خدمة شركات المنطقة منذ 1984

المحررة: فينا أشوات
فريق التحرير والتصميم: ميريام بريتكوفا، راؤول بوتيفيدو، فاني فينوجويال، لوز ووترز، يارفين سي بي،
ماتوج كومار، نونالينكا نونجروم، سمانتا باين، ديلينا روي شيفاني دروق، براشانت آبه، فينيتا تيواي.

الناشر: نك فوردهام

مديرة مبيعات الإعلانات: بريتشارد روزيلار

مديرة مبيعات المجلة: بريتشارد روزيلار

هاتف: ٤٤٨ ٩٦٦٠ (٤) ٩٦٦١، فاكس: ٤٤٨ ٩٦٦١ (٤) ٩٦٦١، بريد إلكتروني: trme@alaincharles.com

المكتب الرئيسي:

Alain Charles Publishing Ltd

University House, 11-13 Lower

Grosvenor Place

London SW1W 0EX UK

هاتف: ٢٠٧٨٣٤٧٦٧١ (٠) ٤٤

فاكس: ٢٠٧٩٧٣٠٠٧٦ (٠) ٤٤

الطبعة: مطبعة الإمارات - دبي

مكتب الشرق الأوسط الإقليمي:

Alain Charles Middle East FZ - LLC

Office 112, Loft 2B

مدينة دبي للإعلام

دبي - الإمارات العربية المتحدة - صندوق بريد: ٥٠٢٢٠٧

هاتف: ٤٤٨ ٩٦٦٠ (٤) ٩٦٦١

فاكس: ٤٤٨ ٩٦٦١ (٤) ٩٦٦١

الترجم: عز الدين محمود علي ezzeddinmali@gmail.com

التصميم والإخراج الفني: محمد مسلم التجار alnajjar722@gmail.com

ADVERTISER INDEX

Company	Page
DMG World Media Dubai (2006) Ltd.....	15
DMS Global WLL	47
Elematic Oyj	25
Hawkeye Pedershaab	2
Informa Middle East Limited (Dubai Branch)	5
Magna Tyres Group	21
Peter Berghaus GmbH	11

Oil Review

Oil · Gas · Petrochemicals

Middle East

The leading oil and gas publication, for almost two decades

One success leads to another

WEB

EVENTS

PRINT



WEBINARS

E-NEWSLETTER

Advertise with us to maximise the return on investment for your business

Follow us on Social Media for the latest business news & updates



www.oilreviewmiddleeast.com | Tel: UK +44 (0) 207 834 7676 | UAE +971 (0) 4 4489260

TECHNICAL REVIEW MIDDLE EAST

المجلد ٣٩ العدد الأول ٢٠٢٣

النشرة التقنية

SERVING THE REGION'S BUSINESS SINCE 1984 ١٩٨٤ في خدمة شركات المنطقة منذ

الشرق الأوسط

الإسراع بنمو الطاقة المتجددة وتأمينها

وجد تقرير الوكالة الدولية للطاقة أن مصادر الطاقة المتجددة ستشكل أكثر من ٩٠ في المائة من التوسع العالمي للكهرباء على مدى السنوات الخمس المقبلة