

TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

Vol 37/Issue Five 2021

INCLUDES ANNUAL GENSETS BUYERS' GUIDE 2021

Mining

Improving efficiency

Gensets

Customisation through collaboration

SUSTAINABLE LIVING

EXPO 2020: INTELLIGENT STRATEGIES
OPTIMISING NATURAL CONDITIONS

Inside

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Excavators
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CONTENTS

BUSINESS & MANAGEMENT

Market News 4

BESIX and Trojan to build Guggenheim Abu Dhabi; Enerpac push-pull system builds largest observation wheel; UPS and DP World deliver e-vehicles charged using solar power at Expo 2020 Dubai; MAN Truck & Bus introduces new TG range

EXPO 2020

Sustainability 14

Terra - The Sustainability Pavilion at Expo 2020 highlights intelligent strategies for sustainable living

POWER

Delivering Reliability and Excellence 16

An interview with Lenaik Andrieux, GM, Kohler EMEA on the company's focus in the region, its range of generators including the walk-in PODS, and how they contribute towards sustainability

MINING

Construction and Mining 24

The Mining Show Preview
Technologies optimising water management and maximising the valorising of fines

CRUSHING & SCREENING

Innovations 34

Range of equipment from Terex Minerals Processing Systems offering reliability and versatility

ANNUAL BUYERS' GUIDE

Gensets 40

A comprehensive guide to the Middle East's manufacturers and suppliers

ARABIC

Analysis 48

EDITOR'S NOTE

THE SUSTAINABILITY PAVILION at Dubai Expo 2020, (see cover image and p14) is inspired by natural processes such as photosynthesis and demonstrates sustainable living in a challenging desert environment.

As the region now begins to host several conferences and exhibitions, it is time to get together again to share expertise across industries. The Mining Show in Dubai, from 16-17 November, will bring together stakeholders from the region's mining and quarrying industry.

In this issue, we have insights on innovations for water management and those accelerating sustainability in mining. The issue also features the Annual Gensets Buyers' Guide on page 40, bringing you a comprehensive list of the region's genset manufacturers and suppliers.

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



16



18



35

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TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

SERVING THE REGION'S BUSINESS SINCE 1984

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Briefly

UPS and DP World deliver e-vehicles charged using solar power at Expo 2020 Dubai

UPS IS WORKING with DP World, the official premier global trade partner of Expo, to showcase its transition to clean energy with UPS's electrical vehicles being charged for the first time with an off-grid charging system to power on-site deliveries.

"Today's deployment of one of the world's first off-grid electric vehicle charging systems is a demonstration of how Expo 2020 is connecting minds and creating the future. Our joint efforts allow us to decentralise the charging system, eliminate the need for electricity in charging vehicles at Expo 2020 and further our goal of becoming carbon neutral by 2050," said Scott Price, president of UPS international.

During the six-month mega event, UPS will use the system to charge its fleet of electric vehicles, developed in collaboration with Arrival, at DP World's FLOW Pavilion.

Sunlight is captured by panels on the pavilion's roof, with the solar energy flowing through an inverter to an off-grid Battery Energy Storage System (BESS) unit.

Abdulla Bin Damithan, CEO and managing director, DP World - UAE Region and Jafza, stated, "DP World is proud to work with UPS, demonstrating the next generation of delivery vehicles at Expo 2020 Dubai. We are committed to digital and technological innovation that makes supply chains smarter and more sustainable. The DP World FLOW pavilion has been designed to demonstrate the future of global trade, increasing prosperity while reducing the use of energy and resources."

The sustainable collaboration is closely aligned with the UAE's Circular Economy Policy 2021-2031 and its Green Agenda 2030, as well as supporting a key growth engine of Dubai's economy through the development of cutting-edge circular economy technologies.

UPS's journey toward a less carbon-intensive future is enabled through one of the industry's largest private alternative fuel and advanced technology fleets, and a 'rolling laboratory' of more than 13,000 vehicles that drive more than one million greener miles each business day.

BESIX and Trojan to build the Guggenheim Abu Dhabi



Guggenheim Abu Dhabi is located on Saadiyat Island.

Photo Credit: BESIX Group

The main construction CONTRACT FOR the Guggenheim Abu Dhabi has been awarded to Six Construct, a subsidiary of BESIX Group, and Trojan General Contracting LLC, a subsidiary of Alpha Dhabi Holding.

The contract awarded by the Department of Culture and Tourism - Abu Dhabi, covers the entire construction phase of the museum, which is set to be completed by 2025.

Located on Saadiyat Island and bordering the Arabian Gulf on three sides, the museum is set to be the largest of the four international Guggenheim museums - with three others in New York, Venice and Bilbao.

The architecture of the building is the work of Frank Gehry and features a series of asymmetrical cones surrounding the main building, which serve as entrances and outdoor exhibition spaces.

Incorporating sustainable elements appropriate for the region, natural cooling and ventilation systems have been integrated into the building, inspired by the Middle East's traditional wind towers.

The contract covers all construction work except the foundation which is completed. The building is set to use steel, concrete, wood and aluminium.

"We are extremely proud to build the Guggenheim Abu Dhabi, a museum of global modern and contemporary that will further enhance the appeal of Abu Dhabi as a destination," commented deputy CEO of BESIX Group, Pierre Sironval.

Olivier Crasson, general manager of Besix-Six Construct, added, "This is a particularly complex yet very sustainable building which will benefit from our engineering and construction expertise. Together with Trojan, a high-quality partner, we will make the Guggenheim Abu Dhabi a great success for our client and the Emirate of Abu Dhabi."

Six Construct has been operating in the UAE since 1966, and designs and builds projects including buildings, skyscrapers and marine-related projects.

Enerpac push-pull system builds largest observation wheel

AN ENERPAC PUSH-PULL system has been used to construct the world's largest observation wheel. Opening this week, the Ain Dubai observation wheel is more than 250 metres tall, significantly higher than the 168 metre, High Roller observation wheel in Las Vegas, and almost twice the height of the London Eye.

The Ain Dubai comprises a wheel rim, rotating hub and fixed spindles mounted on four support legs. For the wheel assembly, the height of the Ain Dubai takes it well beyond the reach of a traditional crane and so an alternative method was needed. Enerpac proposed to use a Push-Pull system for the wheel construction. Located at the base of the wheel, a pair of hydraulic grippers pushes the wheel forward, effectively rotating it. The push grippers are then released and pulled back into position using hydraulic cylinders. The Push-Pull



Photo Credit: Ain Dubai

The completed 'Ain Dubai' the world's largest and tallest observation wheel, standing at more than 250 metres.

system is powered and operated by a central hydraulic power unit (HPU). The HPU's diesel engine, main control panel, safety PLC and tank with hydraulic oil are controlled by PLC and laptop computer.

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MAN Truck & Bus introduces new TG Range

MAN TRUCK & Bus has introduced the New TG Range for its markets in the Middle East, Africa and Latin America. The development of the new trucks was based on customer feedback, to provide vehicles that meet their operational requirements – for today and for the future.

The new range represents MAN Truck & Bus as a provider of sustainable transport solutions. These trucks also showcase the high build quality in MAN factories.

The New TG Range wears a distinct look with a new cabin that makes it stand out among its competitors. The new look is both visually appealing and functionally efficient. These vehicles offer the highest levels of reliability and efficiency for diverse applications and operating conditions.

“The launch of the new range reflects MAN’s focus on helping our customers in their business. These trucks are built to be highly reliable, able to withstand rugged use over their typical operating life, while delivering best-in-class performance. As a result, customers get the optimum uptime and attractive Total Cost of Ownership,” said Joerg Mommertz, senior vice-president, head of sales area Middle East, Africa and Latin America, MAN Truck & Bus SE.

With the introduction of the new trucks, MAN also reaffirms its commitment to “simplifying business” of its customers. The company aims to do so with effective after-sales for service and parts, a range of digital and financial solutions, and business advisory, besides the reliable and efficient products. This is a powerful enterprise -



New range adapted for an array of applications across diverse topographies.

Photo Credit: MAN Truck & Bus

grade solution for customers and it is designed to support improved levels of fleet efficiency and safety, and reduce environmental impact.

Great efficiency and economy: The engine range remains robust, reliable and efficient as before. It will continue to deliver consistent high performance over long duty cycles. Substantial improvements on the product and in the areas of maintenance and service can reduce service life costs. These trucks offer significant payload advantages for weight-sensitive application sectors.

Strong partner: The New TG Range also follows a product logic, which is oriented towards the application profile. This allows for a new MAN TGX, TGS, TGM or TGL to be put together that fits the exact transport task, using flexible configuration options.

Optimised uptime: The operational efficiency of a truck is largely dependent on the parameter of reliability and how easily it fulfils its task, each day. MAN endeavours to make the tried and tested even better with the New TG Range. These trucks will perform

just as before as the powertrain retains its characteristics from the previous generation.

The driver is the focus: The new MAN Truck Generation sets standards in terms of user-friendliness, optimum ergonomics, operation which is more intuitive and reliable. It provides optimum space - a well-thought-out storage concept and perfect sleeping comfort.

The new MAN TGX is the International Truck of the Year 2021: In addition to its driving comfort, the driver's workplace with its clearly arranged, fully digital display instruments, the intuitively operable driving and multimedia functions incorporated into the new, generously adjustable multifunction steering wheel and the innovative, distraction-free rotary pushbutton control function of the MAN SmartSelect system impressed the jury of the International Truck of the Year.

Driving smart: With navigation, radio (from standard to digital), video, telephone and more tailored to trucks, the infotainment system of the new MAN Truck Generation is a communication and multimedia hub.

Lane departure warning system: This assists the driver with accurate lane keeping. If the MAN Truck touches the lane markings or leaves the lane without an activated turn indicator, an acoustic signal will sound.

ACC stop and go: The ACC with stop-and-go function automatically regulates the speed and the distance to traffic ahead. It retains the required speed without the driver's having to actuate the accelerator.

MoU between SWCC and Cummins Arabia on hydrogen production

THE SALINE WATER Conversion Corporation (SWCC) and Cummins Saudi Arabia Company Ltd. signed a memorandum of understanding on developing a hydrogen gas production plant, on the concluding day of WETEX 2021.

The Corporation intends to implement this project in the context of its commitment to developing innovative sustainable solutions for the water industry sector globally. This initiative is in line with the Kingdom's Vision 2030 of adopting clean energy in its projects and diversifying its economic resources to lead the world in the production of alternative energy.

The MoU was signed by the executive director of Investments, HE Issam bin Abdullah Al-Jarba on behalf of SWCC and by Amit Deshpande, managing director, Cummins Arabia. This comes in line with the Kingdom's approach to cooperate in the production of clean hydrogen and establish a joint fund to innovate related technologies. The memorandum, which came on the sidelines of Dubai Expo 2020, included strengthening cooperation in engineering and research consultancy, and training in renewable energy. This is within the framework of the Corporation's



The MoU was signed by the executive director of Investments, HE Issam bin

direction as an industrial entity active in economic development — to tackle the challenges posed by global climate change by innovating practical solutions that employ modern and promising technologies and reduce carbon emissions, developing hydrogen gas production facilities and adopting hydrogen as an energy source, and to support the transformation of the water industry into a safe industry that is more committed to the environment and at a lower cost for the industrial and civil sectors.

Photo Credit: Cummins Arabia

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MissionZero is aimed at enabling our customers and the mining industry to move towards zero water waste, zero emissions and zero energy waste by 2030.

Demand for minerals and declining ore grades are making mining more complex, especially when it comes to the environment. The amount of water and energy needed is growing, resulting in an increasing environmental footprint.

New challenges, such as increasing costs and risk, tighter regulations and higher societal expectations, mean you need a partner that can ensure both business and environmental demands are met.

With MissionZero, our ambition is to deliver innovative and digital solutions to the mining industry that support zero water waste, zero emissions and zero energy waste by 2030.

Already, we have solutions, such as dry-stack tailings, that enable customers to recover up to 95% of process water and digital solutions that make your processes more efficient. But we are also inviting you to co-create new solutions with us and to ensure the adoption of innovations and technologies that will transform mining into a more sustainable industry, for all of us.

[FLSmith.com/MissionZero](https://www.flsmith.com/MissionZero)



Briefly

Hitachi ABB Power Grids handed the contract for the first HVDC interconnection between the Middle East and North Africa

HITACHI ABB POWER Grids announced that it has been awarded a contract from the Saudi Electricity Company and the Egyptian Electricity Transmission Company for the first large-scale high-voltage direct current (HVDC) interconnection in the Middle East and North Africa, enabling Saudi Arabia and Egypt to exchange up to 3,000 MW of electricity, much of which is expected to be generated from renewable energy sources in the future.

The connection aims to support the flow of power in multiple directions between three terminals and will be the first interconnection allowing the exchange of electric power between both countries.

Hitachi ABB said that the contract includes the supply of three HVDC converter stations located at Medina and Tabuk in Saudi Arabia and Badr in Egypt. The company will also be providing system studies, design and engineering, transformers, valves, high-voltage equipment, technical advisory, commissioning and service, in collaboration with two consortium partners - Saudi Services for electro-mechanic work in Saudi Arabia and Orascom Construction in Egypt.

The HVDC interconnection will transport up to 3,000 MW of electricity at 500 kv along 1,350 km using overhead power lines and a subsea cable across the Red Sea. The power will be able to flow in multiple directions between the three terminals.

According to Hitachi ABB, the HVDC link will give Egypt access to the interconnected power grids of the Arabian Gulf and Saudi Arabia access to those of North Africa, whilst strengthening grid resilience and power supply security. Saudi Arabia is said to be working to increase the share of natural gas and renewable energy sources to approximately 50% by 2032 and Egypt intends to increase the supply of electricity generated from renewable sources to 42% by 2033. The consortium believes the connection directly contributes to the realisation of these goals.

Wilo showcases smart pump solutions at WETEX

WILO MIDDLE EAST, a pump manufacturer headquartered in Dortmund, Germany, showcased some of its pumps and systems solutions at WETEX, held in October at the Dubai Exhibition Centre, Expo 2020 Dubai.

Wilo showcased the SiBoost Smart Helix EXCEL, a smart pressure boosting water system that requires minimal energy, EMUport CORE, an easy-to-maintain and clog-free sewage pump system, Rexa SOLID-Q with Nexos Intelligence, a submersible sewage pump with an in-built ethernet interface, Actun OptiMS, an optimised water supply system that uses solar power and Stratos MAXO, a smart pump system designed for commercial infrastructures with an advanced building management system.

Aside from displaying its products, Wilo participated at the event to strengthen its collaboration with existing partnerships, including the Dubai Electricity and Water Authority and to connect with other contractors and consultants to explore digital products and intelligent systems solutions to ensure access to clean drinking water and efficient use of other valuable resources.

“As a leading provider of sustainable solutions, Wilo Middle East has been proud to participate at WETEX, which we have been doing consistently through the years. Joining the event is always a pleasure on our part, given the array of innovative products being showcased to resolve various sustainability concerns in the region. Not only does WETEX provide an opportunity for us to exhibit our world-class solutions, but it also enables us to



Wilo's mission aims for better access to clean drinking water in the region and effectively managing valuable resources for present and future generations.

Photo Credit : Adobe Stock

strengthen our strategic collaboration with our partners and help government and industry leaders in realizing their grand vision for the region, as well as for the rest of the world,” said Yasser Nagi, managing director, Wilo Middle East.

“Wilo has always been at the forefront of innovation with its strong product portfolio and advanced industry insight. With over 150 years of excellence, we make sure that our products will always be relevant and effective to address the increasing demand for innovative pumps in various sectors. Our active and consistent participation at WETEX highlights our commitment to support government and industry leaders in developing the best solutions for the UAE and the GCC region. Moreover, by integrating digital innovations into the water industry, we can assure communities in the region for better access to clean drinking water and effectively manage valuable resources for present and future generations,” remarked Fouad Ahmed, regional marketing manager, Wilo Middle East.

Woodsafe climate concept at Expo 2020

WOODSAFE TIMBER PROTECTION and Bäckegård have partnered to introduce a wood climate concept that aims to embrace the respectful use of nature's resources and diversity in a sustainable value chain. With the help of the wood climate concept ALL-IN-ONE, Sweden was able to present the landmark 'The Forest' in the Swedish pavilion of Expo 2020.

According to Woodsafe, due to its low carbon footprint, there is an ever-growing demand for increased use of wood in areas where it historically has not been considered. Especially in areas where fire safety is an issue.

Since 2011, Woodsafe and Bäckegård have combined their climate, manufacture and knowledge into the 'ALL-in-ONE' concept. The company says that it contributes with knowledge in flame retardant treatment and



Woodsafe and Bäckegård have combined their climate, manufacture and knowledge into the 'ALL-in-ONE' concept.

Photo Credit : Woodsafe

Backegards with the knowledge needed to produce various wooden products that cope with the flame retardant treatment.

Before emerging in Dubai, the Forest has been on growth in the deep forests of Sweden for more than 100 years.

Bahrain launches fastest global sea-to-air logistics hub in region

BAHRAIN HAS LAUNCHED the fastest regional multi-modal logistics hub in the region with only a two hour turnaround time for all containers, which enables products to be with customers in half the time and at 40% of the cost.

The launch of the 'Bahrain Global Sea-Air Hub' capitalises both on Bahrain's strategic position midway between European and Asian markets as well as on its proximity to regional target markets.

Prysmian Group receives submarine cable contract

PRYSMIAN GROUP, AN energy and telecom cable systems provider has been awarded a contract worth more than US\$257mn, for a ± 500 kV HVDC submarine and land cable system to create an interconnection between the Arab Republic of Egypt and Saudi Arabia.

The project was awarded to Prysmian Group by the Egyptian Electricity Transmission Company (EETC) and the Saudi Electricity Company (SEC). The new link will facilitate the strategic exchange of energy between the two countries and will connect the GCC countries with the African continent.

The project involves the design, supply, installation and commissioning of around 127.5 km of HVDC ± 500 kV mass impregnated submarine single-core cables, 43.5 km of 36kV XLPE submarine single-core cables and double-wire armouring, and 61km of MINISUB submarine fibre optic cables for telecommunications and Distributed Temperature Sensing monitoring. This wider interconnection will transport electricity between the Badr substation (Cairo, Egypt) and the Madinah East substation in Saudi Arabia.

The cable route will cross the Gulf of Aqaba, spanning the territorial waters of Egypt and Saudi Arabia with a route length of approximately 20km and deep-water installation at around 1,000 m, in addition to sections of underground land cables between the landfall and the transition stations located on each side. The delivery and commissioning of the project are scheduled for 2024.

"This award represents a further confirmation of our role as a global leading supplier and installer of HVDC submarine cable interconnections. We thank EETC and SEC for this project as it is an important opportunity for us to be a key partner of two leading transmission systems operators and support the upgrade of power grid infrastructure in the region," said Hakan Ozmen, EVP Projects, Prysmian Group.



The new link will facilitate the strategic exchange of energy between the two countries.

Photo Credit: Adobe Stock

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EXECUTIVES' CALENDAR 2021-22

NOVEMBER 2021

2-4	Hypermotion Dubai	DUBAI	www.hypermotiondubai.com
2-4	Materials Handling Middle East	DUBAI	www.materialshandlingme.com

JANUARY 2022

17-19	World Future Energy Summit	ABU DHABI	www.worldfutureenergysummit.com
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FEBRUARY 2022

1-3	LEAP	RIYADH	www.onegiantleap.com
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MARCH 2022

7-9	Middle East Energy	DUBAI	www.middleeast-energy.com
7-9	Intersolar Middle East	DUBAI	www.intersolar.ae
28-31	The Big 5 Saudi	RIYADH	www.thebig5saudi.com
28-31	HVAC R Expo Saudi	RIYADH	www.hvacrexposaudi.com

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

Aerospace Summit confirmed for 2022

MUBADALA will host the sixth edition of the Global Aerospace Summit in Abu Dhabi, from May 24-26, 2022 with 'Digital-Driven Resurgence' as its theme, bringing together international aviation, aerospace, space and defense leaders.

Showcasing the rapid transformation happening across the sectors over recent years, and the role of innovation and digital technology moving forward, the conference will evaluate the impact of digitalisation on efficiency and sustainability.

"The aerospace sector continues to evolve rapidly, constantly innovating and adapting to our new reality. Mubadala is continuing to invest in the sector, developing new partnerships and unlocking opportunities for future growth through the advancement of digitalization and automation technologies," commented Badr Al Olama, executive director of UAE Clusters at Mubadala Investment Company.

"We are pleased to be hosting the Global Aerospace Summit, which is an ideal platform for the industry to come together to explore ways of accelerating its recovery and growth, as well as to discuss the latest strategies and ideas that will shape the future of aviation, space, and defense. We are looking forward to welcoming our partners, colleagues and friends from across the globe, in person in Abu Dhabi, as we drive forward a digital resurgence for our industry," he added.

The 2022 edition will include new elements such as a dedicated start-up programme and the Task Force Programme.

Industry unites for Trucks & Heavy Machinery Show

BUYERS, suppliers, and representatives will gather for the Middle East Trucks & Heavy Machinery Show, taking place in-person at the Festival Arena, in Dubai Festival City, from December 7-9, 2021.

Attendees will be able to expand regional networks, improve brand awareness, arrange one-to-one meetings and attend conferences and panels evaluating the Middle Eastern industry and innovations.

Both local and international businesses will be in attendance, introducing and promoting products and technologies to the market.

Representatives will span areas including government organisations and NGOs,



Photo Credit : Adobe Stock

Industry leaders will come together to showcase new products, innovations and developments.

construction, real estate, distribution and supply, mining and quarrying, transport and logistics, and manufacturing.

Product ranges vary from agricultural tractors, vehicles and equipment, to rock crushers, cranes, trucks and tyres.

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

TAQA Group, Marubeni to develop power and water project for Saudi Aramco

MARUBENI AND TAQA have finalised the contracts for the development of a power and water desalination project for Saudi Aramco.

Set to host a capacity of 5.25 mn imperial gallons a day, the plant will host a power capacity of 940MW

and a steam capacity of 1,084 tonnes per hour.

"Taqa is pleased to partner with Marubeni and Saudi Aramco on a project of such strategic importance to the kingdom," Farid al-Awlaqi, group executive director of generation, Taqa, commented.



Photo Credit: Adobe Stock

The plant will process up to 5.25 mn gallons a day.

ABB brings AI to asset performance management

ABB has strengthened its digital offerings with the launch of ABB Ability Genix Asset Performance Management (APM) Suite for condition monitoring, predictive maintenance and 360-degree asset performance insights.

Genix APM Suite makes it easy to add asset condition monitoring to existing operational technology (OT) landscapes, enables prioritisation of maintenance activities based on AI-informed predictions, and provides an overview of performance.

With reliable data insights, decision makers are provided with the information required in order to identify gaps and areas of improvement for energy efficiency and tighter control of operations, increasing asset availability and improving profit potential.

Teva unveils eco-truck

ELECTRIC TRUCK PROVIDER Teva has unveiled the new Teva Truck – the first British designed 7.5-tonne electric truck, set to go on sale in the Middle East in 2022.

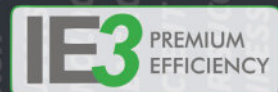
The Teva Truck has been unveiled to address the immediate industry need to electrify. The vehicle offers a range of up to 160 miles (250 km) in pure battery electric vehicle (BEV) form or up to 310 miles (500 km) with its patented range extender technology, which has now been upgraded to use hydrogen fuel cells.



Photo Credit: Teva

The truck has a range of up to 160 miles.

Electric motors
from **0,04kW**
up to **6000kW**



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“With Atmosphere, we collaborated with HPE to design a significantly more performant supercomputer with targeted capabilities in modeling, simulation and artificial intelligence, to accelerate weather and climate insights and advance our nation’s overall R&D. By hosting this state-of-the-art supercomputer, the UAE is now the first country to operate the most powerful liquid-cooled system, based on the HPE Cray EX, for national weather centres across the Middle East and Africa.”



Photo Credit : National Centre of Meteorology

HE DR ABDULLA AL MANDOUS

Director general

National Centre of Meteorology
(On the deployment of ‘Atmosphere’, a new supercomputer built by Hewlett Packard Enterprise)

“Al Marjan Island has become a preferred hub for visitors and investors from around the globe and we are looking forward to expanding our offering through world-class projects such as the one being developed by Dubai Investments. This will further support Ras Al Khaimah’s positioning as a vibrant tourism, hospitality and residential destination – inspired and guided by the vision of our leadership.”

ABDULLA AL ABDOOLI

CEO
Marjan

“We’re pleased to embark on this journey that will empower the emirate to deliver cutting edge government services to citizens, residents and visitors. UAE’s rapid innovation initiatives, streamlined across various emirates across the nation, through the adoption of advanced technologies are aligned with the country’s national goals of embracing the future and emerging as a world-class city along with the other emirates for a unified UAE vision.”

RAMI KICHLI

Vice president, Gulf and Levant

Software AG

(On the strategic partnership between Software AG and Sahab Smart Solutions to provide a boost to UAE’s digital initiatives)

“We are delighted to add this capability to DERC’s growing resources of cutting-edge technological solutions that are shaping our future. A Nuclear Electromagnetic Pulse simulator is unique to the GCC region and is crucial for the protection of strategic systems and critical infrastructures.”



Photo Credit : AETOSWire

DR CHAOUKI KASMI

Chief researcher

Directed Energy Research Centre (DERC)
(On DERC becoming the first entity in the GCC region to reproduce electromagnetic pulses from high altitude nuclear reaction)

“It is important for companies like Seven Seas, which have a global customer base to inspire more companies to think of a more sustainable future. TotalEnergies is committed to providing high quality and reliable solar projects that help our clients reduce their carbon footprint and energy costs.”

GIPIN MANI

Country director UAE

TotalEnergies for Renewables Distributed Generation activities

“Tawdheef is an ideal opportunity for various government and semi-government organisations to discover suitable Emirati talent to drive their growth and prosperity, as well as to enhance communication between the most prominent government agencies and leading companies with Emirati youth to help them make precise decisions to acquire future skills and identify trends and needs of the labor market. In a way, that contributes to achieving the ambitious development visions of the UAE in the next fifty years.”

MOHAMED HELAL AL MHEIRI

Director general

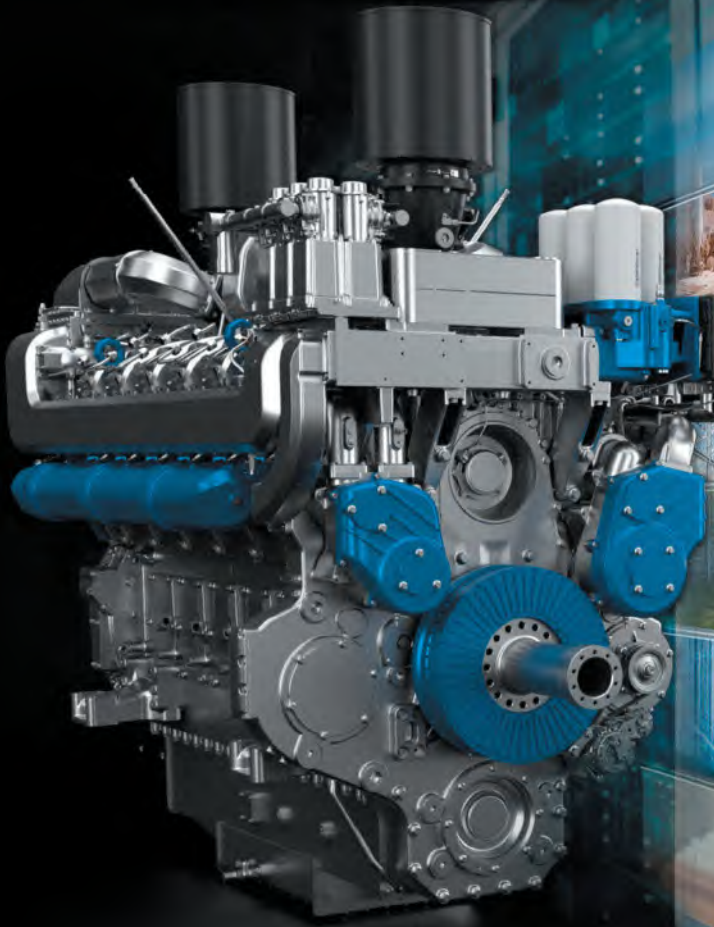
Abu Dhabi Chamber

“Emirates has always been at the heart of Dubai’s growth. Our requirement for 6,000 additional operational staff signifies the quick recovery Dubai’s economy is witnessing and will lead to opportunities and other positive developments across various other businesses, including those in the consumer, travel and tourism sectors. We have been prudently restoring our operations and with the positive signs in the economic recovery and continuous growth of demand, we are hopeful to be back to where we were pre-pandemic, from mid-2022.”

HH SHEIKH AHMED BIN SAEED AL MAKTOUM

Chairman and chief executive

Emirates Airline and Group



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The future of sustainable living

One of the top three attractions at Expo 2020 Dubai, Terra - The Sustainability Pavilion, highlights intelligent strategies for future sustainable living.

TERRA - THE SUSTAINABILITY Pavilion, one of the top three attractions of the Expo 2020 Dubai, aims to illuminate the ingenuity and possibility of architecture as society looks to intelligent strategies for future sustainable living. Drawing inspiration from complex natural processes like photosynthesis, the dynamic form of the Pavilion is in service to its function, capturing energy from sunlight and fresh water from humid air. The facility's strength lies in its capacity to demonstrate a new way of living sustainably in a challenging desert environment.

The Pavilion structure works in tandem with the considered landscape of demonstration gardens, winding pathways and shaded enclaves to create an aura of magic punctuated by the sights, smells and tactile opportunities of nature. The gardens are both experiential and functional, setting the stage for the exhibition contents within and creating shaded gathering areas that will manage and distribute crowds while providing retail, food and beverage opportunities.

A combination of strategies

This self contained, micro-ecosystem optimises the natural conditions inherent in its location, working with and within them to maximise efficiency and supplementing them with pioneering sustainable technologies to create innovative solutions.

The design is driven by maximising efficiency which it does by seeking shade in the one place available: below the ground. The Pavilion uses the insulating properties of the earth to shield it from the harsh ambient temperatures which can soar to 50 degrees in the warmer months. Most of the accommodation is below grade and cased

with an earth roof system, creating a substantial barrier to help reduce its cooling loads and conserve energy. The above ground surfaces are clad with a gabion rainscreen wall – sourced with local stone from the Hajar Mountains – which provides enough thermal mass to absorb the heat while the stone's natural colour reflects the sun. Flora and fauna sourced from the surrounding deserts – including some species that have been never been cultivated by humans – are arranged on the planted roofs and throughout the gardens, creating a water efficient landscape that functions through a series of closed loop systems designed to filter, supply and

The facility's strength lies in its capacity to demonstrate a new way of living sustainably in a challenging desert environment.

recycle water. The framing of these local topographical and floral features, combined with the technologies of water recycling and reuse, provide visitors a newfound appreciation of the unique region and its biodiversity. The site also includes areas for productive agricultural landscape, featuring halophytic agriculture and other testing beds.

The culmination of the building's systems can be found in the heart of the Pavilion, its large exterior courtyard.

Borrowing from the vernacular of the region, the courtyard provides a large, passively cooled space for visitors. During the design, thermodynamic studies charting the prevailing breezes were used to shape the courtyard to allow desirable cool south-westerly breezes to enter while blocking warmer winds.

Soaring over the courtyard, the Pavilion's canopy accommodates more than 6,000 sqm of ultraefficient monocrystalline photovoltaic cells embedded in glass panels. The combination of the cell and the glass casing allow the building to harness solar energy while providing shade and daylighting to the visitors below. The experience in the courtyard is of being beneath a large shade tree with dappled light projecting onto the surfaces below. The form of the canopy works with the courtyard to direct cool air in, while simultaneously exhausting low-lying hot air through a chimney effect at the centre. The canopy also serves as a large collection area for stormwater and dew that replenishes the building's water system. The result is a structure that combines the most advanced technology in solar capture and a clear understanding of the natural conditions of the site to actively generate energy while passively cooling and enhancing the experience of the visitor.

With more than 6,000 sqm of exhibition space, the Sustainability Pavilion will enjoy a long life after Expo is over, transforming into a science museum and expanding on its mission of exploring sustainable practices and the critical stewardship of our fragile planet.

Photo Credit - Terra - Expo 2020

Energy Trees

Nineteen Energy trees (E-trees) ranging from 15-18m in diameter are dispersed throughout the site and provide 28% of the energy required to power the building.

Inspired by the Dragon's Blood, a tree found only on Socotra, an island 200 miles off the coast of Yemen, the E-Tree is designed to be a deployable freestanding shade structure that harvests the sun's energy. The structure is constructed from steel and complex composites and has been optimised

The design is driven by maximising efficiency which it does by seeking shade in the one place available: below the ground.



Photo Credit : Terra - Expo2020

to support an 18m photovoltaic array.

Taking further cues from nature, the array follows the sun in the same manner as a sunflower, rotating 180 degrees throughout the course of the day to maximise the energy yield and increase the efficiency of the solar cells, before returning to its original position at night.

Supporting the array is an engineered

carbon fibre structure inspired by the design of the steering wheel of a yacht. The E-Trees have become an integral part of both the exhibition and the Pavilion site – showcasing and educating visitors on the research on solar harnessing and panel technology – while at the same time, serving as an integral part of the systems that contribute to a net-zero energy goal of the building. ■

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Generating excellence, delivering quality

Lenaik Andrieux, GM, Kohler EMEA, speaks to Fyna Ashwath regarding the company's focus in the region, its range of generators including the walk-in PODS, and how they contribute towards sustainability.

Kohler generator sets are used in a wide range of applications including industry, healthcare, construction and the rapidly expanding data centre market. Could you give us some insights on Kohler's focus for the region?

Kohler continues its work in the region, promoting the principles of quality and product development, offering highly-reliable, customised generators for customers. We are able to deliver excellence for every project and adapt to a specific application and regional restraints.

Kohler provides ongoing logistical support to its extensive distribution network with presence in every country in the region, to ensure optimum performance.

Please tell us about the latest trends in gensets and how Kohler's product offering is supporting sustainability, as there is an increasing trend towards emission requirements and other regulations?

Data centre gensets are in great demand, as people are increasingly conscious of speed and cost. Megatrends like public cloud and 5G adoption will continue to drive the uptake of data services.

Modular designs are gaining popularity. Modularisation and offsite manufacturing facilitate customisation. They streamline new build processes, reduce carbon footprints, and lowers costs. Rapid market growth and changes including edge, colocation and hyperscale are increasing.

Kohler has a track record of developing diesel generators that meet the latest environmental regulations. Firstly, Kohler believes in going beyond emissions on paper. And secondly, our efforts with new technologies involving hydrogen or alternative technologies is all about deploying the right technology mix. Our generators are all customised to requirements, including those pertaining to emission and temperature requirements as well as other parameters.

Kohler's commitment to the industry is demonstrated by keeping abreast of incoming regulations, including Stage V requirements and ongoing investment into research and development. For instance, Kohler has introduced a wide range of rental generators to meet the Stage V requirements, including the 20 to 550 kVA power ratings with the Kohler engines for the lower power demand generator sets from 20 to 50 kVA.

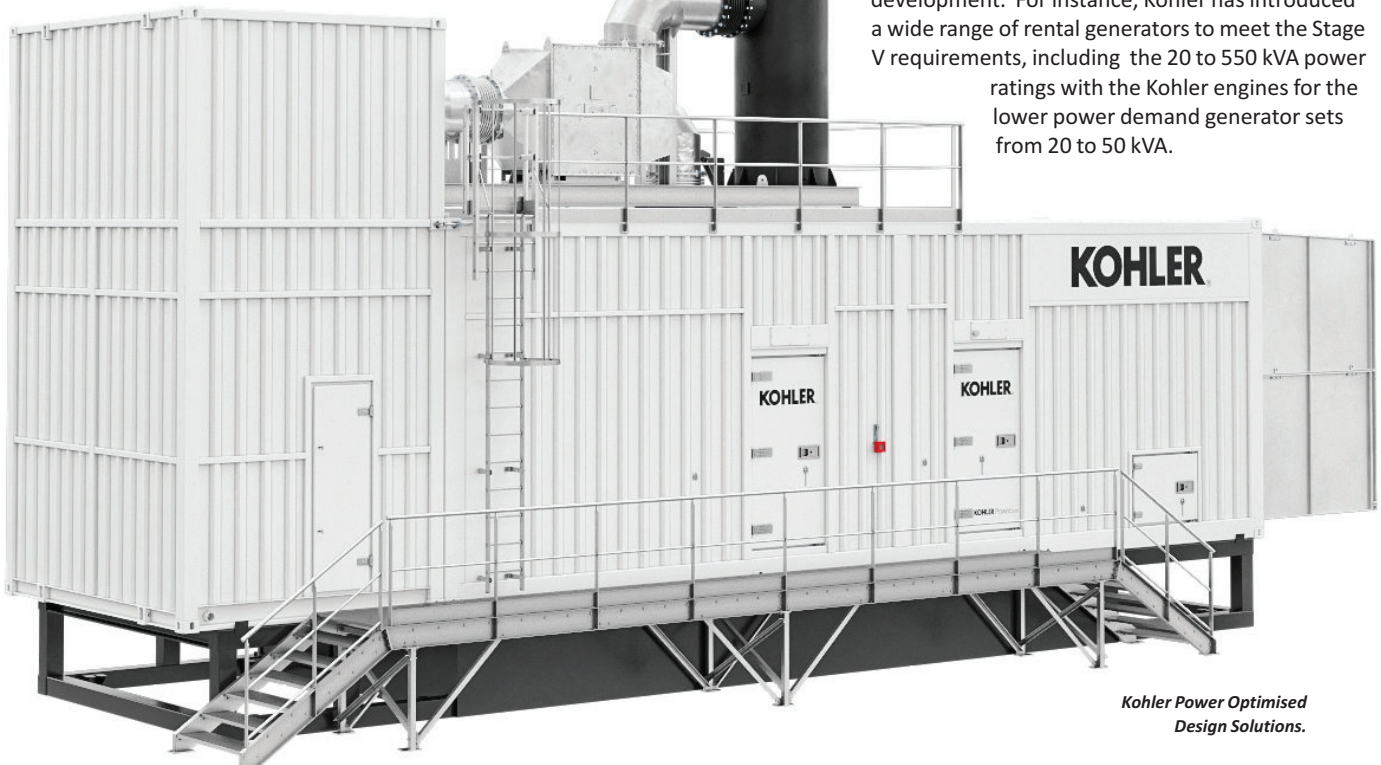


Photo Credit : Kohler

*Kohler Power Optimised
Design Solutions.*

Kohler has launched its range of walk-in Power Optimised Design Solutions (PODS). Please explain the benefits of this latest development.

The range of walk-in PODS was launched in response to the increased market demand for high-power gensets. They offer the highest standards of performance, reliability, robustness, safety, modularity, and competitiveness.

Their size allows for enough internal cooling power to accommodate Kohler's KD Series generators, giving customers the power to utilise the most powerful generators on the market without compromising on installation and maintenance.

The walk-in PODS have generous spacing, offering optimal access to different elements of the diesel genset.

Adherence to noise standards as well as optimisation for harsh weather conditions were critical design considerations.

Kohler will supply the walk-in PODS from its Brest facility in France, which recently committed to more than US\$6mn of investment to enhance manufacturing capacity and optimise the logistics and transport for these larger enclosures.

Our walk-in PODS are inspired by our customers and we offer a wide range of options and specific adaptations to meet customer needs.

Kohler will supply the walk-in PODS from its Brest facility in France, which recently committed to more than US\$6mn of investment to enhance manufacturing capacity and optimise the logistics and transport for these larger enclosures.

How has Kohler been successful in adapting to challenges created by the pandemic and what changes has it brought in?

Despite global supply chain difficulties due to the pandemic, we have been able to collaborate with customers and suppliers and have been successful in providing ongoing support and service.

Kohler has been offering power solutions, since 1920 and we live by serving the genset industry well. Our equipment is the last insurance. For instance, in a hospital, we are providing energy insurance.

During the pandemic, globally, we have all learned to collaborate. For instance, today, for the final testing and inspection of generators, remote testing with digital tools help customers



Photo Credit : Kohler

Kohler has introduced a wide range of rental generators to meet the Stage V requirements.

monitor tests in real-time.

The pandemic has reinforced operations at Kohler and we continue our huge focus on the supply chain and distributors. ■

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The power of the cold chain

AD Ports Group provides insights on factors including active engagement with supply chain partners and the role of digitisation in enhancing the temperature controlled supply chain.

TODAY, LIFE SCIENCES products traverse the globe at speeds, and by modes and related supply chains not conceived even a generation ago. Perhaps the most innovative among them all, given its increasing logistical challenges, is the cold chain.

Of course, the cold chain – the temperature-controlled supply chain – must continue to innovate to survive and remain relevant in today's world. Today's COVID-19 vaccine demand, with its cold and ultra-cold shipment and storage requirements, continues to demonstrate just how much the life sciences world continues to rely upon a global cold chain for the swift and secure movement of its goods.

Engaging with partners

During June 2021, AD Ports Group conducted interviews with global cold chain experts who support the life sciences sector. They revealed that life science organisations can benefit the most from today's cold chain by actively changing the way they engage with their supply chain partners. They should be deploying the latest cold chain technologies, relying on the best related logistics processes and working with the world's best infrastructure partners.

Vaccines serve as an ideal illustration of today's demand on the global cold chain as they usually have a short shelf life. Manufacturers produce doses, and they are shipped immediately in batches of 100,000 to 150,000 doses – vials or syringes – a day. They are shipped in temperature conditions ranging from 2 to 8°C, frozen (-20°C), deep frozen (-80°C) and cryo-frozen (-150°C). The safety and temperature regimen must be extremely strict.

The first step to understanding the science behind any healthcare industry cold chain is to understand the related products' shelf lives and be able to cater to those increasingly rigorous temperature



The temperature-controlled supply chain must continue to innovate to remain relevant.

Photo Credit : AD Ports

demands. Only then can one begin to apply the best technologies to govern their storage and transportation. One of the experts interviewed, said, "We have a situation where we have multiple vaccines, but each vaccine has its own temperature requirements. Active ingredients differ from one vaccine to another, and the shipping times and distances also vary."

Role of IoT

Cold chain experts believe that, from a risk mitigation perspective, tracking and tracing and internet of things (IoT) will play an important technological contribution to managing the cold chain. It is vital that product security is ensured throughout the supply chain. In addition, digitisation – the need to reduce the human factor, the

human handover – will be an important advancement in the future.

One such innovation is AD Ports Group's proprietary custom-built digital system "mUnity" which ensures full vaccine visibility and tamper-proof distribution as part of its drive to deliver millions of COVID-19 vaccines around the world via the Abu Dhabi Government-led HOPE Consortium initiative. Developed by its digital subsidiary, Maqta Gateway, mUnity uses blockchain technology to track and trace COVID-19 vaccine sourcing, storage, shipment, and all related data in real-time.

Life science organisations that want to ensure the integrity of their shipments must seek to own the "last mile" and do so by working with the best possible logistics partners they can.

As one expert said, "When we move life science containers, we believe we are moving patients' lives, not simply products. That is how seriously we take our work, and that is how important each element of the cold chain must be considered from end-to-end, if we are to continue to innovate." ■

It is vital that product security is ensured throughout the supply chain.

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Photo Credit : Trident Technology Services

Getting the most out of network infrastructure

Bassel Alhalabi, founder and MD, Trident Technology Services, Frank Straka, director of business development for enterprise, Panduit and Jeff Paliga, director, Global Data Centre Business Development, Panduit, offer insights on future-proofing network infrastructure.

THE MOST CRITICAL trend driving the evolution in LAN and DC physical infrastructure is the 'need for speed' resulting from the infrastructure modernisation since edge and distributed computing introduced an additional layer, warranting a high-performance network with reduced latency and increased bandwidth.

The future physical infrastructure is expected to maintain high availability, deliver robust performance, and ensure resiliency. There is a dire need for efficient high bandwidth, low power, small form factor, and cost-effective cabling and connectors that provide scalability, conformity, and assurance.

The need for bandwidth keeps increasing – with new technologies like Wi-Fi 6 and 4K video driving bandwidth demands faster than were forecast. It is critical to deploy an infrastructure that supports increasing data needs.

What to look for

Users should look for convergence towards Ethernet within different commercial office technologies. For example, security cameras

used to run over CCTV. Now, the vast majority of new cameras are all IP-based. Panduit anticipates this with other building technologies like HVAC, lighting, security, and other building sensors. New technologies like Single Pair Ethernet will help drive the adoption of these technologies.

An important top tip to future-proof Network Infrastructure is to install a Category 6A cabling system. This will provide the maximum 10 gigabit per second data rate over copper while providing the best performance with technologies like Power over Ethernet. Category 6A cable is the highest-rated copper cabling system designed around supporting a commercial

An important top tip to future - proof Network Infrastructure is to install a Category 6A cabling system.

building. As a result, companies can be expected to install this more and more.

5G is impacting structured cabling in data centres and will serve as an important enabler to deliver applications and services at performance levels never seen before. Further, cloud, edge deployments and central offices rearchitected as data centres (CORD) can and will benefit various users from multiple vertical markets.

As a result, there will be more demands on all types of IT infrastructure and now in less traditional locations, including the conventional data centres. The cabling infrastructure will have to perform in a 'flatter' sense by connecting more servers to servers and using the highest performing cabling, mostly fibre, but still utilising copper where it makes sense in terms of cost, distance, and bandwidth.

A trusted advisor partner who can help define the configuration and topology of the data centre is important. Topology will determine the best cabling infrastructure to deploy - copper, fiber, or the combination of both - to get a reliable, robust, high-speed, and cost-effective network. ■



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Smart solutions for cyber security

NETSCOUT launched the Smart Edge Monitoring solution to give IT teams complete visibility and insights to assure the highest-quality end-user experience in any network or application.

NETSCOUT SYSTEMS INC'S Threat Intelligence Report underscores the dramatic impact of cyber attacks on private and public organisations as well as governments worldwide. The report reveals that in the first half of 2021, cyber criminals launched approximately 5.4 million Distributed Denial of Services (DDoS) attacks, increasing 11% over 1H2020 figures.

Some major findings from the NETSCOUT 1H2021 Threat Intelligence Report include:

- New adaptive DDoS attack techniques evade traditional defenses. By customising their strategies, cyber criminals evolved their attack efforts to bypass cloud-based and on-premise static DDoS defenses to target commercial banks and credit card processors.
- Connectivity of supply chain increasingly under attack. Bad actors looking to cause the most collateral damage focused their efforts on vital internet components, including DNS servers, virtual private network (VPN) concentrators, services, and internet exchanges, disrupting essential gateways.
- Cyber criminals add DDoS to their toolkit to launch triple extortion campaigns.
- Botnets contribute to major DDoS activity - Tracked botnet clusters and high-density attack-source zones worldwide showcased how malicious adversaries abused these botnets to participate in more than 2.8 million DDoS attacks.

Smart Edge Monitoring

In July 2021, NETSCOUT launched the Smart Edge Monitoring solution to give IT teams complete visibility and insights to assure the highest-quality end-user experience in any network or application regardless of where employees perform their job. By reimagining service assurance for the hybrid enterprise, NETSCOUT is the first to introduce an entirely new, patent-pending architecture that combines smart



Photo Credit: Adobe Stock

Smart Edge Monitoring overcomes one of IT's biggest challenges in problem identification and resolution in complex, multi-vendor environments.

data analytics with synthetic transaction testing to deliver visibility and support for the end-user experience whether working at home, business offices, or remote locations.

Smart Edge Monitoring overcomes one of IT's biggest challenges in problem identification and resolution in complex, multi-vendor environments. Through integrated analysis, the solution quickly understands what the end-user experience is and exactly why issues are occurring.

Enterprise organisations all have remote locations representing an edge in their network — manufacturing, banking, and retail have factories, branches, and stores - many of which have gaps in visibility when problems occur. Smart Edge Monitoring closes those gaps with flexible, cost-effective alternatives to get the proper analysis in the right edge location for improved end-user experience and problem resolution.

The value of combining the synthetic testing and packet analysis in Smart Edge Monitoring is that emerging problems are detected as early as possible, so IT teams can quickly discover the reason why and where they are happening. Examples include:

- Unified Communications as a Service (UCaaS)— When users at home, branch and remote offices, or headquarters are experiencing poor performance on platforms such as Webex, Microsoft Teams, and Zoom, Smart Edge Monitoring identifies problems including join-meeting delays and poor audio and video quality.
- With a significant percentage of companies operating a hybrid workforce model, Smart Edge Monitoring provides early detection of performance slow-downs with analysis throughout the transaction ecosystem, from home-user network, across the WAN, to data centre, application and database servers, and to cloud and SaaS providers, to quickly identify the problem.
- Cloud migrations can have gaps in visibility that lead to performance challenges post-launch. Smart Edge Monitoring baselines the user experience before, during, and after cut-over to cloud-based applications to help mitigate such issues.

It is imperative that defenders and security professionals remain vigilant to protect the critical infrastructure that connects and enables the modern world. ■

Supporting a collaborative approach

A combination of productivity and safety is important for the construction industry. A look at some solutions enhancing protection and efficiency.

TRENDS AND DEVELOPMENTS in construction are bringing in improved collaboration, enabling decisions and choices that achieve maximum impact with the least cost and effort.

Infrastructure projects are a major part of the region's economic expansion and there are huge infrastructure needs, as it seeks to build efficient transport and logistics networks as well as reliable supplies of clean energy. A number of innovations are enabling a faster pace of development.

New technologies

Dar Al Arkan, a real estate company in Saudi Arabia, has marked a regional first with the introduction of the first 3D Construction Printing (3DCP) technology that will accelerate the speed of construction while enhancing safety and reducing wastage and errors.

Unlike traditional home-building methods, 3DCP cuts the construction time by more than half, is more flexible and requires less manpower since it takes only three workers to build one house. This, in turn, contributes to creating a safer workplace.

The technology is important in insulation and reduces the cost of electricity bills. A combination of reduced waste of construction materials, less need for repair or rework and low on-site incidents will enable highly cost-efficient project management than traditional construction.

"The introduction of 3D construction printing will revolutionise our approach to construction and enable us to focus on greater flexibility of design, strengthen productivity and achieve higher cost efficiency," said Ziad El Chaar, vice chairman, Dar Al Arkan Properties.

"The Kingdom of Saudi Arabia represents the largest potential market in the Middle East for our disruptive 3D construction technology and many large end customers in the Kingdom have been eagerly awaiting, that the technology became available via an established local company," commented Henrik Lund-Nielsen, founder & general manager, COBOD.

RMD Kwiform, a global formwork, falsework and ground shoring solutions provider, launched theProp Tableform system for the Middle East and Indian construction markets, designed to improve cycle times for high-rise buildings and other tall commercial projects. It uses a small number of components to help keep installation and striking times to a minimum. The company's Tetrashor, a lightweight modular propping system can deliver a loading capacity of up to 400 kN. The system has been designed for various applications including, propping and needling and facade retention.

Digital technologies and data are also playing an increasingly

important role. BIM essentially brings digital transformation to the construction industry worldwide, making possible more impactful decisions with lower cost and effort.

ALEC, one of the most diversified construction group's in the UAE, believes the utilisation of green technologies will be a crucial factor towards ensuring sustainable development and progress of the construction industry. Under this category, ALEC has identified the use of renewable energy, environmentally sustainable materials and the sustainable management of waste as top priorities.

In addition to collaborating on innovative new ideas and products, ALEC believes a fundamental increase in communication between stakeholders will greatly improve project processes and delivery. ■



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Poised for growth

There are great expectations from the mining industry. Here, we track some technologies changing the landscape.

Photo Credit : Adobe Stock

THINGS ARE EXPECTED to get much better for the world's biggest mining companies.

The PwC Mine 2021 Report says that the world's big miners have emerged stronger than ever after weathering the storms of 2020.

The International Monetary Fund hopes to see an economic growth of around 4% for the MENA region, for both 2021 and 2022, after the havoc wreaked by the effects of the coronavirus.

As the world emerges from the worst of the pandemic, several governments have made infrastructure investments a major part of their recovery plans.

Major projects in the region include the Abu Dhabi National Energy Company (Taqa) and Marubeni Corporation's power and desalination project with Saudi Aramco, Bahrain's metro rail project, Ras Al Khaimah's Marjan and Saudi Arabia's project on Qetaifan Island North.

Tracking trends

Digitalisation is improving efficiency in operations in the urban construction and

mining environments. Equipment manufacturers are employing innovations and latest technologies in growing urbanisation and residential construction projects, and in mining equipment such as large excavators. The mining industry offers ease of implementation of autonomous technology too.

Metso Outotec's sustainable screening is a technological advancement that is useful in water management.

The patented BSE Series screens enable iron ore processing even with higher natural moisture content without adding water.

"The elimination of process water ultimately results in lower processing costs, increasing the customer's competitiveness and profitability in the iron ore global markets," said Jouni Mähönen, vice president, screening business line, Metso Outotec.

The use of renewable energy is helping mining companies reduce power costs and control emissions in the mines.

Hitachi Construction Machinery has signed a Memorandum of Understanding with ABB to explore opportunities for mine operators to target net-zero emissions from

mining machinery.

The companies will explore opportunities to apply ABB's electrification, automation and digital solutions to mining trucks and excavators provided by Hitachi Construction Machinery, leveraging both companies' advanced engineering technologies. The combined solutions aim to enhance the efficiency and flexibility of customer businesses, contributing to the reduction of CO₂ and the realisation of a sustainable society.

"The majority of mining operations worldwide remain energy-intensive, with many of the current industrial processes producing significant greenhouse gas emissions. Climate change continues to impact society and communities; it is our vision through this commercial collaboration to provide solutions that can reduce our customers' environmental footprint. We are delighted to be collaborating with ABB as we continue to invest our efforts in introducing eco-friendly technologies and systems for the mining industry," said Sonosuke Ishii, senior vice president and executive officer at Hitachi Construction Machinery. ■

Experience the Progress.



Sharing expertise on the mining and quarrying industry

THE MINING SHOW, AN important exhibition and conference for the mining and quarrying industry in the Middle East and Africa region, will take place from 16-17 November 2021, at the Festival Arena in Dubai.

The free to attend event will showcase products and solutions from companies across the globe, for sectors including heavy equipment and machinery, exploration equipment and services, safety and sustainability solutions, automation and digitisation solutions. The event will bring together stakeholders that represent the entire regional mining, quarrying and mineral processing ecosystem, offering solutions to solve business challenges.

Exhibitors

This year's exhibition will see hundreds of exhibitors from across the region bringing cutting edge products and solutions. Some companies that will be on the exhibition floor include Invest Northern Ireland , FLSmidth, Rema Tip Top, Weir Minerals,



The event will showcase products and solutions from companies across the globe.

Photo Credit : Adobe Stock

Hitachi and Zitron.

Over two days, The Mining Show 2021 will offer insights from mining and quarrying leaders across a series of

presentations and panel debates. The region's mining leaders will come together to share their expertise and look at the challenges we are all facing.

Nordgold and Columbus launch financial software solution designed for gold miners

NORD GOLD PLC, the internationally diversified one million ounce gold producer and global IT consultancy Columbus launched CN Planning Analytics for the mining industry, a corporate finance software solution tailored specifically to meet the challenges of the resources industry, in particular the gold sector.

CN Planning Analytics is a software-based tool which provides a user friendly interfaceto facilitate the transparent planning, measurement, monitoring and reporting of gold mining companies' financial and operating performance.

It was designed to address gold miners' common challenges when planning, measuring, monitoring and reporting their activities.

In particular, CN Planning Analytics aggregates all operating and financial data in one reliable and customisable place with all IFRS and Non-IFRS Metrics based on industry methodologies; provides the ability to identify the primary source of any change in performance in a matter of seconds; automatically generates a full reporting pack immediately after the period end; compares company performance with industry best practices and peers; and provides an effective and straightforward tool to manage capex projects' life cycle, which includes tracking approvals, budget vs actual analysis and post-investment reviews.

The software includes preconfigured budgeting and management reporting models based on industry-specific KPIs. It is designed to work with different types of mining methods including open pit, underground and mixed as well as gold processing technologies (CIL, CIP, heap leaching and BIOX). CN

Planning Analytics also allows data from mine planning IT platforms to be integrated into the gold mine's financial models, which, among other things, streamlines and facilitates long-term strategic financial planning.

"Having worked together with Columbus to successfully develop a powerful and convenient software-based management tool to support the financial management of our own operations, we recognized we had built a system that could benefit other companies in the sector as well, presenting an interesting commercial opportunity for both parties. What sets CN Planning Analytics apart is its unique focus on gold mining company performance and the fact it is adaptable to all mining and processing technologies. At Nordgold, we continue to invest in our IT capabilities which helps us drive performance, in particular as we move forward on our ambitious growth plans in the Gross region in Russia, where we have built a market leading position," said Dmitry Markeev, director of transformation and business system development of Nordgold.

"Partnering with Nordgold to develop CN Planning Analytics was a unique collaboration that allowed us to combine the practical business experience of a mining company with the industry and product expertise of a consultancy. The solution's functionality has been proven by IBM and by its high performance in automating Nordgold's real-world business processes. These are the prerequisite that help us guarantee the business value of this solution to future users", said Andrey Yudaev, business development director for information and Analytical Systems at Columbus.

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Sustainable mining: Making MissionZero possible

Deon de Kock, president, sub-Saharan Africa, Middle East and South Asia, FLSmidth speaks to *Technical Review Middle East* about how the organisation's MissionZero programme is helping the mining industry improve performance, reduce costs and minimise the environmental impact.



FLSmidth launched MissionZero, to enable customers to move towards zero water waste, zero energy waste and zero emissions by 2030.

Photo Credit: FLSmidth

ECONOMIC GROWTH, **URBANISATION** and growing populations are fuelling demand for new urban infrastructure, technology, and modern conveniences. With a concurrent move towards energy efficiency, green technology and a low carbon future, we are seeing stronger demand for electric cars, wind and solar energy as well as energy storage.

Demand for minerals is expected to double by 2050 and it is essential that governments and industry ensure that supply is reliable and sustainable.

Mining is at the centre of green energy solutions. However, the difficulty in delivering the minerals while decreasing the environmental footprint is being compounded by declining ore grades.

Rising demand, rising impact?

This has direct implications for the amounts of water and energy needed, increasing the environmental footprint of the mine. It is a challenge, but it creates opportunities to be part of the solution.

In 2019, FLSmidth launched MissionZero, to enable customers to move towards zero

water waste, zero energy waste and zero emissions by 2030. This has placed it as the go-to-partner for sustainable productivity – positioned to meet customer challenges, such as increasing costs and risk, tighter regulations and changing societal expectations.

FLSmidth is dedicated to the development and co-creation of digital and technologically innovative solutions that will make MissionZero possible. It is collaborating with many customers and third parties, as well as universities across the globe and open to collaboration with peers to achieve sustainable mining.

As mining processes vary, the focus is on the entire flowsheet, but with an emphasis on areas where it is possible to reduce water use, energy consumption, emissions and waste. Tailings and water management will be central but there will be a focus on pumps, flotation, IPCC and comminution.

The role of digital

FLSmidth aims to create products that use automation and digital technologies to increase efficiency, reduce energy

consumption, extend the lifetime of the equipment and in general, allow operations to do more with the same or less.

Digitalisation is absolutely important to achieve sustainable and socially acceptable mining because improved sustainability and better productivity go hand-in-hand. When firms are using less power, using less water and so on, they are having a direct impact on reducing their costs and therefore helping the bottom line.

Sustainability – a business opportunity

Sustainable solutions do not need to come at the expense of business profitability.

There is a singular desire to move the needle of the mining industry when it comes to everything related to ESG and beyond, and to do this at a quicker pace. This reinforces the belief that the MissionZero programme is needed by the industry. It will be part of the re-think that will help secure investment, future-proof our customers and ensure a minimised environmental footprint. ■

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Boosting productivity

Fyna Ashwath finds out more on some of the developments that are driving growth in the region's quarrying industry.



Photo Credit: Adobe Stock

SUPPORTED BY NEW opportunities in construction and new mining regulations, the quarrying industry in the region is witnessing rapid changes.

Tracking developments

Across the region, large infrastructure and manufacturing projects are having an impact on the industry. In the UAE, the Etihad Rail's highly anticipated national railway network announced in a virtual meeting that construction works for Package A of Stage Two were completed.

The project will have an estimated 3.5mn tonnes of construction material carried annually from Stevin Rock's Al Ghail quarry in Ras Al Khaimah to Abu Dhabi, across 500 annual train trips. Each train will measure one kilometre in length and will haul 70 wagons that will have a carrying capacity of

7,000 tonnes per journey.

Minerals Development Oman announced the start of commercial operations of the gabbro quarry in Wilayat of Liwa, Governorate of North Al Batinah, with a production capacity of 2.4 million tonnes of gabbro. Gabbro is witnessing an increased demand by many Gulf and regional markets, due to its rapid importance to the construction sector.

As in other sectors, automation, digitisation and big data are all contributing to the path towards intelligent and connected operations in the mining and quarrying industries.

The energy industry's shift from fossil fuels to wind and solar-powered electricity and rechargeable batteries is drawing attention to the sustainability of the mining and minerals sector by creating demand for other raw materials in the earth's crust.

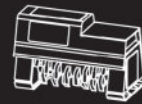
Further, a number of innovations are helping in the path towards better efficiency and sustainability.

Metso Outotec, for instance, provides mineral processing solutions to help mines and quarries improve safety and energy efficiency, while lowering costs per tonne and emissions.

Water management systems are gaining increasing importance for mine and quarry operations.

CDE's AquaCycle water management solution minimises costly water consumption by ensuring that up to 90% of process water is recycled for immediate recirculation. "In a region where an incredibly high percentage of GDP is vulnerable to water stress, it is vital an effective water management strategy is identified," said Ruchin Garg, CDE regional manager for MENA. ■

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Ultrafine Sand Recovery System, AKA-SILT, ensuring cut sizes down to 10 µm as standard.

Minimising material loss, maximising water recycling

AKW Equipment + Process Design, Germany explains how its technologies are helping quarries and mines optimise water consumption and maximise the valorising of fines.

MINING OPERATIONS REQUIRE large amounts of water and generate tailings that have an impact on the environment. The R&D department of AKW Equipment + Process Design, Germany has been engaged for many years in the development of technologies, helping quarry and mine operators optimise their water consumption, maximise the valorising of fines and extract value from tailings.

As all companies do not face the same constraints, the customisation of treatment solutions is an element of differentiation between suppliers. It is important not to over engineer a solution, but to find the right balance between the need to recycle water, the recovery of fines, the context in which the operator works and the level of investment available and required for the implementation of the different solutions.

For industrial minerals such as silica sand, most of the existing processing plants are not designed for ultra-fine sand recovery, and therefore a significant amount of product is lost in the 0-150 µm range. This

leads to higher solid loads of the wastewater circuit which becomes more challenging to manage and operate.

In order to maximise the recovery of fines, as well as contribute to a better water management system, the AKA-SILT System – a combination of ultrafine hydrocyclone classification with dewatering of critical fines – has been developed, tested and meanwhile realised in industrial scale at several places.

The AKA-SILT system is a combination of ultrafine hydrocyclone classification with dewatering of critical fines.

Sludge analysis

A fundamental basis for this development is provided by the tests and sample analyses carried out in the company's own technical centre. AKW Equipment + Process Design technical centre is equipped with all the important equipment and process units in order to execute and simulate the necessary and important steps in wet mechanical processes. For the specific process of the AKA-SILT system, the optimal cut size for the best possible sand recovery is determined (target in this case = minimum 50% wt).

For this purpose, the sludge sample is analysed in order to obtain the following parameters:

- the grain size distribution
- the solids concentration of the sludge

On this basis, AKW Equipment + Process Design was able to evaluate a concept to recover a portion of the sludge. In the example below, the cut size d50 is at 10-15 µm, so the AKA-SILT system must be sized to recover the fraction > 10 µm, respective to a recovery target of 50%.

Process description

How does it work? From an existing treatment plant, approximately 200 m³/h of solids-loaded process water is fed to a pump sump via a pump. With an additional wear resistant slurry pump, the suspension is fed to a first AKA-SPIDER hydrocyclone classification distributor. An installed antiblocking filter, AKA-STRAINER, retains any larger particles that may be present and thus avoids blockages in the distributor, which could lead to variances in the classification. The material is classified at 10 µm by using proprietary AKA-VORTEX high-performance polyurethane hydrocyclones. The hydrocyclone overflow <10 µm is directed into the wastewater treatment line, whereas the hydrocyclone underflow fraction >10 µm is directed to a second AKA-SPIDER hydrocyclone stage that will thicken the suspension prior to its dewatering into a marketable ultra-fine sand (10-150 µm).

In parallel, the solid content being significantly reduced in the wastewater treatment line, the handling of this circuit is significantly eased and can run with a higher efficiency and ecological footprint, especially as result of a lower usage of flocculant.

Products

Both the ultra-fine sand (10-150 µm) and the pure clay (0-10 µm) can be sold as products for processing industries.

The ultra-fine sand is used as an additive to concrete and mortar, the pure clay is used, among other things, as a sealing material. Analyses have shown that this clay deposited in the sedimentation basin has an excellent degree of purity, which enables its further use in other specific applications, such as in the brick industry.

By maximising the total material utilisation yield of a quarry and optimising the overall wastewater treatment flow, the AKA-SILT system allows the customer to reach a high environmental standard without compromising on its product's quality and overall profitability.

Conclusion

For environmental and economic reasons, AKW Equipment + Process Design has developed a process by which ultra-fine sand can be recovered. Small hydrocyclone distributors in connection with a special dewatering screen have proven themselves for this application. The multi-stage process makes it possible to reduce the loss of product and to maximise the recovery of fine sand, as well as to reduce the load of sludge sedimentation ponds.

The AKA-SILT system can be installed as an additional unit in existing plants. By maximising the total material utilisation yield of a quarry and optimising the overall wastewater treatment flow, it allows the customer to reach a high environmental standard without compromising on its product's quality and overall profitability.

The AKA-SILT system can be installed as an additional unit in existing plants. By maximising the total material utilisation yield of a quarry and optimising the overall wastewater treatment flow, it allows the customer to reach a high environmental standard without compromising on its products quality and overall profitability. ■

About AKW Equipment + Process Design, Germany

AKW EQUIPMENT + PROCESS Design is an internationally oriented specialist for process technology, engineering, equipment as well as plant construction and service in the field of mineral processing and environmental technology.

Based on its process engineering developments, the company offers tailored solutions for all stages of the process chain. Depending on the application, systems are planned and constructed from stationary or semi-mobile to highly mobile in containers, on roll-off frames or semi-trailers.

Process development and plant construction from AKW Equipment + Process Design are based on many years of experience, professionalism and know-how. Modern system technology and own proprietary equipment, combined with purchased elements, guarantee problem-oriented solutions and a consistently high and international level of quality.



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Terex MPS cover all bases

Providing a complete range of crushing and screening equipment, Terex Minerals Processing Systems (MPS) has positioned itself as one of the leading distributors across the world.

THE EQUIPMENT OF Terex Minerals Processing Systems (Terex MPS) is most commonly set up in primary, secondary, tertiary and quaternary crushing positions, available with numerous options and can be integrated with almost any portable crushing system. Terex MPS equipment is designed and built for use in the following industries:

- Mining
- **Construction Aggregates:** Quarry and sand & gravel
- Industrial minerals
- Demolition materials recycling

Meeting customers needs

The MJ55 Modular Jaw Crusher has been specifically created to meet a wide range of crushing and screening applications. All modules are pre-engineered and pre-built to operate on a small footprint with low civil work and operating costs with fast, easy on-site assembly. Plus, the modules and components can be easily transported in standard shipping containers or by road, enabling customers to quickly mobilise on site to a different location. The Modular

range is designed for large quarries or contractors that want a stationary type design without the complexity of a normal stick-built plant.

Terex MPS also leads the industry with the most advanced portable plants which now includes the all new WJ3042 and WC1150S high-capacity, all-electric wheeled

Terex MPS leads the industry with the most advanced portable plants.

crushing systems, which are quick to set up and dismantle, as well as easy to operate. The Terex WJ3042 is a high-performance wheeled jaw crusher plant, incorporating the aggressive Terex JW42 jaw crusher and a heavy duty vibrating grizzly feeder, giving optimum production. Its compact size, quick set up times, ease of transport and simple maintenance make it ideal for quarrying, mining, demolition and recycling applications.

The Terex WC1150S Cone-Screen plant is a high performance, medium sized wheeled crushing-

screening system. At the heart of the plant is the 225 kW Terex TC1150 cone crusher with a modern automated control system. Its crushing action provides excellent capacity, high reduction and good product cubicity for the production of high-quality aggregate and sub-base materials.

The WJ3042 and WC1150S are available as stand-alone plants or as part of a multi plant system with product conveyors for a complete crushing and screening solution. All plants and conveyors are designed to fit in standard containers for easy transport overseas or on the road. The entire system with conveyors can be transported in nine containers. Once on site, each assembled plant can be transported in a one-piece tow.

Versatile and reliable

The new series of Simplicity Standard Incline (SI) screens from Terex MPS' Static solutions are designed for heavy duty, medium and fine screening applications and come with many features which make the screens more versatile and highly reliable in the market. The SI screens are built with a robust drive mechanism to handle large tonnages and a wide variety of applications. Utilised as wet or dry screens, these units have adjustable stroke and speed combinations to fit a variety of applications and are available in 2 or 3 deck configurations. ■

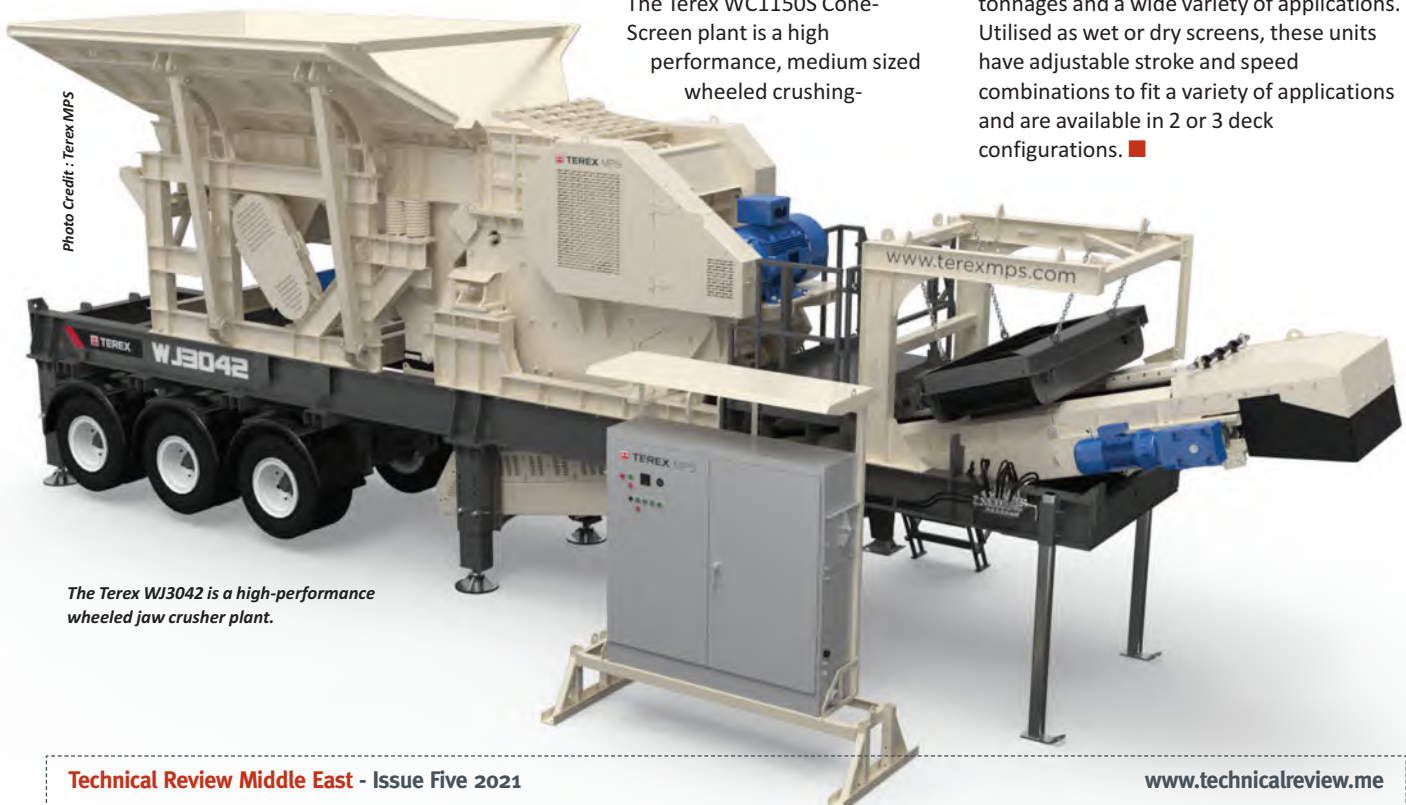


Photo Credit : Terex MPS

The Terex WJ3042 is a high-performance wheeled jaw crusher plant.

Building versatility and performance

Several innovations in excavators are providing customers with a wider range of choice to best suit their needs.

AS THE GLOBAL economy witnesses increasing investments in areas including construction and mining, equipment manufacturers are bringing in added convenience and efficiency, with new and better products.

Bobcat has launched the new R2-Series generation of 5-6 tonne mini-excavators – the new E50z and E55z models – with several additional options.

“We are delighted to announce the new Bobcat R2-Series 5-6 tonne mini-excavators, the design of which has benefitted from the close involvement of our customers at every stage of the process. The truly striking styling of these new machines is indicative of their robust and dynamic design and excellent machine fit and finish. All these models offer a best-in-class mix of high performance, superb stability and smooth controllability of the working functions,” said Robert Husar, product line director for Bobcat mini-excavators in EMEA.

The R2-Series mini-excavators are powered by the Kubota V2403 4-cylinder engine providing 36.5 KW (49 HP) at 2200 RPM.

The new R2-Series machines are designed to achieve superior 360-degree stability in any situation, even when digging over the side or when handling heavy loads.



Bobcat's E50z model.

Photo Credit: Bobcat

Volvo CE's electric compact machines

The EC18 Electric and ECR18 electric compact excavators as well as the L20 Electric compact wheel loader represent the latest additions to Volvo CE's commitment to move its range of compact excavators and compact wheel loaders to electric and stop development of new diesel variants. Easy to operate and transport, the EC18 Electric

offers customers a cost-efficient compact excavator working in 1.8-tonne applications.

The short but tough 1.8-ton ECR18 Electric is set to provide the same best-in-class stability and operator experience customers expect from its diesel counterpart but with the benefit of low noise, low vibration and more responsive hydraulics due to the immediate torque. ■



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Project Databank

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Project Focus

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Etihad Rail - Trans - Emirates Rail Network - Phase 2 - Package B - Tarif & Saih Shuaib

Name of Client	Etihad Rail
Estimated Budget (US\$)	750,000,000
Facility Type	Railway
Sector	Infrastructure
Status	Construction
Location	Abu Dhabi
Project Start	Q1-2018
End Date	Q4-2025
Last Updated	21-09-2021
PMC	Egis Group
Main Contractor	CRCC - China Railway Construction Corporation Ghantoot Group
Contract Value (\$ US)	600,000,000
Award Date	Q2-2019

Background

Stage 2 is a 605km network extending from Ghuweifat on the Saudi border to the UAE's Port of Fujairah on the east coast. The project links to strategic ports and industrial areas nationwide, along with a distance of 310 km. Package B will span up to 216 km connecting Khalifa Port and Industrial Zones within Abu Dhabi mainly from Tarif to Saih Shuaib.

Project Status

Date	Status
Sep 2021	The construction activities continue to progress at the site
May 2021	Construction continues to be carried out with 50,000 concrete sleepers being produced and waiting to be laid across the network.
Feb 2021	Construction activities are progressing well for the overpasses and underpasses near Al Nahda and Al Maha Forest.

Project Scope

Initially, Phase 2 involves rail route From Ruwais to Ghweifat connecting to the Saudi Arabian border & from Tarif to Dubai & Al Ain connecting to the Sultanate of Oman border.

As per the latest update, the Oman link has been removed from the scope of work.

This particular part of the phase 2 project will cover the construction of the following:

Contract C0304 (package B) - 200km mainline in Abu Dhabi and a 40km branch line to Khalifa Port

The project's scope of work will include:

- Design
- Civil works
- Track works

Project Finance

Etihad Rail is the project owner. Etihad Rail was established in June 2009 under Federal Law no. 2, with a mandate to manage the development, construction and operation of the UAE's national freight and passenger railway network.

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CONSTRUCTION AND INFRASTRUCTURE PROJECTS, UAE

Project Name	City	Facility	Budget (US\$)	Status
DWTC - EXPO 2020 Site - Overview	Dubai	Mixed-Use Development	3,000,000,000	Construction
Department of Transport Abu Dhabi - Development of Road Networks at Mina Zayed - Main Tunnel	Abu Dhabi	Roads	350,000,000	Construction
Etihad Rail - Trans - Emirates Rail Network - Tarif & Saih Shuaib	Abu Dhabi	Railway	750,000,000	Construction
RTA - Al Ain Highway Upgrade - Overview	Al Ain	Roads	950,000,000	Construction
RTA - Al Ain Highway Upgrade - Al Khail Road Waterway	Al Ain	Roads	200,000,000	Construction
Tilal Development Company - Sharjah Tilal City Development - Overview	Sharjah	Roads	653,000,000	Construction
Ta'ziz - Ruwais Derivatives Park - Chemicals Handling Terminal	Ruwais	Dredging/ Reclamation	600,000,000	FEED ITB
DOT - Musanada - Umm Lafina Bridge	Abu Dhabi	Bridge	310,000,000	Commissioning
Abu Dhabi Investment Office - Abu Dhabi Municipality - Noor Abu Dhabi - Street Lighting PPP	Abu Dhabi	Roads		EPC ITB
Etihad Rail - Trans - Emirates Rail Network - Ruwais & Ghweifat	Abu Dhabi	Railway	895,000,000	Construction
Etihad Rail - Trans - Emirates Rail Network - Sharjah to Fujairah & Tawyeen	Abu Dhabi	Railway	500,000,000	Construction
DAEP - Al Maktoum International Airport Expansion - Overview	Dubai	Airport	36,000,000,000	EPC ITB
RTA - Shindagha Corridor Scheme - Shindagha Bridge Extension & Al Khaleej Street Upgrade	Dubai	Bridge	195,000,000	Construction
Etihad Rail - Trans - Emirates Rail Network - Dubai and Jebel Ali Port	Abu Dhabi	Railway	750,000,000	Construction
SAA - Sharjah International Airport Expansion	Sharjah	Airport	410,000,000	EPC ITB
ADAC - SCADIA - Abu Dhabi International Airport - Midfield Terminal Complex	Abu Dhabi	Airport	2,940,000,000	Commissioning
ADPC - Khalifa Port and Industrial Zone Expansion - Khalifa Port Terminal 2	Abu Dhabi	Port	400,000,000	Construction
Modon Properties - Saadiyat Lagoons - Enabling Package	Saadiyat Island	Dredging/ Reclamation	170,000,000	Construction
RTA & Hyperloop One - Dubai to Abu Dhabi Hyperloop	Dubai	Hyperloop Transport System	500,000,000	Design
Port of Fujairah - Dibba Port - Docks	Fujairah	Port	217,800,000	Construction
RTA - Shindagha Corridor Scheme - Overview	Dubai	Bridge	1,360,000,000	Construction
Modon Properties - Abu Dhabi Al Riyadh City South- Infrastructure	Abu Dhabi	Roads	530,000,000	Construction
ADPC - Khalifa Port and Industrial Zone Expansion - Overview	Abu Dhabi	Port	7,200,000,000	Construction
Dubai Municipality - Desert Rose - Sustainable City	Dubai	Mixed-Use Development	272,000,000	Construction
RTA - Shindagha Corridor Scheme - Falcon Junction Upgrade	Dubai	Roads	130,000,000	Construction
RTA - Dubai Metro Capacity Expansion (Green and Red line Extensions)	Dubai	Railway	55,000,000	PMC
RTA - Al Ain Highway Upgrade - Al Khail Road Canal	Al Ain	Roads	400,000,000	Construction
DAEP - Al Maktoum International Airport Expansion - West Terminal Building & Concourse 1	Dubai	Airport	33,000,000,000	EPC ITB
Modon Properties - Abu Dhabi Al Riyadh City - Infrastructure	Abu Dhabi	Roads	626,000,000	Construction
Ajman Municipality & Planning Department - Ajman Airport	Ajman	Airport	500,000,000	Feasibility Study
ADNOC Refining - BEAAT Ruwais - Expansion	Abu Dhabi	Waste Management	250,000,000	Commissioning
RTA - Umm Al Sheif, Latifa bint Hamdan & Al Zomorrud Connection-Sheikh Zayed Road Flyover (Overview)	Dubai	Bridge	217,000,000	Construction
Etihad Rail - Trans - Emirates Rail Network - Dubai to Northern Emirates	Abu Dhabi	Railway	11,000,000,000	PMC
ADAC - SCADIA - Abu Dhabi International Airport - Midfield Terminal Complex Airside	Abu Dhabi	Airport	602,000,000	Construction
RTA - Union Oasis TOD Project	Dubai	Mixed-Use Development	191,000,000	Feasibility Study
Dubai Holding & Emaar Properties - Dubai Creek Harbour - Dubai Square	Dubai	Malls/Retail Outlets	2,722,000,000	Feasibility Study
Wasl Properties - Wasl Gate - Overview	Dubai	Mixed-Use Development	10,000,000,000	Construction
Musanada - Al Silaa Port	Abu Dhabi	Port	50,000,000	Construction
ADAC - Fujairah Airport Expansion	Fujairah	Airport	800,000,000	Construction
DOT - Al Ain Surface Transport Masterplan	Al Ain	Roads		Announced
GCC - The Pan GCC Railway Network Study	Various	Railway	30,000,000,000	Feasibility Study

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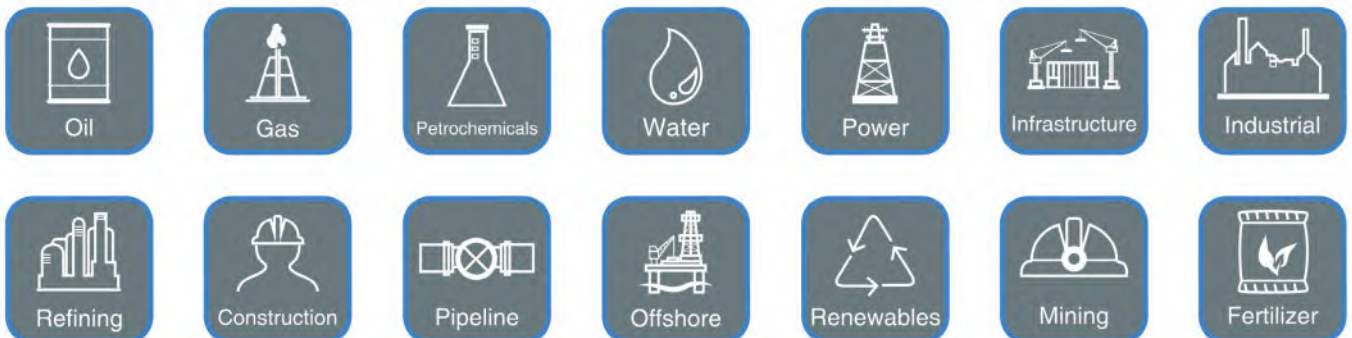
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Gensets Buyers' Guide

2021

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

Section One: International and regional suppliers of Gensets

Section Two: Contact details of Middle East agents & subsidiaries listed by country, page 44

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Egypt - Otrac Heavy Equipment Co. (Doosan Portable)
Ethiopia - My wish Enterprises PLC
Iraq - Vara Machinery
Libya - Gunny Oilfield Services
Mauritius - Prime Plant Company Limited

Oman - General Engineering Services (GENSERV)
Qatar - Jaidah Group
Saudi Arabia - Saudi Diesel Equipment
Saudi Arabia - The Machinery Group LLC
United Arab Emirates - Al Futtaim Auto & Machinery Co. LLC

Forest City Generators Ltd.

Albion House
163 – 167 King Street
Dukinfield
Cheshire
SK16 4LF
United Kingdom
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Generac Mobile Products S.r.l

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Villanova d’Ardenghi (PV)
27030
Italy
Tel: +39 0382 567011
Web: www.generacmobile.com
E-mail: gmp.srl@generac.com

Manufacturer of power generators, mobile lighting towers, dust suppression systems. Leader in the European market since 1997, Generac Mobile Products S.r.l has more than sixty distributors all over the world and is able to provide high quality machinery to the Construction, Mining, Rental, O&G and Event markets.

IREM S.p.A.

Via Abegg 75
Borgone (Torino)
10050
Italy
Tel: +39 011 9648211
Fax: +39 011 9648222
Web: www.irem.it
E-mail: irem@irem.it

IREM S.p.A specialises in design and manufacture of 1PH and 3PH electro-dynamic voltage regulators and line conditioners - in standard and customized versions - with power ratings from 1 to 8000 kVA for indoor and outdoor installation. In business since 1947, IREM is a medium size company (staff 90 people) exporting all over the world. Company according to ISO9001 (since 1983), ISO 14001 (since year 2000), ISO 45001 (since 2020) Standards. Typical application fields: Broadcast, Telecommunication, Industrial applications, Electro-medical appliances, Machine tools, Manufacturing plants, Banks and Insurance Companies, Construction, Oil and Gas, Mining, a.s.o

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Fax: +971 4 8832053
Web: www.JubailiBros.com
E-mail: jbdubai@jubailibros.com

Jubaili Bros has over 40 years of experience and is a leading provider of Power Solutions in the Middle East, Africa and Asia. Jubaili Bros serves its customers by offering high quality diesel generator sets, assembled at 3 manufacturing plants with 29 branches and service centers deployed in 10 countries that are dedicated to customer satisfaction.

Agents:

Kuwait - Jubaili Bros (Kuwait)
Lebanon - Jubaili Bros (Lebanon)
Qatar - Jubaili Bros (Qatar)

Kohler Power Systems


270 rue de Kerervern
29490 Guipavas
France
Tel: +33 2 98 41 41 41
Fax: +33 2 96 41 63 07
Web: www.kohler-sdmo.com
E-mail: jerome.quere@kohler.com

Kohler Power Systems EMEA is one of the world's leading generating set manufacturers. A wide range of standard products from 1 kVA to several Megawatts through an efficient engineering department meets non-standard requirements. Present in over 150 countries through a dense network, Kohler Power Systems EMEA devotes its energy to supporting you in the successful completion of each of your projects world wide.

Agents:

United Arab Emirates - Kohler Power Systems
Middle East

Liebherr Export AG


General-Guisan-Straße 14
Nussbaumen
5415
Switzerland
Web: www.liebherr.com
E-mail: info.lex@liebherr.com

The Liebherr Group comprises more than 140 companies in every continent of the world and employs a workforce of more than 48,000 people. In 2019, the Liebherr Group achieved a total consolidated

turnover of more than 11.75 million Euros. The Liebherr Group's Holding Company is Liebherr-International AG in Bulle, Switzerland, which is entirely owned by members of the Liebherr family.

Linz Electric S.p.A.


Viale Del Lavoro
30 - 37040 - Arcole (VR)
Italy
Tel: +39 045 7639201
Fax: +39 045 7639202
Web: www.linzelectric.com
E-mail: info@linzelectric.com

Linz Electric S.p.A is specialized in the production of alternators up to 1500kVA and rotating welders up to 500Amps. The main focus of Linz Electric is the customer's satisfaction throughout the top product quality, quick and complete service.

Lloyd Dynamowerke GmbH

Hastedter Osterdeich 250
Bremen
28207
Germany
Tel: +49 421 45890
Fax: +49 421 4589260
Web: www.LDW.de
E-mail: sales@LDW.de

LDW develops and produces electrical motors and generators for various industrial applications. Newest technologies in combination with over 90 years of experience - that's the successful foundation on which the extraordinary quality of LDW's machines is based. We do not manufacture standard machinery. Instead we develop specific solutions for your individual needs.

Agents:

United Arab Emirates - Salwo Trading Ltd.

Lovato Electric S.p.A.

Via Don Mazza, 12
Gorle (BG)
24020
Italy
Tel: +39 035 4282111
Fax: +39 035 4282400
Web: www.lovatoelectric.com
E-mail: info@lovatoelectric.com

World leader manufacturer of electromechanical or electronic products for genset control panels. Range includes generators, controllers, automatic trans switch controllers, battery chargers, changeover controller and switches and more.

Mahindra Powerol - Mahindra & Mahindra Ltd.

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Kandivali East
Mumbai
400101
India
Tel: +91 8451844155
Web: www.mahindrapowerol.com
E-mail: shelke.krunal@mahindra.com

Mahindra group, US 20 bn dollar empire, tractor & multi-utility vehicles major in India forayed into the field of Power Generation in 2002. Today, Mahindra engines with the brand name Mahindra Powerol are powering over 270,000 Diesel generating sets in India & in global markets ranging from 5kVA to 500kVA. It offers several advantages like: Fuel Efficiency, Minimal vibration and Low noise levels apart from Diesel Generators, Powerol also deals in Industrial Engines across India & Home Inverters in selected markets. Mahindra Powerol products are presently available in over 20 countries across Africa, Middle East & Asia.

Agents:

Kuwait - Agrims Projects Services General Trading & Cont Co.
Qatar - Mannai Trading Co. WLL (Mahindra)

Mantrac Group

Mantrac House - Pyramids Industrial Parks
(PIP), Km 50, Cairo - Ismailia Road,
Industrial Zone 7 - A
Egypt
Tel: +2 19266
Web: www.mantracgroup.com
E-mail:
contactus@mantracgroup.com

Mantrac Group is the authorized Caterpillar dealer, distributing and supporting Caterpillar construction machines, power systems and material-handling equipment in nine countries spread over three continents. With decades of experience as CAT suppliers, Mantrac provides customers with comprehensive solutions backed by technical know-how, experience and in-depth knowledge of their local markets.

Agents:

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Iraq - Itratrac (Mantrac Group)
United Arab Emirates - UNA Trading FZE

Marelli Motori S.r.l.


Via Sabbionara 1, 36071 Arzignano
(VI) - Italy
Tel: +39 0444 479711
Fax: +39 0444 479888
Web: www.marellimotori.com
E-mail: info@marellimotori.com

With over 130 years of experience, Marelli Motori is one of the world's leading designers and manufacturers of electrical rotating machines, based in Italy. The company offers a complete range of alternators and electric motors for low, medium and high voltage systems to meet every customer needs.

Nidec Leroy-Somer

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16915 Angoulême Cedex 9
France
Tel: +33 5 45 64 45 64
Fax: +33 5 45 64 45 44
Web: www.leroy-somer.com
E-mail: contact@leroy-somer.com

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Agents:

United Arab Emirates - Nidec Motor DMCC - Leroy-Somer

Perkins Engines Company Limited


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United Kingdom
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Web: www.perkins.com
E-mail: info@perkins.com

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Agents:

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Web: www.rotairspa.com
E-mail: jayanthan@rotairspa.com

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- Engines used: Perkins-UK, Kubota-Japan, Honda-Japan, Deutz-Germany and Cummins-UK
- Version: Diesel, Petrol and Hydraulic

SAB, Standard Aggregatebau Evers GmbH & Co. KG**SAB**

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D-22844 Norderstedt
Germany
Tel: +49 40 522 50 110
Fax: +49 40 522 50 1144
Web: www.generatingset.com
E-mail: info@generatingset.com

Reputable German manufacturer of custom-built diesel-driven generating sets from 50 to 8000 kVA in stationary, transportable or mobile executions for standby, peak load or base load applications world-wide. Main competencies are the planning, designing, manufacturing, installation and servicing of global plant constructions under consideration of individual customer and project requirements.

Trident Technology Services

Level 1 , Unit No.2735
DMCC Business Center
Jewellery & Gemplex 3
Dubai
PO Box 338572
United Arab Emirates
Tel: +971 504113733
Web: www.itrident.com

Trident Technology Services helps customers address their most critical

business challenges by delivering comprehensive Information and Communication Technology, AV, security, electrical and industrial solutions. Trident Technology Services is a world-class Representative firm providing sales, marketing, channel, and technical services for international technology manufacturers across the Middle East & Africa, including Panduit, Atona, and Fluke Networks

Visa S.p.A.

Via I° Maggio, 55 - 31043
Fontanelle (TV)
Italy
Tel: +39 0422 5091
Fax: +39 0422 509350
Web: www.visa.it
E-mail: visa@visa.it

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Volvo Penta

Gothenburg
40508
Sweden
Tel: +46 31 660000
Web: www.volvopenta.com
E-mail: info.volvopenta@volvo.com

Agents:

Bahrain - International Agencies Co. Ltd.
Jordan - Mithkal, Shawkat & Sami Asfour Co.
Kuwait - Al Boom Marine Co.
Lebanon - Khonaysser Motors
Qatar - Al Badi Trading & Cont. Co. Ltd.
Saudi Arabia - Alkhorayef Commercial Co. Ltd.
(Riyadh)
Saudi Arabia - Alkhorayef Ind. Co. Marine Division
Syria - Nahas Enterprises
United Arab Emirates - Al Masaood Marine and Engineering (Abu Dhabi)
United Arab Emirates - Al Masaood Marine and Engineering (Dubai)
Yemen - Elaghil Trading Co. Ltd.

**Section Two:
Agents & subsidiaries in the Middle East****BAHRAIN****International Agencies Co. Ltd.**

PO Box 310, 131
Al Khalita Ave
Manama
Tel: +973 727114/28691
Fax: +973 728412
E-mail: sm-service@intercol.com

Mohammed Jalal & Sons WLL

239,Sh.Salman Highway
Po Box 7
Mananra
Tel: +973 17707070
E-mail: vilas_deshmukh@ialal.com

EGYPT**Mantrac Egypt Ltd.**

Mantrac House - Pyramids
Industrial Parks, (PIP), Km 50
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Industrial Zone 7-A
Tel: +2 19266
Fax: +201002115499
Web: www.mantracegypt.com
E-mail: AWeteet@mantracegypt.com

Otrac Heavy Equipment Co. (Doosan Portable)

Ardel - Kanoneyeen, Ringroad
El-Salam City
Cairo
Tel: +20 221838999
E-mail: mhassan@otraheavy.com

ETHIOPIA**My wish Enterprises PLC**

Addis Ababba
Tel: +25 1114663920
E-mail: husa_seifu@yahoo.com

IRAQ**Iratrac (Mantrac Group)**

Tel: +964 780 928 4647
Web: www.mantracgroup.com
E-mail: HGhamry@deltatrasheed.com

Vara Machinery

Vara HQ
8 KM road
Kirkuk Road. 44001
Erbil
Tel: (+964) 750 470 8090
E-mail: rebeen@varamachinery.com

JORDAN**Mithkal, Shawkat & Sami Asfour Co.**

Amman
11118
Tel: +962 6 4651989
Fax: +962 6 4649636

KUWAIT**Agriums Projects Services General Trading & Cont Co.**

Shuaiba
65452
Tel: +965 23712217
Web: www.agrimprojects.com
E-mail: main@agrimprojects.com

Al Boom Marine Co.

PO Box 42188
Shuwaikh
70652
Tel: +965 2 4830474/4830570
Fax: +965 4838293
E-mail: volvopenta@hotmail.com
boomkwt@kuwait.net

Jubaili Bros (Kuwait)

Shuwaikh Industrial Area 2
Block 1, Str. 17
Asyawah Bldg
Tel: +965 24610356
Web: www.JubailiBros.com
E-mail: jbkwait@jubailibros.com

LEBANON**Jubaili Bros (Lebanon)**

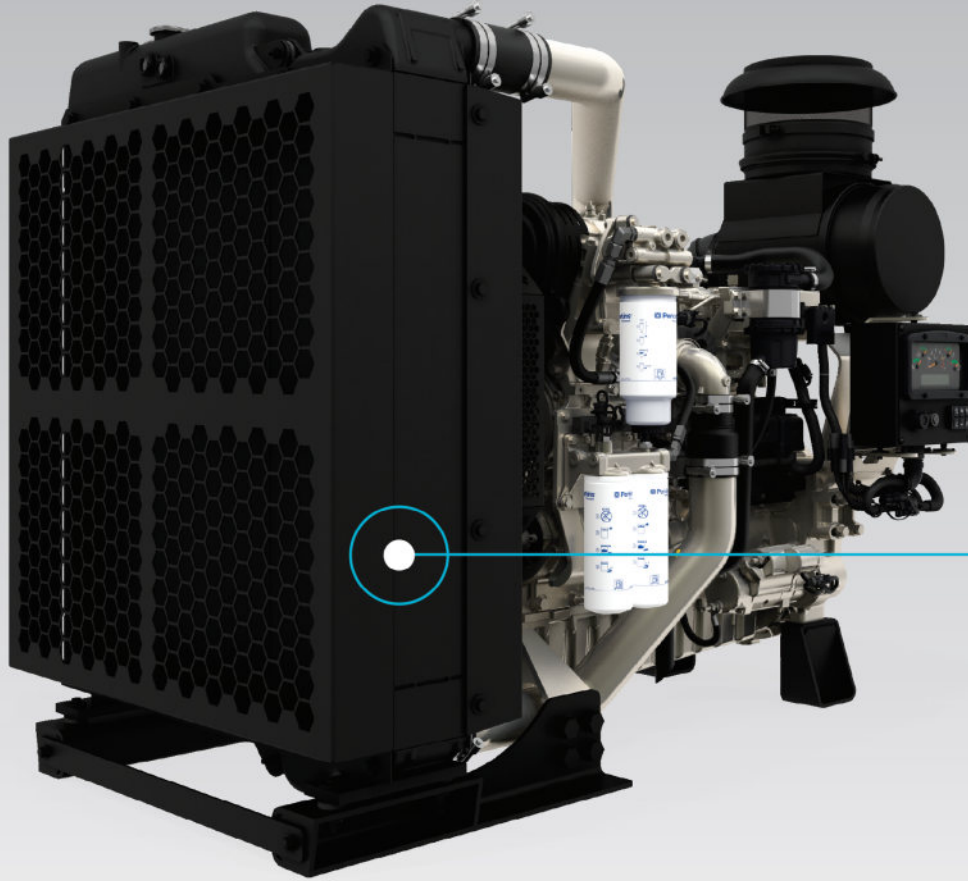
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Fax: +961 7 720813
Web: www.JubailiBros.com
E-mail: jblebanon@jubailibros.com

Khonaysser Motors

Naher El Mott, Main Road
Beirut
Tel: +961 1 870078
Fax: +961 1 874795
E-mail: info@khonaysser.com

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Postal Code:112 Ruwi
Tel: + 968- 24490755
E-mail: wisam.salamah@genserv-oman.com

QATAR**Al Badi Trading & Cont. Co. Ltd.**

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Doha
Tel: +974 4 320715
Fax: +974 4 442888
E-mail: albadi@qatar.net.qa

Jaidah Group

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E-mail: shady.elslamony@jaidah.com.qa

Jubaili Bros (Qatar)

Doha
Tel: +974 4 4160121
Fax: +974 4 4162257
Web: www.JubailiBros.com
E-mail: jbqatar@jubailibros.com

Mannai Trading Co. WLL (Mahindra)

PO Box 76
Industrial Supplies & Building
Materials (ISBM)
Doha
Tel: +974 4 4076000
Fax: +974 4407 6359
Web: www.mannai.com
E-mail: Manal.jradi@mannai.com.qa

SAUDI ARABIA**Alkhorayef Commercial Co. Ltd. (Riyadh)**

PO Box 305
Riyadh
Tel: +966 1 4955452
Fax: +966 1 4950261
E-mail: msd@alkhorayef.com

Alkhorayef Ind. Co. Marine Division

Jeddah
Tel: +966 2 4202666
Fax: +966 2 4202777
E-mail: mnaser@alkhorayef.com

Saudi Diesel Equipment

P.O.Box 2841 Al Kbobar
31952
Tel: +966 1 38208999
E-mail: qunaibi@saudidiesel.com.sa

The Machinery Group LLC

PO Box 8928
Jeddah
21492
Tel: +96626832216,+966126230607
E-mail: azaki@tamgo.com

SYRIA**Nahas Enterprises**

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Damascus
Tel: +963 11 2129736/9742
Fax: +963 11 2129851
E-mail: nahas-co@scs-net.org

UNITED ARAB EMIRATES**AKW Wet Treatment Equipment LLC a member of AKW A+V Group**

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Tel: +971 (0) 55 350 6092
Web: http://www.akwauv.com
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Al Masaood Marine and Engineering (Abu Dhabi)

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Fax: +971 2 6424111

Al Masaood Marine and Engineering (Dubai)

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Dubai
Tel: + 971 4 3241232
Fax: + 971 4 3241262

COELMO spa (DMCC branch)

PO Box 39311
Office 909
1 Lake Plaza Jumeira Lake
Tower Cluster T
Dubai
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Fax: +971 4 3695549
Web: www.coelmo.it
E-mail: dubai@coelmo.it

Kohler Power Systems Middle East

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Dubai Airport Free Zone
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Dubai
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Web: www.kohler-sdmo.com
E-mail: Jerome.quere@kohler.com

Nidec Motor DMCC – Leroy-Somer

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Jumeirah Lakes Towers
P.O. box 128401, Dubai
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Fax: +971 55 602 9341
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Power Systems Gulf LLC

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Dubai
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Web: www.psgulf.com

Salwo Trading Ltd.

PO Box 17372, Dubai
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Fax: +971 4 8810593
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UNA Trading FZE

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Plot S 60525
Jebel Ali Free Zone South
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Tel: +971 4 48074065
Web: www.mantracpowersystems.com
E-mail: mkhalifa@mantracgroup.com

YEMEN**Elaghil Trading Co. Ltd.**

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Zubeiri Street
Sana'a
Tel: +967 1 207470/471/594/595
Fax: +967 1 207596/213380
E-mail: elaghil@y.net.ye



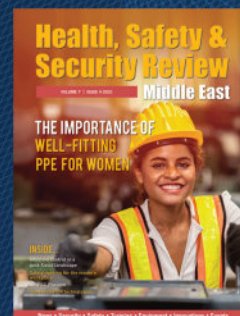
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ختاماً

للرقمنة دورٌ محوريٌّ في توفير الأدوات التي تحتاجها المؤسسات لاتخاذ قرارات عن علم، ستساهم في تمكين الموظفين في سلاسل الأنشطة المضيئة للقيمة في مجال التعدين والمعادن والفلزات، ليعتمدوا أكثر على التخطيط، ويضعوا الاستدامة نصب أعينهم وهم يحددون اختياراتهم. ويمكن للتحويل إلى الرقمنة، في عمليات التعدين، تحقيق مكاسب في الاستدامة والإنتاجية، مما يساهم في زيادة الاستفادة من الأصول وتحقيق أفضل قيمة.

القوى الدافعة إلى التغيير

قال 82 في المائة من المشاركين في الاستطلاع إن من يلعب الدور الأكبر في التأثير على اعتمادهم للتكنولوجيا الرقمية هو أحد الشركاء، وهم يفضلون الوسائل التكنولوجية العامة وليس المخصصة للمجال. وقال 99 في المائة إن وجود مجتمع مختص بالتحويل إلى الرقمنة يمكنهم فيه التعلم من تجارب الأقران مع الوسائل التكنولوجية والتطبيقات المختلفة سيعود عليهم بالفائدة.

منافع كبيرة تقدمها تكنولوجيا السلامة

تسعى الشركات جاهدة لإقامة ثقافات تشجع على السلامة. ويزداد يوماً بعد يوم نجاح المبادرات الداعية إلى انعدام الضرر، فتأتي التكنولوجيا لتقدم للعاملين طبقة حماية جديدة بحلول مراقبة

تلبية الطلب المتزايد على التحول في أنظمة الطاقة يعتقد 99 في المائة من صنّاع القرار الآن أن للتكنولوجيا والابتكار أهميةً بالغةً في بقاء مؤسساتهم. وقال 94 في المائة من المشاركين في الاستطلاع إن مستوى استخدام التكنولوجيا عندهم كان متقدماً أو متوسطاً.

الحلول الرقمية والذكاء الاصطناعي

يزداد التركيز على استخدام التكنولوجيا بهدف زيادة الإنتاجية المباشرة، وتقديم بيئة عمل أفضل، وتحسين عائد الاستثمار عن التركيز على استخدامها بهدف تجنب فترات التعطل. وتكون نظرة الشركات أبعد مدى عندما يتعلق الأمر بالتوفير في التكاليف نتيجة للتحويل إلى الرقمنة. ويتوقع 24 في المائة من المشاركين في الاستطلاع توفير ما يتراوح بين 1-5 في المائة نتيجة لاستخدام التكنولوجيا الرقمية في السنتين المقبلتين، ويتوقع 3 في المائة فقط منهم تحقيق ذلك المستوى من التوفير في التكاليف خلال خمس سنوات، إذ يتوقع أكثرهم نسبة تتراوح بين 11 في المائة و15 في المائة، ويرى ما يزيد على ثلاثة أرباع المشاركين في الاستطلاع أن قيمة التكنولوجيا الرقمية تتقدم في الأولوية على تكلفتها.

وقال 57 في المائة من صنّاع القرار إن مؤسساتهم قد استخدمت الذكاء الاصطناعي بدرجة ما، ووضعه 59 في المائة منهم في المرتبة الأولى من أجل تحقيق إمكانات النمو في السنة القادمة، وتلتها الروبوتات عند 45 في المائة من المشاركين.

التحليلات والمعدات شبه ذاتية

التحكم والعمليات عن بُعد

ذكر 73 في المائة من المشاركين في الاستطلاع أنهم استخدموا التحليلات والمعدات شبه ذاتية التحكم بدرجة ما، وعلى الأرجح تُستخدم المعدات شبه ذاتية التحكم في أرجاء المؤسسة بنسبة 100 في المائة. واستخدمت 73 في المائة من المؤسسات تكنولوجيا العمليات عن بُعد، وقال 72 في المائة من المشاركين في الاستطلاع أن شركاتهم قد جهزت مركزاً للعمليات عن بُعد، كما قال 15 في المائة آخرون أنهم يخططون لفعل ذلك في السنة القادمة.

← مفكرة الفعاليات 2021 - 2022

نوفمبر/تشرين الثاني

دي	معرض هايرموشن دبي	4 - 2
دي	معرض الشرق الأوسط لتداول المواد	4 - 2

يناير/كانون الثاني 2022

أبوظبي	القمة الدولية لطاقة المستقبل	19 - 17
--------	------------------------------	---------



نظرة الشركات تكون أبعد مدى عندما يتعلق الأمر بالتوفير في التكاليف نتيجة للتحويل إلى الرقمنة

المضي قدما نحو التحول الرقمي

للتكنولوجيا دورٌ مهمٌ في التعدين، ولا شك أن للرقمنة تطوراً لا بد منه في هذا المجال. ومن الجلي أنه عندما يكون قطاع التعدين والمعادن سليماً ومزدهراً، يكون لذلك بالغ الأثر على الاقتصاد العالمي، وفي دعم ابتكار مواد ووسائل تكنولوجية جديدة ضرورية للحد من تغير المناخ وحماية البيئة. ووفقاً للدراسة الجديدة التي أجرتها شركة «أكسورا Axora»، يمضي قطاع التعدين والمعادن - حثيثاً - في طريق التحويل إلى الرقمنة، إلا أنه ما يزال هناك المزيد مما ينبغي فعله قبل التحويل في أنظمة الطاقة.

هناك حاجة متزايدة اليوم إلى أن تطلق الشركات العنان لميزات الرقمنة وتستفيد منها من خلال نهج استراتيجي منسق. وبينما تنبعث صناعة التعدين من تحت ركام جائحة كوفيد-19، صار التحويل إلى الرقمنة ضرورة من أجل زيادة كفاءة الإنتاج، وتقليل التكاليف في جميع العمليات». ومن بين النقاط الرئيسية التي توصل إليها التقرير:

«طبيعة التعدين شديدة التغير تقف - جزئياً - وراء هذا الإحجام، إلى جانب طبيعة البيئات النائية القاسية التي تعمل فيها الشركات. هذا بالإضافة إلى أن صناعة التعدين لا تزال في مهدها عندما تكون المسألة هي إدخال المهارات الرقمية إلى مواقع المناجم. ولكن على الرغم من أن استخدام الرقمنة قد سار على مدار التاريخ بسرعة مدروسة، فإن

تقرير توقعات ابتكارات «أكسورا 2021: المعادن والتعدين»، الذي استند إلى استطلاع لرأي 150 من كبار صنّاع القرار في أنحاء العالم، يذكر أن سرعة قطاع التعدين والمعادن، في اعتماد التكنولوجيا الرقمية، كانت بطيئة على مر التاريخ، مقارنة بصناعات عديدة أخرى. وقال ريتز ستايتلر، الرئيس التنفيذي لأكسورا:

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القسم العربي

تحليلات

التحول الرقمي في قطاع التعدين



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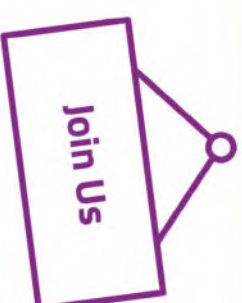
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Aksa Jenerator Sanayi A.S.	37	Marelli Motori Srl	19
AKW Apparate Verfahren GMBH	27	MB S.p.A.	15
Balkrishna Industries Ltd	47	PASCHAL-Werk G. Maier GmbH	23
Cantoni Motor S.A.	11	Perkins Engines Company Limited	45
Caterpillar Inc - Energy	43	Peter Berghaus GmbH	17
DMS Global WLL	39	Societe Internationale des Moteurs Baudouin	13
Expo Centre Sharjah (SteelFab 2022)	35	Standard Aggregatebau Evers GmbH & Co. KG	33
FLSmidth South Africa (Pty) Ltd	7	Terrapinn Middle East FZ LLC (The Mining Show 2021)	51
Indeco Ind. S.p.A.	31	Trident Technology Services DMCC	5
Kohler SDMO	9	Zitron	29

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