

# TECHNICAL REVIEW

## النشرة التقنية - الشرق الأوسط MIDDLE EAST

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Vol 37/Issue Three 2021

### Analysis

Gulf businesses accelerate digital transformation

### Construction

Synergies for the future

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# EDITOR'S NOTE

THE MIDDLE EAST is set to be the market leader in renewable and clean energy, which will account for 34% of total power sector investments across the MENA region in the next five years, according to research by Middle East Energy (p30). We preview some of the major launches.

A technology report by Software AG reveals that digital transformation afoot in Gulf countries, continues into this year. We take a look at the use of smart technology and digital tools, accelerating across businesses in the region (p18).

Elsewhere in the magazine, Ronan O'Sullivan, digital lead for ABB Industries, IMEA, discusses how digitalisation is shaping the post-COVID recovery in the energy sector.

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



# TECHNICAL REVIEW MIDDLE EAST

النشرة التقنية - الشرق الأوسط

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# Briefly

## SAP, Deloitte & Tabreed join hands to transform district cooling industry

**GLOBAL TECHNOLOGY COMPANY**  
SAP has partnered with Tabreed, a UAE-based international district cooling developer, to contribute to the digital transformation of the district cooling industry.

In the Middle East, factors such as population growth, diversified economic growth, the hot climate and government visions for environmental sustainability, all favour the growth of district cooling.

According to the Global Market Insights, Middle East's district cooling market is valued at US\$8bn, and poised for year-on-year growth of 8% between 2021 and 2027.

Bader Saeed Al Lamki, CEO of Tabreed, said, "Tabreed is a dynamic and innovative company and we are always in a continuous pursuit to streamline our processes to facilitate efficient growth, profitability and progress."

"This digital transformation initiative we have embarked upon with SAP and Deloitte will greatly benefit our business. Access to real-time data would unlock additional analytical capabilities which further drive our financial and operational competitiveness and enhance our value add to our clients," added Al Lamki.

## Hyzon Motors, Modern Group and NEOM to launch hydrogen-powered fleet

**HYZON MOTORS INC** and Modern Group have signed a memorandum of understanding, with the aim of establishing a hydrogen-powered demonstration fleet of heavy duty mobility solutions at NEOM.

Under the agreement, Hyzon, Modern Group and NEOM will work closely over the next 18 months, to finalise plans for the new regional assembly facility, which is estimated to have an annual capacity of up to 10,000 vehicles. To facilitate the construction of the new facility, Hyzon and Modern Group are also planning to incorporate a joint venture company, called Hyzon Motors Middle East, which would focus on supplying locally-built, Hyzon-branded zero-emission commercial vehicles throughout Saudi Arabia and the GCC.

# Saudi's first wind farm reaches mid-way mark

THE FIRST WIND farm in Saudi Arabia, led by a consortium of renewable energy companies such as EDF Renewables and Masdar, has reached its mid-way mark in construction.

Located in the Al-Jouf province, 900km north of Riyadh, the Dumal Al Jandal is the first utility-scale wind farm project in Saudi Arabia, and the largest in the Middle East.

His Royal Highness Abdulaziz Bin Salman, Minister of Energy in the Kingdom of Saudi Arabia, His Royal Highness Prince Faisal bin Nawaf, Governor of Al-Jouf Province, Kingdom of Saudi Arabia, His Excellency Ole E. Moesby, Ambassador of Denmark to Saudi Arabia, His Excellency Ludovic Pouille, Ambassador of France to Saudi Arabia, Bruno Bensasson, group senior executive and vice-president of Renewable Energies, and CEO of EDF Renewables and Fawaz Al Muharrami, the acting executive director of Clean Energy, Masdar, visited the construction site recently, to commemorate the installation of half of the wind turbines from Vestas.

Vestas was one of the first companies to introduce wind power in the country in 2013. Since then, the company has held several training programmes and meet-mast campaigns in the Kingdom.

The project will start operating in the first quarter of 2022, and will provide clean energy to 70,000 Saudi households, while displacing 988,000 tonnes of carbon emissions every year. It will also contribute to the Kingdom's 16GW wind power capacity targets, under the Vision 2030 framework.

Muhamed Bou-Zeid, general manager of Vestas, MENA says, "Our ambition as a sustainable energy solutions provider with a technology leadership in wind power is to co-create a renewable energy hub in Saudi Arabia, and for the wider Middle East together with other sustainability leaders in the region. We believe that the Dumal Al Jandal wind



Photo Credit : Vestas

*The turbines arrived at the Dubai Airport last year in September 2020.*

farm is the first step to diversifying the energy sector as well as renewable energy by adding wind power into the energy mix and ultimately creating three times more work opportunities for the local talent. As we strive to complete this project with Quality and Safety as priority, we look forward to accelerating Saudi Arabia's clean energy transition and sustainability leadership journey".

The Dumal Al Jandal wind farm project was awarded to the consortium by the Renewable Energy Project Development Office (REPDO) of the Saudi Ministry of Energy, Industry and Mineral Resources (MEIM) in January 2019.

The EPC order was made firm in July 2019, and included the supply and installation of 99 V150-4.2MW wind turbines, as well as a 20-year Active Output Management 4000 (AOM 4000) service agreement for the operation and maintenance of the wind farm.

The Dumal Al Jandal wind farm will supply electricity under a 20-year purchase agreement (PPA) with the Saudi Power Procurement Company (SPPC), a subsidiary of the Saudi Electricity Company (SEC), the Saudi power generation and distribution company.

## Schneider and NXN collaborate for smart-city projects

**SCHNEIDER ELECTRIC**, A specialist in the field of energy management and automation, and NXN, a provider of end-to-end smart digital services, have entered into a partnership to work together and help the governments accelerate the roll out of smart city projects across the Gulf.

The two companies will collaborate across a variety of technologies for the real estate industry and national smart city initiatives, and deliver advanced solutions to implement digital transformation programmes.

States across the Gulf have embarked on national initiatives to transform their countries into knowledge-based economies. Smart cities are at the heart of these plans and are helping the region's governments develop urban environments that are greener, more sustainable, more business-friendly, and promote well-being for citizens and residents.



Photo Credit : Adobe Stock

*NXN's services will help governments overcome administrative, financial and resource limitations.*

The partnership will allow the companies to identify and collaborate on business opportunities in the domain of digital transformation, and develop solutions for smart buildings, smart districts, smart cities and large-scale development projects. They will also cooperate on initiatives to bring benefits for smart home automation, building analytics, energy metering and management, security, and digital community platforms.

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## MAN Truck & Bus introduces TG range for the Middle East and Africa

MAN TRUCK & BUS has introduced the new TG range for its markets in the sales area of Middle East, Africa and Latin America, covering 47 countries including South Africa. This comes after a year of the global launch of the New Generation Truck range. The development of the new trucks was based on customer feedback, to provide them with vehicles that meet their operational requirements – for today and for the future.

The range represents MAN Truck & Bus as a provider of sustainable transport solutions. It underlines the high competence of MAN's engineering team that has always delivered robust, reliable and efficient vehicles. These trucks also showcase the high build quality in MAN factories. The TG Range wears a distinct look with a new cabin that is both visually appealing and functionally efficient. These vehicles offer highest levels of reliability and efficiency for diverse applications and operating conditions.

Joerg Mommertz, senior vice president, head of sales area Middle East, Africa and Latin America (MEA&LA), MAN Truck & Bus SE, said, "The launch of the new range is a milestone moment for all of us. It 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."

MAN also reaffirms its commitment to 'Simplifying Business' of its customers. The company aims to do so with effective



A closer view of  
TGX Truck.

Photo Credit : MAN

aftersales for service and parts, a range of digital and financial solutions, and business advisory, besides the reliable and efficient products. Among the digital solutions on offer is the telematics suite from MAN. This is a powerful enterprise grade solution for customers and it is designed to support improved levels of fleet efficiency and safety, and reduce environmental impact.

### Stand-out qualities:

#### 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. It offers engines that conform to emission norms ranging from Euro 2 to 4, 5 and 6d, depending upon the selected model. Substantial improvements on the product, and in the areas of maintenance and service, can reduce service life costs.

### Strong partner

Partnership has been key to MAN's successes, and its importer partners have done a commendable job to achieve customer satisfaction. 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.

## Metso Outotec Lokotrack e-Power range is here

AS A RESPONSE to the fast growing demand for more sustainable crushing and screening equipment, Metso Outotec introduced the Lokotrack e-Power range, which brings the diesel-electric Lokotrack mobile crushing and screening units into one, distinctive offering. The range includes 15 crushers and six screens, making it the market's broadest portfolio of hybrid mobile crushing and screening equipment.

"We introduced the first Lokotrack e-models already 35 years ago, so we are one of the pioneers in this field," said Kimmo Anttila, VP, Lokotrack solutions at Metso

Outotec. "During the past couple of years the demand for hybrid solutions has really taken off as environmental regulations have become increasingly stringent in more countries. In fact, sales of the Lokotrack e-models have doubled in five years, and we expect the trend to accelerate."

The Lokotrack e-Power range is an important factor in realising the goals of Metso Outotec's Planet Positive initiative. With Planet Positive, Metso Outotec is committed to limiting global warming to 1.5°C. Aggregate crushing is very energy-intensive; thanks to the development

actions to lower fuel consumption, the annual CO<sub>2</sub> emissions of the Lokotrack equipment are 20,000 tonnes lower today compared to the situation before 2010.

"Lokotrack design principles are simple: optimise the operating costs, capacity, and end-product quality of the customer application. We give consideration to the total fuel consumption, including the engine and driveline technologies, but also to other factors, such as the unit transportation weight and the engine stand-by function," Anttila explained.

"Lokotrack is robust, energy efficient and highly mobile," he concluded.



## Air Curation for Better Environment

From residential to commercial applications,  
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## Briefly

### **ICAEW: Middle East economic growth to accelerate by the second half of 2021**

THE ROLLOUT OF coronavirus vaccines should allow a return to relative normality in the Middle East in the second half of 2021, while much of the region's economies will benefit from higher commodity prices and stronger external demand, according to a report Economic Update: Middle East Q1 2021, compiled by Oxford Economics and commissioned by ICAEW.

According to the Economic Update report, the Middle East's GDP forecast for this year stands at 2.5%, similar to the average pace from 2010 to 2019 (2.6%). This follows the unprecedented decline seen in 2020, estimated to be 5.2%.

The report observed that 2021 has got off to a slow start for the global economy due to containment measures aimed at bringing COVID-19 numbers under control.

The vaccine rollout has been uneven but has progressed particularly well in the UAE and Bahrain, where a relatively large percentage of the population has been vaccinated compared to neighbouring countries and global peers. Overall, according to ICAEW, GCC GDP will grow by 1.4% in 2021, after an estimated 5.4% contraction in 2020.

Expectations of strengthening activity and rising demand have lifted sentiment, pushing oil prices up to US\$66 per barrel (pb) in late February (up from a low point of US\$9 pb in April 2020). The oil price outlook has also been supported by ongoing supply restraint from OPEC+ producers. The group plans to increase output only modestly in the months ahead, to sustain a reduction in inventory levels, with Saudi Arabia maintaining an additional voluntary production cut of one million barrels per day through April.

Michael Armstrong, FCA and ICAEW regional director for the Middle East, Africa and South Asia (MEASA), said, "While COVID-19 vaccine rollouts are underway, Middle Eastern governments must continue to develop sectors and industries that generate net value for the economy. Increasing non-oil revenues is a challenging task in these times so innovation will be vital to the region's economic recovery."

## Mobility MEA named in 2021 Gartner Magic Quadrant for MMS, Global

Mobility MEA, one of the leading systems integrator, enterprise-managed mobility service provider and the region's digital transformation partner, becomes the first ever company from the MEA region to secure a place in Gartner 2021 Magic Quadrant for Managed Mobility Services (MMS), Global.

"Becoming the first MEA company to be featured in the report is a proud moment for us and achieving such a marvelous feat within just a few years of existence comes as a well-earned acknowledgment for all the innovations and hard work that we have been able to do. We feel truly privileged to be recognised by Gartner and sharing space with top global organizations acknowledged in the report," commented Mustafa Rana, CEO of Mobility MEA.

Besides the UAE, Mobility MEA covers 12 additional countries in the MEA region including Bahrain, Egypt, Jordan, Lebanon, Kenya, Kuwait, Morocco, Nigeria, Oman, Pakistan, Saudi Arabia and South Africa through its network of 16 partners. Moreover, the company manages more than two million mobile devices across the region, majority of which are in MEA, with a number of customers across Europe and Latin America as well.

"We believe Gartner's inclusion of Mobility MEA in the Magic Quadrant for MMS, Global, is a validation of Mobility MEA's vision of being the top regional organisation to deliver consistent, complete range and high-quality managed mobility services solutions to both public and private sector customers with their digital transformation initiatives," stated Rana.

"Our vendor and MNO partners have been



*Mustafa Rana is the CEO of Mobility MEA.*

looking for an organisation that can help them both scale and that they can rely on with the knowledge, relationships, and expertise to support their mobile endpoints and employees via an extensive range of Managed Mobility Services portfolio," he further commented.

Mobility MEA aims to offer global mobility managed services through in-country experts with local language and local insights to support the global mobile workforce, while ensuring centralized governance, auditing and reporting. Mobility MEA has partnerships with the world's digital transformation solution vendors such as VMware, Google Android Enterprise, Microsoft, Apple, BlackBerry, MobileIron, SOTI, 42Gears and more.

## Boom Construction deploys Trend Micro solution to protect its digital estate

**CYBERSECURITY SOLUTIONS PROVIDER** Trend Micro Incorporated has announced that Qatar's Boom Construction Company (BCC) has successfully deployed a comprehensive cloud-based Trend Micro solution to protect the construction company's digital estate.

Part of the Boom Group, BCC is one of Qatar's largest construction firms and is a major player in National Vision 2030's goals of environmental development through infrastructure and mega-projects. In March 2020, amid the COVID lockdown, BCC's head office was hit with a ransomware attack that left more than 200 users without access to business applications and emails. Downtime was not an option, so in response to the attack, BCC contacted several vendors for support, and found a trusted future partner in Trend Micro.



*Threat actors continue to take advantage of the vulnerabilities that organisations face in the new normal.*

Trend Micro engineers on site identified the ransomware and its entry point, and offered continued support to control the damage. Boom Construction's entire infrastructure was live and stable within 15 days – a fraction of the two months associated with similar attacks. The company estimates that seven more weeks of downtime would have cost around US\$1.5mn.

## Siemens Energy to supply reliable power to Saudi Aramco

SIEMENS ENERGY HAS signed its first long-term service agreement (LTSA) with Saudi Aramco, covering a range of turbines and generators at four major oil fields.

This 15-year contract will enable Saudi Aramco to benefit from Siemens Energy's comprehensive warranties and extended service support, increasing the availability and the reliability of the power supply for these strategically important assets. Furthermore, Siemens Energy will provide the necessary resources and material availability in case of an emergency.

This agreement will also enable Siemens Energy to expand localisation plans through the development of high-tech industry and training of a skilled Saudi workforce, to raise domestic capabilities in Saudi Arabia, whilst benefitting the local economy.

"Siemens Energy is dedicated to providing and ensuring stable, efficient and resilient power supply to Aramco, while delivering value beyond the scope of the contract, by contributing to the local economy and developing the skills and employability of Saudi nationals," said Mahmoud Sulaimani, managing director of Siemens Energy Saudi Arabia.



Photo Credit : Siemens Energy

Mahmoud Sulaimani, managing director of Siemens Energy Saudi Arabia.

## Sandvik's Sanicro 35 alloy receives industry recognition

SANDVIK, A DEVELOPER and producer of high-performance materials, has received an industry award for its new alloy Sanicro 35, a unique grade that bridges the performance gap between stainless steels and costly nickel alloys.

The company has won the materials design category in the MP Corrosion Innovation of the Year Awards 2021. These awards are organised by Materials Performance, which is published by NACE International.

Launched in August 2020, Sanicro 35 is designed for extremely corrosive environments and seawater applications, and it is ideal for heat exchangers and hydraulic and instrumentation tubing. Its features include high mechanical yield strength, exceptional corrosion-resistance and excellent structural stability. Due to its versatile properties, Sanicro 35 can potentially streamline inventories by replacing special grades, including 6Mo, Alloy 825 and Alloy 625.



Photo Credit : Sandvik

The Sanicro 35 alloy delivers excellent performance across various applications.



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# Briefly

## Offshore International signs MoU with Mammoet UAE

ABU DHABI PORTS' offshore logistics service provider, Offshore Support and Logistics Services Company (OFCO – Offshore International), has signed a Memorandum of Understanding (MoU) with Mammoet United Arab Emirates.

The integrated maritime logistics service provider OFCO will work closely with the heavy lift and transport specialist Mammoet to create a unique integrated package of on and offshore turnkey transport and installation solutions for projects in the GCC.

Captain Maktoum Al Houqani, chief corporate authority officer and head of maritime cluster, Abu Dhabi Ports, said, "The newly-announced collaboration between Abu Dhabi Ports' OFCO and Mammoet marks a critical milestone in Abu Dhabi Ports' ongoing efforts to foster an integrated logistics ecosystem catering to our commercial and industrial customers' every need."

"By combining each organisation's expertise and resources, we can complement each other's service offering and explore potential operational and logistical synergies, which would allow us to create an integrated, cost-effective solution for the major project market within the GCC and beyond."

This in turn will not only provide customers with a streamlined, flexible and cost-effective solution for handling their heavy cargo transport needs but will also enable them to partner with a single service provider, rather than having to rely on several subcontractors to meet their supply chain requirements.

Paul van Gelder, CEO at Mammoet, added, "The strategic alliance with OFCO is a testament to that, as our collaboration will reduce the number of interfaces within the logistics chain of projects, enabling the planning and operations to be streamlined, and therefore realising the efficient and cost-effective approaches."

OFCO operates under SAFEEN Group, Abu Dhabi Ports' marine services arm, and is one of the largest cost-efficient providers of integrated logistics solutions and subsea services in the GCC.

## DMCC's precious metals refinery in the GCC

DMCC, THE FLAGSHIP Free Zone and Government of Dubai Authority on commodities trade and enterprise, has signed a sale and purchase agreement (SPA) with REIT Development to establish the largest precious metals refinery and storage facility across the GCC and the first to be completely enabled by blockchain in the GCC.

As part of the agreement, REIT Development acquired industrial land strategically located in DMCC's Jumeirah Lakes Towers (JLT) vibrant business district.

DMCC has premium plots for sale across JLT, which are attracting significant interest from a diverse range of investors and developers, all in search of a dynamic destination to do business.

The facility will refine and store precious metals including gold, silver, platinum, palladium and rhodium, which will be tokenised on goldexchange.com.

Gold Exchange DMCC, a secured trading platform, will provide access to financial assets in the form of stablecoins namely GoldCoin, SilverCoin, PlatinumCoin, PalladiumCoin and RhodiumCoin.

Each Ethereum-based token will represent the current value of one gram of each metal and can be traded on the exchange. The tokens will be physically backed by the precious metals at DMCC's secure storage facility, meaning they can be traded with confidence.

Ahmed Bin Sulayem, executive chairman and CEO, DMCC, said, "The gold and precious metals industry is at a tipping point, but without a doubt,



*The MoU will establish the GCC's largest refinery and storage facility*

there are boundless opportunities that lie beneath the uncertainty of a post-pandemic world. Signing this agreement with REIT Development underscores the crucial role that DMCC plays in tapping the UAE and the emirate on the world map as a leader in the precious metals industry through the deployment of cutting-edge technology such as blockchain.

"The gold and precious metals industry is expected to witness significant growth in the coming period and through similar agreements, we can advance the industry as a whole."

The first-of-its-kind facility by REIT Development, a leading organisation specialised in precious metals and blockchain technologies, will be completed in the last quarter of 2022.

As part of the ongoing commitment to provide robust infrastructure and innovative platforms to individual traders and stakeholders operating in the gold and precious metals industry, this new facility will strengthen DMCC's position as a global hub for precious metals and a leader in technological advancements.

## Oil Review Middle East to host sulphur-monetisation webinar

**IN THE FACE of challenging economic conditions and increasing ESG concerns, reducing costs and minimising environmental footprint are top priorities for operators of refineries and petrochemical plants.**

On Tuesday 8 June 2021 at 2:00pm (UAE), Oil Review Middle East is hosting a webinar in association with P&P Industries AG, a globally active green technology player specialised in waste gas treatment, entitled "Utilise best-in-class conversion technology to monetise sulphur emissions".

Martin Joksch – head of sales, Paul Piantino – business development manager and Peter Matheisl – senior sales manager at P&P Industries AG will present a case study on the commercial and environmental benefits of



*The webinar will show approach monetisation of sulphur.*

redesigning refineries' and petrochemical industries' cast filter processes to offer a profitable sulphur recycling function.

*Register for this insightful presentation here: [www.alaincharlestraining.com/webinar/p-p](http://www.alaincharlestraining.com/webinar/p-p)*

Photo Credit : DMCC



● ● ALTERNATORS MADE IN ITALY

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# EXECUTIVES' CALENDAR 2021

## MAY 2021

|                 |                                 |         |  |
|-----------------|---------------------------------|---------|--|
| 17 May – 9 June | <b>Middle East Energy Dubai</b> | VIRTUAL | <a href="http://www.middleeast-energy.com/en/home.html">www.middleeast-energy.com/en/home.html</a> |
| 30 May - 1 June | <b>COMEX</b>                    | VIRTUAL | <a href="http://www.comex.om/2020/">www.comex.om/2020/</a>   |

## JUNE 2021

|       |   |         |  |
|-------|---|---------|--|
| 1-2   | <b>Construction Technology Festival</b> | UAE     | <a href="http://www.ctf-uae.com/">www.ctf-uae.com/</a>   |
| 14-15 | <b>DRC Mining Week</b>                  | VIRTUAL | <a href="http://www.drcminingweek.com/dmw-online">www.drcminingweek.com/dmw-online</a>   |
| 15-16 | <b>Telecoms World Middle East</b>       | VIRTUAL | <a href="http://www.terrapinn.com/conference/telecoms-world-middle-east/index.stm">www.terrapinn.com/conference/telecoms-world-middle-east/index.stm</a> |
| 22-23 | <b>HSE Oman Forum</b>                   | VIRTUAL | <a href="http://www.hse-forum.com/oman-2021">www.hse-forum.com/oман-2021</a>   |

## OCTOBER 2021

|       |                         |     |  |
|-------|-------------------------|-----|--|
| 12-13 | <b>Middle East Rail</b> | UAE | <a href="http://www.terrapinn.com/exhibition/middle-east-rail/">www.terrapinn.com/exhibition/middle-east-rail/</a> |
|-------|-------------------------|-----|--|

## NOVEMBER 2021

|     |                               |         |  |
|-----|-------------------------------|---------|--|
| 2-4 | <b>Gulf Construction Expo</b> | BAHRAIN | <a href="http://www.gulfconstructionexpo.com">www.gulfconstructionexpo.com</a> |
|-----|-------------------------------|---------|--|

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

## HSE Oman Forum to debate critical HSE issues

HSE FORUM'S OMAN edition launches on 22-23 June – and it's going virtual.

Over the next few years, the Sultanate of Oman is seeking to break the cycle of its oil and gas dependency and has earmarked US\$106bn to invest in the non-oil sectors, including the construction industry and manufacturing.

At HSE Oman Forum – 2021, delegates will hear from the most senior and influential entities in government, energy, infrastructure, manufacturing, construction and other thriving sectors, obtaining updates on the latest industry and regulatory developments that will allow them to best strategise for upcoming projects and to be HSE compliant.

"HSE Oman Forum - 2021 will offer a virtual platform to discuss ideas, exchange information and address occupational health and safety concerns," said Bhumika Bhinde, event manager. "It will highlight best practices that will help mitigate occupational health and safety risks by integrating the latest technologies with expert insights on the role of effective leadership in HSE."

This year's edition will feature six exclusive themes:

- REGULATORY FRAMEWORK & VISION: Gain access to regulatory updates and ministry initiatives to enhance skilled human resources for Occupational Health and Safety
- E-HSE – NEXT REVOLUTION IN OMAN: Evaluate the scope and challenges involved in integrating emerging tech to monitor health and safety in confined spaces
- ENVIRONMENTAL FOOTPRINT: Learn how effective waste management and go green initiatives for a carbon free future are contributing towards Oman's Sustainable Development Goal
- ZERO INCIDENTS- FRAMEWORK: Explore the best practices for root cause analysis and gain insight on effective safety leadership through case studies and proven methodologies
- RISK OVERVIEW: Review principle elements involved in risk assessment and the critical role of an incident reporting system for efficient process safety

• HSE – POST PANDEMIC ERA: Hear the success stories of HSE virtual trainings and inspection and the impact of behaviour based safety to tackle the pandemic situation.

Speakers include Yousra Kindi, senior behavioural safety adviser, Petroleum Development Oman; Fahad Alkiyumi, senior QHSE manager, Oman Electricity Transmission Company; Willem Nel, general manager HSSE, Port of Salalah; Neelesh Sogani, chairman, IOSH Oman; and Porchelvan Nadanam, HSE manager, Huadong Ibri PV Construction LLC.

HSE Oman Forum is the latest in the highly acclaimed event series, now in its seventh year, designed to highlight best practices, process improvements, technology advancements and innovative applications for the enhancement of HSE performance in the GCC. It follows hard on the heels of the HSE UAE Forum, which took place in Dubai from 6-7 April to highly positive feedback.

*For further information, please visit:  
[www.hse-forum.com/oман-2021](http://www.hse-forum.com/oман-2021)*

# ON THE WEB

A round up of the leading developments and innovations recently featured on *Technical Review Middle East's* online portal.  
To read more or to stay up to date with the latest industry news, visit [www.technicalreview.me](http://www.technicalreview.me)

## Moro Hub to build solar-powered data centre

MORO HUB (DATA Hub

Integrated Solutions LLC) has signed an agreement with Huawei to build the largest solar-powered Uptime TIER III-Certified Data Centre in the Middle East and Africa at the Mohammed bin Rashid Al Maktoum Solar Park.

The new sustainable, carbon-neutral green data centre uses

100% renewable energy and has a capacity exceeding 100 megawatts (MW).

[www.technicalreviewmiddleeast.com/it/computing/](http://www.technicalreviewmiddleeast.com/it/computing/)



Photo Credit: Moro Hub

*The centre will offer digital products and services using Fourth Industrial Revolution technologies.*

## Manitowoc unveils Potain MDT 489 topless crane

MANITOWOC CRANES HAS launched Potain MDT 489 topless crane that aims to fill the gap between the manufacturer's popular MDT 389 and new MDT 569 models and is ideal for large-scale construction and infrastructure projects. The MDT 489 delivers a high capacity with a maximum load of 22 USt (20 t) or 27.6 USt (25 t) and a 262 ft (80 m) jib for broad coverage and reach on the jobsite.

The MDT 489 has been designed for high performance, while keeping the concept of using topless technologies that overlap and avoid collisions on jobsites with multiple cranes, unlike hammerhead tower crane models.

[www.technicalreviewmiddleeast.com/construction/machinery](http://www.technicalreviewmiddleeast.com/construction/machinery)

## Brady offers complete padlock personalisation

A LOCKOUT/TAGOUT PADLOCK is often the last obstacle to prevent a premature machine energisation, and a potential maintenance accident with an impact on professionals and their personal lives. To strongly highlight that Lockout/Tagout padlocks protect people, Brady Corporation now offers PrintFace: a complete padlock personalisation, up to printing coworkers' pictures directly on their padlocks.



*Personalisation can be printed in full colour and high resolution.*

## Five key trends in building net-zero cities

INDUSTRY EXPERTS FROM CallisonRTKL (CRTKL), the global architecture, planning and design firm, have revealed five key trends for the development of net-zero cities in the Middle East and North Africa region. Experts highlight the need to ensure sustainable construction materials, use design processes and tools to enable sustainable construction, implement smart cooling systems, and foster wider industry collaboration as key pillars of further net-zero development in the region.



Photo Credit : Four Communications  
*Five key trends for the development of net-zero cities in the MENA region.*

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

## stc launches 5G SA infrastructure

KUWAIT TELECOMMUNICATIONS COMPANY – stc, a digital specialist in providing innovative services and platforms to customers, enabling the digital transformation in Kuwait, has announced the successful commercialisation step of implementing 5G Stand Alone (5G SA). The milestone is considered to be the second and most disruptive development of the comprehensive 3GPP 5th generation compliant network. stc also accomplished the widest scale of 5G deployment coverage on Sub-3GHz and 2.1GHz amongst other mobile service providers in the MENA region. Besides these two achievements, the company enhanced its infrastructure with the deployment of the most advanced automated Business Support System. Further empowering Multi-Access Edge Computing (MEC) deployment, 5G SA will enable stc to become not only Cloud Native, but Edge Native as well.

[www.technicalreviewmiddleeast.com/it/communication](http://www.technicalreviewmiddleeast.com/it/communication)

“ The centre will offer digital products and services using Fourth Industrial Revolution technologies, such as cloud services, the Internet of Things (IoT) and Artificial Intelligence (AI). Since the new green Data Centre is the largest in the Middle East and Africa, it will enable global hyper-scalers to access carbon-free computing. Moro Hub's green data centre will help customers in their sustainability initiatives to reduce their carbon emissions and become carbon neutral.”

#### **HE SAEED MOHAMMED AL TAYER**

*Managing director and CEO*

**Dubai Electricity and Water Authority**

*(On the new sustainable data centre announced by Moro Hub and Huawei)*

“ Implementation of VAT will impact the finances and day to day operations, and it is important that business owners and entrepreneurs have comprehensive knowledge on the subject. We are relentlessly working towards educating them on the subject and providing right technology so they can seamlessly transition to the new regime. Over the next few months, our aim will be to assist them, in this journey through several such events, knowledge camps, webinars etc.”

*Photo Credit: Tally Solutions*



#### **VIKAS PANCHAL**

*Business head*

**Tally Solutions**

“ With the increasing investment into intelligent buildings and sustainability, the digital ceiling is becoming an important part of modern networking architectures. The myriad of IoT devices that have productive and sustainable use cases built around it are continuously increasing. In today's intelligent buildings it is not uncommon to find thermal cameras, air motion detectors, air quality sensors, temperature sensors, proximity sensors, surveillance cameras, wireless access points, all on the same network and often fitted in the same physical space. The digital ceiling is a solution for this device congestion. Nexans' latest LANactive Digital Ceiling XGigaSwitch DICE, has innovative features including PoE and Gigabit access ports that enables the smooth roll out of the digital ceiling as an integral part of enterprise networking architectures.”



#### **ARAFAT YOUSEF**

*Managing director, Middle East and Africa*

**Nexans Data Network Solutions**

“ This complex project introducing photovoltaic hybrid technology on rooftops and carports of the new Zahid Business Park will showcase SAFEER's capabilities and commitment to excellence and will act as a case study in highlighting the benefits of integrating renewable energy solutions in commercial and industrial settings.”

#### **FRANCOIS GANNEAU**

*Managing director*

**Safeer**

“ Attackers are getting smarter and better than ever at evading detection. The only way to keep pace is with AI-powered automation to analyse and react faster to behaviours and events, coupled with human analysts to correlate multiple suspicious signals and interpret their true meaning. The Sophos adaptive cybersecurity ecosystem is an evolution of Sophos' acclaimed synchronised security approach, and a beautifully elegant solution to a complex problem. The smart ecosystem is engineered to protect the interconnectedness of our businesses and online world, and it couldn't come at a more pivotal time given realities of the past year that forced sudden shifts in remote working and cloud adoption.”



#### **DAN SCHIAPPA**

*Chief product officer*

**Sophos**

“ CallisonRTKL's pursuit of net-zero development across the global architecture sector is demonstrative of the wider climate issues which the world is facing, and how the design and construction industry has to meet its obligations as a sector. Through fostering new forms of industry wide collaboration, we hope to part of that broader conversation on enabling net-zero development that can benefit all.”

#### **MATTHEW TRIBE**

*Principal*

**CallisonRTKL**

*Photo Credit: Sophos*

*The transgenerational nature of UAE family businesses gives them tenacity.*

# Conquering the pandemic

A new report by the STEP Project Global Consortium and KPMG highlights how UAE's family-owned businesses showed resilience during the COVID-19 crisis.

**T**HE PANDEMIC HAS had a long standing impact on businesses the world over, among them some family businesses fared better at dealing with the economic shocks and upgrading themselves with digital transformations to remain in business.

A report from the STEP Project Global Consortium and KPMG Private Enterprise highlights how UAE's family-owned businesses adopted major coping strategies, which have come to play a significant role in the nation's economic recovery.

The study includes insights from nearly 2,500 family businesses and more than 500 non-family businesses around the world, including the UAE. It also highlights the key strategies used by family firms in tackling the immediate impact of COVID-19 on businesses, as well as the wider macro-economy.

The report titled 'Mastering a comeback: How family businesses are triumphing over COVID-19' reveals though businesses in the Middle East and Africa, reported a revenue decline of 84%, compared to 69% globally, majority of the UAE family businesses outperformed their regional peers in saving jobs. The report suggests, multiple generations are currently active in one-third (33%) of the UAE's family businesses, compared to 16% globally.

The transgenerational nature of UAE

family businesses gives them their characteristic tenacity to not just address the economic goals, but also tackle family-oriented issues, such as sustaining the legacy. This combination has affected the ways in which families have reacted and responded to the impact of COVID-19.

Anurag Bajpai, partner, private enterprise and family business leader at KPMG Lower Gulf said, "Family firms in the UAE are embedded in the country's social and economic fabric and are committed to sustaining entrepreneurship. These businesses have exhibited resilience during the pandemic, manifested in strategic actions to embrace all stakeholders during a challenging time. Family businesses have responded swiftly to changing economic realities in order to sustain operations, maintain jobs and preserve long-term economic, social and emotional investments."

Although the Middle East and Africa saw an employee reduction of 20% compared to Europe, which was at 4%, organisations such as the UAE government's Virtual Labour Market assisted companies and employees affected by the pandemic.

The strategy implemented most widely by UAE family businesses was to freeze all hiring. While one-third (32%) of businesses trimmed staff costs, other micro strategies to reduce the financial impact of Covid-19 included office cost optimisation, vendor

contract renegotiation and deferment or reduction in executive pay.

The Virtual Labor Market also supported the recruitment of workers laid off from one company by another UAE-based company, with the objective being- to keep as many people as possible, employed, as revealed by Anurag Bajpai, Lower Gulf Leader, KPMG Private Enterprise, in the report.

Family businesses in the Middle East and Africa also worked collaboratively with external stakeholders (industry and sector groups, suppliers and customers) to deal with the pandemic.

According to Rodrigo Basco, associate professor and Sheikh Saoud bin Khalid bin Khalid Al-Qassimi, chair in family business, American University of Sharjah, family businesses in the UAE experienced an economic slowdown that lasted for several months and increased uncertainty about the future.

Rodrigo tell us that the business families had three-fold strategies- at the organisational level, they incorporated a crisis cabinet to promote family and business resilience, and formulate recovery plans for the family members and the non-family members; at the strategic level, they implemented entrepreneurial actions to sustain their business operations and preserve their long-term economic, social and emotional investments and at a social

## The most implemented actions per macro-category

|   | Global  | UAE                                 | Europe  | Asia Pacific  | The Americas <sup>1</sup>   | Middle East & Africa                |
|---|---|-------------------------------------|---|---|---|-------------------------------------|
|  Employees         | Moving all or some employees to remote status                         | Freezing all hiring                 | Moving all or some employees to remote status | Freezing all hiring   | Moving all or some employees to remote status                         | Reducing employee pay               |
|  Costs/Investments | Cutting office expenses   | Cutting office expenses             | Cutting office expenses                       | Cutting office expenses   | Cutting office expenses   | Cutting office expenses             |
|  Business          | Delaying payment for all or part of vendor bills and loan obligations | Renegotiating vendor contracts      | Renegotiating vendor contracts                | Delaying payment for all or part of vendor bills and loan obligations | Delaying payment for all or part of vendor bills and loan obligations | Renegotiating vendor contracts      |
|  Executives        | Deferring or reducing executive pay                                   | Deferring or reducing executive pay | Deferring or reducing executive pay           | Deferring or reducing executive pay                                   | Deferring or reducing executive pay                                   | Deferring or reducing executive pay |

<sup>1</sup> North America, South America and the Caribbean

Source: STEP Project Global Consortium and KPMG Private Enterprise Global family business report: COVID-19 edition

Photo Credit : KPMG

level, they contributed funds to support the government and the needs of local communities.

"To absorb external shocks brought about by the pandemic, some adjusted their family and business governance structures by incorporating external boards or bringing in a new generation of family members to formulate recovery plans. This was complemented by a shift in their strategic behavior, as they implemented entrepreneurial actions. Family firms' organisational and strategic responses to protect their long-term survival were aligned with their actions to support the UAE government and leadership, as well as addressing the needs of local communities," added Rodrigo.

While family business all over the world streamlined their activities into three categories, including -social responsibility, business transformations and investing capital to understand the full impact of the pandemic; the business families in the Middle East and Africa, seemed more risk averse, and preferred to remain patient, before making a strategic decision.

Alan Barr, national private enterprise leader, partner, KPMG in South Africa revealed that many family businesses opted to look at newer markets as means of coping with the economic slowdown. He said, "The focus that I see right now is one of diversification – not away from the core business, but into new areas that are no longer dependent on one or two sectors or

income streams. They are exploring a wider range of markets and making sure that their products are relevant in the new reality. Families have also recognised that they need to diversify their wealth while sustaining and growing the family business. I have seen several situations in which the family has made the decision not to pay dividends in order to retain their employees' jobs."

He further added, "However, many of those same family members have now realised that they rely on those dividends and that they also need to diversify their wealth in case an unexpected event arises again. With the family's wealth residing in one family business basket, they recognise that they need to consider investing a portion of their money offshore or in alternative investments or in new businesses. The voices of younger generations are playing a larger role in identifying issues such as this and recommending solutions with far more open discussions and views than might have been encouraged in the past."

The report highlighted how an unprecedented event, such as COVID-19, has laid the foundation for longer-term growth prospects among family businesses in the UAE. ■

**"Family firms' organisational and strategic responses to protect their long-term survival were aligned with their actions to support the UAE government and leadership, as well as addressing the needs of local communities."**



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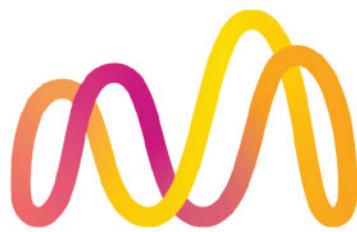
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Major drivers of digital transformation are improved cost efficiency, security and employee safety, among others.

# The digital leap forward

Digital transformation is set to accelerate across the Gulf in the wake of the COVID-19 crisis. Martin Clark tells us more.

IT IS FAIR to say that businesses worldwide have faced unprecedented challenges this past year, triggered by the COVID-19 pandemic and the succession of lockdowns. The disruption does not end there, with technology advances continuing to reshape business processes and patterns across the board. This has long been evident in many of the Gulf region's key industries from oil and gas, power and transport to finance and telecommunications.

In a tech trends report by Software AG, almost all IT directors surveyed said their company went through digital transformation efforts during 2020, with more of the same continuing into this year.

Smart technology and other digital tools are being embedded every step of the way, automating, analysing and accelerating traditional work processes.

And it seems that this is merely the beginning, with the pandemic a dramatic backdrop for a year of innovation and digitalisation in businesses across the globe.

In a recent tech trends report by Software AG, almost all IT directors surveyed said their company went through digital transformation efforts during 2020, with more of the same continuing into this year.

Major drivers include improved cost efficiency and security, employee safety, customer experience and environmental policy.

The Gulf states look set to be at the heart of this transformation as they transition away from a traditional hydrocarbon dependence.

"This is a reflection of the country's emphasis on a digital first approach," said Rami Kichli, the company's vice-president for the Gulf and Levant region.

Of the technologies essential in 2021, IT leaders surveyed in its report listed cloud computing, 5G, artificial intelligence and integration as among the most important.

## More to come

According to Kichli, 2021 will bring the next wave of "hyper-

digitalisation" as enterprises reset goals and adopt agility.

"Regional entities will sustain transformation journeys leaning strongly towards digitising core processes and systems, building resilient operations, driving towards a data-driven decision-making culture," he said.

The events of 2020 and the early months of 2021 were, indeed, revealing in terms of digital resiliency inside many businesses.

Those entities which showcased agility shifted overnight to an almost fully digital world and remained in service while ensuring the safety and wellbeing of employees and customers, the report shows.

Dubai Electricity and Water Authority (DEWA), for example, was able to ensure the continuity of all its services during the exceptional circumstances at the onset of the pandemic because of its state of the art digital infrastructure.

Emirates Airlines and Dubai Health Authority also teamed up to create seamless digital verification of Covid-19 medical records for travellers. It made Dubai one of the first cities to implement digital verification of passenger medical records related to Covid-19.

Likewise, Saudi Telecom Company rapidly implemented a series of initiatives to ensure round-the-clock services during the pandemic.

The finance sector is another example where regional players are rapidly adapting to digital, a trend that the pandemic has only expedited.

## Smart cities

The ongoing digital transformation looks set to be a continuing evolution, however, and not necessarily linked to any future disruptive event like a pandemic.

According to the Software AG report, resilience-building technology is now more important than big bang innovation.

Entities such as the Dubai Health Authority and DEWA, for instance, have long been at the forefront of digital transformation even preceding COVID-19.

*Gulf states are investing heavily in the development of smart cities.*

Photo Credit: Adobe Stock

They are also examples of entities that accelerated technological changes during the pandemic, keeping resilience and self-reliance as the emphasis.

## Private sector companies on board

Schneider Electric and NXN recently teamed up to deliver digital transformation solutions in the Gulf for urban ecosystems, the real estate industry and national smart city initiatives.

Schneider Electric is a global leader in energy and automation, while NXN provides end-to-end smart services for digital transformation in the smart cities sector, now a priority across the Gulf.

The pair will work on developing solutions for smart buildings, districts, cities and large-scale development projects, as well as on initiatives to bring benefits for smart home automation, building analytics, energy metering and management, security, and digital community platforms.

While these moves are technology driven, it also dovetails with the global climate agenda.

"Smart cities are the future of how we will live, both globally and in the Gulf," said Caspar Herzberg, Schneider Electric's Middle East president.

"Cities cover only around 3% of the Earth's land, but they produce around 72% of its total greenhouse gas emissions. We can turn this around and create urban spaces which are both green and smart."

The Gulf states are investing heavily in the development of smart cities, with Saudi Arabia and the UAE widely recognised as global leaders.

Saudi Arabia has embarked on a number of major projects, including the US\$500bn mega-city NEOM and THE LINE, a 100-mile belt of zero-energy communities for a million people.

The UAE has already developed several smart cities of its own, including Masdar City, which has become one of the world's most sustainable urban developments. ■



# Synergies for the future

As economic recovery gathers steam, major projects across the Middle East are reshaping the construction landscape. Fyna Ashwath looks at some latest developments.



Photo Credit : Adobe Stock

**A**S THE MIDDLE East economy shows positive signs of growth after the effects of the pandemic, several construction projects across the region are paving the way for the future.

## United Arab Emirates

The agreement between Etihad Rail and Ras Al Khaimah's Stevin Rock, a major quarrying company, is the first in a series of commercial agreements for Stage Two of the UAE National Rail Network. This will see major organisations based in the UAE connected throughout the Emirates, via Etihad Rail's highly anticipated national railway network which stretches more than 605 km from Al Ghuwaifat on the UAE's border with Saudi Arabia in the west to the port of Fujairah on the eastern coast.

An estimated 3.5mn tonnes of construction material will be 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. The agreement will have significant environmental benefits, with an annual reduction of 100,000 truck trips.

ALEC, Dubai-based main-contractor and BUTEC, a design-build industrial contractor, have announced the launch of a

new joint venture to target the region's utilities, industrial and environmental sector-based projects.

In consolidating its assets, personnel and experience, the joint venture is anticipated to provide a highly competitive offering for projects seeking a cost-effective solution, while retaining the high quality and industry experience required for such undertakings.

Barry Lewis, ALEC's managing director, said, "Our decision to create a new JV with BUTEC stems from a wider industry move to collaborate more closely, particularly on major infrastructure projects, while pooling strengths to provide a faster, more efficient solution for clients. In working with BUTEC, we are capable of adding significant value to the region's future power, water and oil and gas initiatives."

Tony Hanna, general manager of BUTEC, said, "In view of ALEC's extensive experience on major regional projects, such as Dubai International Airport Concourses A & D with the associated rail link and upgrade of Terminal 1, the Dubai Marina Mall and most recently, One Za'abeel, and to BUTEC's strong design-build capabilities in the industrial sectors, this partnership is structured to complement our respective strengths, and to create a stronger value proposition for our clients."

## Kuwait

The construction industry is widely considered to be at the forefront of economic growth and the transformation of modern Kuwait.

Associated Construction Company (ASCO), based in Kuwait, expanded its CDE installation in 2016 with the addition of a second modular washing plant, CDE's M3500, to complement its original investment in the M2500, three years prior in 2013.

Due to rising demand for high quality washed sands for construction, ASCO has now invested in its third CDE solution, adding the M4500 plant to its operation to run alongside its sister plants.

The Kuwait Vision 2035 – or "New Kuwait" – aims to deliver key infrastructure and other major construction projects, all of which will require significant volumes of high-quality washed sand and aggregates and other construction materials produced locally in the Kuwait and Gulf region.

Current developments include The Amiri Diwan's 26-storey Palace of Justice in the heart of Kuwait City; the new 75,000sqm Boubyan Bank HQ which commenced construction in December 2020; projects by Kuwait's Public Authority for Roads and Transport (PART); and the 708,000sqm Terminal 2 at Kuwait International Airport which will have the capacity to accommodate 25 million passengers every year. ■



# The sustainable path.

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# Volvo CE launches EC75D compact excavator

VOLVO CONSTRUCTION EQUIPMENT has launched its latest offering in Africa and the Middle East: the Volvo CE EC75D compact excavator.

The seven-tonne EC75D offers class-leading digging capacity, stability, serviceability and operator comfort for the African and Middle Eastern markets.

The EC75D has a wider and longer undercarriage than many of its competitors, designed to improve stability and lifting capacity along with high ground clearance and an extensive range.

Thanks to a larger size, the compact excavator can also be used with a larger bucket than other machines of the same class, improving productivity where necessary.

With a boom and arm made from high strength steel and fixed to the superstructure at the side of the cab, the unit is built for maximum durability and uptime, as well as improving stability and visibility of the work area.

A superior tractive force allows the EC75D to climb steep gradients with ease and travel over rougher terrains. If ordered with an optional dozer blade, landscaping and backfilling are made easy.

Balance between the torque and swing speed permits the unit to undertake fast and precise placement of the attachment, even when working on a slope.

## Safety and control

The industry-leading Volvo cab is designed to give operators a perceptive view of the work area, with large expanses of glass and



Photo Credit : Volvo

*The seven-tonne EC75D offers class-leading digging capacity, stability, serviceability and operator comfort.*

precise controls to promote an extra degree of jobsite safety.

An alarm sounds upon the machine moving for added safety for bystanders and site workers.

The cab encourages operator productivity, with a spacious and comfortable environment, easy-to-access controls, efficient climate control, and vibration and noise isolation.

A large i-ECU monitor presents machine information and grants operator control, with the operator and service technicians able to make quick visual diagnostic checks.

## Simple servicing

When it comes to servicing the unit, grouped service points and simple access to the engine compartment via the fully-openable engine hood make the process intuitive and easy. Tools and a grease gun can be stored inside a large toolbox located on the right front side. The hydraulic oil level can be seen from inside the cab.

Volvo's EC75D compact excavator has a total operating weight of 7,400kg, an overall width of 2.28m on the upper structure and width of 2.23m on the undercarriage.

## Al-Bahar offers exclusive promotion on SEM Machines

AL-BAHAR THE EXCLUSIVE dealer for SEM-branded heavy equipment in UAE, Oman, Bahrain, Kuwait and Qatar, has announced that it is offering a promotion on its SEM machines to reduce the hassle of owning, operating and maintaining machines.

The offer includes an Equipment Protection Plan (EPP), valid for two years or 5,000 hours, including a Preventive Maintenance (PM) kit for 1,000 hours at no additional costs with every purchase of new SEM machines. Al-Bahar has stated the offer is for a limited-time only.

The Equipment Protection Plan (EPP) is a maintenance and service plan that gives complete peace of mind to owners of

SEM machines. SEM Wheel Loader, SEM Motor Graders, Bulldozers, Soil Compactors, and other types of heavy equipment come with a warranty, giving owners peace of mind upon purchase.

### Models included in offer

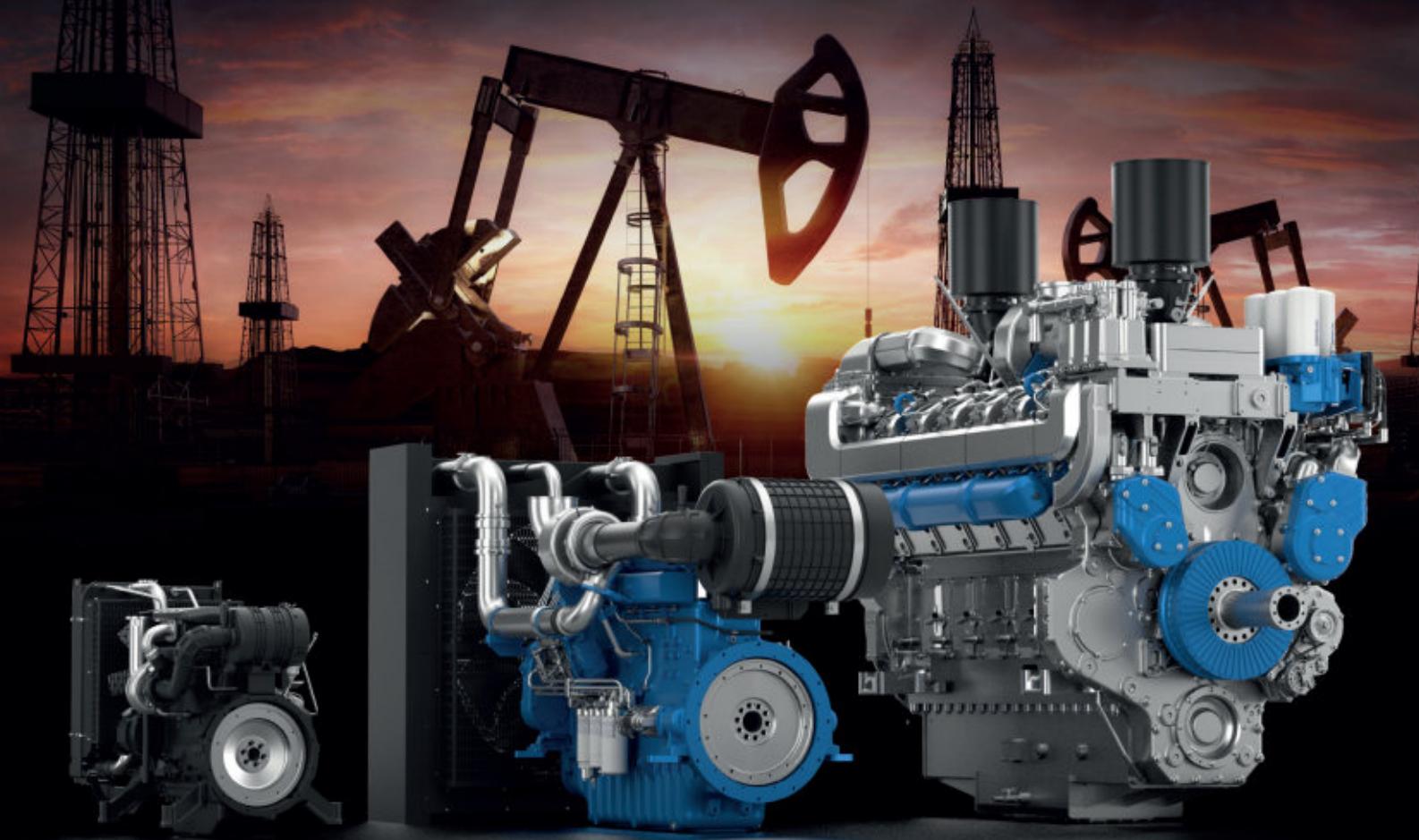
Preventive Maintenance (PM) kits offer regular maintenance and function checks to extend the longevity of machines, with kits containing all original filters and O-Rings that would need to be replaced at various intervals throughout operation.

### Models included in the offer

The offer is included for the following vehicles: the SEM 655D wheel loader,

which includes a Weichai engine and reliable drivetrain; SEM 822 Track-Type tractor, equipped with a hydrostatic drive system and modular radiator, with a wear-resistant undercarriage and semi-universal blade; SEM 921 motor grader, with a 30% larger cabin than similar models, variable displacement piston pump and A-frame tubular design drawbar; and SEM 512 soil compactor, including an advanced vibration system and three-stage alarm monitoring system.

To find out more about the exclusive offer please visit <https://albahar-sem.com/promotions/sem-campaign-2021/>



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# The VSD compressor of tomorrow

Tamer Elgendi, regional business line manager at Atlas Copco Services Middle East, explains how digitalisation is boosting compressor performance.

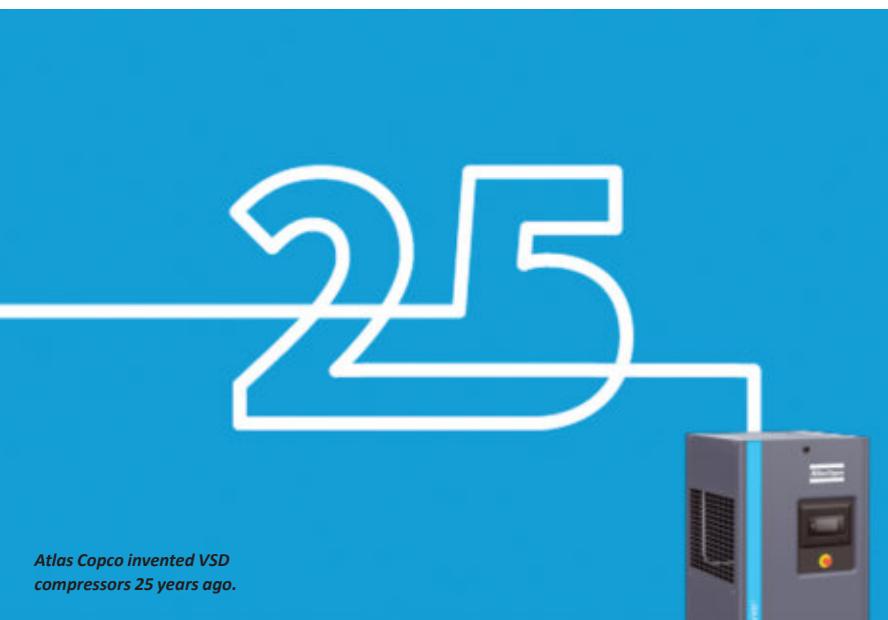
**T**ECHNOLOGY IS EVOLVING faster than ever before in human history. In the blink of an eye, today's new gadget is tomorrow's obsolete technology. Take compressors for example, the entire manufacturing sector is in the midst of a major technological revolution. Whether you refer to it as the Internet of Things (IoT) or Industry 4.0, a move toward connectivity and digitalisation is coming and it will force businesses to either ride this wave of progress or get swept up by it.

The upsides to being at the forefront of this technology are obvious, and the possibilities that connectivity offers will completely change manufacturing as we know it. In the world of compressed air, it is the biggest thing since variable speed drive (VSD) compressors redefined energy efficiency and changed the industry forever. Atlas Copco, which invented VSD compressors 25 years ago, is once again at the cutting edge of this new technology. Now, however, Atlas Copco is no longer "just" building supremely efficient and reliable compressors, it is also utilising new technologies to make its products (as well as production) even more efficient and reliable.

## Total control, total performance

Atlas Copco's VSD+ compressors come with a high-tech Touch controller and the optional SMARTLINK monitoring system. The former is Atlas Copco's most advanced controller yet which features a user-friendly touch screen with state-of-the-art control and monitoring capabilities, such as a delayed second stop, schedules for different weeks, and integrated controls for up to six compressors.

The extremely robust Elektronikon controller, which performs reliably even in tough conditions, ensures that you can maximise the performance of your compressed air system and helps optimise maintenance intervals. In short, it lets you get the most out of your compressors as long as an operator is on site.



Atlas Copco invented VSD compressors 25 years ago.

Photo Credit :Atlas Copco

## Run your compressor from anywhere

By linking the Elektronikon controller to the SMARTLINK monitoring system, all you need is a mobile device and an Internet connection to guarantee that your VSD+ compressor is running optimally. So, whether you are on a business trip or on vacation abroad, you can always keep an eye on things. However, this powerful combo not only lets you control your compressor, it also provides a complete insight into your compressed air network and it alerts you to potential issues before they become problems. It is the perfect example of how modern connectivity tools can lower a compressor's total cost of ownership and increase its uptime.

## Make sure nothing gets lost in translation

Atlas Copco is also a pioneer in using OPC UA communication technology in compressors. By establishing a single 'language' for all industrial equipment, this technology allows all machines to

effortlessly 'understand' each other. And, because security was a top priority in its development and it is encrypted, OPC UA also protects machines from hackers. The use of this technology will also make it much easier to collect data from all of the different machines and optimise operations. Finally, its plug and play installation makes it very easy to set up and facilitates the harmonisation with other equipment. The result of all these features will be a much smoother operation.

As a class A member of the OPC Foundation, Atlas Copco understands that compressed air systems play an important role in achieving the full potential of this technology. That is why the compressed air expert recently released its first series of compressors that speak this universal language. And, in the future, you will be able to retroactively install this technology and enjoy all of its benefits. ■

Learn more about Atlas Copco VSD compressors at [www.atlascopco.com](http://www.atlascopco.com)

# Middle East recovery spells boom for compressors

The compressor market is set to expand as the Middle East economy rebounds from the COVID-19 pandemic.

**A** REPORT PUBLISHED on Mordor Intelligence stated that due to the growing refining capacity of the region, the use of compressors within the oil and gas industry for applications such as extraction, transportation and refining processes will expand. Saudi Arabia, which is rapidly exchanging its power generation from oil to gas, is expected to be the fastest-growing market for compressors. The Middle East and African compressor market is expected to rise at a CAGR of 3.1% during 2020-2025.

Additionally, the construction market within the Middle East and North African regions are forecast to experience a slow recovery after the effects of COVID-19 last year, with initiatives such as the Saudi Arabian Public Investment Fund and projects such as the New Administrative Capital in Egypt on course to ensure construction companies will be kept busy for the next few years. With portable, towable, and heavy duty air compressors a common sight on most construction sites across the world, this will also benefit from the blossoming of building work projected for the region.

With global economies beginning the slow ascent out of the COVID-19 slump, a number of compressor suppliers have moved to take advantage of the promising market outlook:

**“Our key goals for this year include the completion of our Stage V compressor range.”**

## Doosan Portable Power

The portable power business of Doosan Bobcat has announced a new global leadership structure to provide the company with increased efficiencies in terms of operational footprint, product platforms and other key initiatives in order to streamline performance.

Jan Moravec, the newly appointed general manager of Portable Power for Europe, the Middle East and Africa (EMEA) commented, “Our key goals for this year include the completion of our Stage V compressor range with the introduction of a new family of small compressors, enhancing our product offering for MEA markets and to continue to strengthen our dealership network and to fulfill all of our customers’ needs in the EMEA region.”

The Portable Power range from Doosan Bobcat boasts a number of portable compressors for the construction, rental, quarrying and many other industries.

## CompAir

CompAir has introduced new models to its renowned L-Series range of oil-lubricated screw compressors, delivering cutting-edge



CompAir's L06 Tank Dryer.

performance and reliability.

Covering 2.2kW to 7.5kW models, the new fixed speed units are highly versatile and only require a minimum floor space of 60 x 65 cm, with the receiver-mounted models being exceptionally space-saving. From a stand-alone compressor to a complete air station with a high-performance dryer and intelligent control system for low-pressure losses, the systems can help meet a range of individual customer requirements.

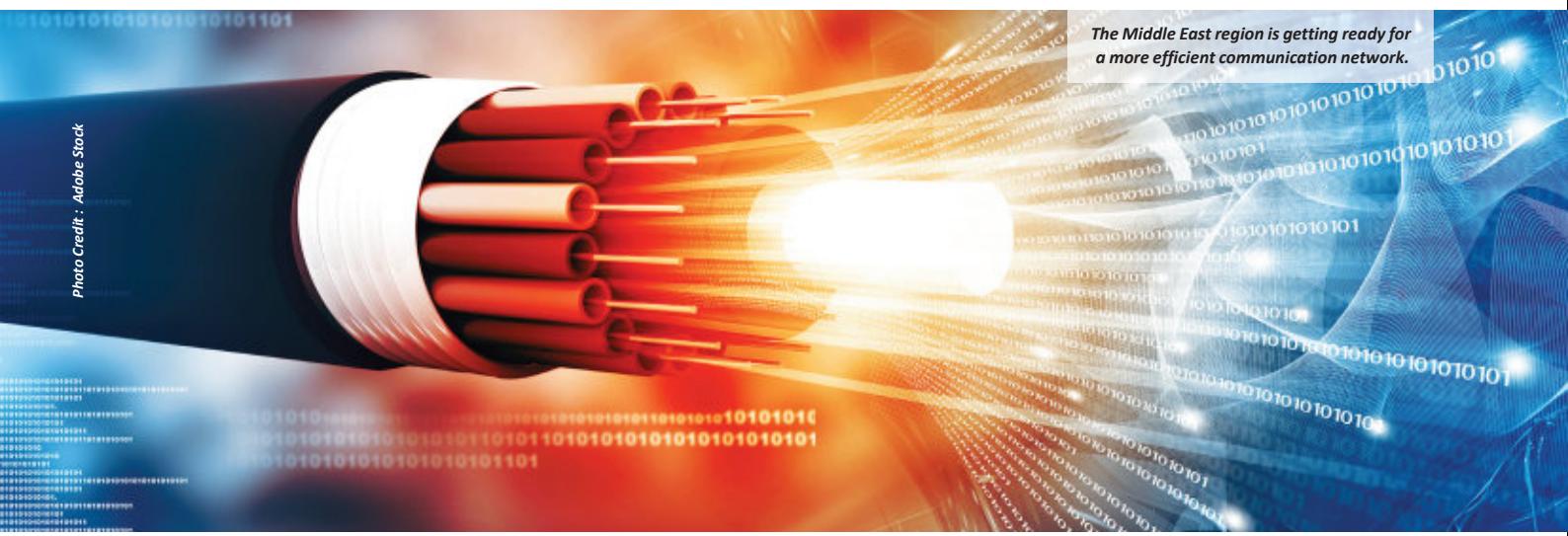
The latest L-Series compressors feature a new C-Pro1.0+ controller as standard, too. Information about pressure, oil temperature and compressor status are provided to the operator together in one display. The controller offers a host of other features too, including a communication port RS485 supporting Modbus. The controller can be used also as a sequencer between two machines with C-Pro 1.0+, continuously monitoring all the critical parameters of the compressor. ■

Photo Credit: CompAir

# Linking through next-gen fibre cable

The use of energy storage solutions and the integration of smart grid technologies to manage the energy demand are expected to underpin the adoption of power and control cable in the Middle East region. Deblina Roy reports.

Photo Credit : Adobe Stock



*The Middle East region is getting ready for a more efficient communication network.*

**S**MART CITY DEVELOPMENT programmes have gained impetus with concerted efforts toward the installation of energy-efficient products and solutions. Major developments are going on to expand the cable market size in the region and link it to Europe and Africa for improved communications set up.

One of the major developments features Alcatel Submarine Networks (ASN) that has started the construction of Africa-1, a new subsea telecom system to connect Africa, the Middle East and Europe. This 10,000-km cable will provide eight fibre pairs to connect Africa and the Middle East eastward to Pakistan and westward to Europe, increasing the available transmission capacity between Asia and Europe.

The Africa-1 system is expected to be ready for operation by end 2023 and will initially have landings in Kenya, Djibouti, Pakistan, the UAE, Saudi Arabia, Egypt and France. The system will further connect other countries in the Mediterranean.

In another exciting development, Telecom Egypt (TE Egypt) is partnering to lay a giant subsea cable between Europe, the Middle East and 16 countries in Africa. Known as '2Africa,' the 37,000-km will be one of the

world's largest subsea cable projects and will significantly expand broadband and mobile networks across Africa and the Middle East. The cable will deliver more than the total capacity of all subsea cables connected to Africa when it comes online in 2023-2024, the statement said.

Participating companies include Facebook, Orange, Vodafone, China Mobile International, MTN GlobalConnect, STC, and WIOCC, and the cable will be constructed by Alcatel Submarine Networks.

In addition to this, TE Egypt will install a new cable linking Egypt and Saudi Arabia across the Red Sea. This will include new landing stations, a cable between Ras Ghareb and Suez and next-gen fibre cables running parallel to the Suez Canal between Ras Ghareb and Port Said.

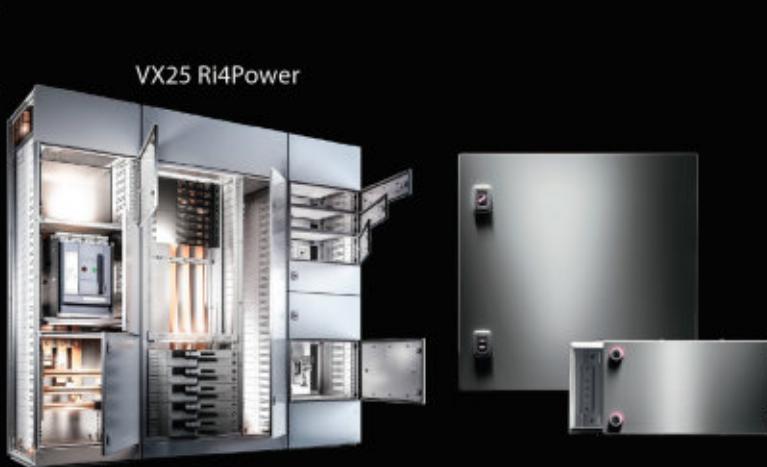
Also, it's not just the new cable linking projects that are connecting the wider regions. In fact, the Middle East is grabbing the attention of investors to build and develop new cable plants as well. In January 2021, Nexans has opened a new cable accessories plant in Morocco. Located in the Nouaceur industrial acceleration zone, known as Midparc, this new Nexans Interface Maroc plant will produce fibre

optic cable connectorisation accessories for Fibre to the Home (FTTH), 5G, data centre and local area network (LAN) applications. This plant is set to enable the Nexans Group to increase its production capacity, while expanding its product range and offering new services to better satisfy its customers: supply chain optimisation services, component pre-wiring and cable connectorisation services. It will serve the European market, as well as the North African market.

Added to this, last year, Arab Organisation for Industrialisation (AOI) and Benya Capital signed an MoU with Suez Canal Economic Zone (SCZone) to build the largest optical fibre cable manufacturing plant in the Middle East and the North Africa (MENA). According to a SCZone press release, the yearly production capacity of the plant is expected to be four million kilometres of cables, while investments would amount to more than US\$63mn.

With all these exciting developments going on across the region, it will be interesting to see how service providers and end users are benefitted and how the influx of funds foster growth for the region's cable market in the near future. ■

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Ronan O'Sullivan, digital lead for ABB Energy Industries IMEA region.

Photo Credit : ABB Energy Industries



# Advancing autonomous operations

Ronan O'Sullivan, digital lead for ABB Energy Industries IMEA region, speaks to Technical Review Middle East on how digitalisation is shaping the post COVID-19 recovery in the energy sector, and accelerating the drive towards more sustainable and autonomous operations.

**T**HERE CAN BE no doubt that the COVID-19 pandemic has accelerated digital transformation, driving the need for remote and automated operations and forcing companies to fundamentally adapt their working practices.

ABB Energy Industries has had to adapt its operations in two key aspects, Ronan O'Sullivan explains.

"One is the service aspect and how we take care of our existing customers. Our service models have had to adapt to difficulties in sending people to sites. We had to overcome that very quickly through some of our digital solutions to connect our

customers in the field with our subject matter experts sitting remotely, or where customers themselves were unable to get to their sites, connecting a subject matter expert sitting in their headquarters or at home. So it has certainly accelerated all the remote connectivity to enable us to provide services for customers.

"On the project side too, we've really had to adapt. Last year we launched Adaptive Execution, a project methodology leveraging years of experience which offers an optimised way of executing projects. So we incorporate our people, SMEs or an expert team that

could be connected globally for a project, we look at the years of project execution, and have streamlined that into our adaptive execution methodology.

"The other part of it involves making more use of our technologies, and making them more modular and more standard, so that we can deploy projects globally in a more efficient and effective way.

"Last and not least, is looking at infrastructure as a catalyst, utilising cloud technology to have remote connectivity project execution on a cloud-based infrastructure, to allow that acceleration of project optimisation as a whole.

"We have brought all these key areas together in our Adaptive Execution."

The uptake from the oil and gas industry has been huge, O'Sullivan comments, as with the current constraints, customers have to use what they currently have in a better way to run their businesses.

"What they have today is data, and the possibility of us connecting remotely. So there's a big acceleration around utilising data in order to run operations more efficiently, and really start moving the industry towards autonomous operations.

"How are we're helping with that? We've got various tools we can utilise from a data perspective, but what's really helped us focus is our launch last year of our ABB Ability Genius platform. That allows our customers to gather data from operational technology, IT and engineering technology, bring that together, contextualise it and be able to drive further value out of that data. That's been a big area of discussion for our customers.

"There's also the data gathering part, and that's where we've launched our Edgenius Operations Data Manager, which can take data from our various plants in a secure and efficient manner to a central location, whether that's a cloud or an on-premise data centre. We're seeing a big uptake on this, from data collection to data gathering, contextualisation and integration, and then applying our machine learning and even our advanced analytics and AI.

ABB has customers at varying stages of their transformation journey, O'Sullivan says.

"Some of our customers are very mature on the digital transformation curve; they already have connectivity to all their data sources, bringing it centrally and visualising it. Now they want to explore what they can do with industrial analytics and AI to drive value within their use cases, and deploy it on the problems they're trying to solve.

"With other customers we're having conversations around connectivity, from the smart sensoring on equipment, to data gathering, to bringing that data into a central location and then getting more into analytics, machine learning and AI."

There is scope to do more, even with mature customers, he says, given that industry analysis indicates that only around 20 to 30% of data is being utilised by customers, whether OT, IT or engineering data.

"Whether it's a customer far along the digital maturity scale or one starting out on their transformation journey, there's an untapped potential. There are a lot of things we could do around that uncaptured

## "Utilising data, utilising AI and then the automation piece; these three combined are the future."

data, even for the customers who are further ahead."

In the Middle East, there are there some good examples of digital transformation driving real value. Abu Dhabi National Oil Company (ADNOC) for example, has complete visibility over its entire value chain through its Panorama command centre, where real-time data from across its operations is centralised, captured, centralised, analysed and incorporated into decision-making, enabling more efficient operations and significant cost reductions. By utilising blockchain, the company has been able to optimise the whole supply chain process.

### Focus on sustainability

Turning to sustainability, an increasing focus for oil and gas companies, O'Sullivan comments that this goes back to the data piece, with real-time business environments providing the ability, for example, to visualise the performance of multiple plants from a smart device, tablet or phone and generate real time data in order to optimise performance across plants. This facilitates decision making in key areas, such as maintenance, addressing questions such as, can we run the plant for six to eight months longer than the scheduled downtime? It provides the ability to make predictions and devise prescriptive maintenance strategies to sustain the plant and equipment long term.

These technologies also minimise the chance of unwanted shutdowns or disturbances in the plant that could cause harm to the environment, or prevent particular processes from being carried out in a sustainable way, he adds.

Enhancing and improving asset predictability and helping customers adapting their end product for various market demands in the current shifting scenario are a current focus.

"Some companies are shifting what they're producing, so we are helping them to put together strategies to deliver an end product that's in higher demand now, for instance," he explains.

### Accelerating automation operations

So how does O'Sullivan see the drive towards autonomous operations playing out?

"Certainly it's going to start with some fundamentals to build up to autonomous operations, and that's going to be a driver around the utilisation of the data, so we're looking at IT and OT data integration, increased automation around our customers' processes, as well as the enhancements of digital twins and AI," he says.

"So utilising data, utilising AI, and then the automation piece; these three combined are the future. We already have use cases where customers want a single push-button start-up of a facility. That requires a lot of automation, a lot of advanced analytics and machine learning, and eventually AI.

"By enhancing automation and utilising digital technologies such as AR and VR the worker in the field can have access to the control system and all the data to enable them to work more efficiently, with visualisation over process areas, equipment conditions and so on, so they have the information to perform tasks in a safe manner.

"It's about more data connectivity, more automation, and the utilisation of AR and VR into the mix. In hazardous areas there will be more use of robotics, both in terms of robotics working side by side with humans but also mobile robotics, performing tasks that will keep humans away from hazardous areas or tedious types of work, enabling them to focus on other aspects of the process.

"So we are moving to autonomous production with data-driven and AI, along with automation and the evolution of digital twins."

In concluding, O'Sullivan stresses the priority ABB attaches to deploying these digital solutions in a cyber-secure way and mitigating the threat of cyber attacks.

"It is critical to ensure that when you're adding in digital solutions and extracting data you are utilising what we refer to as reference architecture, so that these solutions and connectivities are handled to the highest of cyber security standards," he says.

"This is a big priority for us as the industry and our customers evolve towards autonomous operations." ■

# The Middle East to be market leader in renewable and clean energy

Renewable and clean energy will account for 34% of total power sector investments across the MENA region in the next five years, according to research revealed by Middle East Energy.

**R**ENEWABLE & CLEAN ENERGY will debut as the theme for Middle East Energy's inaugural virtual focus week on 17 May 2021, as research from Informa Markets revealed 83GW of renewable and clean energy capacity, mainly solar and wind power, is planned across the Middle East and North Africa (MENA) region within the next 20 years, and more than AED 55 billion (US\$14.9bn) of solar power projects are expected to become operational by 2026.

The figures were highlighted as the Middle East is set to become a market leader in renewable and clean energy due to well-designed auctions, favourable financing conditions, and declining technology costs, all contributing to bringing renewables into the mainstream.

Claudia Konieczna, exhibition director, Middle East Energy, said, "We expect renewable and clean energy to account for 34% of total power sector investments across the MENA region in the next five years. "Naturally, with the demand for new power capacity increasing in the region, one of the hot topics of discussion is renewable and clean energy and how countries are advancing initiatives in this sector. Creating dialogue on this subject is paramount to supporting Middle East Energy's attendees in all future decision-making processes."

In the GCC, the UAE remains a leader in energy transition thanks to a robust pipeline of developments. These include the 2GW Al Dhafra solar power project in Abu Dhabi, which will eventually power 160,000 homes, and the 1.5GW PV3 project, also in the capital.



Photo Credit : Informa

*The conference programme will provide opportunities to learn more about the impact of renewable and clean energy.*

In Dubai, the fourth and fifth phases of the Mohammed bin Rashid Al Maktoum (MBR) solar facility are under development. Once completed, the MBR plant will be the

world's largest single-site solar installation, with a planned total capacity of 5GW when fully operational by 2030.

Putting those figures in context, 1GW is equal to 3.125 million photovoltaic panels. The importance of the renewables and clean sector, and the anticipated growth, was recently underscored in the report: "COVID-19 Impact on Renewable Energy Market – Global Forecast to 2021". The findings revealed revenue generated from renewable and clean energy is expected to increase from AED 675 billion (US\$183bn) in 2020 to AED 829 billion (US\$225bn) in 2021, representing a 22% increase.

"In line with these findings, we have developed a conference programme which provides the opportunity to discuss, debate and learn more about the impact renewable and clean energy will have on the sector as

**"We expect renewable and clean energy to account for 34% of total power sector investments across the MENA region in the next five years."**



## BEARING PROTECTION FOR EVERY INDUSTRY

### Protect your motors against bearing damage

Variable frequency drives (VFDs) are true miracles of efficiency. VFD-controlled motors often save more than 30% energy. They also have other advantages, such as higher machine availability and more precise process control, but their operation can have one serious disadvantage: VFDs also generate voltages on the motor shaft. Electric discharge machining (EDM) can then cause localized corrosion (pitting) and corrugations on the motor bearing.

VFDs can save a lot of money. However, without bearing protection, motor failures can quickly wipe out savings, often in less than three months.

### AEGIS® Shaft Grounding Rings protect motor bearings against damage

AEGIS® Shaft Grounding Rings are already protecting over two million motors against damaging shaft voltages worldwide – safely and over the long term. Well-known manufacturers rely on motors with integrated shaft grounding rings.

AEGIS® Shaft Grounding Rings are available for motors with shafts up to 800 mm in diameter. Full rings or split rings allow simple retrofitting to almost any motor.



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part of our virtual three-day conference," added Konieczna.

The virtual Renewable and Clean Energy sector week, which takes place from 17-19 May, will feature a range of tech talks, industry briefings, case studies, product demonstrations and panel discussions throughout the three-day conference. Ian Williamson, chief, project delivery, Red

Sea Utilities, and speaker on third day leaders panel, Integrating Renewables into Electricity Networks, said, "We will be able to evidence that tourist destinations, even at this scale, can be 100% powered by renewable energy. Eventually nations will have their energy grids powered from renewables and nuclear, but in the meantime, we can achieve 100% renewable

energy for The Red Sea project while staying off grid."

"We started with the ambition of having 100% renewable energy sources for The Red Sea project, and we are delivering on it," he added.

Topics on day one include 'Realising the potential of green hydrogen – will this be the game-changer for the energy transition'. On day two, leading the agenda will be 'Race to net-zero: How will the corporates transition towards the "New Energy" scenario'. On the final day, 'Exploring the opportunities around growing wind sector, in potential regions of UK, Africa, Asia and the Middle East', will take centre stage.

The focused sector week is the first of a four-week series of online events brought by Middle East Energy from 17 May until 9 June 2021, featuring: Renewable & Clean Energy, Transmission & Distribution, Critical & Backup Power and Energy Consumption & Management. ■

*For more information, please visit [www.middleeast-energy.com](http://www.middleeast-energy.com), or to register for the event please click <https://bit.ly/2QXsD5w>.*

Photo Credit : Infoma



*New power capacity is increasing in the region.*

## Valuing long-standing industrial tradition

THE CANTONI GROUP, located in the mining region of Poland, is a pioneer in the production of electric motors. Its products include induction motors recognised globally as safe, reliable and durable, operating in the harshest conditions.

The latest offering from Cantoni Motors is the new series of premium efficiency (IE3) flame proof three-phase squirrel cage motors, designed for the chemical industry.

Such motors are suitable for operation in spaces (zone 1 or 2) where explosive mixtures of combustible gases and steams of liquid with air reckoned group II can occur, classes of the temperature T1...T5.

These motors are certified for group IIC in a complete range (can be used also in case of group IIB and IIA applications). They guarantee high safety level (equipment category 2G) and comply with ATEX directive 2014/34/UE together with harmonised standards IEC 60034-1, IEC 60079-0, IEC 60079-1 and IEC 60079-7.

The company has a wide selection of other explosion proof motors including non-sparking IEC and Class I Div 2 NEMA motors, dust ignition proof IEC and Class II Div 2 NEMA motors, increased safety motors as well as those for the mining industries.

*For further information, please visit [www.cantonigroup.com](http://www.cantonigroup.com)*

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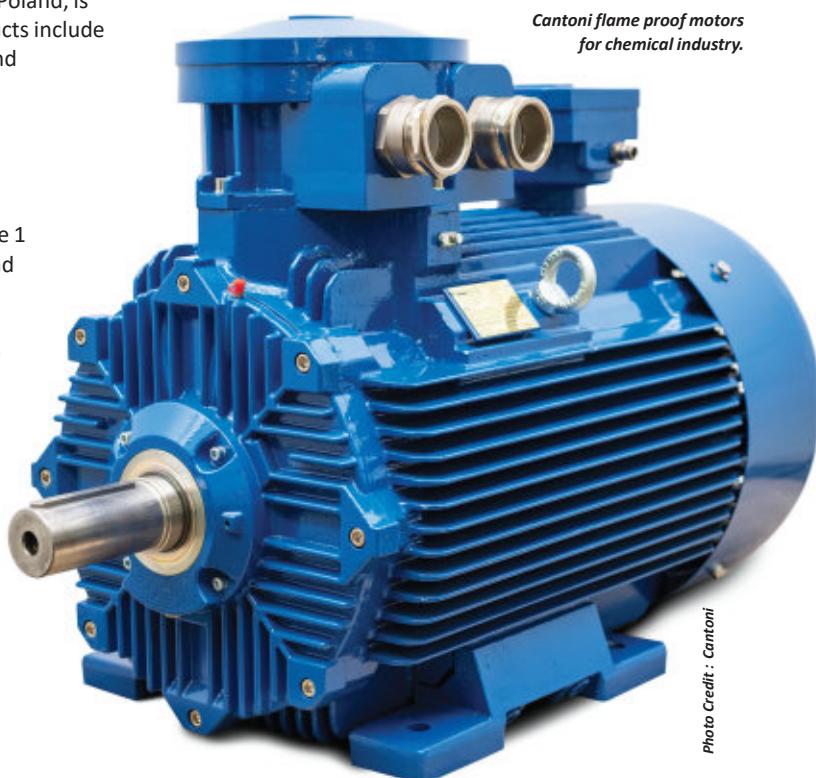


Photo Credit : Cantoni

# Water: the essence of life

GENAQ Cumulus C5000 extracts water from air, ensuring clean drinking water even in emergencies.



**W**ATER STRESS AND scarcity put millions of people at risk every year. The challenge is to transport water to the places where it is needed. Spain-based GENAQ's atmospheric water generators support daily life, industry, and emergency relief. The GENAQ Cumulus C5000 — powered by a generator set driven by PowerTech John Deere 6.8L engine, is suited for the most demanding, extreme and remote sites.

**"It has a double refrigeration circuit, can work with several energy options, and is reliable in extreme environmental conditions of up to 55°C (131°F)."**

## High productivity in extreme conditions

The GENAQ Cumulus C5000 atmospheric water generator has a strong track record of supplying clean, drinkable water in disaster-stricken locations around the world.

It can generate up to 5,192 litres (1,372 gallons) of water per day, depending on conditions. "Large-scale disaster relief, humanitarian relief and defense customers needed a high-productivity solution with a

robust structure and an autonomous power supply," said Carlos Garcia, CEO of GENAQ. "We developed the GENAQ Cumulus C5000 to tick all the boxes, it has a double refrigeration circuit, can work with several energy options, and is reliable in extreme environmental conditions of up to 55°C (131°F)."

The C5000 atmospheric water generator includes an air circuit, condensation chamber, water circuit, electrical connections and control, and water treatment. Integrated in a six-metre (20-foot) container with a 2,000-litre (528-gallon) tank, it is powered by a generator set that is driven by a 6.8L engine.

**Global service offers peace of mind**  
To power the generator set GENAQ turned to the John Deere distributor in Spain, Transdiesel S.L.



Photo Credit : John Deere

The choice of the John Deere 6.8L engine was based on reliability and fuel efficiency — both critical for the emergency situations that require the C5000. "The engine fulfills our clients' top requirements: efficiency, reliability, and low diesel consumption. And so far, it has been performing perfectly," said Garcia.

### Safe, drinkable water for all

Water may cover 75% of the Earth's surface, but only 1% of it is drinkable. GENAQ's atmospheric water generators condense

water vapor in the atmospheric air using a thermodynamic cycle with mechanical refrigeration technology. Air and water treatments eliminate particles in the air and volatile organic compounds in the water. Depending on the conditions — especially temperature and humidity — and the model, GENAQ's units can produce between 50 and 5,000 litres (13 and 1,320 gallons) of safe, drinkable, storable water per day.

"By combining high efficiency with low energy consumption, our solutions lower

the cost per litre of water generated. And the client doesn't have to worry about logistics, waste, or plastic bottles, making our atmospheric water generators a very sustainable choice," Garcia explained. "A six-stage process filters the air and water, while ultraviolet technology and mineralisation enable safe storage. Finally, we do exhaustive quality control of our units to guarantee that the water generated meets the most demanding quality standards."

The C5000 has found a strong customer base around the world, including the United Nations, the European Commission and national governments. Today, it is being used in 36 countries: from oil, gas, and mining applications in Malaysia and Chile to the World Youth Days in Panama and atmospheric water bottling plants in France. And, the C5000 will be supplying water at the 2022 World Cup in Qatar.

"By supporting global efforts to ensure people have access to pure drinking water, the C5000 is helping us achieve our goal of creating opportunities for countries and their societies to embark on a new path, free from water stress," Garcia concluded.

John Deere Power Systems manufactures and markets 30 kW to 448 kW (40 hp to 600 hp) industrial diesel engines and 56 kW to 559 kW (75 hp to 750 hp) marine diesel engines, as well as drivetrain components for use in a variety of off-highway applications. ■



Photo Credit : John Deere



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## Driving efficiency in cable testing and measurement

THE NEW TITRON cable test van from BAUR, is the intelligent system for comprehensive cable fault location, testing and diagnostics.

It offers higher network availability, better quality and optimised equipment utilisation to operators of medium-voltage networks. The test van's technology not only facilitates targeted cable fault location that saves time, it supports cable testing and provides functions for quick and simple cable diagnostics. Failures and unplanned repairs are thus avoided and the assessment of remaining lifetime of cables by asset managers, optimised. This increases certainty in maintenance planning and creates an ideal foundation for making decisions about replacement investments.

The new titron has something to offer the entire company - from measurement staff, asset managers and other technical departments all the way up to the top management, everyone benefits. This has been possible due to the comprehensive redesign based on feedback from operators all over the world. The end results are easier operation and a comfortable mobile workspace, cable fault location supported by numerous tools, time-optimised diagnostic processes thanks to the parallel



*titron cable test van.*

*Photo Credit : BAUR*

performance of dissipation factor measurement and partial discharge measurement, and a high level of customisability of processes so that an individual, company-specific diagnostics philosophy can be implemented. All this ensures consistent results and a straight-line evaluation chain from the cable test van to the executive floor.

The BAUR testing and measurement technology prevents damage to networks and systems, allows for accurate planning of investments for maintenance and locates

faults as precisely and quickly as possible. The titron automatic measurement and test system is characterised by efficient technology and intuitive operation.

BAUR has been making a significant contribution to efficient and problem-free power supply around the world, for more than 75 years.

Its customers include power plant companies, mains operators as well as industrial and service companies around the world.

## IEA predicts record year for renewables in 2021

THE INTERNATIONAL ENERGY Agency (IEA) has forecasted that renewable electricity generation will increase by more than 8% to reach 8,300TWh in 2021. Photovoltaic (PV) solar and wind are

expected to contribute to two-thirds of the growth in renewables electricity generation, according to the IEA in its Global Energy Review 2021 report. According to the IEA, China alone

should account for almost half of the global increase in renewable electricity in 2021, followed by the US, EU and India. The policy deadlines in China and the US resulted in developers completing a record amount of capacity in the fourth quarter of 2020, which led to a significant increase in generation in the first two months in 2021. China is expected to generate 600TWh from renewables, with the US set to generate 400TWh – which combined will represent more than half of global wind output.

While the IEA expects China to remain the largest PV market, it states that the US will see significant expansion as a result of policy support at federal and state level. The IEA also sees a recovery in India's solar market, with PV solar capacity additions falling sharply in 2020 due to COVID-19. The IEA states in its report that long-term contracts, priority access to the grid and the continuous installation of new clean energy plants led to a growth in renewables despite lower global electricity demand and supply chain challenges for projects.



*IEA predicts global increase in renewable energy.*

# Kleemann's new generation mobile jaw crusher

It offers users increased efficiency and a large range of application.

**T**HE NEW MOBICAT MC 110(i) EVO2, from Kleemann, focusing on economy, operability and sustainability provides technologies for optimising all areas of a typical workday.

## Flexible use

Kleemann concentrated on the requirements of demolition and building companies, contractor crushers and quarry operators. With an hourly output of up to 400 tonnes per hour, the new mobile jaw crusher meets the requirements in the medium output range and delivers a wide variety of quarry and recycling applications, where the emphasis is on effective coarse crushing.

## Convincing plant design

The focal point is on optimum transportability and a fast start-up. The transport height was reduced by 20cm to 3.40m. Relocation is now possible with simplified transport by means of semi low-loaders. The start-up procedure itself takes only around 10 minutes and includes set-up times for flaps, belts and feed hoppers.

## Higher availability

A special highlight is a new effective two-stage overload system. It effectively prevents blockages and material bridging that can lead to unwanted downtimes. If uncrushable material enters the crushing process, the CSS opens 2x faster than with the predecessor plant or, as an option, even up to 40x faster. This increases the availability and thus the overall output.

## Optimised operating concept

With the further development of SPECTIVE, Kleemann has set the standards for user interfaces in the sector even higher. This digital operating concept has an intuitive structure and revolutionises plant operation with its extensive features. The 12" touch panel has been optimised with regard to user guidance and visualisation. New



*The MOBICAT MC 110(i) EVO2 is designed for the first crushing stage.*

components such as a radio remote control and a small radio remote control have been integrated in the SPECTIVE world. The new digital solution sends all important plant data to the smartphone.

## Process optimisation

The Continuous Feed System - guarantees a continuous crusher feed and thus a daily output of up to 10% more. The independent double-deck prescreen effectively separates fines before they reach the crushing process. This increases the total plant

throughput and is gentle, for example, on downstream cone crushers in the second crushing stage.

Improved feed behaviour is guaranteed on the one hand by the extra long articulated crusher jaw, whereas a flattened transition to the crushing chamber makes an optimum material flow possible. The accessibility for fast, safe and convenient maintenance has also been optimised.

## Energy efficiency

The improved diesel-direct drive concept is characterised by the economic use of fuel, which minimises operating costs. The power fan guarantees an increased cooling capacity, operates only when required and reduces fuel consumption. With its innovative technologies, the company not only wants to take economic aspects into consideration but also to set standards with regard to sustainability.

The MOBICAT MC 110(i) EVO2 is designed for the first crushing stage and is used in medium-hard to hard natural stone and in recycling. ■

Photo Credit : Wirtgen

**With the further development of SPECTIVE, Kleemann has set the standards for user interfaces in the sector even higher.**

# BKT launches the SKID MAX SR-SKIDDER tyre

The product has been created to equip SKID-STEER loaders used for heavy-duty operations.



*The BKT tyre guarantees optimal comfort for operators who drive these vehicles for long periods of time.*

**B**ALKRISHNA INDUSTRIES (BKT) LTD. is ready to launch its new All Steel radial tyre, the SKID MAX SR-SKIDDER, specifically designed for use in extremely heavy work environments and on hard surfaces. It is ideal to equip skid loader machines used in road maintenance work or in waste material deposits.

In such heavy-duty applications, the tyre requires characteristics that can meet the

**SKID MAX SR-SKIDDER is equipped with a guard which protects against any punctures and impacts which could damage the area around the rim.**



*The SKID MAX SR-SKIDDER tyre*

daily challenges linked to the risk of puncture and abrasion and the ability to transport heavy loads while maintaining perfect stability.

SKID MAX SR-SKIDDER meets these

requirements and offers longer product life as well as high load capacity. The robust casing is equipped with an all-steel structure with steel belts which confer greater resistance on the casing and therefore against aggression, such as, punctures and the penetration by foreign bodies. Additionally, the thickness of the side helps to minimise the risk of punctures and accidental damage and so consequent vehicle downtime.

Further, SKID MAX SR-SKIDDER is equipped with a guard which protects against any punctures and impacts that could damage the area around the rim.

The wide tread is designed with a continuous central block which, in combination with the anti - static and abrasion resistant tread mix, guarantees excellent traction and long product life.

The BKT tyre guarantees optimal comfort for the operators who drive these vehicles for long periods of time. That is why SKID MAX SR-SKIDDER can also guarantee excellent comfort and stability in everyday work.

SKID MAX SR-SKIDDER is currently available in the 260/70R16.5 (10 R 16.5) size. ■

# Accelerating growth in energy industry

AVEVA highlights how energy organisations are undergoing increasing digitalisation to deliver optimised operations.

**A**VEVA, A GLOBAL leader in industrial software, driving digital transformation and sustainability, highlighted how the acceleration of digital is transforming the energy industry in a post-pandemic landscape. AVEVA CEO Craig Hayman, who spoke at CERAWeek 2021, is championing the rapid digital evolution of the energy sector to drive transformative change.

Digital innovation through the use of predictive analytics to better anticipate the future, data to better inform current decisions in the here and now, and digitisation and automation to deliver cost efficiencies and speed is driving renewed growth energy organizations globally.

## New opportunities

Hayman noted that industrial software is, "rapidly enabling and accelerating the energy transition" for diverse industries, as well as supporting the efficiency and viability of the renewables sector. The current pandemic has shown enterprises throughout the world how dependable enterprise operations can be upended almost overnight.

"We are about a year into the pandemic. At the outset, many energy majors focused on CAPEX and certainty and as a result, there was never any room for error. On the OPEX side, teams are looking to reduce expenses without increasing the risk," Hayman said. "We have seen five years' digital acceleration crammed into the space of just ten months as well as a resurgence around giving people the tools to do their job, by harvesting data and predicting when facilities will fail." The key to surviving in this pandemic is how organisations use data to make sure the capital projects are delivered reliably.

Hayman says that the energy sector will undergo a 'wholesale transformation', where trust, partnership and the human journey will be absolutely key. "As an industry, we're at the start of the journey –



there are more transformative behaviours to come as well as silos that need to be broken down," he said. "Even in times of rapid change, energy companies' two most valuable assets remain their people and their data."

"Integrating human insight and operational information including the way that we design, build and run assets can evolve to be more efficient, intelligent and sustainable. We believe that the future mix will be defined by what we call the three Ds: demand, digitalisation and ongoing disruption," Hayman commented.

Industrial technology is key to realising a more resource-efficient value chain and will support circularity as well as enable the transition to renewables and low-carbon energy. Digital tools, powered by human insight, can leverage integrated data and analytics to realize the energy company of the future more quickly and efficiently and that is why AVEVA is working with leading EPCs and owner-operators to make efficient, intelligent operations a reality.

According to IDC, a global provider of

market intelligence, a new era of efficiency and profitability is upon the oil and gas industry as the advantage Internet of Things (IoT) provides to the industry is improving the business productivity and reducing cost, which is a game changer as it creates new competitive advantage. IDC predicts that that IoT investments will rise though partnership with technology companies that have proven solutions to deliver improve efficiency and profitability while combating risk and security threats. The critical success factors are now to deliver value to the business and increase return on investments (ROI). Leadership and corporation need to be established between IoT Vendors and Oil & Gas in order to handle adoption that meets organisational goals.

"As markets continue to evolve, the pace of change will also accelerate, and the possible gains are increasing. Combining information and artificial intelligence with human insight is crucial to optimizing engineering and operations to drive performance intelligence, and support the energy transition," Hayman concluded. ■

# Oman pushes ahead with clean energy agenda

Momentum is building for clean energy developments in Oman in line with Vision 2040 objectives, with ambitious plans for hydrogen hubs taking shape. Louise Waters reports.

**O**MAN HAS BEEN hard hit by the impact of the pandemic and the accompanying fall in the oil price, with its economy estimated to have contracted by 6.2% in 2020, according to the IMF.

Developing renewable energy is critical to reducing Oman's reliance on hydrocarbons and diversifying the economy, as well as reducing greenhouse gas emissions (GHGs). Around 3GW of wind and solar PV projects are at various stages of development throughout the sultanate, with the ambitious target of deriving at least 30% of electricity from renewables by 2030, in line with Oman's Vision 2040 objectives.

They include the 500 MW Ibri 11 solar PV plant being developed by a consortium of ACWA Power, GIC and Alternative Energy Projects Company, which is set to begin production in H2 2021; the 50MW wind farm in Dhofar, implemented by Petroleum Development Oman (PDO) and Tanweer; the Duqm 300MW wind plant, Oman's first utility-scale wind power project, set to commence operations in 2023; two solar IPPs in Manah; 11 solar-diesel hybrid facilities; and the 'Sahim' initiative to install small-scale solar panels on buildings.

Oman's strong renewable energy potential, along with the presence of industrial clusters in its free zones and industrial zones, favours the development of green hydrogen, given the role of hydrogen in decarbonising hard-to-abate industrial sectors. Oman's Ministry of Energy and Minerals announced last year that it is undertaking a feasibility study to devise policies supporting investment in hydrogen technologies, and moves are afoot which could see Oman become a net exporter of green hydrogen.

In January 2020, the Oman Hydrogen Centre was launched at the German University of Technology in Oman (GuTech), as a knowledge centre in hydrogen technology for Oman and the GCC region.

"Oman's geographical position and

geological structure offer the chance to position Oman as a leading global producer and supplier for green hydrogen, satisfying the fast-growing worldwide demand," said GuTech in a statement. "The production, domestic use and export of green hydrogen can be fundamental for the economic future of Oman, and will play a key role for the economic diversification and job creation efforts in the local energy industry and economy in general."

In early May 2021, Ireland-based Fusion Fuel Green PLC, a green hydrogen technology company, announced that it has entered into a partnership with Consolidated Contractors Group (CCG) to develop green hydrogen plants in three countries in the Middle East, one of those being Oman. The green hydrogen demonstrator plants will support local refining and petrochemical companies to reduce their carbon footprint.

In December 2020 OQ and Concessions, a subsidiary of Belgian dredging company DEME, announced the launch of a project to develop a world leading, green hydrogen plant in the Special Economic Zone at Duqm.

"The Special Economic Zone at Duqm provides a strategic and competitive location to develop large-scale green hydrogen production, given its centrality to global trade, the favourable wind and solar resources, the existing large port facilities and the proximity to a booming industrial zone," said DEME in a statement.

The HYPORT Duqm Green Hydrogen Project will significantly contribute to the decarbonisation of the regional industry in Oman, as well as providing green hydrogen and/or derivatives (such as green ammonia) to international customers in Europe. The envisaged electrolyser capacity for the first phase is estimated between 250 and 500MW, following which the upscaling of the installation is on the cards.

His Excellency Dr. Ali bin Masoud Al Sunaidi, chairman of the board of directors

of the Public Authority of Special Economic Zones and Free Zones (OPAZ), commented, "The start of this cooperation between DEME and OQ is important, not only for the project, but towards placing Duqm as a hub in the hydrogen value chain. It complements the recently announced decision of the Public Authority of Special Economic Zones and Free Zones of dedicating 150 sq. km of land for green energy projects in the Special Economic Zone at Duqm, in line with the Oman Vision 2040."

Sohar Port and Freezone has a similar vision, with plans to host a large-scale green hydrogen generation hub powered by solar power plants as part of its strategy to diversify energy sources and become a greener port and free zone, thereby increasing the attractiveness of Sohar as an investment destination. The hydrogen will be used by the port's industries and tenants for clean transport and industrial purposes.

In a whitepaper, the Port's CEO Mark Geilenkirchen, says, "With declining costs for solar PV generation, building electrolyzers at our Sohar location with excellent renewable resource conditions could become a low-cost supply option for hydrogen."

The Port is working in collaboration with the Port of Rotterdam as well as research institutes to identify competitive solutions for the adoption of hydrogen as an alternative to natural gas.

"Scale up will be critical to bring down the costs of technologies for producing and using clean hydrogen," says Geilenkirchen.

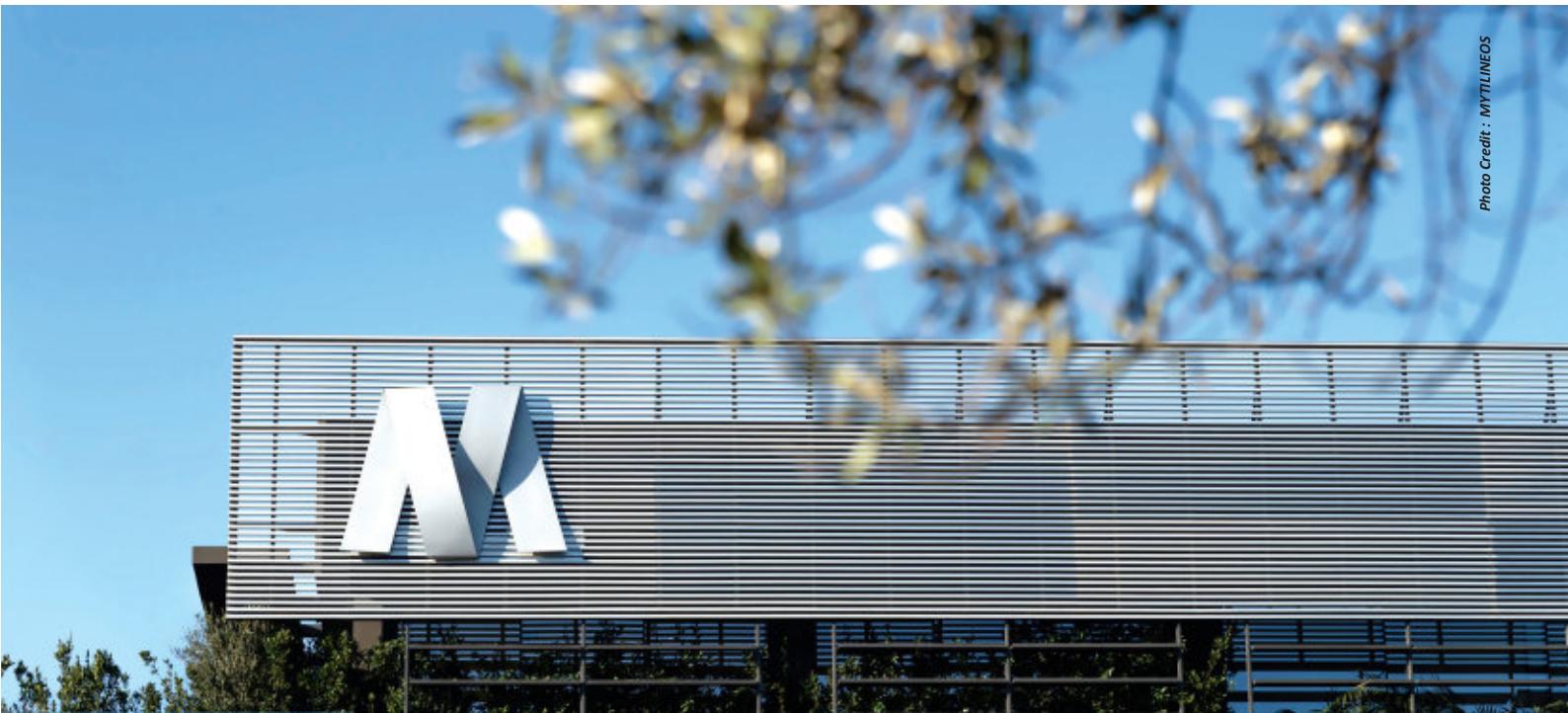
OPAZ plans for solar projects equating to 1GW in Sohar. In January, Shell launched the 25MW Qabas solar plant at Sohar Freezone, Shell's first utility scale solar PV project in the Middle East and Oman. The output is supplied to a large ferrochrome production facility, displacing the equivalent gas-fired power generation and avoiding more than 25,000 tonnes of CO<sub>2</sub> emissions annually. Further such projects will surely follow. ■

# Towards a net zero emissions future

MYTILINEOS is transitioning towards alternative fuels through innovation and openness to change.



Photo Credit : MYTILINEOS



**T**HE CURRENT DECADE is considered one of the most crucial for tackling climate change and many countries have already addressed the issue through the Paris Agreement.

Several companies have decided to switch to alternative fuels in order to achieve their environmental targets. MYTILINEOS, a leading Greek industry active in Metallurgy, Power & Gas, Renewables & Storage and Sustainable Engineering Solutions is such an example. In February 2021, the company publicly committed to reduce its total direct and indirect CO<sub>2</sub> emissions by at least 30% by 2030 and to achieve net zero emissions across its entire business activity by 2050.

## Achieving targets

Adaptability and openness to innovation and change are helpful in such transformation. An example of this is the recent cooperation between MYTILINEOS' Sustainable Engineering Solutions Business Unit with Selcoms, for the exclusive use of Selcoms's

BOOSTplus fuel.

Selcoms is a niche energy management company operating in the UAE and Ireland that has developed unique solutions for fossil fuel consumption reduction. BOOSTplus, the product trusted by MYTILINEOS, is a fuel enhancing supplement that considerably reduces fossil fuel consumption, drastically cutting down at the same time CO<sub>2</sub> and NOx emissions. It is essentially a "bio" fuel booster, consisting of 97% vegetable oil blend without the

addition of synthetic chemicals. It is evident, that the decision to switch to BOOSTplus will offer multiple benefits in every aspect of its activity, as the alternative fuel will be used in all its fossil fuel powered plant equipment and vehicles, bringing the company one step closer to reaching net zero emissions by 2050.

As part of a greener industry, MYTILINEOS also provides innovative and competitive solutions globally. Last December, the company signed an agreement for the Engineering, Procurement and Construction (EPC) of the Protos Energy Recovery Facility project in Cheshire, England, which will treat 400,000 tonnes of non-recyclable waste per year.

This partnership, as well as many others in the industrial sector, are offering new solutions for heavy industry to reduce their impact on the environment and the development of low-carbon energy technologies that can lead to sustainable models to mitigate climate change. ■

**Adaptability and openness to innovation and change are helpful in achieving environmental targets.**

# Project Databank

Compiled by Data Media Systems

## POWER PROJECTS, OMAN

| Project Name  | City         | Facility                 | Budget (US\$) | Status                    | Start date | Completion date |
|---|--------------|--------------------------|---------------|---------------------------|------------|-----------------|
| GCCIA - GCC Interconnection Grid - Oman -KSA Link   | Various      | Power Transmission Lines | 1,500,000,000 | Feasibility Study         | 2019-Q4    | 2024-Q4         |
| OETC - Duqm and Mahout Grid Stations  | Duqm         | Power Grid               | 110,000,000   | Engineering & Procurement | 2018-Q4    | 2023-Q2         |
| OETC - Al Jefnain 400/132 kV Grid Station and OHJs and Misfah Transformers                                  | Al-Jefnain   | Power Transmission Lines | 130,000,000   | Construction              | 2018-Q4    | 2023-Q4         |
| OETC - Nahadah 400/132 KV Grid Station & Overhead Line  | Saih Nihayda | Power Grid               | 50,000,000    | Construction              | 2018-Q4    | 2023-Q2         |
| OETC - North-South Power Grids Interconnection  | Various      | Power Transmission Lines | 750,000,000   | Engineering & Procurement | 2015-Q2    | 2024-Q4         |
| OETC - North-South Power Grids Interconnection - PDO Interconnect at Lines Nahaida                          | Various      | Power Transmission Lines | 120,000,000   | Engineering & Procurement | 2016-Q2    | 2024-Q3         |
| OETC - Saih Al Khairat GS and OHL to Thumrait GS  | Dhofar       | Power Transmission Lines | 140,000,000   | EPC ITB                   | 2018-Q4    | 2023-Q3         |
| OETC - Suwayhat and Barik 400/132 kV Grid Stations  | Barik        | Power Grid               | 102,000,000   | Engineering & Procurement | 2018-Q4    | 2023-Q2         |
| OETC - Suwayhat to Barik and Barik to Nahadah Overhead Lines  | Barik        | Power Transmission Lines | 150,000,000   | Engineering & Procurement | 2018-Q4    | 2023-Q4         |
| OETC - Suwayhat to Duqm and Duqm to Mahout Overhead Lines   | Al Wusta     | Power Transmission Lines | 140,000,000   | Engineering & Procurement | 2018-Q4    | 2023-Q3         |
| OETC - Transformer at the Airport Heights GS and Underground Cable to Ghala GS                              | Muscat       | Power Grid               | 52,000,000    | EPC ITB                   | 2018-Q4    | 2023-Q3         |
| OETC - Upgrade Nizwa and New Izki Grid Station and Construction of New Izki - Nizwa 220kV Transmission Line | Nizwa        | Power Grid               | 100,000,000   | FEED                      | 2020-Q1    | 2024-Q4         |
| Oman LNG - Qalhat LNG Power Plant Expansion   | Qalhat       | Power Plant              | 100,000,000   | Construction              | 2016-Q4    | 2022-Q2         |
| PDO - Lekhwair Combined Cycle Power Plant   | Lekhwair     | Combined Cycle           | 200,000,000   | Commissioning             | 2013-Q4    | 2021-Q3         |
| PDO - Qarn Alam Co-Generation Project   | Qarn Alam    | Co-Generation            | 120,000,000   | Engineering & Procurement | 2018-Q4    | 2021-Q4         |
| PDO - Saih Rawl Combined Cycle Power Plant  | Saih Rawl    | Combined Cycle           | 80,000,000    | Commissioning             | 2015-Q4    | 2021-Q3         |
| PDO - Waste-to-Energy Facility  | Various      | Power Plant              | 100,000,000   | Feasibility Study         | 2020-Q4    | 2024-Q4         |
| Beah - Small-Scale Biogas Power Plants  | Various      | Biofuels                 | 40,000,000    | EPC ITB                   | 2020-Q4    | 2024-Q3         |
| DEME Group - OQ - Hyport Duqm Green Hydrogen Project  | Duqm         | Hydrogen                 | 80,000,000    | Project                   | 2020-Q1    | 2024-Q4         |
| OPWP - North Al Sharqiyah Large-Scale Wind Power Plant  | Al Sharqiya  | Wind                     | 500,000,000   | Feasibility Study         | 2019-Q4    | 2024-Q4         |
| OPWP - Dhofar II Wind IPP (150 MW)  | Dhofar       | Wind                     | 500,000,000   | Project Announced         | 2018-Q4    | 2023-Q4         |
| OPWP - Duqm 300 MW Wind Power Plant (Wind 2023)   | Duqm         | Power Plant              | 1,000,000,000 | Project Announced         | 2018-Q4    | 2023-Q4         |
| OPWP - Duqm Thermal Solar plant   | Duqm         | Solar                    | 500,000,000   | Feasibility Study         | 2019-Q3    | 2025-Q1         |
| OPWP - Solar 2022 IPP - Overview  | Manah        | Wind                     | 800,000,000   | EPC ITB                   | 2017-Q4    | 2024-Q4         |
| OPWP - Solar 2022 IPP (Manah Solar I)   | Manah        | Solar                    | 500,000,000   | EPC ITB                   | 2017-Q4    | 2024-Q4         |
| OPWP - Solar 2022 IPP (Manah Solar II)  | Manah        | Solar                    | 50,000,000    | EPC ITB                   | 2017-Q4    | 2024-Q4         |
| OPWP - Solar 2023 IPP   | Ibri         | Solar                    | 500,000,000   | Project Announced         | 2018-Q2    | 2023-Q2         |
| OPWP - Solar 2024 IPP   | Muscat       | Solar                    | 500,000,000   | Project Announced         | 2018-Q2    | 2024-Q2         |
| PDO - Wind Power Project  | Dhofar       | Wind                     |               | Feasibility Study         | 2018-Q4    | 2023-Q1         |
| Shams Al-Dhahirah Generating Company - Ibri II Solar IPP  | Ibri         | Solar                    | 385,000,000   | Construction              | 2016-Q4    | 2022-Q1         |
| Duqm Power Company - Duqm Integrated Power and Water Project (DIPWP)  | Duqm         | Desalination             | 483,000,000   | Construction              | 2014-Q4    | 2022-Q4         |

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# Enabling data-driven decision making

Sandra DiMatteo, global director of marketing for Digital Twin Solutions, asset and network performance at Bentley Systems, discusses the importance of current and accurate data insights to optimise asset performance and reliability.

*Despite the emergence of IIoT, plants are still people dependent.*



Photo Credit: Bentley Systems

**D**ATA-DRIVEN DECISIONS ARE those that are backed by hard evidence, reliable and trustworthy data rather than intuition, gut instinct, or guesswork. However, the abundance of data that is generated from IIoT devices and multiple siloed sources makes it difficult to analyse. So, how do we know we have the correct information to make the right decision at the right time?

## The tipping point for IIoT

The cost of sensors, data connection, and data storage is now a fraction of what it used to be. As a result, the amount of raw data being generated in plants from IIoT sources is growing exponentially, and many organisations cannot keep up.

Industry 4.0 can connect physical assets in the plant to their digital counterparts to improve the automation of plant operations and maintenance. Using edge computing to implement artificial intelligence and automated rules is a fast and easy way to alert personnel of problems that must be addressed. However, edge computing is still a silo and might not monitor all aspects of every

asset over the long-term, nor understand interdependencies. To fully oversee a facility, a systematic, sustainable approach is needed for tracking asset performance over time with visible, accessible, and trusted engineering data.

## Improving automation

Even with the explosion of sensors that can detect changes in operating conditions, the ugly truth is that plants remain highly people-dependent. To improve automation, plants need an efficient, effective, and comprehensive programme that fully defines organisational and business processes, proactive and predictive asset management practices, and the right technology that enables the implementation and execution of real-time asset performance.

## Challenges in decision making

Data problems include availability – where data simply doesn't exist; accessibility – when data is stuck in departmental silos, and relevance – where the data isn't relatable to the problem.

By not having proper and necessary data in place, making the correct decision seems largely impossible. When the right data has been collected, managed, analysed, and shared- it provides the following advantages to decision makers:

**Goal alignment:** It ensures that goals and targets are met by first identifying the goals and then asking what the data can do to achieve them.

**Confidence:** Users can be more confident about their decisions, once they are backed up with knowledge that are based on facts, procures straight from the trusted information sources.

**Insights:** Diving deep into user data, leads to insight and helps uncover patterns and events that would have otherwise remained undiscovered.

**Real-time information:** With a constant source of real-time or near real-time data, consolidated and analysed from multiple sources, users can keep themselves up-to-date with asset performance, and eliminate late reports and unscheduled events.

**Situational awareness:** With a digital twin, users can see the effects of decisions made, both in the past and in the present, as well as simulate and forecast the future.

**Contextual visibility:** With trusted information, users can bring their data to life. This doesn't just apply to operations and maintenance data, but to design and engineering data; which can transform 2D process diagrams to complex 3D /4D models and reality meshes within digital twins.

Digital twins help users make trusted data-driven decisions with confidence by capturing all asset information sources, improving data quality from CapEx to OpEx, ensuring operational readiness and superior asset performance, lowering operational costs, making information easier to find, ensuring up-to-date information interpreting, managing, and analysing data from one central source, improving the way information is presented and gaining intelligent insights to make fast and accurate decisions.

### Gaining insights

Effective decision-making depends on always knowing the current state and status of the asset, and becoming informed immediately when that state or status changes. This knowledge should include essential engineering information, as well as how to bring the asset back to the as-built, as-commissioned, or as-designed state when necessary.

Asset lifecycle information management is the backbone of the digital twin. Components, structures, systems, and operating states all change over time due to wear and tear, operator decisions, and overall plant conditions. Trustworthy engineering data enables plant engineers to determine why a change occurred and who caused the change.

We know that raw sensor data alone might not be useful as the complexity and interconnections of piping and process equipment, systems, instrumentation, and control devices increase over time. Operations technology relies on analytics visibility as well as subject matter experts that can act based on the massive amount of data being generated. Digital twins can harness that raw data and create a trusted system of systems. They can connect data with processes and identify, consolidate, and analyse all relevant sources to make asset health more visible and drive informed decisions and measurable business results.

The convergence of information technology, operations technology, and engineering technology (or IT-OT-ET) feeds the digital twin. In addition to communicating the current state of the asset, the digital twin can perform operational and engineering simulations to model the performance of an asset over time and



*The convergence of information technology, operations technology and engineering technology feeds the digital twin.*

Photo Credit: Bentley Systems

evaluate options to improve performance. A digital twin environment that is open, interoperable, connected, and contextualised enables true collaboration between engineering, operations and maintenance.

### Digital transformation

Digital twins are transforming plants to keep them ahead of the competition. Everyone from the plant floor to the boardroom needs insights to make more informed data-driven decisions. Digital twins provide a necessary federated view of all necessary systems and data, which gives workers at all levels the insight needed for overall success. ■

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## Briefly

### **Caparol release eco-friendly exterior paint for sustainable projects**

CAPAROL ARABIA, A leading German paint manufacturer, has launched Nano 360, an energy-saving exterior paint with advanced Nano technology specially designed to withstand the harsh Middle East climate and weather.

Nano 360 offers excellent dirt pick-up resistance, outstanding colour retention, enhanced solar reflectance, increased durability and provides long protection for any type of building (up to 5% energy savings and 22% cost savings over the lifetime of a building). The product offers high resistance to soiling particles from the air, algae and fungal attack, hot and humid weather with very high dust and low rainfall. Caparol is so confident in the performance of Nano 360 that they have sought to provide customers with a 25 years' warranty.

In the Middle East, buildings consume in general up to 80% of all electricity generated and much of this is to power air conditioning systems. According to the Max Plack Institute, by 2050 temperatures in the MENA region will be 4°C higher. By the end of the century, daytime highs could reach 50°C, with 200 days of exceptional heat every year.

Mowaffaq Balish, commercial director at Caparol Arabia, said, "Nano 360 strengthens our exterior portfolio. It is a sustainable, energy efficient and cost savings solution that aims to make facades look bright, fresh and vibrant even in the harshest climatic conditions of the region. It is conceived as a futuristic paint reducing the cycles of maintenance to make sure that frequent repainting is not required as the paint stays fresh and vibrant for longer periods of time compared to other paints."

Since the outbreak of global pandemic, sustainability trends have accelerated. As the world enters a recovery phase, governments and businesses are putting more efforts to address environmental crises and challenges. In the midst of the pandemic, Caparol Arabia was already one of the leading companies that introduced products such as CapaCare Protect, a tested and approved solution able to curb the spread of coronavirus and other microbes.

## Volvo Penta targets electromobility innovation

MOST MANUFACTURERS ARE skilled at implementing an internal combustion engine into their driveline but developing a wholly electric driveline is a completely different scenario. To gain a deeper understanding of the challenging journey that Original Equipment Manufacturers (OEMs) must embark upon, Volvo Penta acquired a terminal tractor – an extremely viable product line for electrification – and proceeded to begin with the conversion to an electric driveline in 2015.

The tractor was initially run with its existing diesel driveline, with its performance monitored to provide a baseline for future developments. It was then rebuilt in the same diesel-electric parallel hybrid configuration used in Volvo's hybrid buses. Simulations of different drive cycles were performed on this diesel-electric parallel hybrid version of this tractor. This testing eventually confirmed a 30% increase in efficiency over a typical operation cycle.

The tractor was then converted to fully electric using electromobility technology from the Volvo Group, namely the batteries and a pair of electric motors connected to the gearbox. The packaging solution of the driveline was also adapted to the terminal tractor design to accommodate space restrictions.

The tractor with the electric driveline was first exhibited at TOC 2019, and the following year Austrian OEM Rosenbauer announced that it would be using it in its forthcoming municipal fire truck, RT Revolutionary Technology. This electric fire truck was purpose-built to take advantage of the new technology, enabling major enhancements in terms of lowering its centre of gravity and improving access for firefighters carrying heavy equipment.

Once Rosenbauer's electric fire truck goes into



Peter Brankell, application engineer at Volvo Penta's Industrial Electromobility business.

production this year, the terminal tractor will continue to play a key role as a test platform for Volvo Penta to adapt its electromobility portfolio to future vehicle partnerships. The combination of components can remain generally unchanged, just leaving the inevitable software and wiring changes to meet new demands.

Peter Brankell, application engineer at Volvo Penta's Industrial Electromobility business, commented, "Although fully electric terminal tractors are already on the market, they are a first-generation product. But most OEMs would prefer to work with an experienced driveline supplier offering the entire 600V system along with superior safety, reliability, and exceptional aftermarket support. Aside from the active cooling unit for cooling the batteries and the cabin, the majority of components are existing Volvo Group components – so by the time an OEM is ready to begin production, we'll have several thousand vehicles on the road."

## Hyva cranes arrive in Saudi Arabia

HYVA, IN PARTNERSHIP with Alaa For Industries (AFI), has delivered 45 cranes in Riyadh. The Hyva HB 50 and HB 60 cranes will be part of a fleet of several cargo handling commercial vehicles throughout the Kingdom of Saudi Arabia.

Hyva's HB series of articulated cranes are extremely versatile and easy to operate. With a maximum outreach of 11.90m and a maximum lifting capacity of 6,580kg, the HB60 model is the ideal solution for robust versatile applications.

Mohammed Ali Al-Khayyat, general manager at AFI, commented, "This is a very important order. It is significant in size, and, most importantly, it recognises the quality of the Hyva brand and the premium service reputation



Hyva and AFI have been partners since 1984.

that our customers recognise between Hyva and AFI. We have an extensive network of satellite offices around the country which offer true value to our customers as well as a convenient and fast service to customers to help keep their operations running smoothly."

# Ariston ME applies hybrid energy solution in Jeddah and Riyadh projects

IN ORDER TO contribute to the sustainable growth strategy, Ariston Middle East Group is planning to save 3,400,000 tonnes of CO<sub>2</sub> equivalent by 2022, through innovative technologies, with the group's main brand Ariston being the major contributor to this goal.

Ariston ME has contributed its expertise in solar energy and hybrid solutions to some prestigious projects in Saudi Arabia, the Ministry of Interior in

Jeddah being one of them. The main building of the Ministry of Interior office of Saudi Arabia which has multiple offices has hot water requirement. Ariston has installed solar systems that will supply 3,257 l/day at 60°C with a solar contribution of minimum 60%. The British School in Riyadh has also opted for installation of solar panels to generate hot water leveraging the option to tap sustainable resources and reduce energy cost at the same time.

The added advantages of a full-fledged service network, top quality and the famous Italian design have secured Ariston projects like Ikea, Riyadh, hotels such as the Aqua Rafal in Jeddah, Holiday Inn VOCCO Towers in Dammam, Ansar and Al Madina in Madinah.

Housing estates all over the country are also fitted with Ariston electrical heaters. Recent projects include La Palma 2, Dari Quraish in Jeddah and Neom engineers housing project. Other customers in the country are Prince Abdullah Al Faisal Stadium, Taif University and Tamim Farms.



Solar panels being used for hot water in buildings.

## Briefly

### Kohler unveils durable steel generator canopy

POWER SYSTEMS SUPPLIER Kohler has launched its M139 generator canopy. It offers the highest levels of anti-corrosion performance, making it suitable for use in harsh outdoor environments in markets such as Africa and the Middle East.

The M139 integrates powers from 165 kVA to 250 kVA. It completes the redesign of canopies for Kohler's industrial range, with the previously released M137 and M138 covering 22 to 130 kVA.

The canopy is made from aluminium-zinc coated steel, which provides superior protection against corrosion compared with standard galvanised steel. Tests at the French Corrosion Institute near Kohler's headquarters in Brest, northwest France, showed that the M139 continued to provide resistance up to 1,500 hours in a climatic chamber under salt spray conditions.

The design of the M139 has also resulted in the removal of certain welds, eliminating water traps that can accelerate the spread of rust.

"The M139 canopy integrates generator for prime and back-up electricity production in global markets, and it will find application in a broad range of small industry and retil settings," said Kevin Bougault, product manager, Small Diesel Range at Kohler.

"Durability was a crucial factor from the outset," said Baugault.

Other design advantages include grooved sheets to provide additional structural solidity of the canopy, therefore reducing vibration.

The M139 also comes with a chamfered roof and plastic finishing on the corners, providing additional protection.

Day-to-day practicality was also an important consideration. The M139 features a door at the front and a double-sized panel on the side for ease of access for maintenance teams. An oculus on the door provides clear visibility of the generator control panel.

The M139 will be offered to global markets through an extended distribution network, providing delivery within two weeks.

For more information, visit: [www.kohler-sdmo.com](http://www.kohler-sdmo.com)

## SABIC, NUDEC partner to introduce renewable polycarbonate

### CHEMICAL MANUFACTURING COMPANY

SABIC has announced a collaboration with NUDEC, a manufacturer of clear plastic sheets for numerous industries such as construction, personal and machinery protection.

NUDEC, based in Barcelona, Spain, will be using SABIC's LEXAN polycarbonate (PC) resin based on certified renewable feedstock in several end applications for these industries.

"We are delighted to collaborate with NUDEC to introduce our certified renewable polycarbonate into the building and construction sector, helping to create applications that are made to last, and are produced more sustainably," said Abdullah S. Al-Otaibi, ETP and market solution general manager at SABIC.

"Our certified renewable materials have a lower carbon footprint and are made to the same high specifications and properties as virgin products,



NUDEC to use SABIC's LEXAN polycarbonate resin.

while still acting as a drop-in solution. This is a great example of how we are committed to innovating and working with partners to change how plastic is made and used, by collaborating across the value chain to create a circular economy where we use our natural resources wisely and responsibly," he added.

"NUDEC is the first in the plastic sheet industry to offer an alternative for our customers to keep up with the trend towards more sustainability in the

development of polycarbonate sheets," said Joan Antoni Enrich, CEO at NUDEC. "Our vision focuses on sustainable development with great respect for the environment. To achieve this, our challenge is to increase our product range with solutions containing a certain percentage of raw materials coming from a renewable source, as well as the implementation of new norms and actions to help improve our environmental footprint."

وقد بدأت بعض تطبيقات الطاقة في أن تصبح قابلة للتطبيق تزامناً مع هذه التكاليف المنخفضة، وبحلول عام 2030، تظهر التوقعات سعراً تقديره يبلغ 62 دولاراً أمريكياً للكيلوواط / ساعة ». وقد أدى ذلك إلى نمو سوق تخزين الطاقة بشكل كبير، مقرروناً بالدفع نحو نزع الكربون بالكامل في صناعة الطاقة.

كما شارك ريبا رأيه بأن جدوى إنشاء محطة هجينة مع إمكانية التخزين تتطوّر أيضاً على تحقيق الدخل وليس فقط تحكيم الطاقة، ولكن أيضاً خدمات الشبكة والسعفة، والتي تعد من الاعتبارات الرئيسية في النموذج المالي، ويجب أن تساهم على الأقل بنسبة 70% في المائة من إيرادات التخزين. ومع ذلك، تتطلب إدارة تلك المحطة تنظيم التطبيقات وتحسينها للجمع بين التوفّر والاستخدام.

وتتابع ريبا قائلاً: «إن تدهور نظام تحويل الطاقة له تأثيرٌ كبيرٌ على النموذج المالي ويُتطلّب إدارة العوامل الرئيسية، مثل معدل C وحالة الشحن وعمق التفريغ، والتي تؤثّر بدورها على إنتاج المحطة. ونظراً لأنّ موارد التوليد أو طاقة الرياح أو الطاقة الشمسية لها ثقلٌ أساسٌ في جدوى المشروع، يعتبر التحدّيد الدقيق للموارد أمراً بالغ الأهميّة. ولا يمكن تحقيق معظم المشاريع ذات التخزين إلا للشركات التي تتمتع بإمكانية الوصول إلى تكلفة رأس مال منخفضة من خلال حقوق الملكية أو ديون الشركات مع التكلفة الحاليّة للتخزين (CAPEX) والشكوك التي تواجهها العديد من المشاريع فيما يتعلق بإدارة الآليات التعويضية».

التي يجب مراعاتها في هذه المنطقة. فمن منظور قانوني، هناك مجالات مختلفة يجبأخذها في الاعتبار في أي مشروع للطاقة المتتجددة. ففي البداية، يجب أن يتم النظر في المخاطر المتعلقة بالبلد ذاتها ومعرفة ما إذا كانت هذه الجولة هي الجولة الثانية أو الثالثة من ذلك البرنامج.

فمثلاً لديك دولة مصر والأردن والإمارات العربية المتحدة وال سعودية أنجزت عدداً من هذه المشاريع في الوقت الراهن. ولذلك يتم تسوية ملف تعريف المخاطر في وثائق العقد من المنظور المتعلق بالتمويل.

وتحتاج إلى التأكيد من أنّ الطرف المقابل لاتفاقية شراء الطاقة يتمتع بقدرة مناسبة، كما تحتاج إلى التأكيد من أنه يمكنك إخراج أموالك من البلد في حال ما إذا كنت مستثمراً دولياً. وبالنسبة لمجموعة المستندات القانونية، فمن الواجب أن تجتهد لضمان حصولك على الأرض المطلوبة والمواقف اللازمّة لبناء الأصول الخاصة بك وتشغيلها وإيقافها». ثم عرج ليناقش اتفاقية شراء الطاقة، والأعمال الهندسية والمشتريات والبناء واعتبارات التشغيل والصيانة وتأثيرها على المشاريع في المنطقة.

وقد بحث خوسيه خابير ريبا، مدير إدارة تطوير الأعمال في أوروبا والشرق الأوسط وإفريقيا وأمريكا اللاتينية في شركة «يو إل»، ظهور تقنيات تخزين الطاقة كحلٍّ رئيسيٍّ للدمج الفعال للطاقة الشمسية وطاقة الرياح المتتجددة في أنظمة الطاقة العالمية. وقال: «تم تخفيف تكلفة بطاريات الليثيوم أيون بشكل تدريجي، مدفوعة بشكل خاص بالطلب الزائد في سوق السيارات الكهربائية.

ويعتبر التقييم الدقيق للمخاطر في مراحل التطوير والتخطيط ودراسة الجدوى أثناء تطوير المشروع، أمراً بالغ الأهميّة لنجاح المشروع. ويجب تحديد جميع المخاطر والتخفيف من حدتها بأسرع ما يمكن لتقليل أي تأثير على تكاليف المشروع وحالات التأخير. كذلك استعرض باراندالا الأنواع المختلفة للأنظمة التي تشمل التصاميم أحاديد الوجه مقابل تصاميم ثانية الوجه والأنظمة الكهروضوئية العامة، مع الأخذ في الاعتبار اتجاهات التكنولوجيا الحالية والمستقبلية.

وتشمل المخاطر المحتملة، المرتبطة بمرحلة بناء المشروع، الخدمات اللوجستية والتأخير ونطاق تنفيذ العقد ومراقبة عمليات البناء. كما حدد باراندالا المخاطر التشغيلية المحتملة التي تشمل عمليات الإنتاج التي تقلّ عما هو متوقع، والنفقات المرتفعة، والإيراد غير الكافي، والأضرار الهيكليّة.

وقال: «تمثل الرسالة المحورية في أنه من الأفضل تحديد أي مسائل من شأنها أن تشكل خطراً بأسرع ما يمكن. ويمكن تقليل العدد من المخاطر والتخفيف من حدتها في البداية، وذلك من خلال تطبيق أفضل الممارسات الهندسية، واستخدام مجموعة مميزة من المكونات، واستخدام التعريف التقني والقانوني الأمثل للعقود، وتوفير التحقق المستقل لبناء المشروع للتأكد من اضطلاع طرف مستقل، غير قابع لمقابل الأعمال الهندسية والمشتريات والبناء، للأعمال ويبحث مقاول الأعمال الهندسية والمشتريات والبناء إنها العمل بأفضل جودة و بما يتماشى مع المتطلبات التي تم الاتفاق عليها في العقد».

وأفاد باراندالا أيضاً بأن الإشراف الشامل خلال مرحلة البناء يساعد أصحاب المصلحة في تحديد المخاطر المتعلقة بعمليات البناء والتخفيف من حدتها. واختتم بالقول إن تعريف مؤشرات الأداء الرئيسية واطهار والأنشطة الصحيحة أمرٌ بالغ الأهميّة لإزالة أي مخاطر عند اكمال المشروع.

وقد شارك إيوان والترز، شريك ومدير إدارة الطاقة النظيفة في منطقة الشرق الأوسط وشمال إفريقيا في شركة أفرشدز سازارلاند، في إحدى حلقات النقاش حول عملية البحث المعمق، ما يُعده الاعتبارات الرئيسية عند الاستثمار في مشاريع الطاقة المتتجددة، وقال: «هناك عددٌ من الاعتبارات

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تبرز الطاقة المتجدددة كعنصر حاسم في الانتقال إلى الطاقة المستدامة في المنطقة

## الاستفادة من إمكانات الطاقة النظيفة

تبرز الطاقة المتجدددة كعنصر حاسم في الانتقال إلى الطاقة المستدامة في منطقة الشرق الأوسط وإفريقيا. فقطاع الطاقة المتجدددة يشهد - حالياً - تطوراً سريعاً مواكبة الطلب المتزايد على الطاقة والأهداف الطموحة التي وضعتها الحكومات والمنظمات في المنطقة، في خضم التسابق لتحقيق صافي انبعاثات كربونية صفية. فالاستثمار في الطاقة المتجدددة يتزايد في الواقع الحالي. فقد أصبح العديد من البلدان في منطقة الشرق الأوسط وإفريقيا من الدول الرائدة عالمياً في مجال تطوير حلول الطاقة النظيفة.

الشمسيّة لأوروبا والشرق الأوسط وإفريقيا وأمريكا الشماليّة وأمريكا اللاتينيّة في شركة «يو إل»، عرضاً تقدّميّاً حول تطوير مشاريع الطاقة الشمسيّة الكهروضوئيّة على نطاق امتداد في منطقة الشرق الأوسط وإفريقيا، مع التركيز على تقليل مخاطر المشروع في كل مرحلة من مراحل التطوير.

- بشكل ناجح - من إمكانات الطاقة النظيفة، وكيف يمكن للأصحاب المصلحة تخفيف المخاطر في كل مرحلة من مراحل تنفيذ المشروع أثناء عملهم على تحقيق الأهداف الخاصة بهم للحصول على الطاقة المستدامة.

فقد قدم دانييل باراندالا، استشاري الطاقة

خلال القمة المنعقدة برعاية شركة «يو إل» حول الطاقة المتجدددة في الشرق الأوسط وإفريقيا، والتي استمرت مدة يومين في شهر مارس/آذار المنصرم، بحث فريق من الخبراء في الشركة والمؤسسات الرائدة في مجال الطاقة المتجدددة في منطقة الشرق الأوسط وإفريقيا كيف يمكن للمطورين الاستفادة

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