

TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

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Annual Power Review 2021

ANNUAL POWER REVIEW 2021

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Accelerating the energy transition

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EDITOR'S NOTE

A NUMBER OF developments and collaborations are driving growth across the region's power sector. Our Annual Power Review takes a look at some significant projects underway, on pages 16-18. Green hydrogen projects, especially, are gaining a lot of popularity, as highlighted in the Middle East Energy exhibition, as well (p29). Digital technologies are helping the sector improve efficiencies (p20) and making smart cities safe and sustainable. Our Annual Buyers' Guide offers a comprehensive guide to the region's power industry (p36).

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



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TECHNICAL REVIEW

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MIDDLE EAST

SERVING THE REGION'S BUSINESS SINCE 1984

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

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

Printed by: Buxton Press **Printed in:** June 2021

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

Arabic Typesetting: Lunad Publicity, Dubai

© Technical Review Middle East ISSN: 0267-5307

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Serving the world of business

Briefly

Moro Hub joins forces with Trend Micro for digital transformation

MORO HUB (DATA Hub Integrated Solutions LLC), a subsidiary of Digital DEWA, the digital arm of Dubai Electricity and Water Authority (DEWA), has signed a managed service provider agreement with Trend Micro, a global leader in cybersecurity solutions.

This is expected to enable Moro Hub to provide cloud workload protection services to its customers and accelerate their digital transformation journey.

The agreement was signed between Marwan Bin Haidar, vice-chairman and group CEO of Digital DEWA and Majd Sinan, country manager, Trend Micro UAE.

“Our cooperation with Trend Micro will enable Moro Hub to provide customers with the best locally hosted, unified security management services that accelerate compliance and secure workloads hosted in hybrid and multi-cloud environments,” according to Marwan Bin Haidar.

“The alliance will be of particular importance as several organisations have been challenged by the increasingly complex and rapidly changing tactics of savvy cyber adversaries in the last few years due to the digital influx. The new service will empower Moro Hub customers with top-of-the-line security and offer them compliance tools to safeguard new and existing cloud resources. This will help us to offer innovative and competitive digital technologies in the region, which is in line with Dubai 10X and UAE Centennial 2071,” said Marwan Bin Haidar.

Majd Sinan, country manager, Trend Micro UAE, added, “This partnership ensures organisations can secure workloads and guarantee compliance so that enterprises can grow their business without worrying about security issues. Together with Moro Hub, we shall protect the UAE’s enterprises as they build more competitive business operations in the cloud.”

Moro Hub, offering next-generation digital and cloud services, has certifications from top accreditation bodies.

Masdar City attracts global and regional innovation giants

MASDAR CITY, THE sustainable urban development in the UAE’s capital, Abu Dhabi, will play a major role in the global green recovery from COVID-19, as it continues to add sustainability-focused innovation and technology companies.

The number of companies in the City’s free zone increased 26% in 2020, indicating the important role of the City and its offerings to innovation-led companies, including G42 Healthcare, whose laboratories and testing centres were central to the UAE’s pandemic response.

“The UAE leadership has made a longstanding commitment to progressive climate action and recognises the integral part that innovation plays in advancing the global green recovery,” said, Abdulla Balalaa, executive director, Masdar City.

“The COVID-19 pandemic has further underlined the links between public health and climate change. Now more than ever, we see the critical importance of the green recovery. It is the only way forward to drive sustainable development, and facilitating innovation in key sectors is a fundamental aspect of this journey, one that we are helping to lead at Masdar City.

“The UAE also has in place a National Strategy for Advanced Innovation which is focused on devising innovative solutions in the health, transportation, water, environment, and space technology. This vision is at the heart of Masdar and the reason that Masdar City was developed as a ‘greenprint’ of sustainable urban living and a center for R&D, innovation and technology. The work being done by companies in Masdar City to develop transformative technologies, is not only preparing for the future, but is creating it, while simultaneously supporting

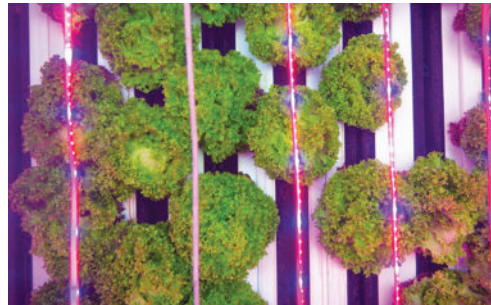


Photo Credit : Masdar City

The development of startup businesses is a major focus for Masdar City.

the UAE’s goals of driving sustainable and positive change,” Balalaa concluded.

Masdar continues to welcome new partners

Despite the challenges presented by the COVID-19 pandemic, Masdar City has continued to welcome new partners, including high-tech sector drivers, the Advanced Technology Research Council (ATRC), which shapes the R&D strategy in Abu Dhabi, alongside its pillar entities, the Technology Innovation Institute (TII) and ASPIRE, and will continue to welcome regional and global partners in the coming months.

“The UAE has strategies in place that will support the development of industrial small-to-medium enterprises and enable them to play a greater role in the country’s transition to a knowledge-based economy. The city provides a very unique offering that includes education, R&D, technology, and innovation, all within a strategic base through which companies can test new technologies and build their partnerships,” Balalaa added.

Mitsubishi Power expands presence in EMEA

MITSUBISHI POWER, A global leader in gas turbine technology, has expanded its operational footprint across EMEA with the establishment of a Gas Turbine Combined Cycle (GTCC) EMEA Business Unit headquartered in Dubai, UAE.

The new business unit is focusing on the sale of the J-Series Air Cooled gas turbines which boast world-class reliability of 99.6% and efficiency of greater than 64%. Capable of operating on a mixture of up to 30% hydrogen and 70% natural gas, the turbines can be increased to 100% hydrogen in the future. This efficient energy generation technology can play a crucial role in helping countries across the EMEA region meet ambitious net zero carbon emissions targets.

As part of this expansion, Khalid Salem, president of Mitsubishi Power Middle East,



Photo Credit : Mitsubishi Power

Khalid Salem, the new GTCC Business Unit leader for EMEA.

and North Africa will take on a new role as the GTCC Business Unit leader for EMEA. Additionally, Jose Aguas, who has more than two decades of experience in the power generation industry, has been appointed vice president of GTCC Sales, EMEA.

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Largest private solar plant at the Bahrain Mall

MAJID AL FUTTAIM, a leading shopping mall, retail, and leisure pioneer across the Middle East, Africa and Asia has signed a 6.2 MW-peak solar power purchase agreement with Yellow Door Energy, a leading solar developer in the Middle East and South Asia.

The agreement will bring clean energy to the Bahrain Mall, operated by Carrefour Bahrain, and will be the largest private solar plant in the Kingdom of Bahrain. Spanning over 40,000 sq m, the rooftop solar plant is expected to generate 10 million kWh of clean energy in its first year of operation, which is the equivalent to reducing 6,300 tonnes of carbon emissions. More than 11,600 solar panels will be installed which will meet 50% of the shopping mall's energy consumption needs.

Hani Weiss, CEO of Majid Al Futtaim Retail, commented, "The Kingdom of Bahrain, like other Gulf countries, has made clear its sustainable vision for the future, with the Bahrain Economic Vision 2030 setting a national renewable energy target of 5% by 2025 and 10% by 2035. These ambitions require the support of the private sector, and that's why Majid Al Futtaim and Yellow Door Energy have partnered to bring clean energy to the Bahrain Mall."

Jerome Akel, country manager of Carrefour Bahrain at Majid Al Futtaim Retail, added, "This momentous solar power purchase agreement with Yellow Door Energy enables



Conceptual view of the Bahrain Mall.

Photo Credit : Yellow Door Energy

us to save cost, reduce carbon emissions and take a step closer to our Net Positive Strategy. This will not only help us take forward the company's vision of creating 'great moments for everyone, everyday' but it will also allow us to translate the savings and environmental benefits into memorable experiences for all visitors at the Bahrain Mall every year."

Rory McCarthy, chief commercial officer of Yellow Door Energy, said, "As the leading solar developer with 120MW of solar assets in the Middle East and Pakistan, Yellow Door Energy looks forward to commissioning the

solar plant and to bringing affordable and clean energy to more leading businesses in Bahrain that is in line with the Kingdom's National Renewable Energy Action Plan."

As Carrefour Bahrain leads the solar plant project for the next 20 years, Yellow Door Energy will also invest and support the project by building, designing and maintaining the solar plant. This agreement is a part of the full renovation and expansion plan at the Bahrain Mall, which will be completed by 2022, and reflects the commitment to bring the mall the latest in innovation.

FAMCO launches new range of heavy duty Volvo Trucks in the UAE

AL-FUTTAIM AUTO AND Machinery Company (FAMCO) has launched its new cutting-edge Volvo Trucks range in the UAE. The new-generation FH, FM and FMX heavy-duty trucks have been redesigned to deliver even higher levels of productivity, class-leading safety features, as well as a more driver-friendly experience with an enhanced driver interface, interior space and overall visibility. These advanced models deliver a stronger return on range, giving users an environmental and financial saving in the process.

"FAMCO and Volvo Trucks truly are a team working closely together on a daily basis. And that is the secret to the success of these two brands, which then benefits our customers," said Ramez Hamdan, managing director of FAMCO and Commercial Vehicles.

Frank O'Connor, vice-president, Volvo Trucks International, Middle East and



The redesigned trucks come with the Innovative Volvo Torque Assist feature, which helps in saving fuel.

Photo Credit : FAMCO

Turkey, said, "With a strong focus on the driver environment, safety and productivity, this new line-up will help us to deliver on our promise to be our customers' best business partner. We can do this by helping them to develop the best drivers—responsible driving behaviour can help reduce emissions and fuel costs, as well as helping reduce the risk of accidents, injury and unplanned downtime, all of which will make them

more competitive and profitable."

The new generation Volvo FH combines the most successful elements from the previous FH series with smart technologies and a functional, human centric design. The result is an intelligent and sophisticated truck that helps the driver deliver outstanding performance under any conditions.

An optional nine-inch side display can provide infotainment, navigation assistance, transport information and camera monitoring. The display, that is easy to reach, allows the driver to interact in numerous ways: with the intuitively positioned buttons on the steering wheel, through voice control, or directly via the touchscreen and display control panel. The all new FH globetrotter cabin includes re-designed gear selector, spacious storage spaces, three USB slots, 33 litre refrigerator and other features which helps the driver to have a fatigue free driving experience.

Hitachi ABB Power Grids unveils transformers portfolio



The portfolio of transformers will be installed on floating offshore substations and floating wind turbines in deep waters, where traditional solutions are not feasible.

HITACHI ABB POWER Grids has revealed a portfolio of transformer products for offshore floating applications, designed to overcome the challenging offshore environment and withstand the physically demanding conditions on floating structures.

The portfolio will enable much greater volumes of wind to be efficiently harvested and integrated into the global energy system, directly supporting the transition to a sustainable energy future.

Building offshore presents many challenges beyond the harsh saltwater environment. So far, only a small fraction of offshore potential has been exploited, as in many areas the seabed is not suitable and depths of 60 metres are not feasible for fixed structures.

Floating substations and floating wind turbines offer a solution, which can be used in deeper waters, vastly increasing the available global capacity for developing offshore wind energy. Yet floating systems come with their challenges: over their entire lifetime, they are constantly in motion and can be exposed to vibrations and shocks from waves up to 15 metres in height.

“Our world-class engineers take pride in pioneering innovative solutions that overcome harsh offshore conditions and ultimately, help move society towards a sustainable energy future,” said Bruno Melles, managing director of the Transformers business at Hitachi ABB Power Grids. “Floating electrical systems are an important development in the offshore renewable industry, that will open up tremendous opportunities for clean power,” he added.

This portfolio introduces a range of collector step-up transformers, earthing transformers and shunt reactors for floating substations plus wind turbine transformers for floating wind turbines, including the industry-leading WindSTAR units.

Transformers and shunt reactors are key pieces of equipment in the grid infrastructure, enabling the transmission of electricity generated by offshore wind farms. This complete and qualified equipment range, developed in partnership with leading floating offshore developers, meets challenging operating requirements with a lightweight and modular design made up of specially designed active part, tank, tap changer, accessories and external components.

Hitachi ABB Power Grids is committed to powering good for a sustainable energy future, with pioneering and digital technologies, as the partner of choice for enabling a stronger, smarter and greener grid.

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Briefly

GAC breaks ground on logistics facility in Ras Bufontas Free Zone

CONSTRUCTION IS UNDERWAY on GAC Qatar's new 27,000 sqm multi-user contract logistics facility after the groundbreaking ceremony in the Ras Bufontas Free Zone. It follows the signing of an agreement between GAC and Qatar Free Zones Authority (QFZA) in February this year. The facility is expected to be completed by early 2022. It will be built from sustainable materials, partly fuelled by solar power, have several energy-saving features and use recycled water in its operations.

Lim Meng Hui, the CEO of QFZA, said, "It is our pleasure today to be part of the groundbreaking ceremony for GAC logistics facility in Ras Bufontas Free Zone, which will be a showcase of sustainable building development. This facility will contribute towards Qatar as a regional logistics hub and good ecosystem for our investors to run their operations sustainably out of the free zones."

Björn Engblom, GAC group executive chairman and trustee said that Ras Bufontas Free Zone was a natural choice for the group's footprint expansion in the region. He added, "This facility will be a boost to our capabilities and will allow us to better serve the growing and increasingly complex logistics and supply chain needs of our customers."

The facility is expected to be completed by early 2022.

Metito wins Jordan's wastewater treatment plant rehabilitation project

THE JORDAN MINISTRY of Water and Irrigation has appointed Metito to rehabilitate Central Irbid Wastewater Treatment Plant (WWTP) and Wadi Al-Arab WWTP. The project worth US\$51mn will cut greenhouse emissions by approximately 6,600 metric tons annually and provide over 10 million cubic metres of treated effluent water per year. The project scope includes the rehabilitation and upgrade of Irbid Central WWTP (13,000 cu/m per day capacity), and Wadi Al Arab (27,000 cu/m per day capacity). Works are set to begin on 1 July 2021 with completion expected in July 2023.

Polygreen, Bee'ah to offer environmental management solutions

GREEK-OWNED POLYGREEN forms a joint venture partnership with Bee'ah to offer innovative marine and environmental management solutions and boost the MENA region's circular economy. The newly established company, Evogreen, tackles marine pollution through advanced waste management solutions to keep oceans pristine. By joining forces, Bee'ah and Polygreen are setting a new benchmark for environmental cooperation in the wider Middle East region. Evogreen has already established an alternative raw material facility located in Bee'ah's Waste Management Complex, Sharjah, and is building an alternative solid fuel facility, to process waste streams such as sludge, and convert it into alternative fuel for use in cement manufacturing.

HE Salim Bin Mohamed Al Owais, chairman of Bee'ah said, "We are proud to establish Evogreen, our joint venture with our Greek partners, which showcases the potential of cross-border efforts to tackle global environmental concerns. I am confident that through our shared expertise and experience, Evogreen will take the lead in promoting best practices in the maritime waste management industry and achieve remarkable outcomes for the UAE and wider region."

HE Khaled Al Huraimel, group CEO of Bee'ah said, "Bee'ah, renowned for its integrated waste management and circular economy solutions, is delighted to partner with Polygreen, a company which shares our values and vision for sustainability. We are proud to be furthering the UAE's specialized waste treatment recycling capabilities, and leverage international cooperation to help protect our seas."

Athanasios Polychronopoulos, founder and CEO



Photo Credit : Bee'ah

By joining forces, Bee'ah and Polygreen are setting a new benchmark for environmental cooperation in the wider Middle East region.

of Polygreen said, "The launch of Evogreen is a milestone regarding the global effort to protect the environment and address the challenge of climate change. Polygreen is proud to join forces with Bee'ah and provide its expertise and infrastructure to further develop networks in the wider Middle East region. Through this joint venture, a fruitful bond is being established between Greece and the UAE, fostering the bilateral relations and paving a promising path."

The alternative raw material facility treats and processes maritime waste and marine-related hazardous waste, to produce alternative materials for industrial use. Both facilities will collect, recycle and recover hazardous and non-hazardous waste from ships visiting ports in the UAE, which is an international maritime hub.

Evogreen will also provide oil spill response services; management of distressed vessels, cargo and abandoned containers including recycling or recovery solutions, repair or refurbishment works; green ship recycling and establishing an environmental laboratory.

GE to build turnkey substation for desalination plant

GE RENEWABLE ENERGY'S Grid Solutions has won a deal from Doosan Heavy Industries and Construction to build a turnkey substation that will power the Yanbu-4 independent water producer (IWP) plant. This is the first integrated, seawater reverse osmosis project in the kingdom that uses clean energy. Scheduled to be operational in 2023, Yanbu-4 will have a capacity of 450,000 cu/m per day of freshwater to be supplied to households in Makkah and Madinah. Located 140 km west of Madinah, near the town of Ar Rayyis on the Red Sea coast of the kingdom, Yanbu-4 will utilise reverse osmosis technology to supply potable water. The plant will include solar energy units generating 20 MW of power to reduce grid electricity consumption throughout the



Photo Credit : Adobe Stock

The substation will provide Yanbu-4 the required power

desalination process, as well as water storage tanks to maintain a capacity of two operational days. A consortium of GE's Grid Solutions and Al Sharif Group will provide the full turnkey solution for Yanbu-4 including a 380-110 kV gas-insulated switchgear (GIS) substation.

'Positive business sentiment across the UAE offers bright outlook for the country'

SIGNS OF A revival in consumer demand and positive business sentiment across the UAE offer a bright outlook for the country to get back on its pre-pandemic growth path, according to Aberdeen Standard Investments (ASI). Proactive government policies and support measures have enabled the economy to perform better than expected in 2020. And the roadmap suggests positive growth rates by the end of 2021: 2.5% in real GDP, and 3.6% in non-oil real GDP.

As of the start of the second quarter, improving conditions in the private sector had seen new business growth hit a 20-month high, based on the IHS Markit UAE Purchasing Managers' Index. Projects such as the DIFC Innovation Hub will add to this impetus. Demand for hotels to host conferences, exhibitions and other events is rising again. Further initiatives include the commitment from Ras Al Khaimah, to spend over US\$130mn on 20 sustainable tourism destinations, to tap into global demand.

Losberger De Boer delivers record-breaking Jeddah Superdome venue

LOSBERGER DE BOER has delivered the Jeddah Superdome venue in Saudi Arabia, handing over the dome's frame three days ahead of schedule and completing the project on time, despite disruptions from the COVID-19 pandemic. Jeddah Superdome officially opened its doors on 9 June 2021. The Superdome has claimed the Guinness World Records titles for the world's largest geodesic dome and largest dome with continuous roof. It is a multi-purpose event space and will play an integral role in the Jeddah Season events programme. From live

Aerial view of Jeddah Superdome venue.



Photo Credit: Losberger De Boer

shows, concerts and sporting events to brand activations and exhibitions, the dome will host some of the Kingdom's stand-out events.

Although Saudi Arabia announced Jeddah Season, originally scheduled to take place in June and July 2020, plans were cancelled due to the country's measures to curb the coronavirus outbreak. Work on the ambitious Jeddah Superdome project continued with the aim to break the previous Guinness World Records title, and ensure it is complete when Jeddah Season returns. In February 2020, Losberger De Boer was awarded the dome construction project by Jeddah Superdome's operator, Sela Sports Company, Saudi Arabia.

Waleed Khaled, Losberger De Boer Middle East's regional sales director, said, "Losberger De Boer's in-house design team along with our trusted consultant Geometrica designed the dome's concept, working closely with the client to meet every aspect of the brief and create an events space, the likes of which have not been seen in this region before."

Philips and du partner to accelerate data-driven healthcare in UAE

PHILIPS AND DU signed a memorandum of understanding to collaboratively accelerate the critical, data-driven transformation of healthcare in the UAE in support of the Dubai Health Strategy 2021.

This first-of-its-kind partnership will focus collective efforts on realising value-based care by improving patient and healthcare professionals' experiences, delivering better health outcomes, at a lower cost of care across the healthcare continuum.

The potential and power of virtualised healthcare extends well beyond COVID-19. The infrastructure provided by du and paired with Philips' technological advancements will provide predictive analytics, data visualisation, and reporting capabilities to healthcare



Philips and du sign MoU to transform healthcare in the UAE

Photo Credit: Philips

workers. They will enable the local health system to access critical patient information, make split-second life-saving decisions, and prevent patient deterioration in general ward settings through early warning scores.



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Briefly

ENEC and KEPCO achieve 100mn man-hours without LTI

ENEC AND ITS joint venture partner KEPCO have surpassed more than 100mn man-hours without a Lost Time Injury (LTI) at the Barakah Nuclear Energy Plant.

The accomplishment highlights ENEC's success in implementing the highest standards of safety, security, and quality in developing the UAE Peaceful Nuclear Energy Programme. The milestone sets a new benchmark for industrial safety for nuclear new build projects around the world.

ENEC and its prime contractor and joint venture partner the Korea Electric Power Corporation (KEPCO) have worked closely together for more than a decade on implementing the highest safety and quality standards and ensuring an exceptional safety culture.

Dedication to continuous improvement of everyday work behaviours, accountability, and employee empowerment to ensure their safety and that of their colleagues has been delivered through a range of safety-related practices and tools including continuous training programmes. This has resulted in their shared achievement of what is a significant industrial safety accomplishment.

Mohamed Ibrahim Al Hammadi, CEO of ENEC, said, "This extraordinary achievement is a result of our robust culture of safety and dedication to meeting the highest standards of quality and safety in the development of the Barakah Plant. Achieving 100mn safe work hours is a testament to the UAE's ability to safely deliver complex megaprojects and sets a new industrial safety record.

"With thousands of workers, we have been committed to offering regular training and coaching to ensure our team places safety as the highest priority. This reflects our close and extensive collaboration with KEPCO and our wider Team Korea colleagues, working together to construct and commission the Barakah Plant. With Unit 1 now commercially operating and Unit 2 undergoing preparations for start-up, we remain committed to upholding these same standards for nuclear safety and security throughout the lifetime of the Barakah plant."

Emirates SkyCargo integrates Releye RLP

EMIRATES SKYCARGO, THE freight subsidiary of the Dubai-based Emirates airlines, has approved the use of the Envirotainer Releye RLP container across its fleet of freight aircraft, according to Envirotainer, the specialist in secure cold chain solutions designed for the pharmaceutical air transportation sector.

Customers across Emirates SkyCargo's global network, which spans six global continents and dozens of nations, can now utilise Envirotainer's solution offering features including fully integrated live monitoring for shipping temperature-sensitive commodities.

The announcement builds on the long-standing partnership between Envirotainer and Emirates SkyCargo to bring cutting edge cool chain solutions to customers.

The Envirotainer Releye RLP is an LD11-sized unit with a unique air flow technology for maximum temperature stability in the cargo bay.

The RLP-size fits 3-euro pallets (or 2-US pallets) and fills a strategic gap between the larger RAP-size and the smaller RKN-size allowing for increase efficiency by mixing and matching sizes based on shipment volume.



Photo Credit : Releye

The unit offers a unique airflow technology for maximum temperature stability.

Releye RLP uses rechargeable batteries to power its electric heating and compressor cooling system and can power its system for more than 170 hours on a single charge.

Don Harrison, head of Global Key Accounts, Airlines at Envirotainer, said, "We are delighted to welcome Emirates, one of the leading global air cargo carriers, as the most recent airline to approve the Releye RLP.

"With the new Releye RLP, Emirates can offer their customers the best active, fully connected, solution on their fleet of over 250 widebody airplanes."

Henrik Ambak, Emirates senior vice-president, Cargo Operations Worldwide, said, "Emirates SkyCargo has been leading the airfreight industry in the transportation of

temperature sensitive goods.

"Even during the COVID-19 pandemic, we have continued to fly hundreds of tonnes of pharmaceuticals, vaccines and other critical shipments every day on our aircraft.

"As a customer focused organisation, we are always looking to offer the best in market equipment to complement our fit for purpose GDP certified infrastructure for the transportation of critical temperature sensitive commodities.

"Integrating the Envirotainer Releye RLP container into our portfolio allows us to expand the range of solutions we offer to our customers and set a new standard for secure cold chain transport at a time when the biopharma industry is looking for groundbreaking solutions."

VD Gulf and Joramco sign agreement for MRO cooperation

JORAMCO AND VD Gulf have signed a framework agreement on maintenance, repair and overhaul (MRO) cooperation.

The agreement affirms both organisations' aims to expand capability, capacity and optimise their synergies for a one-stop-shop experience.

Additionally, both organisations hope to encourage and promote sustainable development.

Jeff Wilkinson, CEO of Joramco, commented, "This collaboration shows that Joramco and VD Gulf are both trusted MRO companies and will form the future of the MRO industry in the region to adapt to customers' needs."

Mikhail Khoroshaev, accountable manager at VD Gulf, added, "As we enter a new era



Photo Credit : Joramco

The agreement was signed at MRO Middle East 2021

following the pandemic, it is prudent that MROs across the globe endeavor to work jointly as witnessed in other industries."

The agreement was signed by Wilkinson and Khoroshaev during MRO Middle East 2021, the Gulf region's leading annual conference and exhibition for commercial aviation.

Schneider Electric and Wärtsilä unveil sustainable power solution

TECHNOLOGY GROUP WÄRTSILÄ and Schneider Electric have developed an end-to-end power system reference design, that aims to work on lithium mine operations where grid supply of electricity is not accessible.

The design provides for an economically-viable total expenditure, that covers the complete process, including consulting, project design, the power infrastructure, equipment delivery, installation and commissioning.

The solution contributes to sustainable lithium production by optimising the efficient delivery and use of energy, and by leveraging microgrids and enabling renewable energy sources. The overall objective of this collaborative development is to provide high efficiency power solutions, with a minimal environmental footprint.

The design concept expands to the lifecycle of the mine, and it links the availability and performance of the power generating plant to a mine's productivity. Shared business case incentives, based on leading performance indicators for power generation, reduce operational costs and enhance power availability, which supports a mine's production targets. Predictability of parts and decreased maintenance costs reduces the need for working capital



The new collaboration between Wärtsilä and Schneider Electric will provide efficient power solutions with a minimal environmental footprint.

"The increasing global demand for lithium needed for battery storage applications is putting pressure on mining operations to be as efficient and cost-effective as possible. The power supply is a key element in this, and together we have designed a solution that harnesses the strengths and experience of our two companies. It will not only guarantee a reliable energy supply, but will do so with economic and environmental benefits that will raise the efficiency of the mining operations," said Jean Nabb, director, strategic partnership, Wärtsilä Energy and Vivek Kapoor, vice-president and regional segment leader, mining, minerals and metals segment at Schneider Electric in a joint statement.

Wärtsilä and Schneider Electric signed the framework co-operation agreement for the development of the design for mining energy solutions in March last year. The parties aim to optimise customer benefit in mining projects by offering solutions based on mutually complementary technologies. The business white paper recommending power generation and electrical distribution for high altitude lithium mine was published in June 2021.



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EXECUTIVES' CALENDAR 2021

SEPTEMBER 2021

12-15	Big 5 Dubai Online: 22 August - 17 November	DUBAI	www.thebig5.ae/
21-23	Gastech	DUBAI	www.gastechevent.com
29-30	Seamless Middle East	DUBAI	www.terrapinn.com/exhibition/seamless-middle-east/index.stm

OCTOBER 2021

1- 31 March 2022	EXPO 2020	DUBAI	www.expo2020dubai.com
5-7	WETEX	DUBAI	www.wetex.ae
6-7	World Green Economy Summit (WGES)	DUBAI	www.wges.ae
12-13	Middle East Rail	DUBAI	www.terrapinn.com/exhibition/middle-east-rail

NOVEMBER 2021

2-4	Hypermotion Dubai	DUBAI	https://hypermotion-dubai.ae.messefrankfurt.com/dubai/en.html
22-27	GMIS2021	DUBAI	https://gmisummit.com

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

HSE Oman Forum discusses environmental footprint and zero-incident framework

THE OPENING SESSION of HSE Oman Forum 2021 focused on 'Savings through Safety' with Yokogawa RAP.

During the virtual HSE Oman Forum's second session, which handled the environmental footprint of health and safety management across the Middle East, Nadiya al Harthy, Petroleum Development Oman (PDO), and Porchelvan Nadanam, Arabian Industries Projects, dissected the role that HSE management ought to play in environmental regulations and the scope of footprint, from individual change to critical regulation. On the changes made by Arabian Industries Projects, Nadanam discussed plastic alternatives and initiatives: "Some of the promising initiatives include careful selection of materials, durability of materials, energy efficiency, and considering the role of energy beyond its costs, considering environmental regulations and local and community impact."

"We have adapted a lot of those initiatives, like the ban of single use plastics, successfully running the no paper

campaign... the COVID-19 pandemic taught us that we can actually live with a lot less printing," added al Harthy.

"We're particularly focused on waste management initiatives. This will minimise environmental impact during construction."

Spotlight on zero-incident framework

The session on 'Savings through Safety' with Yokogawa RAP, featured an interactive panel with subject matter experts at Petroleum Development Oman, IOSH Oman, Yokogawa RAP and Al Tasnim Group.

Mark Breese, global sales manager, Yokogawa RAP, has highlighted a fresh intuitive gateway to safer workforce culture. Speaking on the Industry 5.0, he cited a quote from European Commission: "The next step (Industry 5.0) is to place the wellbeing of workers at the centre of the production process and to use new technologies to provide prosperity beyond jobs and growth while respecting the production limits of the planet."

In line with this, Breese discussed the

reasons for industrial fatalities. According to him, 60% of accidents happen due to a lack of inadequate control in work as poor understanding of risks are involved is the primary factor. He cited the main cause causes of accidents in Oman. In Oman, 34% of workplace injuries are from vehicle accidents. As per the statistics provided by the Public Authority of Social Insurance (PASI), as many as 158 cases of the 454 workplace-related injuries in 2018 were due to vehicle-related accidents. Additionally, 26% of accidents are caused due to slips, trips and falls, and 27% of accidents are caused due to debris, high falls, moving equipment and sharps.

To tackle this, Breese highlighted the major pillars of control of work. He noted that three core functions make up the control of work: plant assets and process, plant system and technology, and safe working practices. All these three pillars should be equally represented and linked together to make a proper balance among risk assessment, isolation management and permit to work.

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

Dubai waste-to-energy plant agreement

BESIX, AN INFRASTRUCTURE group, has announced the financial close of the Dubai Waste-to-Energy project, which is being developed in collaboration with a global equity investor consortium and will cost US\$1.2bn.



Photo Credit: BESIX

The plant, one of the largest in the world, was procured by Dubai Municipality.

The plant, one of the largest in the world, was procured by Dubai Municipality. The equity investor consortium comprises leading private and public operators from the Middle East, Asia and Europe: Dubai Holding, DUBAL Holding, ITOCHU, HZI, BESIX and Tech Group. www.technicalreviewmiddleeast.com/business-a-management

Abu Dhabi's DoE to construct wastewater monitoring lab

THE ABU DHABI Department of Energy has announced the start of construction on a wastewater monitoring lab in Abu Dhabi, to analyse wastewater samples and issue early warnings to prevent the spread of infectious diseases or harmful substances, as well as to mitigate negative environmental effects. The lab is being developed in collaboration with G42 Healthcare and set to be completed in 12 months. It will be capable of testing for chemical, physical, and biological hazards, including infectious diseases, parasites, pathogenic yeast and fungi, pharmaceutical compounds, and other lifestyle-related items – all with automated sampling and artificial-intelligence-powered data analysis. www.technicalreviewmiddleeast.com/power-a-water/water-a-environment

DEWA increases its capacity of desalinated water

DUBAI ELECTRICITY AND Water Authority (DEWA) has announced that its desalinated water production capacity has increased to 490 million imperial gallons per day (MIGD) following the addition of new advanced units at its Jebel Ali Power Plant and Desalination Complex using Sea Water Reverse Osmosis (SWRO) technology.



Photo Credit: DEWA

This is part of its efforts to meet the growing demand for electricity and water in the emirate.

This is part of its efforts to keep pace with the continuous growth in Dubai and meet the growing demand for electricity and water in the emirate. www.technicalreviewmiddleeast.com/power-a-water

IKEA, Rockefeller Foundation set up US\$1bn initiative

THE IKEA FOUNDATION and The Rockefeller Foundation has announced that they will join forces to set up a US\$1bn global platform to fight climate change and energy poverty.

The platform aims to reduce one billion tonnes of greenhouse gas emissions and to empower one billion people with distributed renewable energy (DRE). This is renewable energy generated from sources such as mini-grid and off-grid solutions, located near the point of use, rather than centralised sources like power plants. The new global platform will oversee the organisations' combined matching funds. It also aims to deliver clean and reliable power to the 800 million people worldwide who lack electricity, and a further 2.8 billion who have unreliable access.

www.technicalreviewmiddleeast.com/power-a-water

Mubadala acquires stake in Russian energy group EN+

Mubadala Investment Company, an Abu Dhabi-based sovereign investor, has announced the acquisition of a 2.6% stake in Anglo-Russian green energy and metals company EN+.

The new block acquisition equates to 16,641,700 of EN+ ordinary shares. The company is listed on the Moscow Stock Exchange, while its GDRs are tradeable on the London Stock Exchange.

www.technicalreviewmiddleeast.com/manufacturing



Photo Credit: Adobe Stock

The new block acquisition equates to 16,641,700 of EN+ ordinary shares.

UAE's businesses true cost revealed

CYBEREASON HAS RELEASED a research findings from global ransomware study in which 90% of UAE organisations that paid a ransom demand were hit and 63% reported significant loss of business. In the United Arab Emirates (UAE), 37% of surveyed companies reported that they had bit hit by a ransomware attack in the last 24 months. A staggering 84% of these companies chose to pay the ransom but what is interesting is that of those, 90% suffered a second ransomware attack, often at the hands of the same threat actor group.

Other key findings included in the full report reveal the extent to which losses to UAE businesses may be covered by cyber insurance, how prepared regional organisations are to address ransomware threats to the business with regard to adequate security policies and staffing.

www.technicalreviewmiddleeast.com/business-a-management

“At SPARK, we are committed to ensuring sustainable solutions are continuously implemented as we grow to become the leading energy-centric ecosystem in the world. We have achieved many firsts in our initial stages of development and will continue to adopt and support innovative initiatives that help improve the quality of life for our people, while also strengthening our business and the Kingdom’s economy. We are very proud of our team and the work they have done to guarantee SPARK provides long-term value and supports national and regional programmes aimed at building a more sustainable future.”



Photo Credit: SPARK

SAIF AL QAHTANI
President and CEO
SPARK

“Our mission at Veolia is to demonstrate that an ecologically sustainable way of life is not just a pipe dream, but entirely achievable via the solutions that we are delivering to millions around the world every day. With some expertise and innovation and being more eco-conscious with regards to our consumption patterns, we can ensure a long-term future for our planet and the generations to come.”

SEBASTIEN CHAUVIN
Chief executive officer
Veolia Middle East

“As ASRY continues on its modernisation drive environmental sustainability is a vital part of the facility’s future operations. As a responsible member of the maritime industry, we must not tolerate harmful and dangerous practices of ship recycling, which are common practices across the globe. We have now achieved compliance with the strictest international standards with a view to being able to offer a sustainable, responsible and affordable alternative for vessel owners with end-of-life maritime assets. There is also natural synergy with nearby steel production facilities, who can benefit from this new initiative.”

MAZEN MATAR
Managing director
ASRY

“The breadth of discussion on the opening day has underscored the eagerness of the energy industry to come together and plan for the future with clean and sustainable alternatives. Insights from around the world are reiterating the commitment of countries to diversify their energy portfolio and reduce carbon emissions.”



Photo Credit: MEE

CLAUDIA KONIECZNA
Exhibition director
Middle East Energy

(On the opening day of Middle East Energy 2021)

“Adding Taeknizon’s cloud offering will be an absolute game changer to our business. We see great traction in the market for digitalisation — and cloud is a crucial element of any digitalisation process. Taeknizon’s Taekni cloud fulfilled all local and international compliances, and their highly customisable cloud solutions are locally stored in UAE.”



Photo Credit: Cloud Box Technologies

RANJITH KAIPPADA
Managing director
Cloud Box Technologies

“As the world seeks to satisfy the rising demand for affordable power and water, ACWA Power remains committed to being at the forefront of the energy transition and providing transformative solutions, including the early adoption of emerging energy solutions like biofuels, to deliver power responsibly. We are delighted to be collaborating with Neutral Fuels, enabling us to accelerate our commitment to support the Kingdom’s ambitions to deliver a tourist destination that limits the environmental impact through the provision of zero-carbon emitting utility services.”

PADDY PADMANATHAN
President and CEO
ACWA Power

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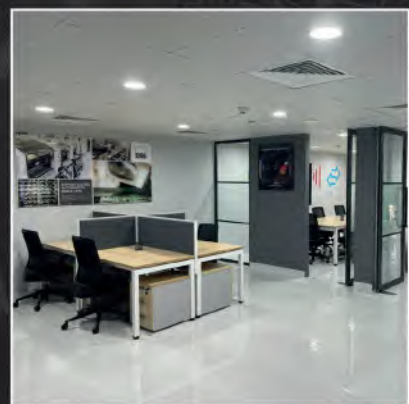


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Prospects and fundamentals for power sector look robust.

Photo Credit : Adobe Stock



Building back better

Clean energy solutions making rapid headway as Gulf states transition away from traditional thermal-based generation. Martin Clark reports.

Better technology and improved economics are opening up new utility-scale opportunities for both solar and wind power.

THERE IS NO doubt that the pandemic has significantly impacted all businesses and industries in the Gulf, but prospects and fundamentals for the power sector still look robust, nonetheless.

Energy demand has been strong for many years as the region's economies have grown, placing huge requirements on developers for new energy infrastructure, from power stations to miles upon miles of connections.

This has helped fuel both industrial expansion, including major projects in petrochemicals and transport, as well as meeting the rise in demand for domestic energy services.

Saudi Arabia, for instance, has turned to crude oil to meet some of its electricity

needs, as well as drawing on cleaner-burning natural gas.

This is changing, however, with the kingdom moving to use more gas in its energy mix — not only to generate cleaner electricity, but also to free up more oil for export — and exploring other avenues.

Saudi Arabia is likewise moving swiftly with its renewables agenda: the kingdom aims to produce as much as 50% of its electricity from renewable sources by 2030.

Indeed, Crown Prince Mohammed bin Salman said in April that his country had signed power purchase agreements (PPAs) with seven new solar projects that will produce more than 3,600 megawatts (MW) capacity and provide electricity for more than 600,000 households.

Utility-scale PV plants

Better technology and improved economics are opening up new utility-scale opportunities for both solar and wind power.

This is bringing with it serious investment from major international investors.

A consortium led by the UAE's Masdar and EDF Renewables, along with Nesma Company, has reached financial close on a 300 MW utility-scale photovoltaic (PV) solar power plant in Jeddah, Saudi Arabia.

"This project demonstrates Masdar's commitment to Saudi Arabia's Vision 2030 objectives and its climate goals," said Masdar chief executive Mohamed Jameel Al Ramahi. "Through its National Renewable Energy Programme, Saudi Arabia is fast developing into a global renewable energy player, and Masdar will continue to work closely with the Saudi government and our partners here to help the kingdom achieve its clean energy transition, while reducing environmental impacts in line with the Saudi Green Initiative."

It follows the inauguration of the kingdom's first utility-scale solar plant earlier this year — the 300 MW Sakaka PV independent power project (IPP). State of the art technology

Nuclear power milestone

At the same time, nuclear power is also disrupting the Gulf's traditional energy mix.

The UAE's Barakah nuclear plant started commercial operations from its Unit 1 at the start of April — a major milestone for the region.

The plant, located in the Al Dhafrah region of Abu Dhabi, is the first nuclear power station in the Arab world and a key part of the Gulf oil producer's efforts to diversify its energy mix.

"After more than a decade of strategic planning, programme development and construction, we are confidently marking the start of a new chapter in for the UAE's transition to cleaner energy sources," said HE Mohamed Ibrahim Al Hammadi, ENEC's chief executive.

Despite this advance into nuclear technology, maintaining broad energy diversity remains integral to the UAE's longer-term plans, which underscores its rationale for rolling out the 2,400 MW Hassyan coal-fired power plant at a cost of US\$3.4bn.

The first 600 MW unit was hooked up to the grid at the end of 2020 and will play a key role in meeting sustained, base-load demand in the country.

There are several other projects underway.

Leading Gulf states are looking to work smarter by pooling electricity.

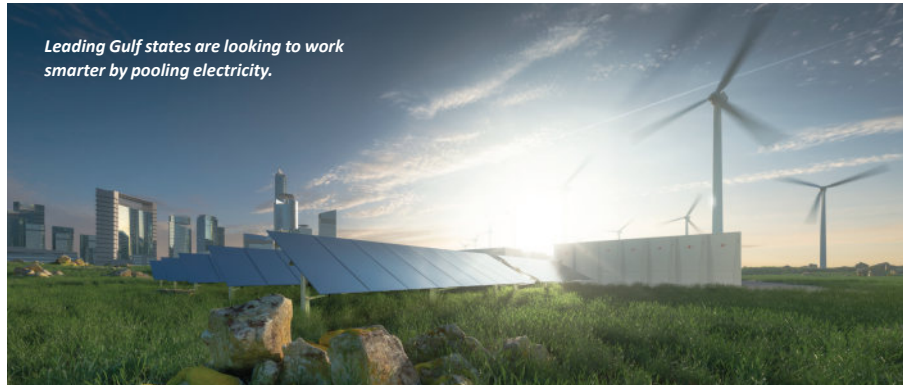


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SirajPower, a leading distributed solar energy provider in the UAE, has unveiled a major partnership with Al Shirawi Group, one of the largest industrial conglomerates in the GCC, spanning trading, industrial, distribution, contracting, and service industries.

Hitachi ABB Power Grids has unveiled a portfolio of transformer products for offshore floating applications, designed to overcome the challenging offshore environment and withstand the physically demanding conditions on floating structures

The portfolio will enable much greater volumes of wind to be efficiently harvested and integrated into the global energy system, directly supporting the transition to

Hitachi ABB Power Grids has unveiled a portfolio of transformer products for offshore floating applications, designed to overcome the challenging offshore environment and withstand the physically demanding conditions on floating structures.

a sustainable energy future.

Separately, leading Gulf states are also looking to work smarter going forward by pooling electricity around the wider region.

Both Saudi Arabia and the UAE have announced plans to provide power for export to other countries as more surplus becomes available. ■

There is serious investment in renewables projects across the region.



Photo Credit : Adobe Stock

DEWA collaborates with Siemens Energy for green hydrogen project

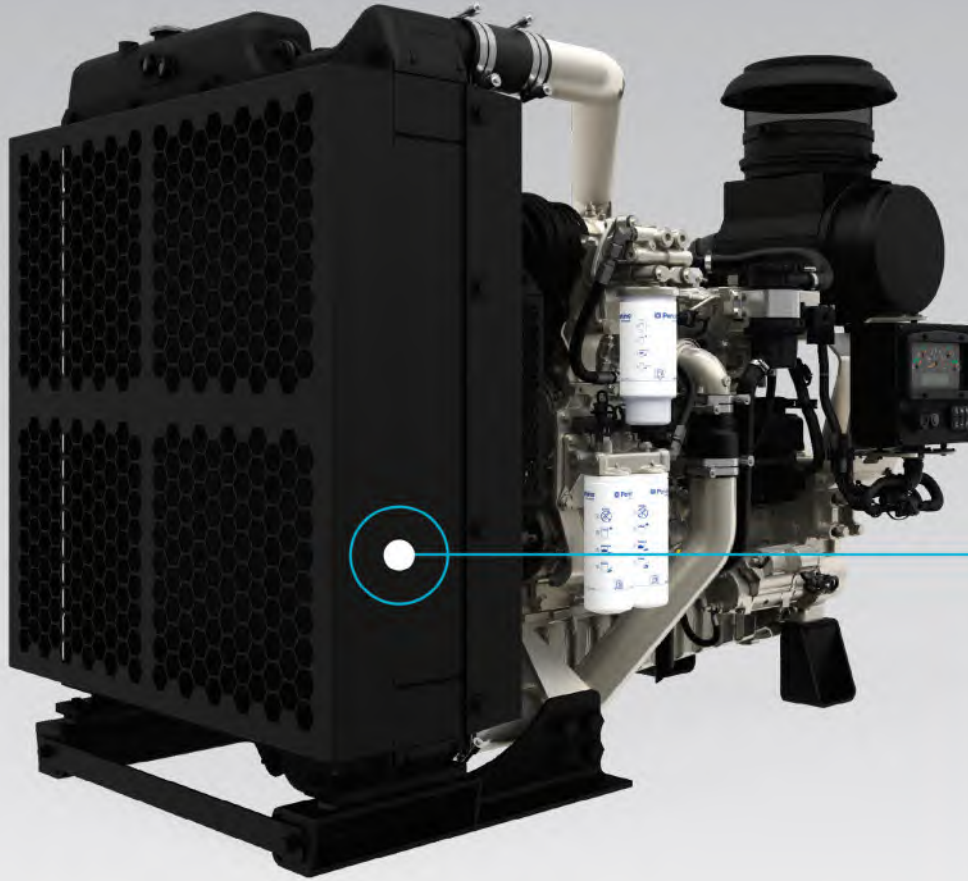
SIEMENS ENERGY, IN collaboration with Dubai Electricity and Water Authority (DEWA) and Expo 2020 Dubai, has inaugurated the first industrial scale, solar-driven green hydrogen facility in the Middle East and North Africa (MENA)

Located at DEWA's Outdoor Testing Facility of the Research and Development (R&D) Centre at the Mohammed bin Rashid Al Maktoum Solar Park in Dubai, the Green Hydrogen Project serves as a major milestone in the advancement of the sustainable energy industry in the region.

The integrated facility was developed with electrolysis, storage, and re-electrification capabilities, to maximise the benefits of the pilot project. Daylight solar power from the solar park will enable the pilot project to produce around 20.5kg/hr of hydrogen at 1.25MWe of peak power.

Utilising this pilot project, DEWA aims to demonstrate the production of green hydrogen from solar power, as well as the storage, and re-electrification of hydrogen. This is a system that allows for buffering renewable energy production, both for fast response applications, as well as for long-term storage.

HE Saeed Mohammed Al Tayer, managing director and CEO of DEWA, added, "Through this pilot project, DEWA aims to demonstrate the production of green hydrogen from solar power, its storage and re-electrification. This is a system that allows for buffering renewable energy production, both for fast response applications, as well as for long-term storage. The plant has been built to accommodate future applications and test platforms for the different uses of hydrogen, including potential mobility and industrial uses."



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Regional power sector leveraging digital technologies

Vijay Jaswal, CTO, Middle East and Turkey, Software AG explains how companies are embracing digital strategies to improve efficiencies.

TO SURVIVE AND thrive, it has become imperative for the power sector to embrace digital strategies in order to extract maximum benefit and elevate operational efficiency, boost asset optimisation, and reduce plant downtime.

Reducing costs, IT agility and compliance transparency are seen as critical needs and one way to do so is by aligning enterprise IT and business.

Enabling business

Software AG's recent collaboration with a leading utility entity in the UAE will implement digital tools to overcome strategic IT planning hurdles and to evolve its architecture into an even more cost-efficient, responsive, and agile enabler of digital business.

Another vital use case is that of a state-owned utility firm in the region, which wanted to introduce an effective platform and integrate systems to improve cost efficiencies, make company's systems and structure more scalable and build a future-proof organisation. Based on effective due diligence led by Software AG, the firm deployed the tech vendor's technologies to increase the effectiveness and efficiencies of services delivered by the firm and its partners. The platform fostered the provision of core services and APIs in compliance with best practices and principals providing the firm a distinctive competitive advantage. The



Vijay Jaswal, CTO, Middle East and Turkey, Software AG.

impact has been vital, from creating the centralised integrated system, improved cost efficiencies, service reusability, cost effectiveness via reduced redundancies, reduced operational costs, reduced overheads and increased ROIs, scalability that is horizontally and vertically scalable, cloud-enabled systems that let the firm adapt cloud technologies and move gradually to cloud, agile infrastructure and finally a fully safe and secure platform with complete security measures and features provided by the firm's upgraded infrastructure. The entity is today one of the few that are ahead of the digitalisation curve.

Through deployment of predictive analytics and digital dashboards, IoT sensors provide performance metrics to measure vibrations, noise, temperatures, to improve the efficiency of maintenance schedules and many other tangible and intangible benefits and provide power companies a distinct competitive advantage.

IoT

Moving on, another method to utilise digital technology to improve efficiency is to harness IoT for Remote Asset Monitoring and Management.

Power companies can leverage IoT sensors in many areas of their business, from generation, transmission to distribution equipment to monitor the performance of these assets remotely.

Through deployment of predictive analytics and digital dashboards, these sensors provide performance metrics to measure vibrations, noise, temperatures, to improve the efficiency of maintenance schedules and many other tangible and intangible benefits and provide power companies a distinct competitive advantage. This preventative maintenance approach can inexorably improve reliability by ensuring equipment is kept in optimal shape and ensuring repairs are carried out before drastic failures occur that could affect customer experience - especially in this part of the world, AC units not having power in the height of summer is a major no!


Leveraging a digital asset-management model based on analytics makes it possible to increase an energy company's revenues and improve operating efficiencies. It can help to improve reliability, minimise unplanned service disruption, and increase operating capacity.

By using digital technology, power companies can gain the power to leverage and use real-time performance data and predictive models to guide asset-management decisions in the most effective way possible. And by default, digital technology can play a key role in capturing and conveying knowledge, whether it originates from sensors, or an operational process. Its business transformation capabilities allow executives and managers to gather the knowledge of experienced maintenance professionals and incorporate it into asset-management plans. ■

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Technologies that make smart cities safer

Firas Jadalla, regional director for the Middle East, Turkey and Africa at Genetec explains how technological advancements are making smart cities safe and sustainable.

CITIES ARE INHERENTLY dynamic. Over the past few years, government authorities all over the world have embraced the concept of smart cities. The market for smart cities has also seen consistent growth, and it is estimated to hit US\$775bn in 2021, according to BCC Research.

The concept of a 'smart city' is largely built upon the foundation of data gathering, analysis, and a collaboration of different stakeholders, for effective city management. Several countries in the Middle East are developing smart cities and improving the quality of the citizen's life, besides transforming the urban landscape. Technological advancements such as Internet of Things (IoT), Machine Learning (ML), 5G networking, and cyber security has helped city leaders and decision-makers upgrade the infrastructure and make the cities safer, smarter and sustainable.

According to a recent research survey in the UAE, eight out of ten residents opted to live in a smart city since safer cities also attract business, foster innovation, and provide unmatched opportunities for stable and sustained growth.

After recognising the potential of smart cities in the UAE, Saudi Arabia has incorporated the establishment of smart cities in Saudi Arabia's Vision 2030, which includes plans such as the mega-city, The Line. The Masdar City in the UAE, uses renewable energy and clean technology.

Technology trends

Cities are looking for ways to use a growing network of connected sensors (cameras, license plate recognition (LPR) streetlights, dynamic information displays, GIS maps and others) to help reshape the urban experience and enhance public safety. Deep learning, IoT, crowd sourcing and 5G networking can fundamentally enhance law enforcement, emergency management, and city government operations.



Firas Jadalla, regional director for the Middle East, Turkey and Africa, Genetec.

Deep learning and IoT

Government authorities in the Middle East are deploying IoT technologies to create smart and digitally swift cities. According to a research report by the International Data Corporation (IDC), the market for IoT and related technology is expected to scale up to US\$18bn by 2023. Deep learning, including optical sensors, DL inference, and VMS for incident management, visualisation, analytics, and search, further enhances the use of IoT in smart cities. The optical sensor technology can help public safety officials by generating positive response in multiple scenarios, such as crowd control, traffic and transportation, civil unrest, identification of

missing persons, and for emergencies in crowds and big gatherings or events. Additionally, deep learning acts as a forensic tool, for reviewing video footage or evidence.

Crowdsourcing

This allows cities to tap into the collective intelligence of the public to complete a task and solve a problem, creating a means for collaboration between cities and citizens.

Cybersecurity

To safeguard cybersecurity, the IoT sensors and applications must be secure themselves, from the sensor to the cloud, including all hardware and software.

5G technology

The adoption of 5G networks in the GCC region is expected to reach 16% by 2025, according to a research report by GSMA. Compared to 4G, 5G-transformed networks will deliver 10X less latency, 50X more speed and 1000X more capacity. Emergency services require a need to understand events and act upon them as they unfold. Using data gathered by sensors connected through city-wide 5G networks, will allow the access of near real-time information, which is crucial for public safety.

Emergency response leaders will be able to improve decision making and coordinate emergency services on the ground using augmented reality to enhance video, sensor and data feeds. 5G transformed networks with gigabit speeds and edge computing will make cities run smoother, safer, and smarter with near real-time, data-backed insight.

City leaders worldwide are adopting technologies and best practices to improve communications between departments, gain greater access to available data sources, monitor high-crime areas, and improve emergency preparedness. The goal is to make cities more efficient and resilient to unforeseen events— and safer for residents, visitors, and businesses. ■

Spotlight on UAE construction challenges

A poll of UAE-based construction leaders has found undervaluation of actual work in progress is the sector's biggest challenge.



A clear focus on the whole life costs of a capital asset is critical.

Photo Credit: Adobe Stock

ACCORDING TO THE British Business Group (BBG) survey of more than 70 construction heavyweights during a sold-out event in Dubai, 67 per cent agrees that works need to be valued more accurately and on a more realistic basis for the health of the industry.

A poll of UAE-based construction leaders carried out by the group has found undervaluation of actual work in progress rather than delayed payment is considered the sector's biggest challenge. Of those polled, 69% also believes there is a short term approach and a lack of consideration of the whole project life cycle when making decisions on capital projects during the construction phase.

Cynthia Corby, audit and assurance chief operating office and Middle East construction lead for Deloitte, said, "It is encouraging to see the majority of people agreed with what we believe is one of the

principal root causes for some of the symptoms we see in the industry today.

"A clear focus on the whole life costs of a capital asset is critical to ensure assets are delivered within budget, on time, fit for purpose and fulfil the planned return on investment for the stakeholders, be that a strategic ROI or a measured financial ROI. This focus ensures assets can be capitalised on the owner's balance sheet with confidence it will deliver the business plan with robust cash flows to support its capitalised cost and the potential to monetise the assets if and when required, be that through a sale or securitisation of the asset.

"The BBG Construction roundtable is now working towards assessing how the UK Construction Playbook can be adapted for the UAE region, capturing best practice and suggesting key policies and guidance for how private and public work projects and

programmes are evaluated for feasibility and funding, procured, delivered and handed over for operations – encompassing the whole life cycle of a capital project."

BBG's construction lead and chair of the event, Alan McCreehy of Spencer Interiors and Contracting said, "It was amazing how the participants attending this BBG construction-focused event were from such a broad demographic across every aspect of the industry, including clients, finance, legal firms, management consultants, architects, engineers, project managers, cost consultants, contractors, academia, manufacturers, equipment suppliers and facility management. The live poll was therefore very representative of the whole sector."

With more than 700 members, the British Business Group Dubai and the Northern Emirates is a not-for-profit business group open to companies or individuals from the UK with business interests in the region. ■

AEGIS Shaft Grounding Rings for electric motors

Martin Deiss, sales manager, Europe & Middle East, Electro Static Technology, ITW explains the usefulness of AEGIS Shaft Grounding Rings

VARIABLE FREQUENCY DRIVES (VFDs) are commonly used for energy-efficient control of AC motors. However, they can induce shaft voltages which lead to bearing and motor failure. Shaft grounding rings are a cost-effective alternative for protecting bearings against electrical damage.

All manufacturers of AC motors have motor product lines which are suitable for operation on VFDs. Through precision control of motors with VFDs, at least 30% of energy costs can be saved.

However, VFDs can induce unwanted shaft voltages and without effective protection, these voltages can result in premature bearing failure.

Although the National Electrical Manufacturers Association (NEMA) and other institutions identify this problem in motors, and recommend effective bearing protection, the most frequent cause of bearing failure is still bearing current.

Inverter duty motors include insulation which is designed to meet the latest standards to protect the windings, but the bearings are often neglected. For an AC motor to be truly suitable for VFD operation, it should have a long-term bearing protection. Often, this is not given sufficient consideration and leads to expensive downtime.

Technology for electrical bearing protection

AEGIS Shaft Grounding Ring (SGR) provides a reliable and cost-effective way to minimise electrical bearing damage, when combined with an insulated bearing for

AEGIS Shaft Grounding Rings.



Photo Credit : AEGIS

motors larger than 75-100 kW.

In contrast to the previously used shaft grounding technology, which came with spring energised carbon brush, the AEGIS SGRs offer far greater efficiency, especially in avoiding high frequency bearing currents. The shaft grounding rings consist of highly conductive microfibres and are scalable to any shaft diameter. Since the microfibres work with low-impedance and little or no contact with the shaft, they are not subject to wear like conventional carbon brushes.

Shaft grounding rings provide effective protection

Bearings normally have a mirror-smooth bearing surface. Without protection, shaft voltages pass through the bearings and cause undesirable electrical discharges. Spark erosion damages the bearing surfaces and leads to premature failure of the bearing. Within a short time, the bearing surface is strewn with microscopic scale melt craters, giving it a frosted appearance.

Over time, a corrugation (washboard-like surface) forms, resulting in increased bearing noise and vibrations.

When using insulated bearings, the damaging current will find a different path to ground, usually through connected units with bearing damages in these devices.

Simple proof of effectiveness

The effectiveness of AEGIS SGRs can be quantified by simply measuring the shaft voltage by an oscilloscope. Without shaft grounding, the voltage profile exhibits high voltage peaks and steep discharge edges. After applying the bearing protection ring, a virtually flat line appears on the screen.

AEGIS SGRs have already proven their value in millions of installations worldwide and many motor OEMs use factory-installed shaft grounding rings as standard or as options for certain motor series.

Conclusion

To operate an electric motor by a VFD without issues, it is important to have a proper insulation, as per the latest standards; and users should pay equal attention to effective shaft grounding.

AEGIS SGRs can be used in combination with an insulated bearing, for motors larger than 75-100 kW for most industries, including lifts, cranes or HVAC systems. ■

AEGIS SGRs can be used in combination with an insulated bearing, for motors larger than 75-100 kW for most industries, including lifts, cranes or HVAC systems.

ICAEW: Strong rebound in Middle East economies

According to the Economic Insight report for the Middle East, business confidence in the region has strengthened as vaccines have been rolled out and COVID-19 restrictions have eased.

THE REPORT WAS compiled by Oxford Economics, a leader in global forecasting and quantitative analysis providing advice to corporate, financial and government decision-makers, and shows that the Middle East's regional GDP will grow by 2.4% this year, a similar rate to the region's average growth trajectory in the last decade, and an improvement from the 4.4% it shrank by in 2020.

The Institute of Chartered Accountants in England and Wales (ICAEW), a membership organisation that promotes, develops and supports chartered accountants and students across the world, commissioned the report which highlights how the recovery process has been disrupted by stricter lockdown restrictions in recent weeks and oil production cuts weighing on output. Despite this, strong Purchasing Managers' Index (PMI) readings indicate growth accelerating in the coming months, boosted by rapid vaccine rollouts in several countries.

Preparation for various regional events, such as Expo 2020 in Dubai and the 2022 FIFA World Cup in Qatar, an easing of regional tensions and spending by the Saudi Public Investment Fund (PIF) will also support growth. Overall, the GCC GDP will grow by 2.1% this year, after the 5% contraction seen in 2020.

Although global COVID-19 cases are still high and new outbreaks are being reported daily, the pandemic looks to be under control in China, Europe and the US. With the tourist season approaching, oil demand is increasing. This has stabilised the oil price at above US\$65 per barrel (pb), and US\$64.4pb for Brent crude in 2021, up from \$62. However, given the continuously fragile demand outlook and plentiful scope for stronger supply growth, the upside for oil prices will remain limited through 2022 and 2023 and the report forecasts Brent to average US\$61pb during that period.



Photo Credit : Adobe Stock

Keeping infection levels low will be essential to ensuring economies in the Middle East can return to growth.

Michael Armstrong, FCA and ICAEW regional director for the Middle East, Africa and South Asia (MEASA), commented, "The outlook for most Middle Eastern economies looks positive this quarter, but keeping coronavirus levels low will be essential to ensure economies can return to growth. Governments across the region must keep developing sectors and industries that foster innovation, and continue implementing reforms to diversify economies and accelerate them into the post-COVID era."

The climate emphasis

Given the high reliance on the oil sector for growth, and countries' vulnerability to rising temperatures, climate change is also an increasingly important issue in the GCC region and is receiving a sharper focus in diversification plans in countries such as Saudi Arabia and the UAE. For instance, Saudi Arabia's Green Initiative aims to cut CO2 emissions in the Middle East by 60% by 2030 and ensure that half of the country's

electricity is generated from renewable sources. With many sectors oil-intensive the authorities have recognised that business models must change as otherwise they risk exposure to international policies to tackle climate change such as carbon taxation and border carbon adjustments.

"The rise in the oil price has boosted revenue prospects for GCC producers, which derive 40-90% of total fiscal income from oil. Higher oil revenue gives governments more scope to support post-pandemic recoveries without undermining efforts aimed at improving medium-term fiscal sustainability," said Scott Livermore, ICAEW economic advisor and chief economist at Oxford Economics.

"Climate change is a big risk to the economy and society. Without a significantly expanded mitigation effort, the MENA region, which already suffers from climate-related issues like water scarcity, is likely to have major economic consequences that could have pronounced economic impacts by 2050." ■

Building green, reliable, and intelligent All-Flash data centres is a challenge for future sustainable development.

Photo Credit - Adobe Stock

All-Flash data centres in the Intelligent Age

Huawei Enterprise describes how next-gen data centres can rise to the challenge of operating at the dawn of an Intelligent Era.

EXplosive data has become the core means of production and the catalyst for the digital economy.

Challenges facing the reconstruction of data centres First, the in-depth digital transformation of enterprises causes huge numbers of offline services to go online, and innovative services to emerge one after another. This is exemplified by the financial sector, where the transactions per second of large banks are increasing exponentially as a result of e-commerce and mobile payments.

Second, data centres have become a major power consumer. Currently, the total global power consumption of data centres is around 2% to 3% of the annual world power consumption.

High energy consumption results in high electricity costs and carbon emissions.

Third, many enterprises suffer huge economic losses and social impacts due to data loss and service disruption each year, which results in an estimated 8% fall in revenue. In the financial industry, where data is the lifeblood of business, the loss caused by system downtime reaches up to US\$6.48mn per hour.

Finally, operations and maintenance (O&M) efficiency is one of the core factors in the development of data centres. This is made difficult by a large number of devices and interfaces from multiple vendors affecting the ability of organisations to locate faults and respond to service

requests. Over the next five years, the amount of data maintained per capita will increase fivefold, which will further increase the difficulty of O&M and labour costs.

Building an all-flash data centre requires a comprehensive upgrade of the media, and also the integration of data centre resources and architecture reconstruction, in order to meet diverse future service requirements. Here are three important considerations for designing AllFlash data centres:

All-scenario Flash fast-tracks your services

All-scenario media flash indicates that diverse types of workloads are stored in flash media, for example, HDDs are replaced by SSDs in various scenarios, such as enterprise core systems, HPC, video, and disaster recovery. Offering the same capacity, SSDs reduce power consumption by 70% and space occupation by 50%. This slashes the total cost of ownership of data centres and helps them to go carbon neutral. In addition, the system performance of SSDs is 40x higher than that of HDDs.

All-IP data centre network unlocks the potential of Flash

Faster media and protocols call for faster networks. That brings us to the NVMe over Fabric (NVMe-oF) storage network. NVMe-oF uses the IP network to innovate and upgrade the previous dedicated network, achieving

higher bandwidth and lower latency. It is also easy to manage using the IP network, which is the optimal solution for implementing end-to-end NVMe. NVMe-oF solutions are currently trending in the industry.

Intelligent O&M platform improves full-lifecycle efficiency

All-flash data centres must deliver full-lifecycle intelligent O&M to implement automation and intelligence in planning, deployment, and optimisation. In the planning phase, resources are precisely planned, and the focus has shifted from device upgrade to full-lifecycle data management. In the deployment phase, global resources are automatically provisioned. In the optimisation phase, agile configuration optimisation and automatic resource prediction and change are implemented. The optimisation is performed using intelligent algorithms instead of expert experience.

Huawei's all-flash data centre solution, provides an effective way to build a future green and energy-efficient all-flash data centre. It has been used in core service systems of various industries, to better mine enterprise data value and accelerate the digital transformation journey. Along the way, emerging modern allflash data centres are sure to achieve great things while pushing social and economic production to new heights. ■

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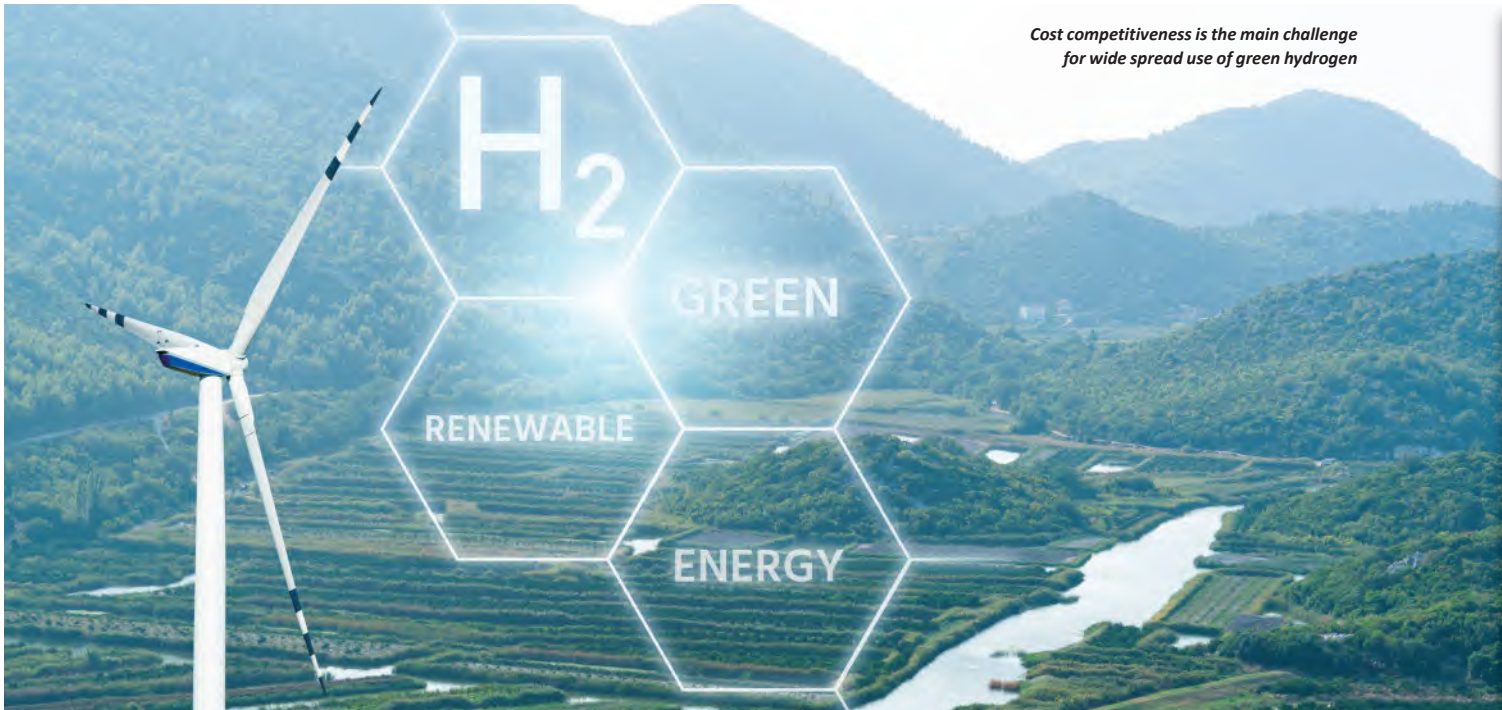
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Cost competitiveness is the main challenge for wide spread use of green hydrogen

Photo Credit : Adobe Stock

Road to decarbonisation

DNV's Technology Progress Report highlights the role of green hydrogen technologies in meeting decarbonisation targets.

DNV IN A recent research report, titled Technology Progress Report, has come to observe how the adoption of new energy transition technologies can help in achieving emissions reduction targets.

The Technology Progress Report, a new supplement to DNV's annual Energy Transition Outlook, has identified the role of green hydrogen in decarbonising manufacturing and energy production, over the next five years.

Remi Eriksen, group president and CEO of DNV says, "The world needs to transition faster to a deeply decarbonised energy system, reducing emissions by around 8% each year, to ensure an energy future compliant with the 1.5-degree ambition set under the Paris Agreement. This urgent and complex challenge requires full energy system thinking: understanding the timeline and interdependencies of technologies, policies, and the difficult decisions that need to be made."

According to the report, hydrogen economy is on the rise, and DNV expects that the global demand for hydrogen as an energy carrier will grow from zero in 2019 to 24 EJ/yr in 2050. The primary utility of the green hydrogen technologies will be in the

manufacturing and transport sectors, besides its primary use in fertiliser production or as feedstock.

Green hydrogen is produced through electrolysis, when a water molecule (H₂O) is split into hydrogen (H₂) and oxygen (O₂) by applying an electric current. The four main green hydrogen technologies are Alkaline Electrolysis (AE), Proton Exchange Membrane (PEM), Solid Oxide Electrolysis (SOE) and Anion Exchange Membrane. DNV is involved in numerous projects which apply these technologies, and keeps track of recent developments.

AE is the most mature electrolysis technology, largely used to improve conductivity, when mixed with potassium hydroxide (KOH), or for making fertilisers. PEM electrolyzers are used to produce commercial hydrogen and are largely used pressurised, with a quick response time and 30% higher cost than AE, but with better efficiency.

SOE is recognised for its high operating temperatures (500-900°C) and higher efficiency, but it has a low maturity level, compared to AE and PEM, and uses steam instead of liquid water.

AEM is the least developed procedure and still in the process of development but

seems promising, since the design is similar to that of PEM, but does not require the same raw materials.

The Technology Progress Report discusses at length, the uses of green hydrogen and some smart alternatives. SOE increases the lifetime of the stack, improves capacity, and reduces cost. While electrification is a good replacement for carbon-intensive energy carriers, and a better alternative than green hydrogen; it is generally suited for low and medium heating temperature processes (below 100°C).

Hydrogen can also be implemented by replacing or retrofitting natural gas burners, while the rest of the process equipment remains largely unchanged.

Green hydrogen is the most sustainable and carbon-free option and supports the business case of renewable energy. The upscaling and cost reduction of renewable energy and electrolysis will render green hydrogen more user-friendly.

The research report predicts that after about a decade, say in 2035, when renewable resources are abundantly available, the production of green hydrogen will see a significant increase, helping sustained decarbonisation in future. ■

The panelists of the Middle East Energy 2021 session who discussed the adoption of green hydrogen.



Renewable & Clean Energy Week
17 - 19 May

Topic: Briefing: Enabling the adoption of Green Hydrogen in the region



Tarik Hamane
Executive Director-Head of
Development, MASEN



Cornelius Matthes
CEO, Dii Desert Energy



Andrew Roscoe
Editor, Energy & Utilities



Photo Credit : Middle East Energy

Green hydrogen: the missing piece of the renewables puzzle?

A panel of expert speakers at Middle East Energy 2021, discussed why governments, utilities, international partners and more, are seriously considering developing green hydrogen projects in the future. Robert Daniels reports.

AT MIDDLE EAST Energy 2021, Andre Roscoe, editor of Energy and Utilities at Informa Markets, explored why green hydrogen is generating so much excitement within the energy industry.

Cornelius Matthes, CEO of Dii Desert Energy, explained that interest in green hydrogen has exploded over the last year due to a combination of factors. First the challenge of climate change has really been taken up in a big way and there is now serious action towards accelerating the transition to clean energy and reducing carbon footprint. Additionally, renewable energy is becoming increasingly low cost which is making the production of green hydrogen a much more viable option.

Continuing, Matthes commented, "Green hydrogen is now considered a necessity. Industries such as steel and fertilisers cannot electrify easily, so when it comes to massively reducing CO₂ emissions, green molecules are highly complementary to

green electrons (which are obviously a prerequisite). Steel is a low hanging fruit which currently represents 7% of global CO₂ emissions. One avenue to produce carbon neutral steel is direct reduction, to substitute things like coal with hydrogen."

Tariq Hamane, head of development department at Morocco Agency for

"Renewable energy is becoming increasingly low cost which is making the production of green hydrogen a much more viable option."

Sustainable Energy (MASEN), echoed these points and added that, for Morocco, the chemical and fertiliser industries were the biggest opportunity relating to green hydrogen. The country is a huge importer of ammonia, which could be subsidised by green ammonia produced by green hydrogen. Additionally, as the country has such huge potential for renewable power with solar and wind, it could be a major player in the green hydrogen field, capable of producing and transporting it to Europe.

At this moment green hydrogen is still in its infancy in regards to maturity of projects, but the panelists expected that this would begin to pick up rapidly in the near future due to the advancement of technology relating to electrolysis and renewable energy. They also noted that collaboration and partnerships would be absolutely essential to ensure that this enthusiasm for green hydrogen is maintained and actually converted into competitive projects. ■

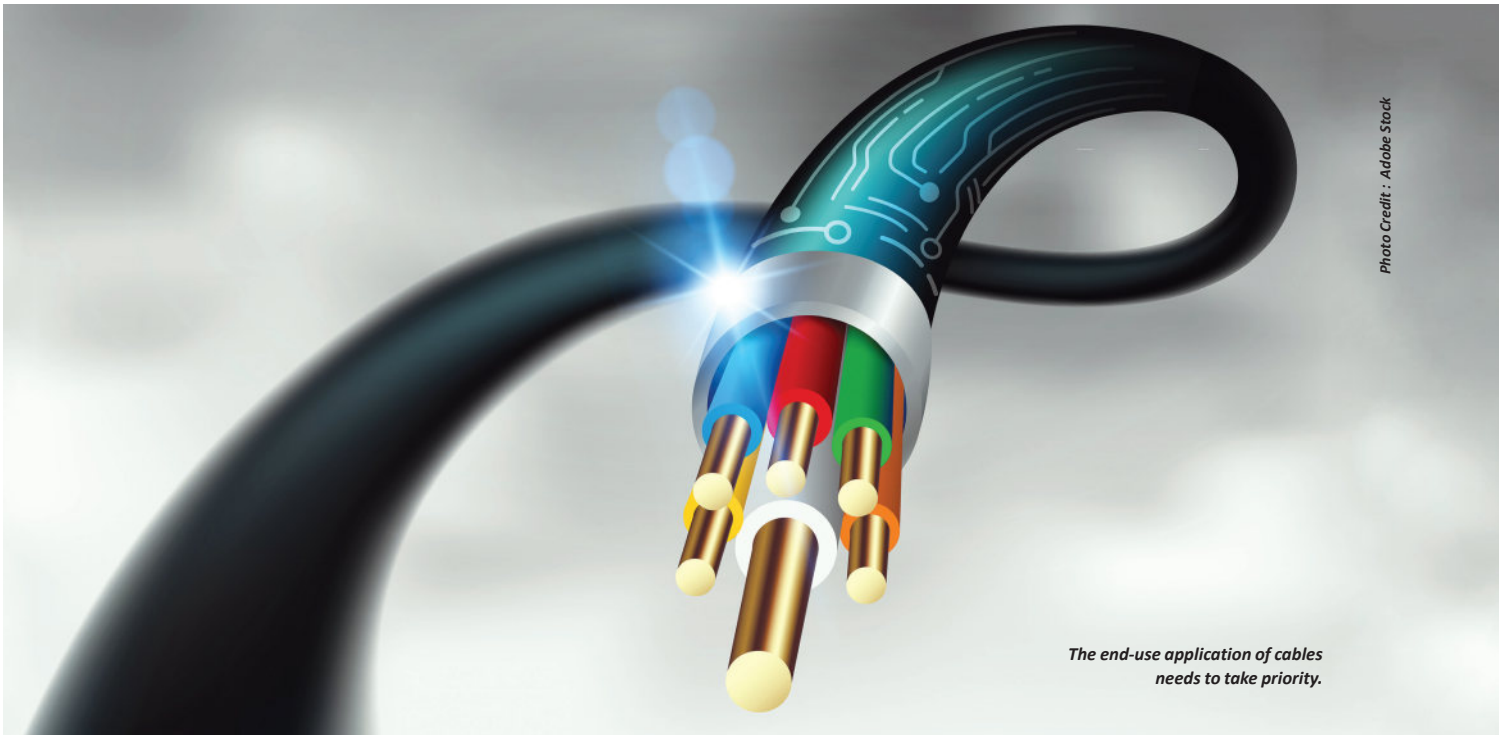


Photo Credit : Adobe Stock

The end-use application of cables needs to take priority.

Cabling for the future

A panel of industry experts at the Middle East Energy exhibition, take a look at the significance of cables in sustainable development.

IN A PANEL at the Middle East Energy 2021 on 'Revolutionising urban planning through underground cables,' an expert panel considered the impact of the energy transition on cables, technologies for testing and the importance of quality to meet demands of the end-user.

Uberto Vercellotti, product development manager cables, CESI, commented on the importance of proper design and installation, since cables are vital parts of the generation and distribution networks.

Ashish Chaturvedy, head of marketing, Ducab, explained that cables are undergoing significant innovations and transformation, in view of the energy transition. "From a Middle East perspective, we are witnessing a rising population, mainly due to more young people seeking jobs. This has led to a

lot of planning for smart cities, shaping trends in cable application," he said.

He added that the role of renewable energy sources is vital in the overall energy mix and the UAE has a number of initiatives underway, including DEWA piloting the first industrial scale, solar-driven green hydrogen facility in the MENA, in collaboration with Siemens Energy.

Further, he emphasised the need for utilities across the world, to be prepared for the demand of the underground cable network to meet demands for charging and storage, created by the electric vehicle boom.

Since our life is so dependent on these high, medium and low voltage cables, power outages can cause significant economic damage.

Sebastian Verhoeven, director, High

Voltage Laboratories, KEMA Labs explained the importance of quality for cables and the need for a significant number of testing of cables, distribution and transformers, for meeting economic stresses, chemical stresses and others. Cables should meet international standards, however, he added that certification should also be cost-effective. KEMA Labs is a world leader for independent testing, inspection and certification in electrical industries.

Chaturvedy agreed with the need for balancing quality and cost, stating that Ducab is offering tailored solutions for projects, to meet the evolving demand for urban planning. "As global demand for cable grows, compliance with cable standards becomes important for all sectors such as utilities, transportation, petrochemicals and others. So, in-depth type testing for assessing the quality of individual components is significant."

The end-use application for cables needs to take priority, he said. "The priority for sustainable urban development is to offer certified, tailored and quality solutions," he added. ■

"The priority for sustainable urban development is to offer certified, tailored and quality solutions," said Ashish Chaturvedy, head of marketing at Ducab.

Prioritising clean energy investment

New report from IEA shows concerted international efforts are needed for a sustainable and resilient economic future in the developing world.

THE WORLD'S ENERGY and climate future increasingly hinges on whether emerging and developing economies are able to successfully transition to cleaner energy systems, calling for a step change in global efforts to mobilise and channel the massive surge in investment that is required, according to a new report by the International Energy Agency.

The special report – carried out in collaboration with the World Bank and the World Economic Forum – sets out a series of actions to enable these countries to overcome the major hurdles they face in attracting the financing to build the clean, modern and resilient energy systems that can power their growing economies for decades to come.

Annual clean energy investment in emerging and developing economies needs to increase by more than seven times – from less than US\$150bn last year to more than US\$1tn by 2030 to put the world on track to reach net-zero emissions by 2050, according to the report, *Financing Clean Energy Transitions in Emerging and Developing Economies*. Unless much stronger action is taken, energy-related carbon dioxide emissions from these economies – which are mostly in Asia, Africa and Latin America – are set to grow by five billion tonnes over the next two decades.

“In many emerging and developing economies, emissions are heading upwards while clean energy investments are faltering, creating a dangerous fault line in global



The report underscores that clean energy investments and activities can bring substantial economic opportunities and jobs.

Photo Credit : Adobe Stock

efforts to reach climate and sustainable energy goals,” said Fatih Birol, the IEA Executive Director. “Countries are not starting on this journey from the same place – many do not have access to the funds they need to rapidly transition to a healthier and more prosperous energy future – and the damaging effects of the Covid-19 crisis are lasting longer in many parts of the developing world.”

“There is no shortage of money worldwide, but it is not finding its way to the countries, sectors and projects where it is most needed,” said Dr Fatih Birol, the IEA Executive Director. “Governments need to give international public finance institutions a strong strategic mandate to finance clean energy transitions in the developing world.”

“A major catalyst is needed to make the 2020s the decade of transformative clean energy investment,” said Dr Birol. “The

international system lacks a clear and unified focus on financing emissions reductions and clean energy – particularly in emerging and developing economies. Today’s strategies, capabilities and funding levels are well short of where they need to be. Our report is a global call to action – especially for those who have the wealth, resources and expertise to make a difference – and offers priority actions that can be taken now to move things forward fast.”

The report calls for a focus on channelling and facilitating investment into sectors where clean technologies are market-ready, especially in the areas of renewables and energy efficiency, but also laying the groundwork for scaling up low-carbon fuels and industrial infrastructure needed to decarbonise rapidly growing and urbanising economies. It also calls for strengthening sustainable finance frameworks, addressing barriers on foreign investment, easing procedures for licensing and land acquisition, and rolling back policies that distort local energy markets.

The report underscores that clean energy investments and activities can bring substantial economic opportunities and jobs in industries that are expected to flourish in the coming decades as energy transitions accelerate worldwide. ■

“Our report is a global call to action – especially for those who have the wealth, resources and expertise to make a difference – and offers priority actions that can be taken now to move things forward fast.”

Connecting the industry

Attendees came from a host of countries, with the United Arab Emirates, Nigeria, India, Egypt, Saudi Arabia, Pakistan, United Kingdom, Ethiopia, Bangladesh, and Ghana leading the way.



Photo Credit : Infarma

The event covered Renewable & Clean Energy, Transmission & Distribution, Critical & Backup Power, and Energy Consumption & Management.

ORGANISERS OF MIDDLE East Energy's debut virtual event have revealed that more than 164 countries took part in the month-long showcase, which featured four online energy sector weeks, between 17 May – 9 June.

The online event attracted 5,400 attendees from 164 countries worldwide, focusing on the latest insights, trends, and innovations across four energy industry sectors, including Renewable & Clean Energy, Transmission & Distribution, Critical & Backup Power, and Energy Consumption & Management.

During the event, 85 sessions, including tech talks, interactive roundtables, panel discussions, thought leadership sessions and remote interviews, took place. Underscoring the importance of business development and making meaningful contacts, over 7,300 connections were made by 164 exhibiting companies.

Claudia Konieczna, Exhibition Director, Middle East Energy, said, "The outcome of the event has supported our strategy to take Middle East Energy online and deliver a virtual showcase for the energy industry.

"Despite the challenges of the pandemic, we have been able to bring the global energy industry together. A series of insightful and thought-provoking discussions have been instrumental in supporting the sector's recovery and providing a roadmap for the future.

"During the four sector weeks, we heard from a series of industry heavyweights discussing everything from the adoption of clean hydrogen to automation and digital solutions in transmission and distribution. Energy access to all and the importance of green buildings and smart cities were also highlighted, giving the event broad appeal to those in the energy industry."

The highlight of the opening day was the welcome speech by H.E.

Suhail Al Mazrouei, Minister of Energy and Infrastructure, who reiterated the UAE's commitment to reduce carbon dioxide emissions by 70% and increase clean energy use by 50% by 2050.

Elsewhere on day one, H.E. Eng. Yousif Al Ali, Assistant Undersecretary - Electricity, Water and Future Energy Ministry of Energy and Infrastructure, highlighted the UAE's position to be one of the top producers of hydrogen in the world during the session, Energy diversification and the race to meet clean energy targets – strategies to reach net-zero.

During week two, Transmission & Distribution took centre stage with discussions focused on automation, digital solutions, and artificial intelligence, with reliable generation integral to driving economic recovery post-COVID-19.

The third sector week, Critical and Backup Power, saw a presentation from David Lecoque, CEO, Alliance for Rural Electrification (ARE), who highlighted the need to provide electricity to 870 million people who currently don't have access and better access to the 1.5 billion suffering from unreliable service.

Rounding out the sector weeks was Energy Consumption & Management, where a panel of energy industry experts underscored the importance of green buildings and smart cities in reducing energy consumption. Insights on the opening day session came courtesy of Benoit Lebot, a senior policy adviser in the French government's Ministry for the Energy Transition; Amr Salah, Senior Director - Head of Utilities, Emaar - The Economic City; and Ahmed Samer Elbermbali, Managing Director, MENA Clean Energy Business Council.

A host of exhibitors showcasing their latest innovations included Perkins, Masdar, Cummins, Brady, Koncar, AVEVA, CESI, HitachiABB, IFS, Riedon, Uniper and BASEC. ■



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Big 5 Construct Egypt 2021 launches five co-located events

THE BIG 5 CONSTRUCT Egypt kicked off in June, 2021 at the Cairo International Convention Centre. The Big 5 Egypt Leadership Conference, a three-day event, scheduled to gather regional ministers and international leaders to explore the construction sector's future contribution towards economic growth and diversification in Egypt. Besides the conference, the event features free-to-attend CPD certified talks across several critical themes, presenting a unique opportunity for visitors to stay up-to-date on trends in the sector, while gaining professional development points for their professional record.

This year the event introduced five new specialised co-located events, namely- Ceramic Egypt, The Big 5 Heavy Egypt, Marble, Stone and Surface Egypt, TOTALLY CONCRETE EGYPT, Windows, Doors and Facades, Egypt, covering the full spectrum of construction sector disciplines, giving exhibitors exceptional access to a precisely targeted buyer demographic with serious and specific purchasing power.

Matt Denton, president at dmg events, said that powerful face-to-face connections between industry stakeholders will be significant for the sector's sustained development, reinforcing that "It is more important than ever for us to offer a safe environment for the community to come together where they can boost business activities, rebuild partnerships, and apply lessons learnt to future projects, all in one place."

"To that end, in addition to offering vital trading opportunities this year, The Big 5 Construct Egypt will launch new high-level features

focused on strategic industry development and innovation, making it an unmissable business event for the construction sector in the wake of COVID-19 disruption," he added.

The event also launched the Big 5 Egypt Impact Awards this year, on the first day of the business networking event, at the same venue. The awards explored across 20 categories, Egypt's outstanding construction projects and leaders and young construction professionals who showed remarkable feats of inclusion and diversity, innovation and health and safety. The entries were examined against individual category criteria by an independent and international panel, comprising 16 industry experts

Muhammed Kazi, the vice-president at dmg events, said, "I am delighted to report that in its first edition The Big 5 Egypt Impact Awards have received entries from over 50 leading architectural, engineering and construction businesses operating across Egypt." "The project market in Egypt has presented as a top performer in the MENA region despite the COVID-19 impact and we are excited to recognise the businesses and people behind this outstanding resilience."

Matt Doran, MENA regional manager at The Chartered Institute of Building (CIOB), said, "Huge congratulations to the finalists of The Big 5 Egypt Impact Awards who have shown great examples of industry collaboration and innovation, with submissions reflecting a strong focus on digitalisation and contribution to the Sustainable Development Goals, in addition to an impressive and diversified portfolio of projects in Egypt."

Construction Technology Festival 2021 highlights AEC sector's digital future

THE THIRD CONSTRUCTION Technology Festival, the industry's first in-person conference and exhibition this year, successfully concluded on 2 June. The two-day event, organised at the Address Hotel Dubai Marina, saw more than 300 attendees from the architecture, engineering, and construction (AEC) sector come together and share new digital methods that help design, build and operate assets better, and deliver projects efficiently, quickly and sustainably.

The Festival explored 10+ digital disciplines, including Digital Twins, Internet Of Things (IoT), Artificial Intelligence (AI), Architecture, Engineering, and Construction (AEC) Data, 3D Printing, Offsite Methods, Automation, and Building Information Modelling (BIM).

Katie Briggs, content director at b2b Connect, said "It is clear that the shift towards digitalisation in AEC is now unstoppable. It is no longer if technology will be used within the sector to improve its performance, but how."

Both the days saw a number of case studies being presented, with real-world results. This included the widespread and more sophisticated use of BIM, the use of monitoring and sensors, coupled with IoT



Photo Credit : CTF 2021

The Red Sea Project won the BIM Implementation of the Year Award.

systems, and the growing use in the region of Digital Twins.

AEC sector's digital future

Throughout the construction value chain, processes are being re-evaluated and areas of resistance are weakening, as clients, developers, consultants, and contractors are realising the benefits of digital transformation.

The event underlined that offsite methods of construction bring tangible benefits to the industry, particularly around safety and reduced waste of materials, as well as introduced predictability to build processes. 3D printing is offering benefits in safety and sustainability.

Construction Technology Awards 2021

The Construction Technology Awards 2021 recognised and celebrated some leading technology innovators and pioneers within the built environment.

The Coastal Village Residential Buildings for The Red Sea Development Company won the Offsite Project of the Year (entered by DuBox by Amana); The Red Sea Project won the BIM Implementation of the Year Award (entered by The Red Sea Development Company); ALEC Engineering and Contracting won the Digital Project of the Year while Multiplex Constructions LLC won the Sustainable Organisation of the Year award.

Tamer Elgohari, Digital Innovation Manager, ASGC Construction won the title of the Construction Technology Rising Star of the Year, and Jason English CEO of Al Laith, won the Construction Technology Leader of the Year award.

Accelerating clean energy in the MENA region

Across the region, there are advancements in the provision of clean, reliable energy. Fyna Ashwath reports.

MENA is advancing the progress towards clean energy and green growth.



Photo Credit: Adobe Stock

ECONOMIC ACTIVITY IN the Middle East and North Africa is forecast to advance by 2.4% this year and 3.5% next year, the World Bank says in its June 2021 Global Economic Prospects.

The region should benefit from the recent rebound in oil prices, stronger external demand, and less economic disruptions from COVID-19 outbreaks. As vaccinations rise, mobility restrictions ease, oil production cuts taper, and damage to balance sheets reverse, growth should accelerate further to 3.5% in 2022, according to the report.

Saudi Arabia is forecast to grow 2.4% this year and 3.3% in the next, reflecting positive pandemic developments, higher oil prices and tapering oil production cuts.

Signs of a revival in consumer demand and positive business sentiment are evident across the UAE, too. The country is at the forefront of the clean energy movement with initiatives such as the Siemens Energy collaboration with Dubai Electricity and

Water Authority (DEWA) and Expo 2020 Dubai, for the first industrial scale, solar-driven green hydrogen facility in the Middle East and North Africa (MENA).

Morocco is recognised as a regional energy transition pioneer.

The International Renewable Energy Agency (IRENA) and the Ministry of Energy, Mines and Environment of Morocco have agreed to strengthen collaboration to advance knowledge in renewable energy and to accelerate the energy transition

Specifically, IRENA and Morocco will work closely to advance the national green hydrogen economy as the country aims to become a major green hydrogen producer and exporter.

“Morocco has shown great leadership in advancing the deployment of renewable energy to meet growing energy demand while creating new industrial opportunities across the country,” said IRENA director-general Francesco La Camera.

The African Development Bank (AfDB) has

approved a US\$99mn loan to finance the second phase of Egypt’s Electricity and Green Growth Support Programme.

The programme seeks to enhance the power sector’s financial sustainability, governance and operations. It will also advance the provision of clean, reliable energy to drive green growth. Egypt’s successful reforms in the sector have led to greater private investment in utility-scale renewable energy projects.

Rania Al Mashat, minister of Egypt’s International Cooperation, said, “Egypt’s Vision 2030 instills the sustainability ethos across all sectors. Energy and electricity are amongst the top sectors in Egypt’s International Development Cooperation’s portfolio, pushing towards a green reform. With 2021 being the year of private sector engagement, the Electricity and Green Growth Support Programme will contribute towards sustainable growth and job creation and catalyse the development of Egyptian private entities.” ■

Electrical Equipment and Materials Buyers' Guide

2021

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

Section One: Listings by category

Section Two: Suppliers of electrical equipment and materials, page 37

Section Three: Contact details of Middle East agents & subsidiaries listed by country, page 40

Section One: Listings by category

AC Alternators

Mecc Alte UK Ltd.

Air Compressors

Bauer Kompressoren GCC FZE

Kaesar Kompressoren FZE

Rotair S.P.A

Air Conditioning / Chillers / Heat

Exchangers

LG Electronics Gulf FZE

Rittal Middle East FZE

Air Purification & Cleaning Equipment

Bauer Kompressoren GCC FZE

Asbestos, GRP, Fibre Glass

Phoenix Contact Electrical Equipment Trading LLC

Automation Systems

GIOVENZANA INTERNATIONAL BV

Bus Bar Systems

GIOVENZANA INTERNATIONAL BV

Cable Fault Locator

BAUR GmbH

Megger Limited

Cable Labeling

Brady Middle East FZE

Cable Laying Equipment

Rotair S.P.A

Cable Testing Equipment

BAUR GmbH

Megger Limited

Cables & Cable Accessories

alfanar trading

Brady Middle East FZE

Cathodic Protection

DEHN SE + Co KG

Circuit Breakers

alfanar trading

Cogeneration

Caterpillar Electric Power

KOHLER-SDMO

Compressor and Turbine Blades

Bauer Kompressoren GCC FZE

Compressors

Byrne Equipment Rental LLC

Kaesar Kompressoren FZE

MAN Energy Solutions SE

Rotair S.P.A

Control Equipment/Systems

MOTORTECH GmbH

Control Safety, System Protection &

Monitoring Equipment

Bauer Kompressoren GCC FZE

Control System - Industrial &

Residential

alfanar trading

COELMO Spa

Conversion & Storage of Electrical

Energy

HVR PENTAGON

Cooling & Heating Equipment

HVR PENTAGON

Copper Rod & Wire

DEHN SE + Co KG

John Deere Power Systems

Data Communications Equipment

Phoenix Contact Electrical Equipment Trading LLC

Data Logging

Nidec Leroy-Somer / Electric Power Generation

Detectors

VEGA Technique

Diesel Engines

Cummins Middle East FZE

John Deere Power Systems

Jubaili Bros

KOHLER-SDMO

MAN Energy Solutions SE

Perkins Engines Company Limited

Dimmers

alfanar trading

Earthing / Lightning Equipment &

Accessories

Cressall Resistors Ltd.

DEHN SE + Co KG

Education & Training

VEGA Technique

Electric Generators - Turbo Generators

& Hydro Generators

AJ Power Ltd.

Cummins Middle East FZE

HIMOINSA

Linz Electric S.p.A

Mecc Alte UK Ltd.

Nidec Leroy-Somer / Electric Power Generation

Electric Motors / Repairs Equipment

AEGIS dba Electro Static Technology, an ITW company

Electrical Wiring Accessories

Phoenix Contact Electrical Equipment Trading LLC

Electronics

LG Electronics Gulf FZE

Enclosures

alfanar trading

AP Lanka Pvt. Ltd.

Jubaili Bros

Rittal Middle East FZE

Energy Efficiency/Savers

IREM S.p.A.

Energy Management & Services

IREM S.p.A.

Lovato Electric S.p.A.

Energy Measurements

Lovato Electric S.p.A.

Engineering Services

alfanar trading

AP Lanka Pvt. Ltd.

COELMO Spa

Jubaili Bros

MOTORTECH GmbH

Engines/Motors/Engine Parts

Cummins Middle East FZE

KOHLER-SDMO

Equipment for Electric Motor Repair

AEGIS dba Electro Static Technology, an ITW company

Equipment for Power Transmission

Lines

Cressall Resistors Ltd.

Explosion Proof Equipment /Lighting

& Switchgear

Byrne Equipment Rental LLC

Field Instrumentation / Process

Control / Valves

MOTORTECH GmbH

VEGA Technique

Filters

Jubaili Bros

Firefighting Equipment & System

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MOTORTECH GmbH

Nidec Leroy-Somer / Electric Power Generation

Gas Engines

Cummins Middle East FZE

MAN Energy Solutions SE

Gas Turbines

MAN Energy Solutions SE

Generating Sets

AJ Power Ltd.

Caterpillar Electric Power

COELMO Spa

HIMOINSA

Jubaili Bros

KOHLER-SDMO

Linz Electric S.p.A

Lovato Electric S.p.A.

MAN Energy Solutions SE

Mecc Alte UK Ltd.

SAB Standard Aggregatbau Evers GmbH & Co. KG

Teksan Generator

Visa S.p.A.

Generating Technologies

KOHLER-SDMO

Teksan Generator

Generators

AJ Power Ltd.

Byrne Equipment Rental LLC

COELMO Spa

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Linz Electric S.p.A

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Teksan Generator

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Phoenix Contact Electrical Equipment Trading LLC

Heat & Power Integration, Products &

System, Co-Generation

Teksan Generator

High-Voltage Equipment of

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Cressall Resistors Ltd.

Hydraulic & Pneumatic

Kaesar Kompressoren FZE

Hydro-Electric Power Plant

Phoenix Contact Electrical Equipment Trading LLC

Indicators/ Controllers

VEGA Technique

Industrial & Power Automation

Lovato Electric S.p.A.

Industrial Power Engineering

AP Lanka Pvt. Ltd.

KOHLER-SDMO

Rittal Middle East FZE

Inspection and Testing

Megger Limited

Instrumentation & Calibration

VEGA Technique

Irrigations Systems

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Isolators

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Level Detection & Control

VEGA Technique

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Lifts & Escalators

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DEHN SE + Co KG

Limit SwitchesGIOVENZANA INTERNATIONAL BV
VEGA Technique**Load Banks**

Cressall Resistors Ltd.

Magnetic Cores

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ITW companyBAUR GmbH
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AP Lanka Pvt. Ltd.Caterpillar Electric Power
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Brady Middle East FZE

Section Two: Suppliers**AEGIS dba Electro Static
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E-mail: sales@est-aegis.comFor over 30 years, AEGIS dba Electro Static
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Fax: +44 28 38361010
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E-mail: sales@ajpower.net;
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Agents:
United Arab Emirates - Petroleum Specialities FZE

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Fax: 044544899
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E-mail: marketing@byrnerental.com

Byrne Equipment Rental has 20 operational bases across the Middle East with a fleet of over 14,000 items of plant and a team of over 1,500 people. Byrne's product range is built upon our successful 'one stop shop' model approach with a rental fleet constantly updated to carry the latest brands of equipment and technology, enabling operational efficiency through equipment rental and lease solutions.

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COELMO Spa

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Coelmo is one of the oldest European manufacturers of industrial and marine generators from 3kVA up to 4000kVA. Based in Italy, with a large stock of Generating Sets available to be shipped overnight to any destination in the world. Company profile, products and models are available online at www.coelmo.it

Agents:
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Cressall Resistors Ltd.

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Tel: +44 116 2733633
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E-mail: sales@cressall.com

Cressall Resistors manufacture high power resistors, neutral earthing resistors (NERS), portable load units, bespoke LV and HV load banks, dummy loads and dynamic braking resistors as well as resistors for use in high voltage filters such as HVDC, SVC and MSC Systems.

Agents:
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Saudi Arabia - Naizak Power System
United Arab Emirates - Ali Haji Abdulla Awazi-Gargash LLC

Cummins Generator Technologies

Fountain Court, Lynch Wood
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Agents:
United Arab Emirates - Cummins Generator Technologies (Middle East)

Cummins Middle East FZE

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**Deep Sea Electronics LTD**

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DSE is a number one designer and

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DEHN SE + Co KG

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As you might be aware of, DEHN SE + Co KG is a Germany based company engaged in the field of Earthing & Lightning Protection over 110 years and cater to needs of Earthing & Lightning Protection, Surge Protection, Safety Devices (as per five safety rules). All DEHN products are tested as per applied International norms like IEC, EN, UL etc. at DEHN Test Centre, Neumarkt, Germany (Accredited by IEC & UL); DEHN quality management system is certified to ISO9001. DEHN Middle East FZE, Dubai is 100% subsidiary of DEHN SE + Co KG, Germany. We offer full range of ELPS Components (in Copper, Stainless Steel, Galv. Steel and Aluminum) and Surge Protection Devices in accordance with IEC & UL norms. We offer specialized design solutions in Earthing & Lightning Protection for Building, Infra, Energy and Oil & Gas Sector for GCC region.

Agents:
United Arab Emirates - DEHN Middle East FZE

GIOVENZANA INTERNATIONAL BV

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HIMOINSA

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Agents:
United Arab Emirates - HIMOINSA Middle East

HVR PENTAGON

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John Deere Power Systems

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Yemen - Abu Alrejal Trading Corporation

Jubaili Bros

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Tel: +971 4 8832023
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Agents:

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Kaeser Kompressoren FZE

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United Arab Emirates - KOHLER SDMO MIDDLE EAST

LG Electronics Gulf FZE

36th Floor
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Dubai
United Arab Emirates
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www.lg.com/ae_ar

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

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United Arab Emirates - Al Yousuf Electronics
United Arab Emirates - District Cooling Company
United Arab Emirates - Fortune International Trading LLC
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Linz Electric S.p.A

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Linz Electric S.p.A is an Italian industrial company specialized in the design, production and sale of alternators. Part of the Pedrollo Group of companies, Linz Electric has become one of the major players in the sector in just a few years, thanks to the original innovative solutions in energy transformation.

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Lovato Electric, Italian solid tradition with almost 90 years of on-going activity, is the leader in industrial controls, diesel gen-set, energy management product manufacturing field for industry. The presence of Lovato Electric in the most important world markets is the result of the company's constant international strategy, which is now exporting its products in over 100 countries.

**MAN Energy Solutions SE**

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MAN Energy Solutions enables its customers to achieve sustainable value creation in the transition towards a carbon neutral future. Addressing tomorrow's challenges within the marine, energy and industrial sectors, we improve efficiency and performance systematically. Leading the way in advanced engineering, we provide a unique portfolio of technologies.

Agents:

United Arab Emirates - MAN Energy Solutions Middle East LLC

Mecc Alte UK Ltd.

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Mecc Alte design and build high performing alternator solutions for low, medium and high voltage power classes for standby and prime power applications, from 1-5,000kVA. With manufacturing in Italy, the UK, China and India, their network of factories is supported by wholly-owned subsidiaries across the globe who specialise locally in the sales, distribution and after-sales for all Mecc Alte products. Combining independent thinking

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MOTORTECH GmbH is an international developer and manufacturer of ignition components, gas regulation and engine management systems as well as other accessories for the worldwide energy generation industry with stationary gas engines.

Nidec Leroy-Somer / Electric Power Generation

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Leroy-Somer, a business of the Nidec Group, is the world leader in low and medium voltage alternators. We specialize in high-quality, reliable products that combine long-lasting performance and reduced lifetime costs. We serve all industries and provide a complete range of solutions. Get in touch!

Agents:

United Arab Emirates - Nidec Motor DMCC

ORTEA S.p.A.

Via dei Chiosi
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Fax: +39 02 95917801
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Founded in 1969, ORTEA is now a leading company in manufacturing and engineering Power Quality solutions: voltage stabilizers, sag compensator, pfc systems, transformers and active harmonic filters. ORTEA is well established in the global market. Thanks to strategically positioned offices and distributors, ORTEA's products are installed and working in more than 100 countries.



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Agents:
United Arab Emirates - Power Systems Gulf LLC

Phoenix Contact Electrical Equipment Trading LLC

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PHOENIX CONTACT is a worldwide market leader for components, systems, and solutions in the fields of electrical engineering, electronics, and automation. Today, the family-owned company employs around 17,100 people worldwide, and had a turnover of 2.4 billion in 2020. The company headquarters are in Blomberg, Germany. The Phoenix Contact Group is made up of 15 German and four international companies, as well as 55 sales subsidiaries throughout the world. Internationally, Phoenix Contact is represented in more than 100 countries.



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Founded in 1999, Rittal Middle East FZE - a subsidiary of Rittal GmbH & Co. KG, composing an active team with over 30 professionals addressing the Middle East market, with headquarters based in Herborn, Germany. Rittal Middle East is one of the recognized innovative suppliers for the industrial and electrical sectors as well as a key player in the networking infrastructure & datacentre arena. A perfectly coordinated platform with a vast product range covering industrial/electrical enclosures, system climate control and power distribution suitable for oil & gas, energy, industries, construction etc. Ri4Power Form 2-4: New structured solution for reliable low-voltage

switchgear system compatible with international players (breakers), type tested to IEC60439-1 and IEC61439-1/2.

Agents:
United Arab Emirates - Al Ghandi General Trading

Rotair S.P.A

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Engines: Perkins / Kubota / Honda / Deutz / JCB / Cummins
Version: Diesel / Petrol / Hydraulic



SAB

SAB Standard Aggregatebau Evers GmbH & Co. KG

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Teksan Generator

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Teksan, a leading engineering and technology company, manufactures diesel, natural gas and biogas generator sets, hybrid power systems, cogeneration-trigeneration systems, mobile lighting towers. Powering Middle East with high quality and reliable power systems

Agents:
Egypt - Rich Uni
Iraq - KM Company
Libya - BELHAJ INTERNATIONAL COMPANY
Saudi Arabia - Abdul Latif Jameel Machinery
Yemen - AL AHLASI CORP.FOR INTERNATIONAL TRADE



Trident Technology Services

Middle East & Africa
Web: www.itrident.com
E-mail: info@itrident.com

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

VEGA Technique

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VEGA is a German manufacturer of level and pressure instruments for all applications such as in the chemicals, oil & gas, energy, water & waste water, bulk solids, food, pharmaceutical... VEGA develops innovative sensors that offers maximum safety and reliability: Guide Wave Radar, Free space Radar, Radiation based technologies, Pressure and Differential Pressure Transmitters etc...



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Visa S.p.A. is one of the world's leading gensets supplier, based in Italy, designing and manufacturing diesel generators, from 9 to 3000 kVA, in standard or customized versions to meet your every need in a large variety of applications (telecommunications, construction and engineering industry, hospitals, data centers, etc...). With its network currently present in more than 90 countries worldwide, it provides versatile, high-tech energy solutions guaranteeing a highly operational flexibility and qualitative standards for which it has become a leader in the market for more than 60 years.

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Briefly

Potain's new Igo T 99 self-erecting crane

POTAIN HAS INTRODUCED the Igo T 99 self-erecting crane, with improved reach and capacity from a compact footprint.

The Potain Igo T 99 ups the ante for self-erecting cranes with improved capacity and reach over previous models, but from the same compact footprint that the Igo series is known for worldwide. The impressive capacity and reach from this compact crane will enable customers to bid for and complete more jobs, as its travel and on-site dimensions make the crane easy to transport and ideal for jobsites with tight working conditions.

Three additional mast sections can be added to the crane, providing seven working heights that range from 20.5 m – 38.5 m (67.2 ft – 126 ft). Keeping things compact and easy Transport to the jobsite is made easy by the Igo T 99's compact dimensions. It has a total transport length of just 15.65 m (51.3 ft) and height of only 4 m (13.1 ft) when fitted with 80 km/hr axles (49.7

The Igo T 99 features a 6 t (6.6 USt) maximum capacity and reach of 48 m (157 ft). With the jib extended to 45 m (147 ft), it can lift 1.5 t (1.6 USt) at the tip. When it's configured with 48 m (157 ft) of jib, it can lift 1.2 t (1.3 USt).

This new crane features plenty of vertical reach, too. Its height-under-hook reaches 38.5 m (126 ft) at horizontal, and when the jib is raised to 30°, it can reach 56.5 m (185 ft). It is compatible with all current Potain Igo and Igo T transport axles which adds versatility for customers with more than one Igo in their fleet.

The Igo T 99 features the compact footprint and ability to work on constricted jobsites that previous generations of Igo cranes are known for. Its footprint measures only 4.5 m x 4.5 m (14.7 ft x 14.7 ft) when erected, and a new unfolding mechanism enables the crane to be erected in narrow spaces close to buildings. This mechanism requires less ground area because the crane deploys from the top after the base is already erected. Levelling the Igo T 99 is as simple as adjusting a support screw, and the crane can be powered from 480v 60hz and 400v 50hz power sources.

Bobcat launches new generation of telehandlers



The T36.120SL comes from the middle range telehandler series.

Photo Credit: Bobcat

BOBCAT HAS LAUNCHED the company's new generation R-Series telehandler range for the Middle East, Africa, Russia and CIS markets, providing a choice of 12 models powered by Stage IIIA engines. The telehandlers cover lifting heights from 6 to 18m, with maximum lifting capacities between 2.6 and 4.1 tonnes. This is the latest phase in Bobcat's Next is Now programme, combining innovative product development and diversification with more intelligent, user friendly technologies that reshape how work gets done.

Commenting on the R-Series launch, Gustavo Otero, president, Doosan Bobcat EMEA, said, "Telehandlers are a fundamental asset of our business strategy and key pillar of our Next is Now initiative. Our new ground-breaking R-Series offers high performance, robust machines for maximum uptime with a focus on accurate controls and intuitive operation for tackling any job on the construction site. With these new models and the increased investment in our telehandler business, we are aiming to double the production of Bobcat telehandlers by 2025."

The new R-Series range of telehandlers from Bobcat comprises the models below:

Compact telescopic loaders – TL26.60, TL30.60 and TL30.70

Middle range telehandlers – TL35.70, T35.105,

T35.105L and T36.120SL

High lift telehandlers – T35.130S, T35.130SLP, T35.140S, T41.140SLP and T40.180SLP.

Gustavo Otero continued, "Bobcat telehandlers are popular in MEA and we want to further improve our presence and accelerate our growth in the MEA construction and rental market with this new generation. Leveraging from the ease of use, safety and reliability of our equipment, we aim to be present on every job site, where this kind of equipment is needed."

The R-Series telehandlers offer agility on demand, with a newly configured transmission system, providing enhanced smoothness to carry out the trickiest jobs at height with surgical precision. These operations are also facilitated by the combination of the Boom Positioning System, the new updated, ultra-accurate joystick, the inching function and the improved visibility from the cab.

An enhanced inching pedal design is easier to use and reduces fatigue. A higher engine brake provides a shorter stop distance and increases safety on construction sites. Turtle/rabbit speeds are standard on all models and operated from the joystick. Bobcat R-Series telehandlers feature a new cab with unmatched ease of use, designed around the operator, offering a unique central control panel for optimised 360° ergonomics.

Ericsson Private 5G set to transform secure on-site connectivity

ERICSSON HAS LAUNCHED Ericsson Private 5G that offers secure and simple 4G LTE and 5G Standalone connectivity primarily targeting- but not limited to- manufacturing, mining and process industry, offshore and power utilities, as well as ports and airports.

Ericsson Private 5G optimises and simplifies business operations with cloud-based network management, keeps sensitive data on-premise, has zero downtime upgrades and guarantees high performance through Service-Level Agreements (SLAs).

It is easily installed within hours at any facility and can be scaled to support larger coverage areas, more devices and higher capacity when needed. The product is designed to be flexible and will support a range of deployment sizes, depending on requirements, to suit varied needs. Businesses can manage their networks and integrate with IT/OT systems via an open API.

Ericsson Private 5G builds upon Ericsson's 4G/5G radio and dual-mode core technology, enabling a wide variety of use cases for both indoor and outdoor environments while integrating well with business operations, devices and applications.

As a result, companies can improve productivity, give their customers more value and provide better working environments for employees.

Innovative use cases include tracking assets and real-time automation to improve productivity in warehouses, and a digital twin that can help to optimise manufacturing operations. Efficient quality



Photo Credit : Adobe Stock

Manufacturing, mining and process industry, offshore and power utilities, ports and airport sectors to be among the chief beneficiaries.

inspections can also be performed via augmented reality or smart surveillance drones to increase worker safety, particularly in potentially hazardous environments such as ports and mines.

Peter Burman, programme manager, Mine Automation, at Swedish mining company Boliden, said, "Automation, and safety through automation in our mining operations is an absolute must for us. Ericsson Private 5G is exactly what Boliden needs to bring high quality, fast and secure connectivity into potentially hazardous environments allowing us to mobilize efficiency and safety improving use cases."

Konecranes launches new generation of energy-efficient mobile harbour cranes

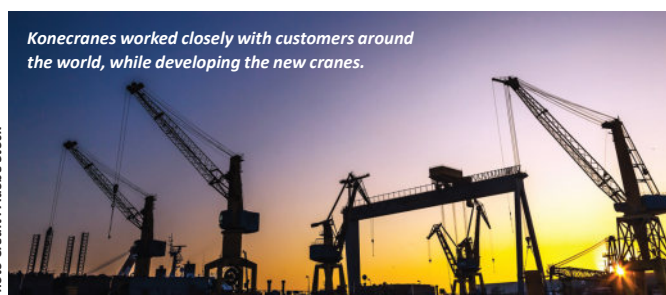
KONECRANES LAUNCHED ITS sixth generation of mobile harbor cranes, refreshing and reinforcing its industry-leading portfolio as global trade accelerates and the industry seeks more sustainable lifting solutions to reduce its climate impact.

Konecranes GENERATION 6 high-performance model portfolio targets growing global bulk and general cargo handling market demand. Engineered for electric power, the new cranes can also run on battery power, cutting fuel and maintenance costs and helping Konecranes' customers meet their low-carbon targets.

Generation 6 marks the first comprehensive revamp of Konecranes Gottwald's mobile harbor crane portfolio in 15 years, and comes as growth in the global bulk and general cargo handling market accelerates.

Konecranes, which launched the world's first mobile harbor crane in 195 is a pioneer in Ecolifting, and has worked closely with customers around the world while developing the new cranes. The result is a range of products that can eco-efficiently service essentially any type of vessel and any kind of cargo – containers, general cargo, project cargo and bulk – in any location, either on the quay or on a barge.

"Konecranes is a pioneer and leader in high-performance mobile harbor cranes, and this launch underscores that pedigree at a time when growth in the global bulk and cargo handling market gathers pace and customers are seeking more sustainable solutions," said



Konecranes worked closely with customers around the world, while developing the new cranes.

Photo Credit : Adobe Stock

Konecranes president and CEO Rob Smith.

Freedom to move - with lower emissions: Reflecting Konecranes' commitment to a decarbonised and circular world for customers and society at large, Generation 6 is designed for electrical power use; power can be sourced from an onshore grid, meaning no direct carbon emissions during operation. Operators can also choose a new battery solution that also reduces emissions and gives greater flexibility by permitting crane operation independent from the grid. For quays without a power supply, a common occurrence in developing markets, the cranes come with fuel-saving diesel generators and Konecranes' latest hybrid drives.

The design of the crane advances circularity

Its robust construction doubles the cranes' service life in container operation compared to earlier generations, and more powerful lifting capacity curves and high working speeds ensure greater efficiency and faster cargo turnaround times. The long-lasting design not only saves the resources needed to build new cranes, it supports resale values when customers choose to renew their fleets.

A truly connected fleet, designed by the customer: The new products also reflect Konecranes' technology leadership. The new cranes will be equipped with smart crane features for safe, ergonomic and efficient crane operation, and will come equipped with TRUCONNECT remote monitoring, which collects condition, usage and operating data from control systems and sensors to help with maintenance planning and predicting possible component or equipment failure.

These capabilities reflect Konecranes' investment in the growing opportunities of data. The company has a data science laboratory in Lyon, France, as part of its continuing drive to digitalise products, services, and operations, and has tapped the real-time insights from its tens of thousands of connected devices and pieces of equipment around the world to balance demand and supply in real time and navigate through the COVID-19 pandemic.

Briefly

WIDIA introduces M8065HD milling platform

WIDIA HAS ANNOUNCED the release of the new M8065HD indexable milling platform. The platform is designed for use in heavy-duty milling operations in steel and cast iron materials.

Designed with eight cutting edges and extra wide chip gashes, the milling platform is capable of achieving deep depths of cuts while also producing high metal removal rates during the face and shoulder milling applications.

"Face milling is one of the most common machining operations, so we designed a versatile and cost-effective solution that delivers substantial improvements in metal removal rates in steel and cast iron for our customers," said Christine Schneider, WIDIA Senior Global Portfolio Manager.

"The M8065HD represents a turnkey solution for general engineering, energy and automotive customers who want to reduce their face milling tooling inventory and increase their machining outputs."

The new platform offers a reduced set up time and inventory costs by utilising one tool for multiple operations: milling both steel and cast iron.

Engineered with a 65-degree approach angle with a 6.35mm thick insert, the platform has one universal insert geometry applying to three versatile grades, WP35CM, WK15CM and WU20PM.

The WP35CM grade applies to all types of steels.

The WK15CM grade is ideal for cast iron materials, performing best in dry applications but also working in wet conditions.

The WU20PM grade is designed as a universal grade for steel, stainless steel and high-temperature alloys across all applications. All insert grades include a 2.37mm wiper facet to provide superior finish and reliability.

M8065HD indexable milling cutters are available from WIDIA in nine metric diameter ranges, with ranges between 50mm and 315mm and three insert geometries. Orders for the M8065HD bodies and inserts along with other WIDIA metal cutting tooling can be placed through WIDIA authorised distribution partners.

Doosan signs 221 worldwide machine orders

DOOSAN INFRACORE HAS announced the signing of a selection of contracts to deliver a total of 221 construction machines.

The agreements span a number of emerging markets including the Middle East, Africa, Asia and Latin America which the company are targeting following the lack of business during the Covid-19 pandemic.

Across the Middle East, a mining company in Oman awarded an order for 27 excavators and wheel orders. A large construction firm in Qatar have ordered 35 excavators, and a Turkish equipment rental company has ordered 54 machines for use in its fleet.

Another notable order is the provision of 10 large 50-tonne excavators for a Saudi Arabian construction company.

In North Africa, a Moroccan construction firm is sourcing 35 excavators from Doosan; the local company that signed the contract conducts business across MENA and owns over 300 Doosan machines.

Doosan Infracore will also deliver 35 wheel loaders for a series of agricultural projects led by the Egyptian government, adding to the government's 100-plus fleet of Doosan construction machines.

Included in the contracts is another order for 50 mid- to large-sized excavators, comprising of the company's popular DX340LC and DX480LC models, which are set to be delivered to a local construction company that won the contract for the runaway expansion for Hong Kong



The 221 agreements span a number of emerging markets.

Photo Credit : Doosan Infracore

International Airport.

In Thailand, the construction equipment supplier has signed a large supply agreement for 38 excavators and wheel loaders that will be deployed as part of a mine development and civil construction's fleet, which previously used machines from the company's competitors.

Further expansion across Asia includes an order for 20 mini-excavators by a Vietnamese dairy company.

Elsewhere, Doosan Infracore has continued to penetrate the Latin American market with an order of 16 excavators and wheel loaders from construction and rental companies across Colombia.

Jeong Kwan-hee, managing director for emerging market sales at Doosan Infracore, explained, "The new orders are the result of our efforts to foster dealers and develop the market even in the midst of the market slump caused by the spread of COVID-19.

"We plan to accelerate our efforts to enhance our brand image in emerging markets and expand sales volume and market share accordingly as the market situation improves," concluded Kwan-hee.

Bureau Veritas launches floating unit design tool

EXPANDING ON ITS maritime sector expertise, Bureau Veritas has unveiled a new simulation tool that is designed to support independent design verification and certification of floating units.

The testing, inspection and certification specialist has launched 'Opera', which will specialise in the certification of floating units, notably, wind turbines.

As offshore wind farms continue to be built further offshore, floating turbines are becoming more popular.



The tool models floating units for testing and certification.

Photo Credit : Bureau Veritas

Bureau Veritas is marketing 'Opera' as the state-of-the-art solution and guidance to innovating and developing safe, reliable and cost-competitive projects.

'Opera' offers an independent and fully integrated modelling solution, with a thorough understanding of floating projects and capability to cater for any innovation. The system performs integrated loads analysis, providing accuracy, reliability and speed to support customer requests.

Project Databank

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Project Focus

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Project Summary

Project Name	Al Kharsaah 800 MW Solar Power Plant - Phase 2
Name of Client	Siraj Energy, Total, Marubeni
Revised Budget (US\$)	462,000,000
Facility Type	Solar
Status	Construction
Location	Al Kharsaah
Project Start	Q4-2015
End Date	Q2-2022
Main Contractor	PowerChina
Subcontractors	Ideematec, Hitachi ABB Power Grids, Poyry, EY UK, DLA Piper, Sungrow Power
Award Date	Q1-2020

Background

As part of its National Vision, Qatar is aiming to generate 20% of its energy from renewables by 2030 and is aiming for 1,800 MW of renewable generation capacity by 2020. The scheme will use a mixture of technologies, including solar thermal, developed in two phases.

Project Status

Date	Status
Mar 2021	The construction works are ongoing as per the schedule.
Feb 2021	Hitachi ABB Power Grids has been awarded by PowerChina a contract to provide a 220 kilovolt (kV) grid connection solution for the project.
Nov 2020	Ideematec has been awarded a contract to supply 800 MW of its Bifacial Optimized Horizon Plus solar tracker for the project
Oct 2020	Sungrow has been awarded an Inverter Solution Contract. The firm will supply 1500V string inverter SG250HX, which is resilient in harsh conditions given the IP66 and C5 protection capability and smart forced air-cooling technology.
Aug 2020	The construction works have started on the project.
Aug 2020	A US \$330mn loan has been granted by Japan Bank for International Cooperation and Mizuho Bank.
Jul 2020	The financial closing of the project has been reached. The first capacity of 350 MW is planned to come online in Q2 2021 and the full completion of the project is expected in April 2022.

Project Scope

The scope of the scheme involves the construction of:

- 800-megawatt solar power plant
- Heat recovery boilers
- Air condenser
- Air-cooled turbogenerators
- Cylindro-parabolic mirrors
- Water pipes
- Transformers
- Associated facilities

Project Finance

Siraj Energy owns 60% of the project. The other 40% of the shares will be owned by a private developer. Kahramaa (General Electricity & Water Corporation), a subsidiary of QEWC, will handle the project on behalf of Siraj Energy. Total and Marubeni Corporation JV will develop the project under a Build Operate Own Transfer (BOOT) contract under a 25-year agreement, after which the ownership of the facility will be transferred to Kahramaa. The JV holds 40% of the project. Total owns 49% of the JV company, with Marubeni holding 51%.

Project Databank

Compiled by Data Media Systems

CONSTRUCTION AND INFRASTRUCTURE PROJECTS, QATAR

Project Name	City	Facility	Budget (US\$)	Status
QIMC - Abraj Al Tahwiliya (QIMC Tower West Bay)	Doha, West Bay	Mixed-Use Development	330,000,000	Construction
Msheireb Properties - Msheireb Downtown Doha Phase 4	Doha	Mixed-Use Development	3,000,000,000	Construction
Supreme Committee for Delivery and Legacy - Lusail Iconic Stadium	Lusail	Sports Stadium/Facilities	2,000,000,000	Construction
Supreme Committee for Delivery and Legacy - Ras Abu Aboud Stadium	Ras Abu Aboud	Sports Stadium/Facilities	210,000,000	Construction
Supreme Committee for Delivery and Legacy - Al Thumama Stadium	Al Thumama	Sports Stadium/Facilities	400,000,000	Construction
Manateq - Special Economic Zone	Various	Economic Zone	3,550,000,000	Construction
UDC - Gewan Island Development	Doha	Mixed-Use Development	685,200,000	Construction
NPP - Hamad Port - Phase 2 Overview	Mesaieed	Port	1,350,440,000	Construction
NPP - Hamad Port - Strategic Food Security Facilities - NPP/0085	Mesaieed	Logistic Hub	438,000,000	Construction
Kahramaa - Al Kharsah 800MW Solar Plant, Phase 2	Al Kharsaah	Solar	500,000,000	Construction
Ashghal - Sabah Al Ahmad Corridor	Various	Bridge	2,000,000,000	Commissioning
Kahramaa IWPP Facility E	Al Shamal	IWPP	3,000,000,000	EPC IT
Ashghal - Qatar PPP Schools Dev't Program - School Buildings	Various	Schools/R&D /Educational Institution	167,000,000	Project Announced
QEWC/QP 1000 MW Solar Power Plant	Qatar	Solar	500,000,000	Construction
Ministry of Municipality / Transport - New Al Khor Expressway	Al-Khor	Roads	2,100,000,000	Construction
Katara Hospitality - Katara Towers	Lusail	Mixed-Use Development	604,000,000	Construction
Al-Jasrah Real Estate Development - Alar Hotel	Lusail	Hotels	300,000,000	Construction
QRC - Lusail Light Rail Transit Network	Doha	Railway	1,800,000,000	Commissioning
LREDC - Qetaifan Islands	Lusail	Residential Development	3,000,000,000	Construction
Supreme Committee for Delivery and Legacy - Al Bayt-Al Khor Stadium	Al-Khor	Sports Stadium/Facilities	950,000,000	Construction
Kahramaa - Facility A Power and Water	Qatar	Power Plant	1,000,000,000	Project Announced
UDC - Place Vendome	Lusail	Mixed-Use Development	1,250,000,000	Construction
QRC - Doha Metro Network	Doha	Mass Transit Systems	37,000,000,000	Construction
LREDC - Lusail City Development	Lusail	Mixed-Use Development	45,000,000,000	Construction
Microsoft - Cloud Data Centre	Doha	Service Centres	200,000,000	Project Announced
Ashghal - Jeryan Nejaima Roads	Various	Roads	1,000,000,000	Engineering & Procurement
NDIA - Hamad International Airport - PassengeTerminal Expansion	Doha	Airport	1,100,000,000	Construction
Qatar Museum Authority - Qatar Art Mill	Doha	Theatre/Entertainment/Leisure	550,000,000	Design
Ashghal - Shamal Urban Residential Dev't	Shamal	Residential Development	335,000,000	Construction
Ministry of Transport - Al Sharq Crossing	West Bay	Bridge	12,000,000,000	EPC ITB
Kahramaa - Qatar Power Transmission System	Various	Power Transmission Lines	2,300,000,000	Construction
Kahramaa - Qatar Power Transmission System	Various	Power Transmission Lines	1,100,000,000	Construction
Kahramaa - Qatar Power Transmission System	Various	Substations	1,280,000,000	Construction
NDIA - Hamad Airport City - Phase One	Doha	City	10,000,000,000	Design

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بُنِي المصنع ليتسع لتطبيقات مستقبلية ولمنصات لاختبار الاستخدامات المختلفة للهيدروجين، والتي تتضمن الاستخدامات المحتملة في النقل والاستخدامات الصناعية.

وقد استكشفت هيئة كهرباء ومياه دبي، وطورت بالفعل، مشروعاً تجريبياً لوسائل النقل الخضراء التي تستخدم الهيدروجين. ويمكن تنفيذ هذا المشروع في المستقبل القريب، إلى جانب عدد من الدراسات والاستراتيجيات التجارية وخارطة طريق ممكنة لاستخدام الهيدروجين. حيث تبني هيئة كهرباء ومياه دبي معرفة وخبرة وقدرة لتساهم في رسم مستقبل الإمارات من الهيدروجين النظيف».

وقال كريستيان بروك، الرئيس التنفيذي لشركة سيمنس للطاقة: «يرز مشروع الهيدروجين الأخضر هذا - والذي يُعد حدثاً بارزاً - أهمية الشراكة في دفع عجلة حلول الطاقة النظيفة الجديدة المبتكرة، والتعامل مع تهديد تغير المناخ العالمي القائم. وبصفتها أول منشأة كبيرة لإنتاج الهيدروجين الأخضر في الشرق الأوسط وشمال إفريقيا، فهي علامة بارزة في التحول في مجال الطاقة. كما نتطلع إلى العمل معاً على التخلص من الكربون في الصناعات التي يصعب فيها التقليل منه بالطاقة المتجددة وحدها».

علما بأن مشروع الهيدروجين الأخضر سيأخذ حاجته من الطاقة من مجمع محمد بن راشد آل مكتوم للطاقة المتجددة، مما سيولد 5000 ميغاوات من الطاقة النظيفة بحلول عام 2030 ليكون أكبر مجمع للطاقة الشمسية في موقع واحد في العالم.

للهيدروجين الأخضر تعمل بالطاقة الشمسية في الشرق الأوسط وشمال إفريقيا.

ويقع هذا المشروع الريادي للهيدروجين الأخضر، في منشأة الاختبار الخارجية التابعة لمركز البحث والتطوير التابع لهيئة كهرباء ومياه دبي في مجمع محمد بن راشد آل مكتوم للطاقة الشمسية في دبي، وهو يعد علامة بارزة في تقدم صناعة الطاقة المستدامة في المنطقة.

وقد افتتح المصنع سمو الشيخ أحمد بن سعيد آل مكتوم، رئيس المجلس الأعلى للطاقة في دبي، ورئيس اللجنة العليا لإكسبو 2020 دبي.

وأقيمت المنشأة المتكاملة بإمكانات للتحليل الكهربائي والتخزين وإعادة التحويل إلى طاقة كهربائية لتحقيق الاستفادة القصوى من منافع المشروع التجريبي. وسيتمكن المشروع التجريبي، باستخدام الطاقة الشمسية خلال النهار التي ينتجها مجمع الطاقة الشمسية، من إنتاج ما يقارب 20,5 كجم/ساعة من الهيدروجين بطاقة قصوى تبلغ 1,25 ميغاوات.

وقد صرح معالي سعيد محمد الطاير، العضو المنتدب والرئيس التنفيذي لهيئة كهرباء ومياه دبي قائلاً: «هذا المشروع الريادي، الذي نفذناه مع شريكنا الإستراتيجي شركة سيمنس للطاقة، إنما هو مثال يُحتذى به في الشراكة الإستراتيجية بين القطاعين العام والخاص. إذ تهدف هيئة كهرباء ومياه دبي - من خلال هذا المشروع التجريبي - إلى إثبات إمكانية إنتاج الهيدروجين الأخضر من الطاقة الشمسية وتخزينه وإعادة تحويله إلى طاقة كهربائية. إنه نظام يتيح تخزين إنتاج الطاقة المتجددة، سواء للتطبيقات التي تستخدمها بسرعة أو للتخزين طويل الأمد. وقد

أكبر فرصة لاستخدام الهيدروجين الأخضر. وتعد الدولة مُصدراً كبيراً للأموال (2 مليون طن سنوياً) ويمكن استبدال الأمونيا بالأمونيا الخضراء التي تُنتج باستخدام الهيدروجين الأخضر. علاوة على ذلك، وبما أن الدولة تتمتع بإمكانات هائلة لاستخدام الطاقة المتجددة من الشمس والرياح، فيمكن لها أن تحظى بدور كبير في مجال الهيدروجين الأخضر، حيث ستتمكن من إنتاجه وتصديره إلى أوروبا.

ورغم أن الهيدروجين الأخضر لا يزال حتى اللحظة في مهده إلى حد كبير، إذ أن المشاريع لم تصل بعد إلى درجة النضج، فإن أعضاء اللجنة يتوقعون أن هذا سيأخذ في التحسن بسرعة كبيرة في المستقبل القريب.

ويرى ماتيس أنه ستظهر الكثير من الابتكارات في التحليل الكهربائي، وهو عنصر أساسي في إنتاج الهيدروجين الأخضر، مما سيقبل التكلفة ويسمح بزيادة المشاريع. أضف إلى ذلك أن التقدم في التكنولوجيا المتعلقة بالطاقة المتجددة سيقبل بصورة أكثر من تكلفة مورد الطاقة هذا، مما سيسر، على نحو كبير، حدوث نمو في تطوير الهيدروجين الأخضر.

وفي النهاية، أشار الرئيس التنفيذي إلى أن رؤية أن القرارات المالية المتعلقة بالهيدروجين الأخضر لم تكن تتخذها وتشجعها الهيئات الوطنية فحسب وإنما الشركات الخاصة كذلك، وهو أمرٌ مشجّع للغاية.

وختم أعضاء اللجنة الجلسة بالإشارة إلى أن التعاون والشراكة سيكونان أمراً أساسياً بلا ريب. وذلك لضمان عدم فتور الحماسة للهيدروجين الأخضر وتحويلها على أرض الواقع إلى مشاريع تنافسية. إذ يمكن للشركات المستمرة بين القطاع الخاص والحكومات الوطنية في إطار تنظيمي واضح أن توفر الظروف المناسبة للعالم ليستفيد بحق من المنافع الفريدة التي يقدمها الهيدروجين الأخضر، وهي فرصة لا ينبغي تضييعها.

دشنت شركة سيمنس للطاقة Siemens Energy، بالتعاون مع هيئة كهرباء ومياه دبي (ديوا) وإكسبو 2020 دبي، أول منشأة كبيرة

← مفكرة الفعاليات 2021

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دي 15 - 12 معرض دبي بيج فايف www.thebig5.ae

أكتوبر/تشرين الأول

دي 2022/3/31 - 1 معرض إكسبو 2020 www.expo2020dubai.com

دي 13 - 12 معرض سكك حديد الشرق الأوسط www.terrapi.com/exhibition/middle-east-rail



يمكن للهيدروجين الأخضر أن يلعب دوراً هائلاً في تخفيض الانبعاثات الصناعية

لماذا الهيدروجين الأخضر؟

أثناء استضافة أندريه روسكو، رئيس تحرير الطاقة والمرافق في إنفورما ماركيتس Informa Markets، لإحدى الجلسات في معرض الشرق الأوسط للطاقة تناقش استخدام الهيدروجين الأخضر، أشار بهذه المناسبة إلى أن الهيدروجين الأخضر يثير الكثير من الحماسة في مجال الطاقة، حيث تفكر الحكومات والمؤسسات والشركاء الدوليون وغيرهم جدياً في تطوير مشاريع هيدروجين أخضر في المستقبل.

مواد كالفحم بالهيدروجين. من ناحية ما هذه فرصة لا تتكرر، وهذا أمر لم يسبق له مثيل والتركيز الآن عليه شديد». وقد كرر هذه النقاط طارق هامان، رئيس قسم التطوير في الوكالة المغربية للطاقة المستدامة، وهو مشروع مشترك بين القطاعين الخاص والعام لقيادة سعي الدولة إلى استخدام الطاقة المتجددة. وقال إنه بالنسبة إلى المغرب، باعتبارها دولة تسير حثيثاً في طريقها إلى تحقيق خططها الطموح المتمثلة في الحصول على 50 في المائة - على الأقل - من سعة الطاقة من مصادر متجددة بحلول عام 2030، فقد كانت صناعات الكيماويات والأسمدة

وتابع ماتيس قائلا: «يُعد الهيدروجين الأخضر الآن من الضروريات. فلا يمكن لصناعات مثل الصلب والأسمدة توفير الطاقة الكهربائية بسهولة. لذلك عندما يكون المطلوب هو تقليل انبعاثات ثاني أكسيد الكربون بقدر كبير، فإن الجزيئات الخضراء مكتملة بدرجة كبيرة للإلكترونيات الخضراء (والتي من الواضح أنها تتطلب أساسياً). وتعتبر صناعة الصلب من أقرب الطرق لأنها تتسبب حالياً في 7 في المائة من انبعاثات ثاني أكسيد الكربون. ولدى معظم شركات الصلب خططاً طموحاً تسعى إلى إنتاج صلب لا يؤثر على المناخ في المستقبل. وأحد السبل إلى فعل ذلك هو التقليل المباشر باستبدال

كورنيليوس ماتيس، الرئيس التنفيذي لمنظمة DII Desert Energy، وهي شبكة دولية مستقلة غير ربحية مشتركة بين القطاعين الخاص والعام تعمل من دبي، انضم إلى روسكو ليتوسع في هذه الصورة، وأوضح أن الاهتمام بالهيدروجين الأخضر قد زاد خلال السنة الماضية، ويُعزى ذلك إلى عوامل عدة؛ أولاً، كما يعرف الجميع لقد حظي تحدي تغير المناخ باهتمام كبير، وثمة الآن إجراءات جديّة تهدف إلى تسريع عملية التحول إلى طاقة نظيفة وتقليل بصمة الكربون البشرية. بالإضافة إلى ذلك تقل تكلفة الطاقة المتجددة أكثر وأكثر مما يجعل إنتاج الهيدروجين الأخضر خياراً عملياً أكثر.

المحتويات

القسم العربي

تحليلات

لماذا الهيدروجين الأخضر؟



ملخص محتويات القسم الانجليزي

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بناء وبنية تحتية: المدن الذكية.

طاقة ومرافق: قطاع الطاقة الإقليمي يستخدم التقنية الرقمية، الهيدروجين الأخضر.

صناعة وتصنيع: المحركات الكهربائية.

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

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

الإنتاج: سريندي شيكارز، نلي مينديز، باكشيت شيغاكومار
بريد إلكتروني: production@alaincharles.com
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الناشر: نك فوردهام
مديرة مبيعات الإعلانات: بريتشارد روزيلار
مديرة مبيعات المجلة: بريتشارد روزيلار
هاتف: ٩٣٠ ٤٤٨ ٩٣٦٠ (٤) ٩٧١ +، فاكس: ٩٣٦١ ٤٤٨ ٩٧١ +، بريد إلكتروني: trme@alaincharles.com

مكتب الشرق الأوسط الإقليمي:
Alain Charles Publishing Ltd
University House, 11-13 Lower Grosvenor Place
London SW1W 0EX UK
هاتف: ٧٨٣٤٧٦٧٦ ٢٠ (+) ٤٤
فاكس: ٧٨٣٤٧٦٧٦ ٢٠ (+) ٤٤
الطباعة: مطبعة الإمارات - دبي

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