

TECHNICAL REVIEW

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MIDDLE EAST

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The pioneering NEOM project

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Inside

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1984 - 2020

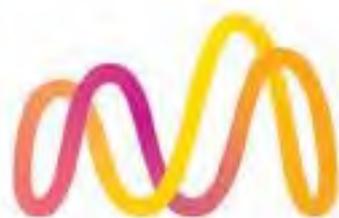
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EDITOR'S NOTE

A 2017 REPORT from the Organisation for Economic Cooperation and Development (OECD) says the UAE is one of only three countries in the world, where girls feel more comfortable solving maths problems than boys. (Interestingly enough, the other two countries are also in the Middle East).

Ahead of International Women's Day on March 8, we examine how the Middle East is fostering gender diversity and inclusion, with more women taking up tech and engineering (p16).

Meanwhile, as we go to press, Covid-19 is still battering the global markets. Will it dent the GCC's growth projections for the year ahead (p19)?

Elsewhere in this issue, we look at smart building technologies (p34), the new Famco uptime centre in Dubai (p28) and a comprehensive preview of Middle East Energy 2020. If you are at the show, do meet us at **Stand No. S3.C63**.

Reach the Technical Review editorial team at trme@alaincharles.com

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TECHNICAL REVIEW

الخدمة لشركات المنطقة منذ 1984

SERVING THE REGION'S BUSINESS SINCE 1984

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Briefly

Aveva expands into discrete manufacturing market

AVEVA, A GLOBAL leader in engineering and industrial software, has unveiled its new Discrete Lean Management software to support digital transformation in the discrete manufacturing market. The new solution is aimed at improving operational efficiency through the digitalisation of lean work management for both manual and automated production lines.

The AVEVA Discrete Lean Management software solution is used in Schneider Electric's manufacturing plants and has been successfully deployed in more than 70 smart factories globally resulting a 10 per cent productivity increase due to downtime mitigation and 70 per cent improved response-time due to automated escalation of production issues.

Aveva's quick-to-deploy and easy to use digital tools enable access to production information, KPIs and notifications on dashboards, workstations and mobile devices to improve overall equipment and labor effectiveness, and to facilitate data-driven continuous improvement.

Abu Dhabi industrial units' investment value grows to US\$1.7bn

ABU DHABI-BASED INDUSTRIAL facilities grew by more than 57 per cent in 2019 to 66 from 42 facilities in 2018., hitting a combined investment value of US\$1.7bn, according to official data released by the Abu Dhabi Department of Economic Development (ADDED).

The latest edition of the annual Industrial Activity Report issued by the Industrial Development Bureau (IDB), of the ADDED highlights important statistics showcasing the local industrial sector's performance in 2019. A total of 1,552 industrial licenses, comprising 811 with 'Production' status; 535, 'Under Process,' and 206, 'Industry Pioneers,' were released by the end of the year.

Rashed Abdul Karim Al Balooshi, undersecretary at ADDED, said the report reflects the significant role played by IDB in fostering a business-friendly environment in Abu Dhabi and ensuring a positive and preferable investment environment for the local industrial sector.

DP World to delist from Dubai stock exchange

DP WORLD'S PARENT company Port and Free Zone World has offered to acquire the 19.55 per cent of DP World's shares traded on Nasdaq Dubai, returning the company to private ownership.

The move will enable DP World to focus on its medium-to-long-term strategy of transforming from a global port operator to an infrastructure-led end-to-end logistics provider. Upon successful offer acceptance, DP World will be 100 per cent owned by Port and Free Zone World, which in turn is a wholly-owned subsidiary of Dubai World.

The board of directors of Port and Free Zone World and the independent directors of DP World have reached agreement on a cash offer for the shares, which the Independent Directors deem to be fair and reasonable.

In recent years, the company has made a series of acquisitions as part of its strategy to become the world's leading end-to-end logistics provider, including Unifeeder, P&O Ferries, Continental Warehousing, and Topaz Energy & Marine.

Yuvraj Narayan, group chief financial, strategy and business officer of DP World, said, "The DP World Board has concluded that the disadvantages of maintaining a public listing outweigh the benefits. Delisting from Nasdaq Dubai is in the best interest of the company, enabling it to execute its



DP World will be 100 per cent owned by Port and Free Zone World.

Photo Credit: Adobe Stock

medium to long-term strategy. DP World is focussed on the transformation of the Group and takes a long-term view of investment returns and value creation. In contrast, public markets typically hold a short-term view. As a result of this gap, the DP World strategy is not fully appreciated by the equity markets, and consequently is not reflected in the company's share price performance."

Sultan Ahmed bin Sulayem, group chairman and CEO of DP World, said, "The global ports and logistics industry has been undergoing a significant transition as a result of the consolidation of the customer base and the vertical integration of several competitors. DP World must be able to continue responding effectively to this rapidly changing landscape and to invest in the future."

IRENA and UN-Habitat pair up to foster global energy transition in cities

THE INTERNATIONAL RENEWABLE Energy Agency (IRENA) has signed a memorandum of understanding (MoU) with the United Nations Human Settlements Programme (UN-Habitat), to cooperate on sustainable energy in the context of urban development.

IRENA's studies show that cities are responsible for 65 per cent of global energy demand and the Intergovernmental Panel on Climate Change data shows cities are responsible for 71-76 per cent of energy-related carbon dioxide emissions.

Signed by IRENA director-general Francesco La Camera and UN-Habitat deputy executive director Victor Kisob during the Tenth Session of the World Urban Forum (WUF10) in Abu Dhabi, UAE, the MoU will see the two organisations work to advance the role of cities in the global energy transformation whilst promoting cleaner, low-carbon urbanisation.

"Cities are the engines of modern economic growth, supporting prosperity and opportunity, and are also a source of significant energy demands and of carbon emissions," said IRENA director-general Francesco La Camera. "In the pursuit of climate and sustainable development goals, municipal governments have an



High-level cooperation to support municipal governments in their energy transition is crucial.

Photo Credit: UN-Habitat

opportunity to strengthen policy frameworks that can help cities shift to renewable energy use. Cities can significantly contribute to the achievement of global energy transformation objectives and this partnership will help accelerate that process."

IRENA and UN-Habitat have been working together for several years by sharing expertise in different occasions.

The cooperation agreed upon by the MoU covers the exchange of relevant information, expertise, and viewpoints to realise potential synergies, enhance public dialogue, and implement common positions. Under this MoU, both IRENA and UN-Habitat hope to be at the forefront of the global efforts to achieve sustainable urban development.



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Briefly

TAQA Morocco extends Jorf Lasfar power plant contract for 17 years

TAQA MOROCCO HAS signed a deal with Morocco's National Office for Electricity and Drinking Water (ONEE) to extend the power purchase agreement (PPA) of the Jorf Lasfar Units 1- 4 for 17 years from 2027 to 2044.

The Jorf Lasfar thermal power plant totals an overall capacity of 2,056MW, helping to meet more than 40 per cent of Morocco's electricity needs. Bringing together these contracts will continue to allow TAQA Morocco to further support Morocco's growing economy through the reliable and secure supply of electricity.

"Our investment in Morocco further underscores our commitment to investing in and deploying best-in-class solutions across our business," said Saeed Mubarak Al Hajeri, chairman of Abu Dhabi National Energy Company - TAQA.

"The extension of the PPA in Morocco speaks to the strong expertise and technical capabilities of our in-country team and will allow us to build upon our successes in Morocco as we continue to explore opportunities across our power and water business," said Saeed Hamad Al Dhaheri, CEO Abu Dhabi National Energy Company - TAQA.

Eni's deal to strengthen collaboration in Bahrain's energy sector

ENI HAS SIGNED a memorandum of understanding (MoU) with Tatweer Petroleum to explore new areas for potential collaboration in renewable energy.

The agreement will enhance collaboration in the energy sector, by facilitating the joint assessment and launch of new initiatives in areas of mutual interest, including renewable energy, LNG supply and exploration.

In accordance with Bahrain's national energy plan, renewable energy will be an area of particular interest in order to consider potential business opportunities.

Supporting the increase of low carbon energy sources, Claudio Descalzi, CEO of Eni, said that ENI aims to promote renewable energy and conducts scientific and technological research.

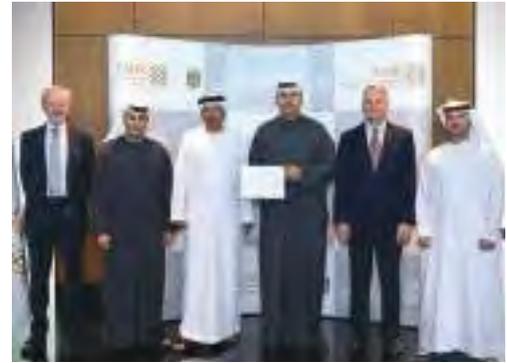
Nawah Energy receives operating license for Barakah nuclear plant's Unit 1

NAWAH ENERGY COMPANY (Nawah), the subsidiary of the Emirates Nuclear Energy Corporation (ENEC) responsible for operating and maintaining the Barakah Nuclear Energy Plant, has received the operating license for Unit 1 from the Federal Authority for Nuclear Regulation (FANR). Following receipt, Nawah has commenced loading the first nuclear fuel assemblies as the initial step in the process towards safely and gradually commencing operations and subsequent generation of clean electricity.

The operating license, approved by the FANR board of directors, follows a series of thorough assessments and rigorous independent reviews of Nawah's operational readiness. The license authorises Nawah to operate Unit 1 of the Barakah Plant for a duration of 60 years.

"Receiving the operating license for Unit 1 of the Barakah Nuclear Energy Plant is a significant milestone for Nawah Energy Company as it becomes the latest operator to join the global nuclear community," said Mark Reddemann, CEO of Nawah. "We are proud to have demonstrated that Nawah meets rigorous federal requirements, as well as robust international standards for nuclear safety and quality. We are committed to meeting these standards throughout the start-up process and the lifespan of the plant.

"Our teams are trained, certified and ready to safely commence the testing and start-up processes for Unit 1 working in full adherence to FANR regulations, as well as industry best practices



FANR chairman Abdulla Nasser Al Suwaidi delivering operating license for Unit 1 to ENEC chairman Khaldoon Al Mubarak.

Photo Credit: Nawah

as set forth by the World Association of Nuclear Operators (WANO)."

Once the fuel assemblies are loaded, Nawah will run a series of tests, prior to commencing the start-up sequence process known as power ascension testing (PAT), where operators will safely and steadily raise the power generation levels. During this process, which will be safety led, the unit will be synchronised to the grid, and the first megawatts of electricity will be dispatched. Following the successful completion of these tests, Unit 1 will begin commercial operations.

The Barakah Nuclear Energy Plant is the cornerstone of the UAE Peaceful Nuclear Energy Programme, which adheres to the highest international standards of safety, security, quality, transparency and non-proliferation.

GCC projects market grows by 5 per cent YoY in 2019

THE GCC CONSTRUCTION market is estimated at US\$2.5tn, with over 25,000 active projects at the end of the year 2019, according to BNC Projects Journal titled, *The Wild 20's*.

The latest BNC Projects Journal states that the overall GCC construction market was stable in December 2019, and grew 5 per cent over the course of the last 12 months.

"The 2020's promises to usher in new responsibilities for each GCC country as they work towards creating economic independence without a hydrocarbon safety net," said Avin Gidwani, CEO of Industry Networks.

Saudi Arabia registered a 13 per cent YoY growth, led by the energy sector with YoY 24 per cent growth, followed by urban construction and industrial, both of which grew by 13 per cent YoY. About 38 per cent of all awards and 46 per cent of project announcements across the GCC were in KSA.

"Saudi Arabia is setting the country up as the



Saudi Arabia energy sector grew by 24 per cent YoY, while Oman's grew by 23 per cent YoY.

Photo Credit: Adobe Stock

prime growth market for construction businesses in the years ahead as these projects get designed, engineered and ready for execution," said Gidwani.

The UAE saw a marginal YoY drop in its project market as it was rescued by the growth in the energy and industrial sectors. The urban construction sector, contributing to 58 per cent of the project market, contracted by 5 per cent. The UAE still led project awards in 2019, with 38 per cent of all GCC contract awards.

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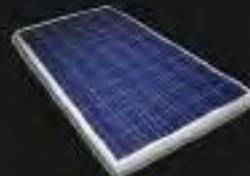
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Briefly

New cables from Prysmian for energy transition

THE PRYSMIAN GROUP is relaunching its P-Laser cable, which for 10 years now has been offering innovative technology for power transmission grids, ensuring superior electrical performance, lower costs and greater environmental sustainability.

P-Laser is the first 100 per cent recyclable, eco-sustainable, high-performance cable technology based on a zero-emission process that reduces CO₂ emissions by 40 per cent.

P-Laser is fully compatible with existing cables and accessories and more than 50,000 km of cable has been produced. The P-Laser cable system is based on the use of a patented thermoplastic material, HPTe (High Performance Thermoplastic Elastomer), which ensures that the product is fully recyclable, a simplified manufacturing process and a lower environmental impact than the traditional XLPE (cross-linked polyethylene). The P-Laser technology also offers better electrical characteristics, and in particular, higher performance at high temperatures, greater intrinsic reliability and greater productivity.

P-Laser technology may be applied to power grids, renewable energy projects and underground and submarine HVDC cable systems.

Yovza unveils construction intelligence management platform

YOYZA TECHNOLOGIES HAS launched its construction intelligence management platform Yovza.com in Dubai. It is positioned to be an integrated solution that will connect businesses within the construction industry across the segments of four vital project stakeholders taking their operations completely paperless. Starting from engineering consultants, main-contractors, sub-contractors and material suppliers.

The solution will bind together project information and project controls on a single cloud-based collaborative intelligence management platform. Yovza will solve the grave issues, facing the operations side of the multi-trillion dollar global construction industry.

GCC doubling efforts to conserve water: report

THE GCC REGION remains one of the highest consumers of water in the world as demand surges simultaneous with its booming population and steady socio-economic growth, according to a report entitled 'Water Management and Sustainability in the Gulf Cooperation Council: Addressing Scarcity and Consumption in the Region' released by Orient Planet Research (OPR), an Orient Planet Group venture.

The OPR report examined various fundamentals affecting the regional water industry in light of uncertainties concerning the growing gap between water demand and supply in the six GCC member states. According to the report, a look at various sources has revealed that freshwater supply shortage could be on the horizon if the current trend of water consumption level in the region continues.

"There are more than 50 million inhabitants across the GCC today and the figures could increase by approximately 14 million by 2050. Given these projections, it is expected that the water demand is only going to climb. The water-intensive lifestyle that is prevalent in the Gulf countries as well as their steady economic progress are going to further widen the demand-supply gap in the future," said Nidal Abou Zaki, managing director, Orient Planet Group.

The OPR report has found an industry study predicting that the GCC's future average consumption will hit 33,733 million cu m by



Photo Credit: Orient Planet Research

2050. With the region's projected future storage of only 25,855 million cu m, the GCC, said the same study, will need an additional 77 per cent water to meet the requirements of its populations 30 years from now.

Desalination and wastewater treatment are the GCC's main water sources. During the past decade, GCC governments have invested US\$76bn in several water projects, according to MEED Projects, while a number of wastewater treatment plants have been set up for irrigating parks, gardens, and landscapes.

The combined desalination capacity of GCC countries is expected to increase dramatically by 40 per cent — from the current 18.18 million cu m a day to more than 25 million cu m a day — in the next five years. While desalination provides the needed supply, the OPR report points to the fact that the process is costly and energy-intensive and contributes to environmental degradation.

Albwardy Damen opens ship repair workshop in SOHAR

DUBAI-BASED SHIPBUILDING AND repair company Albwardy Damen has signed an agreement with SOHAR to install a 40-foot workshop container at a service jetty in the port.

The workshop will be installed in collaboration with Albwardy Damen's Omani partner, Sawahel Sohar Al Almya, and will be Albwardy Damen's fourth operational location in the Middle East, along with those in Sharjah, Dubai and Fujairah.

During the signing, which was took place at SOHAR Port and Freezone head office in Oman, SOHAR was represented by Mark Geilenkirchen, CEO of SOHAR Port, and Albwardy Damen was represented by Ibrahim Mohamed Al Shidi.

Geilenkirchen said that the partnership aims to provide the clients with high-quality services



Photo Credit: Albwardy Damen

The partnership aims to provide the clients with high-quality services in the region.

in the region.

The upcoming workshop will be fitted out with relevant machinery and tools, including lathe, press, drilling and welding machines to provide easy and quick services for vessels calling at the port.

Gender equality in focus at Sharjah forum



The forum emphasized the leadership role of women in the fields of technological innovation and scientific research.

GLOBAL SCIENCE ORGANISATIONS, women's empowerment organisations, entrepreneurs and government officials attended The Women in Technology Forum, organised by the Sharjah Research, Technology and Innovation Complex in cooperation with the Women In Tech Foundation.

The forum was the first event of its kind in the region. Its importance comes through focusing on women's leadership in scientific research and technological innovation. It aimed to highlight the role of women in technology and innovation, enhancing their impact at the global level, and maximising their contributions to social and economic development, as well as inspiring future generations of women to participate actively in building the country.

In his opening speech, Hussain Al Mahmoudi, CEO of SRTIP talked about the vision of the complex, which aims to provide an appropriate environment for creativity and innovation to raise Sharjah's status as an international destination of research and technology.

Al Mahmoudi said, "The impact of automation has led to the creation of new jobs for women, which were previously reserved to men, since the demand on digital skills will increase by 55 per cent by 2030; thus, it is inevitable for us to enhance women skills to cope with this future."

SRTIP has recently announced the launch of "an innovative package for women" initiative in order to encourage women's engagement and investment in establishing companies in various technical sectors. Such a package empowers women to obtain a business license, which enables them to carry out investment activities and enter the world of technical business for a nominal fee.

Ayumi Moore Aoki, founder and president of the Women In Tech Foundation, also spoke about the activities of the foundation at the global level and the progress that women have achieved in the field of technology. She also shared significant achievements by women in Sharjah.

The exhibition accompanying the forum showcased activities of the complex and a number of companies operating in it. The Sharjah Open Innovation Laboratory was presented as the first incubator for start-ups and innovative businesses in Sharjah. The Marlin International Company, one of the most important partnership projects that exist in the Sharjah Research Technology and Innovation Park, focuses on the global level of identifying and developing innovative ways for a sustainable future, as it offers many technical solutions to take advantage of natural resources, such as innovative agriculture (horizontal, water and pneumatic), and solar water desalination devices.

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2-3	Kuwait HSE Forum	KUWAIT	www.hse-forum.com/kuwait
3-5	Middle East Energy	DUBAI	www.middleeast-energy.com
4-7	Kuwait Bulding Show	KUWAIT	www.kuwaitbuildingshow.com
8-11	The Big 5 Saudi	JEDDAH	www.thebig5saudi.com
9-11	Middle East Coatings Show	DUBAI	www.coatings-group.com/mecs/dubai
10-14	Conexpo-Con/Agg	LAS VEGAS	www.conexpoconagg.com

APRIL 2020

5-9	World HSE Week	DUBAI	www.worldhseweek.com
6-8	HVAC&R Egypt Expo	CAIRO	www.hvacregypt.com
13-14	Solar Show MENA	CAIRO	www.terrapinn.com/exhibition/solar-show-mena/index.stm
14-16	Gulf Steel Show	DUBAI	www.gulfsteelshow.com
20-21	Middle East Smart Lighting & Energy	DUBAI	www.lightingsummit.com

MAY 2020

6-7	Electric Vehicles World	ITALY	www.zeroemission.show/cose-ev-world/
7-8	Warsaw Energy Expo	POLAND	www.warsawenergyexpo.com

Bahrain HSE Forum: driving health and safety

THE SECOND EDITION of the Bahrain HSE Forum 2020 will take place from 15-16 June. The Forum is the region's most influential event catering to diverse industry sectors. It will offer valuable insights into effective health and safety programmes highlighting best practices, process improvements, technology advancements, and innovative applications to enhance occupational health and safety performance.

Researched and developed by *Technical Review Middle East* sister publication - *Health, Safety & Security Review Middle East*, the forum will emphasise on the Bahrain Economic Vision 2030; highlighting the necessity of a safe and secure environment – adopting the latest technologies, and modernisation of police services and community policing programmes.

Furthermore, Bahrain will achieve safety and security through the provision of an integrated strategy to mitigate risks and threats. The Kingdom will direct investments to technologies that reduce carbon emissions, minimise pollution and promote the sourcing of more sustainable energy.



The Forum will emphasise on the Bahrain Economic Vision 2030, highlighting the necessity of a safe and secure environment.

Photo Credit: Alain Charles Publishing

This year, the Bahrain HSE Forum will touch upon major topics including: towards zero accidents, detecting cognitive fatigue with smart technologies, smart personal protective equipment, detecting gas leaks and hazardous substances using smart cameras, and using artificial intelligence to monitor potential hazards within the working environment.

Companies expected to attend the Forum include Bahrain Health Ministry, BAPCO, JGC Gulf International, Gulf Petrochemical Industries Co, Bahrain Airport Company, BMMI Group Bahrain, Ministry of Labour &

Social Development Ministry of Works – Bahrain, Aluminum Bahrain (ALBA), Bahrain Foundation Construction Company, Tatweer, National Oil & Gas Authority and many more.

The Forum is must attend for all contractors and consultants, regulatory bodies and policy makers, occupational and industrial physiologists, safety and risk management heads, international safety equipment managers, EHS solution providers, safety engineers/experts, HSE auditors, environment and pollution control officers, HSE, HSSE, QHSE heads, industrial hygiene experts and health experts.

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A round-up of the leading developments and innovations featured online on *Technical Review Middle East*. To read more or to stay up to date with the latest industry news, visit www.technicalreview.me

PwC session on smart cities' development at World Urban Forum

PWC MIDDLE EAST has hosted a session titled 'Financing and Implementing the Sustainable Development Goals and the New Urban Agenda in Cities' at the tenth UN-Habitat World Urban Forum (WUF10), co-organised by the UN Habitat and the Abu Dhabi Department of Municipalities & Transport (DMT).

PwC hosted and moderated this compelling session with the participation of a community of practitioners.

www.technicalreviewmiddleeast.com/events/



Photo Credit: PwC

The future of cities largely depends on the way urbanisation is managed.

Egyptian and Latvian foreign ministers discuss bilateral cooperation

EDGARS RINKĒVIČS, MINISTER of foreign affairs of Latvia, met with the foreign minister of Egypt, Sameh Shoukry on 16 February 2020, to discuss the promotion of bilateral cooperation between Latvia and Egypt.

The meeting took place in the margins of the Munich Security Conference.

The Latvian Foreign Minister encouraged the Egyptian side to open an embassy in Latvia with a view to intensifying the Latvian-Egyptian dialogue. The ministers recognised that agriculture and the IT sector are among the areas where there is a good prospect for business cooperation.

www.technicalreviewmiddleeast.com/business-a-management/

Middle East compact track loader market is growing

ONE OF THE major changes in the compact equipment sector in the Middle East is the significant growth in the compact track loader market in the region, according to Bobcat.

The growth is being driven by increasing demand among contractors for safe, stable and high performing machines that can be combined with a wide range of attachments that help them to expand the amount and type of work they can carry out with the same loaders.

www.technicalreviewmiddleeast.com/construction



Photo Credit: Bobcat

T590 Auger

Siemens to showcase building automation solution

SIEMENS WILL SHOWCASE its vision for transforming passive buildings into learning and adaptive environments that intelligently interact with people at this year's Light+Building trade fair, from 8-13 March in Frankfurt, Germany. The company's focus at this year's show is "Building the future today," outlining the innovations that will make this possible. These include cloud-based technologies, digital planning, occupant-centric building automation and services. New solutions for smart electrical infrastructure that seamlessly connects to the IoT are also at the core of this transformation. Given that buildings account for more than 40 per cent of electricity consumption in cities, building efficiency is crucial in the battle towards decarbonisation.

<http://www.technicalreviewmiddleeast.com/construction/>

Tunisia: 5G licenses expected by 2021

TUNISIA HAS ONE of the most sophisticated telecoms and broadband infrastructures in North Africa, with mobile and internet penetration rates among the highest in the region.

Stimulated by the Digital Tunisia 2020 programme, a number of regulatory measures and infrastructure projects have been set up to improve Internet connectivity in underserved areas.

www.technicalreviewmiddleeast.com/it/communication/



Photo Credit: Christoph Scholz/Flickr

Tunisie Telecom has invested in its LTE network as well as vectoring VDSL and fibre infrastructure.

Seerslab to showcase AR technology through Born2Global in Dubai

SEERSLAB, WINNER OF the AIM 2020 National Pitch Competition held in Korea, will go to the Middle East through Born2Global Centre (a Korean government innovation agency) to participate in the AIM 2020 Global Startups Champions League, to be held at the Dubai World Trade Center from 24-26 March.

The AIM National Pitch Competition was organised in cooperation with the Born2Global Centre, the official partner of Annual Investment Meeting (AIM) in Korea. AIM is an investment platform under the patronage of HH Sheikh Mohammed bin Rashid Al Maktoum, UAE Vice-President and Prime Minister, and Ruler of Dubai, and is an initiative of the UAE Ministry of Economy. The winner of this competition gets the opportunity to introduce its technology and establish itself in the Middle East market.

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There is a critical need to equip women with skills for the Fourth Industrial Revolution.

Narrowing the digital divide

The Middle East is bucking the global trend with women enjoying greater representation in science, technology, engineering and maths fields. By *Neil Wright and Shalaka Paradkar*.

IT IS ESTIMATED that 180 million jobs are at “high risk of displacement” in the coming 10 years because of automation – with machines and computers replacing jobs currently held by humans. Women are particularly at risk. McKinsey Global Institute predicts as many as 160 million may need to change jobs in the age of automation – which adds up to nearly one-quarter of all women employed today.

Speaking at the recently concluded Global Women’s Forum (GWF) 2020 Dubai, Stefania Fabrizio, deputy unit chief of the strategy, policy and review department, IMF said “we have to adapt” to the challenges.

She explained that, generally, women in STEM (science, technology, engineering, maths) education and careers are “under-represented”. Fabrizio opined that Gender Responsive Budgeting (GRB) must be given legal status and supported by policy and

programmes. This has become especially relevant and crucial today as technology continues to disrupt the labour market.

“We need this STEM for jobs of the future. There’s a lot of room for policy changes. We need programmes to keep women in STEM. And governments need to provide the access and infrastructure, they have a big role in that,” she added.

There is a critical need to equip women with skills for the Fourth Industrial Revolution. At GWF, Mariam Al Mheiri, UAE Minister of State for Food Security, said: “We have the Advanced Skills Strategy that was launched in 2018. Just a few months ago, we announced the Mohammed Bin Zayed University for Artificial Intelligence. We have a Minister in charge for Advanced Sciences. Our Mars Mission is composed of 34 per cent women. These examples show you how the UAE has pushed women to the next level when it

comes to what they can do in the STEM field. Since our leadership has empowered us so much, it motivates us and we believe we can. What we are doing is giving women the skills needed for future jobs.”

However, in the Western world, and especially in the UK and the United States, a crisis looms in engineering recruitment. The sector is struggling to attract talent altogether, a problem worsened by the fact that almost no women seem to want to train to be engineers.

In the UK, a scant 11 per cent of engineers are female, despite women outnumbering men in the general population. The problem has been manifest since at least 2016, when Engineering UK revealed the alarming recruitment figures in its ‘State of the Nation’ report.

According to the World Economic Forum, globally, men are 33 per cent more likely

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than women to have access to the internet, and women only account for 35 per cent of STEM students in higher education. Fewer than 20 per cent of tech workers are female in many mature economies. Only 1.4 per cent of female workers have jobs developing, maintaining or operating ICT systems, compared with 5.5 per cent of male workers, according to the OECD. Companies have a role to play, working with educational institutions to develop a broader pipeline of women going into tech fields.

But this is not an issue in the Middle East.

In fact, in Saudi Arabia, Oman, Iran and the United Arab Emirates, the STEM fields are dominated by women. In an almost reversal of the trend in the UK, nearly 70 per cent of all STEM university graduates are women in Iran.

The Western world and the Middle East seem to be poles apart on the women/STEM issue, but what are the underlying socio-cultural reasons behind such big differences?

Some authors in the West have termed this “the STEM paradox” of extreme gender inequality. In the Middle East, they say, women have less personal freedoms and choices in what they do. Whereas on the other side, free to their own devices in liberal democracies, women tend to dominate subjects that are more people-oriented and less about ‘things’.

Saadia Zahidi, author of *Fifty Million Rising*, who has said women in the Western world are freer to pursue alternatives and not worry about them paying less.

Others hold the view that the Middle East is not influenced by what some might consider to be harmful gender stereotypes. Sarah Peers of the Women’s Engineering Society in the UK is one voice who has spoken out about the pro-masculine ‘Old Boys Club’ culture that excludes and discourages Western women. In the West, young women are often told to pursue their passions. But if gender stereotypes are tantamount, this might incidentally lead to a

In fact, the Middle East already has a higher percentage of female-led or founded start-ups than Silicon Valley, with about 1 in 3 having some kind of female genesis.

young woman looking at the cultural expectations around her, and instead following what she thinks would be the right thing to do from a societal point of view.

On the other hand, the reason women tend to be encouraged into engineering in the Middle East and North Africa is because of the job security such a path provides. One popular Arabic TV show from the 1950s had a popular theme tune that Arab mothers reappropriated as a theme tune to their baby girls. The lyrics included lines such as: “And I will say ‘My girl has grown up, she will be an engineer/She’s her mother’s lovely girl!’” But also because, according to engineering professor, Raja Ghazi, education systems are not so “flexible” and “quitting or changing a career direction for them is a failure, at least when they embark on their engineering education”.

Breaking the stereotypes

Rana Dajani, a Saudi national of Palestinian, Syrian and Jordanian heritage, and the first woman from the Gulf to complete a PhD in biotechnology from Cambridge University, has stated that women in the Middle East “don’t feel intimidated” by liking science. She believes this is part of an innate drive amongst women to help progress and improve the conditions in society for all women.

There is one stereotype that stubbornly persists for women in the Middle East, at least according to Hoda Baytiyeh, and that is a lack of confidence when it comes to creativity and innovation. This may also be one of the reasons contributing to a lack of

women in the workforce. Baytiyeh says that there is a stereotype that women struggle to turn “knowledge to product” under their own ingenuity, which is an image that should begin to fall away after the public successes of figures such as Rana Dajani.

But despite the fact that Middle Eastern women seem to have no fear in pursuing a tech or engineering degree, such success does not necessarily translate into the wider world of work. Instead, and self-defeatingly, certain cultural, social, and family pressures can result in many women choosing to stay at home.

The result is that the Arab world has some of the lowest rates of female participation in work. There are signs attitudes are changing, though.

In the Middle East, there may be more conservative cultural values that act as barriers to women wanting to pursue STEM-related jobs, including engineering. But given that the tech industry is relatively new in the Arab and Middle Eastern world, there is no legacy — unlike in the West — of it being solely male dominated.

This means that, in the eyes of many young women graduates, technology is looked on as one of those areas that is full of opportunities, and where everything is possible. This is what makes engineering a very attractive pull for women in the Middle East.

In the meantime, we can expect Middle Eastern women to circumvent hostile workplace norms by leaving the structure and starting their own home-based tech companies, by leveraging through the internet to reach new markets. In fact, the Middle East already has a higher percentage of female-led or founded start-ups than Silicon Valley, with about 1 in 3 having some kind of female genesis.

Engineering is naturally a scientific and knowledge-based sector, and will help to propel the Middle East into a plethora of knowledge-based economies. The really exciting thing is, this could also, by proxy, transform the Middle East in ways that will undoubtedly make it richer and more prosperous going forward. ■
(Neil Wright works with Weldwide, an architectural steel and structural engineering company, based in London, UK).



Photo Credits: GWF

In Saudi Arabia, Oman, and the UAE, the STEM fields are dominated by women.

Coronavirus hits the GCC

As global losses mount to US\$160bn, *Shalaka Paradkar* reports on the effect of the pandemic on the Middle East.



Photo Credit: Adobe Stock

The coronavirus outbreak has underscored the importance of the Chinese economy to GCC economic activity.

A DEADLY CORONAVIRUS outbreak first reported from Wuhan in China this January has claimed more than 2000 lives to date and disrupted the global economy.

The outbreak hit China's industrial sector hard – triggering lockdowns and disrupting shipments. This had a domino effect on supply chains across sectors such as electronics, automotive, manufacturing and hi-tech electronics. Digger manufacturer JCB cut working hours for 4,000 of its staff because it was facing a shortage of components being shipped in from China.

Bloomberg reported a potential US\$160bn hit in lost growth as the interconnected global economy reels under the strain of China's viral outbreak.

S&P Global Ratings expects it could dampen growth in the GCC, already affected by low oil prices and geopolitical uncertainty. GCC countries send four to 45 per cent of their exported goods to China, with Oman being the most exposed (45.1 per cent) and the UAE the least exposed (4.2 per cent) based on the latest available data from the UN Comtrade database (2018).

S&P Global Ratings predicts sectors in the GCC's hospitality industry, such as airlines,

hotels, and retail, could also feel the effects of lower tourism inflows. With travel restrictions in place and Gulf airlines suspending flights to Chinese cities, tourists have stayed away. World Travel & Tourism Council (WTTC) president and CEO, Gloria Guevara, commented, "Previous cases have also shown us that closing airports, cancelling flights and closing borders often has a greater economic impact than the outbreak itself."

Last year, Colliers International predicted China will maintain its position as a top source market across the GCC, particularly in the UAE, where Chinese visitors are currently the second and fourth highest ranked source markets for Abu Dhabi and Dubai, respectively. If the virus outbreak isn't contained by March, it will dent expected visitor numbers for Expo 2020. The Dubai event is expected to attract 25mn visitors over a six-month period, with more than 70 per cent coming from outside the UAE.

According to S&P Global Ratings, an indirect impact could stem from foreign nationals' decision to delay or cancel plans to buy real estate due to uncertainty regarding the pandemic.

In its January 2020, Global Economic

Prospects report, the World Bank cut the UAE's growth estimates for 2020 and 2021 by 0.4 per cent and 0.2 per cent respectively, from its June 2019 forecast. Overall, GCC countries are set to grow for 2020 and 2021 by 1.0 per cent, and 0.1 per cent, respectively.

A prolonged crisis will test the resilience of the GCC's non-oil sector. Speaking to *Khaleej Times*, Monica Malik, chief economist at Abu Dhabi Commercial Bank (ADCB), predicted that the GCC's real non-oil GDP growth would accelerate to 2.6 per cent in 2020 from an estimated 2.1 per cent in 2019. "Stronger forecast non-oil activity in the UAE and Saudi Arabia is the key factor behind this estimated acceleration in regional growth," said Malik.

In the UAE, she sees a boost from the Expo 2020 Dubai, "with the timing later in the year as positive given the near-term concerns over travel." She added, "We are also seeing traction building in Abu Dhabi's investment programme, alongside the UAE having the most expansionary fiscal stance in the region in 2020. Our GCC forecast continues to reflect ongoing challenges to the non-oil economy, including real estate sector-related issues." ■

Finland tops out Expo pavilion

It's been designed and executed by JKMM Architects and Swiss construction specialist, Expomobilia.

Photo Credit: Expomobilia

The Finland pavilion, Snow Cape, is located within Expo 2020 Dubai's Mobility District

“To date, we have recorded 26,606 safe man-hours and almost 40 per cent of the construction work has been completed.”

Dietmar Kautschitz, chief customer officer at Expomobilia

FINLAND HAS BECOME one of the first countries to top out its Expo 2020 Dubai pavilion. At a ceremony held at the Expo 2020 Dubai site, Finnish delegates, including Finland's minister of economic affairs, Mika Lintilä, commissioner general of Finland at Expo 2020 Dubai, Severi Keinälä, and Finland's ambassador to the UAE, Marianne Nissilä, hosted guests and provided a full construction update.

The Finland pavilion, Snow Cape, is located within Expo 2020 Dubai's Mobility District and the concept, design, planning and execution have been undertaken by Finland-based JKMM Architects and Swiss construction specialist, Expomobilia.

Severi Keinälä provided information about the pavilion: “The main theme of Snow Cape and Finland's participation in Expo 2020 Dubai is ‘Finland – Sharing Future Happiness’. Finnish happiness is based on the symbiosis of people, nature and technology. This deep connection is the

origin of the quality of everyday Finnish life and the Finland pavilion communicates this happiness by taking visitors on a journey through Finland's major strengths, which are nature and sustainability, education and know-how and functionality and wellbeing.

“We want visitors to Snow Cape to immerse themselves in our deep connection to nature and sustainability. The values of happiness, circular economy and innovations are being showcased throughout the pavilion and exhibition design.”

JKMM Architects, which was also the architect of Finland's pavilion at Shanghai Expo 2010, has designed a simple yet functional structure, ensuring accessibility, openness and simple people flow remain at the core of the architectural concept.

Teemu Kurkela, partner and architect at JKMM Architects, explained the design concept of Snow Cape: “In designing the pavilion, we sought to bring together Finland's icy landscapes with the culture of

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the UAE. In Finnish, it is named 'lumi', which means snow and the pavilion was inspired by the white blanket of snow that covers the Finnish landscape every winter. The main entrance was designed to elicit thoughts of a traditional Arabic tent, seamlessly integrating features from both cultures.

"Finnish components and materials used in the 1,867 sq m pavilion play a significant role in its design. Soft and light façade fabrics are strongly contrasted by the hard, brushed concrete of the entrance deck. Water in dark lakes and shallow water pools will create gentle sounds and cool the air around them.

"The entrance, which spans the entire height of the pavilion, provides a cool, intermediate space to prepare visitors as they embark on their journey through the exhibition. Using hard, granite flooring, we will lead visitors to the central gorge, where they will be embraced by the warmth of gently curved wooden surfaces, acting as a

Nearly 80-85 per cent of the materials used to build Snow Cape would be recycled and reused after Expo 2020 Dubai concludes in April 2021.



Snow Cape is being built almost entirely using material from the local market.

Photo Credit: Expomobilia

serene space for visitors to relax."

Finland was the first country to create a road map to a circular economy and it has stayed true to these principles in the design and construction of Snow Cape. Keinälä explained: "Sustainability has been a guiding theme throughout the design and construction process. With the exception of a limited number of Finnish materials being imported, Snow Cape is being built almost entirely using material from the local market, thereby reducing the environmental burden caused by unnecessary logistics and transportation.

"The simple design of Snow Cape

minimises unnecessary additional claddings, enabling us to reduce the overall use of materials."

Keinälä explained 80-85 per cent of the materials used to build Snow Cape would be recycled and reused after Expo 2020 Dubai concludes in April 2021.

A number of Finnish partner companies have been actively involved in the construction of the Finnish pavilion. For example, the pavilion elevators and sliding doors for the exhibition and VIP areas will be provided by Kone and will be repurposed following the Expo. Halton Group will provide an air ventilation system inside the main exhibition and gorge areas based on low-velocity air diffusers, assuring cool and fresh air on in the human-level zone up to three metres high.

Dietmar Kautschitz, chief customer officer at Expomobilia, discussed its role in the construction of Snow Cape: "It has been our honour to collaborate with Finland and its partner companies in the building of the Finnish pavilion. We have deployed 35 full-time team members onsite and we are very pleased to say works are completely on-schedule.

"To date, we have recorded 26,606 safe man-hours and almost 40 per cent of the construction work has been completed. We are excited to deliver the pavilion, which we're sure will make a big impression during Expo 2020 Dubai."

Works on Snow Cape are ongoing and are scheduled to be completed in the summer. ■



A number of Finnish partner companies have been actively involved in the construction of the Finnish pavilion.

Photo Credit: Expomobilia

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Hardox HiAce drastically slows down the oxidation process, allowing the full hardness of the material to counteract wear.

Photo Credit: SSAB

New corrosion-resistant wear steel from Hardox

Hardox HiAce is designed for municipal and industrial waste management, waste-to-energy plants, and mining and process industries.

THE HARDOX WEAR plate product range of abrasion-resistant steel has a reputation for being both hard and tough, fighting wear in the most severe conditions. Hardox HiAce is the latest product in the range, targeted at applications in acidic and corrosive environments. This corrosion-resistant steel plate helps to meet the challenges of corrosive wear environments found in municipal and industrial waste management, waste-to-energy plants, and in mining and process industries.

The recycling business poses particular challenges to steel. Municipal solid waste is one example of a material that creates a low pH, acidic environment, accelerating wear in garbage truck bodies and refuse containers. Other conditions that have the same effect are when transporting wood chips and if chemicals such as sulphates and chlorides are present.

Hardox HiAce has been developed to withstand these conditions. At low pH levels, the wear mechanism is different than in a more pH-neutral environment. The acidity oxidises the steel's surface, making it more prone to wear even if the body or container is made with a hard material.

Introducing new opportunities to fight

acidity and corrosion, Hardox HiAce drastically slows down the oxidation process, allowing the full hardness of the material to counteract wear.

In a regular environment, Hardox HiAce will perform the same as a 450 HBW steel. But in conditions with lower pH levels, the equipment service life is up to three times longer compared to a 400 HBW steel.

Apart from the additional wear resistance in acidic environments, Hardox HiAce has the toughness it takes to perform as a structural material in garbage trucks, recycling containers, tipper and dump bodies and other heavy-duty equipment.

Hardox HiAce also works in freezing conditions, with guaranteed impact energy of 27 J at -20°C (20 ft-lb at -4°F). It is available in thicknesses of 4-25.4 mm (5/32

- 1 in.). Hardox HiAce has similar mechanical properties as Hardox 450. It can be processed by the same kind of machinery used for other Hardox grades.

The increased wear resistance in garbage trucks and other equipment allows for the use of thinner plate without jeopardising the service life. Thinner steel plate means more payload when fully loaded. And when traveling empty, a lower-weight truck saves on fuel and reduces CO2 emissions.

Hardox range is developed by SSAB, a Nordic and US-based steel company. SSAB offers value added products and services developed in close cooperation with its customers to create a stronger, lighter and more sustainable world. With employees in over 50 countries, SSAB has production facilities in Sweden, Finland and the US. ■

There is only one Hardox

Hardox is a trademark of the SSAB group of companies. Genuine Hardox wear plate is only produced by the Swedish specialty steel manufacturer SSAB. It is possible to tell it's an original Hardox wear plate from the marking printed over every plate's red surface. The marking will also tell which steel batch it comes from, the serial number, its length, width and thickness. It's like each Hardox wear plate having its own passport. All genuine Hardox are supported by mill test certificates from SSAB.

SSAB Swedish Steel Middle East has office and local stock in Sharjah, UAE. Hardox wear plate ordered, shipped and delivered in 48 hours from these local stocks.

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The rise in urbanisation owing to an increase in population is another factor that propels the CSE market size.



Infra projects drive demand

Photo Credit: MB Crusher

To meet the growing requirements of construction, real estate and mining sectors, crushing and screening equipment (CSE) manufacturers are unveiling new machines for the market. *Abhishek Paul* reports.

THE MIDDLE EAST region is witnessing a slew of large scale construction activities, either planned or underway, expanding opportunities for the crushing and screening equipment (CSE) market.

In the *GCC Construction Outlook 2019* report by MEED, there are an estimated 6,722 active projects with a combined value of more than US\$3.1 tn planned or underway in the GCC.

While it is evident that increase in construction and infrastructure projects mainly drives the growth of CSE, the other biggest contributor is the mining sector, which uses CSE machines across all capacities and types to process all kinds of aggregates. Additionally, the rise in urbanisation owing to an increase in population is another factor that propels the CSE market size.

With the governments and the industry players promoting construction and demolition waste recycling activities, CSE is vital to change waste material form so that it can be simply disposed or recycled. Also, they can be used for secondary and tertiary crushing to produce the finished product.

Considering all these factors, a report by Allied Market Research revealed that the global crushing, screening and mineral processing equipment market growth is projected to reach US\$33,116.4mn by 2025, growing at a CAGR of 6.8 per cent from 2018 to 2025.

To eliminate the high labour cost and time, customers are increasingly preferring mobile crushers and screeners to process materials onsite.

“Factors such as rise in demand for metals and minerals, increase in innovations such as automation, controlled costs, and the emergence of mining automation software fuel the growth of the crushing, screening, and mineral processing equipment market,” says the report.

Some of the main players in the mobile crushers and screeners industries include Metso, Terex, Sandvik AB, Powerscreen, SBM Mineral Processing GmbH and Thyssenkrupp, all of which have an active presence in the Middle East.

Rolling out new machines

To meet the requirements of general contractors, in particular, Metso has expanded its mobile crushing and screening solutions with its new Metso Nordtrack range, introducing 19 mobile machines including jaw crushers, impact crushers, screens and conveyors.

“Our target is to create a comprehensive end-to-end offering to serve diverse customer needs. Metso has traditionally been exceptionally strong in the most demanding aggregates applications, such as hard rock. Our new Metso Nordtrack range complements our offering to better address the needs of small and mid-sized companies and general contractors looking for the right combination of productivity, availability and dependability at an attractive price point,” says Renaud Lapointe, senior vice-president, business and product management of aggregates equipment at Metso.

The Metso Nordtrack solutions, which will be introduced at the CONEXPO-CON/AGG 2020 tradeshow in Las Vegas in March 2020, are suitable for a variety of applications, such as recycling, demolition, and the processing of sand and gravel.

Another big player Sandvik AB is launching an intelligent, fuel-efficient and user-friendly mobile jaw crusher Sandvik UJ440i. The mobile jaw crusher's onboard integrated 'intelligence' system allows for simplicity of operation, as the UJ440i is continuously and automatically monitored by the control system that operates the unit, enabling full optimisation of production. Designed on a fully tracked chassis and operated via radio remote control, the UJ440i is fitted with the Sandvik CJ412 jaw 1200 x 830 mm / 47 x 33.

Also on display from Sandvik's mobile crushing and screening offering is the modular double deck hanging screen, which connects to Sandvik QH332, QS332 and QI442 tracked crushers.

Powerscreen will be presenting Chieftain 1700X Hybrid screen and a CT75R tracked radial stockpiling conveyor at the CONEXPO-CON/AGG 2020.

The Chieftain 1700X Hybrid features a highly aggressive screenbox with a patented 2/4 bearing drive system and improved screening angle. Growing on the Powerscreen legacy of high performance 4 bearing screen boxes, the new screen on the Chieftain 1700X leaves with a package that can outperform any similar-sized screenbox on



Photo Credit: Sandvik

The customers' are increasingly preferring mobile crushers and screeners to process materials onsite.

the market, and many larger machines, according to Powerscreen.

The 16ft x 5ft screenbox maintains the screenbox size and mesh of the current Chieftain 1700, but with increase screening force and with an increased screening angle, both combine to give a superior screening performance.

The CT75R tracked radial conveyor is the stockpiling solution for any crushing and screening operation. The mobility and flexibility of Powerscreen tracked radial conveyors reduces/eliminates the use of a wheel loader on-site as well as significantly reducing fuel, labour and maintenance costs. ■

Focusing on on-site flexibility and independence

In an interview with *Technical Review Middle East*, Najmeddine Sahraoui, deputy general manager for the Middle East and Africa, MB Crusher talks about the construction and screening equipment market and emerging trends in the region.

Technical Review Middle East (TRME): How is the GCC market looking for crushing and screening equipment (CSE)?

Najmeddine Sahraoui (NS): GCC and Middle East market is growing and moving fast and its infrastructure industry has the biggest potential for growth and opportunities for investment. We think that the construction and mining industry is on the rise and this would have a significant impact on the crushing and screening equipment. MB Crusher offers solutions for every need, starting from the small work in a city centre where a flexible machine reduces costs and staff necessity, to big piping works or mines where working on site is the main requirement.



Photo Credit: MB Crusher

MB Crusher recently launched the new line of Shafts Screener, the MB-HDS model.

TRME: What kind of CSE do you see most in demand within regional projects?

NS: Crushing as well as screening buckets are considered to be among the latest innovations in the hydraulic attachments segment. Attachments are considered as a boon to secondary operations as they drastically reduce the capital investment

required upfront. At the same time, they are more versatile in terms of applicability and do not require major logistical considerations and capital intensive mobilisation costs as one would face with stationary crushers for example. They provide on-site independence. One may all of a sudden do crushing and screening operations in the remotest parts of the country without depending on expensive and time-consuming transportation costs. They also eliminate a lot of labour issues when replacing manually executed jobs. This enhances consistency and efficiency.

TRME: What are some of the emerging trends in the Middle East crushing and screening market?

NS: Crushing on site is a vital aspect of many applications, such as road construction, quarry and mining operations and urban working sites. For this reason, the need to make the most of all available material has prompted many operators to use also the waste material which once was simply piled up in the site. Our market is strongly correlated to general infrastructure activity, so positive developments bring downstream positive impacts to equipment suppliers like us.

TRME: Have you recently launched or planning to roll out any new equipment in this segment in the Middle East? Why should customers choose your solution?

NS: We recently launched the new line of shafts screener, the MB-HDS model. The MB-HDS shafts screener is designed to interchange the rotating shafts directly on-site and in complete safety, in just a few minutes by a single person. This innovative system is made up of a stand that will keep the rotating shafts in place, making it easy to extract and exchange them. In practice, it means having the yard always in action.



For truck owners, the Dynafleet fleet management system provides constant updates on a vehicle's performance.

Photo Credit: Famco

The Middle East's first Uptime Centre is here

The Centre, inaugurated by Famco UAE and supported by Volvo, seeks to improve fleet operations efficiency through proactive and flexible vehicle-specific maintenance planning.

CUSTOMERS OPERATING VOLVO trucks and/or Volvo construction equipment will benefit from upgraded standards of support courtesy of the region's first Uptime Centre, by Al Futtaim Auto & Machinery Co (Famco UAE) supported by Volvo. It is based at the Famco workshop in Dubai Investment Park.

The technical bays supporting the uptime centre are adequately equipped to deal with the pre-planning needed so as to ensure efficient servicing and unplanned repairs being dealt with efficiently.

This service includes the consistent use of proven fleet management systems, in addition to designated uptime bays, updated workflows, genuine Volvo parts and specialised technicians.

For truck owners, the Dynafleet fleet management system provides constant updates on a vehicle's performance, making it possible to pinpoint critical data and take prompt action to reduce

Remote Diagnostics alerts drivers to current mechanical issues as well as reminding them of routine maintenance checks.



Photo Credit: Famco

Famco enhances the services by setting up the new Uptime Centre in the region.

costs, improve vehicle utilisation and allow for the quick re-deployment of assets.

Remote Diagnostics alerts drivers to current mechanical issues as well as reminding them of routine maintenance checks. In emergencies, agents spring into action, obtaining fleet

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information and pinpointing the trucks' geographic locations and proximity to dealers.

At the same time, the CareTrack advanced telematics service, available to equipment operators, allows machine problems to be caught before they occur, while also improving technical response time and downtime resolution speed.

Vladimir Knezevic, managing director at Famco UAE, commented, "Our customers are central to everything we do, so it was a logical decision for us to enhance our services by establishing the Middle East's first Uptime Centre. This will allow us to better support our partners, providing further reassurance that when they choose a Volvo truck or machine, they are actively prioritising increased uptime and maximising profit, while reducing downtime and any negative impact on their investments."

Famco is the exclusive distributor of Volvo trucks, buses and construction equipment and franchises other renowned industry heavyweights such as Yanmar, Linde Material Handling, Ingersoll Rand and Doosan.

Frank O'Connor, Middle East market director of Volvo Trucks, said, "It is still uncommon for dealers to provide the levels of service that Famco is now offering, both in terms of the standards of advanced technology involved and the investment made in the upgrading of the Famco workshop facility. With the launch of its new Uptime Centre supported by Volvo, Famco is setting new standards for the truck industry in the Middle East."

Al-Futtaim Auto & Machinery Company (Famco) is the distributor of heavy vehicles and machinery including trucks, buses, construction equipment, storage, handling, power, and marine solutions. ■

Al-Futtaim delivers 220 HINO 300 series trucks to CAFU, ADNOC and ENOC

AL-FUTTAIM'S COMMERCIAL VEHICLE Division, exclusive distributor of HINO trucks in the UAE, has announced that it has delivered over 220 HINO light-duty trucks to fuel delivery operators in the UAE in 2019.

HINO 300 series 714 NWB tons and 916 SWB 6 tons trucks constitute the fleet involved in the distribution of fuel to customers for CAFU, the Middle East's first on-demand fuel delivery service app, ENOC and ADNOC.

Ramez Hamdan, general manager, HINO, Al-Futtaim Automotive group said, "HINO trucks are known for their durability, versatility and famed 'Total Support' aftersales concept in terms of service contracts and spare parts availability, making them the trusted partner for companies. We are very pleased to see HINO becoming the backbone of the booming fuel delivery sector."

HINO teamed up with Gorica, Transworld and CMC to conduct the customisation of the trucks for CAFU, ENOC and ADNOC respectively to ensure they fit the operational needs for each business and conform to the set safety standards in the UAE.

Also, as part of the 'HINO Total Support' concept, experts from Al-Futtaim's Commercial Vehicle Division provided eco-driving training to drivers of fuel delivery operators, to help them optimise total cost of truck ownership and contributing to the bottom line. These training help fleet owners improve fuel efficiency, minimise the cost of wear and tear, reduce service and maintenance costs as well as insurance premiums and decrease the risk of major road accidents.



HINO teamed up with GORICA, Transworld and CMC to conduct the customisation of the trucks for CAFU, ENOC and ADNOC.

Photo Credit: Al-Futtaim

Isuzu, Honda sign hydrogen fuel cell R&D deal

ISUZU MOTORS AND Honda R&D, a research and development subsidiary of Honda Motor, have signed an agreement to undertake joint research on heavy-duty trucks, utilising fuel cells (FC) as the powertrain.

As a commercial vehicle manufacturer, Isuzu has been striving to promote the utilisation of low-carbon and sustainable energy. To that end, Isuzu has been researching and developing various powertrains including clean diesel engine, engines for natural gas vehicles (NGVs) and electric vehicle (EV) powertrains, which accommodate a broad range of customer needs and how vehicles are used.

Calling fuel cell vehicles "the ultimate environmental technology" for motorised vehicles, Honda stated that it has been working researching and developing fuel cell vehicles for more than 30 years.

There are still some issues that need to be addressed to popularize the use of FC and hydrogen energy, including issues related to cost and infrastructure, according to both the companies. These issues need to be tackled not only by individual companies but more expansively through industry-wide initiatives, the companies said.

Taking advantage of the respective strengths each company has amassed over

a long period of time, that is, Isuzu's strengths in the development of heavy-duty trucks and Honda's strengths in the development of FC, the two companies will strive to establish the foundation for basic technologies such as FC powertrain and vehicle control technologies.

Moreover, through this joint research, Isuzu and Honda will not only realise clean, low-noise, low-vibration heavy-duty trucks, but also promote expansive discussions by the industry so that the use of FC trucks and hydrogen energy can contribute to the future prosperity of the logistics industry and all other industries in our society and to the early realisation of hydrogen society.

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The 3D model is a live model and can be updated to reflect any real-world bridge conditions as the bridge lifecycle progresses.

BIM for bridges

Bridge information modeling improves design quality, constructability, and collaboration, says **Amy Heffner** - manager, product marketing, civil design at Bentley Systems.

B R I D G E I N F O R M A T I O N M O D E L I N G (BrIM), or BIM for bridges, is an advanced methodology for the bridge design and construction industry. Intelligent, physical 3D bridge models provide a perfect graphical and functional representation of a bridge and its design results, improving design quality, constructability, and collaboration.

BIM for bridges is increasing in popularity, with several US State Departments of Transportation adopting BIM workflows for bridges and Bentley's OpenBridge.

The New York State Department of Transportation (NYSDOT) has recently released its first "model-based contract" where the intelligent 3D bridge model plays a central role. This contract approach minimises the use of paper plans, requiring that project bidders use a digital copy, a 3D model of the entire project that contains topography, geotechnical, roadway, as well as bridge information.

Leading DOTs and progressive consulting firms are taking advantage of innovative collaborative software applications to eliminate traditional workflows, where

bridge and roadway designers usually work in silos with very little information sharing or reuse of data.

For example, terrain data and roadway geometry are generated by roadway engineers, and this data is shared with bridge engineers via paper copy or methods that require manual data entry or export into a new format. This traditional workflow

introduces unnecessary project risk with the potential for inaccurate or outdated data entry, resulting in delays to the project schedule and cost overrun.

Traditional, non-interoperable workflows create a range of disconnected models, including visualisation models for marketing or public information purposes, CAD models for geometry verification, and structural analytical models for design calculations. Any changes or updates to these models must be done independently, resulting in a workflow prone to data entry errors and diminished data ownership and modifications tracking. This situation leads to a decrease in productivity, as well as liability conflicts.

Using 3D intelligent models to represent physical bridge information offers owners of bridge assets the opportunity to use digital project delivery, including 3D visualisation, virtual assembly, automated machine control, fast routing and permitting, network-level study, and smart inventory as a routine part of project development and asset management.

BIM for bridges not only encompasses the creation of an intelligent physical 3D model,



Amy Heffner - manager, product marketing, civil design, Bentley Systems

Photo Credit: Bentley

but also establishes an environment for all applications required for bridge design to interoperate and efficiently exchange information. Therefore, the intelligent 3D model becomes the single source of information for the project, allowing different engineering disciplines and sub-disciplines to retrieve specific data and update the 3D model.

As BrIM practices become mainstream, it is clear that the hundreds of potential information exchanges taking place over the lifecycle of any bridge—spanning design, construction, and management phases—can gain significant value by leveraging 3D intelligent models.

While there is high initial value in preparing and automating bridge design plans, production of 2D plans cannot be the ultimate goal of BrIM. The real value of BrIM lies in the virtual elimination of 2D plans and the transition to a fully digital solution, adding more information like material descriptions, design specifications, reports, and geotechnical data to make the model more intelligent.

In a centralised connected data environment, a single, physical 3D BIM model can be utilised by different disciplines and their specific applications interoperable with the 3D model. Any modification to the centralised 3D BIM model is reflected in the other applications, such as the analytical bridge model, 2D drawings, and rebar detailing input.

Bentley's OpenBridge eliminates multiple data entry from different end-users from different disciplines and unifies the data in a single source of truth: the physical 3D model. This 3D model is a live model and can be updated to reflect any real-world bridge conditions as the bridge lifecycle progresses. As-built modifications, defects found during an inspection, or any rehabilitations performed on the bridge can be reflected in the 3D model, resulting in a digital twin of the bridge, ready to be analysed, monitored, and evaluated as needed.

BIM for bridges not only encompasses the creation of an intelligent physical 3D model, but also establishes an environment for all applications required for bridge design to interoperate and efficiently exchange information.



The intelligent 3D model becomes the single source of information for the project.



Photo Credit: Bentley

The 3D model is enriched with design information. Therefore, all the related data is transferred to contractors for construction and, later, to owners for asset management and maintenance operations.

The intelligent 3D models created by Bentley's OpenBridge can be shared with contractors and used to create the construction schedule and plan how the structure will be built in a fully collaborative environment with the engineering disciplines. Contractors can connect their Gantt charts and cash-flow schedules directly to the 3D model using Bentley's SYNCHRO, and evaluate multiple construction options.

An as-built model, with its combination of design and construction information, has tremendous value for owner-operators. If

reality data and Internet of Things data (sensors, drones, photos, and point clouds) are added to the model, the 3D model grows into a true digital twin of the bridge, which can be used for bridge management and operations.

While 3D intelligent models provide a valuable shared knowledge resource, digital twins support a more reliable basis for decisions during the bridge lifecycle. Using Bentley's iTwin Services, an owner can continuously survey and visualise the bridge, track changes, and perform analysis to better understand and optimise its performance, predict behaviors, and test or apply corrective measures.

These are exciting times in which BIM for bridges is an essential strategic step in the the infrastructure industry going digital. Using BIM compels designers and contractors to think more about operations and maintenance. When they think about the full lifecycle of a bridge as it is designed and constructed, the information will paint a more accurate picture of the future operations of the bridge. It is our responsibility as an industry to educate ourselves in the available technology advancements and learn how to adopt them and gain significant economic efficiency throughout infrastructure lifecycles. ■

Reaping the benefits of intelligent assets

Nicky Dobreanu, cost consultant at CIOB Middle East, talks about the role of Building Information Modeling (BIM) and other technologies in shaping up the construction sector, with *Abhishek Paul*.

Technical Review Middle East (TRME): As an industry expert, can you shed light on current trends in Building Information Modeling (BIM) in the Middle East? How can BIM make buildings more intelligent?

Nicky Dobreanu (ND): BIM on its own, as a process, requires additional tools and facilitates additional analyses that definitely add value to both the project cost, as well as the operational side of things. BIM is essentially value creating collaboration through the entire lifecycle of an asset, underpinned by the creation, collation and exchange of shared three-dimensional (3D) models and intelligent, structured data attached to them. The end goal for BIM, in my view, would be to assist a whole life cycle open information flow approach to facilitate design, construction, handover and in-use facilities in efficient, effective and sustainable ways. This should be enabled and underpinned by well-developed and sustainable standards, processes (including contract strategies), human capital and agile IT technologies.

TRME: What makes Saudi Arabia and the UAE a promising business environment for intelligent buildings?

ND: The GCC felt the impact of digital

transformation, and this benefited buildings, cities and professional firms. As the GCC region delivers on its strategic social and economic development plans (Saudi Vision 2030, Expo 2020, Abu Dhabi Plan 2030 etc.), creating sustainable living environments and world-class infrastructure, digital transformation keeps plays a critical role in achieving all these goals. The estimated pipeline of projects in KSA is at a whopping US\$1.415tn, while for the UAE is US\$0.887tn, so very promising.

TRME: How can intelligent buildings and BIM drive sustainability in Saudi Arabia and the UAE's construction industry?

ND: Although BIM - on its own - cannot drive sustainability, the number of analyses it allows (including assistance in the facilities management via computer aided facilities management software) and the reduced wastage on sites should be quantified in terms of sustainability. Projects produced in a 3D environment and which undergo a number of simulations before being physically built, are more environmentally friendly, attract higher returns, and create better social relationships, since they act as hubs or "places to be in".



Nicky Dobreanu, cost consultant at CIOB Middle East

TRME: What are some of the latest developments in this sector?

ND: Most notable developments have technology at their core. Cities, including buildings and infrastructure need to be smarter, more responsive to requirements and highly dependent on artificial intelligence. All of our built assets need to incorporate information and communication technologies (ICT) in order to enhance the quality and performance of urban services such as energy, transportation and utilities in order to reduce resource consumption, wastage and overall costs. The overarching aim of a smart cities is to enhance the quality of living for its citizens through the use of smart technologies.

TRME: What are some of the gaps that need addressing in terms of product development in the Middle East construction market?

ND: The main gap, in my view, is the mindset. It takes time for some professionals to get used to new ways of working. Once they understand that the end goal is to work smarter, not harder, it will become business as usual working in a digital environment and the current resistors will hopefully become change champions. There should be a government 'task force' to mandate BIM implementation and have ownership of the developed standards. Construction SMEs in the Middle East must play an effective role and responsibility to be an essential ingredient of the BIM development processes. ■

Photo Credit: Adobe Stock



Built assets need to incorporate information and communication technologies (ICT).



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HERZ IS AN Austrian company recognised internationally, and only deals with resource-friendly energy supply and ensures an energy-efficient creation of economic and convenient systems. Decades of experience as well as specialising in the fields of heating and control engineering form the basis of innovation and attractive design for our products.

Herz products cover the entire market for the HVAC industry. All our products are manufactured in EU countries according to European quality standards. We positively contribute the two concepts of energy efficiency and energy conservation with the products that we manufacture.

Energy efficiency is acquired when the technology being used does the same function however with less needed energy. Reducing energy use reduces energy costs and may result in a financial cost saving to consumers if the energy savings offset any additional costs of implementing an energy-efficient technology. Energy reduction is also seen as a solution to the problem of reducing greenhouse gas emissions.

According to the International Energy Agency, improved energy efficiency in buildings, industrial processes and transportation could reduce the world's energy needs in 2050 by one third and help control global emissions of greenhouse gases.

On the other hand, energy conservation is the effort made to reduce the consumption of energy by using less of an energy service. This can be achieved either by using energy more efficiently or by reducing the amount of service used. Energy conservation is a part of the concept of eco-sufficiency. Energy can be conserved by reducing wastage and losses, improving efficiency through technological upgrades and improved operation, installation and maintenance.

With today's emphasis on saving energy, designers are looking to cut costs to a minimum by utilising variable volume heating and cooling systems. The use of dynamic balancing valves such as pressure



Photo Credit: Herz

Herz trades internationally in over 100 countries from its headquarters in Vienna/Austria.

independent balancing control valves ensures that these issues are overcome and flow rates are controlled constantly, as required by modern room temperature control systems. Therefore, the selection of regulating valves and the control areas have a critical importance.

Herz dynamic balancing valves work automatically without the need for auxiliary power. In addition, the settings of Herz automatic balancing valves can be changed easily and effortlessly after installation should requirements change.

The BSRIA guide to Energy Efficient Pumping Systems BG 12 / 2011 clearly indicates that significant energy savings can be made by utilising pressure independent balancing control valves (PIBCV) on terminal units in variable volume systems.

Herz dynamic balancing valves work automatically without the need for auxiliary power.

In addition, with our valve package "HerzCON" we aim to highlight both methodologies mentioned above, which was designed to give a simple connection to fan-coils, or other terminal units, and utilises Herz's 4006 SMART pressure independent balancing control valve, multifunctional ball valve, strainer, and drain valve. On/off, or modulating 0 – 10 V DC actuating, or motoric drives can be fitted and integrated to a BMS when required.

The HerzCON unit also permits flushing and isolating operations to be undertaken. This means there is no product differentiation between heating and chilled systems, one unit does both applications.

The drain cock fitted to the strainer allows flushing without the need to remove the strainer basket and allows the strainer basket to be cleaned on-site. The unit allows pressure independent control ensuring full stroke, regardless of pressure fluctuations while guaranteeing a constant flow rate to the terminal unit, maximising energy efficiency for the system and providing the best comfort for our users. ■

*For further information, please contact
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Innovation for slab formwork procedures

The new large panel slab formwork improves degree of safety and economic efficiency, says formwork and scaffolding specialist Peri.

THE SAFETY REQUIREMENTS imposed on slab-forming procedures are becoming an increasingly significant issue. To ensure safety during day-to-day work, Peri has unveiled the future-proof large panel formwork system Skymax. Not only does the innovative principle significantly increase safety levels for users, it also improves the degree of economic efficiency, according to Peri.

The solution, which makes it possible to carry out slab-forming procedures from a safe position on the level below, stands out not only due to its low weight, but due to its high technical and economic flexibility. As such, the Skymax system is marketed as a kit consisting of compatible components made of various materials. The panels, support heads and other system components can be combined in many different ways. In future, it will be possible to assemble the Skymax panels at the construction site using safety equipment in order to produce large slab tables. What's more, it will be possible to attach additional panels to the Skymax slab table directly and thus flexibly expand the formwork system.

Future-proof and cost-effective

The ability to carry out the slab-forming procedure from the level below makes Skymax a future-proof investment. From a safe position on the installation surface below, the panels are fed through the patented guide openings, which feature retaining teeth, and onto the head where they are automatically secured in place and cannot be lifted out. This reduces the amount of work and level of effort involved and significantly increases the level of safety on the construction site. Additional system components such as column frames and double adjustment beams make it safe and easy to marry up mating surfaces, thus reducing the amount of effort required significantly.



Additional system components such as column frames and adjustment beams make it safe and easy to marry up mating surfaces.

RFID technology

By installing dual-frequency RFID transponders in each Skymax system as standard, Peri has ensured that it is optimally equipped for the future. This technology enables customers to detect and clearly identify the Skymax panels from significant distances and en masse using a scanner.

In this way, not only can specific component information and assembly instructions be retrieved digitally using a conventional NFC-compatible smartphone and the Peri material scan app thanks to this special RFID tag, logistical processes can also be optimised according to the track and trace principle. ■

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Investment in the region's power sector is estimated to be worth US\$260bn by 2022.

Powering into the future

Claudia Konieczna, exhibition director, Middle East Energy, discusses the impact of digitisation, renewables and AI on the energy sector, in conversation with Shalaka Paradkar.



Photo Credit: MEE

Technical Review Middle East (TRME): In your opinion, what are the top three developments that are set to disrupt the power sector regionally?

Claudia Konieczna (CK): Judging from what our exhibitors are telling us the major developments for the Middle East will be the integration of renewables into the ecosystem, maximising returns by the increased digitalisation of the sector and the widespread impact of artificial intelligence (AI).

For renewables integration, disruption of this kind is now becoming mainstream, driven by well-designed auctions, favourable financing conditions and declining technology costs. Analysts forecast that based on the renewables targets already in place, the region, led by the UAE, could save 354 mmbbl of oil which is equivalent to a 23 per cent reduction, cut the sector's carbon dioxide emissions by 22 per cent and slash water withdrawal in the power sector by 17 per cent by 2030.

On the digitalisation front, this is now being touted as an important success driver for the region's power industry which could boost its profitability by 20-30 per cent.

More than 2,000 companies interviewed for our Informa Markets' *Energy & Utilities*

Market Outlook 2020 believe that the shift to a digitalised landscape holds out tremendous growth opportunities for those willing to become digital champions of the power community. Further, we see the impact of digitisation being felt across all industry sectors including power generation, renewables, transmission and

Data collection and state-of-the-art technology are crucial to maximising the efficiency of our energy systems while making the best use of natural resources.

distribution, energy consumption and management.

AI meanwhile will significantly impact roles within the regional power sector with adjustments to jobs in power generation plant operations and maintenance as sensors, digitisation and machine learning are increasingly adopted. AI adoption will result in data analytics which will improve plant efficiencies via improved systems for asset management, control and monitoring and automation.

TRME: How do you see digitisation transforming the region's energy sector? What are some of the significant barriers to its implementation?

CK: The main areas of opportunity arising out of digitalisation is the smart lighting market, which in the MENA region is forecast to reach US\$2.1bn in 2023, and smart grid investments throughout the region, which are tipped to grow to US\$17.6bn by 2027. Digitalisation is now seen as 'vital' to an industry which will increasingly become data-dependent. It's no secret that the region's energy industry is undergoing huge transformation, with renewable energy becoming more competitive.

These new energy sources have, however, increased the complexity of managing the region's power and water supplies in as much as they require significantly higher levels of data on both the generation and demand sides. Decision making needs to be faster and more seriously based on data evidence.

Data collection and state-of-the-art technology are crucial to maximising the efficiency of our energy systems while making the best use of natural resources to meet increasing demand while minimising any environmental impact.

One barrier to its introduction is the risk adverseness of an industry which recognises that digitalisation also brings with it, increased risk of cyber-attack. The proliferation of smart grids, smart meters and smart buildings is taking the region into an era of interconnectedness and automation, but in-turn, makes the energy supply chain increasingly vulnerable to cyber-attacks. This will require a cross-sector-based approach to risk management, with all involved in the eco-chain accepting that cyber threats are now as much a feature of the power sector's risk landscape as fires would be.

TRME: What is the potential for smart grids in the region?

CK: Our research forecasts tremendous opportunities with smart grid investments in the MENA region likely to reach US\$17.6bn by 2027. This research suggests that the GCC alone could save up to US\$10bn a year in infrastructural investment through the use of smart grids, making their introduction one of the most important steps towards

According to a report from the Gas Exporting Countries Forum, the Middle East's demand for electricity is expected to reach 2,419 terawatt hours (TWh) by 2040.



Energy storage and management and solar are interlinked.

improving electricity diversification and conservation in the region.

Our forecasts suggest that the GCC smart grid market will grow to US\$1.68bn by 2026 as regional governments step up their deployment of smart grid infrastructure heightening demand for energy storage and management systems. Smart grid adoption is an integral part of the region's smart city ambitions. They are essential to managing its robust energy demand and in mitigating the impact of climate change and global warming, thereby enabling nations to meet their obligations under the Paris Accord. Growth in the GCC renewable energy market is expected to drive smart grid technology adoption.

Energy storage and management and solar are interlinked. While the adoption of renewables continues to rise, the ongoing challenge faced by government, utilities and even commercial projects is locking in the energy generated to provide, reliable and on-demand power.

TRME: In the Middle East's changing energy landscape, what role do you see for conventional power generation from fossil fuels?

CK: A new report from the International Energy Agency (IAE) suggests that while renewable energy generation is gaining traction in the region, traditional power generation from sources such as oil and natural gas will continue to have a role in the broader energy to satisfy rising power

demand through a reliable energy mix.

There is some evidence for this with the recent signing of a 25-year power purchase agreement between GE and Japan's Sumitomo Corporation with the Sharjah Electricity and Water Authority (SEWA) to develop, build and operate a 1.8GW combined cycle power plant in Hamriyah. This flagship project is expected to be the most efficient power plant in the Middle East's utilities sector enabling SEWA to substantially improve overall operational efficiency of its operations.

The new project is expected to boost Sharjah's electricity supply and emphasises the critical role of gas power in the wider energy mix.

Meanwhile, in Saudi Arabia, which has earmarked more than US\$100bn for renewable energy investments, efforts are being made to further investments in new gas power projects, in recognition of the essential role of gas in narrowing the electricity demand-supply gap. Saudi has openly stated that it is looking to renewable energy to complement traditional sources of power generation including gas.

According to a report from the Gas Exporting Countries Forum, the Middle East's demand for electricity is expected to reach 2,419 terawatt hours (TWh) by 2040. Joseph Anis, president and CEO of GE Power in the Middle East, North Africa and South Asia, said that the intermittency of renewable power means it cannot be relied upon as a sole electricity source and that

Photo Credit: MEE

the region will have to depend upon a mix of conventional resources and renewable power to meet the need for dependable, affordable and sustainable energy for the foreseeable future. The consensus would seem to suggest that traditional and alternative sources should be complementary, not competing, to meet our electricity needs.

TRME: What are the challenges ahead as the region moves to a zero-carbon future and clean, uninterrupted power supply?

CK: The main challenge is the integration of renewable technologies into the eco-system as the industry continues to strive to meet spiralling power demand. This will require greater flexibility from the regional power sector. A whole raft of issues needs to be facilitated including the introduction of ancillary services, a readiness to curtail solar output at low system inertia times, the development of new tools and procedures, extensive cost assessment and network reinforcements. For instance, new forecasting and communication tools will need to be developed while grid codes will need to be updated and new procedures prepared. We have heard from some exhibitors that system operations will be the major challenges in the GCC's development and deployment of wind and

solar resources and could take up to a decade to overcome.

TRME: What are the highlights of this year's edition of the Middle East Energy (MEE)?

CK: First and foremost, the name change and what it represents. Middle East Energy is the first in the new series which used to be known as Middle East Electricity. The rebrand is aimed at ensuring the series stays relevant in the Fourth Industrial Revolution era when the energy industry is at the forefront of transformational disruption. It is a strategic move to better reflect the industry we serve which has moved well beyond the electricity segment alone. The electricity segment is one element in the wider energy field, which is now replete with advancing technologies, including renewables and digitalisation.

The event continues to expand upon its long-held role of being a new technology launch pad, a B2B meeting ground and an educational and knowledge sharing platform for one of the fastest change industries.

MEE will offer, for the first time, a high-level conference providing specific market information designed to meet the needs of visitors in the form of plenary sessions. Two full programmes focused on Energy Digitalisation and Renewables will take

place. This expansive, free-to-attend knowledge-sharing programme comprises more than 30 conference sessions, more than 150 speakers and 25 hours of learning opportunities.

TRME: How do you envision MEE pushing the sustainability agenda in the GCC?

CK: MEE is fostering the GCC's sustainability agenda by placing a heavy focus on its exhibition and conference content on renewables, AI and digitalisation. The renewables and digitalisation have their own product sectors – two of five focused sectors – at the show. Both have dedicated conferences as part of our expansive knowledge-sharing programme. We are pushing forward the debate and knowledge-transfer that will help shape the region's sustainability agenda. Major themes under discussion will be 'The Middle East and the Emission-Free Technology Mix' and the 'Energy Storage Game-Changers' covering the markets, technologies, and business models required for this essential segment. By furthering knowledge and highlighting the technology required for an environmentally conscious age aware of the climate change dilemma, the event is helping to keep the region's sustainability agenda top-of-mind among a highly influential audience. ■

'MENA must invest US\$260bn in power sector by 2022'

INVESTMENT IN THE region's power sector is estimated to be worth US\$260bn by 2022, according to an industry report released ahead of Middle East Energy (MEE), a global energy platform to be held at the Dubai World Trade Centre from 3-5 March.

The Middle East and North Africa (MENA) energy sector faces the dual challenge of meeting rising demand while addressing the urgent need to move to low-carbon systems, added the Energy & Utilities Market Outlook Report 2020, produced by GRS Research and Strategy and commissioned by Informa Markets, organisers of MEE.

"Energy systems around the world are going through rapid transitions that affect many aspects of our lives," stated the report. "The continuation and acceleration of these shifts will initiate a global energy transition that will bring about significant changes to the way we fuel our cars, heat our homes and power our industries in the coming decades."

The report, based on a survey of more than 2,100 energy sector operators, has identified the GCC as the highest potential market for future-focused energy business opportunities, accounting for 32.8 per cent of anticipated transactions.

Middle East Energy's free-to-attend plenary sessions will feature six dedicated discussions and more than 40 speakers delivering more than nine hours of strategic dialogue on the issues at the core of the long-term development of the MENA region's power sector.

Claudia Koniczna, exhibition director, MEE, said, "As the global energy platform, MEE gathers the leading lights of the worldwide industry to examine the major issues, explore opportunities and set



Middle East Energy free-to-attend agenda setting conference series will shine spotlight on major industry topics.

the agenda for the future. The plenary sessions and the wider conference series will deliver expert insights into the major transformation of the energy sector."

The sessions will probe topics which are now fundamental to the sector's transition, including new business models operating within the energy industry, the power of digital and effective renewables integration.

They are part of a three-pronged MEE conference programme which has attracted more than 150 experts from the UK, the USA, Europe, China, the Middle East and North Africa to a two-day Renewables conference and a series of seminars devoted to digitalisation in energy.

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Wind and Solar are emerging as the region's most cost-effective electricity sources.

GCC power sector needs flexibility

Challenges of integrating wind and solar could take 10 years to overcome, says Brendan Cronin of AFRY.

THE GCC POWER sector needs greater flexibility if it is to effectively integrate renewables into its electricity generation infrastructure, according to one of the world's leading energy market consultants.

Brendan Cronin, head of management consulting Middle East, AFRY, was speaking ahead of his participation in the thought

“There have been further falls in PV module costs and a shift to bifacial technology which has driven solar PV tender prices well below \$20/MWh in tenders in Dubai, Abu Dhabi and Saudi Arabia.”

Brendan Cronin, head of management consulting Middle East, AFRY

leadership plenary sessions of the first Middle East Energy (MEE) conference, which will run at the Dubai World Trade Centre from March 3-5 as part of the global energy event.

Cronin said that the wind and solar PV are now the cheapest source of electricity due to falling module and turbine prices, strong competition and low capital costs.

“There have been further falls in PV module costs and a shift to bifacial technology which has driven solar PV tender prices well below US\$20/MWh in tenders in Dubai, Abu Dhabi and Saudi Arabia,” he explained.

Cronin pointed to the GCC's wind resources being largely focused on Oman and Saudi Arabia and added, “Load factors of 40 per cent are possible in some areas which is pushing prices down to levels comparable to solar PV.”

Though wind and solar renewables look attractive from a cost perspective, their integration will require considerable flexibility within the GCC's existing electricity system. Cronin pointed to the need for ancillary service provision, an ability to curtail solar output during period of low system inertia and integrated generation and network planning.

He added, “New forecasting and communication tools will need to be developed. Grid codes will need to be updated. We are also very excited by the potential for greater demand-side participation to be



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used to better integrate of renewables.”

AFRY has contended that system operation challenges will be the major challenge in the GCC’s development and deployment of wind and solar PV resources and experience from other markets suggests this will take time to overcome.

“Renewable integration will require an extensive programme of change ... it will be a continuous journey of improvement rather than a one-off event,” said Cronin. “The programme will need to be developed over the next 10 years.”

Cronin will join Paul McCusker, vice president-EMEA of global energy storage and services company Fluence, and Rasheed Sulaiman, digital and MYA leader, GE Steam Power, at the plenary session. The trio will explore the challenges that wind and solar PV bring to the GCC’s system operation and the role that energy storage can play, how best to evaluate alternative options to add power system flexibility and the necessary regulatory changes required.

Six free-to-attend thought leadership plenary sessions will feature more than 40 local, regional and international speakers, including representatives from the region’s utility providers. Together they will provide more than nine hours of strategic dialogue on the issues at the core of the long-term development of the region’s power sector.

“The plenary sessions will be complemented by a Renewables conference and the highly focussed Energy Digitalisation conference,” explained Claudia Konieczna, exhibition director, MEE, formerly known as Middle East Electricity. “Together these three forums represent a powerful knowledge platform for all in the industry with more than 30 conference sessions and more than

Photo Credit: Action



Discussions will focus on integration of digitalisation and renewables.

Renewable integration will require an extensive programme of change ... it will be a continuous journey of improvement rather than a one-off event. The programme will need to be developed over the next 10 years.

150 speakers providing up to 25 hours of insightful learning.”

Digitalisation and renewables come in for added focus at the event being among its five dedicated product sectors which include power generation, transmission and distribution, energy consumption and management. More than 1,300 exhibitors from around 130 countries are due at the show which is expected to attract up to 48,000 attendees. ■

About Middle East Energy

AFTER FOUR AND a half decades as Middle East Electricity (MEE), the rebranded Middle East Energy - organised by Informa Markets - is the region’s leading trade event for the power industry. In 2020, Middle East Energy will feature dedicated product sectors for power generation; transmission and distribution; energy consumption and management; renewables and digitalisation.

MEE 2020, the 45th edition of the trade-only event, is held under the patronage of HH Sheikh Maktoum Bin Mohammed Bin Rashid Al Maktoum, Deputy Ruler of Dubai, and is hosted by the UAE Ministry of Energy, from 3-5 March, 2020 at Dubai World Trade Centre.

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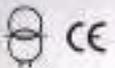
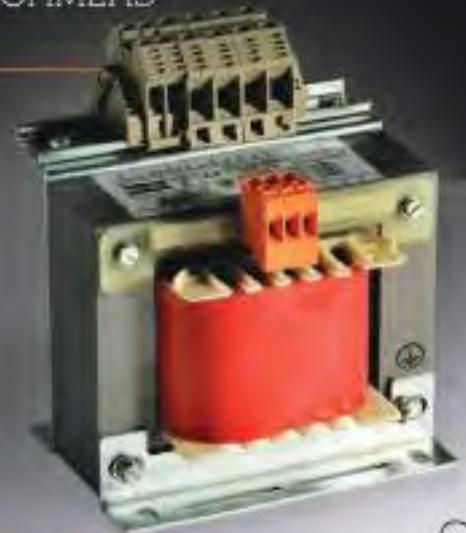
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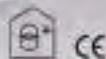


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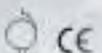
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DEWA sets new world record

DEWA recorded 1.86 minutes of Customer Minutes Lost (CML) in Dubai, compared to around 15 minutes recorded by leading utilities providers in the European Union.

DUBAI ELECTRICITY AND Water Authority (DEWA) has achieved a new world record in electricity Customer Minutes Lost (CML) per year. DEWA recorded 1.86 minutes, in Dubai, compared to around 15 minutes recorded by leading electricity companies in the European Union.

This is a new addition to DEWA's record of international achievements in electricity and water services.

"We continuously work to enhance the capacity and efficiency of transmission and distribution networks to provide electricity and water services according to the highest standards of reliability, availability, efficiency, and sustainability. This is to meet the growing demand for energy and water and keep pace with Dubai's ambitious urban and economic plans. We are proud that DEWA is part of the UAE's global achievements that are accomplished by Emirati men and women who do their best to provide state-of-the-art services to make Dubai the smartest and happiest city in the world," said Saeed Mohammed Al Tayer, MD and CEO of DEWA.

Al Tayer noted that DEWA adopts the latest technologies for energy production, transmission, and distribution. DEWA is also building an integrated smart grid, which is a key component of its strategy to develop an advanced infrastructure to support Dubai's efforts to become a smart and happy city.

The smart grid strategy contains 10 programmes to be completed over the short, medium and long-term by 2035. These include advanced metering infrastructure for electricity, advanced metering infrastructure for water, asset management, distribution automation, information technology infrastructure, transmission automation, system integration, telecommunications, big data and analytics, and security.

DEWA's results surpass major European and American utilities in several indicators.



DEWA's results surpass major European and American utilities in several indicators.

Photo Credit: DEWA

In 2018, losses from electricity transmission and distribution networks were 3.3 per cent compared to 6-7 per cent in Europe and the

USA. Water network losses were also reduced to 6.5 per cent compared to around 15 per cent in North America. ■

Contractors lauded for achieving milestone

DEWA IS TOP-RANKED utility in World Bank's Doing Business 2020 report. The UAE, represented by DEWA, maintained its first global ranking, for the third consecutive year, in Getting Electricity as per the World Bank's Doing Business 2020 report. The report measures the ease of doing business in 190 economies around the world. DEWA achieved 100 per cent in all of the Getting Electricity indicators, including procedures, time, cost, and reliability of supply and transparency of tariff.

Saeed Mohammed Al Tayer, MD and CEO of Dubai Electricity and Water Authority (DEWA) awarded DEWA's contractors and consultants for their efforts that helped the utility achieve this milestone. DEWA's officials and a large number of consulting and contracting companies were present at the awards ceremony.

Al Tayer commended DEWA's partner consultants and contractors for their role. "The public-private partnership has always been an important pillar for the development of Dubai, which has consolidated its position as a distinguished model that provides a favourable and supportive environment for investments," he said.

Al Tayer noted that DEWA has reduced the time to complete the process for new connections of up to 150kW for commercial and industrial customers from 7 to 5 days and in one step only. DEWA continues to waive deposits and new connection charges for connections of up to 150kW.

"I look forward to continued partnerships and flourishing long-term cooperation that benefits all parties and achieve the happiness of all stakeholders, to make this year, '2020: Towards the Next 50,' the starting point for the UAE towards more progress, growth and prosperity, guided by the vision and directives of our wise leadership that accepts nothing short of the first place in everything," added Al Tayer.

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The construction products regulation (CPR) is established in the EU markets as a mandatory requirement to ensure product safety and compliance to recognised standards.

The UAE is working to implement a similar, rigorous testing methodology applicable to all fixed installations in domestic, commercial and industrial premises and other civil engineering works. Comprehensive testing of cables in Europe applies to power, communications and fibre optic cables irrespective of the place of manufacture and includes novel/unique cables and those which are not designed to any design-standard

To provide reassurance that cables tested for fire do meet the specified standards it is extremely important for independent testing to be undertaken as part of the approval processes to accurately validate compliance.

Alongside fire testing, cable products generally should hold a formal product certification, this can be for a single or range of cable products, providing manufacturers with on-going surveillance in order to track product quality. Regular auditing and product sampling allows BASEC to test the cable routinely to ensure



Photo Credit: Basec

Regular auditing and product sampling allows BASEC to test the cable routinely.

consistent manufacture to the standard's requirements.

BASEC certification is an enabler. In delivering independent value-driven testing services, end users can be sure that when they see the BASEC mark - quality standards have been met. This in turn helps them to verify reliability of the cable

products specified for use in end applications such as: utilities, construction, solar, transportation and fire-safety.

When quality matters, trust in BASEC.

Meet the team at Middle East Energy, 3-5 March 2020 on stand H8. F01.

UL outlines importance of using tested fibre optic products

UL, THE GLOBAL independent safety science company, has urged organisations in the Middle East to comply with international and regional standards when installing fibre optic products in order to avoid any potential accidents.

The usage of fibre optics has increased rapidly around the world and is commonly used for carrying information over long distances and high-performance data networking such as televisions, internet and telephones. With demand set to grow in a continuously evolving market, UL hosted a workshop in Dubai to discuss how fibre optic testing can help lead to the development of a safe and reliable infrastructure. Fibre optic related injuries, death and damage costs the US over US\$1tn annually, underscoring the need for robust product testing in the region.

To address this, UL's Sameer Abdul Salam, business head, Wire and Cable division, and Clifford Jones, staff engineer, UL's Wire and Cable Division, conducted the workshop titled 'Building reliable FTTX infrastructure through testing and compliance'. Jones delivered a detailed presentation that highlighted the transition of fibre optic including optical connectors and cables. Salam told the attendees how UL has helped evaluate more than 70 different wire cable product categories to national and international standards in regions around the world.

Jones said, "Given that the Middle East is growing rapidly, with

new businesses being set up, we realise that fibre optics is widely used across the region, and even more so due to the demands of the digital and internet age. "Having put our skills and knowledge together for more than two decades in other parts of the world, we are determined to help utility companies build an extensive infrastructure that is tested and compliant. UL already has opened a testing facility in the Kingdom of Saudi Arabia by partnering with Saudi Telecom Company, which offers testing for various products across the "Fibre to the Home" ecosystem. Now closer to home in the UAE, we are looking to build a new testing laboratory in Abu Dhabi."

UL provides fibre optic performance testing and verification that helps detect counterfeit products and reduce liabilities.

Hamid Syed, vice-president and general manager in the Middle East for UL, said, "From the first day UL was founded, we have made significant steps in promoting public safety and performance. Our workshop in Dubai provided interesting insight for industry professional, focusing on how UL is supporting the drive to enhance product quality and the importance of having reliable and tested products. Opportunities like these are very valuable, and with representatives from DEWA, du and Etisalat in attendance, it shows that leading organisations in the UAE are willing to take action when it comes to safety."

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Volvo Penta expands genset range

At MEE, the focus will be on the compact D8 Stage II and Stage IIIA/Tier 3 engine that offers industry-leading power density.

VOLVO PENTA IS launching a new addition to its genset product portfolio, the D8 Stage II and Stage IIIA/Tier 3 engine. The 8-litre power generation engine offers industry-leading power density and a compact size, combined with low fuel consumption and noise levels.

Volvo Penta's new D8 Stage II and IIIA/Tier 3 engine further strengthens the company's robust range of genset engines. The D8 base engine has been used globally for a wide variety of applications across the Volvo Group. Now, Volvo Penta engineers have perfected the design and optimised the D8 for the power generation segment.

"The proven D8 design is based on mature technology concepts that have undergone hundreds of thousands of testing hours and real-world use," says Kristian Vekas, product manager for genset engines at Volvo Penta. "With the D8, our customers will benefit from 100 per cent proven, reliable components. We have ensured our solution will function with the required performance and reliability levels in all the applications, climates and environments our customers operate in."

Both the D8 Stage II and IIIA/Tier 3 engines feature high-tech injection and charging systems with low internal losses, contributing to excellent combustion and low fuel consumption.

They have been built on the dependable in-line six design and

The Stage II compliant D8 engine (TAD841-843GE) is a dual speed premium engine. Switchable between 1,500 rpm (50 Hz) and 1,800 rpm (60 Hz), it delivers up to 275 kWm at prime power.



Volvo Penta's new D8 Stage II and IIIA/Tier 3 engine.

Photo Credit: Volvo Penta

have been developed to produce smooth and vibration-free operation with low noise levels.

"The new, modern D8 engine has been built with a high power to weight ratio, giving it industry-leading power density and an extremely compact design for its power class," says Kristian. "It has been designed for quick, easy and economical installation as well as ease of operation and maintenance."

The powerful and economical D8 will mainly be used as a reliable source of back-up power, as well as cost-effective primary power generation in areas where energy is scarce. It can be used for both mobile and stationary power generation applications, depending on local emission regulations.

The Stage II compliant D8 engine (TAD841-843GE) is a dual speed premium engine. Switchable between 1,500 rpm (50 Hz) and 1,800 rpm (60 Hz), it delivers up to 275 kWm at prime power and is also available in three power nodes: 256, 301 and 326kVA at 1,500 rpm (50 Hz) at prime power.

Similarly, the EU Stage IIIA/Tier 3 Certificate compliant D8 (TAD851-853GE) genset engine is also a premium dual speed engine, switchable between 1,500 rpm (50 Hz) and 1,800 rpm (60 Hz), it delivers up to 274 kWm at prime power.

Volvo Penta is showcasing its new D8 Stage II and IIIA/Tier 3 engine at Middle East Energy, with product experts at hand. ■

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Rittal is showcasing its innovative suite of solutions at Middle East Energy 2020.

RITTAL MIDDLE EAST (a subsidiary of Rittal GmbH & Co. KG), a renowned leading system supplier for industrial enclosures, power distribution, climate control, IT infrastructure and software & services, will showcase their portfolio of innovative products at Middle East Energy 2020.

At the company's Innovations Stand, Joseph Najjar, managing director, Rittal Middle East and Bharat Mahajan, sales manager, business- industry, Rittal Middle East will be at hand to take visitors through the highlights including:

- New large enclosure series VX25 and variants
- Middle East premiere of new compact and small enclosures designed for the age of Industry 4.0 (AX. KX)
- New Ri4Power solution based on VX25
- New Integrated solution of VX25 with Blue E+ roof mount cooling
- Software tools and configuration tools
- New showcase this year will be along with EPLAN : Value chain engineering solutions helping panel builders and switchgear manufacturers master the challenges of Industry 4.0

Rittal solutions have been developed to meet the requirements for increased productivity in control and switchgear manufacturing and along the Industry 4.0 value chains.



*Joseph Najjar,
managing director,
Rittal Middle East*

“This year’s rebranded Middle East Energy show will offer more value from its previous editions and 2020 being a strategic year for all sectors in the region will make our participation even more worthwhile and the MEE platform a highly recognised platform worldwide,” said Joseph Najjar.



New Ri4Power solution based on VX25

Rittal solutions have been developed to meet the requirements for increased productivity in control and switchgear manufacturing and along the Industry 4.0 value chains. With the “SYSTEM PERFECTION” slogan, Rittal is promising a major innovative leap, which has been made possible by depth of experience and intensive customer dialogue.

Other portfolio on showcase includes the enclosure for Ri4Power (low voltage) based on the New VX25, RiLine components complying to global standards and certifications along with Ri4Power (Form-4, Type Tested MCC’s Acc. to IEC 947), SE enclosures, cooling units with ‘Blue-E+’ technology with low carbon emissions and and more in store.



*Bharat Mahajan,
sales manager,
business- industry,
Rittal Middle East*

From the planning, project management and configuration of switchgear and control gear, through to the monitoring of IT infrastructures, Rittal offers a wide range of intelligent tools to help achieve optimum implementation.

Channel partners, consultants and end-customers are welcome to drop by the Rittal stand to witness the latest innovations on industrial and electrical products and network with our experts. ■

Stand No: Hall 5, Stand 5D10

Solar power and storage combo vital to Middle East smart buildings

A COMBINATION OF solar power generation and storage systems will be the most efficient means of transforming buildings throughout the Middle East from energy passive to active, according to a German electricity innovation expert.

Speaking ahead of the 'Digitalisation in Energy Conference,' which will run at the Dubai World Trade Centre from March 3-5, Marc Helfter, Disruptive Innovation director for the electrical installations solutions provider, Hager Group, said the region's future 'smart' buildings will be totally electric powered.

Helfter, who is to present a 'Smart Building in Action' case-study at the conference, said the region's high sunshine penetration rate – running at 1747 kWh/kWp/year in Dubai – made solar the obvious choice to power buildings but solutions needed to be supported by storage infrastructures.

"Within the region solar has by far the biggest potential but to be fully efficient, PV installations have to be combined with energy storage solutions," he said. "The future will be fully electric. Mobility, heating, cooling will become electric. Buildings will go from passive to active as they produce a part of their energy then exchange information and energy with the grid.

"In this way, smart buildings will play a role in the electric ecosystem. Renewable energies need storage capacities and flexibility. Buildings connected to the grid can provide services, in terms of flexibility to utilities or grid operators."

The impact of smart buildings and office space is one of three



Photo Credit: Action

Middle East & Africa smart cities market forecast to reach US \$2.7bn by 2022.

seminars which make up the 'Digitalisation in Energy Conference', which is part of Middle East Energy, the global power industry event previously known as Middle East Electricity

"Smart buildings are a key component of the Middle East and Africa's smart cities market which has been forecast by KPMG to be worth US\$2.7bn by 2022," explained Claudia Konieczna, exhibition director, Middle East Energy.

Throughout the region there is rising public sector ambition to become a global leader in smart cities, with Dubai in the vanguard and smart buildings and work environments will be crucial to delivery of these goals.

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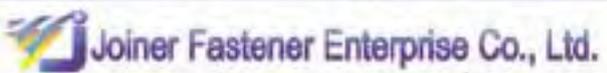
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Photo Credit: Action

Saudi renewables: US\$30bn by 2025

Power sector investor ENGIE Saudi Arabia says kingdom's renewables drive will boost economic diversification and result in job creation.

“The diversification of the energy mix goes beyond multiple clean energy sources but also provides the opportunity to create jobs through manufacturing.”

**Turki Al Shehri,
CEO of ENGIE Saudi Arabia**

SAUDI ARABIA'S AMBITIOUS plans for a renewable-focused future will unearth a flurry of private sector investment and local manufacturing job creation opportunities, according to a leading regional power sector investor.

Turki Al Shehri, CEO of ENGIE Saudi Arabia, the industrial investor in the integrated water power plant (IWPP) sector, says the Kingdom's renewables drive will significantly boost its economic diversification programme and see public and private sector investment rise to more than US\$30bn by 2025.

Ahead of his participation in the agenda-setting Middle East Energy Renewables Conference, running on March 3 and 4 at the Dubai World Trade Centre (DWTC), Al Shehri says Saudi Arabia's energy sector transformation will have multi-faceted benefits.

“The diversification of the energy mix goes beyond multiple clean energy sources

but also provides the opportunity to create jobs through manufacturing,” explained Al Shehri. “In parallel to the renewable tenders being issued, efforts are underway to localise renewable manufacturing in the Kingdom.”

Al Shehri's forecast comes as Saudi Arabia pursues an energy mix strategy that comprises 30 per cent renewables and 70 per cent gas by 2030. “The objective will be to retire liquid burning plants and switch newer plants to burn gas instead of liquids,” said Al Shehri. “Renewables will comprise 16 GW wind, 40GW solar, and 2.7 GW concentrated solar power.”

He added: “As other renewable technologies become commercialised and costs are reduced, the Kingdom will also consider such technologies.”

Al Shehri will use his participation at the free-to-attend Renewables Conference to outline how future-focused energy companies can maximise Saudi Arabia's

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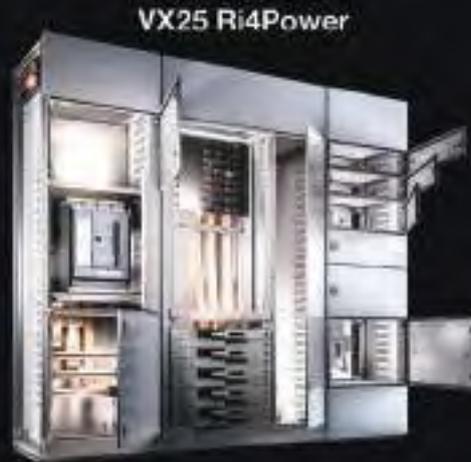
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green investment potential. The conference is part of a powerful knowledge-sharing programme running alongside Middle East Energy.

And the ENGIE CEO is bullish about opportunities for the private sector emerging from Saudi Arabia's multi-billion-dollar renewables drive, adding: "The trend today is mainly related to utility scale renewables that are being applied in both the public and private sector. In addition, several local companies are rising to become developers, EPC contractors, OEMs and equipment suppliers. As the cost of renewables continues to reduce, we can expect to see

In parallel to the renewable tenders being issued, efforts are underway to localise renewable manufacturing in the kingdom.

more involvement from the private sector, as well as an increase in renewable targets beyond the announced targets.

"In addition, the drive for public-private partnership (PPP) programmes in the public sector has also created similar PPP opportunities in the private sector. Corporate power purchase agreements are slowly becoming the norm for many private companies seeking renewable solutions. In the next four to five years we foresee US\$30 to 40 billion invested in renewable energy between the public and private sector."

"Given the intense focus renewables are now generating across the Middle East & North Africa it is essential this segment has a dedicated product sector within the show profile," explained Claudia Konieczna, exhibition director, Middle East Energy.

"Energy deployment is set to see significant acceleration in the coming years as the MENA region prepares for the influx of US\$35bn in renewable energy investments per year. Driven by well-designed auctions, favourable financing conditions and declining technology costs, renewables are being brought into the mainstream."

Supported by InterSolar, Middle East Energy's Renewables Conference will provide insights into the global transformative dynamics of renewable energies and emphasise how technology



Photo Credit: Adobe Stock

Power purchase agreements are slowly becoming the norm for many private companies seeking renewable solutions.

can produce synergies and create an integrated energy system.

The Renewables Conference is part of an expanded Middle East Energy knowledge programme which, for the first time, includes a high-level plenary sessions summit providing specific market information. A third conference, devoted to Digitalisation comprises over 30 conference sessions, more than 150 speakers and represents 25 hours of learning opportunities. ■

Engie consortium bags landmark Yanbu-4 project

The new plant will include two days storage tanks as well as solar power

SAUDI WATER PARTNERSHIP Company (SWPC) has announced that a consortium comprising French multinational utility group Engie and local water desalination company Mowah has emerged the preferred bidder to build a major desalination plant in Yanbu region of Saudi Arabia.

One of the kingdom's ambitious projects, Yanbu-4 IWP - will be using reverse osmosis (RO) seawater desalination technology and on completion will boast a potable water capacity of up to 450,000 cu m per day, stated SWPC (formerly Saudi Water & Electricity Company).

As per the deal, the Engie consortium will be responsible for the development, design, financing, construction, commissioning, operation and maintenance of the desalination plant which will come up near the town of Ar Rayyis (140 km west of Madinah).

Located on the Red Sea coast of Saudi

Arabia, the new plant will feed Makkah and Madinah regions with potable water. Yanbu-4 IWP will include two days storage tanks as well as solar power to reduce the power consumption from the network.

A total of 71 developer consortiums had expressed interest in the Yanbu-4 IWP in September last year including global giants such as SNC Lavalin; Suez International, Veolia, Tecnicas Reunidas besides Sumitomo and JGC Corporation (Japan); Bechtel (US) and Doosan Heavy Industries besides UAE groups Mubadala, Masdar and Utico, said senior SWPC sources.

Of these around 30 were Saudi developers led by regional heavyweights Saudi Binladin Group; Abdul Ali Al Ajmi Company; Abdullatif Jameel Commercial Development Company; Alfanar Company besides GS Inima Environment; Gulf Investment Corporation and Marafiq, they stated.

According to SWPC, Engie-Mowah consortium had emerged the preferred

bidders after submitting the lowest levelised water costs of SR1.7446 per cu m compared to FCC Aqualia-HAACO-Alfanar consortium's cost of SR1.7775 per cu m, Acwa Power-Albahrain-GIC consortium's SR1.8435 and Marubeni Corporation-Marafiq consortium's SR1.9168.

The highest water costs of 2.0242 were quoted by the consortium comprising Veolia-Alkhorayef-Al Bawani, it stated.

The Engie-Mowah consortium is now expected to sign a 25-year water purchase agreement, under which the consortium will sell the entire capacity and output to SWPC.

A strategic project for the Saudi region, the Yanbu Phase 4 Independent Water Project has several leading global industry experts in the advisory role.

Sumitomo Mitsui Banking Corporation DIFC Branch is the lead and financial advisor for the transaction, DLA Piper Middle East the legal advisor and ILF Consulting Engineers the technical advisor.



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Electrolyser costs are to be halved by 2040 to 2050, from US\$840 per kilowatt (kW) today, as per the projections.

Energy transition: a case for green hydrogen

Owing to falling costs of renewable energy and its wide ranging applications in power, transport and manufacturing sectors, many industry players, energy leaders and governments are keen on promoting this alternative energy. *Abhishek Paul* reports.

IRENA's report reveals that electrolysers are scaling up quickly, from megawatt (MW)- to gigawatt (GW)-scale, as technology continues to evolve.

THE INTERNATIONAL RENEWABLE Energy Agency (IRENA) in its 'Hydrogen: A Renewable Energy Perspective' report has identified two vital developments that have contributed to the growth of hydrogen in the recent years.

Firstly, the report found that the cost of hydrogen supply from renewables has come down and continues to fall. Many countries have begun to take action to decarbonise their economies, notably energy supply and demand as the urgency of greenhouse gas emission mitigation has increased.

Following on from this, the report's second finding was that the hydrogen debate has evolved over the past two decades, with a shift in attention from applications for the auto industry to hard-

to-decarbonise sectors such as energy-intensive industries, trucks, aviation, shipping and heating applications.

Renewables and electrolyser nexus

The rising interest in this supply option is driven by the falling costs of renewable power and by systems integration challenges due to rising shares of variable renewable power supply, according to the report.

Pointing out that the focus is on deployment and learning-by-doing to reduce electrolyser costs and supply chain logistics, IRENA's report reveals that electrolysers are scaling up quickly, from megawatt (MW)- to gigawatt (GW)-scale, as technology continues to evolve.

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2040 to 2050, from US\$840 per kilowatt (kW) today, as per the projections, states the report.

Additionally, the investment in solar projects is expected to witness an uptick. According to Frost and Sullivan, the value of solar projects that are currently operational in the region is estimated at US\$5bn to US\$7.5bn and the total value of projects expected to come online by 2024 at US\$15bn to US\$20bn.

APICORP values the total investment in renewables in MENA between 2019-2023 at 34 per cent of the total investment in the power sector (US\$210bn) which amounts to an estimated US\$71.4bn.

Considering the declining prices of renewable electricity and electrolyser prices, the report goes on to say that hydrogen from renewable power is technically viable today and is quickly approaching economic competitiveness.

IRENA's Renewable Energy Roadmap (REmap) analysis indicates a 6 per cent hydrogen share of total final energy consumption by 2050 (IRENA, 2019a), while the Hydrogen Council in its roadmap suggests that an 18 per cent share can be achieved by 2050 (Hydrogen Council, 2017).

Energy leaders envisage a brighter future for green hydrogen produced by renewable energy in the coming years, meaning creation of a new downstream market for renewable power.

Driving energy mix

Participants of a ministerial roundtable on 'Decarbonisation – Green Hydrogen', at the 10th session of the IRENA Assembly in Abu Dhabi, UAE, have drummed up support for green hydrogen, seeing it as a main driver of the energy transition and enabler for a wider global decarbonisation.

"Green hydrogen is gaining unprecedented political and business momentum, with a number of policies and projects expanding rapidly around the world," said IRENA's director-general Francesco La Camera at the session.

“With further investment, hydrogen production could become cost competitive in the next five years. In the UAE we are building the region’s first solar-driven hydrogen electrolysis facility.”

Dr Thani Al Zeyoudi, Minister of Climate Change and Environment, UAE



Energy leaders at a ministerial roundtable on 'Decarbonisation – Green Hydrogen', at 10th session of the IRENA Assembly in Abu Dhabi.

"Our vision of hydrogen is to store large quantities of renewables," said Michèle Azalbert, CEO of ENGIE's business unit dedicated to renewable hydrogen.

"We want to develop different types of solutions to increase the demand and scale the production of hydrogen solution together with complementary partners."

Manuel Kuehn, Siemens Middle East senior vice-president for strategy and business development, overseeing the joint green hydrogen pilot project in the UAE commented: "We target decentralised and large-scale application. It's important to leave the pilot phase and scale up projects that are viable."

Prominently, hydrogen production in the GCC is carried out using energy from fossil fuels, turning methane into hydrogen, with carbon dioxide as a by-product. The easy access to hydrocarbons in the region has resulted in the expansion of heavy industry including steel-making, aluminium smelters, refineries and chemical industry.

Large-scale production and usage of hydrogen in many of these industries has been continuing for decades, primarily for producing fertilisers, in refineries and to a lesser extent in the chemical industry.

In order to step up decarbonisation measures in all these energy-intensive industries, involving hydrogen made using

clean energy is likely the right way forward.

UAE's environment minister Dr Thani Al Zeyoudi, says, "With further investment, hydrogen production could become cost competitive in the next five years. In the UAE we are building the region's first solar-driven hydrogen electrolysis facility."

Industry experts are of the view that hydrogen has the capability to replace oil and gas in the electricity and transport sector domestically, as well as for export.

Green hydrogen production is right now more expensive than utilising fossil fuels. However, it can be an attractive alternative for oil companies that are sensitive about reducing their carbon footprint.

Given the ever-growing power demand in buildings, the experts say, green hydrogen can also be vital to foster energy efficiency in buildings, enabling to satisfy increased electronics use with a smaller amount of energy input for every kilowatt hour of power generated.

Based on its strategy of cooperating with local and international entities working in the capital's energy sector, the Abu Dhabi Department of Energy (DoE) has entered into a partnership with Marubeni Corporation (Marubeni), a Japanese trading and investment firm.

The three-year agreement facilitates cooperation between the two parties in the spheres of improving the water and electricity usage, and exploring the commercial viability of producing and using hydrogen in Abu Dhabi.

In order to accelerate the transition to a hydrogen society, Euisun Chung, Hyundai Motor group executive vice-chairman (EVC) and Hydrogen Council co-chair, recommends reducing cost through technological innovation, creating a comprehensive safety management system and fostering broad acceptance of hydrogen. ■



Sonel S.A. is a manufacturer of high-quality measuring instruments for power generation and telecommunications sectors.

Photo Credit: Sonel

Pioneering measurements

Insulation tests of a 400 kV power line with Sonel MIC-15k1 meter.

MEASUREMENTS OF POWER line insulation resistance are an uncharted area of inspections. The standard is the measurement of longitudinal parameters (positive sequence impedance, zero sequence impedance, self impedance of phase conductor and earth loop resistance). However, insulation resistance is not measured. Furthermore, there are no standards or guidelines specifying the minimum values of insulation resistance, test voltage or measurement time.

Sonel found this topic worth investigating. Here are the results of the research.

What did they test?

Thanks to TAURON Dystrybucja S.A., Sonel had the opportunity to examine a power line with a rated voltage of 400 kV. It runs between the towns of Jasieniec and Grudziądz (Poland) at a distance of 73.6 km. It has 195 pieces of E33U, E33spec and EA33 type power line towers, supported on prefabricated, monolithic and pile foundations.

How did they measure?

The tested line was ungrounded and unpowered. The MIC-15k1 insulation quality analyser was connected using an additional coupler line. The test voltage was 15 kV.

Due to compliance with safety standards, the device control like measurement monitoring, start and stop was carried out remotely - from a mobile phone using the free Sonel MIC Mobile 2.0 mobile remote control application.

In result, they obtained following values for L1, L2 and L3 lines: 234 MΩ, 220 MΩ, and 240 MΩ. On the other hand, the calculated resistance value was 805 MΩ.

Results interpretation

- The strongly simplified overhead line model was used for the calculations. It does not include many variables, such as power line properties, resistance of insulators and the impact of dirt on their surface.
- Approximate value of air conductivity

around the line was assumed. Actual conductivity depends on parameters such as radiation, air pollution or atmospheric conditions.

- In order to obtain a more accurate theoretical analysis, one would have to precisely map the line in question and create its numerical model.

Challenges for the future

As mentioned at the beginning, the test area for insulation resistance of overhead power lines is not covered by any standards. There is no minimum insulation resistance values. There is no define measuring voltages. There is no data on the recommended measurement time. What values should be expected? How to determine them? How to measure insulation resistance of the whole overhead line?

If you have had contact with insulation resistance measurements of medium and high voltage overhead lines - please contact Sonel to compare experiences. ■

Innovations from Gardner Denver

Premium 90 to 132kW screw compressor models launched as part of CompAir line.

GARDNER DENVER HAS launched a new, premium range of oil-lubricated screw compressors as part of the CompAir L-Series. The premium range, available in 90 kW, 110kW and 132kW models, combines a fixed speed compressor with IE4 motors. This creates a system that delivers energy efficiency improvements of 2.3 per cent compared to standard models.

With businesses around the world striving to reduce the environmental impact of their operations, the new premium range can help offer businesses a long-lasting and energy efficient investment. The new models feature a newly patented oil regulation valve, which automatically regulates oil injections and discharge temperature according to environmental conditions. Not only does this reduce power consumption, but it eliminates the risk of condensate and corrosion in the system too. It also helps maintain the oil's high quality throughout the compressor's lifetime, reducing the unit's total cost of ownership.

The premium models also include an improved airend, designed and manufactured at Gardner Denver's Centre of Excellence in Germany. The technology is supported by the CompAir Assure warranty, which covers the airend for up to ten years or 44,000 hours. The improved airend features a larger-sized inlet and outlet to help improve air flow and reduce pressure drop.

As Industry 4.0 drives the need for users to share and analyse asset data, businesses are demanding more intelligent insights from compressed air performance to remove risks, improve productivity and reduce energy consumption. The range supports iConn, Gardner Denver's digital analytics platform for helping manage and optimise compressed air usage, as well as a user-friendly touch-screen control system that provides a range of insightful monitoring capabilities.

Dora Artemiadi, product manager for industrial compressors EMEA at Gardner Denver, said, "Our new screw compressors are just



Photo Credit: Gardner Denver

the latest example, helping to improve energy efficiency and reduce a system's whole life costs. For example, we compared one of the premium units with a number of alternative models. Our compressor delivered five per cent greater energy efficiency, as well as a flow rate up to 12 per cent higher. And the impact on running costs? Energy savings of US\$4000 to US\$5000 a year against other competitor models.

"Capable of delivering pressure ranges from 7.5 to 10 bar and volume flow between 15.5 to 24.8 m³/min, our new models have been designed so that servicing is simple and straight-forward too. The premium models also feature many high-quality details that help set it apart from other models available on the market, including Victaulic couplings and an automatic lubrication system for the motor's bearings, which prevents drive failure due to improper or poor lubrication." ■



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How to reciprocate compressor valve failure

COMPRESSOR VALVE PARTS manufacturer KB Delta offers advice on diagnosing, repairing and preventing compressor valve failure in a blog on its website.

The main causes of reciprocating compressor valve failure are environment and mechanical factors, it says. Environmental factors can include improper lubrication, corrosive contaminants and foreign material.

Reciprocating compressors need to be operated in a conducive environment where the machine is not exposed to dirt and air-borne oil and mist.

As for mechanical factors, system overload or overheating can cause high levels of stress on the valve, and incorrect use of the compressor may also lead to a breakdown of the valve.

Mechanical causes of compressor valve failure include spring failure, high-cycle fatigue and off-design operation.

Common signs of reciprocating valve failure include overly high suction pressures, low discharge pressure, overly high discharge temperature, and working more



Photo Credit: KB Delta

Reciprocating compressor valve failure can cause system lags and also affect the seamless operation of processes.

quietly than usual.

Troubleshooting will enable you to repair reciprocating compressor valve failure.

To prevent valve failure in the future, you should examine line temperatures; check for low compressor amp draw, which will indicate there may be performance issues with your valve; check the compressor shell for overheating; and examine the valve bypass when the compressor is off.

“Reciprocating compressor valve failure

is easy to diagnose, repair and prevent if you’re informed on how best to go about each of these,” says KB Delta.

“Once your valves are in order, their long life span will be assured, instead of being tampered with by environmental and mechanical factors. The best part is, you can prevent these problems from occurring in the future, and therefore, reduce the frequency of maintenance on your reciprocating compressor.”



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Ready for Stage V

AEM and JOHN DEERE POWER SYSTEMS introduce new generator set and educate customers about Stage V technologies.

EUROPEAN UNION STAGE V emissions standards introduced may raise questions for original equipment manufacturers (OEMs) and their customers. Stage V regulations set strict limits on particulate matter (PM) emissions for non-road mobile machinery (NRMM), requiring 19 kW to 560 kW (25 hp to 751 hp) engines to be fitted with wall flow particulate filter technology. With new technologies come more questions about complexity, performance, ease of use, maintenance, and total cost of ownership.

Spanish generator set manufacturer Alternativas Energéticas Murcia S.L. (AEM Spain) took the lead to inform equipment rental companies with a dedicated Stage V event. At the event, a John Deere team provided integration support and a Stage V power unit for AEM's prototype 200-kVA generator set. John Deere has accumulated more than one billion hours of operating experience with exhaust filters, which includes this AEM prototype.

Support at every stage

As an engine and machine manufacturer, John Deere can leverage the remarkable global experience gained since first introducing aftertreatment technology to meet Interim Tier 4/Stage III B regulations in 2011. John Deere Power Systems (JDPS) continues to develop proven emissions solutions for OEM customers. This expertise played a key role in AEM's decision to collaborate with JDPS on its prototype 200-kVA Stage V generator set.

For the prototype, Transdiesel, JDPS distributor for Spain, Portugal, and Morocco, supplied a PSS 6.8L power unit. A few months before the unit arrived, Transdiesel engineers visited AEM to provide its engineers and sales managers preliminary training on the aftertreatment system. Before integration, Transdiesel shared several configurations of the aftertreatment system for the 200-kVA generator set, and



Customers can have confidence that DPF technology will not impact the user experience under normal operating conditions.



AEM, Transdiesel, and JDPS engineers share technical details on the 200-kVA generator set powered by a John Deere 6.8L Stage V engine.

engineers were present throughout tests and final calibration. While adding the new system required internal design changes, the impact on the overall weight and size of the generator set was minimal.

"Integrating the new aftertreatment system throughout our range may become a complex exercise, so we are pleased being able to work with Transdiesel," says AEM's Antonio Matteo.

At its Stage V event, AEM introduced the prototype 200-kVA generator set to its customers. In live presentations, AEM, JDPS,

and Transdiesel engineers outlined Stage V advantages such as optimised uptime, performance, and fuel efficiency. The 75-plus companies that attended could also gather more information on the technology.

The 200-kVA Stage V prototype is the first of many to come for AEM. Transdiesel general manager Jérôme Zanon commented: "We are grateful for the trust AEM has put in us and are pleased that the JDPS Stage V engines let us offer one of the most advanced technologies on the market." ■

Photo Credit: Chesco Ananda

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For the 32nd year running the UK Pavilion at Middle East Energy is hosted by BEAMA the UK association for manufacturers of vital products, technologies and services that deliver a safe, reliable and smart end to end energy system.

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H2.F16 & H2.G16

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BEAMA represents and works with manufacturers of vital products, technologies and services that deliver a safe, reliable and smart end to end electricity system. As an association, BEAMA represents manufacturers in the energy, power and electrical installation sectors, a UK industry with a turnover of £13 billion and employing 137,000 people.

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H2.F17

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H2.G19

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BEAMA is the UK trade organisation, established in 1906 to provide guidance and support to our members in the electrotechnical industry. We work with the UK Government, and other law enforcement agencies around the world, to crack down on the manufacture and distribution of counterfeit and non-compliant electrical installation products.

BEAMA formed the Anti-counterfeit Working Group (ACWG) in 2000 with the aim of stemming the flow of counterfeit products by taking action against the counterfeiters manufacturing electrical installation products, and the traders who distribute them to many international markets including the Middle East and Africa which form an important part of our members' export businesses. This work has achieved global recognition for its proactive work and receives cooperation from trade associations around the world.

KEY FACTS

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BEAMA's Anti-Counterfeiting Work in Progress:

- BEAMA's investigation teams target manufacturers in China and distributors in a number of Middle Eastern and African countries, as well as containers in transit.
- To date 17 brands are represented, and over 22.4 million products have been seized.
- BEAMA has what is probably the best database of electrical installation product counterfeiters in the world, which is passed to authorities worldwide for them to follow up in the local markets.
- By publicising the Working Groups' activities through the counterfeit kills website, trade magazine articles, presentations, participation in conferences and the production of guides and posters it is hoped to raise the profile of this rapidly growing, potentially damaging threat to consumer safety and members' export business.
- The Working Group is responsible for managing the various anti-counterfeiting projects, collecting and disseminating information on IPR issues, and responding to government and others on behalf of the association. It also offers advice and information to any company or association which has a problem with IPR issues.

Tailored solutions for demanding applications

EnerSys will showcase PowerSafe SBS EON Technology batteries, beside a wide range of products.



Photo Credit: EnerSys

EnerSys can provide the ideal power solution for virtually any site installation.

ENERSYS, THE GLOBAL leader in stored energy solutions, will showcase its tailored energy solutions for demanding telecom and industrial applications at the Middle East Energy show.

“Today, increasing data traffic, growing site power needs and a drive for easier maintenance, control and energy efficiency pose new challenges to telecom and industrial companies across the Middle East region,” comments Ates Koc, sales director MP & RP Turkey & Middle East at EnerSys.

“Accordingly, we have established

ourselves as the region’s premium solutions provider and ‘one stop shop’ for power, energy storage, enclosures and renewable powering solutions for the telecom, UPS, oil & gas, utility, CATV, traffic, security, industrial, renewable energy and many other industries.”

EnerSys products provide the reliable power to mobile cell sites, large switching sites, data centres and broadband networks. The company’s multi-layered customer knowledge allows it to understand user needs better than anyone else, and quickly design and deliver solutions specifically tailored to each unique challenge.

With multiple options for standardised and custom system integration, EnerSys can provide the ideal solution for virtually any site installation. Exhibits will include PowerSafe SBS EON Technology batteries, beside a wide range of EnerSys products which have been proven by over a decade’s use in telecom hybrid/off-grid applications and offer exceptional cyclic performance.

Also featured will be the latest long life, high temperature PowerSafe SBS XL batteries that cut total cost of ownership for air conditioning systems. Both of these PowerSafe ranges are based on EnerSys Thin Plate Pure Lead (TPPL) technology.

As the global leader in energy storage, EnerSys is the first choice for customers worldwide. Their extensive product range is backed by more than 100 years’ experience of battery manufacturing and innovative technology. ■

Stand No. H7.C28

EnerSys offers power solutions for the telecom, UPS, oil & gas, utility, CATV, traffic, security, industrial, renewable energy and many other industries.

Al Masaood marine power: a crucial collaboration

The evolution of Al Masaood Power Division and its partnership with Volvo Penta.

SINCE BEING ESTABLISHED in 1972, Al Masaood Power Division has developed an unrivalled expertise in marine propulsion and power generation systems. Part of the Al Masaood Group, the Division is strongly positioned for the near future. With 32 per cent overall sales growth and quadrupling power generation sales in 2019, it also represents several of the industry's most prominent and reputable manufacturers – including Volvo Penta.

Recent statistics highlight the progress of the country's maritime sector, which has in turn facilitated the evolution of the Al Masaood Power Division. Today, the UAE ranks among the world's top 20 countries in terms of container-carrying fleets, as it has maintained the highest liner shipping connectivity index in the sub-region. The UAE is the MENA maritime gateway for global trade, and one of the top 10 countries worldwide with highest container port volumes. Jebel Ali Port is also the ninth largest container port in the world.

Al Masaood Power represents Volvo Penta – a major player in the industry who now have over 3,500 trusted and dedicated dealers in 130 countries. Much like Al Masaood, Volvo Penta has evolved since its humble beginnings in the mid-19th century to become a leading global developer and manufacturer of heavy-duty diesel engines – integral to innovation, competence, the sharing experience and the worldwide infrastructure and aftermarket network.

Crucially, the success of the Al Masaood Power Division depends on Volvo Penta's products and its own long-standing



Photo Credit: Al Masaood

Whether it be oil tankers or commercial or consumer vessels, the marine power sector assists in ensuring operational efficiency and effectiveness.

reputation in the industry. As part of the Volvo Group, the company is building on its strong heritage, pioneering reputation and industrial and marine engineering expertise to provide world-class products and solutions while retaining the highest level of customer satisfaction.

Founded in 1868, Volvo Penta today is globally renowned for innovations including Volvo Penta IPS propulsion and the Aquamatic. Ultimately, Volvo Penta facilitates an easy and enjoyable boating experience; providing integrated, digital and fuel-efficient services and solutions through

innovative, intuitive and user-friendly technology.

The importance of the marine power sector cannot be undervalued. Whether it be oil tankers or commercial or consumer vessels, the marine power sector assists in ensuring operational efficiency and effectiveness; with Volvo Penta commercial marine engines offering complete solutions and world-class propulsion and onboard power solutions for outstanding performance, reliability and durability.

In 2017, Al Masaood Power was named and recognised as the exclusive 'Yacht Series Support Center' in the Middle East to provide key services and supervision to all designs equipped with Volvo Penta's IPS technology engines.

The recently opened Volvo Penta Spare Parts Centre in Abu Dhabi's Mussafah Industrial Area provides genuine spare parts, accessories for marine leisure, commercial segments, industrial engines

Al Masaood Power represents Volvo Penta – a major player in the industry who now have over 3,500 trusted and dedicated dealers in 130 countries.

and is the latest addition to the existing Volvo Penta Aftersales Centres in Abu Dhabi and Dubai. The launch of the Mussafah branch aligned with the company's expansion strategy adopts the latest technologies to provide world-class services to customers and residents.

"The UAE maritime sector has witnessed continuous substantial growth every year over the last decade, in particular, the opening of the Volvo Penta Spare Parts Centre in Mussafah was the latest step as part of our plans to expand and facilitate the growing demand for services throughout the country. We will continue to meet demands and identify market trends," said Rasso Bartenschlager, general manager, Al Masaood Power Division.

Exclusively distributed by Al Masaood Power Division, Seven Marine, originally under Volvo Penta, has been a pioneer of high power outboard marine engines since 2010. It has been at the forefront of technology innovations in the outboard industry. This development also proves Al Masaood's status as a provider of the



Photo Credit : Al Masaood

Exclusively distributed by Al Masaood Power Division, Seven Marine, originally under Volvo Penta, has been a pioneer of high power outboard marine engines since 2010.

highest standards of quality service operations.

"The importance of utilising the UAE's local resources could not be more apparent

considering 90 per cent of the company's operations are conducted within the emirates. Looking ahead to the future, we will continue to make the most of our branches in Dubai, Sharjah and Abu Dhabi – with the latter being the first CI-Standard centre in the region in line with corporate international standards – and work closely with our valued partners at Volvo Penta to increase our regional presence. Besides our operational facility in Bahrain, we aim to continue with our expansion plans and have identified other countries as viable destinations to establish new facilities that will help facilitate certain increased demand in the region," Rasso Bartenschlager concluded.

Al Masaood Power Division represents MTU, Volvo Penta and Leroy Somer in the UAE and Bahrain, providing the highest standards of after sales services. The Division's professional team possesses cutting edge technological knowledge and know-how and are able to plan and execute both customised and efficient solutions for its customers. ■

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Abu Dhabi completes efficiency retrofit

Building retrofit aims to improve energy efficiency, while generating savings and reducing costs.



The Building Retrofit programme is a part of Abu Dhabi's Demand Side Management and Energy Rationalisation Strategy 2030

Photo Credit: Adobe Stock

THE ABU DHABI Department of Energy (DoE) has completed the emirate's first Energy Saving Performance Contracting (ESPC) pilot project encompassing eight retrofitted government buildings.

The Building Retrofit programme is a part of Abu Dhabi's Demand Side Management and Energy Rationalisation Strategy 2030, which aims for a 22 per cent reduction in energy consumption and a 32 per cent reduction in water consumption over the next decade.

One of the nine key programmes of the DSM strategy, building retrofitting aims for significant cost savings, system reliability and environmental benefits, in line with the vision of Abu Dhabi and UAE's national strategies for sustainability.

Building retrofit aims to improve energy efficiency in the buildings while generating savings and reducing costs to building owners, tenants and the government. Eight government buildings including Abu Dhabi Distribution Company (ADDC), Abu Dhabi Transmission and Despatch Company (TRANSCO), Al Ain Distribution Company (AADC), and Emirates Water and Electricity Company (EWEC), participated in the retrofitting project to study energy efficiency by introducing a number of energy conservation measures.

As part of the programme, a number of smart energy saving solutions were

deployed in the buildings to improve the efficiency of cooling, lighting and water components. The project deployed several technologies such as solar rooftop PV installations, smart meters and thermostats, LED lighting, efficient chillers, new Variable Frequency Drive (VFD) controlled chilled water pumps and innovative chiller evaporative cooling membrane to meet the targeted savings

Following the success of the pilot and the potential ESPC holds in terms of resource and cost savings, Abu Dhabi aims to retrofit 150 governmental buildings starting this year. The pilot project is the first for government/public buildings, which follows the ESPC model and utilises private ESCOs to

The ESCO programme has been projected to result in a saving of 2.7 TWh electricity and 9 million cu m of water over the next decade.

implement energy and water conservation measures. The pilot will not only improve existing building efficiency but also develop the market for ESCO. The project has shown an initial average energy saving of 38 per cent across the eight buildings, and it is expected to have far-reaching economic impact once the ESCO model is adopted across the board.

The first Super ESCO for Abu Dhabi has already been designed to lead retrofitting in 3000 government buildings. This large-scale roll-out through the Super ESCO will act as a market maker and catalyst to drive the Building Retrofit programme across the 3000 buildings in the emirate. The Super ESCO programme is led by an energy performance contracting model, whereby the Super ESCO, which is competitively selected by the facility owner, funds the efficiency improvement and recovers the costs of implementation from the savings in the utility bills.

Abu Dhabi's ESCO programme has been projected to result in a saving of 2.7 TWh electricity and 9 million cu m of water over the next decade.

The programme will also be an economic booster for the emirate by creating new business opportunities. It will introduce new companies operating in the field which in turn will create new white-collar jobs in the emirate. ■

Generating Backup Power in the Wake of Any Emergency



Keep Your City Lit Up With An Undisturbed Power Flow

Maintaining a robust power flow is a fundamental constituent for keeping our cities and homes always lit up. At Al Masaood Power, we understand that with the pace and connectivity in our lives today there is no room for any power uncertainties. Power connectivity is no longer merely convenient, but rather compulsory.

Utilising world-class components, our first-of-its-kind Electric Power Generator solution that is proudly built in the UAE, ensures that you never run out of power in the case of emergencies, plant shutdowns or grid instability, whether in the city or in isolated locations.

With an all-terrain agility, and a capability of lighting over 100 households on average at once, the Al Masaood Electric Power Generator is your reliable solution for back-up power, whenever or wherever your emergency may be.





The solar power collectors of the 700 MW CSP plant include both tower and tube collectors.

Reaching for the sun

The world's highest thermal tower, part of the ambitious MBR Solar Park, tops out in Dubai.

Sustainability is the focus of the project. Shanghai Electric engaged experts and partners to relocate wild animals and 180 mesquite trees across the 40 sq km site to a new wildlife park.

SIGNIFICANT PROGRESS HAS been made on the Dubai 700 MW concentrated solar power project, announced as the world's largest single-site CSP project.

On January 9, a topping-out ceremony for the project's 222-m central tower was held, welcoming representatives from Shanghai Electric - the project's general contractor - Dubai Electricity and Water Authority (DEWA), Noor Energy 1 and China Construction Third Engineering Bureau.

"SEGC (Shanghai Electric Group Company) showed us their outstanding performance, finishing the concrete solar tower according to schedule, even if they suffered tough challenges along the way," said Enrique Valades Nieto, Noor Energy 1 construction manager.

The 700 MW CSP project marks phase four of the Mohammed bin Rashid Al Maktoum Solar Park in Dubai and is a crucial part of the UAE government's Vision 2021

initiative to ensure sustainable and environmentally friendly development.

In addition to Vision 2021, the government also launched the Energy Strategy 2050 Plan, which aims to increase the contribution of clean energy in the total energy mix from 25 per cent to 50 per cent by 2050.

Once operational, the CSP plant will reduce Dubai's carbon footprint by 1.6 million tons per year.

Sustainability is the focus of the project. Shanghai Electric engaged experts and partners to relocate wild animals and 180 mesquite trees across the 40 sq km site to a new wildlife park to minimise the impact of construction.

The project also aims to generate jobs for residents and is supported by an international team. It is estimated that as the project progresses, it will create around 6000 jobs in the technology, energy management and construction sectors.

Concentrated solar power systems generate solar power by using mirrors or lenses to concentrate a large area of sunlight onto a small area. Electricity is generated when the focused light is converted into heat, which drives a steam turbine connected to an electrical power generator.

The solar power collectors of the 700 MW CSP plant include both tower and tube collectors. The central tower is the crucial component of the plant and is used for receiving all the focused sunlight from the 70,000 mirrors to increase the temperature to more than 500 °C, and with this heat produced the steam turbine is connected to the electrical power generator. With a total height of 267m, this is currently the world's highest thermal tower.

Shanghai Electric is principally engaged in design, manufacture and distribution of electric power and industrial equipment. Its primary focus is on new energy, including the manufacture and sale of wind turbines and components and nuclear power equipment; efficient and clean energy



Developed by Saudi Arabia's ACWA Power, the Dubai Electricity Water Authority (DEWA) awarded the project in 2017 at a record-low tariff of US\$73/MWh.

Photo Credit: ACWA Power

business, including the manufacture and sale of thermal power equipment and power transmission and distribution equipment; industrial equipment, including the production and sale of

elevators and motors; modern service industry, including the contracting of construction projects of thermal power and transmission and distribution projects, as well as other businesses. ■

Yellow Door Energy commissions solar plant

YELLOW DOOR ENERGY, a Dubai-based sustainable energy provider for businesses, has commissioned a 869 kilowatt-peak (kWp) rooftop solar plant for Le Chocolat and Greenhouse Foodstuff Trading, part of BPC Holding Group. The project is a successful example of a solar lease, which enables businesses to switch to clean energy without any upfront capital investment, while significantly reducing energy costs, according to Yellow Door Energy.

Located in Dubai Investments Park (DIP), the rooftop solar plant is expected to generate 1,380 MWh of clean energy in its first year of operation, equivalent to reducing 600 tonnes of carbon emissions per year. It will supply over 30 per cent of the facility's annual electricity consumption and substantially lower electricity costs.

Adel Ayass, general manager of BPC Holding Group, commented, "Our facility in DIP crafts premium chocolates and provides foodservices for many customers in the UAE and beyond. To be the leader, we have to remain competitive, innovative and differentiated. The solar lease with Yellow Door Energy enables us to reduce our costs and achieve our sustainability targets. We can now also proudly share that our facility is running on solar power, which differentiates us from the competition."

Jeremy Crane, CEO and Co-Founder of Yellow Door Energy, commented: "We are pleased to support BPC Holding Group in its cost reduction and sustainability goals. We hope businesses in Dubai Investments Park will consider solar, and in particular solar leasing, as a cost-effective and clean source of electricity for their operations."

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Coelmo: building capacity with excellence

Generating sets manufacturer Coelmo has boosted production capacity by investing in an 8000-sq m production plant in Italy.

COELMO DESIGNS AND manufactures in Italy industrial and marine generating sets from 3 to 4.000 kVA since 1946, representing an unique model of engineering company and manufacturing excellence.

With three production plants located in Italy, an integrated management system for engineering and production, a wide distribution network and international after sales service, Coelmo manufactures generating sets for different applications, such as residential and commercial, telecommunications, oil and gas, military and humanitarian organisations, leisure and commercial marine, while supporting after-sale services in more than 36 countries in the world.

Coelmo has recently increased production capacity by investing in a new 8000 sq m production plant in Acerra – Italy, including a new metal sheet cutting, bending and painting facility. The new production plant is highly automated plant, designed in a three-dimensional modelling optic, with the aim of increasing efficiency reducing production times and costs.

Oil Refinery in Italy

One of the most recent Coelmo projects for the oil & gas sector consists of two medium speed generating sets rated 3850 kVA in COP each, 6 kV, three phase and 50 Hz frequency, installed as emergency backup for oil processing plants in an oil refinery.

Each generating set is installed in IP55



Coelmo generating set rated 3850 kVA at an oil refinery in Italy.



Showing at MEE 2020: new Coelmo generating set – Stage V rated 200 kVA

container with painting suitable for aggressive environments (C5M) and are equipped with a synchronisation control panel, 3237 kWm engines, IP55 alternator, compressed air starting system, integrated fire extinguishing system with CO₂ in compliance with NFPA standards, anti-seismic spring dampers and remote electro-radiator. The generating sets are suitable for unattended operation, automatic black-starting on external mains failure start signal or on detection of failure

of the mains supply and testing in synchronisation with the mains.

New Stage V at MEE 2020

At Middle East Energy, Coelmo will present the new generating set FDTN67TM7 – Stage V equipped with FPT engine (N67TM7), designed to reduce air pollution and emissions of gaseous and particulate pollutants.

The new Coelmo FDTN67TM7 200kVA, designed according to EU 2016/1628 regulations for industrial mobile machines, is equipped with a 65 dB (A) 7m soundproof canopy, 400 l integrated fuel tank with bypass for direct connection to the external tank, 43 l integrated urea tank, automatic control panel with remote start and customisable service sockets on request.

Coelmo's Stage V ensures high operational reliability in adverse weather conditions, while achieving significant reduction of polluting emissions. ■

Stand no: S2.C39

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ADPower to build UAE's largest thermal plant

Abu Dhabi Power and Marubeni Corporation form consortium to develop new 2.4GW power plant in Fujairah.

ABU DHABI POWER Corporation (ADPower) and Japan-based Marubeni Corporation have announced the formation of a consortium to develop the Fujairah F3 independent power producer (IPP) project, which will be the largest independent thermal power plant in the UAE.

The Fujairah F3 IPP project includes the development, financing, construction, operation, maintenance and ownership of a combined cycle gas turbine (CCGT) power plant, together with associated infrastructure. Located in the Fujairah water and electricity complex, between the existing Fujairah F1 and Fujairah F2 water and electricity plants, the Fujairah F3 IPP project will have a contracted power capacity of 2.4GW, bringing ADPower's current power generation capacity to 20.4GW. Once operational, Fujairah F3's capacity will be able to power the equivalent of 380,000 households.

Jasim Husain Thabet, CEO and managing director of ADPower, said, "Our ambition is to transform Abu Dhabi's water and electricity sector into a reliable, efficient, sustainable and value-generating system that optimises our robust portfolio of assets and creates unique partnership opportunities. The F3 IPP Project represents a significant milestone in this journey, deploying world-class technology and efficiency standards to meet the UAE's evolving power needs. We are delighted to announce Marubeni Corporation as our partner in the F3 Fujairah IPP project."

Othman Al Ali, CEO of EWEC, said, "The Fujairah F3 IPP project will apply one of the most efficient and advanced CCGT technologies available in the region, producing more energy that aligns with the UAE Energy Strategy 2050's CO2 emissions reduction targets. It will play a strategic role in the growth and development of the UAE, providing secure and reliable power to match the needs of consumers in Abu Dhabi

The government of Abu Dhabi will indirectly own a 60 per cent stake in the project.



Photo Credit: Adobe Stock

and the UAE. As part of the tender process, EWEC conducted a robust due diligence exercise, in line with the UAE energy industry's world-class standards, in order to select the most attractive technical and commercial bid for this project."

Through this project, the government of Abu Dhabi will indirectly own a 60 per cent stake, while the remaining 40 per cent will be owned by Marubeni Corporation. The construction of the Fujairah F3 IPP project, which is the largest CCGT power plant in the

The new power plant's capacity will be able to power the equivalent of 380,000 households.

UAE's current fleet, is expected to commence swiftly to enable EWEC to procure early power by summer 2022 and full generation by summer 2023.

The Fujairah F3 IPP project will grow ADPower's portfolio of investments in power generation assets, which form part of the assets subject to the recently announced offer to Abu Dhabi National Energy Company (TAQA), whereby ADPower would transfer the majority of its water and electricity generation, transmission and distribution assets to TAQA. If accepted and approved by TAQA and regulatory authorities, the proposed transaction would create a combined entity that is expected to be one of the largest utilities companies in the GCC, a top-10 integrated utilities player in the EMEA region by regulated assets, and the third-largest company listed on the UAE stock markets by market cap.

The project's Power Purchase Agreement (PPA) and Shareholders' Agreement was signed at the headquarters of Emirates Water and Electricity Company (EWEC). ■

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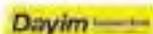
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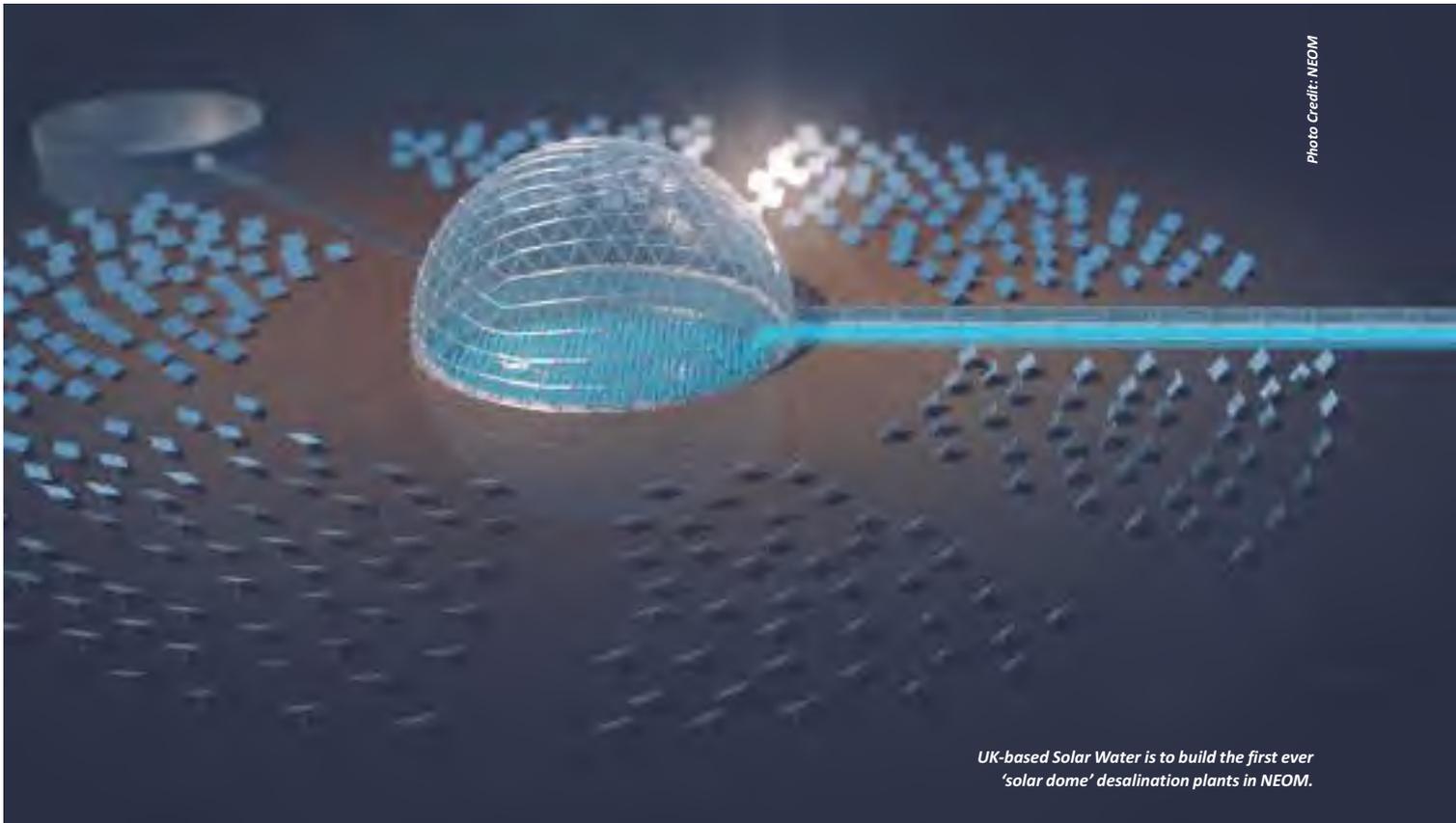


Photo Credit: NEOM

UK-based Solar Water is to build the first ever 'solar dome' desalination plants in NEOM.

Carbon-neutral desal at NEOM

A pioneering solar dome technology is set to shape the future of water desalination in Saudi Arabia and the world.

SAUDI ARABIA'S FUTURISTIC US\$500-billion NEOM mega city has announced it will adopt a pioneering solar technology to produce low cost, environmentally friendly water.

The company has inked an agreement with UK-based Solar Water to build the first ever 'solar dome' desalination plants in NEOM, located in northwest Saudi Arabia. The pilot project promises to revolutionise the water desalination process, helping solve one of the world's most pressing problems – access to fresh water.

Work on the first solar dome will begin in February and is expected to be completed by the end of 2020.

Nadhmi Al-Nasr, CEO of NEOM, said, "Easy access to abundant seawater and fully renewable energy resources means NEOM is

perfectly placed to produce low cost, sustainable fresh water through solar desalination. This type of technology is a powerful reminder of our commitment to supporting innovation, championing environmental conservation and delivering exceptional livability. Working together with the Ministry of Environment, Water and Agriculture we can expand the implementation of this technology beyond NEOM."

At an estimated \$0.34/m³, the cost of producing water via solar dome technology will be significantly lower than desalination plants using reverse osmosis methods. The technology will also significantly reduce the impact on the environment by producing more concentrated brine, a potentially harmful

byproduct of the water extraction process.

Developed at the UK's Cranfield University, this technology represents the first use, on a large scale, of Concentrating Solar Power (CSP) technology in seawater desalination. The process sees seawater pumped into a hydrological solar dome made from glass and steel, before it is superheated, evaporated and eventually precipitated as fresh water.

The solar dome desalination process, which can also operate at night due to the stored solar energy generated throughout the day, will reduce the total amount of brine that is created during the water extraction process.

Typically, the high salt concentration in brine makes it more difficult and expensive to process. The solar dome process helps

prevent any damage to marine life as no brine is discharged into the sea.

With over one billion people around the world lacking access to clean water every day, NEOM's solar desalination project will serve as a test case for other water scarce countries that are struggling to generate environmentally safe and sustainable sources of fresh water.

Gavin van Tonder, head of water at NEOM, said: "We're really excited by the prospect of bringing cutting edge water technology and fresh industry thinking to NEOM. By using solar dome desalination techniques, we can build a highly effective, efficient water utility that is both future oriented and environmentally responsible."

David Reavley, CEO of Solar Water, commented: "Currently, thousands of desalination plants around the world are heavily reliant on burning fossil fuels to extract water, poisoning our oceans in the process with excess brine. Our game changing desalination technology is 100% carbon neutral and entirely sustainable. In NEOM we have found a partner who has a strong vision of what a New Future looks

With over one billion people around the world lacking access to clean water every day, NEOM's solar desalination project will serve as a test case for other water scarce countries that are struggling to generate environmentally safe and sustainable sources of fresh water.

like in harmony with nature."

NEOM, the flagship project of Saudi Arabia's post-oil diversification plan, is being built on a 26,500 sq km area in northwestern Saudi Arabia. It offers unique investment opportunities in economic sectors and real-estate development.

NEOM is a cross-border development in northwest Saudi Arabia on the Red Sea being built from the ground up as a 'living laboratory'. Home and workplace to more than a million residents from around the world, the planned development will

include towns and cities, ports and enterprise zones, research centres, sports and entertainment venues, and tourist destinations.

Commenting on the project, Abdulrahman Al-Fadli, Saudi Arabia's Minister of Environment, Water and Agriculture, said, "NEOM's adoption of this pilot supports Saudi Arabia's sustainability goals, as outlined in the country's National Water Strategy 2030, and is fully aligned with the sustainable development goals set out by the United Nations." ■

VEGA launches a new radar for water industry

THE NEW RADAR level instruments by VEGA defy buildup to deliver reliable measurement in the water and wastewater industry.

In many level measurement applications, sensors constantly struggle with buildup. For example, when using ultrasonic sensors, buildup influences the reliability of the measuring signal and increases what is called the 'dead band'.

The situation is quite different with radar technology. Because of their optimised signal processing, radar sensors can suppress interference caused by buildup on the antenna system. Radar sensors are not sensitive to dirt and contamination, so they don't require cleaning.

All radar level sensors make a measurement by emitting microwaves from the sensor's antenna system to the measured product. Those microwaves are reflected by the product surface and received by the antenna system, and the signal's time of flight from emission to reception is used to calculate a distance, which then will be converted into a level.

German manufacturer of level sensors VEGA claims: "Radar is the better ultrasonic". VEGA has extended the proven VEGAPULS series with a new



Photo Credit: VEGA

The radar sensors measure reliably irrespective of the intense dust generation during filling.

radar sensor for level measurement This new product range is based on 80 GHz technology. In price and performance, it represents a real alternative to ultrasonic technology, delivering reliable and precise measured values as it is unaffected by environmental influences.

In the wastewater industry for example, level measurement of lime in silos, which is used to stabilise the pH value, is an ideal area of application for the new instrument series. The radar sensors measure reliably irrespective of the intense dust generation during filling. Buildup and deposits on the container wall

or on the sensor itself are also no problem thanks to the strong signal focusing.

Another application is in sewage treatment plants, for instance in mechanical pre-cleaning, where floating materials are removed with screens or sieves. The difference of the water level in front of and behind the screen is used to determine the degree of contamination and control the cleaning of the screen. Even in direct sunlight or heavy rain, the new radar sensors deliver accurate performance.

Very simple setup

With their compact dimensions, the new devices lend themselves to quick and easy installation, too. Thanks to the proven VEGA Tools app, any user can set up and operate the instruments via Bluetooth - quickly, wirelessly and from a safe distance. Reliable and accurate level readings are available after just few simple steps. The remote operation makes setup, display and diagnostics considerably easier, especially in harsh environments. Along with higher accuracy and reliability, these are important additional reasons for choosing radar technology on standard measuring tasks.

UAE to get US\$44mn of water projects

The new projects include the construction of a dam in Wadi Naqab, Ras Al Khaimah.

Hatta dam in the UAE.

THE FOLLOW-UP COMMITTEE of the Initiatives of the UAE President has approved a series of dam and water canal projects in various areas of the country, valued at US\$44 million, as part of the ongoing national efforts to develop the country's infrastructure and strategic facilities, the UAE's state news agency WAM has reported.

The new projects include the construction of a dam in Wadi Naqab, Ras Al Khaimah, valued at US\$7.32mn (AED26.9 million) and measuring 22 metres high and 257 metres wide, with a capacity of some one million cubic meters.

The dam, which is being built in the main valley of Wadi Naqab, some six kilometres

from the intersection of three valleys in Al Fahlain, will control the flow of water to residential neighbourhoods and improve groundwater storage in agricultural areas.

The project will be followed by the construction of water channels with regular and lined paths, as well as lakes and barriers to absorb and store large amounts of rain water and prevent waste.

The projects also include several dams, water canals and urgent protection works in areas off the eastern coast, as well as in Masfout, Siji and Shawka, valued at US\$33.4mn (AED122.6 million).

They also comprise the construction of ferry and water drainage channels to protect housing areas in several regions of Fujairah,

at a cost of US\$20.75mn (AED76.2 million), along with the deployment of a number of water ferries and the maintenance of the Hazf Dam in Masfout, Ajman, at a cost of US\$3.13mn (AED11.5 million). The series of projects will include three other projects related to draining rainwater and constructing ferries in Sharjah, at a total cost of US\$5.28mn (AED19.4 million). These projects will be located in the Luluyah and Mediffi areas of Khor Fakkan, Al Saf and Sur Kalba, while the ferry project will be located at the Wadi Shawka Dam on the Al-Siji-Shawka Road.

Another project in the series is the construction of urgent protection works in the village of Al Siji, as well as in Dafta, Ras Al Khaimah, costing US\$4.22mn (AED15.5 million), as well as the construction of the Al Rahba Dam and protection works in Shaml, Ras Al Khaimah, costing US\$3.24mn (AED11.9 million).

The committee also directed several specialist consultancy companies to perform hydrological studies on all areas of the country's northern regions and eastern coast, as well as to draft related engineering and environmental plans that comply with the highest standards. ■

The projects also include several dams, water canals and urgent protection works in areas off the eastern coast, as well as in Masfout, Siji and Shawka, valued at US\$33.4mn.

Saudi Arabia plans US\$825bn infra projects

The Big 5 Saudi expands heavy machinery offering on the back of Kingdom's increasing demand for infrastructure.

MUCH OF SAUDI Arabia's US\$302 billion budget has been earmarked for spending on the government's ambitious infrastructure plans, in line with Vision 2030.

The significant projects cited as driving the increasing demand for PMV and heavy machinery include the US\$500bn NEOM smart-city project and other major developments such as the King Hamad Causeway, Qiddiya, Amaala, and the Red Sea tourism project.

On the back of this increased infrastructure spending, The Big 5 Saudi has expanded its heavy machinery offering.

The tenth edition of The Big 5 Saudi will now encompass the full construction cycle by showcasing the expanded PMV sector within the venue and at a new outdoor area. Organisers DMG Events have announced the addition of a new outdoor area to facilitate the increased presence of PMV and heavy machinery exhibitors at The Big 5 Saudi.

Taking place at the Jeddah Centre for Forum & Events from 8 to 10 March, 2020, the new Plant Machinery & Vehicles (PMV) solutions sector further cements The Big 5 Saudi's position as a central meeting place to source everything in the construction buying cycle.

Event director – The Big 5 Saudi, Roni El Haddad, said, "The Big 5 Saudi continues to grow and to support the country's ambitious development goals with the introduction of a dedicated area showcasing machinery for heavy construction and infrastructure industries. The expansion comes on the back of the increasing demand for these products in the country as



Photo Credit: DMG

The Big 5 Saudi will offer more than 50 workshops across three theatres.

US\$825bn worth of future projects are planned across construction and transport sectors in particular.

"As these future projects move from the design phase to reality, and the life-cycle of the project turns towards the construction phase, the application of PMV and heavy machinery becomes a critical consideration in the building process."

Serving the entire building cycle from the ground up, The Big 5 Saudi will host more than 250 exhibiting brands from 20 countries and showcase products across sectors including building interiors and finishes, building envelope and special construction, construction tools and building materials,

construction technologies and innovations, concrete, and MEP Services.

Exhibitors include Kanoo Machinery, Saudi Diesel Machinery Company with XCMG products, Saudi Diesel Equipment Company with Doosan products, and Kice, to name a few.

The Big 5 Saudi will also offer more than 50 workshops across three theatres. Curated by industry thought leaders, these free-to-attend and CPD (continuing professional development) certified sessions educate and empower construction professionals to achieve the Saudi Vision 2030 through case studies, power keynotes and captivating debates.

The event is supported by Katerra (platinum sponsor), Al Bawani Contracting (contracting sponsor), Al Latifa Trading & Contracting Company (gold sponsor), and Oscar Paints (official paint sponsor). The Big 5 Saudi is free-to-attend for registered visitors. ■

www.thebig5saudi.com

The tenth edition of The Big 5 Saudi will now encompass the full construction cycle by showcasing the expanded PMV sector within the venue and at a new outdoor area.

Kohler expands Command PRO Engine lineup with Dual-Fuel CH440DF

KOHLER HAS ANNOUNCED the launch of the Command PRO dual-fuel CH440DF engine, an addition to the popular Command PRO lineup.

The CH440DF carbureted engine is designed to operate on gasoline or propane, offering users more flexibility – simply move a lever left or right to switch between fuels based on fuel levels, preference or task.

This horizontal-shaft, single-cylinder, four-cycle engine is part of the Kohler Command PRO lineup, which ranges between 4.5 and 14 horsepower gasoline engines designed to power a wide variety of tools on the jobsite, including: concrete saws, compactors, trowels, portable generators and larger products like power buggies.

“Our users depend on Kohler to provide offerings that meet their diverse needs on the job site. The new CH440DF engine is designed to do just that,” said Ben Marotz, marketing manager for Kohler Engines.

The CH440DF comes with several standard performance-enhancing features, including: Kohler’s Quad-Clean four-stage cyclonic air cleaner for maximum protection against dirt and debris; fuel secure automatic fuel line shutoff for clean starts on jobsites, a large fuel tank for longer runtime; cast-iron cylinder liners and

forged-steel crankcases for durable operation; and Oil Sentry protection which automatically shuts down the engine in low-oil conditions.

The full line of Kohler Command PRO single-cylinder, horizontal-shaft engines come with a full three-year commercial warranty.

Command PRO EFI propane engine

As the demand for fuel-efficient, low-emission engines continues to grow, Kohler has unveiled the Command PRO EFI propane engine (Model PCV680LE). An addition to the company’s EFI lineup, the PCV680LE twin-cylinder, vertical-shaft engine significantly lowers exhaust emissions due to an integrated catalyst and optimised fueling.

“Low-emission technology is important for the environment, as well as users, and our goal is to ensure that alternative-fuel engines perform as well or better than gasoline- or diesel-fueled products,” said Quinn Derby, marketing manager-gasoline engines. “We are continuously refining our products and developing new ones, as a way to continue to reduce emissions without sacrificing performance.”

An alternative to gasoline- and diesel-fueled engines, the PCV680LE 22-hp model is a cleaner-burning, more fuel-efficient alternative for commercial equipment. It saves significantly on fuel with less downtime for refueling. Kohler EFI low-emission propane engines produce over 80 per cent fewer exhaust emissions.

Kohler closed-loop EFI technology allows the PCV680LE to optimise performance by automatically adapting to operating conditions.

EFI engines offer automotive-like turnkey starting and the elimination of carburetors and their associated maintenance. Like all Command PRO engines, the PCV680LE feature’s KOHLER’s three-year commercial warranty.



Command PRO EFI propane engine PCV680LE

Photo Credit: Kohler



Command PRO dual-fuel CH440DF engine

Photo Credit: Kohler

FifthEdge launches AI-driven recruitment platform for construction and engineering sectors

FIFTHEDGE HAS STARTED operations in the UAE with the launch of its artificial intelligence-driven recruitment platform of the same name. With this new product, FifthEdge aims to change the recruitment process in the construction and engineering sectors, increasing the recruitment capacity of hiring companies by up to 467 per cent and reducing cost-to-hire by 52 per cent.

Using AI technology, FifthEdge matches companies to candidates, who are either actively looking for jobs or passive candidates who would be open to changing roles if the right opportunity was presented. Rather than candidates applying for specific positions, they instead select companies they may want to work for, so should a role arise, companies have a live talent pool from which to select candidates.

Candidates submit their CVs and create a profile on the platform free of charge. The AI technology then screens and assesses their profiles against industry-specific disciplines. In the event additional information is required, candidates are contacted via chatbots. Following an AI-driven, industry-specific, in-depth assessment of their profiles carried out by FifthEdge’s algorithms, candidates see real-time company updates if their skill sets match the companies’ requirements. When companies have roles available, they can set search parameters based on the job requirements and FifthEdge will search the available candidates who have indicated they would want to work for them. Companies will be able to access this up-to-date live talent list to select candidates they would like to interview.

Xtreme launches three new C-Class telehandlers

XTREME MANUFACTURING HAS launched three rough terrain telehandler models at World of Concrete 2020. The new C-class models, which expand the Xtreme product line up to 19 models, are the XR1347-C, XR1547-C and XR1555-C.

Designed as a replacement for the 5443 kg capacity XR1245, the XR1547-C can lift up to 6,803 kg with a maximum lift height of 14.3 m and a maximum forward reach of 9.6 m, and comes with outriggers as standard. The 5,897 kg capacity XR1347-C is the same machine as the XR1547-C, however does not require outriggers.

Weighing 15,966 kg and 16,692 kg respectively, the XR1347-C and XR1547-C both offer frame leveling up to 11°, and are dimensionally the same measuring an overall width of 2.56 m and stowed length to the fork face of 6.47 m. The lifts have a ground clearance of 0.41 m for tackling rough terrain and a turning radius of 3.66 m.

The C-class Xtreme XR1555-C is a replacement for the original B-class XR1255, offering 1,360 kg additional lift capacity. For customers operating a fleet of XR1255 telehandlers with associated B-class attachments, Xtreme will offer the new design XR1555-C as a B-class variant, branded as the XR1255-B.

The XR1255-B will benefit from the features of the new design, including an improved load chart, but will be compatible with existing B-class carriages. The XR1555-C can lift up to 6,803 kg and has a maximum lift height of 16.7 m, and a maximum forward reach of 11.7 m. Measuring 2.56 m wide, the XR1555-C weighs in at 17,445 kg and offers frame leveling up to 11°.

All three units are electric over hydraulic, and features Xtreme's new modular cab design, which enables the cab to be easily switched from open to enclosed, or vice versa, with an optional kit. The three new lifts are powered by a Cummins 3.8L 120hp Tier 4 Final engine, and are available with either foam filled or solid tyres.

Offered with a choice of three cab configurations – open; enclosed; or enclosed with heat and air conditioning – the units can be fitted with a wide range of C-class attachments, including pole



Xtreme XR1347 and XR1555

grapples, sling mounts, truss booms, buckets and personnel platforms, in addition to the range of fixed and fork positioning carriages and fork tines.

Common with all Xtreme telehandlers, the new models have 360° operator visibility from the cab.

Photo Credit: Xtreme

Terex Ecotec to present latest shredders and screens

TEREX ECOTEC, A SPECIALIST in the design and manufacture of wood processing, biomass and recycling equipment, will be showcasing their latest product offerings, innovations and expertise at at CONEXPO-CON/AGG 2020.

The Terex Ecotec product line has a comprehensive product portfolio of mobile shredding, screening, handling and conveying equipment.

Recent product launches include the Phoenix 1600 Trommel (tracked and wheeled variants available), the TBG 630 High Speed Shredder and the TDS 825 Slow Speed Shredder.

On display at booth S5118 in the Silver Lot will be the highly versatile TTS 620T Trommel. This user-friendly machine features a two-metre diameter drum and advanced hydraulic controls, as well as an easy change drum system, easy service access and a swing-out engine cradle.

The TTS 620T tracked trommel screen features a highly efficient engine and hydraulic drive system, combined with an advanced material processing control system, offering maximum production combined with minimum costs. It is suitable for screening compost, biomass, soil, gravel and waste.

An intuitive push button control panel allows the operator to easily configure the machine to suit the required application while the intelligent feeder control system continually adjusts the feeder speed to

optimise screening rates. Special consideration has been given to minimise change out time for the screening drum. The process, which takes a matter of minutes, places the TTS 620T as a market leader. The machine has been designed to accept a number of other manufacturers screening drums, allowing customers to smoothly integrate the TTS 620T into established fleets.



TTS 620T Trommel

Photo Credit: Terex Ecotec

Potain launches MRH 175 tower crane for high-rise and homebuilding sectors

POTAIN HAS ANNOUNCED the new MRH 175 tower crane, a new hydraulic luffing jib crane that will make its debut at CONEXPO-CON/AGG 2020, Las Vegas.

The MRH 175 is the latest release in Potain's line of hydraulic luffing jib cranes, a product line the company has continuously developed since unveiling the MRH 125 a year ago.

Combining the advantages of Potain's MR luffing jib cranes and MDT topless cranes, contractors find them particularly straightforward to assemble and disassemble on congested sites, making them suitable for urban projects, high-rise construction or job sites where space is limited.

Maximum capacity for the MRH 175 is 10 tons, while the maximum jib length is 55 m. Tip capacity is 1.65-1.5 tons when working with the full 55 metres jib, or 2.7 tons if fitted with 50 m of jib. Maximum line speed is 215 m/min when working with the high-performance 90HPL25 hoist.

The crane's unique design, with its fixed counter jib and topless structure, facilitates its trademark fast erection and dismantling, as well as making it more compact for transport, needing only four standard containers. The elements weigh under 7.7 tons, and there is a single counter-jib/jib foot package.

The topless design also means less space is needed on sites where multiple cranes overfly the job site and the hydraulic design means no wire rope installation is needed. It also means a smaller assist crane is needed for erection as there is no cathead to assemble.

Potain's hydraulic luffing design features a shorter counter-jib and out-of-service radius than rope-luffing alternatives. This frees up valuable space on job sites, with the MRH 175 delivering an out-of-service radius of only 10.2 m, regardless of jib length. Freestanding heights of up to 62.8 m are available with the 62 m K-mast sections, and the crane is also compatible with 1.6 m K-mast sections. On the hoisting drum, up to 956 m of rope is available with the 90HPL25 winch, allowing users to choose either 478 m in a two-fall configuration with a 5 tons maximum capacity or 239 m in a four-fall configuration with a 10 tons maximum capacity. Luffing the crane from the horizontal to vertical is efficient, taking less than two minutes, delivering optimum productivity on the job site.

"Hydraulic luffing topless cranes have a very strong future in our industry, and we've been pleased with the uptake over the past two years," said Thibaut Le Besnerais, vice-president of global products for tower cranes at Manitowoc. "Potain customers have seen the advantages these new cranes

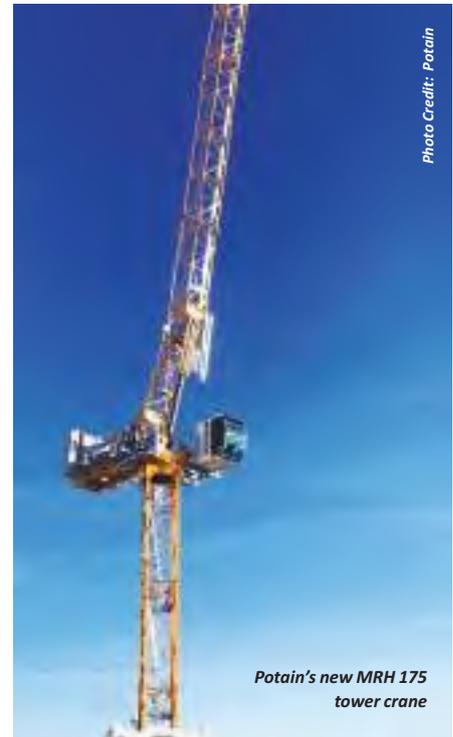


Photo Credit: Potain

Potain's new MRH 175 tower crane

deliver and how they help them achieve a stronger return on investment on their projects. We have a strong technical training programme to accompany our new MRH cranes, and the feedback from the market has been very positive."

Harting presents universally deployable rectangular connector system Han 1A

HARTING TECHNOLOGY HAS launched a universally deployable rectangular connector system, Han 1A, for transmission in all lifelines of Industry 4.0 (data, power, signals). It can be used in conjunction with low inventory to produce all necessary interfaces, e.g. for small to medium-sized drives.

With its Han 1A, Harting follows the trend towards miniaturisation in the industrial sector. Smaller and smaller drives are also requiring smaller and smaller interfaces, e.g. in

engineering and robotics. The new connector series reflects the trend with matching housings and inserts. The necessary shielding for the motor connection can be achieved with Han 1A plastic connectors.

The series follows the Han modular principle. The customer can flexibly combine insulating bodies, contacts, housings and interlocks to interfaces and achieve degrees of protection according to its requirements. An IP20 solution with only two components can already be assembled for use in protected areas within the industry (e.g., on spars of machines and supply channels). Only slightly more effort is required to make it a water- and dust-proof solution with single-wire sealing mats, which in turn enables gripper and other robotic tools to be fed in a pluggable manner. With additional housing elements, the degree of protection can be quickly extended to IP65. Han 1A thus enables the flexible and efficient connection of tools and modules such as heating or cooling units, fans, control terminals, lighting systems, drives and vibration conveyors.

In transportation engineering, the Han 1A is recommended for the connection of door drives and entry systems, lighting, headlights, loudspeakers, screens, display panels, warning and alarm lights, push-buttons, wipers and signal generators.



Han 1A connector series

Photo Credit: Harting

Sandvik presents Leopard DI650i drill rig for high capacity production

SANDVIK IS ROLLING out the Leopard DI650i drill rig, incorporating new drilling simulator and SanRemo Mobile, a mobile connectivity solution. The LeopardTM DI650i down-the-hole (DTH) drill rig is designed for demanding high-capacity production drilling applications in surface mining, as well as large-scale quarry applications. In addition to a powerful engine and compressor, LeopardTM DI650i incorporates a highly ergonomic iCAB cabin, serviceability, mobility and fuel economy, along with scalable automation packages, to offer overall productivity.

In addition to the actual drill rig being on display at CONEXPO/CON-AGG 2020, visitors will be able to try out its performance using the Leopard DI650i drilling simulator to guide them through the whole drilling process. SanRemo Mobile is a mobile device-based connectivity solution for Sandvik surface drill rigs which transfers easily, quickly and cost-effectively drill plans, reports and other drilling data.



Photo Credit: Sandvik

LeopardTM DI650i down-the-hole (DTH) drill rig.

Solution to train operators

DIGITAL DRILLER IS a compact and flexible solution to safely train operators or maintenance teams on Sandvik underground drills DD422i, DD422iE, DT922i and DL421. Operators learn via a realistic simulator, optimising their transition to the real machine. Digital DrillerTM acts like a real rig, operating with authentic controls and combined with the same control system software as that installed on the actual machines. It is fully integrated with iSURE software, a tunnel management tool for accurate drilling, charging and blasting plans.

Telsmith launches Titan T200 cone crusher

TELSMITH, MANUFACTURER OF mineral processing equipment, will present the Titan T200 Cone Crusher at CONEXPO/CON-AGG 2020.

The T200 cone is the newest model in the line-up of Titan series crushers that were originally introduced in 2012, which are designed to deliver maximum uptime availability while also minimising maintenance costs.

The Titan T200 Cone Crusher utilises 200 horsepower with a maximum feed size of 8” and throughput capacities from 110 up to 288 stph, making the T200 suitable for secondary and tertiary circuit positions in mining, construction aggregates, industrial and recycling applications.

With a small footprint, The T200 can easily replace existing cone crushers yet provide high production with product size and shape that can meet any operation’s needs. Available in both stationary and portable configurations, the T200 can be used in series with their Hydra-Jaw crushers and Vibro-King TL screens.

The patented anti-spin feature prevents head spin to help extend manganese service life. Like other key components, it is mounted on top of the main shaft for safe, top-service access. The anti-spin operates with pressure lubrication oil, eliminating the need for a gearbox, separate hydraulic circuit, and associated maintenance. The use of a single support bowl for all liners reduces



Titan T200 Cone Crusher

Photo Credit: Telsmith

inventory costs while allowing optimum versatility, flexibility, and efficiency in portable crushing applications.

Furthermore, Telsmith patented hybrid bearing technology within Titan Cone Crushers provides the ability to crush at tighter settings and easily handle crushing forces, when compared to traditional bearing machines. Engineered to hold up to tough, abrasive aggregate and mining processes, Titan cones with hybrid bearings deliver tested productivity, safety, and ease of maintenance with maximum uptime.

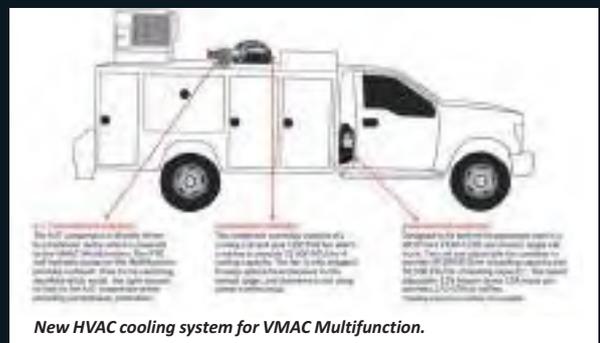
VMAC to release HVAC cooling system for multifunction

VMAC IS PLANNING to launch its new HVAC cooling system for VMAC Multifunction, enabling its proven 6-in-1 multi-power system to provide truck cab cooling.

The HVAC cooling system will help reduce idling and provide operators with relief from high temperatures: simply turn on the air conditioning when it is hot—without running the truck’s engine—and enjoy the comforts of a climate-controlled cab.

“While VMAC’s multifunction system is designed to reduce idling, many end-users still idle their vehicles on hot days so they can use their cab’s air conditioning,” said Mike Pettigrew, VMAC’s marketing manager. “The new HVAC cooling system allows operators to use their VMAC multifunction and turn off their truck engines in hot weather, without compromising on personal comfort.”

The HVAC cooling system for VMAC multifunction is designed to integrate seamlessly



New HVAC cooling system for VMAC Multifunction.

Photo Credit: VMAC

with VMAC’s multifunction power system, a 6-in-1 multi-power system that includes a rotary screw air compressor, generator, welder, battery booster/charger, PTO with optional hydraulic pump, and integrated cold climate kit.

This HVAC cooling system is the suitable solution for fleet managers who want to eliminate truck idling on the job site and reduce operating costs, while still providing operators with the comfort and safety of a climate-controlled truck cab.



قد تدفع الآلة ما يصل إلى 100 مليون امرأة إلى بطح وظائفهن

سناخورة في إرسال الموظفين إلى برنامج ورشة العمل الرقمي الخاص بمهارات المستقبل، ووضعت شركة ساب للبرمجيات في ألمانيا هدفاً بأن تشغل المرأة 30 في المائة من المناصب القيادية بحلول عام 2022، وتقيس الشركة مدى التقدم في تحقيق ذلك الهدف. لقد حان الوقت، للتصالح بمعرفة التحولات التي ستحتاج إليها للمرأة لتكثيف الجهود ومساعدة المرأة على التغلب على التحديات الجديدة والقديمة.

ويتعين على القطاعات العامة والخاصة والثالثة، العمل معاً لدعم مسيرة المرأة في التحولات التي تحتاجها في عصر الأتمتة. وهناك أدوات ملموسة وعملية يمكن للشركات القيام بها مثل تعزيز قاعدة المواهب والوفاء بالتزامها بالتنوع في صفوفها، ومن الأفضل أن تستثمر الآن في ذلك الأمر بدلا من أن تفقد التقدم المحرز في التنوع بالنسبة للشركات والمجتمع، وبالطبع للمرأة نفسها مع تقدم عصر الأتمتة.

■ المصدر: المنتدى الاقتصادي العالمي.

3 - الوصول إلى التكنولوجيا والمتمتع بدرجة عالية من الذكاء في استخدامها

يمكن أن تكون التكنولوجيا هي الإجهاد الذي نحتاجه المرأة، والذي سيمكنها من العمل بمزيد من المرونة في سوق العمل الحر. ومع ذلك تترزخ للمرأة - بعد الرجل - في الوصول إلى التكنولوجيا والمهارات والقيادة، فعلى مستوى العالم يزيد احتمال وصول الرجال إلى الإنترنت بنسبة 33 في المائة عن النساء وتمثل النساء 35 في المائة فقط من طلاب العلوم والتكنولوجيا والهندسة والرياضيات في التعليم العالي، وأقل من 20 في المائة من العاملين في مجال التكنولوجيا في العديد من الاقتصادات الناشئة، و14 في المائة فقط من العاملات النواتي لديهن وظائف لتطوير أنظمة تكنولوجيا المعلومات والاتصالات أو صيانتها أو تشغيلها، مقارنة بنسبة 5.5 في المائة من العمال الذكور، وفقاً لمنظمة التعاون الاقتصادي والتنمية. كما أن لدى الشركات دوراً تلعبه في العمل مع المؤسسات التعليمية لزيادة القدرة الاستيعابية للنساء اللاتي يدخلن مجالات التكنولوجيا، وقد بدأت العديد من الشركات في

وفي ثلاثة من الاقتصادات الناشئة الأربعة التي شملتها الدراسة، قد يرتفع صافي الطلب على العمالة للمهن التي تتطلب التعليم الثانوي بشكل حاد. وقد وجد بحث معهد ماكينزي العالمي في عام 2018 أن الطلب على المهارات المعرفية والبدنية واليدوية سينخفض، ولكن قد تتطلب هذه الوظائف - بحلول عام 2030 - استخداماً أكثر للمهارات الفنية بما يصل إلى 55 في المائة وفقاً إضافياً و24 في المائة ساعات إضافية باستخدام المهارات الاجتماعية والعاطفية، ستطلب هذه التحولات الكبيرة، في الطلب على العمالة من العديد من النساء، إجراء تغييرات جذرية في حياتهن العملية، وعلى الرغم من تضيق الفجوة بين الجنسين في التعليم، فإن عدد نساء أقل يتخرج من المجالات التي ستزدهر والتي ستكون حيوية للعمل في المستقبل، فعلى سبيل المثال، يدرس 37 في المائة فقط من طالبات السنة الأولى في المملكة المتحدة بدوام كامل مواد العلوم، مقابل 48 في المائة من الرجال، يجب أن يستثمر القطاع الخاص أكثر في إعادة تدريب الموظفين أو الشراكة مع المؤسسات الأكاديمية وغيرها من المؤسسات، وقد وجدت إحدى الدراسات أنه في عام 2018 كان 54 في المائة من أرباب العمل يوفرون فرص تدريب وتطوير إضافية للقوى العاملة الحالية لسد الفجوات في المهارات، مقارنة بنسبة 20 في المائة فقط في عام 2014، والتي تحتاج إلى زيادة أكبر. كما أن من شأن الاستثمار العام والخاص في منصات التعلم الرقمي أن يفتح مجالاً آخر للمرأة، وتعمل مبادرة ديزي «كود: روزي» في الولايات المتحدة، على توظيف وتدريب النساء في المناصب غير التقنية في مجال هندسة البرمجيات، وتقدم برامج تدريب وتوجيه مدتها 12 شهراً.

2 - الفرصة للانتقال من وظيفة إلى أخرى

النساء أقل قدرة على التنقل من الرجال لأنهن يقمن بشكل غير متناسب بأعمال الرعاية غير مدفوعة الأجر في المنزل، مما يضر بنطاق التدريب والوظائف المدفوعة. ويمكن أن تمنح التكنولوجيا المرأة مرونة جديدة للعمل عن بُعد - سواء في الاقتصاد المباشر أو في التجارة الإلكترونية - تكن الشركات تحتاج إلى توسيع نطاق خيارات العمل المرنة، وقد وجدت دراسة لأصحاب العمل في عام 2018 أن خيارات العمل المرنة أو العمل عن بُعد لم يقدمها سوى 23 في المائة من أرباب العمل. وسيساعد الوصول إلى الشبكات المهنية للنساء على تعزيز فرصهن في الانتقال إلى وظائف ذات رواتب أعلى. فقد أنشأت هيلتون على سبيل المثال شبكات لمجموعات أعضاء فريق العمل للنساء وغيرهم من مجموعات الموظفين الممثلة تمثيلاً ناقصاً.

مفكرة الفعاليات 2020

مارس/آذار

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دي
جدة
الرياض



يتعين على القطاعات العامة وخاصة والثالثة العمل معا لدعم مسيرة المرأة في عصر الأتمتة

مساعدة المرأة على الانضمام إلى عصر الأتمتة

■ بقلم: أنو مدغافكار وفيليان هانت وولارينا بي

تبدو الحاجة الداعمة لزيادة مهارات المرأة بعبء النجاح في أسواق العمل المستقبلية مفعلة للغاية. لذا يتعين على أصحاب العمل إيلاء اهتمام خاص لاحتياجات النساء اللاتي يواجهن ضغوطاً جديدة جراء الأتمتة، إضافة إلى الصعوبات الدائمة التي يواجهنها بالفعل في سوق العمل. وقد توصل معهد ماكينزي العالمي - جراء دراسة أجراها - إلى أن حوالي 160 مليون شخص قد يحتاجون إلى تغيير وظائفهم في عصر الأتمتة، أي ما يقرب من ربع عدد النساء العاملات اليوم.

التنقل اللازم للتعامل مع التحولات في سوق العمل، والوصول إلى التكنولوجيا اللازمة للعمل على الأنظمة الآلية والإلمام بها. وتواجه المرأة اليوم تحديات نسبية في جميع المجالات الثلاثة ونحن ندافع عن دعم مخصص من الشركات، تدعمه سياسة الحكومة، لتمكين المرأة من التغلب على هذه العوائق. دعونا لنلقي نظرة على الأساسيات الثلاثة لمستقبل عمل المرأة:

1 - المهارات العالية والمختلفة

يرجع العامل الأساسي للنجاح أو الفشل في مجارة هذه التحولات إلى وجود مهارات مختلفة وعالية. ففي خمسة من الاقتصادات الستة الناشئة التي شملتها الدراسة، نتوقع أن يكون صافي الطلب على العمالة إيجابياً فقط للوظائف التي تتطلب شهادة جامعية أو درجة متقدمة،

مساعدة المرأة على إجراء التحولات التي تحتاج إليها في مواجهة الأتمتة. ونحن نعلم أن هذا الأمر مهم، فقد وجد بحث ماكينزي أن الشركات التي تقع في الربع الأعلى على مؤشر التنوع تزيد فرصتها بنسبة تتراوح بين 15 و 24 في المائة في التفوق على نظرائها في تحقيق الأرباح قبل هوامش الفائدة والضرائب (EBIT) مقارنة بالشركات في الربع السفلي. ووجدنا في بيانات المملكة المتحدة والولايات المتحدة أن الشركات التي لديها أكثر من 30 في المائة من النساء في فرقها التنفيذية كانت أوفر حظاً بنسبة 40 في المائة تقريباً في تحقيق أداء أعلى على هوامش الأرباح قبل الفوائد والضرائب مقارنة بالشركات التي لديها نسبة من 10 إلى 30 في المائة من النساء في الدور التنفيذي. ويحتاج الرجال والنساء، أكثر من أي وقت مضى، إلى تطوير المهارات المطلوبة والقدرة على

لا يكمن التحدي فيمن سيتضرر أكثر نتيجة الأتمتة، فالتأثير يعادل تقريباً نفس القدر الذي قد يخلفه على النساء والرجال على السواء، ولكن في مدى استعداد الأفراد للتكيف معه. وهذا هو المجال الذي تحتاج فيه النساء إلى دعم محدد الأهداف. فإذًا يمكن للمرأة من اتخاذ التحولات اللازمة، فقد نكون في طريقها إلى عمل أكثر إنتاجية وأعلى أجراً. وإذا لم تسح الفرصة لها فقد تسع فجوة الأجور بين الجنسين، وقد ترك العديد من النساء العمل مع انخفاض الطلب على الوظائف الأقل مهارة. وقد كان هناك تقدم ملحوظ في هذا المجال ولكنه كان بطيئاً. فالشركات تعمل على تعزيز التنوع، ولكن باتباع هذا النهج قد يستغرق الأمر أكثر من 20 عاماً للوصول إلى التكافؤ في المناصب التنفيذية، وفقاً لقاعدة بيانات ماكينزي الخاصة بالتنوع. وقد يخرج هذا التقدم عن مساره عن طريق عدم

المحتويات

القسم العربي

تحليلات

مساعدة المرأة على الانضمام إلى عصر الأتمتة



ملخص محتويات القسم الإنجليزي

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فعاليات: معرض بيغ فايف السعودية، المنتدى السعودي للمياه.

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يتعين على أصحاب العمل إيلاء اهتمام خاص لاحتياجات النساء اللاتي يواجهن ضغوطاً جديدة جراء الأمّة.