

# TECHNICAL REVIEW

## النشرة التقنية - الشرق الأوسط

### MIDDLE EAST

USA: \$16.50, United Kingdom: £10

Vol 34/Issue Six 2018

## Beyond Tourism

Increasing FDI in Egypt creates  
local business opportunities

## RACE TO THE FUTURE

THE UAE IS A STEP AHEAD IN  
DEPLOYING SUSTAINABLE  
TRANSPORTATION MEASURES

## INSIDE

Tunneling  
Cranes  
HVACR  
The Big 5

SEE US AT THE SHOW



[www.technicalreview.me](http://www.technicalreview.me)

## 34 Years

1984 - 2018

Serving Middle East  
Business





## COMPLETE WATER AND WASTEWATER SOLUTIONS

OIL & GAS / POWER / INDUSTRIAL / MUNICIPAL





# POWER YOUR FUTURE



**aksa** POWER  
GENERATION

## In life some things really matter

Power, is without doubt, one of them. AKSA Power Generation works tirelessly to deliver this human essential by supplying the spectrum of electricity generating equipment from very small to very large. And our services go further, with access to comprehensive spare parts, customer- focused after sales and best in the business warranty.



[aksa@aksa.com.tr](mailto:aksa@aksa.com.tr)  
[www.aksa.com.tr](http://www.aksa.com.tr)

Follow us on:    

 KAZANCI HOLDING

## EDITOR'S NOTE

This year has seen the Middle East and North Africa (MENA) countries reboot their economies with improved business reforms. A World Bank report (p26) tracks the growth. As the GCC countries of the UAE and Saudi Arabia continue with diversification, North Africa's leading economy – Egypt – is transforming from being a 'tourist destination' to a 'business hotspot'. Indeed, the country has witnessed positive GDP growth in 2018. Meanwhile, German tunneling experts such as Herrenknecht and SENNEBOGEN are busy fulfilling government projects in Egypt and the UAE respectively. Elsewhere in this issue, we have news from the HVACR industry (p32), developments from the Communications & IT sector (p33), and the latest industrial innovations from across the globe (p42).

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

## CONTENTS

### BUSINESS & MANAGEMENT

- Market News** 6  
New Saudi Arabia mining project to increase non-oil GDP by three per cent; Morocco unveils country's first high-speed rail line; Iraq's US\$600mn 'Power Up Plan'; ISO releases first worldwide drone standards

### TRANSPORTATION

- Driving Sustainable Goals** 12  
Current global trends are shaping the UAE's future transportation segment
- The Heavyweight** 18  
Spain's COORDINADORA is making headway in the GCC's freight services sector

### ANALYSIS

- Eye on Egypt** 20  
Many structural reforms are having a positive impact on the North African nation's economic transition

### CONSTRUCTION

- Passage to Development** 24  
Herrenknecht's tunneling expertise will help open new opportunities in Egypt
- Making the Cut** 26  
A World Bank report on how the MENA countries have advanced their business reforms

- Towering Success** 28  
NFT Specialized in Tower Cranes' Nawar Al Zahlawi talks about the brand's success

### HVACR

- Partnering with Petra** 32  
Firas Abu Wisah talks about the Jordanian manufacturer's 'in-demand' stature

### EVENTS

- Saudi Arabia Smart Grid** 34
- The Big 5** 36
- bauma 2019** 39
- WFES 2019** 40

### INNOVATIONS

- Products and Progress** 42  
Featuring Consolidated Contractors Company, Liebherr, Doosan Bobcat, Eaton, Cummins, Caterpillar, Danfoss, COMANSA, Fugro, SENNEBOGEN, Rotork, Endress+Hauser

### ARABIC

- Analysis** 4



12



30



42

## TECHNICAL REVIEW

المنشور التقني - الشرق الأوسط

### MIDDLE EAST

**Editor:** Rhonita Patnaik - Email: [rhonita.patnaik@alaincharles.com](mailto:rhonita.patnaik@alaincharles.com).

**Editorial and Design team:** Prashanth AP, Hiriya Bauru, Miriam Brtkova Manojkumar, Nonalynka Nongrum, Praveen CP, Rahul Puthenveedu Samantha Payne, Deblina Roy and Louise Waters

**Managing Editor:** Georgia Lewis

**Publisher:** Nick Fordham

**Sales Director:** Michael Ferridge

**Magazine Sales Manager:** Graham Brown - Email: [graham.brown@alaincharles.com](mailto:graham.brown@alaincharles.com)  
Tel: +971 4 448 9260, Fax: +971 4 448 9261

**Special Projects Manager:** Jane Wellman - Email: [jane.wellman@alaincharles.com](mailto:jane.wellman@alaincharles.com)

**Production:** Srinidhi Chikkars, Nelly Mendes and Infant Prakash  
Email: [production@alaincharles.com](mailto:production@alaincharles.com)

**Subscriptions:** [circulation@alaincharles.com](mailto:circulation@alaincharles.com)

**Chairman:** Derek Fordham

Country	Representative	Telephone	Fax	Email
India	Tanmay Mishra	+91 80 65684483		<a href="mailto:tanmay.mishra@alaincharles.com">tanmay.mishra@alaincharles.com</a>
Nigeria	Bola Olowo	+234 8034349299		<a href="mailto:bola.olowo@alaincharles.com">bola.olowo@alaincharles.com</a>
UK	Michael Ferridge	+44 20 7834 7676	+44 20 79730076	<a href="mailto:michael.ferridge@alaincharles.com">michael.ferridge@alaincharles.com</a>
USA	Michael Tomashefsky	+1 203 226 2882	+1 203 226 7447	<a href="mailto:michael.tomashefsky@alaincharles.com">michael.tomashefsky@alaincharles.com</a>

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

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

**Printed by:** Atlas Printing Press

**Printed in:** December 2018

**Arabic Translation:** Ezzeddin M. Ali - Email: [ezzeddin@movistar.es](mailto:ezzeddin@movistar.es)

**Arabic Typesetting:** Lunad Publicity, Dubai

© Technical Review Middle East ISSN: 0267-5307

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

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

**Alain Charles**  
Publishing  
Serving the world of business

**abc** Audit Bureau of  
Circulations -  
Business Magazines





## DEMANDING BY NATURE

## THIRD-PARTY CERTIFICATION DESERVES YOUR CONFIDENCE

The labels, logos or « certificate of excellence » are abundant, but they are not all equal.

When a manufacturer starts the process of **Third-Party certification**, they enter a **process of quality** for the benefit of all: end users, prescribers, insurers, investors and authorities.

The reliability of advertised performance, the readability and transparency of information, the regulatory compliance, the product energy efficiency, are some of the benefits resulting from **Third-Party certification**.

**Our certification process is robust, rigorous and demanding:** continuous testing, product sampling, factory audits, independent testing by accredited agencies and laboratories, selection software control as well as independent evaluation.



*Since 1994 EUROVENT CERTITA CERTIFICATION certifies the performance ratings of HVAC-R products for residential home and industrial facilities. Visit our website available 24/7.*

Quality Images © ThomsonVisual

Download your customized  
certified solution on :

[www.eurovent-certification.com](http://www.eurovent-certification.com)

## Briefly

### EDF and Nawah sign deal to operate and maintain UAE's nuclear plant

NUCLEAR OPERATOR EDF and Nawah Energy Company (Nawah), subsidiary of the Emirates Nuclear Energy Corporation (ENEC) that is mandated to operate and maintain the Barakah Nuclear Energy Plant, signed a long-term framework agreement whereby EDF will provide services to support Nawah in operating and maintaining the Barakah Plant in the UAE.

EDF will provide Nawah with services in a number of areas including operational safety, radiation protection, fuel-cycle management and environmental monitoring. The EDF expertise includes engineering studies, on-site support, training and benchmarking sessions. These services may involve the entire EDF Group including Framatome, as well as some of EDF's legacy partners.

Dominique Minière, EDF's senior executive vice-president in-charge on nuclear and thermal fleet, "With this agreement, EDF will be strengthening its position in the UAE's low-carbon energy sector, thereby reasserting the goal of its CAP 2030 strategy which is to triple its business volumes outside of Europe by 2030."

### Morocco unveils Tangier-Casablanca high-speed rail line

FRENCH PRESIDENT EMMANUEL Macron and Morocco's King Mohammed VI inaugurated the North African nation's first high-speed rail line. According to an *Associated Press* report, The US\$2.4bn project was launched in September 2011, jointly funded by France and Morocco.

The rail line will connect the economic hubs of Tangier and Casablanca in two hours 10 minutes at a speed of 320km/h instead of five hours on a regular train. Morocco bought 12 high speed trains from French train manufacturer Alstom.

Designed to suit the climate and environment conditions of Morocco, these Avelia Euroduplex train sets are capable of carrying 533 passengers. All trains feature bilingual digital passenger information systems in both Arabic and French.

## New Saudi Arabia mining project to increase non-oil GDP by three per cent

CUSTODIAN OF THE Two Holy Mosques King Salman bin Abdulaziz of Saudi Arabia has inaugurated the Waad Al Shamaal mining project, which is expected to boost the kingdom's gross domestic product by US\$64bn and its non-oil GDP by around three per cent.

The kingdom will invest US\$22.6bn in the project, a 440 sq km city for mining industries in the northern region, the Ministry of Energy, Industry and Mineral Resources said in a statement.

The completion of the next phase will lift the kingdom's phosphate fertiliser production to nine million tonnes annually, energy minister Khalid Al Falih said. "This will make the kingdom the second largest producer of phosphate fertilisers in the world," Al Falih added.

Mining is key to the kingdom's efforts to diversify its economy away from hydrocarbons, as the government aims to more than triple the sector's contribution to the nation's economic output by 2030.

Saudi authorities estimate the region holds 500mn tonnes of phosphate ore, around seven per cent of global proven reserves, mainly in the Al Jalamid and Umm Wu'al areas between Arar and Turaif.

The energy ministry estimates the kingdom's unused mineral resources to be valued at US\$1.33 trillion.

Al Falih added that he sees weak oil demand in January and said the kingdom will respond accordingly to 'cool the global market's anxiety'.

His comments come one day after US President



Saudi authorities estimate the kingdom holds 500mn tonnes of phosphate ore, around seven per cent of global proven reserves.

Donald Trump called on Saudi Arabia to help bring down oil prices. Al Falih said the kingdom's policy has not changed and it will work towards a balanced market.

## 190 countries confirm participation in Expo 2020 Dubai

A TOTAL OF 190 countries have confirmed their participation in Expo 2020 Dubai, confirming its position as a global destination and bringing to life the World Expo's theme of 'Connecting Minds, Creating the Future'.

With just under 700 days to go until Expo 2020's opening ceremony, the milestone means that expo has already surpassed the 180-nation commitment set out in its successful 2013 bid to host a World Expo for the first time in the Middle East, Africa and South Asia (MEASA) region.

Reem Al Hashemy, minister of state for international cooperation and director general, Dubai Expo 2020 Bureau, said, "In less than two years' time, Expo 2020 Dubai will welcome the international community to the UAE for a six-month celebration of human ingenuity and

progress, allowing millions of people to experience the world in one place.

Along with Al Wasl Plaza and the three thematic pavilions, national pavilions and their exciting content will be major drawcards for the millions of people who come to Expo 2020, representing an integral part of the global destination's exceptional visitor experience.

Countries that have already unveiled their pavilion plans include Austria, Brazil, Czech Republic, Finland, Germany, Luxembourg, New Zealand, Oman, Poland, Switzerland, the UK and the UAE. More are expected to follow in the coming months.

With 25mn visits expected between October 2020 and April 2021, 70 per cent of visitors are projected to come from outside the UAE.



## Iraq's US\$600mn 'Power Up Plan' to develop grids

TRADE BANK OF Iraq (TBI), Standard Chartered Bank and General Electric (GE) closed a US\$600mn financing agreement that funded an ambitious power project implemented across Iraq.

Comprising two phases, the government of Iraq's 'Power up Plan' was a major part of the country's ongoing rebuilding and modernisation plans, delivering and securing more than 2 GW of new power, while ensuring the continuity of up to 6.7 GW to Iraq's grid, supplying much-needed electricity to homes and businesses nationwide.

The financing arrangement is the largest bespoke Letter of Credit (LC) confirmation and discounting transaction of its kind in the region.

TBI was established in July 2003 with the aim of helping the reconstruction of Iraq by facilitating international trade and continues to be at the forefront of infrastructure developments across the country. The institution's financial network and expertise play a significant role in sourcing and securing funding for projects that will benefit the Iraqi people for generations to come.

Faisal Al Haimus, chairman and president of Trade Bank of Iraq, said, "An efficient, modern, secure, and reliable power network is the foundation on which the country's long-term development and prosperity will be built. The financing supported as part of this latest round with our partners at GE and Standard Chartered



*Faisal Al Haimus is the chairman and president of Trade Bank of Iraq.*

Photo Credit: Trade Bank of Iraq

Bank will play a major role in creating a brighter future for the Iraqi people."

For Standard Chartered, the agreement also manifests its newly introduced sustainability philosophy, as such finance will help enable individuals' businesses to thrive and grow, and governments to deliver economic prosperity for the wider community; supporting sustainable and responsible growth.

GE has supported the development of essential energy, healthcare and transportation infrastructure in Iraq for more than 50 years. The current agreement is an important part of the company's commitment to contributing towards the rebuilding efforts to the benefit of families, businesses and industries across the country.

## Briefly

### DEWA awards water pipeline contract worth US\$32.13mn

DUBAI ELECTRICITY AND Water Authority (DEWA) has awarded a US\$32.13mn contract to supply, fit, and commission 26.5km of water pipelines across Dubai. This will achieve vital ongoing projects on DEWA's infrastructure, and increase water flow to meet demand.

"This project is a part of our efforts to achieve the vision of HH Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, to promote sustainable and comprehensive development of electricity and water in the emirate," said Saeed Mohammed Al Tayer, MD and CEO of DEWA.

The project includes the fitting of glass reinforced epoxy (GRE) main water pipes, with a diameter of 1,200mm, to connect multiple areas, including the water reservoir in Al Nakhali to Al Aweer, and all the way to Hatta Road. It also includes the fitting of main water pipes with a diameter of 600mm in Muhaisnah, water wells in Margham, and the Dubai-Al Ain highway, to increase water flow to development projects in these areas. The project is due to be completed in 30 months.

### Denmark's Vestas signs EPC contract for 52MW wind farm in Jordan

DANISH WIND TURBINE manufacturer Vestas has secured an engineering, procurement and construction (EPC) order for a 52MW wind farm in Jordan. Commissioning of the Tafila facility is expected to take place in Q1 2020, Vestas said in an announcement.

The EPC order was placed by special purpose company Daehan Wind Power. Korea Southern Power and Daelim Energy have co-invested in Daehan Wind Power. The supply, transport, installation and commissioning of 15 of Vestas' V136-3.45MW turbines are included in the contract.

"This comprehensive EPC contract reinforces our leadership in the Jordanian wind energy market and demonstrates our project management expertise and broad range of auction capabilities," said Rainer Karan, general manager of Vestas Mediterranean Eastern Cluster.

## ISO releases first worldwide drone standards

INTERNATIONAL STANDARDS ORGANISATION (ISO) has published the international draft of ISO standards for drone operations to determine how to use drones safely and effectively in compliance with regulatory requirements. It is expected that the new standards, applicable from 2019 onwards, will trigger a rapid acceleration of growth in the drone industry as organisations throughout the world are galvanised to adopt drone technology against a new background of reassurance on safety and security.

The announcement by ISO is the first important step in the standardisation of the global drone industry, encompassing applications for all environments—surface, underwater, air and space.

## Egypt takes steps to revise mining law to attract FDIs

EGYPT'S MINISTER OF petroleum and mineral resources, Tarek El-Molla, announced that Wood Mackenzie has completed the country's new mining strategy.

He added that the implementation of the strategy will begin with the establishing the amendments to the Mineral Wealth Law, adding that the changes have been referred to the House of Representatives for discussions.

El-Molla pointed out that the new amendments aim to separate the exploitation from the utilisation stage, which aims to attract more investments, as the research agreements need a long time for the procedures, as well as a cap on royalties, which renders investors safe from market fluctuations.

The amendments will also contribute to increasing the revenues of the different governorates from the profits of the collection of resources, in addition to merging the quarries licenses in one entity.

The mining sector had not put any investments to the state since 2014 and no contracts in the quarries sector were signed since, thus prompting the government to amend the 2014 law.

The minister said that his Ministry will be adding incentives to investors in the Mineral Wealth Law in order to attract investment and bring funds to the state.

# ON THE WEB

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

## Italy's Nidec to transport water in Saudi Arabia

ITALY'S NIDEC ASI has supplied motors and technologies to create a system of pipes for water transport in Saudi Arabia. The pipe system will be situated between Arafat and Taif and between Rabigh, Jeddah and Makkah, in the desert of the Arabian Peninsula.

The project aims to ensure adequate water supply for the local populations in the area, which is essential to improve their quality of life.

[www.technicalreview.me/power-a-water](http://www.technicalreview.me/power-a-water)



Photo Credit: Adobe Stock

*The motors and the inverters of Nidec Asi and Leroy Somer will be placed in the 46km-long stretch.*

## Waste management specialist Suez to upgrade vehicles

FRAIKIN AND MASTERNAUT will support Suez with specialised vehicles for waste recycling and recovery including waste collection vehicles, roll-off trucks and specialised vehicles such as road sweepers and skip cleaners. FRAIKIN will provide more than 100 specialised vehicles for waste recycling and recovery with an embedded telematics solution in the centre and west of France. Masternaut's telematics solutions provide real-time visibility into vehicle locations and helps businesses improve driver behaviour. Suez has decided to invest in a telematics solution to reduce fuel consumption and keep their drivers safe. A device on the dashboard gives drivers real-time feedback to help them adopt a safer, more ecological driving style.

[www.technicalreview.me/logistics](http://www.technicalreview.me/logistics)

## Dubai's RTA receives first 50 Metropolis trainsets

FRENCH MULTINATIONAL ALSTOM has delivered to the Roads and Transport Authority of Dubai (RTA) the first of the 50 Metropolis train sets that will run on the city's Red and the Green Lines. The train, produced at Alstom's site in Katowice in Poland, arrived in Dubai after being shipped from Bremerhaven Port in Germany. Alstom will conduct initial static and dynamic tests in the depot over the next few months.

[www.technicalreview.me/logistics](http://www.technicalreview.me/logistics)



Photo Credit: Alstom

*The project, also known as Route 2020, is worth a total of US\$2.92bn and is expected to start commercial service in 2020, in time for the expo.*

## Solar plant to provide energy to Algerian oilfield

SONATRACH'S CHAIRMAN ABDELMOUMEN Ould Kaddour and the CEO of Italy's Eni Claudio Descalzi have inaugurated a 10MW solar plant in Bir Rebaa North (BRN) in Algeria.

The companies have also signed an agreement to expand the scope of their cooperation by establishing a new joint venture that is fully dedicated to Algeria's renewable energy sector.

The partnership aims to install and operate solar power production units at Sonatrach's and Eni's production sites in Algeria. The BRN photovoltaic plant proves that renewable projects can efficiently support upstream oil and gas operations and contribute to the reduction of GHG emissions.

[www.technicalreview.me/power-a-water](http://www.technicalreview.me/power-a-water)

## Kuwait to develop Silk City and five islands

KUWAIT AND CHINA have signed a MoU agreement aiming to form a mechanism to develop Silk City and five Kuwaiti islands.

Kuwait's participation in the Silk Road project reflects HH the Amir Sheikh Sabah Al-Ahmad Al-Jaber Al-Sabah's strategic New Kuwait 2030 vision, which aims to transform the country into a financial, commercial and cultural hub at regional and international levels.

[www.technicalreview.me/construction](http://www.technicalreview.me/construction)



Photo Credit: Essam/Flickr

*The Silk Road project will restore Kuwait's commercial and economic role in the region.*

## Senet and Imtac to deliver smart city solutions in GCC

SENET, ONE OF the leading providers of cloud-based software and services platforms in the GCC, has announced a partnership with Imtac, Oman-based provider of technology solutions.

"The strategic partnership with Senet is expected to allow Imtac to extend its vision to include a greater number of smart city applications in the GCC region," according to Mukesh Arora, COO of Imtac. With an initial focus on smart city solutions including lighting, asset tracking, water management and smart buildings, this collaboration illustrates the growing global adoption of LoRaWAN networks for applications that drive improvements in energy consumption, resource conservation and a variety of new and enhanced municipal services. Imtac, through its IoT and smart city brand 'Empyrean', integrates field assets and automation controls to monitor, manage and maintain industrial systems.

[www.technicalreview.me/it](http://www.technicalreview.me/it)



# EXECUTIVES' CALENDAR 2018-19

## DECEMBER 2018

11-13	<b>Saudi Arabia Smart Grid Conference</b>	JEDDAH	<a href="http://www.saudi-sg.com">www.saudi-sg.com</a>
-------	---	--------	--

## JANUARY 2019

14-17	<b>World Future Energy Summit</b>	ABU DHABI	<a href="http://www.worldfutureenergysummit.com">www.worldfutureenergysummit.com</a>
20-22	<b>Intersec 2019</b>	DUBAI	<a href="http://www.intersecexpo.com">www.intersecexpo.com</a>

## MARCH 2019

5-7	<b>Middle East Electricity</b>	DUBAI	<a href="http://www.middleeastelectricity.com">www.middleeastelectricity.com</a>
5-9	<b>Kuwait Construction Week</b>	KUWAIT	<a href="http://www.kuwaitconstructionweek.com">www.kuwaitconstructionweek.com</a>
10-13	<b>The Big 5 Saudi</b>	JEDDAH	<a href="http://www.thebig5saudi.com">www.thebig5saudi.com</a>

## APRIL 2019

15-17	<b>Oman Mining Expo</b>	MUSCAT	<a href="http://www.omanminingexpo.com">www.omanminingexpo.com</a>
-------	-------------------------	--------	--

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

## ADNOC's update on new integrated gas strategy and downstream plans at ADIPEC

THE ABU DHABI National Oil Company (ADNOC) announced its gas strategy and plans to further develop its refining and petrochemicals' resources and create new downstream growth opportunities during the 2018 edition of the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) that took place from 12-15 November.

ADNOC provided details of how its new integrated gas strategy, recently approved by Abu Dhabi's Supreme Petroleum Council (SPC), will drive the development and delivery of new gas resources that will enable the UAE to achieve gas self-sufficiency with the aim of transitioning to a net gas exporter.

Abdulmunim Al Kindy, director of ADNOC's upstream directorate, said, "Our significant investment in commercially developing our gas resources will enable us to achieve self-sufficiency in gas and transition to being a net exporter of gas. At the same time, it supports our ongoing journey to become a leading, global downstream player that positions Abu Dhabi and the UAE as a major hub in the global refining and petrochemicals value chain."

ADNOC's integrated gas strategy is the first time in ADNOC's history it has been in a position to commercially unlock its abundant gas resources.

Under the new strategy, ADNOC will develop the Hail, Ghasha and Dalma megaproject that tap into Abu Dhabi's Arab formation, which is estimated to hold multiple trillions of cubic feet of recoverable gas. The project is expected to produce more than 1.5bn cubic feet of gas per day around the middle of the next decade.

ADNOC will also unlock other sources of gas, which include Abu Dhabi's gas caps and unconventional gas reserves, as well as new natural gas accumulations, which will continue to be appraised and developed as the company pursues its exploration activities. ADNOC's unconventional resources are expected to produce one billion standard cubic feet of gas per day, before 2030, while the



development of its gas caps is expected to produce an additional 500mn standard cubic feet of gas per day for processing by 2030, from its Umm Shaif gas cap.

Meanwhile, the Abu Dhabi government's historic decision, earlier this year, to open six oil and gas blocks for competitive bidding is expected to identify significant further gas resources. The six onshore and offshore blocks are estimated to hold multiple trillion cubic feet of gas.

ADNOC's new gas strategy will also sustain its LNG production to 2040 and allow ADNOC to seize incremental LNG and gas-to-chemicals growth opportunities – where they arise – from the UAE's dynamic demand/supply position and evolving energy mix. And it will create additional value from international LNG trading expansion, in response to the dominant role Asian markets will play in driving demand for LNG.



*Dr Waddah S Ghanem, Senior Director – Sustainability, Operational and Business Excellence, ENOC, led the keynote presentation on Operational Excellence Management Systems.*

# Workplace safety vital to achieve business growth

The 4<sup>th</sup> Annual Health, Safety & Security Forum, the latest in the highly acclaimed annual event series, was researched and developed by *Health, Safety & Security Review Middle East*.

**WORKER WELL-BEING** WAS the core theme of the 4<sup>th</sup> Annual HSS Forum, committed to promoting health and safety across all sectors in the UAE. The event took place from 27-28 November at the Habtoor Grand Resort, Autograph Collection Dubai.

The Day 1 session began with a keynote presentation from Dr Ola Ahmed Mira, the UAE's Ministry of Health and Prevention Director – OHS and Head. To ensure better business practices, she advised participating organisations to invest in employee health to create a resilient and productive workforce, adding that today's work environment determines the health of an individual. Therefore, it is critical to follow employee

health initiatives and put them first. She also mentioned that the UAE government supports wellness initiatives such as ergonomics training programmes onsite.

Dubai, this year, topped the global list of construction project values. This is because of government spending and a committed multinational workforce in the country. During summer, Dubai records high temperatures but the show must go on. Emirates Global Aluminium (EGA) is one of the biggest aluminium producers in the world. Therefore, expectations pose a challenge. EGA's worker wellbeing initiative to address the challenge of working in a hot and humid environment consists of three steps – awareness programme, hydration

and healthy lifestyle. According to EGA's Executive V-P, HSSEQ and Business Transformation Salman Dawood Abdulla, the producer invests a great deal in technology and data collection methodology to regularly monitor the HSE standards in the organisation. "EGA to date continues to achieve and sustain zero harm to workers."

Following EGA's Abdulla was Dr Raed Al Marzooqi, Head of Occupational Health & Safety Section, Health & Safety Department, Dubai Municipality, who spoke about the Dubai government's efforts to make working at a height safely. "Efforts must be taken by project managers to ensure that equipment used is certified and faultless." In particular, they should avoid using defective formwork



and scaffoldings so that the worker does not fall. He added that many organisations still need to strategise their HSE norms, follow safety regulations and redesign job practices.

Getting to safety during an incident is a priority. But how do you get to safety safely? The global leader in evacuation chairs Evac+Chair's General Manager Gary Hicks demonstrated the concept with case studies from the 2001 World Trade Centre incident.

From construction to oil and gas – the HSE standards are different yet the aim is same: to save lives. Mohammed Suwaidan Al Ameri, Manager – HSE Compliance and Assurance Dept at ADNOC, discussed ADNOC's continuous efforts to achieve the industry benchmark for HSE globally. However, he also said that the goal can only be realised if we have data to record incidents. Right now such data sets are not available in the UAE. But he added that efforts are ongoing to improve employee wellbeing every day at ADNOC.

To address the data collection challenges, Akrivia has introduced an IoT-based health and safety management solution to meet the HSE needs. It can assist in incident reporting, cause analysis, corrective and preventive measures. Nikhil Bhat, Manager Business Operations, explained that it is a cloud-based solution and can be used on premises with a dedicated server.

Jorge Manuel Miranda Dias, Professor, Electrical and Computer, Khalifa University, Abu Dhabi, gave an overview about the use of video surveillance for crowd management that in turn can help in behaviour analysis of individuals.

Day 1 concluded with an Eaton presentation by Qasem Niureddin, Regional Sales Director, Life Safety Division. The electrical company is bringing new products in compliance with the latest safety standards. Its adaptive signages for building evacuations direct people out through the safest route.

Day 2 centred on the different types of methodologies, safety operations and systems that the industry can adopt to achieve worker well-being in the UAE.

The forum started with a workshop focussed on occupational health and safety services in the UAE. It covered a wide array of topics from employee assistance programme – metabolic health, to protecting and promoting health at the workplace (dynamics and biomechanics), improving the performance of and access to occupational health services, providing and communicating evidence for action and practice, incorporating worker health into other policies and promoting happiness and welfare at work.



*The panel discussion in session on Day 1.*



*The panellists included (from left): ESMA's Dr Rehab Al Ameri, UAE Ministry of Health's Dr Ola Mira, Dubai Municipality's Raed Al Marzooqi, ADNOC's Mohammed Suwaidan Al Ameri and Dubai Civil Aviation Authority's Hafidh Masoud Al Zarai.*

Dr Waddah S Ghanem, Senior Director – Sustainability, Operational and Business Excellence, ENOC, led the keynote presentation on Operational Excellence Management Systems. He stated that the management of most organisations may not accept the root cause of an incident, especially if it is the lack of proper maintenance or preventive maintenance by their department that caused the failure. The first step to becoming a High Reliable Organisation (HRO) is to acknowledge the problem and resolve it. "HRO operates on safety, efficiency and reliability. True operational excellence may not be achieved, operational excellence is not a goal, it is a journey, a journey of excellence and to maintain that excellence we need reliability."

According to Shaun Hannam, Head of Safety International Airport Operations, Emirates Group, "Safety should be simplified. The organisation needs to identify the unsafe conditions and unsafe acts (fatigue, inappropriate use of equipment) and create a safe place for an employee. Simplifying an operational approach is more than auditing on paper, it is to focus on the individual and achieve a safe zone for the employee."

Jason Woods, Middle East and India

representative, IPAF, spoke about how reporting an incident is a very important step in keeping the employees safe in the future. A MEWP analysis of 2013-2015 showed that fall from height is the highest fatal accident reported and entrapment is on the rise with three incidents in the UAE.

A presentation 'Workplace health and safety in the UAE: a legal perspective' was given by Will Cadwaladr and Rachael Smith from Clyde & Co through a Mock Criminal Investigation Process. What if incidents can be predicted?

Christine Adeline, Global EHS product manager, SAI Global, discussed how data collection of incidents and analysing them can help provide better insights to managing hazards and risks while identifying, monitoring, analysing and reporting on EHS performance.

The forum ended with a panel discussion on AI versus human workforce where loss of traditional jobs and the use of AI technology in hazardous environments to safeguard the human workforce were among the topics discussed. ■

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



The UAE government meeting on leveraging the transport system.

# Driving sustainable goals

The future of the UAE's transportation sector is being shaped by the ongoing trends globally, including climate change. Rhonita Patnaik reports.

Digitalisation is already proving to be a big help in the UAE's overall sustainability ambitions.

**S**USTAINABILITY IS THE next step of mobility. Be it passenger, commercial, long haul or heavy vehicles – urban transportation will have to take into account the changing environmental impact in fast-growing cities like Dubai and Abu Dhabi.

With radical economic diversification, shifting demographic paradigms, sustainable responsibility and an increasing tourist population, investment in transportation infrastructure has become a top priority. Government authorities and regulators are recognising the transformative effects of smart urban planning and mobility and are applying new policies, frameworks and standards for execution and engagement.

On 28 November, the UAE government launched five national initiatives to develop the transport sector, as part of its efforts to develop smart and innovative transportation system. The initiatives focus on leveraging advanced technologies to boost safety and prepare the infrastructure for autonomous vehicles and high-speed means of transportation, while seeking sustainable and environment-friendly alternatives.

The National Policy for Reducing Transport Sector's Emissions aims to

identify the standards and specifications of electric vehicles, hybrid vehicles and hybrid electric vehicles, which will ensure the sustainability of the transport sector in the UAE.

Abdullah bin Mohammed Belhaif Al Nuaimi, minister of infrastructure development, stressed that the UAE adopts a holistic approach to the transportation sector based on alignment between various stakeholders in order to tackle the overlapping of responsibilities and move towards integration, which will ultimately promote inclusive development and boost the UAE's economy and trade worldwide.

The National Strategy for Smart Transportation was also launched with the aim to establish a global smart transportation system that guarantees integration and compatibility across federal and local levels, enhances traffic safety, reduces the environmental impact and increases economic productivity.

Again, the National Strategy for Regulating Maritime Sector initiative guarantees integration amongst all federal and local entities in order to enhance investment opportunities in this sector.



# STRALIS X-WAY PERFECT CROSSING



Discover the IVECO world  
and all its news on:  
[www.iveco.com](http://www.iveco.com), Middle East area.



Or call now the IVECO  
Representative Office:  
00971 4 2994935

#### BEST PAYLOAD IN THE INDUSTRY

Payload up to 20 ton  
on a 6x4 chassis with  
large "C" section chassis

#### CONTINUOUS OPERATION

Higher autonomy thanks  
to the Cursor engine that allow  
to reduce fuel consumption

#### OUTSTANDING TCO

Thanks to 11.2% fuel saving  
tested by TÜV on the New Stralis,  
optimised driveline and disk brakes

#### MODULAR AND MISSION-ORIENTED RANGE

New front axle (off road) that  
guarantee an higher ground  
clearance

Rugged chassis for light off-road  
missions



**ON-ROAD EXCELLENCE.  
OFF-ROAD ENDURANCE.**

## IVECO

Your partner for sustainable transport

In addition, the new National Maritime Navigation System is based on the integration between geographical information systems (GIS) and the different maritime data provided by all the local, federal and international partners. It aims to classify marine areas, routes and ports to complement security, environmental and customs information.

The meeting highlighted areas of development in the transport sector, which could enhance the UAE's leading position on the national index for road quality. It tackled the most prominent global trends, in terms of the impact of technology and digital innovation on the development of the transport sector, and their positive impacts on the quality and efficiency of roads, also shedding light on ways to leverage the available opportunities.

Emirates Authority for Standardisation and Metrology (ESMA)'s International Conference and Exhibition on Future Mobility on 7-8 November was aimed at encouraging the UAE's research authorities and students to innovate systems in the autonomous and eco-friendly vehicle sector.

Shaikh Theyab Bin Mohammad, chairman of department of transport and member of the Executive Council of Abu Dhabi, stressed that the intelligent transport sector has become a pivotal part of the economy of the future, an important pillar of sustainable development and a central element in achieving its objectives.

### Technology and innovation

Digitalisation is already proving to be a huge support in the UAE's overall sustainability

ambitions. The country is at the forefront of utilising digital transformation to significantly reduce the carbon footprint of its logistical operations in accordance with the sustainability pillar of the UAE Vision 2021 National Agenda.

Dubai Customs is a prominent example of the effect that digitalisation can have on the logistics business in terms of engendering sustainable operating practices. Its recently launched virtual freight and logistics corridor has substantially streamlined the process of transferring goods between shipping operators and port handling authorities. This fully digitalised logistical approach combines automation, syndicated customs procedures and various other advanced technologies to overcome many of the administrative hurdles and bottlenecks that plague more traditional operators. Subsequently, other UAE logistics companies are experiencing much reduced turnaround times, fuel expenditure and carbon footprint ratios.

Even world's leading solution providers are bringing in their best transport solutions to the UAE to match up to the emirates' standards.

A recent report by Scania Middle East maintained that carbon dioxide (CO<sub>2</sub>) emissions can be reduced by more than 20 per cent by simply optimising transport systems. This optimisation, according to Scania, can contribute to the realisation of the UAE National Agenda 2021's Sustainable Environment and Infrastructure pillar.

According to the research, achieving a fossil-free commercial transport system by 2050, as per the Paris Agreement

timeframe, is not only environmentally sustainable but financially attractive from a societal perspective.

Exploring alternatives such as biofuels, which offer the highest CO<sub>2</sub> emissions reductions, as well as electrification, hydrogen fuel cells and e-highways, will pave the way to a fossil-free future.

Özcan Barmoro, managing director of Scania Middle East, said, "The transportation industry must adopt rapid and immediate change in order to contribute substantially to achieving global goals and realising a fossil-free world by 2050.

"Scania Middle East welcomes the UAE's decision to implement Euro 4 emissions level for heavy-duty vehicles. The UAE already has the fuel quality to move to Euro 6, which is the required emission level in Europe. We hope and expect the other GCC countries to follow the UAE," he added.

Scania simultaneously launched in the UAE, on 1 November, its new next generation trucks, thus setting a new standard for the premium transport industry. The result of ten years of development work and investments of around US\$2.84bn, the new truck generation builds on the values, strategies and innovations.

Loaded with enhancements, the new truck range further improves Scania's already strong fuel performance due to factors such as improved powertrains and better aerodynamics.

Speaking on the launch of the new range in the UAE, Barmoro said, "Inspired by our core value of putting the customers first, global trends and challenges, this generation of trucks is designed to better meet the needs of our customers and the world we live in. It has efficiency in both fuel economy and performance incorporated into a design inspired by the Scania heritage. Our new truck range will contribute to the ambitions of the UAE to become a sustainable nation, powered by smart technology solutions."

Earlier this year, environmental management company Bee'ah announced that it would be buying 50 Tesla Semi heavy duty electric trucks to add to its 1,000-strong fleet of waste collection and transportation vehicles. This order could be the necessary kickstart needed to prompt heavier investment in smart mobility solutions across the Middle East.

The Tesla Semi trucks, which enter production in 2019, will primarily be used for waste collection and transportation, including transportation of materials for



Photo Credit: Scania Middle East

Scania Middle East's  
managing director  
Özcan Barmoro.



recovery. Overall, Bee'ah's modernised fleet will contribute to reducing the company's carbon footprint by using the new Tesla Semi trucks alongside its existing electric vehicles, vehicles that run on compressed natural gas (CNG) and those that run on bio diesel, in addition to the boats that use solar energy while cleaning water bodies.

Bee'ah also launched a joint venture ION – a sustainable commercial transport company – with Crescent Enterprises in June 2018. ION's operations include the development, acquisition and management of electric vehicle (EV) fleets for commercial use, deployed through platforms such as ride-hailing services, as well as corporate and government fleets.

Meanwhile, the new Ford Trucks tractor F-MAX, which was launched at IAA Commercial Vehicles 2018 in Hanover, Germany, won the '2019 International Truck of the Year' award for technological innovation, comfort, safety, drivability, fuel economy, environmental footprint and total cost of ownership (TCO).

Ford Otosan general manager Haydar Yenigün stated, "We developed our new tractor with Ford's principles of comfort, power, efficiency and technology at its heart."

The 12-speed ZF automated transmission and different drive modes such as Eco-Mode and Power-Mode help optimise fuel consumption. The new F-MAX is also empowered by a variable-geometry turbocharger, a water pump and compressor with multiple working speeds and 400kW engine brake power, which achieves 1,000kW total braking power with the optional interarder.

Ford Trucks also offers a revolutionary technology 'ConnecTruck' with the new F-MAX with many benefits. These include remote monitoring of the vehicle using remote diagnostic and over-the-air software. The special topographic map means that F-MAX is able to analyze road conditions, allowing the vehicle to drive at optimum speeds, thereby reducing fuel consumption by up to four per cent.

At the recently held IRU World Congress in Oman, Joachim Drees, CEO of MAN Truck & Bus, stressed that as a manufacturer of trucks and buses, it is their responsibility to provide the right transport solutions to its customers. "And this is why we have a very clear e-mobility roadmap in place. Additionally, MAN is taking a leading role in the automatisisation and digitalisation of commercial vehicles to make our customers' business operations simpler and more profitable."



*The UAE Government is targeting up to 15 per cent reduction in carbon emissions by 2020 – and a 20 per cent adoption of EVs within its own fleet.*

Photo Credit: Adobe Stock

MAN Truck & Bus unveiled a fully-electric version of the instantly recognisable MAN Lion's City bus, the low floor, low entry public transportation bus. The fully electric version can sustain a range of up to 270km and can be charged in just three hours. In addition, the electric eTGE van was introduced as the perfect vehicle for urban transportation needs, offering a load capacity of up to 1.75 tonnes as well as a range of up to 160km.

### Battery storage advances

Driven by the growing demand for EVs, lithium-ion manufacturing has significantly scaled up over recent years, resulting in the price per kilowatt-hour of battery power falling to just US\$230 in 2016, compared with almost US\$1,000 per kilowatt-hour in 2010.

The plummeting costs of battery storage and its ability to provide a cost-effective solution to the problem of intermittency has resulted in a surge in renewable projects being approved and added to the pipeline across the GCC, including the UAE. Dubai's Roads and Transport Authority (RTA) have invested in 300 hybrid taxis which represent six per cent of the total taxi fleet. They are working to convert 50 per cent of the taxi fleet to hybrid cars by 2021. DEWA have already implemented 100 EV charging stations in Dubai. A mandate has been issued that 10 per cent of the government investment in new vehicles will be electric and hybrid cars by 2020. The UAE President's office has launched the 'EV Accelerator Initiative' to remove the barriers associated with introduction of EVs in the UAE.

Around 55 new models of EVs are expected to be introduced in UAE markets

over the next year to encourage residents to opt for green transportation.

Ivano Iannelli, CEO of Dubai Carbon, said as major car brands like Mercedes, BMW and General Motors are introducing new models of EVs, UAE markets will see a breakthrough in green mobility by 2020.

In 2017, the Dubai Electricity and Water Authority (DEWA) introduced several incentives for e-car users including free charging until end of 2019, free 'Salik' (toll) tag, free parking spots across Dubai and exemption from vehicle registration and renewal fees. E-car users can now charge their vehicles at 200 EV Green Charger stations installed across Dubai roads, malls and tourist destinations.

Chevrolet has entered the EV market in the UAE and the Middle East with the introduction of the Bolt EV. In November, General Motors (GM) also signed an MoU with Dubai-based Diamond Developers to further the adoption of EVs in the emirate. "As GM works across the future trends of transportation with autonomous vehicles, alternative propulsion and connected and sharing driving, we know that achieving this vision requires close collaboration and alignment with cities, governments, and countries around the world," said John Roth, president and managing director of GM Africa and Middle East.

### The way ahead

As the UAE plans its roadmap for the future, transportation will play a major role to achieve its ambitious sustainability targets. The only way forward is to move with the Green Mobility Agenda to create a low-carbon economy. ■

# NAVYA: The new breed of mobility

Masdar City in Abu Dhabi to introduce MENA region's first operational autonomous mobility service with the unveiling of NAVYA Autonom Shuttle.

**M**ASDAR CITY, ABU DHABI'S flagship sustainable urban development, launched its NAVYA autonomous vehicle in October, thus marking the next phase of its sustainable mobility network.

Capable of transporting up to 12 people, the 'Autonom Shuttle' is designed by the French autonomous vehicle pioneer NAVYA. It is a self-driving electric vehicle dedicated to first and last-mile transportation. It carries up to 12 people with eight seating, is fully autonomous and has a top operational speed of 25km/hr.

Having successfully completed a rigorous pilot phase, the NAVYA shuttle will shortly begin a regular all-day service linking Masdar City's parking areas with its main podium. The service will be the first operational use of the technology in the Middle East and North Africa.

Yousef Baselaib, executive director for Sustainable Real Estate at Masdar, said, "With urban mobility at the forefront of the sustainability conversation in the UAE and worldwide, and with the business, residential and research community here at Masdar City continuing to flourish, Masdar is building on its legacy as a catalyst for clean-tech innovation to bring cutting-edge and commercially viable autonomous mobility to the streets of Masdar City."



The NAVYA autonomous vehicle in Masdar City.

Photo Credit: Masdar

"Masdar City's iconic personal rapid transit (PRT) system, which has carried more than two million passengers in eight years of operations, established a benchmark for driverless and sustainable mobility in the UAE," added Baselaib. "The introduction of our first NAVYA shuttle represents the next exciting phase of the city's mobility journey."

Working closely with Abu Dhabi Department of Transport and NAVYA Group, the NAVYA shuttle was customised to mitigate the effects of the region's extreme heat and humidity on battery performance. Rigorous health and safety testing was also carried out

to safeguard passengers and pedestrians.

The vehicle uses on-board cameras and sensitive LIDAR sensors creating 3D and 2D 'perception maps' to detect obstacles and their position relative to the vehicle. GPS technology further allows the vehicle to define its precise location, as well as V2X to communicate with traffic lights.

Mohammed Darwish Al Qamzi, general manager of Integrated Transport Center, Department of Transport in Abu Dhabi (DoT), added that the arrival of autonomous mobility at Masdar has been the result of a highly successful collaboration between the DoT, Masdar and NAVYA, which has further raised the profile of Abu Dhabi as the leader in environmental best practice and sustainable urban development.

Implementation of Masdar City's wider transportation strategy will see the arrival of a fleet of seven Autonom Shuttles from next year. Over time, the shuttle route map will be expanded to connect the Etihad Eco Residence complex above the city's North Car Park with the headquarters of the International Renewable Energy Agency (IRENA) and Majid Al Futtaim's My City Centre Masdar shopping mall due for completion in the first half of 2019. ■



The vehicle was demonstrated at the Abu Dhabi Sustainability Week in January 2018.

Photo Credit: Masdar



# Lift it or Shift it..

with our material handling solutions



## ► Central Tire Inflation System (CTIS)



## ► Utility Specialized Trucks



## ► Rough-Terrain (RT) Cranes (35-100 Tons)

ZOOMLION



## ► Forklifts (Diesel - Gasoline LPG - Electrical)



مجموعة الربيع والنصار  
RABIAH & NASSAR GROUP

Passion to  
Construct

Unified Number  
920007873

Mobile  
+966 54 277 7311

Email  
B2B@rancogroup.com

rancogroup

rancogroup

[www.rancogroup.com](http://www.rancogroup.com)

The COORDINADORA team supervises the loading operations at Gijón, Spain.



Juan H Madsen.

# Meet the heavyweight of freight transportation

Director Juan H Madsen talks about COORDINADORA's success stories in the GCC in an interview with Rhonita Patnaik.

**S**PAIN-BASED TRANSPORT ENGINEERING company COORDINADORA opened its first regional office in Abu Dhabi almost three years ago and the company is now reaping the benefits of its seamless cargo offerings with projects across the GCC. Its own engineering department helps COORDINADORA design, plan, organise, execute and handle the transport of heavy cargo, both in offshore and the rest of the oil and gas sector.

Speaking to *Technical Review Middle East*, Juan H Madsen opens up about the opportunities that its ETM (engineered transport management) concept has created for the clients and itself.

The most demanding project to date for COORDINADORA in the Middle East has been transporting equipment to Saudi Aramco's Fadhili Gas Plant project from Spain. Beginning of May 2018, COORDINADORA has carried out the transport process of five slug catchers of 2,000 tonnes each. The project has recently ended with the delivery of the last piece of equipment on the 18 of November.

Madsen says, "The vehicle combinations we are using for the Fadhili project is two 30 triple axle SPMTs combinations. This is a very large amount of SPMT axles, taking into account each slug

catcher has to be moved almost 100km inland from the port and we did it on convoys. So, normally we had a total of 180 axles on a small stretch of public road. Every small detail was taken into consideration and we followed all stages of operation onsite."

Madsen is pleased that COORDINADORA's ETM methodology has found a lot of takers in the Middle East, given the professional and safety convenience of its application whenever there are heavy cargoes and/or challenging scenarios to face. With back to back business in the Middle East, Madsen is now planning to recruit local workforce in the UAE who can become COORDINADORA's backbone in the region. This also means that the company is looking to align itself to ADNOC's in-country value (ICV) strategy.

He said, "We are working with the Madrid technical team at the moment for the Middle East business but we are expecting higher number of projects in few months. Hence, we are preparing ourselves to be able to cope with multiple projects at the same time while maintaining our tendering capability in full capacity. For the opportunities we predict to materialise in the coming months, we will have to reinforce the technical muscle here significantly in 2019." ■







*The IMF's managing director Christine Lagarde also noted recently that Egypt now appears to be on much firmer ground than when it commenced its revival a few years ago.*

Photo Credit: World Bank

# Egypt: Tourism hotspot to a business hub

Major structural reforms are having a positive impact on Egypt's economic transition, including an uplift in the vital tourism and energy sectors, yet there remains a long way to go. Martin Clark reports.

**The implementation of reforms, along with the gradual restoration of confidence and stability, are starting to yield positive results. In fiscal year 2018, real GDP grew at 5.3 per cent, compared to 4.2 per cent in FY17**

**S**LOWLY, BUT SURELY, Egypt is putting its house back in order. After the tumult of the 2011 Arab Spring, and the ousting of former president Hosni Mubarak, the tremors have levelled out and Egyptians are once more looking ahead with greater confidence.

While volatility continues across pockets of the wider region – notably in war-torn Yemen, Syria and persistent tensions in Israel/Palestine – a period of greater stability in what remains of the Middle East's most influential states will provide some welcome relief, especially for investors.

Egypt, one of the world's oldest civilisations, has played a central role in Middle Eastern politics throughout the modern era and is expected to continue to do so.

Its economy is also the second largest in the Arab world after Saudi Arabia although it struggles to support a large and growing population of around 96mn.

It may not always be straightforward – life rarely is – but there is a sense that this strategic North African state, home to Africa's largest city, Cairo, is once again on the up.

This is no better illustrated than through the oil and gas sector: after a period in which gas exports virtually dried up and the country faced up to shortages, things have now come full circle.

Massive investment in the country's energy industry post-independence has fuelled a raft of new discoveries offshore in the prolific Nile Delta area, driving up oil and gas production and opening up new export opportunities. It has positioned the eastern Mediterranean as one of the world's exploration hotspots.

The recovery has not gone unnoticed by the ratings agencies.

Moody's Investors Service changed the outlook on the government's long-term issuer ratings to 'positive' from 'stable' a few months back.

At the time, Moody's said the decision reflected "the continuing structural improvements in the fiscal and current account balances, resulting from the ongoing implementation of the home-grown IMF-backed reform programme".

The International Monetary Fund and





مجموعة محمد العجمي  
MOHAMMED AL-OJAIMI GROUP



**42**  
Years of trust  
in the Kingdom

**Mohammed Al-Ojaimi Cont. Est.**

Electrical Works  
Mechanical Works  
Civil and Site Development Works  
Telecommunication Works

**Al-Ojaimi Energy Services**

Testing and Commissioning Services  
Automation and Control Services  
Engineering Services  
Trading Services

**Al-Ojaimi Industrial Group**

Distribution Transformers  
Transformer Substations  
Distribution Panel Boards  
Package and Unit Sub-Stations  
LV Current Transformers  
Cable Lugs & Connectors | Link Boxes  
Insulated Wires | Copper Conductor



**MATCO**



**SWANCO**

Tel.: +966 13 8221800/8325064 - es.info@alojaimi.com - www.alojaimi.com

other multilateral agencies have played a key role in helping transition Egypt back to a new normal. While the many challenges facing its government are numerous, pressing and very real, there is at least a pathway and now some measurable progress.

### Growth forecasts

In terms of economic growth, things are certainly moving forward, though perhaps not as swiftly as many would like.

The World Bank's view is that as the momentum of the government's reform agenda is sustained, activity is likely to improve, and any financial and economic imbalances are projected to narrow further.

Real gross domestic growth (GDP) is forecast to grow by 5.3 per cent during the 2018 financial year (compared to 4.2 per cent in 2017), rising gently to 5.8 per cent by 2020, it says.

Growth is expected to be driven largely by resilient private consumption and investment, in addition to a gradual pick-up in exports, notably from the all-important tourism sector as well as the gas industry.

Behind it all, is a bold and transformational reform programme, started by the government in 2014, aimed at spurring the economy, enhancing the country's business environment, and setting the stage for more balanced and inclusive growth.

The first wave of reforms focused on rebalancing the macro economy, including passage of the VAT Law, reducing energy subsidies, containing the wage bill, and the liberalisation of the Egyptian Pound.

The second wave of reforms focused on improved governance and the investment climate, including the Civil Service Reform Law (passed in October 2016) and other policies to remove investment barriers and attract local and foreign investments.

At the same time, to alleviate adverse effects of the reforms on the poor, the government has scaled up key social protection short-term mitigating measures, including through higher allocations of food smart cards and targeted cash transfer programmes.

It has all been underpinned by a huge

US\$12bn package from the IMF, and support from others. That includes regional kingpin Saudi Arabia, which has pledged vast sums in support of various Egyptian projects, including power stations and even a possible US\$2bn causeway to connect the two countries.

Saudi Crown Prince Mohammed bin Salman was in Egypt in November to bolster economic ties.

### Tourism industry

The implementation of the reforms, along with the gradual restoration of confidence and stability after such a hectic few years, are starting to yield positive results, including thawing relations with investors.

It has been a difficult journey, hardly surprising perhaps given that Mubarak had served as the nation's president for 30 years.

The transition appears to be moving into gear now, however.

Nonetheless, Egypt's comparative stability – even during its own time of crisis – remains impressive, especially given the uncertainties that surround it, notably in Syria and across the border in oil-rich Libya.

One key barometer of success is the tourism industry, which has likewise faced an array of challenges in past years, including the Russian airliner crash of 2015.

The aircraft is believed to have been downed by a bomb soon after take off from Sharm el-Sheikh airport. There are also still no direct flights from major tourist markets like the UK and Russia to the country's biggest Red Sea resort.

Still, tourism has been gradually recovering since the 2011 uprising, helped along the way by a currency float in late 2016 that halved the Egyptian pound's value, making the country a relatively cheaper destination for foreign visitors.

Visitor numbers are on the up. In the first half of 2018, arrivals jumped 41 per cent from a year earlier to reach five million. It could mean annual tourist numbers top 10mn for the first time since 2012. In 2010, before the Arab Spring, a total of 14.7mn people visited Egypt.

This is driving up foreign currency earnings. Again, in the first half of this year, tourism revenues jumped 77 per cent to around US\$4.8bn, compared with the same period last year.

If these numbers are doubled for the full calendar year, it still puts Egypt way behind pre-2011 levels, but nonetheless indicates that the trend is on the up.

A measure of its significance, Egypt's tourism minister Rania Al-Mashat, says the industry will contribute around 15 per cent of the nation's economic output this year.

As well as the weak pound, it has been helped by easing security tensions, plus flagship development projects like the new Grand Egyptian Museum, part of a large complex two kilometres from the pyramids and the Sphinx of Giza.

### Oil and gas

Egypt's prized tourism assets – that include the Great Pyramid of Giza, outside the capital, as well as the Valley of the Kings in Upper Egypt, near the great cities of Luxor and Aswan – remain major draws for all visitors, as they have done for centuries.

Aside tourism, the economy also depends heavily on cash remittances from Egyptians living and working abroad, mainly in Saudi Arabia and the Gulf countries, as well as agriculture, concentrated along the banks of the famed Nile River.

The revival of the oil and gas sector is likewise providing a timely boost to the economy. This was triggered by the discovery of the mighty Zohr field by Italy's Eni in 2015, which has entered production just two years later.

The largest gas field in the Mediterranean with around 30 trillion cubic feet (tcf) of reserves, it is now producing some two billion cubic feet of natural gas per day (bcfd), which equates to around 365,000 barrels of oil equivalent per day (boepd).

Eni hopes to raise this to a plateau production in excess of 2.7 bcfd during 2019, in collaboration with state-owned Egyptian Natural Gas Holding Company (EGAS).

But Zohr triggered a wave of new drilling and exploration in the area that has yielded further successes, such as BP – a partner in the Shorouk concession, which contains the Zohr field – this year approved its Harmattan and Qattameya Shallow projects, targeting first gas in 2020.

In September, Cairo also signed more deepwater exploration deals worth around US\$1 billion with Shell and Malaysia's Petronas for the drilling of eight more wells in the West Nile Delta area.

**The International Monetary Fund and other multilateral agencies have played a key role in helping transition Egypt back to a new normal.**



With more blocks set to be awarded before the year-end, petroleum minister Tarek El Molla has said he hopes the sector will generate US\$10bn worth of foreign investment during the 2018-19 period.

The net impact of all this activity could yield immense financial gains for the wider economy.

Once a big gas exporter, Egypt has now been able to halt costly imports, according to Molla, saving US\$250mn per month by no longer buying in liquefied natural gas (LNG). Egypt began importing LNG in 2015 when its diminishing gas output failed to keep up with soaring domestic demand.

It could also mean a new lease of life for the country's own LNG exports, out of the Idku and Damietta plants on the Med coast, with Cairo hoping to position Egypt once again as a regional hub for LNG trading.

### Infrastructure boost

One way or another, these changes are bringing about a behind-the-scenes effect on the government's financial status too.

Gross government debt declined from 103 per cent of GDP in 2016/17 to around 93 per cent of GDP in 2017/18, notes the IMF, supported by fiscal consolidation and higher growth.

The Central Bank of Egypt's prudent monetary policies have likewise helped bring down annual inflation from 33 per cent in July 2017 to 11.4 per cent by May 2018.

But the work continues on all fronts.

Expanding the nation's infrastructure has been another important part of repackaging the country to the world in the aftermath of 2011.

That includes a major US\$8bn expansion of the strategic Suez Canal, the narrow waterway that connects the Mediterranean with the Red Sea. The canal is the fastest shipping route between Europe and Asia and one of the Egyptian government's main sources of foreign currency. It has now completed a second 35km channel allowing parallel traffic through the canal.

The government hopes that it will boost traffic and earnings from the canal, from 49 to 97 ships per day, doubling daily traffic and increasing annual revenues to US\$13bn by 2023.

That has yet to materialise, amid the general slowdown in global trade, however revenues for the 2017-2018 financial year increased 11.5 per cent to a record high US\$5.585bn, the canal authority said in June (up from US\$5.008bn a year earlier).

At the same time, Egypt has been rolling out swathes of new power generating plant to meet rising domestic energy requirements.

*The revival of the oil and gas sector is likewise providing a timely boost to the economy.*



Photo Credit: vladimirilic/Adobe Stock

This has, in part, been facilitated by the surge in investment in offshore gas output, with much of the country's energy production now switched to natural gas.

Renewable energy has also become a priority, especially solar power, given the country's abundant sunshine.

As well as investment in new tourism infrastructure, the government is also keen to direct more funds into areas such as telecommunications, transport, healthcare and education.

### Firm foundations

Other initiatives have been launched by the government in a bid to attract more diverse sources of investment, including into the burgeoning property market.

This includes the offer of a residency permit to foreigners who acquire property worth US\$100,000 or above.

Meanwhile, Egypt's strong population growth continues to present opportunities for the services sector, from mobile phones and hotels, through to banking and financial services.

The retail sector is growing rapidly too, attracting familiar new entrants such as UK high street brand Marks & Spencer in recent years.

With as much as 50 per cent of Egypt's population under 25 years of age, it is an extremely youthful and vibrant market, although this presents challenges too, certainly in terms of job creation.

The sweeping reforms made over recent years have been designed to put the country on a more stable platform for dealing with these and other tests going forward. While these reforms have not come without difficulties — notably, squeezing the poor further — there is a recognition they are beginning to pay off.

According to Moody's, early signs of business environment reforms offer the prospect of a sustainable, inclusive growth path capable of improving competitiveness and absorbing the country's rapidly expanding labour force.

"The substantial progress made by the government in implementing reforms agreed with the IMF has imparted a degree of financial stability not present earlier in the decade," it notes.

Foreign exchange buffers have been rebuilt, the debt burden has begun to fall and a degree of political stability has been achieved and seems likely to be sustained, increasing the likelihood that the general policy direction will be maintained, it adds.

The IMF's managing director Christine Lagarde also noted recently that Egypt now appears to be on much firmer ground than when it commenced its revival a few years before.

"Egypt's economy is showing strong signs of recovery, and its economic growth is among the highest in the Middle East," she said in September. ■



Photo Credit: Herrenknecht

# The passage to development

Egypt has hired Germany's Herrenknecht expertise to deliver tunnel boring machines for new tunnels at Port Said and Ismailia to link the Sinai Peninsula more closely to the Egyptian heartland that will open up new economic opportunities.

**Herrenknecht trained 40 Egyptian engineers at its headquarters in Schwanau, Germany, and on the jobsites in Egypt to provide on site support.**

**I**N DECEMBER 2017, Egyptian President Abdel Fattah el-Sisi inaugurated several development projects in the East Suez Canal development zone in northern Ismailia, including tunnels and two floating bridges to facilitate commercial and civilian access to Sinai and the East Suez Canal Development Zone.

The East Suez Canal development project, which is part of the larger Suez Canal development plans, was launched in 2015. The project aims to develop major residential and industrial centres in the central Suez Canal governorate of Ismailia.

The Suez Canal tunnels project aims to ease congestion in the area due to industrial development and population growth.

Instead of spending up to five days in a ferry, crossing the Suez Canal via the efficient tunnels will only take 10 minutes in future. On both sides of the canal, the North African country has invested in commercial and

industrial business parks and residential areas.

German tunneling expert Herrenknecht is providing the tunneling technology for the construction of the necessary underground transport infrastructure: four large-diameter Mixshields (13,020mm). From September 2015 to January 2016, four Mixshields were handed over to the customer at the Schwanau plant before beginning their sea journey to Egypt by freighter.

The four new highway tunnel drives under the canal were excavated in 19 months by two construction joint ventures, the Arab Contractors/Orascom JV and the Petrojet/Concord/CMC JV. To help the project run smoothly, Herrenknecht trained 40 Egyptian engineers at its headquarters in Schwanau, Germany, and on the jobsites in Egypt to provide on site support.

Herrenknecht's role in the project includes support for optimal jobsite



operations with a comprehensive technology and service package; VMT looks after navigation and process data management systems and Herrenknecht Formwork is equipping the lining segment production plants with moulds. Multi-service vehicles at the jobsite are being taken care of by Techni-Métal Systèmes.

**The current fixed link under the Suez waterway is the 1.63km long single tube bi-directional two lane Ahmed Hamdi Tunnel at the southern end of the Canal.**



Photo Credit: Herrenknecht

*A total of four tunnel boring machines were supplied by Herrenknecht for the construction of two new road tunnels under the Suez Canal.*

As early as January 2018, excavation was complete on the first of two new twin-tube road tunnels being built under the Suez Canal at Port Said.

In addition to the transport infrastructure, Herrenknecht technology is also being used

for the construction of supply and disposal lines. Two HDD rigs from Herrenknecht are installing pipelines for the expansion of the power grid. Two AVND machines in turn are handling the construction of water pipelines for agriculture. ■

**FLOW**

# ENABLING MULTIPLE OPERATIONS

Implementation of bold plans for centennial infrastructure calls for supreme power and performance. In complex environments, together we can ensure smooth operations and trailblazing results. Just as in Doha where 21 EPB shields created a high class metro system.

[herrenknecht.com/flow/](http://herrenknecht.com/flow/)

**PIONEERING UNDERGROUND TOGETHER**

**HERRENKNECHT**  
Tunneling Systems



*This year, the UAE ranked  
in the global top 20.*

Photo Credit: Alexey Strop/Adobe Stock

# Making business easier

The top 10 economies in the ease of doing business ranking share common features of regulatory efficiency and quality that includes sectors such as construction, utilities and financial sectors. The UAE ranks 11th, jumping 10 positions up from last year. A World Bank report explains how the economies in the Middle East and North Africa region have improved their business reforms to make the cut.

**E**CONOMIES IN MENA carried out a record number of reforms to improve the ease of doing business for domestic small and medium enterprises, says the recent World Bank Group's *Doing Business 2019 – Training for Reform* report.

A total of 43 business reforms were implemented in the region during the past year, compared with 29 the previous year. Fourteen of the region's 20 economies carried out reforms that help create jobs and stimulate private enterprise.

This year, the UAE (the only country from the region) was ranked in the global top 20 and Turkey being the sole economy that has made it to the World Bank's list of economies with notable improvement in *Doing Business 2019*.

The four notable efforts made by the UAE included the elimination of all fees for

industrial and commercial electricity connections and improving online registration for new businesses. The UAE also strengthened access to credit and made registering property easier by increasing the transparency of the land administration system.

The GCC country is an important trade hub with a robust economy. TIR (or International Road Transport) and offers a

huge potential for improving transit connectivity between ports and borders with free zones and integrating them into the global logistics chain.

Mohammed Jumaa Busaiba, director general of the Federal Customs Authority in Dubai, said, "Using TIR in our intermodal transport increases substantially the UAE's global competitiveness."

Preparations for the roll-out of TIR across all seven emirates are proceeding, with plans for further TIR intermodal transport operations in the pipeline.

Meanwhile, Egypt carried out five reforms in the past year, the highest number in a decade. It made starting a business easier by establishing a one-stop shop and strengthened minority investors' protections by increasing corporate transparency. Other reforms include improving access to credit and making it

**Since doing  
business began in  
2003, there have  
been reforms for  
starting business**



easier to pay taxes and resolve insolvency.

While Jordan has made contract enforcement easier, the region's largest country, Saudi Arabia, made Trading Across Borders easier, among other improvements.

Collectively in 2018, the MENA economies focused on improvements in the areas of Starting a Business and Protecting Minority Investors (SMEs), with seven reforms in each area.

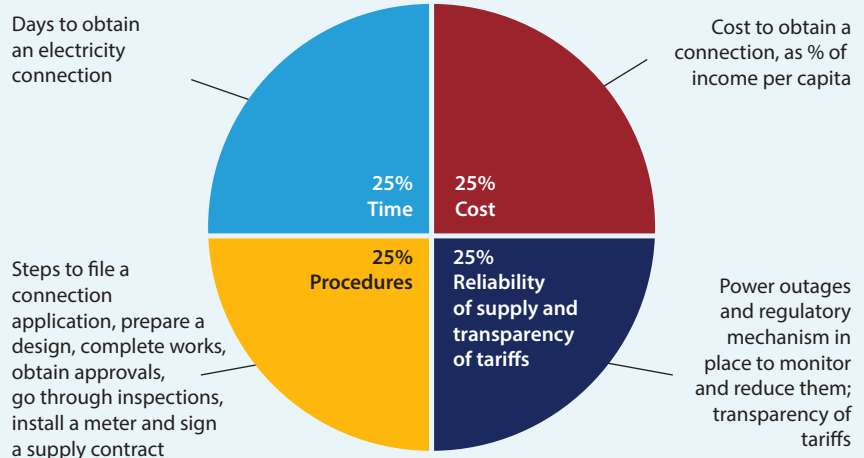
"Governments have the enormous task of fostering an environment where entrepreneurs and small and medium enterprises can thrive," said World Bank Group President Jim Yong Kim. "Sound and efficient business regulations are critical for entrepreneurship and a thriving private sector. Without them, we have no chance to end extreme poverty and boost shared prosperity around the world."

"The significant acceleration in the pace of reforms in MENA is an encouraging demonstration of countries' commitment to nurture entrepreneurship and enable private enterprise. Going forward, policy makers should focus on adopting global best practices in areas where they are most needed," according to Santiago Croci Downes, programme manager of the Doing Business unit.

**Economies of the MENA significantly accelerated the pace of reforms in 2018 with 43 reforms, compared to 29 the previous year.**

### Getting electricity: efficiency, reliability and transparency

Rankings are based on scores for four indicators



Note : The price of electricity is measured but does not count for the rankings.

### Power portfolio

Rising electricity demand and growing fiscal constraints have encouraged governments in the MENA region to consider more cooperative approaches to delivering reliable and affordable electricity services.

Today, the region performs best in the area of Getting Electricity. The UAE maintained its first global ranking, for the second consecutive year, with scores of 100 per cent in the 2019 report, surpassing major European and American utilities.

With regards to Registering Property and Paying Taxes, the average time to transfer property in the region is 30 days, compared to 20 days in OECD high-income. Saudi Arabia and the UAE are the region's best performers in this area, with just 1.5 days needed to transfer property in each economy.

However, Getting Credit is hardest in

MENA, partly due to insufficient protections for lenders and borrowers in collateral and bankruptcy laws.

The region also underperforms in the areas of Trading Across Borders and Resolving Insolvency. For example, the cost for complying with the border requirements for exporting is US\$442 on average and it takes 58 hours, compared with US\$139 and 12.5 hours on average in OECD high-income economies. And, in cases of bankruptcy, the average recovery rate in the region is 26 cents to the dollar, compared with 70 cents in OECD high-income economies.

Since Doing Business began in 2003, Starting a Business has seen the most reforms in the MENA. As a result, the average time to start a business in the region has more than halved to 21 days, from 47 days in 2003, and the cost has also been halved to 22 per cent income per capita, from 59 per cent in 2003. ■

Photo Credit: World Bank

**The Ultimate Source for Pressure and Vacuum for your industry**

Gardner Denver provides reliable, low-pressure products that serve a wide range of manufacturing and process industries.

enquiries.fze@gardnerdenver.com  
**Tel: +971(0) 4881 1744**  
[www.gardnerdenver.com](http://www.gardnerdenver.com)

For more information, contact us today

*NFT's tower cranes are used in almost all projects across the GCC region.*

*Photo Credit: NFT Specialized in Tower Cranes*

# Towering success

Nawar Al Zahlawi, business development manager at NFT Specialized in Tower Cranes, reflects at a good year NFT has witnessed in 2018, thus determining its success going forward.

**Technical Review Middle East (TRME): NFT Specialized in Tower Cranes has been winning accolades this year. Can you tell us about the company's tools to success?**

**Nawar Al Zahlawi (NAZ):** NFT was the first company to predict the market demand for tower cranes. This gave us the ability to capitalise on this and fulfil the demand.

NFT is also the exclusive dealer of world-leading crane brands such as Potain and Manitowoc in the Middle East and across the globe.

Our technical team carries more than 20 years of expertise with regards to safety and equipment in specialised cranes.

In 2016, NFT launched its Safety First! Campaign in Dubai with Manitowoc. After numerous positive response by our clients in the UAE, the campaign set foot in Saudi Arabia this year to promote safety at the Riyadh metro project site.

The agenda includes NFT's 15-minute induction on how to work safely with Potain Tower Cranes on jobsites. Post induction, the participants who also include riggers, operators and supervisors, receive a bag of safety essentials with Potain's Tower Crane multilingual safety booklet (in Urdu, Hindi, Arabia, Turkish and English), CE-certified safety gloves, CE-certified safety glasses, first-aid kit, cooling water bottle, torch and face bandana to protect against the dust.

**TRME: How do you view the growth of the crane market in the GCC?**

**NAZ:** NFT is optimistic about the future of the crane industry in the region. We can say with certainty that things will improve and more construction projects will come up. NFT's strategy is to continue to look at the demand and see what type of construction is anticipated and to add to our fleet the right machines to meet this



*Nawar Al Zahlawi.*

*Photo Credit: NFT Specialized in Tower Cranes*

demand. We buy, on an average, 150 brand new tower cranes every year and our competitive advantage is our ability to supply the right equipment no matter how challenging a project is.

We also anticipate demand in the construction of renewable energy projects like solar panels and wind farms across the Middle East region. As Saudi Arabia continues to declare new projects owing to Vision 2030, currently more than 5,200 construction projects are underway in the kingdom. The market looks promising. With the UAE already planning to diversify from its oil economy, the government is accelerating progress on projects such as Ghadan 21 in Abu Dhabi and Expo 2020 Dubai.

The GCC rail project also is back on track with the Middle East governments declaring new projects and we see a lot of work coming up. Another market to watch out for is Oman.

**TRME: What kind of cranes do you see in demand in regional projects besides tower cranes as well as the technology trends?**

**NAZ:** The tower crane sector is ever evolving

and the new types and models of tower cranes are quickly entering the market. Demand, terrain conditions, cost-to-value propositions, time saving factor are just some of the reasons as to why new models of tower cranes are being introduced. One of the latest of these models is the hydraulic tower crane that is shifting heads in the industry.

Unlike smaller cranes, which rely on electric or diesel-powered motors, hydraulic cranes include an internal hydraulic system that allows the crane to lift heavier loads. This fluid-filled hydraulic system enables the crane to transport objects such as heavy shipping containers and tractor trailers, which are well beyond the size and scope of any other lifting device. Hydraulic tower cranes are known for their power and increase in capacity of lifting objects. The Potain MCH 125 is the first topless luffing jib model from Potain and its unique hydraulic technology makes it easier to assemble and faster to operate. With a cutting-edge design and new technology, the crane combines the advantages of Potain's MCR luffing jib cranes and MCT topless cranes.

Apart from that, gigantic luffing and topless tower cranes such as the MR 608 that can lift 32 tons at 60 metres and nine tons on tip and MR 418 with a hook height per base of 89.4 metres are seeing a rise in demand. We also expect that there is going to be a larger need for giant tower cranes (60 tons and above) and an increasing appreciation for self-erecting machines especially in Saudi Arabia with the government's emphasis to build more houses. NFT is to serve both the needs.

Besides equipment, technology plays a huge role in improving the efficiency of construction works. Dedicated e-commerce platforms and mobile apps can go a long way to push for growth in the sector. ■





# MIDDLE EAST ELECTRICITY

**ENERGISING THE INDUSTRY**

5 - 7 MARCH 2019 | DUBAI WORLD TRADE CENTRE, UAE



**RESERVE YOUR SPACE  
TODAY**

[www.middleeastelectricity.com](http://www.middleeastelectricity.com)



# Reduce arc faults, save costs

Understanding the technology is critical to avoid fire incidents, according to an Eaton whitepaper.

**T**HE MIDDLE EAST'S US\$1.9bn fire safety systems and equipment market will see solid growth over the next six years, with new government regulations around life safety and fire protection along with large scale infrastructure investment among the key market drivers.

A November 2018 report by analyst 6Wresearch estimates the Middle East market for firefighting systems, fire detection and alarm systems, and emergency exit and lighting, will be worth US\$3bn by 2024, growing at a compound annual growth rate of nearly eight per cent.

The report stated the regional market witnessed a slight decline during 2014-2016, however from 2017 demand has picked up, aided by recovering oil prices and government economic diversification initiatives aimed at reviving the construction sector.

Additionally, revised Life & Fire Safety Codes, such as those rolled out by the UAE Civil Defence in 2016, has helped growth in passive fire-rated products in new buildings and infrastructure, while adding further impetus to the retrofitting segment, where newer systems in line with current regulations are replacing older systems.

The cost of production downtime alone could reach US\$46,000 within 24 hours of an arc fault, according to a research by power management company Eaton.

The study noted that there is the threat to life safety posed by the initial explosion, the potential for reputational damage and the cost of replacement assemblies, particularly in power-critical environments such as process plants and hospitals.

The power management company has launched a campaign to highlight the risk of arc faults arising from low-voltage electrical distribution panels in commercial and industrial buildings.

The estimated costs of downtime are contained in an Eaton whitepaper, written by European electrical safety expert Alfred



Photo Credit: Eaton

*Arc flash can significantly disrupt the security of electricity supply, leading to an outage that can last up to weeks.*

Mörx. He points out that even organisations meeting the minimum requirements of the International Electrotechnical Commission's IEC 61439 standard remain vulnerable to arc faults.

The whitepaper, 'Safety and Risk in Electrical Low-Voltage Installations', recommends that power-critical operations apply higher standards of safety than those outlined in IEC 61439 in order to minimise the risk to personnel, production schedules and building infrastructure.

Mörx commented, "When planning and implementing low-voltage switchgear assemblies and the low-voltage installations supplied from them, it is in many cases necessary from a technical protection point of view to examine whether the minimum requirements specified in the generally-accepted technical standards are sufficient for actual operation."

Frank Ackland, managing director, Eaton Middle East, said, "The impact of arc flash incidents can be truly devastating for commercial buildings where the power supply is critical to daily operations. In extreme cases,

they can significantly disrupt the security of electricity supply, leading to an outage that can last days or weeks if not longer."

"Switchgear can be damaged beyond repair and businesses will soon find themselves facing substantial costs. Eaton has carried out research to develop solutions that not only can reduce the risk of arc faults but can also minimise the damage to switchgear in an incident so that businesses can protect employees and resume normal service quickly without escalating costs," added Ackland.

Low-voltage distribution panels play a decisive role in supplying electrical power but even if the equipment is planned, built and tested to meet the standard, they are frequently modified and added to over time. Eaton contends that this can result in an arc flash incident.

These hazardous events can also be triggered as a result of human error while working on the switchgear, through contamination, condensation or even by small rodents or insects damaging the electrical system. ■



# Harnessing solar power

The GCC's cumulative deployment and investment in renewables sector could reach US\$16bn in 2020.

**I**N THE WAKE of depressed oil prices over the last few years, renewable energy, and especially solar energy, is expected to play a vital role in the GCC's economic diversification plans. The region is likely to speed up its solar energy conversion movement.

According to the latest *MENA Power Industry Outlook* prepared by Ventures Onsite, "Renewable energy forms a lucrative option for electricity generation capacity in the GCC, which has reached US\$2.1bn in 2018 and is expected to be worth US\$25bn in 2022."

With all GCC countries now prioritising renewables, the UAE currently leads the way courtesy of mega projects such as the Mohammed Bin Rashid Al Maktoum Solar Park in Dubai, which is worth an estimated US\$968mn and the 1.2 GW Adwea Sweihan plant in Abu Dhabi, described as the world's largest solar power plant. As part of its 'Energy Strategy 2050', the UAE aims to generate 44 per cent of its electricity from renewables by the middle of the century.

"The UAE Ministry of Energy is considering tendering 1 GW of renewable-based mega-projects each year over the next few years to meet its energy targets. The expected increase in electricity consumption in the coming years, coupled with the integration of a large share of renewables, clean coal, nuclear and waste-to-energy in its energy mix is expected to project the UAE as a hotspot for power sector development in the GCC," says *MENA Power Industry Outlook* report.

Furthering its ambitions, the UAE has launched a lab to test artificial intelligence techniques for solar power. The Ministry of Climate Change and Environment, in collaboration with Khalifa University of Science and Technology and the International Renewable Energy Agency (IRENA), are now working to identify solar energy locations. The lab will have three main systems featuring real-time maps of solar locations in the UAE – solar simulation, environmental monitoring and marine environment monitoring systems. Solar maps and simulations are likely to help determine the best locations for solar power within the country.

Following closely is Saudi Arabia, which recently started the construction of 300MW Sakaka PV IPP. The Sakaka PV project is the first utility scale PV plant in the kingdom and was inaugurated by the Custodian of the Two Holy Mosques, King Salman bin Abdulaziz of Saudi Arabia.

Upon completion in 2019, the 300MW Sakaka PV IPP will supply 45,000 households with power in Al Jouf, while offsetting over 430,000

tonnes of CO<sub>2</sub> a year. The project will also create new employment opportunities in fields including construction and operations.

Looking further, Oman is vigorously pushing its renewables agenda to meet its energy goals. Oman has one of the world's highest solar densities and has already made some significant steps towards its Energy Transition strategy in its goal to generate 10 per cent of its energy from renewables by 2025. The move towards adopting energy transition strategies across the GCC is propelled by an urgency triggered by rapid consumption, which has grown by eight per cent annually since 1972, compared to two per cent for the world.

The sultanate's first utility scale 500MW solar PV IPP will come up in Ibri and its being developed with RFP, which already issued to 12 international companies and expected to be commercially operational by 2021.

In November 2018, California-headquartered GlassPoint Solar signed an agreement with Occidental of Oman to develop a solar thermal energy plant of more than 2 GW. The plant would be located at the Mukhaizna oilfield. The MoU calls for GlassPoint Solar to deploy its enclosed trough technology to produce up to 100,000 barrels of solar steam per day, which will be bought by Occidental and used to facilitate production of heavy oil at the oilfield.

The company has experience with another such project in Oman in partnership with Petroleum Development Oman (PDO). GlassPoint built a 7MW pilot solar plant for PDO in 2013 and commenced construction work on the Miraah project at the same oilfield in south Oman in November 2015.

Upon completion, that solar thermal park will consist of 36 standard greenhouse blocks that house parabolic trough collectors, and will have a total capacity of 1,021 MWp.

The Kuwait National Petroleum Company (KNPC), in September, initiated a tender for the installation of up to 1.5 GW of solar power capacity under its Dabdaba project.

The complex will be constructed within the Al-Shagaya Renewable Energy Park, near the Saudi Arabian border. According to the tender notification, published by Kuwait's Central Agency for Public Tenders, the scope of work includes the supply and construction of the solar park, and operations and maintenance for 25 years. Also, Renewable Energy Development Organisation (REDO), a New York-based NGO, is trying to persuade the government to invest in solar for public buildings. ■

# Petra: Serving the best to the world

Firas Abu Wishah, board of directors, member, of Petra Engineering Industries talks to Samantha Payne about his company's global success thanks to its long-standing partnership with Danfoss.

## Technical Review Middle East (TRME): Can you talk about Danfoss and Petra Engineering Industries' partnership in Jordan?

**Firas Abu Wishah (FAW):** We are the largest air conditioning manufacturer in the Middle East. We manufacture in Jordan but export to 54 countries worldwide – Jordan is our kitchen and the world is our dining room. About 90 per cent of our production is exported out of Jordan. We have two factories in Jordan, employing around 2,000 people. We have a third factory in Saudi Arabia which employs around 400 people. We've been working with Danfoss since we started in 1987, when we serviced Iraq and Kuwait before they shut down in 1991. Our number one market now is the USA. We've been exporting to the USA for the past 19 years using Danfoss components. Our second most important market is Saudi Arabia, followed by the GCC countries and the rest of the world, including South Africa, Central Africa, Libya and Egypt. We have a long-standing relationship with Danfoss and offer a complete range of products; compressors, valves and drives, whatever Danfoss makes for the air conditioning industry we use. For example, we use their VSD scroll compressor which is one of the most efficient VSD scrolls in the market.

## TRME: Do you have any impressive jobs that you would like to mention?

**FAW:** We carried out a job for Western Digital which makes hard drives for one of their facilities in San Francisco. We supplied large rooftop equipment, having 250 tonnes of cooling capacity which was quite massive. We are one of the only companies in the world that go up to that size of customised equipment. We used Danfoss VSD scroll compressors for this particular project and were one of the first to use that compressor for that size equipment. We are a customised manufacturer, designing everything from scratch to suit customers'



Air cooled rooftop packaged unit.

requirements. Our credo is 'efficiency efficiency, efficiency'.

## TRME: Who are your main customers in the USA?

**FAW:** We are the only regional manufacturer that exports high technological products to the USA. Some of our US customers include Tesla, Yahoo, Google and NASA as well as multiple hotel chains, such as Four Seasons, Carlton and Western chains.

## TRME: Can you give me an overview of Jordan's air conditioning market?

**FAW:** Mostly the market in Jordan is residential. Air conditioning was a luxury until 1996. From then, air conditioning has become a necessity in the tourism, education, retail and health sectors.

## TRME: What are the trends that will expand Petra's growth in the region?

**FAW:** Efficiency, green refrigerants and indoor air quality. Customers are becoming more aware of different trends, especially when it comes to energy efficiency and using low global warming potential (GWP) refrigerants. Danfoss is at the forefront of this development with the recent expansion of its ATEX laboratory in Lyon. Jordan is a

very important example when it comes to energy as we are energy dependent on our neighbours. Our fossil fuels are imported where 50 to 60 per cent is used to generate electricity. Our tariffs are quite high so there's an enormous push towards renewable energy. In this market you need to have energy efficient products.

## TRME: You opened a factory Saudi Arabia in 2013. Are there any other markets you are looking to focus your operations on?

**FAW:** We started the factory in Saudi Arabia six years ago and recently, we just signed with our first distributor in the Philippines. Our focus is on the USA and South America. But we have just opened up our office in the UK and will focus on European markets as well as have a footprint in South East Asia, Indonesia and Vietnam. Some of our biggest clients in the Middle East are Korean and Spanish contracting companies such as Samsung Construction, Hyundai Engineering and Técnicas Reunidas – they're the ones building infrastructure projects such as power and desalination plants. One of our projects with Samsung Construction was for an oil rig. We manufactured the AC equipment using Danfoss components, sent it to China where it was installed on the rig, which was later shipped to Chile. ■

Photo Credit: Petra Engineering Industries



## The digital twin as a transformation enabler

THE BENEFITS OF digital twin technology go beyond digital transformation, says Rafi Hattar, vice-president Middle East at Hexagon PPM, one of the world's leading provider of asset life cycle solutions for design, construction, and operation of industrial facilities.

"In the last two years we have created more data than during the whole existence of humanity and even with all of it, we still don't have enough actionable information available. How can we manage the overwhelming amount of data in the context of facility operations and maintenance, to ensure that we will always have relevant, correct, and up-to-date information available for everyone who needs it?

"The answer is simple – by having full, digital access to up-to-date and actionable information. The only way to achieve this is to digitalise the existing information. The good news is that most of the time, everything you need is already there. The documentation and data needed for digital operations of a facility are often there, but probably not organised, digitised, consolidated or centralised. A cornerstone of digital transformation and creating a



The intelligent digital twin is a cornerstone of digital transformation.

centralised access to information for facility owners is an intelligent digital twin – a digital representation of the physical facility.

"At a minimum the digital twin may simply be a set of structured data and documents that fully describe the facility configuration, but may contain more sophisticated components, like 3D visualisation, integration with operational systems, advanced analytics, and more. The

goal of the digital twin is to provide a virtual representation of both the current and historic facility configuration along with related performance data.

"The benefits of digital twin technology go beyond digital transformation - a digital twin will improve overall project performance by enabling consistent and standardised processes, and shorter communication cycles."

## SpotSee adds satellite connectivity to its portfolio

SPOTSEE, PROVIDER OF shock and vibration monitoring through low-cost connectivity and data, has expanded its ShockLog product line to include the ShockLog Satellite, previously ShockTrak, adding satellite connectivity to a line-up that already boasts cellular and USB connectivity.

The ShockLog product line uses the ShockLog 298, which measures impact, temperature, humidity, tilt, roll and pressure. With the addition of either cellular or satellite connectivity modules, parameters can be viewed in real-time from the SpotSee Cloud, all from the comfort of a user's smartphone or computer. Along with the ShockLog Cellular and ShockLog Satellite, SpotSee offers the economical ShockLog 248 that offers impact, temperature and humidity monitoring without the detail and connectivity that the ShockLog 298 variants offer.



ShockLogs are used in various industries including power.

"Adding satellite connectivity to ShockLog was a great next step for us to ensure our customers always have the connectivity they need," said Angela Kerr, vice-president, product portfolio, SpotSee.

"The increase in connectivity options allows them to monitor

products being transported through the most remote locations where cellular connectivity isn't available."

ShockLogs are used in the power, energy, industrial and medical industries to ensure supply chain transparency and responsibility.

## Dubai Electronic Security Centre and BSI sign cooperation MoU

DUBAI ELECTRONIC SECURITY Centre (DESC) and the British Standards Institution (BSI) have signed an MoU to enhance cooperation in the areas of standardisation and conformity assessment, sharing best practice in the development of information and cyber security resilience, initiatives to mitigate cyber threats and programmes to ensure the effective adoption of digital technology.

The agreement includes collaboration in various areas such as develop and enhancing policies on Internet of Things (IoT) security, implementation of measures to address the opportunities associated with SCADA systems and assessment of cloud service providers (CSP) in accordance with DESC CSP standards.

Theuns Kotzé, managing director-BSI Middle East and Africa commented, "DESC will become a key element of BSI's IoT and digital transformation global community, benefitting from, and contributing to global 'best practice' on the security of digital technologies."

# Saudi Arabia's new power strategy

The SASG 2018 will provide opportunity to promote products, services, ideas and business in a comprehensive way, attracting regional governmental, scientific, business and technological communities.

**A**S SAUDI ARABIA is witnessing heavy demand for electricity access due to increased activities in the industrial and construction sectors, the kingdom has taken a number of initiatives to diversify power generation strategies, considering the renewables, gas and nuclear power alternatives.

According to the *MENA Power Industry Outlook 2019* by Ventures Onsite, the GCC region alone is expected to require US\$55bn for additional 43 GW of generating capacity and US\$34bn for transmission and distribution (T&D) from 2018-2022.

Smart grid infrastructure development is seen as one of the most important aspects to improve electricity diversification and conservation in the GCC. The outlook has estimated that GCC countries can save up to US\$10bn in infrastructural investment by 2020 through the use of smart grids.

A TechSci Research report has further revealed that the GCC smart grid market is projected to grow to US\$1.68bn by 2026 due to the deployment of smart grid infrastructure by GCC governments.

Addressing the impact of the smart grids on electricity diversification and cost saving, a large number of countries in the region have announced smart grid roll-out plans. Saudi Arabia, Egypt and the UAE are expected to be the market leaders in smart grid investments and adoption over the next decade.

Of the GCC countries, Saudi Arabia is leading the evolution of the region's power sector. As reported in the outlook, total electricity generating capacity in Saudi Arabia is currently around 66 GW. While projections suggest slower growth in the future, peak electricity demand is expected to double by 2030. According to the report, the kingdom will need to invest around US\$21bn, which will increase capacity to 92 GW.

"In line with Vision 2030, the Ministry of Energy, Industry and Mineral Resources is



Photo Credit: Jandrie Lombard/Adobe Stock

*The Saudi Electricity Company plans to establish a power generation subsidiary, pending shareholder approval, a step viewed by analysts as a sign the state-controlled power giant is pushing ahead with a long-awaited restructuring.*

undertaking a programme in coordination with Saudi Arabia's stakeholders to transform the power sector and ensure it is more competitive, efficient and sustainable, underpinned by a strong pipeline for private sector participation," a Ventures Onsite report added.

Under its plan to reform the regional power sector, the kingdom has implemented a number of options for new generation capacity which includes the increase of electricity tariffs to S\$0.05/kWh for residential consumption levels below 6,000kWh/month. Residential consumption levels above, 000kWh/month remained at US\$0.07/kWh.

Saudi Electricity Company (SEC), the kingdom's largest utility, is also taking up new initiatives and investment opportunities in the country's electricity sector, rehabilitating local power manufacturers and suppliers, as well as

attracting foreign investors to transform it into a regional centre for electrical industry. Added to this, the kingdom has ambitions of adding 9.5 GW of renewable energy to the grid by 2023.

To back the region's initiatives in electricity diversification and conservation strategies, the eight edition of Saudi Arabia Smart Grid (SASG) Conference is all set to take place from 11-13 December 2018 in Jeddah.

Under the patronage of Khalid Al-Falih, minister of energy, industry and mineral resources, the event is expected to attract more than 2,500 participants and 70 exhibitors. SASG 2018 aims to provide a unique platform to share visions in the field of emerging technologies such as sustainable energy, demand side management, grid integration of renewable energy sources, automation technologies, power system planning, operation and maintenance, IT and communications solutions. ■



# In pursuit of the kingdom's vision

Ahead of SASG 2018, Deblina Roy catches up with Abbad S Ahmed, Mohammad Al-Ojaimi Group's manager for energy services, to understand how the company is aligning its current and future goals to fit into the Vision 2030 Agenda.

**Technical Review Middle East (TRME):** What are the current demands in Saudi Arabia's power market with regards to electrical equipment?

**Abbad S Ahmed (ASA):** As a regional electrical equipment manufacturing company, we see that the demand being very high for the production of all electrical equipment and it is now going up for renewable energy products. There are large solar and wind energy projects in the Middle East. So there will be a big demand in products such as solar panels, wind turbines and related equipment.

**TRME: What role does Mohammad Al-Ojaimi play in Saudi Arabia's renewable energy sector?**

**ASA:** There are a set of new initiatives from the Saudi government such as Vision 2030 to boost the renewable energy sector in the country. To support this initiative, we are negotiating and finalising some partnerships with few international companies to create a manufacturing facility for solar panels in Riyadh. However, all are in the design stage at this moment.

**TRME: Can you provide a brief background on the Saudi Taihan JV? What has progressed since you kick-started it?**

**ASA:** The Saudi Taihan JV is the first factory in the Middle East for the manufacturing of cable joints and insulation materials. The manufacturing plant has been already completed and it is in the commissioning stage now. Meanwhile, we have started manufacturing the products in the plant and hopefully, by the beginning of 2019, we will start the commercial production.

**TRME: Could you brief about Saudi Arabia's potential in the global electrical equipment market compared to other international markets?**

**ASA:** There is no doubt that Saudi Arabia is the main market in the Middle East. There



Abbad S Ahmed is the manager for energy services at Mohammed Al-Ojaimi.

are and will be a huge number of projects to start from 2019 in both conventional and renewable energy sectors. I am optimistic that the Saudi market will continue to be one of the largest markets of energy in the coming 10 years.

**“One of the main targets for Saudi Vision 2030 is to localise manufacturing. We are aiming to produce electrical components that are imported currently.”**

**TRME: How is Mohammad Al-Ojaimi aligning its strategies with Saudi Vision 2030?**

**ASA:** One of the main targets for Saudi Vision 2030 is to localise the manufacturing of electrical products. We are aiming to produce electrical products that are not yet manufactured locally. Just like our facility in Taihan (South Korea), we are planning to build a similar manufacturing facility in Saudi Arabia. Several projects are in the planning stage, ready to execute, in the country, focusing on quality, timely completion and within stipulated cost.

And of course, now we are opening our new company – Al Ojaimi Renewable Energy Company – that will take care of all these renewable energy projects.

**TRME: Are you considering any international collaboration for your businesses?**

**ASA:** Yes, we are negotiating some partnership opportunities for the manufacturing of high voltage switchgears in Saudi Arabia for gas insulated switchgear (GIS). The project is now in the feasibility study stage for our partners from South Korea and Japan.

We also have partners such as Taihan from South Korea, Ingeteam from Spain, Incico SpA from Italy and KRIES GMBH and KOCOS AG from Germany as we have a good rapport with many German companies. Al-Ojaimi is also working on some deals from companies in the USA and Spain. Our export business includes transformers and we have received some enquiries from African markets such as Egypt, Kenya, Tanzania and Lybia. For 2019, our target is to make the turnover to be more than US\$1.2bn and we strongly believe that we will achieve the target.

**TRME: What are Al-Ojaimi's showcase at SASG in December 2018?**

**ASA:** At the SASG 2018, we will be showcasing smart products, smart meters, distribution and transmission automation systems and renewable energy products. ■

# The Big 5 2018 reinforces confidence in construction

Five co-located events and high-level summits hosted more than 2,500 companies in Dubai from 26-29 November.

**T**HE 39<sup>TH</sup> EDITION of The Big 5 International Building and Construction Show was inaugurated by HH Sheikh Hamdan bin Rashid Al Maktoum, Deputy Ruler of Dubai and the Minister of Finance and Industry of the UAE.

More than 2,500 global exhibiting companies and 30+ official country pavilions display the latest building solutions and innovative products at the event. The broad international participation, which is expected to cater to the needs of the regional construction industry, demonstrates a growing interest in the expanding GCC market.

According to The Big 5's intelligence partner, BNC Network, over 23,000 construction projects are currently active in the GCC, and worth more than US\$2.3 trillion.

The urban construction sector has the highest number of projects (18,000), with the most significant segment coming from residential, commercial and hospitality developments. With the sector having expanded by four per cent in terms of value and 15 per cent in terms of total active projects in the first half of 2018, the outlook for the GCC construction industry remains positive.

This year, The Big 5 2018 introduced two new features that aim to advance the construction sector by embracing innovation and technology: the brand new Live Innovation Zone, hosting a selection of the most innovative products that are shaking up the construction industry today, and The Big 5's Start-Up City, presenting the next construction tech disruptors.

The event also hosted the first FutureTech Construction Summit with speakers from Virgin Hyperloop One, Microsoft, Saudi Aramco, Faithful+Gould, ASGC, AECOM, Dubai Silicon Oasis Authority, Meraas and Mont Hill.

Josine Heijmans, portfolio director at dmg events, said, "In a world where innovation and technology are more and more crucial to remain competitive, the construction



*Under the Patronage of the UAE Ministry of Energy and Industry, the Global Solar Leaders' Summit was held at The Big 5 Solar's 4<sup>th</sup> edition.*

sector is still widely considered a late technology adopter. Yet, technology has an enormous potential within the sector.

"From Robotics and Artificial Intelligence to 3D Printing, from Virtual Reality to smart building and IT solutions, a variety of tech innovations have the power to shake up the construction industry today, to improve its productivity, and increase its sustainability and affordability. Innovation and technology are considered key elements also to realizing the UAE Vision 2021. It is therefore of essence for the regional construction sector to embrace innovation and the vast development opportunities offered by technological innovations."

As the HVACR market in the UAE is expected to reach a value of US\$1.5bn by 2019, the launch of the HVAC R Expo promises to help the construction industry move toward a greener and more sustainable future.

Supported by leading associations

ASHRAE Falcon Chapter, AHRI, BSRIA and REHVA, the event hosted more than 200 exhibitors from around the globe.

The popular CPD-certified and free to attend workshops featured in four dedicated theatres throughout the four days of the event as BIM Talks, Architecture Talks, Project Management Talks and Design Talks.

Chris Kilbee, senior vice-president at dmg events, said, "Much of the energy consumption in the region is driven by urban spaces: The residential sector is responsible for the consumption of almost 47 per cent of the GCC's total energy, against a global average of 25 per cent.

"If we consider that there are more than 23,000 active construction projects in the GCC right now, we understand that it is extremely important for the solar and the construction industries to join forces, address current challenges and harness the immense opportunities that lie ahead." ■

Photo Credit: dmg events



## Overcoming global market challenges

**EMIRATES STEEL**, THE only integrated steel plant in the UAE and a subsidiary of the General Holding Corporation (SENAAT), showcased its unique steel product range, which caters to the construction and building industries, at The Big 5.

“Our continued participation at The Big 5 conference highlights our dedication to the manufacturing of high-quality steel products, alongside being an industry leader through our commitments to sustainability and safety,” said Eng. Saeed Ghumran Al Remeithi, CEO of Emirates Steel.

“Alongside showcasing our range of products to those attending the conference, we are looking to understand the needs of those in the construction sector, and we will be excited to share developments with them as to how we at Emirates Steel are adapting our products to be in line with the industry’s requirements.

“We are continuously looking to develop our range of steel products as well as our manufacturing processes, in order to meet the needs of our customers,” added Al Remeithi.

The UAE has the most active construction market in the region, with active projects estimated at US\$513.5bn. The urban construction sector accounts for 63 per cent of the total value of active projects in all sectors of the country.

There are market challenges, but Emirates Steel remains confident of the opportunities for growth, given that in Q3 2018, 425 projects were awarded in the UAE with a total value of



Photo Credit: Emirates Steel

Emirates Steel is the first and only MENA steel producer to be accredited by the American Society of Mechanical Engineers to produce nuclear grade steel.

US\$12.4bn, up by 19 per cent compared to Q2 2018. Emirates Steel looks to increase their presence in these construction projects through the continual refinement of their products and processes.

## Atlantic launches electric water heaters powered by solar PV

FRENCH BRAND ATLANTIC showcased its latest range of heat pumps at The Big 5.

Explorer, the highly efficient heat pump water heater, and Solerio Optimum 3, high-end indoor solar tank with forced circulation, were the centre of focus at the show. Other Atlantic products included the launch of electric water heaters with Steatite technology and remote piloting through Wi-Fi.

“We approach the development of our products with the eco-citizen in mind and want our solutions to convert energy economically and in a way that is friendly to the environment. In that regard, we are proud to support UAE’s strategic plans to generate clean energy and to achieve sustainable lifestyles. By utilising our accumulated expertise, we have created water heating solutions with renewable energy sources that are ideal for the region, such as the heat pump water heater, using the unlimited energy source available in the ambient air temperature, or our thermal water heating systems that use the sun’s energy,” said Mazen Aldabie, UAE and Oman country manager for Atlantic.



Photo Credit: Atlantic

The Solerio Optimum 3 from Atlantic.

## Peter Berghaus GmbH Safety products for work zones



In expanding our network of dealers and service partner abroad, we are looking for suitable partners for the sale of our traffic technology products.

If interested, please get in touch.

Phone +49 (0)2207 9677-0  
51515 Kürten - Germany  
berghaus-verkehrstechnik.de



## STYRO invests in new production unit

STYRO, AN EXPANDED polystyrene (EPS) manufacturer in the Middle East, has opened a 40,000 sq m production facility in Abu Dhabi with an initial investment of US\$19.06mn to meet a growing demand for its products and services – especially within the construction, interiors/fit-out and packaging sector.

STYRO is working on several projects in the UAE, valued at more than US\$5.44bn; including the Expo 2020 pavilion. Some of STYRO's past projects include the Blue Water Island, City Walk and Louvre Abu Dhabi amongst others. STYRO offers Class A fire-retardant, heat-resistant, tremor-proof, and eco-friendly products, making it a suitable solution for any construction, interior and exterior decoration, architectural applications, packaging and merchandising displays.

The company showcased latest products and project designs at The Big 5 in Dubai.

Walid Wakim, GM partner of STYRO, said, "STYRO has become a product of choice for several iconic developments and projects in the UAE. We recently opened our showroom and a second manufacturing unit in Abu Dhabi to support our growth and demand for STYRO products. Our products are carefully engineered, making it unique and versatile to deliver any creative and durable designs."

## French companies maintain strong positions

TO HELP FRENCH companies seize new opportunities as well as reinforce their existing presence, Business France, the national agency supporting the international development of the French economy, was running two French pavilions at the Big 5. Twenty-four companies from the industry's various sectors showcased their products, services and expertise to local businesses.

The French construction industry believes that the Expo 2020 Dubai will create a whole host of opportunities that they must leverage by establishing ties with local decision makers.

With a highly fragmented network of 392,000 companies and sales of US\$153.6bn in 2017, the industry has more than one global leader from France in most of its component sectors. France's diverse offerings include companies of all sizes providing structural engineering services and finishing work (carpentry, roofing, insulation, sanitation, air-conditioning, smoke detectors) and interior fittings (wall and floor coverings, luxury tapware, home automation).

Marc Cagnard, managing director at Business France Middle East, commented, "Innovation features strongly in French companies, from new and biosourced building materials, construction driven by ecological considerations, and BIM to home automation, energy optimisation tools, solar glass, smart thermostats and bulbs."

## SRTI Park backs Big 5 Dubai 2018's 'FutureTech Construction Summit'

AS PART OF its efforts to promote innovation and advanced research in Sharjah and the UAE, the Sharjah Research, Technology and Innovation (SRTI) Park participated at The Big 5.

Hussain Al Mahmoudi, CEO of SRTI Park, said, "Attendees can learn from these experiences and apply the same in their own projects to guarantee success in today's digital world. They will also have a chance to take part in the panel discussions that will dominate the summit. Taking part in the event is a reaffirmation of our commitment towards bringing the academics and construction industry together in collaborative ventures. It will also highlight the research works being undertaken at the Sharjah University City that will benefit businesses and organisations."

## Key HVAC trends at the epicentre

AS PART OF The Big 5 construction exhibition, BSRIA showcased its knowledge with a market presentation and introduced its membership services with a BSRIA briefing session.

Today, HVAC and refrigeration systems are at the epicentre of a struggle playing out across the built environment industry, between the focus on "environmental comfort and the need for sustainable solutions".

In the Middle East, temperatures regularly exceed 40° Celsius, so effective cooling is a necessity, and despite incorporating more natural ventilation into building design, AC systems remain the most effective method of providing the cooling the region needs.

At the show, BSRIA's senior research manager Saziye Dickson summarised how the HVAC industry is changing to face these challenges and gave some insight into how the organisation sees the market evolving in the Middle East.

"The growing focus on energy efficiency in the Middle East was evident in the sales of inverter air conditioning units in the region this year and it is expected to accelerate in the next couple of years. Further acceleration on minimum energy efficiency requirements is bringing challenges to the region as average prices are expected to increase. Among the greatest challenges facing suppliers is to choose the right stock with the right EER rating, while trying to stay competitive against lower-priced, lower efficiency units.

Unlike the European and the South Asian markets, the Middle East is embracing VRF products, with strong growth forecast in the region and many new players launching their own range of mini-VRFs (<20kW). This is taking market share from other cooling products, notably ducted splits, rooftops and small tonnage chillers."





# 'bauma 2019 will create new prospects for MEA'

Four months ahead of the biggest construction machinery show in the world, exhibition director Mareile Kaestner talks about the attractions that lie ahead for Middle East and Africa visitors to Germany, in an exclusive interview with Rhonita Patnaik in Dubai.

**"THE MIDDLE EAST** is an important market for bauma and as we get ready to host more than 3,500 exhibitors from 55 countries, I am in Dubai to promote the 2019 edition in April after three years," says Kaestner introducing herself.

Taking place from 8-14 April, the 32<sup>nd</sup> edition of bauma in Munich will cater to the entire construction equipment sector, including mining. In 2016, 20 per cent of the exhibitors came from the mining industry and interested visitors for the sector covered 24 per cent of the footfall.

As Saudi Arabia looks to invest US\$22.6bn in its mining sector and Egypt prepares to revamp its mining strategy for investors, Kaestner feels that bauma will give the Middle East and Africa companies an ideal platform to source solutions from global players.

"Also with the Dubai government's plans to spend up to US\$9bn for Expo 2020, the trade fair can be the perfect place to look for information and partners for projects."



Mareile Kaestner is the exhibition director of bauma.



bauma 2016 attracted around 580,000 visitors from 200 countries.

To keep up with the evolving construction sector, bauma 2019 will focus on three trends – Digitisation, Sustainability and Efficiency.

"Sustainable mining as well as workplace safety is a huge part of our agenda at bauma. Apart from the product showcase, we also have special mining halls for seminars and lectures," she adds.

Kaestner points towards another evolving trend – alternative drives. "The construction machinery industry is increasingly opting for these. In the future there will no longer be one single typical drive system but instead an increasingly wide range of competing drive systems on the market.

Electromobility and driverless vehicles in particular are seen as key future drivers. The leading manufacturers will be showcasing their developments and discussing the opportunities and challenges presented by new technology at bauma 2019."

She added that electromobility and driverless vehicles are two areas that are increasingly gaining traction with manufacturers and service providers in the

construction machinery industry. These will also be the hot topics at the fair. Leading exhibitors here include Doosan Bobcat, Liebherr, Perkins Engines and Bosch Rexroth.

As always, there will be new introductions at the show.

bauma 2019 will see the launch of two new halls. With these put together, the total area of the event will cover 20,000 sq m. There will also be a new lifting technology area inside as well as outside the halls. A dedicated hall for digital solutions will feature an augmented reality and virtual reality technologies for the attendees.

The world's seventh biggest construction machinery market Canada is the designated partner country of bauma 2019. According to Kaestner, this gives an opportunity to bauma, until now a Europe-focussed market, to look for partners as far as North America.

"We have been preparing for three years now and believe that such forward-thinking agendas will help attract visitors from Middle East and Africa gain partnerships and procure new products." ■

Photo Credit: Messe München

# Heading the 'green' plan

Abu Dhabi will once again host The World Future Energy Summit (WFES) with a few changes to the programme as well as the return of some popular events. Georgia Lewis previews the summit.



The exhibition at WFES 2018 was very busy.

Photo Credit: Reed Exhibitions

**W**ITH A THEME of 'Accelerating Sustainable Development' the World Future Energy Summit (WFES) for 2019 features new innovations to the programme to keep it relevant to the dynamic global renewable energy industry. The 2019 edition of WFES will be held at ADNEC in Abu Dhabi from 14-17 January.

The WFES Conference will now be known as The Future Summit and it will give delegates the opportunity to hear about future infrastructure plans, government strategies and market-leading innovations in energy, water and waste management.

Every year, WFES is a great opportunity for leading developers of technology and the 2019 event will be no exception, with more than 850 exhibitors from more than 40 countries expected to showcase the latest solutions in clean energy, water and waste management. The exhibition space will include a range of businesses and organisations, from global enterprises and leading tech companies to rising start-ups and entrepreneurs.

For delegates keen to learn about industry best practices, the organisers recommend the WFES Forums. These forums are free to attend and bring together world class experts to share their experiences and views on the show floor. The sectors covered by these forums will

include solar power, energy efficiency, waste and water.

Climate Innovations Exchange – or CLIX – was launched at WFES in 2018 and returns for 2019. This youth-focused initiative was launched to support the UAE's Ministry of Climate Change and Environment strategy to enable the sourcing and funding of climate change solutions and technologies.

CLIX is part of Youth 4 Sustainability Hub, which brings together knowledge, aiming to prepare youth to carry forward the sustainability agenda by ensuring that relevant and actionable information is passed down from our current leaders and experts to our future leaders.

**Climate  
Innovations  
Exchange – or CLIX  
– returns to WFES  
with themes of  
space, the future of  
energy, and food  
and agriculture.**

Submissions are being taken for CLIX 2019 under the following three themes:

Sustainability in Space, Future of Energy, and Future of Food and Agriculture. At last year's CLIX event, 312 applicants from around the world presented 364 ideas; 27 finalists presented their innovations to a crowd of global leaders, business decision-makers and investors, climate experts and regional thought leaders; and 12 investors pledged more than US\$17.5mn in support of 16 projects.

There will be a series of WFES Hosted Events at the 2019 summit. These allow international organisations and global associations to host specialised events alongside the main activities of WFES. This allows stakeholders from across the world to converge on the one meeting place to share ideas. Some Hosted Events are open to all WFES attendees while others are invitation-only.

Among the Hosted Events will be a return of the International Solar Alliance (ISA). ISA was launched in Paris in 2015 at the groundbreaking UN Climate Change Conference by the president of France and the prime minister of India. It is a coalition of sun-rich countries which seeks to increase the use of solar energy and reduce its members' dependence on fossil fuels.

The Solar Energy Forum, a free event, will be dedicated to exploring all things new



and relevant to the evolution of solar energy provision.

Environmentally friendly transport will again be on the agenda at WFES 2019 and the Electric Vehicle Road Trip Middle East will be taking place as a Hosted Event.

The nine-day road trip is a practical opportunity to showcase the outstanding electric vehicle technology, while raising awareness and educating the public on topics such as charging, financing, vehicle range, and insurance.

Green buildings, an ongoing concern for the construction industry around the world, will be discussed at the WFES Green Buildings Forum, a free event.

This is a platform where the Middle East and North Africa's developers, building owners and EPCs can discover the benefits of building in a sustainable way.

At last year's event, investments exceeding US\$15bn were announced. This included Saudi Arabia announcing its intention to launch up to US\$7bn worth of renewable energy projects in 2018, as part of the country's plan to have 9.5 GW of solar and wind capacity installed by 2023. The



*WFES draws a global audience each year.*

Photo Credit: IRENA/Flickr

majority of the funding is expected to be spent on solar plants, with four GW of solar energy projects to be contracted throughout the year.

Last year's conference hosted high-level speakers including local ministers and foreign dignitaries, such as HE Dr. Thani bin Ahmed Al Zeyoudi, UAE Minister of Climate Change and Environment, and Turki Al Shehri, Head of the Renewable Energy

Project Development Office at the Ministry of Energy, Industry and Mineral Resources in Saudi Arabia. A range of experts presented at the new Dialogue Hall, including Tarik Hamame, an advisor at the Moroccan Agency for Sustainable Energy, and technology futurist Ian Khan. ■

*For more information about the event, visit [www.worldfutureenergysummit.com](http://www.worldfutureenergysummit.com)*



**POWER**

OKADA AIYON CORPORATION supplies a variety of attachments mounted on excavators and has been an innovator in the field for many years all over the world.

**OKADA**

**JAPAN**

[www.okada-aiyon.com](http://www.okada-aiyon.com)

1-1-14 Higashi-cho, Minato-ku, Osaka 542-0822, Japan. Tel: +81-6-653-8076 (FAX) Fax: +81-6-653-79-8100 Email: [osaka@okada-aiyon.com](mailto:osaka@okada-aiyon.com)

*Saudi operators will soon start printing the next phase of this project to contribute a significant part of the goal of 1.5mn houses by 2030.*

*Photo Credit: CyBe*

# World's first 3D printed house finds home in Saudi Arabia

Consolidated Contractors Company has partnered with Dutch technology company CyBe in Saudi Arabia to complete a mainstream prototype – the world's first realistic approach to the mass production of 3D printed houses.

**T**HE WORLD'S FIRST realistic approach to the mass production of 3D printed houses has been successfully piloted in Saudi Arabia, with the pioneering creation of a unique 3D printed house prototype taking the technology into mainstream construction.

Consolidated Contractors Company and technology company CyBe were commissioned by the National Housing Company in Saudi Arabia to create the prototype as part of a vision to transform the housing industry worldwide with innovative technologies – meeting ever-growing, critical housing demands on local and global scales.

According to CyBe, the collaborative project is the first step of many in realising 3D printing as a mainstream construction method and certifying that new approaches, such as load bearing walls and complete mechanical, electrical and plumbing (MEP) integration while printing – approaches that were explored with this pilot project – are thoroughly investigated and implemented in future phases.

The project examined the realistic adoption of 3D printing

*Saudi nationals were trained in the 3D printing approach with the aim to involve them in future phases.*



*The one-bedroom house is ready.*



technology in mainstream construction, taking the prototype from an 'abstract future vision' through to real-life implementation.

As part of its commitment to Saudisation, the Consolidated Contractors Company trained Saudi nationals in the 3D printing approach and associated processes, with the aim for them to be involved in future phases. All finishing material used to complete the project was acquired locally from Saudi suppliers and local industry.

The purpose of the initiative was to build a demo housing unit, demonstrating the capabilities of 3D printing technology, and to investigate its potential benefits to the housing market. The project addressed engineering challenges associated with the 3D printing approach and its integration into the strict requirements of the construction industry.

The project is the first realistic collaboration between a global construction company with seven decades of experience, and a technology provider, blending the 'old' with the 'new' and seeing great success. ■



## Bobcat launches new skid-steer loader, announces new developments

BOBCAT HAS ANNOUNCED a number of new developments in the company's compact loader range for Europe, Middle East and Africa (EMEA), such as auto ride control, heated cloth air ride seats and several more, offering numerous additional benefits for customers. The new developments provide an increased choice of features for the Bobcat skid-steer, compact track and all-wheel steer loader ranges.

Complementing this, Bobcat has also launched the S100E model for EMEA, an updated version of the company's popular S100 skid-steer loader that meets Stage V emissions regulations. Like the S100, the new S100E skid-steer loader meets customer requirements for manoeuvrability, size, weight, uptime protection, lift capacity and push force for this loader class. In addition, customers benefit from improvements Bobcat has made in operator comfort, ease of operation, noise levels, running costs and asset management.

Compact dimensions – a height of 1,878mm, length without attachment of



Photo Credit: Bobcat

The S100E from Bobcat for the EMEA region.

2,262mm and width over the tyres of 1,182mm – allow the S100E to manoeuvre efficiently in confined spaces even in bad weather. Despite its smaller dimensions, state-of-the-art engineering has ensured that the S100E loader offers the power and performance expected of a bigger machine.

This is combined with the durability of a strong frame design, increased operator comfort and easy serviceability thanks to a transverse-mounted Stage V compliant Kubota V1505-T4FST5 diesel engine providing 18.2kW of power at 2,300RPM. The S100E offers a rated operating capacity of 457kg and a tipping load of 915kg.

The low operating weight with bucket of just 1,860kg allows for easy transportation of the S100E on a trailer. The engine power and hydraulic flow on the S100E are suitable for operating more than 30 different Bobcat attachments.

As well as the full-comfort cab, designed to enable operators to work all day long for optimal productivity, the S100E has the most advanced electronic controls and instrumentation for this size of machine on the market, providing a new level of diagnostic capability and control. The instrument panels and gauges are placed in convenient locations in the top left hand and top right hand corners at the front of the cab.



# ORTEA

ahead of time



www.ortea.com

-  Experience
-  Reliability
-  Flexibility
-  After-sales
-  Quality



## italian excellence

-  DIGITAL VOLTAGE STABILISERS
-  SAG COMPENSATOR
-  POWER TRANSFORMERS
-  POWER FACTOR CORRECTION SYSTEMS

ORTEA SpA | Via del Chiosl, 21 | 20873 Cavenago di Brianza MB - Italy | Phone: +39.02.95.917.800 | Mail: sales@ortea.com

## Liebherr Tower Cranes develops its first high-tensile fibre ropes

LIEBHERR, WORKING WITH Austrian rope manufacturer Teufelberger, has developed a new type of high-tensile fibre rope for hoisting applications, which will increase lifting capacity.

During the development stage, more than 100 different fibre rope prototypes, measuring around 70,000 metres in length, were developed. Extensive tests provided confirmation that the fibre rope not only weighs around one-fifth of a conventional steel rope, but also lasts four times as long and is significantly easier to handle. Operational safety is also guaranteed – the different wear states are clearly identifiable.

Tests in classic rope bending machines showed that the high-tensile fibre rope is extremely wear-resistant and can withstand a high number of bending cycles. The rope was also subjected to a wide range of weather conditions and temperatures. It was exposed to sand and dust to simulate desert conditions, as well as to monsoon-type rain.

High-tensile fibre ropes in various diameters have been undergoing field tests on eleven tower cranes in Europe since 2016. The benefits of the significantly lighter rope are particularly noticeable during the assembly and dismantling of the crane – fibre ropes can often be fitted on the crane by hand and without any auxiliary reeving winches. Re-reeving the hook block is also quicker and easier. The rope does not require lubrication due to its plastic fibres, resulting in cleanliness and minimal maintenance.

The crane operator can easily and safely identify when the rope requires changing. The end of the rope's service life is primarily identified optically by the jacket on the rope undergoing defined wear, shown by the colour which clearly indicates when the rope must be changed.



*Field tests for the high-tensile fibre rope developed by Liebherr and Teufelberger were conducted on eleven tower cranes.*

Photo Credit: Liebherr

Furthermore, the fibre rope can withstand multiple notches without suffering immediate damage. The winding pattern of the new fibre rope is similar to that of a steel rope. If the lower layers have less tension than the upper ones, however, the new fibre rope is more tolerant. In the event of notching, it will free itself, unlike steel ropes which generally become enmeshed.

To achieve the controlled wear of the fibre rope, Liebherr selected the Lebus winding system, featuring a clean winding pattern on the cable drum which minimises wear and thus extends service life.

Liebherr will be launching its fibre cranes for sale from April 2019, and a new tower crane series featuring fibre rope will be launched at Bauma, to take place in Munich in the same month.

## Cummins new QSG12 diesel series with higher power density and smaller footprint

CUMMINS INC. NEW QSG12 50Hz diesel generator series offers optimum performance, reliability and versatility for stationary standby and prime power applications. With an improved design and an advanced combustion system, this new model series offers more power for less space, by delivering a much higher power density and a more reliable power solution.

Available from 360-450kVA at 50Hz, the new C400D5 and C450D5 generator set models are powered by a Cummins 4-cycle, inline, six-cylinder dual speed engine. The Cummins heavy duty engine is designed to respond to low emissions

requirements and delivers fast response to load changes, while using less fuel. In particular, an XPI fuel system is embedded on the engine across all new models for greater fuel efficiency.

This series is designed for a wide variety of applications to meet diverse customer needs in different markets such as hospitals, manufacturing, commercial and industrial facilities. The reduced noise level down to 67Db(A) at 75 per cent makes the series an ideal choice for such industries.

All new models can run in grid parallel mode to fit the diverse project site customer requirements. Additional features offered within this new product offering include extended service intervals of 500hrs for easier maintenance and unaided cold start capability at -12°C.



*The QSG12-C450D5 diesel generator.*

Photo Credit: Cummins

"This product series includes many design and performance improvements and it is a definitive step forward for us. In addition to the robust performance and fuel efficiency offering, Cummins customers can depend on comprehensive warranty and worldwide distributor network, making this series a perfect fit for global standby and prime power applications," said Ignacio González, executive director of power systems Greater Europe.





## Caterpillar launches two new ultra-class trucks for mining

FOLLOWING THE SUCCESSFUL introduction of the 794 AC 291-tonne capacity truck in 2016 and investments to further advance the 797F 363-tonne mechanical-drive truck, Caterpillar is now introducing the 798 AC and the 796 AC.

The new electric-drive 798 AC features a 372-tonne payload and will join the fleet of over 1,000 Cat mechanical-drive 797s in the 400-short-ton class. The new electric-drive 796 AC delivers 326-tonne payload and will be offered in all regions. The 795F AC, in the same size class, will continue to be offered in regions where engine emissions are less regulated. Both trucks will be available in Q2 2019.

The design of the new trucks focuses on delivering the class-leading payload, high reliability and simple serviceability. These attributes are built on the frame and chassis design proven in 18mn hours of legacy truck operation and now used by the Cat 794 AC.

The AC powertrain of each of the two new trucks draws from around five million hours of Cat 795 AC and Cat 794 AC truck operation. Cat AC electric drive is developed and manufactured by Caterpillar, the single source for the entire powertrain.

The Cat C175-16 diesel engine powers both the new trucks. With more than 21mn hours of operation in mobile equipment and power generation, the reliable engine can be configured to meet US EPA Tier 4 emissions regulations and offers a choice of 2,610kW (3,500hp) or 2,312kW (3,100hp) to meet the mine's needs. To further adapt to the mine, simple software changes can adjust system power to help meet production targets or to work smoothly in mixed fleets. The 796 AC and 798 AC are built for efficient production. Both are designed to minimise empty machine weight, as configured in the field. The design enables the 798 AC to carry its class-leading payload of 372 tonnes and to haul more material each cycle on 59/80R63 tyres.

With four-corner, oil-cooled disc brakes as well as dynamic retarding for stable handling and confident stopping, the superior retarding capability, blended braking and the Cat Traction Control



Photo Credit: Caterpillar

*Caterpillar continues to expand its mining truck offering to give mining companies the flexibility to choose what meets their needs and preferences.*

System help boost productivity while enhancing safety.

The Cat AC drive is a high voltage system (2,600 volts) that operates at a lower current than the most other competitors. When combined with Cat's total integration and design of the truck and drive system the result is higher efficiency, lower heat generation, smaller and lighter components, and longer component life.

The Cat High Efficiency (HE) body is sized and configured to meet the specific needs of the mine, dictated by fragmentation, abrasion, cohesion and the loading tool. The curved floor, front, and canopy strengthen the entire body, which is integral to the truck.

Open engine access and service platforms ease maintenance tasks. The modular design allows for easy removal and installation of components. Traction alternator and optional inverter platforms allow for easier inspections, diagnostics and component swaps. The result is less service time and greater uptime.

## Danfoss enters wastewater market with high energy efficiency pumps

IN RESPONSE TO the growing demand for energy efficient ZLD/MLD solutions in the Middle East, Danfoss has released its first APP pumps targeting large capacity industrial wastewater treatment plants.

The new APP W HC pumps that handle flow ranges from 11 to 24 cu/m per hour are made of Duplex stainless steel to provide maximum corrosion protection. The pumps can be parallel-coupled to fulfil the required capacity at any time. If one of the pumps is out for

maintenance, the remaining pumps automatically take over the full operation allowing the plant to run full speed around the clock.

"The UAE has immense dependence on water technologies that can contribute to achieving universal access to safe quality water. The APP pumps instantly adjust to ensure constant flow and efficiency in the ZLD/MLD processes. Operation is extremely easy, since changes in pressure impact neither flow nor efficiency," said Ziad Al Bawaliz, Danfoss regional president for Turkey, Middle East and Africa (TMA).

"For the last 15 years, our axial

piston pumps have proved their efficiency in reverse osmosis desalination. We have applied this know-how to match the demands of the wastewater market in the region. We believe that taking this step can intensify the call for sustainability and energy source diversification in the regional and global water industry," he added.

The APP W HC pumps deliver a constant flow whatever the amount and quality of the industrial wastewater. The simple pump design with few parts allows easy installation, inspection and maintenance, and can be operated without oil to prevent contamination.

The APP portfolio for ZLD/MLD industrial wastewater treatment comprises the following pump sizes:

- APP W HC 15 with a flow range of 11-15 m<sup>3</sup>/h (48-66 gpm)
- APP W HC 21 with a flow range of 11-21 m<sup>3</sup>/h (48-92 gpm)
- APP W HC 24 with a flow range of 11-24 m<sup>3</sup>/h (48-106 gpm)

All pumps are approved for pressures up to 120 bar (1740 psi)

### Benefits at a glance:

- Up to 90 per cent efficiency at all operation points
- Substantial energy savings up to 75 per cent
- Made of duplex steel to prevent corrosion in aggressive environments
- Easy scalability when coupled in parallel
- Low complexity with few moving parts and few system components
- Easy to operate and maintain
- Oil-free to avoid contamination

Photo Credit: Danfoss



Danfoss' APP pumps.

## Briefly

### Eaton expands AxisPro proportional valve portfolio

#### POWER MANAGEMENT

COMPANY Eaton announced the advancement of its AxisPro industrial valve platform, including new two-stage valve offerings and release of its all-new Pro-FX Configure software. The latest capabilities are designed to offer ease of configuration, enriched user flexibility, enhanced reliability and improved diagnostics to a wider range of industrial machinery.

Eaton's AxisPro valves are now available in two-stage D05 (NG10) and D07 (NG16) designs. The valves provide the same high performance and closed-loop control capability of Eaton's single-stage AxisPro valves, but in a higher flow package. The new sizes round out the AxisPro valve portfolio, which features single-stage and two-stage valves that accommodate flow rates of up to 375 LPM.

"The new two-stage valves help fill the gap in flow capacity between our existing single-stage D05 and two-stage D08 offerings," said Susan Harris, global product manager for industrial valves, Hydraulics, Eaton. "The AxisPro valves bring the easy configurability, precision, repeatability and reliability to mid-range applications, helping OEMs improve machine performance and productivity."

Eaton has also updated Pro-FX Configure, the programming software for AxisPro valves. Featuring parameter-based tuning and a complete wizard-based setup, the all new Pro-FX Configure 2.0 enables users to configure and tune AxisPro valves by following a streamlined, step-by-step graphical workflow. The new version significantly improves ease of use resulting in easier valve setup that will greatly reduce setup time and costs.

"Pro-FX Configure 2.0 is valve configuration software the way it should be – smarter, faster and easier," Harris said. "The programme simplifies everything from setup to tuning to commissioning, helping OEMs get machines to their customers faster."

AxisPro valves enable more productive industrial machines. Featuring onboard motion control, sensors, diagnostics and communication, the valves are available in three levels.

## COMANSA upgrades crane models to suit restricted space

COMANSA HAS INTRODUCED two upgraded models following the success of the 21LC1050 flat-top tower crane that was launched in September 2018.

The models – 21LC660 and 21LC750 – are mainly designed for large industrial projects, energy, mining and PPVC construction with significant performance improvement.

The versions of 24, 36 and 48 tonnes of both models have increased their maximum load capacity to 25, 37.5 and 50 tonnes. This improvement is achieved because of the use of a compacted wire rope, of smaller diameter, and an optimised design of the now lighter trolley-hook set. Such change does not only increase the maximum load capacity of the crane, but also improves the loads in all radii, including the jib-end load.

During the design of the 21LC1050, space restrictions at construction sites were taken into account. That is why a highly modular counterjib was created for such model, which allows up to six different configurations according to the jib length. The advantages of this new counterjib and its good reception in the market encouraged COMANSA to apply this design to cranes 21LC660 and 21LC750, which will improve the counterjib radius of both models when they are erected with reduced jib-lengths. Thus, when the 21LC750 crane is erected with a 50-metre jib, the counterjib radius is 25 metres instead of 31, of the previous design.

COMANSA now offers an optional 90-metre radius, for special applications. This option is available for the 21LC660 and 21LC750 models, as well as for the 21LC1050 crane.

Models 21LC660 and 21LC750 (except the 20-

*Both cranes increase their maximum load capacity up to 50 tonnes, among other improvements.*



Photo Credit: COMANSA

tonne version of 21LC660) now feature a new optional hoist mechanism (132kW-177hp), which allows speeds of up to 300 metres per minute. COMANSA also added the Effi-Plus system to the optional 110 kW hoist mechanisms (148 hp), available for all versions of such models. This system, which was already implemented in the other motors of both models, increases the hoist speed almost 15 per cent with light loads. These two mechanisms greatly improve the productivity of the crane, especially when working at large heights. Both motors can have wire rope capacity of 720 or 1,570 metres, which allows these cranes to work with heights under hook of up to 785 metres.

To simplify and unify the range of tower sections, the 21LC750 now has the D36B as standard section. The 21LC660 and 21LC750 cranes are now available worldwide and are shipped with the XL-size CUBE cab as standard. These cranes have worked in projects in different countries such as Germany, South Korea, Canada, Angola, Singapore, Sweden, Australia, Argentina, Hong Kong and Cote d'Ivoire.

## Actionable building intelligence with Gaia Insight

FUGRO'S HAS GLOBALLY released Gaia Insight that introduces a fundamental new route to de-risking major construction works and shortening project cycles. The first of a suite of Gaia products, the online platform delivers geotechnical, geological and structural insights. It integrates site investigation, real-time geotechnical and structural monitoring IoT and third-party data, and provides the analytics required to lower ground risk and accelerate construction project schedules.

Alexander van Noort, global business line director for land site characterisation, said, "Fugro is in the strongest possible position to become the 'Google Earth' for subsurface data.

We have designed Gaia Insight to overcome the challenge of understanding the Earth and visualising the subsurface in major construction works."

Gaia Insight delivers verified data in real time, reducing uncertainties, lowering the risks of geotechnical failure and avoiding disruption to the adjacent environment. "This highly valuable, actionable intelligence allows clients to accelerate their projects, reducing costs and mitigating ground risk," he explained.

Gaia Insight is already used at the world's largest infrastructure construction sites and in civil engineering assets, providing real-time data insight and risk visualisation.



## German tunneling expertise for Expo 2020 Dubai

SENNEBOGEN IS SUPPLYING large 120-ton telescopic crawler cranes for micro-tunneling projects in Dubai to be ready before the start of Expo 2020 Dubai.

Trenchless pipe-laying to reroute pipelines is a special process for developing terrain. This process is being used to press 14km of water pipes, sewage pipes and other supply pipes into the ground in the Khawaneej area of Dubai, east of Dubai International Airport. This means that the starting shaft, in particular, needs to be firmly secured in loose, sandy ground.

The contractor – a subsidiary of Al Naboodah Group Enterprises L.L.C., – used reliable and robust equipment, in order to make sure and steady progress on schedule, in spite of difficult soil conditions and high temperature. The equipment, in particular



Photo Credit: SENNEBOGEN

*The crane lowers the 30 ton drill unit and the pipe sections into the shaft, and takes away the excavated material at the same time.*

the drill head and the pipe-jacking machine, weighs up to 30 tonnes and needs to be lifted safely into the starting shaft. They chose a SENNEBOGEN telescopic crawler crane 6113 E with a lift capacity of 120 tons for the job.

After taking care of the drilling equipment, the telescopic crawler crane was also used to lift the pipe sections into the shaft and remove the excavated material.

Speaking about the machine's stability and flexibility, construction site foreman of national plant, Srinivas Badala, said, "We are lifting constantly changing loads with different boom lengths. The machine is very flexible when it comes to adjusting – we can lift varying loads in a very short time, which really speeds up progress on site."

The project must be finished by 2020 and the crane will move on to be used at another

construction site, of which there are many in Dubai, according to SENNEBOGEN.

## Rotork's CMA range expands for improved control valve automation

ROTORK HAS EXTENDED its CMA range of compact modulating actuators with new sizes specifically designed for reliable automation of larger linear control valves.

The new actuator is capable of a maximum 20kN seating thrust. The new sizes increase the CMA range modulating thrust performance to 13 kN with a 114.3mm (4.5 inches) stroke length for the automation of larger valves with higher pressure ratings. The combined performance of the CMA and the larger CVA ranges enables Rotork's innovative electrical control valve actuation technologies to be applied to process control applications of virtually any size and description.

CMAs are robust enough to handle extreme temperature swings, corrosive environments and are also available for explosion-proof areas. The CML-1500 and CML-3000 models, including those with hazardous area approvals, are watertight to IP68 for temporary submersion (seven metres, 72 hours). The optional reserve power pack (RPP) uses supercapacitors to provide the actuator with enough stored energy to perform predetermined action on mains power failure, such as moving to the fully closed position, fully open position or anywhere in between. Manual operation is available as standard.

The cost-effective electric solution is suitable for

a wide variety of applications found in sectors such as power generation, chemicals, petrochemicals and the majority of other process industries. The new sizes are ideal for linear valve control with modulating duty, generally in remote locations, such as oil pipelines and remote gas extraction stations where power supplies are limited. Single-phase or DC electrical power is all that is required for control valve actuation, saving the installation and on-going costs associated with instrument air supplies. Simple cabling replaces cumbersome lines and hoses, eliminating freezing and leaking problems.

The CMA is a low power consumption solution (less than one watt at standby) for automation in established or remote installations such as oil installations and offshore facilities where there are pneumatic limitations. The design allows for solar powered and battery back-up supplies in remote locations where electric energy consumption is a concern and power is often provided through solar collection for the operation of remote automated critical systems such as wellheads. The new sizes retain all the features and benefits of the established CMA range of compact modulating actuators, providing continuous modulation with 0.1 per cent accuracy for the most demanding process control applications.

## Briefly

### Endress+Hauser launches calibration centre in Saudi Arabia

ENDRESS+HAUSER HAS INVESTED around US\$3.4mn in a modern, state-of-the-art calibration and training centre in the industrial city of Jubail, Saudi Arabia, thus strengthening direct contact with customers in the Middle East while supporting the country's economic development.

Saudi Arabia wants to expand the private business sector and become less reliant on oil production, two key goals of the Vision 2030 programme.

"It was this vision that inspired us to create the new calibration and training centre," said Mohammed Abdellah, managing director of Endress+Hauser Saudi Arabia.

"With this new centre, we are supporting the country to achieve these reforms and can also increase the local added value by offering local solutions," he added.

The training centre features a classroom with interactive technology, an extensively equipped workshop and a field bus training lab. It offers practical, hands-on training programmes designed to impart knowledge on measurement technologies and process control systems that are in demand by the hydrocarbon, power and water and wastewater industries. Young Saudi engineers and university graduates will be able to use the facility to acquire technical know-how in accordance with the latest international standards. Local technical resources can enhance their knowledge and stay competitive with the customised trainings offered in the centre.

The 2,700 sq m facility houses a modern calibration centre, the only vendor-managed gravimetric calibration facility in the region, from which Endress+Hauser will offer manufacturer-independent calibration services for measurement instruments. Endress+Hauser also offers reliable on-site calibration, leading to cost savings and a reduction in production downtime. "For us, it's important to be able to address our customers' needs in a flexible manner and to ensure that they are optimally managed," said Matthias Altendorf, CEO of the Endress+Hauser Group.



تتوي الحكومة تطوير شركة «الطيران العمالي» لتكون الوجهة الأولى في المنطقة

وهو يضم مبنى جديدا للمسافرين، ومحطة للشحن الجوي، وبرج مراقبة جويًا وغير ذلك من المرافق الأخرى التي تشمل شبكة طرق متطورة ومنطقة لوجستية توفر الخدمات للمطار والميناء، ومن المقرر أن تشمل أيضا الخدمات اللوجستية المرتبطة بأنشطة الطيران والميناء، هذا إلى جانب تأجير السيارات وخدمات الناقلات ومكاتب الشحن البحري والمستودعات والخدمات الصناعية والعقارية. وتبلغ المساحة الإجمالية لمبنى المسافرين الجديد 5700 متر مربع تقريبا، بينما تصل الطاقة الاستيعابية المتوقعة للمطار إلى حوالي 500 ألف مسافر سنويا. أما عن صالة شحن البضائع فهي مصممة لاستيعاب 25000 طن من البضائع سنويا، ومزودة بممر يبلغ طوله أربعة كيلومترات، مما يمنح مطار الدقم مقومات العمل على الصعيد الدولي. هذا بينما تبلغ مساحة المبنى الجديد للمحطة (ب) (8660 متر مربع وطاقته الاستيعابية الحالية 500 ألف مسافر سنويا، يمكن زيادتها إلى مليوني مسافر. ومن بين المنشآت القائمة المطاعم ومنافذ البيع بالتجزئة.

وسمح إنشاء مصفاة الدقم والممر الصناعي الصيني، الذي يجري العمل به، يكون من المتوقع أن يستقبل مطار الدقم ما يقرب من 100 ألف عامل مقيم ومؤقت خلال السنوات المقبلة. هذا، وتشمل الخطط الحكومية زيادة عدد المسافرين إلى 40 مليون مسافر سنويا بحلول عام 2040، وتطوير شركة الطيران العمالي الأبرز في السلطنة لتصبح الوجهة الأولى في الشرق الأوسط وشمال إفريقيا. وذكر المركز الوطني للإحصاء والمعلومات أن أكثر من 12 مليون مسافر عبروا من خلال مطاري مسقط والدقم حتى نهاية سبتمبر/أيلول 2018.

## مفكرة إجال الأعمال 2018

### ديسمبر/كانون الأول

13 - 11 المؤتمر السعودي للشبكة الذكية (SASG 2018) جدة

### يناير/كانون الثاني 2019

14 - 17 القمة الدولية لطاقة المستقبل أبوظبي





يعتبر مطار مسقط الدولي إحدى الركائز التي تقوم عليها السياحة العمانية

## معايير جديدة إلى عُمان

تشهد عُمان، في الوقت الحاضر، إنفاقاً حكومياً ضخماً، كما يجري بذل جهود على مستوى البلاد من أجل دعم وتيسير السياحة والنقل والمواصلات، وهو ما سيحولها إلى واحدة من أفضل وجهات السفر المقصودة في العالم. ولتعزيز هذه الجهود، يجري ضخ استثمارات ضخمة لإنشاء مطارات جديدة، دخل اثنان منها حيز التشغيل هذا العام. وقد قام مؤخراً الدكتور أحمد بن محمد بن سالم الفطيمي، وزير النقل والاتصالات، بافتتاح مطار مسقط الدولي العصري الجديد للعمليات التجارية، واصفاً إياه بأنه «فخر كبير» وإنجاز غير مسبوق لعُمان.

الجديد فيمكنه استيعاب أكثر من 20 مليون مسافر دولي، حسبما أوردت صحيفة «مسقط ديلي». كذلك يضم المبنى الجديد أيضاً مساحة مخصصة للتسوق للمعفى من الضرائب تبلغ 6000 متر مربع، و8000 حيز لإيقاف السيارات و96 نافذة لتسجيل وصول المسافرين، هذا بالإضافة إلى عدد من المطاعم.

وبخلاف مسقط، تم افتتاح مطار الدقم الجديد في شهر سبتمبر/أيلول 2018 لاستيعاب الأعداد الزائدة من المسافرين الوافدين إلى عُمان، وذكرت صحيفة «تايمز أوف عمان» أن المطار الجديد يعتبر جزءاً رئيسياً من هيئة المنطقة الاقتصادية الخاصة بالدقم.

ونقطة انطلاق نحو شواطئ السلطنة ذات المياه الصافية وسواحلها الخلابة وأقاليمها الداخلية، قد استقبل عدد ركاب بلغ 11419791 راكباً خلال الفترة ما بين يناير/كانون الثاني وسبتمبر/أيلول 2018، بزيادة بلغت نسبتها 9,8 في المائة عن نفس الفترة خلال العام المنصرم.

وتبلغ مساحة المطار الجديد ذي المبنى الضخم 335000 متر مربع، ويضم متاجر للبيع بالتجزئة، إلى جانب استراحات من الدرجة الأولى ودرجة رجال الأعمال. ومكاتباً لشركات الطيران، هذا فضلاً عن وكالات تأجير السيارات. أما مبنى المسافرين

بهذا أصبحت سلطنة عمان قادرة على استيعاب الطائرات الكبيرة مثل الطائرات من طراز إيرباص A380 وبوينج 747. وكانت العمليات المتعلقة بإنشاء مبنى المسافرين الجديد بالمطار قد بدأت في الحادي والعشرين من مارس/آذار هذا العام. وذكر بيان رسمي أن مطار مسقط الدولي يعتبر إحدى الركائز التي تقوم عليها استراتيجية السياحة العمانية الرامية إلى جذب المزيد من السائحين الوافدين من جميع أنحاء العالم.

وأورد البيان أن «هذا المطار الفائق الحدائق، والذي يعتبر البوابة الرئيسية لعاصمة البلاد مسقط

التقنية المعلومات      سبورات الأعمال      التطورات

التشخيص والوقاية      النقل والتوصيلات      أخبار السوق

ملخص محتويات القسم الإنجليزي

**التطورات: تطورات السوق،**

### تحليلات: الاقتصاد المصري، التقرير السنوي للنقل

**خدمات لوجيستية:** الشحن، المناطق الحرة، فتح الأنفاق.

**مرافق خدمية:** الطاقة المتجددة، التدفئة والتبريد، وتكييف الهواء.

**فعاليات:** معرض بيع فائض معرض التدفئة والتهوية وتكييف الهواء، المؤتمر السعودي للشبكة الذكية، القمة الدولية لطاقة المستقبل.

**النشرة التقنية**   
TECHNICAL REVIEW MIDDLE EAST الشرق الأوسط  
SERVING THE REGION'S BUSINESS SINCE 1984 خدمة في مجالات التقنية منذ ١٩٨٤

المختصة بروسيا بانسداد  
 فريق التحريز والتفتيش، يوم الاثنين، عرّضوا بائنة التدمير كروفت والمخازن جي.إي.إس. براكشا، إيه.إو.  
 (الاستعدادات)، بناءً على برنامج بروتوكول موريسا لوس. إيزابيل بونيفينو، تكي فالاسكس، فلي البومبول، لوزا بونيفينو.  
 القاتل: لسانة فورد هام  
 مدبرة بيوعات الإغاثية: ماريلز فورد هاج  
 من بيوعات الخلية: جرجا هاج، ساجا

هاتف: 0044 (0) 1444 373100 ، فاكس: 0044 (0) 1444 373101 ، بريد إلكتروني: [publish@brownjohnandson.com](mailto:publish@brownjohnandson.com)  
 الناشر الرئيسي:  
**Alain Charles Publishing Ltd**  
 University House, 11-13 Linnet  
 Avenue Place  
 London SW16 6ER UK  
 هاتف: 0044 (0) 1444 373100  
 فاكس: 0044 (0) 1444 373101

المراجع: عز الدين م. علي [esadd@esadd.com](mailto:esadd@esadd.com)  
التصميم والأخراج الفني: محمد سائد الخط [designer72@gmail.com](mailto:designer72@gmail.com)

Technical Review Middle East ISBN 0267 1367 الشرق الأوسط  
 نشرهاست سيات في العام 1999 دوترا أمريكا شركة أن لتأجير النشر  
 Alain Charles Publishing, University House, 11-13 Lower Grosvenor Place, London, SW1P 0EX, UK  
 بوليفيا في المطابع للنشر

Agem Profs: Makem International, 200 Wood Avenue, Middletown, NJ 08846

تولید: سریندی شرینگز، لی مونتیز، پیکتوریل شیفاکومپار  
 پید: الکترونی production@delachar.com

البيانات: [www.ksars.gov.sa](http://www.ksars.gov.sa)، [www.ksars.gov.sa](http://www.ksars.gov.sa)

رئيس مجلس الإدارة: دريك فوردهام

© Technical Review Middle East ISSN: 0267-5507

**Alain Charles**  
Publishing  
Serving the world of business

<b>Company .....</b>	<b>Page</b>	<b>Company .....</b>	<b>Page</b>
AES Arabia Ltd .....	2	Kaeser Kompressoren FZE .....	51
Aksa Jenerator Sanayi AS .....	3	Mohammad Al-Ojaimi Contracting Est. ....	21
Eurovent Certita Certification .....	5	Okada Aiyon Corporation .....	41
Gardner Denver FZE .....	27	Omicron Electronics Middle East .....	19
Gustav Bertram GmbH .....	38	Ortea S.p.A. ....	43
Herrenknecht AG .....	25	Peter Berghaus GmbH .....	37
IIR Exhibitions (MEE Dubai 2019) .....	29	Ranco Group .....	17
Iveco SPA.....	13		



Compressed air 4.0 – networked, predictive and even more efficient

# SIGMA AIR MANAGER® 4.0



- The revolutionary **SIGMA AIR MANAGER 4.0** is the key to seamless integration of your compressed air supply into **Industrie 4.0** production environments
- Guaranteed optimum energy efficiency and dependable compressed air availability thanks to **3-D<sup>advanced</sup> Control**

**KAESER KOMPRESSOREN FZE**

P.O. Box 17485 • Jebel Ali Free Zone • Dubai • United Arab Emirates  
Phone: +971 4 805 0000 • Fax: +971 4 805 0077 • E-mail: info.dubai@kaeser.com

**www.kaeser.com**

TECHNICAL REVIEW MIDDLE EAST

SERVING THE REGION'S BUSINESS SINCE 1984 / العدد السادس ٢٠١٨

# النشرة التقنية

UK £10, USA \$16.50

في خدمة شركات المنطقة منذ ١٩٨٤

الشرق الأوسط

## معايير جديدة إلى عُمان

تفتتح عمان مطارين جديدين من أجل استيعاب الأعداد المتزايدة من المسافرين الوافدين إلى السلطنة كل عام.