

# TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

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Vol 36/Issue One 2020

## Region focus

Despite geopolitical tensions, the GCC's Fourth Industrial Revolution is on course

## Smart mobility

Saudi Arabia and the UAE lead the way

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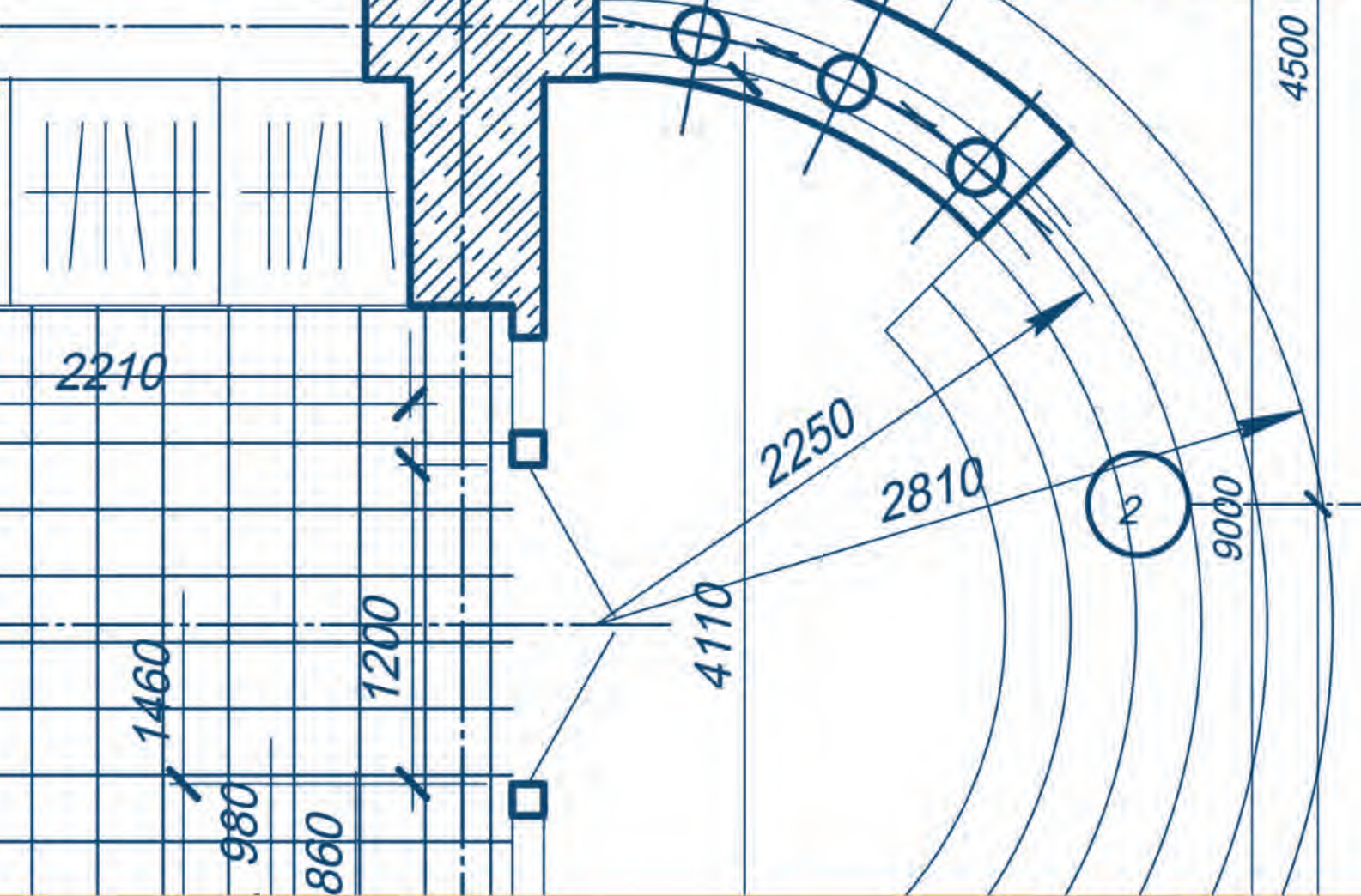
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## EDITOR'S NOTE

IN A FEW months from now, an event that is expected to be the silver bullet to end years of slow growth will open.

While 80 per cent of the construction projects tied to Expo 2020 are now complete, the anticipated spending and investments from an expected 25 million visitors is expected to stretch well into the new decade. Will the ripple effects extend to the rest of the region as well? Which sectors stand to benefit the most? Our special report (p15) offers some insights.

Elsewhere in the issue, we report on smart mobility solutions (p26), take a peek at the future of manufacturing (p24), highlight how the Middle East is tackling its water scarcity (p30) and economist Moin Siddiqi analyses the outlook for the GCC (p20).

As we prepare for our bumper Middle East Energy issue, let us know if you plan to be there. We'd love to hear from you!

Reach the Technical Review editorial team at [trme@alaincharles.com](mailto:trme@alaincharles.com)

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## TECHNICAL REVIEW

الخدمة لشركات المنطقة منذ 1984

SERVING THE REGION'S BUSINESS SINCE 1984

### MIDDLE EAST

النشرة التقنية - الشرق الأوسط

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## Briefly

### Empower commissions Barsha Heights district cooling plant

EMIRATES CENTRAL COOLING Systems Corporation (Empower) has commissioned the new district cooling plant in Barsha Heights, with a total capacity of 31,250 refrigeration tonnes (RT).

The construction contract of US\$4.60mn was awarded by Empower for its new district cooling plant in Barsha Heights area, as part of the plans to develop its infrastructure, improve district cooling services and to increase the operational efficiency across its district cooling plants. The new district cooling plant in Barsha Heights will replace the three temporary plants currently operating in the area.

Empower explained that the new plant is designed according to the highest international standards in terms of construction and building design, as it took into account the criteria of sustainable green buildings, and modern urban development in Dubai.

The project is expected to be awarded the Gold certification for green buildings from the Leadership in Energy and Environmental Design (LEED) of the US Green Building Council (USGBC).

### DEWA wins sustainable excellence certificate from EFQM

DUBAI ELECTRICITY AND Water Authority (DEWA) has won the Sustainable Excellence certificate from the European Foundation for Quality Management (EFQM). The EFQM develops standards of sustainable excellence and recognises organisations and companies who have reached high levels of excellence.

DEWA won the certificate after a visit by a team of experts from the EFQM to its head office. They evaluated the standards of sustainable excellence, conducted research and intensive meetings, and direct interviews with a number of DEWA employees and managers. The evaluation process included five pillars: the management and employees; the environment; the society; the partnerships and customers. The evaluation included the most important projects, data, and indicators of the smart initiatives.

## DP World wins 30-year BOT concession for Jeddah Port container terminal



Sultan Ahmed Bin Sulayem, DP World group chairman and CEO, at the signing ceremony of the BOT concession at the Jeddah Islamic Port.

Photo Credit: DP World

GLOBAL TERMINAL OPERATOR DP World has been awarded a 30-year Build-Operate-Transfer (BOT) concession by the Saudi Ports Authority (Mawani), for the management and development of the Jeddah South Container Terminal at the multi-purpose Jeddah Islamic Port.

Under the agreement, DP World will invest up to US\$500mn to improve and modernise the Jeddah Islamic Port, including major infrastructure development to enable the Port to serve the ultra-large container carriers (ULCC's), which are considered the world's largest mega containerhips.

The Jeddah Islamic Port is on the Red Sea and is the largest port in Saudi Arabia with annual volumes of over 6 million TEU. As a crucial link on the world's busy east-west trade route and the kingdom's main commercial centres, the port currently handles approximately 60 per cent of the country's sea-imports and is a strategic hub that connects East-West cargo.

Developing Jeddah Islamic Port is considered a vital milestone towards achieving the targets of the national industrial development and logistics

vision realisation programme, one of the Saudi Vision 2030's major initiatives. The concession is set to be instrumental in facilitating the smooth and efficient movement of cargo and greater access to local and international markets. DP World has operated the South Container Terminal on a lease agreement for more than 20 years.

As the main trade destination for Saudi Arabia and one of the Kingdom's major port privatisation projects, the new terminal will also have an upgraded capacity of 3.6mn TEU up from 2.4mn TEU, to meet the expected growth demands of the future, and will provide 1,400 jobs.

Sultan Ahmed Bin Sulayem, DP World Group Chairman and CEO, said, "DP World is honoured to support the Kingdom's 2030 growth vision through this new concession to transform the country into a global logistics hub. We have committed to investing significantly to modernise the Jeddah South Container terminal, which will not only result in greater direct and indirect job creation but also deliver best-in-class efficiency and productivity to the Port's operations."

## ENOC opens two solar-powered service stations in Dubai

ENOC GROUP HAS announced that two service stations have opened at Dubai Hills and Lehab First, expanding ENOC's network to 135 stations across the UAE.

Saif Humaid Al Falasi, group CEO, ENOC, said, "The launch of the new service stations is in line with our vision to invest into the country's growing energy infrastructure."

Al Falasi added, "Our goal is to expand our network to 191 service stations in the lead up to Expo 2020 Dubai, which will significantly add to the ease of customers to access their fuel and convenience-store requirements."

The new stations are equipped with latest technologies including photovoltaic solar panels on the roof the canopy, advanced vapour recovery system, next-gen fuel dispensers and



These service stations bring further convenience to the communities living in Dubai.

Photo Credit: ENOC

fully integrated digital wall displays. With these two stations, ENOC's network now includes 18 solar-powered service stations and 23 service stations with smart displays. The service stations have been built as per global retail standards and are complaint with Dubai Municipality Green Building Regulations.

## AMEA signs power purchase agreement for 700MW wind and solar projects in Egypt

AMEA POWER HAS signed a power purchase agreement (PPA) with the Egyptian Electricity Transmission Company (EETC) for a 200MW solar PV project and a 500MW wind project in Egypt.

The PPA was signed by Sabah Mashali, president of EETC and Hussain Al Nowais, chairman of AMEA Power, in the presence of Egypt's Prime Minister, Dr Mostafa Madbouly; the minister of electricity and renewable energy, Mohamed Shaker and the UAE ambassador to Egypt Jomaa Al Junaibi, amongst others.

Abyodos Solar Power Company (ASPC), a company fully owned by AMEA Power, will build, own and operate the 200MW solar project in the Kom Ombo region of Aswan under the 25 year take-or-pay agreement. While Amunet Wind Power Company (AWPC), fully owned by AMEA Power, will build, own and operate the 500MW wind power project in the Ras Ghareb area under the 20 year take-or-pay agreement.

The power plants, expected to be commissioned in Q4 2021 for solar and Q3 2023 for wind, will be able to supply power to approximately 830,000 homes, with planned production of nearly 2.9GWh per year. The project confirms the dedication of AMEA Power to



Photo Credit: Adobe Stock

*The power plants are expected to be commissioned in Q4 2021 for solar and Q3 2023 for wind.*

support the country's firm goal of increasing the renewables contribution by 42 per cent to its energy mix by 2035.

AMEA Power signed a PPA with Togo's national utility company, La Compagnie Energie Electrique du Togo (CEET) for a 50MW solar PV project on 26 November 2019. This project is now under construction. A PPA with Chad's Ministry of Energy for a 60MW solar PV project was also signed earlier this year. Additionally, the company has two projects in Jordan under construction; a 50MW solar power plant and a 51.75MW wind power plant.

## ACWA Power pairs with SABIC to promote local energy content

ACWA POWER HAS signed a memorandum of understanding with Saudi Basic Industries Corporation (SABIC) to enhance local content and establish an end-to-end value chain for all its activities and projects in Saudi Arabia.

The agreement was signed by Thamer Al Sharhan, managing director at ACWA Power and Fuad Mosa, VP of local content and business development at SABIC.

Under the terms of the agreement, SABIC will support ACWA Power's efforts to develop local content in the country by assessing and conducting feasibility studies for potential opportunities which could add value to the local economy and generate employment for Saudi nationals.

"ACWA Power looks towards this next phase of our efforts to enhance localization with the

support of our partner; SABIC. Partnering with the like-minded entity we hope to create synergies in our local content endeavours and are confident this partnership shall prove to be a giant step in the right direction," explained Thamer Al Sharhan, managing director of ACWA Power.

"Through our Sakaka Solar PV project, already we are seeing the benefits of supporting local content for the wider industry through numerous success stories. In addition to developing local businesses expertise in the renewable sphere, our efforts have also helped inject additional investment in the Saudi economy," Al Sharhan added.

In November 2019, ACWA Power has established ACWA Industrial Investment Company (AIICO), a business unit



Photo Credit: ACWA

*ACWA Power will provide SABIC with up-to-date technology trends, market insights and will support the growth of research and development in the renewable energy sector in the region.*

dedicated to enable local content development and industrialisation in the kingdom. AIICO will focus on complying with mandatory Local Content targets for new projects, enhancing ACWA Power's capacity to competitively increase Saudi exports abroad, promoting innovation, transferring knowledge, and creating job opportunities.

## Briefly

### Cebarco bags US\$222mn contract for Bahrain's new convention centre

BAHRAIN IS TO START construction on a new international exhibition and convention centre, due to be completed in two years' time. Works, Municipalities Affairs and Urban Planning Minister Essam Khalaf has awarded the contract for construction of the new centre to Cebarco Bahrain, in a contract worth 83.6 million Bahraini dinars (US\$222.34 million), according to a report by the *Gulf Daily News*. The 308,000 sq m centre will be built next to the Bahrain International Circuit, on a 1.3 million sq m site.

### Abu Dhabi Power signs deal with Digital14 for tech solutions

ABU DHABI POWER Corporation (ADPower) and Digital14 have inked an agreement, whereby Digital14 will provide solutions to enhance digital resilience within ADPower's group of companies. The agreed scope of work will ensure effective technology assessments and deliver digital transformation programmes that tackle ADPower's most critical requirements.

Jasim Husain Thabet, CEO and managing director of ADPower, said, "We are pleased to be partnering with Digital14 on this strategic programme. ADPower is responsible for the transformation of Abu Dhabi's water and electricity sector into an enhanced system that is reliable, efficient, delivers value and ensures it is fit for the future."

### Jordan completes 75 per cent of US\$324mn Desert Highway project

JORDAN'S PUBLIC HOUSING minister Falah Omoush said that around 75 per cent of the Desert Highway project has been completed after opening 246 km of the road for traffic in the three parts of the project, according to a report. The total cost of the project stands at US\$324mn, US\$138mn of which was a grant from the Saudi Fund for Development and US\$105mn a loan from the fund, while the remaining cost will be covered by the government, the *Jordan Times* reported. It connects Jordan with Saudi Arabia through Al Mudawwarah border crossing, and is used by Hajj and Umrah pilgrims.



## Briefly

### Volvo Group and Isuzu Motors to form strategic alliance

THE VOLVO GROUP and Isuzu Motors today signed a non-binding Memorandum of Understanding with the intent to form a strategic alliance within commercial vehicles in order to capture the opportunities in the ongoing transformation of the industry.

In a first step, the intention is to establish a global technology partnership and to create a stronger, combined heavy-duty truck business for Isuzu Motors and UD Trucks in Japan and across international markets. This will entail transferring ownership of the complete UD Trucks business globally from the Volvo Group to Isuzu Motors in order to accelerate growth.

"The Volvo Group and Isuzu Motors have a well-established relationship on medium-duty trucks in Japan based on mutual respect, shared values and win-win spirit. We see great potential to extend our cooperation within technology, sales and service as well as other areas going forward, for the benefit of our customers and business partners," says Martin Lundstedt, president and CEO of the Volvo Group.

"Isuzu Motors and the Volvo Group strongly believe in the business opportunities and synergy potential between the two Groups. We intend to derive the full value from each other's different specialties across product and geographical strongholds," says Masanori Katayama, president and representative director of Isuzu Motors.

All technology cooperation between the Volvo Group and Isuzu Motors will be managed through individual contracts. The intended strategic alliance between the Volvo Group and Isuzu Motors will include:

- Forming a technology partnership, which will leverage the parties' complementary areas of expertise within both well-known and new technologies as well as to create a larger volume base to support technology investments.
- Creating the long-term conditions for a stronger heavy-duty truck business for UD Trucks and Isuzu Motors in Japan and across international markets.

## Infrastructure investment to push GCC growth: World Bank

INFRASTRUCTURE INVESTMENT AND business climate reforms are expected to advance growth in the Gulf Cooperation Council economies to 2.2 per cent in 2020, according to the World Bank's latest global economy report.

Middle East and North Africa (MENA) growth is projected to accelerate to a modest 2.4 per cent in 2020, largely on higher investment and stronger business climates. Among oil exporters, growth is expected to pick up to 2 per cent, said the *January 2020 Global Economic Prospects* report.

Growth in oil importers is expected to rise to 4.4 per cent. Higher investment and private consumption are expected to support a rise to 5.8 per cent in FY2020 growth in Egypt.

Meanwhile, global economic growth is forecast to edge up to 2.5 per cent in 2020 as investment and trade gradually recover from last year's significant weakness but downward risks persist, says the report.

"With growth in emerging and developing economies likely to remain slow, policymakers should seize the opportunity to undertake structural reforms that boost broad-based growth, which is essential to poverty reduction," said World Bank Group vice-president for Equitable Growth, Finance and Institutions, Ceyle Pazarbasiglu. "Steps to improve the business climate, the rule of law, debt management, and productivity can help achieve sustained growth."

Growth among advanced economies as a group is anticipated to slip to 1.4 per cent in 2020 in part due to continued softness in manufacturing. Growth in emerging market and developing economies is expected to accelerate this year to 4.1 per cent. This rebound is not broad-based; instead,

MENA growth is projected to accelerate to a modest 2.4 per cent in 2020.



Photo Credit: Adobe Stock

it assumes improved performance of a small group of large economies, some of which are emerging from a period of substantial weakness. About a third of emerging market and developing economies are projected to decelerate this year due to weaker-than-expected exports and investment.

According to the report, downside risks to the global outlook predominate, and their materialization could slow growth substantially. These risks include a re-escalation of trade tensions and trade policy uncertainty, a sharper than expected downturn in major economies, and financial turmoil in emerging market and developing economies. Even if the recovery in emerging and developing economy growth takes place as expected, per capita growth would remain well below long-term averages and well below levels necessary to achieve poverty alleviation goals.

## Bahrain to introduce renewable energy certificates

BAHRAIN'S SUSTAINABLE ENERGY Authority (SEA) president Abdulhussein bin Ali Mirza has signed an edict launching a set of renewable energy certificates, said a news report.

According to a Bahrain News Agency report, the edict will come into form on its publication in the Official Gazette. The certificates will be



Photo Credit: Adobe Stock

The certificates will be granted to renewable energy producers.

granted to renewable energy producers and investors in solar energy systems so as to enable them to register their production with the SEA.

The SEA will evaluate and control the amount of energy produced and approved in the form of a "renewable energy certificate" for every 1 megawatt hour, the report mentioned.

Mirza said that the Cabinet approved in its weekly meeting on 6 January his mandate to issue an edict establishing the renewable energy certificates in his capacity as chairman of SEA.

The "Renewable Energy Certificates" system will provide an opportunity for investors and financing institutions to evaluate investment opportunities, finance sustainable energy projects and verify the energy output, which is produced through reliable and approved programmes and tools.



## Environmental protection a priority in Abu Dhabi industries: report

ABU DHABI HAS seen a considerable increase in environmental protection expenditures and revenues, revealed the Annual Environment Survey conducted by Statistics Centre - Abu Dhabi (SCAD).

According to a report by Emirates News Agency (WAM), the SCAD survey covered five major sector groups - construction, transportation and storage, services, trade and industry - to measure environmental protection expenditure in Abu Dhabi.

One of the vital findings of the survey was the use of natural gas as an energy resource to conduct economic activities. The emirate of Abu Dhabi's total energy consumption for the five sectors during 2018 accounted for 1,659,010 Billion British Thermal Units (BBTU). Natural gas accounted for 89.7 per cent of this total, reaching 1,488,449 BTU, the report mentioned.

Water and wastewater usage figures showed increases in consumption within the Emirate, particularly in the industry sector, with total water consumption reaching 15,831 million cu/m in 2018, compared to 12,622 million cu/m in 2017. SCAD attributed the rise in water usage to rapid economic and agricultural development, along with sharp population increase within the emirate, it added.

The statistics centre noted that while seawater consumption - used mainly for cooling purposes in



There was 41 per cent increase in the industrial sector's use of treated wastewater.

process industries and power plants - increased by 25.5 per cent, 89 per cent of the seawater utilised was discharged back into the sea. Such high demand has led to the reliance on non-conventional water resources, SCAD explained, noting the use of desalinated water, treated wastewater, and the reuse of treated wastewater.

Worth noting was the 41 per cent increase in the industrial sector's use of treated wastewater.

SCAD recorded a total of 9.8 million tonnes of waste in the emirate of Abu Dhabi, with industrial and commercial waste generating the highest rate of 36 per cent.

Despite this, efforts by industry partners and organisations have led to environmental protection activities expenditures in Abu Dhabi.

## Saudi Arabia invites bids for third round of National Renewable Energy Programme

AS SAUDI ARABIA seeks to reduce its reliance on fossil fuels, the kingdom has started the bidding process for four major solar projects capable of generating 1,200MW.

The Renewable Energy Project Development office of Saudi Arabia's Ministry of Energy has issued the request for qualifications (RFQ) for round three of the kingdom's National Renewable Energy Programme (NREP), reported the official Saudi Press Agency (SPA).

Round three projects will be divided into two categories: "Category A", which targets smaller companies, includes the Layla 80 MW solar PV and Wadi Al Dawaser 120 MW solar PV projects, while "Category B" includes the Saad 300 MW solar PV and Ar Rass 700 MW solar PV projects, according to the report.

Faisal Al-Yemni, head of the Renewable Energy Projects Development Office (REPDO) stated that the projects within Round Three will carry a minimum requirement of 17 per cent local content as calculated by the mechanism defined by the Local Content and Government Procurement Authority, which aims to

increase the value-added contribution of products and services in the national economy, it mentioned.

In July 2019, REPDO launched round two of the NREP which comprised of six solar PV projects amounting to 1,470 MW. The deadline for receiving proposals for round two projects is 20 January 2020, and 3 February 2020, for categories B and A respectively.

The RFQ window for round three closes on 6 February 2020.



The new phase comprises of four Solar PV projects.

## Briefly

### Tristar acquires logistics land in Oman's Duqm port

TRISTAR GROUP, THE global integrated energy logistics company, has acquired more than 11,000 sq m of land in the Port of Duqm, Oman that will have a 3,048 sq m covered warehouse with a capacity of 5,000 pallet position and an open yard for future expansion. The logistics warehouse project will offer 3PL and 4PL services.

The facility offers Port Marine Services at various ports and anchorage areas in Oman by transporting crew, supplying fresh water, stores, lube oil, and gas oil; and providing marine logistics.

Tristar has a new facility located in the Rusayl Industrial Estate Phase 2 with a total plot size of 15,000 sq m with an office building, a warehouse with a capacity of 1,000 pallet position, a five-bay workshop with two inspection pits, and a washdown bay. It can store products outside and inside the warehouse. Eugene Mayne, Group CEO of Tristar, said, "We constantly seek to build partnerships through which we can expand our service offering to our customers across the GCC and beyond, and the Port of Duqm provides us with the perfect platform to do so."

### UAE launches 5-year multi-entry tourist visa for all nationalities

IN A BID to support the UAE's tourism economy, and affirm the country's position as a global tourist destination, the UAE Cabinet has approved the issuance of a five-year multi-entry tourist visa for all nationalities visiting the country.

The decision was made during the Cabinet's first meeting during 2020 the Year of Preparation, chaired by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice-President, Prime Minister and Ruler of Dubai, said the Emirates News (WAM) report. Another decision made during the meeting includes the introduction of a visa waiver for Mexican citizens travelling to the UAE. The two decisions will be implemented during the first quarter of 2020.

The Cabinet approved Air Arabia Abu Dhabi as a national carrier airline for the UAE.

## Regulation the main barrier to implementing innovative tech in real estate: survey

ALMOST HALF (45 per cent) of the 375 senior decision makers from global real estate businesses surveyed said that they were unclear or worried about the legal/regulatory implications of new technology, admitting that this was their biggest obstacle to implementing new tech within their business.

Cyber security fears (43 per cent) and a lack of available data (42 per cent) also featured prominently as barriers to technology implementation. 62 per cent of larger businesses cite lack of data as an obstacle.

Despite the concerns, the report, *Techtonic Shift in Real Estate*, also found that financial investment into innovative technology is set to grow substantially in the next 12 months, with 35 per cent of companies intending to spend more than a quarter of their IT budget on new technology

innovations in 2020, up from just 12 per cent in 2019.

Over half of respondents to the survey (55 per cent) – which included general counsels, heads of legal/IT, C-suite executives and other senior roles – said that implementing new technology within their business is a key enabler for growth that will lead to better decision making, with 45 per cent highlighting AI and ML as their greatest enabler to growth.

Shiraz Sethi, Middle East managing partner and co-head of Employment at DWF, said, "As evidenced in our research, it is clear that the real estate sector is on the cusp of change, with a host of new technologies poised to transform the sector. Whilst this brings an array of new opportunities and challenges, this can be managed with a thorough approach to risk mitigation."

He added, "The UAE has taken a lead in



Photo Credit: Adobe Stock

*Cyber security fears (43 per cent) and a lack of available data (42 per cent) also featured prominently as barriers to technology implementation.*

that respect with initiatives ranging from the Dubai Land Department's Smart Investment Map and Blockchain Project whilst a significant portion of the UAE's tech savvy population already uses technology to guide their real estate research with 72 per cent of prospective property buyers using online portals to search for properties."

## TRME supports business leaders' summit pushing for diversity and inclusion

THE FIFTH EDITION of the Arab Women In Leadership and Business Summit recognises the achievements of Emirati trailblazers and business leaders.

In the last few years, the Middle East has seen a surging wave of new generation leaders as evidenced by the UAE's current cabinet, which comprises nine ministers who are women. Women in the UAE have successfully made inroads into traditionally male-dominated sectors such as aviation, energy and defence.

*Technical Review Middle East* is proud to be the media partner for the fifth edition of the Arab Women In Leadership and Business Summit (5-6 February 2020) organised by MICE Quotient, which celebrates empowered women while recognising their achievements.

From being the UAE's first-ever Arab women-centric summit to being the most consistent Arab women's summit over the years, AWILB 5 has redefined the meaning of leadership and business in the UAE. The milestone year of the summit has AXA Gulf as a platinum sponsor, in line with its vision of being a market leader in diversity and inclusion, and Habibt as an associate partner.



Photo Credit: MICE Quotient

*AWILB has re-defined the meaning of leadership and business in the UAE.*

The last four editions of the Arab Women in Leadership and Business Summit has had more than 900 participants attend presentations from more than 100 leaders.

This year's summit will be attended by some of the region's most prominent personalities: HE Dr Sharifa Al Yahyai, former Minister of Social Development, Sultanate of Oman, Maryam Bin Theneya, Member, Federal National Council, UAE; HE Reem Bin Karam, director of NAMA; Alyazeya Saeed, the first female cargo manager in Oman, Emirates SkyCargo; Amna Sultan Al Owais, chief registrar, DIFC Courts; Hala Kazim, social entrepreneur; Eida Al Muhairbi, Emirati inventor; Eman Al Mahmoud, head of partnerships, Sharjah Entrepreneurship Center – Sheraa; Hessa Al Ghurair, director human capital, UAE General Civil Aviation Authority (GCAA); Noha Hefny, co-founder, She is Arab; Samah Al Hajeri, chief innovation officer (CIO), Ministry of Economy- UAE; Paul Adamson, CEO of AXA Gulf; Despo Michaelides, chief HR & diversity officer, AXA Insurance Gulf and Pooja Gupta, co-founder of Habibt, amongst several others.

The Summit has Dubai SME, the agency of Dubai Economy mandated to develop the small and medium enterprise (SME) sector, as official government partner, and the support of the Dubai Businesswomen Council, NAMA Women, Young Arab Leaders, AMCHAM Abu Dhabi, CEO Club Networks, Leadership Consultants, Evolvin Women, Being She as Encouragement Partner, and media partners, including *Technical Review Middle East*.

Abdul Baset Al Janahi, CEO of Dubai SME, said, "Empowering women to assume leadership in government and the private sector has remained a top priority for Dubai and the UAE."

Edwin Paul, CEO, MICE Quotient, commented, "It is imperative for trailblazers, champions and pioneers of change to showcase their achievements, since their extraordinary achievements and actions inspire other women of the region to stand up and follow their dreams."



# Kuwait HSE Forum: focus on worker wellbeing

Critical industry issues to be highlighted at the second edition of the Kuwait Health, Safety and Environment Forum.

**T**HE HIGHLY ACCLAIMED Kuwait Health, Safety & Environment Forum returns from 2-3 March, 2020, with the addition of exciting new features. The Forum will feature a combination of presentations, case studies and panel discussions.

Taking place at the JW Marriott Hotel Kuwait City, the Forum will once again bring together health and safety professionals, government regulators, policy makers and solutions providers to explore topical health, safety and environment issues. Held under the patronage of the Ministry of Health, Kuwait, and in association with the Kuwait National Guard and Kuwait Fire Services, the Forum builds on the success of the inaugural event held in September 2018. It will provide a platform for the sharing of insights, expertise and best practice on critical issues across the spectrum of health and prevention, safety and security, environment, risk management and technology.

Despite rapid advances in the health and safety sector, Kuwait faces a range of occupational health challenges such as reducing environmental hazards, improving the effectiveness of health policies, addressing communication issues and encouraging a safer work environment and worker wellbeing.

There is also a big push on sustainable healthcare, tying in with the unified Gulf Health Strategy and the UN Sustainable Development Goals (SDGs), to raise standards of health and wellbeing throughout the country.

"Regular occupational health training is urgently required to spread the concepts and importance of both a culture of safety and decent work," said Dr Ahmed Al-Shatti, director, Occupational Health Department at the Ministry of Health, Kuwait, who also stressed the importance of international, regional and local exchange of expertise.

The Forum itself on 2-3 March will feature



Photo Credit: Alain Charles Publishing

The Kuwait HSE Forum (2-3 March, 2020) will feature a combination of presentations, case studies and panel discussions.

presentations, case studies and panel discussions, through which industry experts will address subjects such as health promotion, sustainable healthcare as a way forward to achieve the unified Gulf Health Strategy, improving competency and safety in high rise construction sites, protecting workers with 3D modelling, driving safety, leadership and safety culture, mitigating risks in hostile environments, IoT for monitoring potential workplace hazards and the effects of greenhouse gases on health and environment.

The line-up of eminent speakers includes Dr Duaa Alkhaledi, director, Occupational Health Department, Ministry of Health, Kuwait; Dr Ghaida Mubarak Al-Shoraian, senior general Practitioner, Kuwait National Petroleum Company; Qusai Al Shatti, ex-director-general, Central Agency for Information Technology (CAIT); Muhammad Alamgir, HSE manager, Petrofac, Kuwait; Dr Ahmed Haji, senior doctor, Petrochemical

Industries Company KSC; Shaikhah Alfajjam, head, Shuaiba Medical Centre; and Jason Woods, Middle East & India representative for International Powered Access Federation (IPAF). The Forum will include an exhibition showcasing latest technologies, products and services.

Soumen Chakraborty, event producer, commented, "Kuwait is hard at work to achieve the third of the 17th UN 2030 Agenda Sustainable Development Goals (SDGs): "ensuring healthy lives and promoting the well-being for all at all ages is essential to sustainable development". There is a need to significantly strengthen the workforce with appropriate training related to occupational health, safety and environment. The Kuwait HSE Forum 2020, with the theme of "Prevent, Prepare, Protect", is all set to deliver. Visionary speakers from KNPC, KIPIC, Petrofac and more will present the latest case studies and share best practices." ■

# ON THE WEB

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

## Middle East and Africa power industry tenders up 32 per cent in Q3 2019

THE MIDDLE EAST and Africa (MEA) power industry tenders activity saw 505 tenders announced in Q3 2019, marking a rise of 32 per cent over the last four-quarter average of 382, according to GlobalData's power database. South Africa led the activity in Q3 2019 with 226 tenders and a share of 44.8 per cent, up 12.4 per cent over the previous quarter and up 92 per cent when compared with the last four-quarter average.

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



Photo Credit: Pixels/Pixabay

*South Africa led the activity in Q3 2019.*

## Honeywell acquires Rebellion Photonics

HONEYWELL HAS ACQUIRED Rebellion Photonics, a Houston-based provider of innovative, intelligent, visual gas monitoring solutions with an aim to maximise safety, operational performance, emissions mitigation and compliance in the oil and gas, petrochemical and power industries.

Rebellion offers the industry's only real-time monitoring platform that visually identifies and quantifies gas releases to quickly detect and analyse leaks and keep workers safe.

The intelligent monitoring system incorporates a sophisticated AI-driven software platform that automatically alerts plant operators if a gas leak, fire or security issue is detected.

[www.technicalreviewmiddleeast.com/business-a-management/](http://www.technicalreviewmiddleeast.com/business-a-management/)

## Grandweld wins Khalid Faraj Shipping's contract to build two crew boats

GRANDWELD SHIPYARD, THE UAE-based shipyard, has signed an agreement to build two crew boats to Khalid Faraj Shipping (KFS), the Abu Dhabi-based company in delivering comprehensive marine services and logistical support to offshore oil and gas projects.

The contract includes an option that allows Khaled Faraj Shipping to build two additional boats, with price protection over a period of three months.

[www.technicalreviewmiddleeast.com/logistics/](http://www.technicalreviewmiddleeast.com/logistics/)



Photo Credit: jshh/Pixabay

*The boats can be modified to work in guarding and security operations.*

## MWSPC contracts DuPont Clean Technologies for Sirhan acid plant

THE MA'ADEN WA'AD AI Shamal Phosphate Company (MWSPC) has signed a service agreement for a period of three years with DuPont Clean Technologies (DuPont) for its sulfuric acid plant in Sirhan, in the Turaif region in Saudi Arabia.

The service programme will include activity testing of catalyst samples, evaluation of catalyst performance, plant optimization, troubleshooting and management of catalyst replacement.

Furthermore, DuPont will track performance and assess the overall health of the plant using pre-agreed metrics and will employ its proprietary portable MECS PeGASyS gas chromatography system to assist MWSPC with troubleshooting and plant performance optimisation.

[www.technicalreviewmiddleeast.com/business-a-management/](http://www.technicalreviewmiddleeast.com/business-a-management/)

## AI crucial for sustainable economy

ARTIFICIAL INTELLIGENCE (AI) will be a major enabling technology in achieving renewable energy and sustainability targets, according to a report released ahead of January's 2020 World Future Energy Summit (WFES). The report, "Artificial Intelligence: Transforming the Future of Energy and Sustainability," is based on a comprehensive literature review of AI's predicted impact.

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



Photo Credit: Gerd Altmann/Pixabay

*AI could supercharge the industry.*

## Japan and Morocco sign investment agreement

SUZUKI KEISUKE, STATE minister for foreign affairs of Japan, and Mohcine Jazouli, minister delegate to the minister of foreign affairs of Morocco, signed the 'Agreement between Japan and the Kingdom of Morocco for the Promotion and Protection of Investment' (the Japan-Morocco Investment Agreement).

This agreement aims at further protection and promotion of investment between the Contracting Parties. Morocco is actively attracting foreign investments by creating free economic zones while taking advantage of its proximity to European and African countries and of its abundant young and cheap labour force.

The number of Japanese companies set up in Morocco is steadily increasing and its investment in the future is expected to grow.

[www.technicalreviewmiddleeast.com/business-a-management](http://www.technicalreviewmiddleeast.com/business-a-management)





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# EXECUTIVES' CALENDAR 2020

## JANUARY 2020

19-21 **Intersec** DUBAI [www.intersec.ae.messefrankfurt.com](http://www.intersec.ae.messefrankfurt.com)

## FEBRUARY 2020

3-6 **Mining Indaba** CAPETOWN [www.miningindaba.com/Home](http://www.miningindaba.com/Home)

5-6 **Arab Women in Leadership & Business Summit** DUBAI [www.micequotient.com/awilb](http://www.micequotient.com/awilb)

2-4 **Kuwait Health, Safety & Environment Forum** KUWAIT [www.hse-forum.com](http://www.hse-forum.com)

4-6 **Saudi Transport And Logistic Services** RIYADH [www.recepo.com/events/saudi-transport-and-logistic-services/](http://www.recepo.com/events/saudi-transport-and-logistic-services/)

11-12 **Smart City Expo** DUBAI [www.smartcitiesexpoworldforum.com](http://www.smartcitiesexpoworldforum.com)

25-26 **Middle East Rail** DUBAI [www.terrapinn.com/exhibition/middle-east-rail/index.stm](http://www.terrapinn.com/exhibition/middle-east-rail/index.stm)

## MARCH 2020

3-5 **Middle East Energy** DUBAI [www.middleeast-energy.com](http://www.middleeast-energy.com)

4-7 **Kuwait Building Show** KUWAIT [www.kuwaitbuildingshow.com](http://www.kuwaitbuildingshow.com)

8-11 **The Big 5 Saudi** JEDDAH [www.thebig5saudi.com](http://www.thebig5saudi.com)

9-11 **Middle East Coatings Show** DUBAI [www.coatings-group.com/mecs/dubai](http://www.coatings-group.com/mecs/dubai)

10-14 **CONEXPO-CON/AGG** LAS VEGAS [www.conexpoconagg.com](http://www.conexpoconagg.com)

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

## Abu Dhabi to host 10th World Urban Forum

UNDER THE PATRONAGE of His Highness Sheikh Mohamed bin Zayed Al Nahyan Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, the department of urban planning and transport (DMT) has announced the launch of the 10th World Urban Forum (WUF10) in Abu Dhabi from 8-13 February 2020.

The UN-Habitat conference aims to raise awareness on sustainable urbanisation in cities and liveability across the globe. The forum provides a platform for decision-makers, businesses, urban experts and academics to share their expertise and create sustainable urban development and smart cities of the future.

The 10th World Urban Forum will be themed 'Cities of Opportunities: Connecting Culture and Innovation' and will, for the first time, place culture, creativity and innovation at the heart of dialogue about the



*WUF10 will serve to provide an in-depth examination of urbanisation.*

liveability, vitality and sustainability of cities.

Falah Al Ahababi, chairman of DMT, said, "Hosting the 10th World Urban Forum is a significant opportunity for Abu Dhabi to showcase its considerable achievements in sustainable urban development. Cities are growing and changing rapidly. Abu Dhabi is moving towards realising its ambition to become the sustainable Arab emirate. Abu Dhabi is making

considerable steps towards achieving its ambition to be at the forefront of smart and sustainable cities. This forum is a starting point for cooperation with local and global partners, will increase opportunities for people who work in the sustainable development sector and combine culture and innovation."

The United Nations Human Settlements Programme, UN-Habitat, is the United Nations agency for human settlements.

Photo Credit: DMT

It is mandated by the UN General Assembly to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all.

Mohamed Al Khadar, executive director of Strategic Affairs at the DMT and the general coordinator of WUF10, said, "The 10th World Urban Forum is the first event in its history to be held in the Middle East. This is a strong testimony to Abu Dhabi's strategy in implementing urban sustainability, with the city having undergone a phenomenal shift towards urbanisation in a relatively short time."

The DMT is working in close collaboration with UN-Habitat as well as the UAE Ministry of Foreign Affairs and International Cooperation, to welcome more than 100 ministers and over 20,000 people from more than 160 countries.





Photo Credit : Expo 2020

*The run up to the Expo 2020 has already seen increased public sector spending on infrastructure projects.*

# Vision 2020: Sustainable recovery ahead

The Middle East in general and the UAE in particular are gearing up for significant growth across construction, energy, logistics and power. *Shalaka Paradkar and Abhishek Paul* report.

**W**HILE GEOPOLITICAL TENSIONS often put the Middle East on front pages around the world, two events taking place in 2020 promise to showcase a different side of the region for world audiences and change the narrative.

The six-month long Expo 2020, which opens on 20 October this year, and the G20 summit in Riyadh (21-22 November, 2020), are expected to not only change perceptions but also stimulate business and attract investors to a region determined to decarbonise its future.

When Expo 2020 opens in Dubai, it will be the first time that the event has been hosted in the Middle East region since the exhibition started in 1851. The run up to the Expo has already seen increased public sector spending on infrastructure projects, including roads, mass transport links and a new airport, and

boosted private sector investment in hotels, retail and real estate development.

The most direct economic impact of the event will come largely from spending by the influx of visitors.

According to Dubai Tourism statistics, Dubai hosted 15 million visitors in 2019, making it the fourth most-visited city globally. In 2020-21, visitor numbers are projected to surge to 23 million, making Dubai the world's second most-visited city.

George Dickson, general manager MENA at Aggreko, says, "Over the past decade, the UAE has built a reputation as a hub of innovation. Expo 2020 will put the UAE on the global stage, providing a platform for partnerships to be built between the 135 nations and thousands of organisations set to participate in the event. Some of the most influential individuals from

governments and industry are coming together in one place to consider some of the biggest global challenges and opportunities. Expo 2020 is already beginning to have a positive impact on the region. There's been healthy growth in the infrastructure and construction sectors while the hospitality industry is gearing up to accommodate the millions of visitors expected during the six-month event."

The new hotels, roads and malls coming onstream has been providing a boost to the construction sector, although about 80 per cent of the work has been completed.

The overall GCC hotels project value completed in 2019 is estimated to be worth US\$ 13,263mn. The UAE's hotel supply is expected to grow at a CAGR (2017-2022) of 6 per cent to 183,718 hotel rooms, according to Alpen Capital. Dubai aims to complete

160,000 hotel rooms by October 2020 to welcome 25 million visitors for Expo 2020.

Saudi Arabia is likely to be the second highest in terms of interiors and fit-out spend valued at US\$ 914 mn in 2019, primarily driven by religious tourism. Saudi Arabia's inbound tourism are the annual pilgrimages of Hajj and Umrah, which is forecast to increase to 30 million visitors collectively by 2030. Expansion in hotel rooms is expected to reach 541,000 rooms in 2022, according to Alpen Capital.

### Construction: Betting on digital

The push for sustainability and innovation will continue to shape multiple sectors, including construction. Disruptive technologies including cloud computing, 5G technology, robotics, smart cities and such will continue to present opportunities. Government-led initiatives are driving the growth of the digital economy in the Middle East.



Saudi Arabia is a hotspot for the region's construction firms.

Photo Credit: Adobe Stock

According to Ciaran McCormack, director MENA at construction consultancy Linesight, factors such as economic diversification, social reform, especially in Saudi Arabia, and general demographic demand, combined with renewed government ambition, will be medium term drivers for the industry.

"In addition, a wide-ranging trend of reforms across the region for foreign investment and public-private partnerships (PPP) should serve to support this growth and provide an alternative source of funding, relieving pressure on government finances to some degree."

Dierk Mutschler, CEO, Drees and Sommer predicts, "A gentle slowdown in some regional markets coupled with the emergence

of new technology and business models will pave the way for forward-thinking companies to capitalise on these shifts.

"From 2020, the increasingly competitive environment will result in more demand for quality products, leading to a longer-term focus on investment in sustainable business models. After all, future business models, products and services will be measured not only by their economic success, but by their impact on our environment."

### Critical industry issues

The construction sector has had a number of challenges in the region over recent years. "The lack of new project opportunities has forced contractors to lower tender bid prices to win work, eroding profit margins," says McCormack. "At the same time, fiscal tightening by governments has led to lengthening delays in contract payments. Together, these factors are

causing severe cash flow difficulties for contractors and their suppliers.

"Collectively, our industry will need to rethink how we can approach this issued to achieve a long-term solution. As it stands, it is unlikely that the traditional approach will provide a platform for the long-term growth of a sustainable industry. The collective mindset needs to change. Innovative practices need to be promoted and rewarded, be they at the design or delivery stage."

With more than 5,000 capital projects worth over US\$1.6tn, Saudi Arabia currently holds the greatest potential for the construction sector within the GCC, according to a PwC report. Unsurprisingly, Saudi Arabia is a hotspot for the region's

construction firms.

McCormack predicts the sector will recover steadily from the beginning of 2020, after what has been a challenging period of subdued performance.

"The focus is now on Saudi Arabia, which has vast infrastructure development plans. New forms of project procurement and finance such as public-private partnerships are gaining traction, and we are also seeing the emergence of major new construction clients such as Riyadh's Public Investment Fund. With this in mind, we believe the best opportunities lie in the hospitality and entertainment sectors. Linesight has a strong portfolio in both, having been involved in many such projects, throughout the region over the last 10 years."

### Effects of Expo 2020

Expo 2020 is expected to benefit the UAE both in the immediate short term and provide further long-term benefits for the economy. And a percentage of the expected 20 to 25 million visitors are highly likely to look at investing in the region in some capacity, McCormack predicts.

"With Dubai positioning itself as a leading global city from a technological standpoint, I believe Expo 2020 will be the stimulus to further drive economic diversification and subsequent growth as it focuses on developing several high-growth areas, including the quickly evolving technology industry," he avers.

The UAE will also benefit from further investments in several sectors including infrastructure, transportation, technology, hospitality and tourism – all driven by the event's sub-themes, Mobility, Sustainability and Opportunity. After the event, the Expo 2020 site is to be converted into District 2020 with 200,000 sq m of LEED Gold structures from Expo 2020 to be retained and retrofitted.

Masterplanned by AECOM, District 2020 provides a platform for Dubai's vision of fostering sustainable economic development and an innovation-driven economy. It is envisioned to bring together companies of all sizes, across key growth industries that are poised for collaboration – such as logistics and transport, travel and tourism, construction and real estate, and education – placing them alongside enabling technologies, such as augmented reality, big data and IoT.

The ecosystem will benefit from investments made in cutting-edge digital infrastructure, with ultra-fast internet connectivity and a 5G mobile network, making it ideal for innovators and start-ups.



### Logistics: Autonomy rules

The rapid growth of e-commerce and new technologies, including AI and IoT, will continue to impact businesses where transport and logistics play an essential role. Recent studies by PwC have revealed that major transformations brought about by new technological solutions are taking place across the sector, identifying digitalisation, shifts in international trade, software-driven process changes, changes in domestic markets commerce and machine-driven process changes, as the five primary drivers of change.

The Middle East logistics market is forecast to reach US\$66bn by end of 2020, according to Swisslog Middle East, the robotic, data-driven and flexible automated solutions provider. The UAE's e-commerce sector alone is currently worth US\$17.8bn, representing 45.6 per cent of the total value of the Middle East's e-commerce market. A thriving e-commerce industry in the Middle East and North Africa is expected to be worth US\$28.5bn by 2022, while the global logistics industry will touch the US\$726bn mark by 2020.

While digital disruption is taking every industry by storm, players in the logistics sector can pursue the deployment of disruptive technologies strategy to stay ahead of the curve. "Digitising their operational processes will help incumbent players rise to the challenge posed by platform-based pricing models and remain competitive. But they also need to seize the value-generating opportunities that the application of new technologies delivers," states Accenture's *Digital Disruption in Freight and Logistics* report.

The research clearly shows that if they persist with "business as usual," traditional players can expect to lose both competitiveness and value. The industry's incumbents simply can't compete with new, digital entrants by sticking to largely manual and heterogeneous processes, supported by a variety of different tools, the report opines. Further, it suggests logistics firms in the region ought to roll out a few disruptive technologies to stay in the game, such as blockchain as it improves shipment visibility and brings in a trust element into the sale and movement of international cargo by offering secure data distribution and validation technology.

Revolutionising the picking, packing and commissioning processes in warehouses and cross-docking areas can be done by augmented reality. Application of this technology leads to keep handling costs competitive.

**“Factors such as economic diversification, social reform, especially in Saudi Arabia, and general demographic demand, combined with renewed government ambition, will be medium-term drivers.”**



Ciaran McCormack, director MENA, Linesight

With the help of robotics, automation levels can be enhanced to almost 100 per cent in the transport planning and customer invoicing processes.

Logistics is quickly moving towards a driver-less way of bringing goods from A to B by eliminating the dependency on the human factor. Data collected via sensors, RFID, barcode and remote devices along the entire value chain will be a make or break capability. Already the first-ever semi-autonomous heavy vehicle road trip between Dubai and Abu Dhabi took place in November 2019. The 140km trip by the Mercedes-Benz Actros truck was announced by the Emirates Authority for Standardisation and Metrology (ESMA) at the International Conference on Future Mobility (ICFM). A draft law by ESMA which proposes regulations related to insurance, traffic departments, registration, technical requirements, connectivity and safety and security is currently under discussion.

Digital platforms are changing the revenue mix by enabling both physical and virtual product offerings that not only handle products from one point to another. Also, insights offered to clients along the supply chain can enable the optimisation of other parts of the business. Leveraging big data analytics in the entire ecosystem can provide a whole new set of information for third-party logistics to strongly drive operational efficiencies through a higher utilisation of assets.

Nadia Abdul Aziz, president of Dubai-based National Association of Freight and Logistics (NAFL), comments, "The UAE's logistics sector has been an early adopter of modern technologies which positioned the Arab world's second biggest economy as a world-class business hub. Dubai had taken a proactive role in planning its development in terms of logistics facilities, zones and investments. We have the best connectivity in the region to reach out to more than

three billion population via our both air and sea/rail connectivity."

Dubai Customs World has launched a first of its kind world logistics passport initiative offering incentives to businesses, and also a reward scheme for logistics and freight companies. Both initiatives are expected to stimulate demand in Dubai's products, services and integrated transportation systems. Under the Dubai Plan 2021, logistics-related targets are prominent.

"The strategy has an economic component that aims for the city to become one of the top five logistics centres in the world. Dubai has also launched a new 'Silk Road Strategy' aiming to establish the emirate as a global trade and logistics hub," Nadia Abdul Aziz adds.

### Energy: The changing mix

Renewable energy is the key to sustainability, and a top strategic priority with Dubai and the UAE. Having taken early steps to bid farewell to the last barrel of oil, the UAE Energy Strategy 2050 aims for an energy mix that combines renewable and clean energy sources. The UAE will invest AED 600 billion until 2050 to meet the growing energy demand and ensure the sustainable growth of economy.

The Dubai Clean Energy Strategy 2050 aims to provide 7 per cent of Dubai's total power output from clean energy by 2020. This target will increase to 25 per cent by 2030 and 75 per cent by 2050. The strategy consists of five main pillars: infrastructure, legislation, funding, building capacities and skills, and having an environment-friendly energy mix. The infrastructure pillar includes initiatives such as the Mohammad bin Rashid Al Maktoum Solar Park, which is the largest single-site solar power project in the world, with a planned capacity of 5,000 megawatts (MW) by 2030, and a total investment of AED50 billion.

"Dubai is a pioneer in the transition

towards a green economy through two parallel courses of action. The first is to reduce energy and water demand by 30 per cent by 2030, by promoting efficiency and conservation programmes; whereas the second is improving the supply side by diversifying the energy mix, especially clean energy, increasing the efficiency and reducing the power and water network losses," says Saeed Mohammed Al Tayer, MD and CEO of Dubai Electricity and Water Authority (DEWA). "Our efforts contributed to a significant reduction in carbon emissions in Dubai. Net carbon dioxide (CO<sub>2</sub>) emissions have achieved a considerable reduction of 19 per cent by the end of 2018, two years ahead of the target date set by the Carbon Abatement Strategy 2021 to reduce carbon emissions by 16 per cent by 2021. The UAE in general, and Dubai in particular, have always been a pioneer in implementing solutions to enable it to have the lowest carbon footprint in the world by 2050," added Al Tayer. Dubai aims to be a global model for clean energy by using the disruptive technologies of the Fourth Industrial Revolution such as: artificial intelligence (AI), unmanned aerial vehicles, energy storage, blockchain, the Internet of Things and many more.

DEWA implemented the Mohammed bin Rashid Al Maktoum Solar project in partnership with a consortium led by ACWA Power from Saudi Arabia as the main developer, and Spain's TSK as the main contractor, with an investment of AED 1.2 billion. In November 2019, DEWA announced that the consortium led by ACWA Power and Gulf Investment Corporation is the preferred bidder to build and operate the 900MW fifth phase of the solar park for using photovoltaic (PV) solar

**“Discussions that will take place at Expo 2020 have the potential to have a long-lasting impact. Creating a sustainable future is a global priority and a theme that will be central to the Expo.”**

**George Dickson, general manager MENA at Aggreko**

panels based on the Independent Power Producer (IPP) model.

The solar park implements the triple-bottom line (TBL) related to sustainability in DEWA's strategic map by including three key aspects of sustainability: economy, environment, and society. The solar park will play a role in improving the efficiency of costs and outcomes. It attracts investments, while supporting economic sustainable growth in Dubai and diversifying the local supply chain.

Meeting the Dubai Clean Energy Strategy 2050 targets requires a capacity of 42,000MW of clean and renewable energy by 2050. DEWA has attracted investments around AED 40 billion from the IPP model, which strengthens public-private partnerships. Through this model, it received the lowest global solar energy prices for five consecutive times, making Dubai a global benchmark for solar energy prices. The capacity of the solar power projects completed at the Mohammed bin Rashid Al Maktoum Solar Park is 713MW, and is due to exceed its target of 1,000MW in 2020, with new phases currently under construction and design that will reach 2,863MW by 2023.

Further proof of solar solutions can be found in the rise of businesses and homes in

Dubai building photovoltaic plants to also use solar power. As of today, there is more than 134MW of rooftop solar photovoltaic capacity installed across Dubai. This initiative, Shams Dubai, has the legislation and regulations in place to enable solar power to spread across the city and provide additional clean capacity.

DEWA launched Digital DEWA as its digital arm, making it the world's first digital utility to use autonomous systems for renewable energy, storage, expansion in AI adoption, and providing digital services. Digital DEWA will expand its digital services through MORO, a digital platform that was launched in 2018 to provide hosting and data storage services as well as digital services management in the cloud. This pillar goes beyond cloud computing to provide global, standardised services and multiple solutions from a single location, according to the highest quality standards, to enhance the customer experience.

Aggreko's Dickson says the company is working to develop more efficient energy solutions, which have the potential to play an important role in delivering a more sustainable future. "Aggreko is at the forefront of the rapidly changing energy market. We specialise in delivering integrated energy systems, with the ability to combine solar energy and battery storage with other sources of power generation to meet the growing demand for clean, reliable and efficient power."

Aggreko is currently installing a gas power and battery storage system for United Steel Industries at its Fujairah steel mill to support their efforts to reduce carbon emissions. With decarbonisation playing an increasingly important role in the region, the opportunities for the energy sector in the Middle East are even greater, says Dickson.

"Discussions that will take place at Expo 2020 have the potential to have a long-lasting impact. Creating a sustainable future is a global priority and a theme that will be central to the Expo. 2020 is forecast to be a year of great opportunity in the Middle East. We look forward to continuing to operate and grow our network in the market." ■



Aggreko is currently installing a gas power and battery storage system for United Steel Industries at its Fujairah steel mill.

Photo Credit: Aggreko



# Kuwait: finding the right path

Striking the perfect balance between oil and non-oil sectors remains vital to achieve short and long-term goals for the affluent GCC nation. *Abhishek Paul* reports.

**K**UWAIT'S EMIR SHEIKH Sabah Al-Ahmad Al-Jaber Al-Sabah named Sheikh Sabah Al-Khalid Al-Sabah as prime minister, elevating him from his role as foreign minister, in mid-November last year. As the cabinet led by the newly appointed prime minister is gearing up to prepare a budget for 2020/2021 fiscal year, it is worth mentioning certain sectors need an intense push. Especially, the non-oil sectors require increased budget allocations to accelerate the economic diversification plans.

Amidst growing regional geopolitical tensions, there is an increased need for Kuwait to wean itself off oil, which currently contributes 90 per cent of state revenues and about half its GDP.

With New Kuwait 2035 development plan in place, major infrastructure works – from roads and schools to airports and hospitals – are either underway or in the design phase, showing the signs of significant activity in the construction sector in recent years.

According to Economic Update: Middle East Q3 2019, produced by ICAEW and Oxford Economics, Kuwait's non-oil activity strengthened to 4.1 per cent - significantly above the 1.5 per cent growth recorded in the preceding quarter, lifting Q1 GDP growth to 2.6 per cent year-on-year from a downwardly revised 1.8 per cent in Q4 2018.

Looking forward, the IMF expects Kuwait's economic growth excluding the oil and gas sector to be about 3.5 per cent in 2020.

"In order to build a sustainable and competitive economy, Kuwait must overcome the challenges posed by oil pressures by increasing its revenue base beyond the sector. The economy looks stable in the short term, but will be heavily reliant on the non-oil economy moving forward. Regulatory reform and privatisation efforts will be crucial to improve the business climate and increase FDI," the Saudi Gazette reported quoting Michael Armstrong, FCA and ICAEW



*The IMF expects Kuwait's economic growth excluding the oil and gas sector to be about 3.5 per cent in 2020.*

Photo Credit: Adobe Stock

Regional Director for the Middle East, Africa and South Asia (MEASA).

To accomplish projects related to infrastructure, tourism, service industries and the information technology sector, and promote investments in renewable energy infrastructure, the government plans to invest US\$100bn by 2023.

GlobalData expects the residential construction market to record a forecast-period CAGR of 5.99 per cent in nominal terms, driven by the government's aim to provide affordable houses to the country's middle- and low-income citizens. It is expected that the country's rising population, urbanisation, and positive developments in regional economic conditions would support the market to grow.

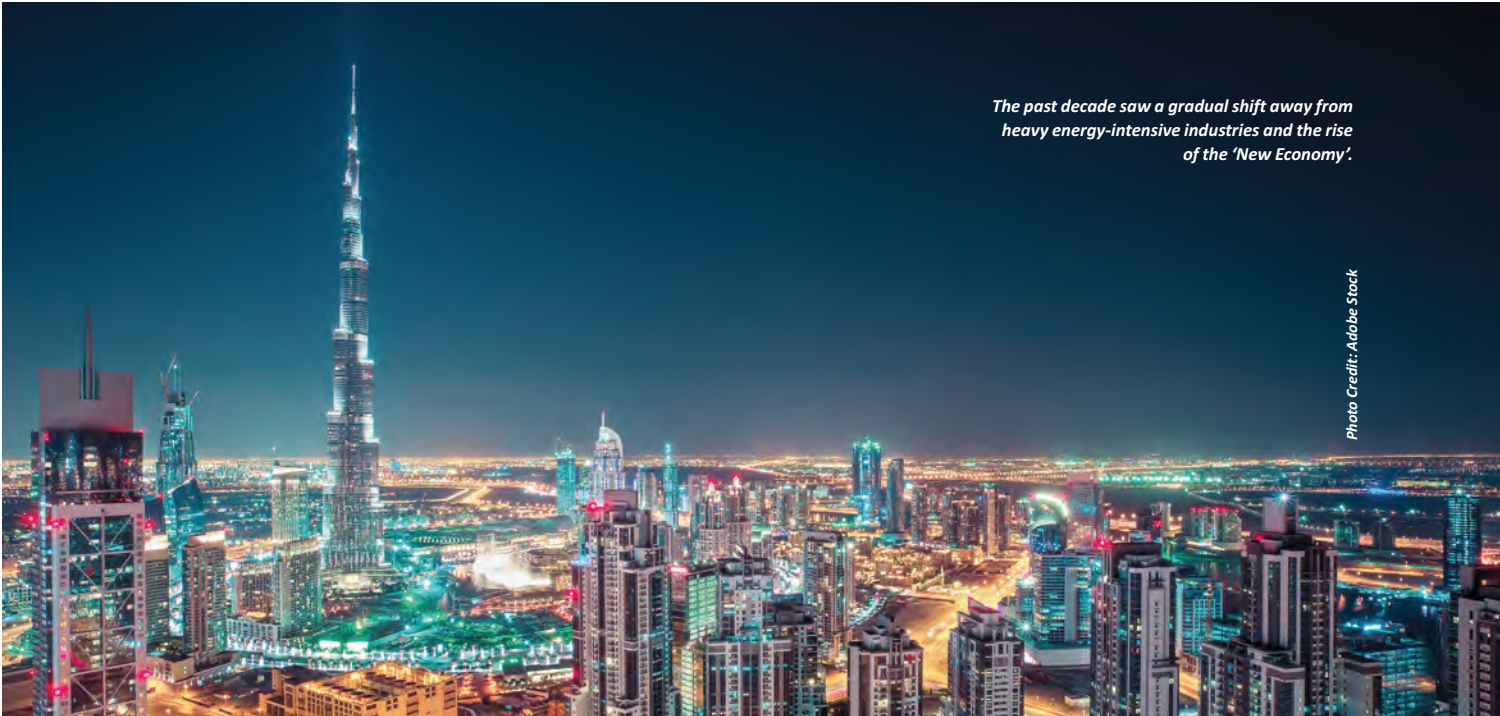
The construction work on two large-scale residential projects - South Sabah Al Ahmad residential city and South Saad Al Abdullah city – has begun and slated for completion in 2029. Realising the ambitious 700,000-inhabitant Silk City mega-development project in Subiyah on the northern side of Kuwait Bay would be a defining moment for Kuwait's economy.

Construction sector aside, focus on prioritising renewable energy sector remains important. Though the government aims to generate 5 per cent of its electricity from renewable sources by 2020, and 10 per cent by 2030, the renewable energy, satisfies less than 1 per cent of energy demand today, stated Kuwait Energy Outlook 2019.

"Rigidities in the electricity sector's structure and the lack of coordination between the various institutions participating in the power sector are the main reasons for the lack of private sector involvement and the slow development and deployment of renewable energy technologies," the report said.

On the governance front, the country has to revisit its present processes to ease off bureaucratic hurdles for businesses. Owing to its complex procedures, Kuwait stood 97th place on the World Bank's 2019 Ease of Doing Business ranking, compared to the United Arab Emirates which ranks 11th.

It remains to be seen how the new prime minister intends to navigate the economic diversification drive. ■



*The past decade saw a gradual shift away from heavy energy-intensive industries and the rise of the 'New Economy'.*

*Photo Credit: Adobe Stock*

# GCC economic outlook for 2020

The region's governments are taking steps to improve their domestic business and foreign direct investment (FDI) environments, laying the foundations for vibrant economies, says economist *Moin Siddiqi*.

**C**OMPARED WITH THE pre-2014 period of rising oil prices, the six Gulf Cooperation Council (GCC) economies grew well below trend in 2019 due to heightened global trade tensions, lower oil production volumes, deflation and geopolitical risks – hindering investor sentiment and raising risk perceptions.

Regional oil-exporters are facing elevated financing needs and public debt. Most need higher oil prices to balance their budgets – Saudi Arabia US\$86.5, Oman US\$87.3, and Bahrain US\$95.1 per barrel, respectively. “With concerns about weak growth, the challenge of the strong association between oil prices and government expenditures remains,” noted the International Monetary Fund (IMF). The GCC's oil sector in 2019 contracted by an average 1.4 per cent compared to 2.5-per cent growth over the previous year.

However, buoyant non-oil activities sustained positive growth

**Ultimately, developments in the non-oil sectors will have a decisive impact on the trajectory of GCC economies.**

largely thanks to public spending on transportation, energy and logistics infrastructure. “Ultimately, developments in the non-oil sectors will have a decisive impact on the trajectory of GCC economies,” said the World Bank. The long term agenda of each member-state targets priority sectors such as logistics, tourism, power generation, financial services, health, education and manufacturing to deliver on economic diversification and increased job creation.

The past decade saw a gradual shift from heavy energy-intensive industries towards lower-carbon ones and the rise of the ‘New Economy’ led by information and communication technologies (ICT), business/consultancy services and innovative healthcare, among others, with non-oil growth frequently exceeding oil-sector growth in every GCC-states. Rates of non-oil expansion vary by country – depending on relative sizes of hydrocarbon and non-oil sectors. Bahrain and the UAE boast highly diversified economies, while Kuwait remains largely reliant on fossil-fuels based industries (see *Table 1*).

## **Unleashing market potential**

GCC governments are taking steps to improve their domestic business and foreign direct investment (FDI) environments, thus laying the foundations for vibrant economies. In 2019, the GCC bloc



**Selected indicators on the GCC non-hydrocarbon economy (Table 1)**

	Pop. 2018 mn	Nominal GDP 2019 US\$bn	Non-Oil Sector %GDP 2019	Non-Oil GDP Growth (%) avg. 2015-19	Non-Oil Exports* 2019 (est.)US\$bn	Non-Oil Manufacturing / %GDP 2018	Manufacturing Value Added # US\$bn 2018	Services Value Added %GDP 2018
Bahrain	1.51	39.0	82.3	3.6	7.8	18.0	6.66	55.3
Kuwait	4.70	142.0	48.0	2.6	6.3	8.0	11.16	59.2
Oman	4.30	77.6	59.0	3.7	15.3	38.0	30.28	46.6
Saudi Arabia	33.86	786.0	57.0	1.9	62.2	13.0	100.23	48.2
UAE	10.75	456.0	70.0	3.5	105.6	9.0	36.93	52.5

Sources: World Bank and IMF.

\*Include chemicals, manufactured goods, machinery & transport equipment, inedible crude materials.

/ Excludes oil refining but includes petrochemical products.

# The value added is the net output of the manufacturing sector, calculated after adding up all the output and subtracting the intermediate inputs.

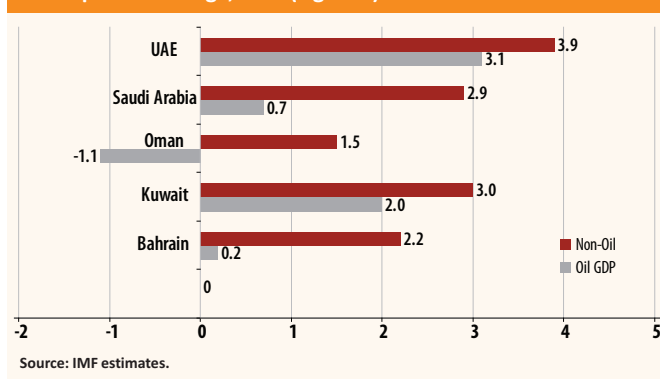
hosted three of the top 10 global improvers (Saudi Arabia, Bahrain, and Kuwait) – accounting for about two-thirds of the Middle East & North Africa’s 35 reforms. The UAE is ranked among the top 20 best performing economies globally at number 16 (see Table 2). Overall, the Gulf performs best in the areas of dealing with construction permits, registering property and paying taxes. Bahrain is the No.1 global performer in terms of fiscal compliance time. Obtaining a building permit takes a third less time than among OECD high-income economies, according to the *Doing Business 2020 Survey*.

The Saudi Arabian General Investment Authority (SAGIA) has liberalised FDI restrictions and processes, including the ‘Negative List’ – which now permits FDI in road transportation, real estate brokerage, audiovisual, recruitment-related services and private healthcare institutions. Licensing procedures were also simplified – the number of required documents cut from 12 to two and processing time to just three hours from the previous three days.

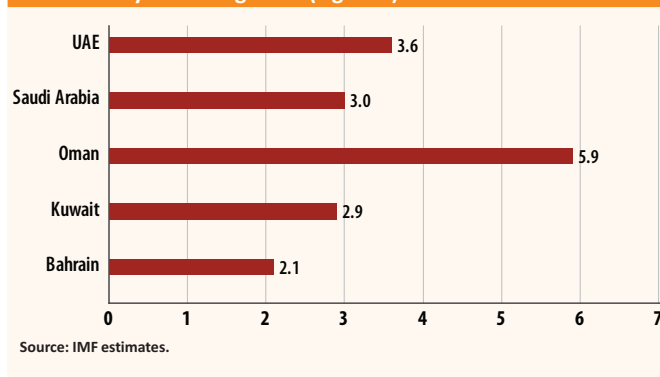
Foreign investors can apply for ‘five-year’ licenses instead of annual licenses subject to renewal. SAGIA reported that over half of the 300 reforms planned under Vision 2030 were implemented. During Future Investment Initiative conference (October 2019), the Kingdom signed deals worth US\$15bn covering energy, transport and manufacturing – with more FDI expected in 2020.

The UAE-based onshore companies licensed in 13 sectors will be eligible for 100-percent foreign ownership. Abu Dhabi has ratified a law regulating public-private partnerships (PPPs) to induce private capital in urban infrastructure, technology and other strategic sectors. Bahrain has enacted a legislation regulating the processing and transfer of data for commercial purposes, with a view to becoming a regional ITC hub. Meanwhile, Oman’s new Commercial Companies Law has modernised the regulatory framework for

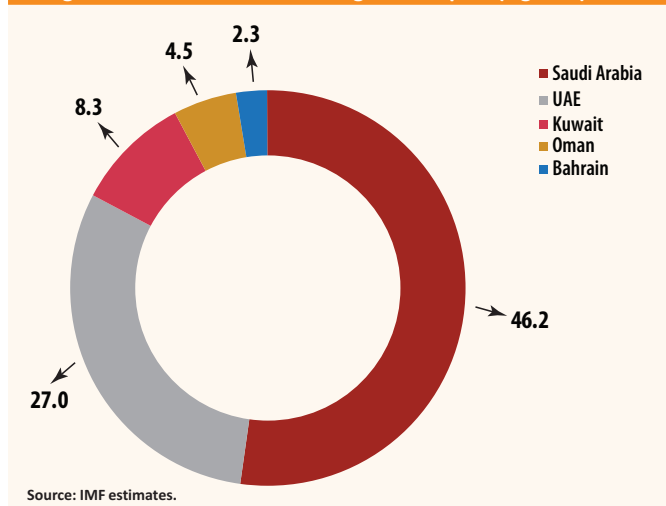
**Non-oil versus growth in hydrocarbons output annual percent change, 2019 (Figure 2)**



**Cross-country real GDP growth (Figure 3)**



**Who generates the lion's share of regional output? (Figure 1)**



public joint stock companies and listings of shares and sukuk.

The region has started receiving some portfolio investments. Last year saw two landmark developments. Firstly, five Gulf states joined Oman as members of the JP Morgan Emerging Markets Bond Index Global. While Saudi Arabia joined the equivalent benchmark for equities, the MSCI Emerging Market Index, following the UAE, which entered in 2014. The GCC upgrades are partly due to their size, but also because market reforms that have improved liquidity, settlement and clearance processes and enhanced investor’s rights.

Pro-business policies and initiatives bode well for inflows of portfolio and direct investments to the Gulf. There are growing opportunities in the areas of banking, investment, industry and economic diversification. World Expo 2020 in Dubai and Group-20 Leaders’ 2020 Summit in Riyadh should also underpin future growth and greater confidence in the region.

**Driving diversification**

The GCC despite recent slowdown boasts some of the best project opportunities.

Saudi Vision 2030 – aimed at becoming the world’s 15th largest

## GCC countries rank highest in MENA on global indicators (Table 2)

	Ease of Doing Business* 1-190 countries	Quality of Infrastructure # 1-141 countries	ICT Adoption 1-141 countries /	Trade Openness ~ 1-141 countries
Bahrain	43	31	46	20
Kuwait	83	66	37	42
Oman	68	28	66	30
Saudi Arabia	62	34	38	41
UAE	16	12	2	7

Sources: World Bank 2020 Doing Business Report, Global Competitiveness Report 2019.

\* Overall ranking based on days and procedures for business start-ups, getting construction permit, electricity connection, property registration.

# Utilities (power & water supplies), ports, air and road transportation.

/ Measured in terms of number of mobile-cellular; fixed & fibre internet broadband subscriptions per 100 population.

~ Prevalence of non-tariff barriers, trade tariffs and border clearance efficiency.

economy – is making headway since its launch in April 2016. Mega-projects under Vision 2030 are being spearheaded by the Public Investment Fund (PIF) – GCC's biggest developer. PIF funds are financing the construction of Neom, a vast high-tech city, Qiddiya Entertainment City, Maritime City and the completion of Red Sea Project, a luxury tourism location as well as the creation of a local defense industry. The Red Sea Project alongside Qiddiya entertainment project and the US\$500bn Neom economic zone with its own regulatory framework and entry visas are designed to incentivise FDI and boost tourism revenues.

The Private Sector Stimulus Office indicated that the US\$53bn fiscal stimulus, originally earmarked for 2018–21, may extend beyond 2021, reaffirming the Saudi government's commitment to economic diversification. The office expects to spend US\$5.9bn this year on top of US\$9.6bn in 2019. The programme includes funds allocated for non-oil export promotion, support for small and medium sized enterprises (SMEs) and investment into new technologies.

Dubai has spent reportedly US\$40bn on infrastructure projects for Expo 2020, which will host pavilions from 132 nations. Upcoming projects include expansions of Al Maktoum International Airport (DWC), Jebel Ali Port and the Dubai Metro Red line connecting to the Expo 2020 site. Ernst & Young estimates Expo 2020 will generate US\$10.3bn in value for the UAE from 2013, when preparation began, to October 2020, before it starts, plus US\$16.9bn from April 2021, after the event closes, to 2031. This assumes Dubai will redevelop the 4.4 sq. km Expo site into a fully-fledged urban centre, post event.

Abu Dhabi's stimulus measures are highlighted in Ghadan-21, a three-year programme to enhance the competitiveness of non-oil economy. The US\$13.6bn strategy targets lowering energy bills, easier access to bank credit and research & development spending

as well as creating 10,000 new jobs in the emirate.

Meanwhile, Aluminum Bahrain now ranks as the world's No.1 aluminum smelter after the completion of line-six expansion project (costing US\$3bn), which increased total annual capacity to 1.5mn tonnes. The Silk City plan, which encompasses major initiatives like a new port and residential/commercial projects, developed under the New Kuwait 2035 strategic vision, is in early planning stages. Another grand scheme is the Northern Gulf Gateway project to be built in phases over 25 years, with a deep seaport, an airport, an

Olympic stadium and a tower (higher than Burj Khalifa) plus an economic free zone. The mega-project (estimated cost US\$86bn) requires approval from the National Assembly.

Oman is implementing Tanfeedh-related investments in manufacturing, transportation, logistics, tourism and fisheries. These include a new ammonia fertiliser plant, Cargo Village at Muscat Airport and the expansion of Sohar Aluminum.

### Withstanding external headwinds

Regional growth outlook for 2020 is benign (see Figure 3) as capital investment and household consumption are expected to increase further – coupled with rising hydrocarbons production, according to the World Bank. However, the GCC continues to face a challenging global environment and oil market volatility. Possible downturn in Eurozone and Asia (principally China), plus a reversal of OPEC production cuts can push oil to below US\$60/barrel – thus leading to twin deficits (fiscal and current account). That could impact public spending and business confidence.

The GCC as a major oil-exporter is sensitive to rising protectionism. The IMF reckons that intensification of trade tensions in advanced economies could reduce world exports by US\$674bn and global income by a whopping US\$1.4 trillion, with losses across all regions. The global transition towards low carbon industries would also further reduce crude oil consumption.

Overall, the GCC compares favourably with peer emerging economies in Asia and South America on macroeconomic stability, physical infrastructure and business climate.

In the new decade, productivity increase will depend on more skilled labour and investments into high-quality assets including digital assets and fintech ecosystem, as well as renewable energy. ■



Bahrain is the top global performer in fiscal compliance time, according to the Doing Business 2020 Survey.

Photo Credit: Adobe Stock





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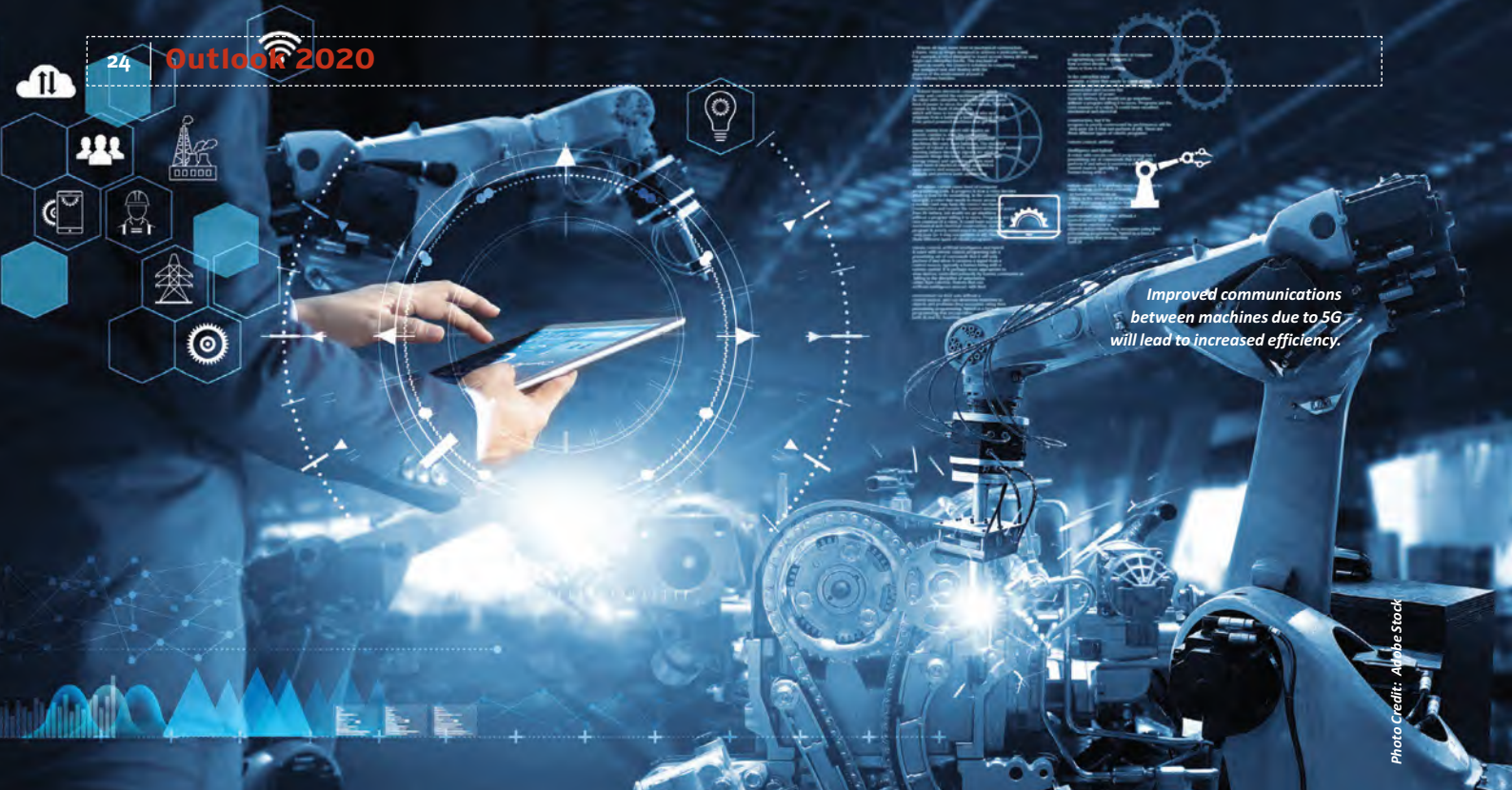
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# Manufacturing: The next big things

It's going to be about connecting machines to networks and companies to end-consumers, predicts *Antony Bourne*, IFS Industries senior vice-president.

**WHILE CHANGE IS** buffeting the industrial manufacturing industry from a number of directions, the most disruptive changes will be those which manufacturers can and should make for themselves. Many of these manufacturers are already taking advantage of technologies like the internet of things (IoT), and as we head into 2020 will find themselves early adopters of things like artificial intelligence, 5G and 3D printing.

In a departure from past manufacturing technology adoption cycles, the focus will not be entirely on incremental improvement of existing processes. These technologies will find their way to the core of new and innovative business models and revenue streams that will change the very nature of industrial manufacturing.

## Prediction 1: 5G will have more machine than human customers

By the end of 2020 there will be more

manufacturing devices connected by 5G than there will be people on 5G networks.

Bernard Marr in *Forbes* points out the tremendous impact 5G will have when it comes to enabling other technologies. Streaming music, TV shows and movies in an uninterrupted way via mobile devices will indeed be easier and more affordable with 5G. But 5G will be more transformational for devices that drive automated industrial processes than for consumer-facing smart devices.

"These advancements will enable connected cars and autonomous driving," Marr writes. "Smart cities with connected logistics, transport, and infrastructure; enhancement in connected healthcare from robotics to blockchain use cases to wearable telemetry; industrial internet of things and smart factories; and the more extended use of augmented reality, virtual reality and mixed reality.

I predict that 5G will make its greatest

impact in industrial automation. The ultra-low-latency, ubiquitous connectivity will power sensors on industrial machines, enabling them to talk to each other and generate floods of data that, through machine learning, will unlock new vistas of cost savings and efficiency. China and South Korea are already working in this way and the US and the UK are likely to spend much of the coming year ensuring they don't get left behind.

Improved communications between machines due to 5G will not just lead to increased efficiency, but rather the ability to automate more complex manufacturing models including configure-to-order and make-to-order. Levels of automation formerly associated only with long-run, repetitive manufacturing will now be able, thanks to the high speed of 5G, to automate multivariate production runs that may result in custom products, regional mass customisation or highly configured



products, all with less human involvement than is currently the case.

### **Prediction 2: In 2020, the B-2-B-2-C model will start to compete in earnest with the B-2-C model**

The movement of manufacturers from their traditional perch at the far end of the value chain toward the consumer is underpinned by the global trend of 'servitisation' — product-oriented companies either adding services to their products or selling their products as services on a subscription basis.

As early as 2018, IFS data suggests that 62 per cent of manufacturers were already benefiting from aftermarket revenue — be it through parts, warranty or proactive service contracting. A full 16 per cent of respondents were offering maintenance contracts with specific service-level agreements (SLAs), but only 4 per cent of manufacturers offered products entirely as a service — full servitisation. What this means is even if a manufacturer is selling the product through a channel of distribution, they may be supporting or servicing that product directly over its lifecycle. The manufacturer is suddenly a business-to-business-to-consumer company. They now have a service relationship that will drive much of their revenue, and they may be responsible for delivering an outcome rather than just the product.

As an example, one of our customers is an air filter manufacturer which manufactures and sells filtration systems, historically through a standard business-to-business model. But through servitisation, they have made the transition from selling air cleaners to selling clean air. They work proactively with their customers to measure their existing air quality, establish an air quality goal and then maintain the filtration system to deliver that outcome. Much of this process is automated as sensors in the equipment monitor the result and can dispatch technicians, order parts and execute on a condition-based maintenance program.

For them, however, preventative maintenance is only the beginning. As big data manipulation and analytics becomes



Photo Credit: IFS Industries

Antony Bourne, senior vice-president of IFS Industries

easier, the opportunity to garner more information about what is happening to the air quality in particular environments will increase exponentially.

There are many other examples. Baxi Heating, the UK leader in smart, low-carbon heating and hot water solutions (and an IFS customer), is now selling environmental temperatures to end customers rather than pallets of mechanical equipment into a distribution channel. Its customers ask for a target temperature and Baxi will achieve this for them.

Customer experience will improve as the business-to-business-to-consumer model takes hold because there will be more direct communication between the manufacturer and the end consumer of a product. This model will also benefit the environment as the number of items being built and resources going into them matches the requirements for a task rather than the whims of a consumer.

### **Prediction 3: By 2022, more than half of manufacturers will have invested in AI technology and improved productivity by over 10 per cent**

IFS has been working with clients to combine machine learning applications with multiple large data sets and using them to identify

patterns and strategies that are beyond what the human mind to conceive of.

Most manufacturers already employ some level of automation — not just on the plant floor but in the front office. Dried fruit and snack manufacturer Whitworths is a good example. It has reached a high degree of automation in quality management, moving from period random testing of product and manual recording to a streamlined process driven directly by the shop order. While automation streamlines processes, AI will be able to create net new processes. So a company like Whitworth may be able to predict quality problems before they happen, or create new AI-driven flavors to meet an individual customers' tastes, as did distiller Diageo.

Another area that will continue to develop over the coming years is AI-powered demand planning and forecasting. As AIs are trained on the right data sets, manufacturers will be able to align their supply chain with demand projections to get insights that were previously unimaginable.

This in turn, brings about a new mindset of the manufacturer, who is likely to only consider the manufacturing process as beginning in the factory and finishing when the goods leave the warehouse. Just-in-time, the Toyota Production System concept, will be taken to new heights, in large part because AI allows a manufacturer to ask, "in time for what, exactly?". What is the event or combination of events that should trigger replenishment—a demand signal, a price drop in the component part or raw material—it could be anything, and the relationship may not be apparent without AI.

In a November 2019 study from IFS, 40 per cent of manufacturers said they were planning to implement AI for inventory planning and logistics, followed by production scheduling and customer relationship management, each at 36 per cent. A majority of 60 per cent of total respondents said they were targeting productivity improvements with these investments.

### **The future will look different**

2020 really should be an exciting year. After decades of incremental productivity growth, the result of lean initiatives, automation and stern discipline, manufacturers will use technology not to optimise, but to create. AI will let us create new ways of doing things, and that means new revenue. ■

**The movement of manufacturers from their traditional perch at the far end of the value chain toward the consumer is underpinned by the global trend of 'servitisation'.**

Smart mobility can move vehicles and people more efficiently over existing roadway networks with less congestion.



Photo Credit: Adobe Stock

# GCC cities ripe for smart mobility

Saudi Arabia and UAE are leading the way for faster, more sustainable, and more efficient systems, which will have significant benefits across the transportation value chain.

**S**MART MOBILITY OFFERINGS, using innovative digital technologies and solutions, will create open and connected transportation networks in the GCC that can move people and freight more efficiently and sustainably than in the past, according to a new study. And Saudi Arabia and UAE are leading the way in introducing smart mobility, says the report, *Smart mobility in GCC cities: Fast track to the future* published by Strategy& Middle East, part of the PwC network.

Mark Haddad, principal with Strategy& Middle East, said, “By

**By making vehicles and transportation infrastructure technology-enabled and data-informed, smart mobility has the potential to transform society.**

making vehicles and transportation infrastructure technology-enabled and data-informed, smart mobility has the potential to transform society. Used correctly, it can reshape cities and transform society across the GCC.”

In Saudi Arabia, the Neom megacity project recently announced plans to develop the world’s most user-centric, environmentally friendly, and technologically advanced land mobility ecosystem. Riyadh has already invested in a multi-million dollar, artificial intelligence-based adaptive signalling project, which has had a significant impact on day-to-day traffic management.

Dubai’s strategy for smart vehicles aims to convert 25 per cent of total journeys to various types of driverless options by 2030. Abu Dhabi’s environmentally friendly Masdar City now has a self-driving shuttle service and partnerships with several e-scooter providers

Other cities are taking steps and generating progress: Kuwait is applying an intelligent traffic control system for overcrowded intersections. Muscat has implemented smart road technology to manage traffic, significantly reducing congestion at peak hours across the city.

According to the report, applying smart mobility on a wider scale across the GCC will lead to broader benefits in several areas:



**Safer roads**

Vehicle automation (either full or partial) and better safety technology can reduce the number of traffic accidents, leading to fewer roadway fatalities and injuries.

**Less traffic**

Smart mobility can move vehicles and people more efficiently over existing roadway networks with less congestion. It can also provide people with alternative options such as shared rides, scooters, bicycles, or mass transit, leading to reduced travel times.

**Cleaner environment**

Smart mobility can lead to a reduction in the negative environmental effects of the transportation sector by providing travellers and transportation system operators with more environmentally friendly options.

**More effective workforce**

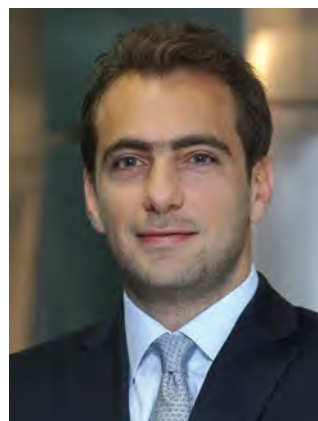
Reinventing mobility will have an important effect on the workforce. Some households will be able to move closer to urban areas (and dispose off private vehicles), increasing their employment prospects and options. Others that choose to move farther away from urban centres can do so as travel times decrease and as autonomous vehicles and other transit options allow commuters to be productive while travelling.

In the future, city transportation will be a linked network of autonomous vehicles (some electric-powered), shared-mobility solutions, adaptive traffic signals that can sense current conditions and adjust to improve traffic flows, micromobility options, and even airborne taxis. These will work together to create a faster, more sustainable, and more efficient system. Vehicles will communicate with each other and with infrastructure. People will have a much wider range of options for getting around.

Smart mobility requires an appropriate governance framework and regulations, both of which demand legislative action and involvement from multiple jurisdictions. The rapid pace of technological development means that ministries and city authorities have to coordinate governance across disciplines and institutions to ensure that new solutions and business models are fair, accessible, equitable, and sustainable.

Dr Ulrich Koegler, partner with Strategy& Middle East, commented, "On the regulatory front, governments need to craft a flexible, inclusive, and responsive set of regulations to support smart mobility. For instance, many governments will need to revamp the way they license and regulate vehicles to accommodate smart technologies".

**Smart mobility requires an appropriate governance framework and regulations, both of which demand legislative action and involvement from multiple jurisdictions.**



Mark Haddad, principal with Strategy& Middle East



Dr Ulrich Koegler, partner with Strategy& Middle East

Photo Credit: Strategy& Middle East

Cybersecurity, data privacy, and physical security issues are other focal areas, in addition to the legal and liability concerns of current mobility services and how these might develop or change with increasing integration of new mobility concepts. "Only this kind of comprehensive approach will provide confidence among the private sector and encourage them to engage in the smart mobility revolution," added Koegler.

The strategy and report identifies three areas through which GCC governments can master the smart mobility ecosystem To reap the benefits of smart mobility, and avoid or mitigate the

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Photo Credit: Adobe Stock

*Planning, developing, and implementing smart mobility solutions calls for collaboration.*

problems, GCC authorities need to learn to manage a fast-moving set of technologies, solutions, and providers. They can master the smart mobility ecosystem through a three-step approach.

### **STEP 1: Establish a holistic policy for smart mobility**

City authorities should conduct a thorough assessment of their current mobility challenges to identify the most urgent problems and pain points. Problems can be categorised in different ways, but most fall into one of several main categories: user experience, safety, mobility, accessibility, and environmental sustainability.

The strategy shall first focus on quick win actions in the short term, which are driven by proven technologies like AI-based traffic analytics and service integration through a common platform reshaping the full traveler experience (MaaS). The medium to longer term goals shall be around ways to incorporate new mobility modes in urban setting i.e. autonomous vehicles, drones etc.

### **STEP 2: Develop an institutional framework**

Authorities need to develop an institutional and regulatory framework that corresponds to their mobility policy and strategy. At a high level, the institutional and regulatory framework ensures that public agencies are prepared to deploy smart mobility systems for an array of possible scenarios.

### **STEP 3: Collaborate through partnerships and platforms**

Planning, developing, and implementing smart mobility solutions calls for cooperation by a wide range of entities in the public sector (other authorities and ministries), the private sector (technology firms, service providers, and professional organisations), and academic institutions.

“Worldwide, the mobility sector is going through the most significant revolution since the development of cars more than a century ago. Even more than other parts of the world, GCC cities are ripe for the benefits of smart mobility. Capitalising on these technologies requires a structured approach, but the rewards will more than justify the effort,” concluded Haddad. ■

## **Dubai RTA mulls leveraging big data to improve public transport**

DUBAI'S ROADS AND Transport Authority has held a series of brainstorming sessions focused on the use of big data to improve the public transport network. These efforts are part of RTA's ongoing efforts to realise its vision of safe and smooth transport for all.

“Through these workshops, five teams from different RTA's agencies and sectors competed in the optimal use of big data to generate ideas contributing to the improvement and operational efficiency of the public transport network in Dubai. Ideas and proposals debated in these workshops will be examined and viable ones will be

referred to the concerned RTA bodies for further necessary action,” said Adel Shakri, director of planning and business development at RTA's Public Transport Agency.

“Upgrading the public transport network is a key strategy of RTA as it is directly linked with customer's service and happiness. RTA always seeks to broaden and improve the scope of public transit means, such as metro, tram and buses, and big data is the best way forward to realise these objectives. The concept of big data is becoming a focal point in the global business as it opens new

horizons and solutions to issues challenging the improvement of the sector.

“Big data is shaping into a key asset considering the extremely valuable knowledge and informational wealth contained. It contributes immensely to the anticipation of future requirements and potential solutions to the sustained development of various sectors. The public transport network is invariably entwined with people's lives and we have to anticipate their future needs. We also need to develop optimal solutions to anticipated challenges in the use of big data,” concluded Shakri.



# BKT equips JCB's record-breaking tractor

JCB's Fastrac tractor comes with specially developed tyres by BKT.

**B**KT HAS EQUIPPED JCB's record-breaking Fastrac tractor with specially developed tyres, helping it set a new record of 135.191 mph (217.568 km/h) to enter the Guinness World Records. The world speed record set by JCB with its 1,016 hp Fastrac tractor was achieved with the ultimate BKT know-how.

In addition to the revised chassis and powertrain developments carried out by the British tractor maker, this speed machine was also equipped with a tyre specially developed by BKT and capable of withstanding high-speed runs at speeds in excess of 241 km/h.

For the task, BKT worked closely with JCB's engineering team to create a technically advanced tractor tyre capable of handling extreme speeds and loads. The tyre is a specially constructed 400/80 R 28 RIDEMAX IT 696, based on a tyre usually found in industrial applications and capable of speeds of up to 65 km/h on paved surfaces.

This tyre offers a series of features and chief among these is an outstanding rolling resistance, which turns into fuel savings and both economic and environmental advantages.

Compared to the classic RIDEMAX IT 696 tyre on which it is based, this high-speed version underwent considerable changes to meet the demands of the challenge.

Firstly, tread blocks were reduced in height from 27 mm to just 10 mm, to improve stability and reduce unwanted movement. Secondly, the carcass was reshaped to be smaller and narrower – this improved aerodynamics and enabled two additional steel belts to be integrated into the tyre, to create much needed rigidity. This also prevented the tyre from generating excessive heat and stopped tyre growth at high rotational speeds.

Finally, this tyre has been created with more natural rubber to further improve its grip. And after digitally-created simulations, extensive rig-testing followed to obtain the best performance of the tyre, and at speeds

*BKT worked closely with JCB's engineering team to create a technically advanced tractor tyre.*



Photo Credit: BKT

that included a generous safety margin.

With motorbike racer and lorry mechanic Guy Martin in the driving seat, Fastrac Two achieved a maximum speed of 247.470km/h and on its way he recorded an average of

**This tyre offers a series of features, chief among these is an outstanding rolling resistance, which turns into fuel savings and both economic and environmental advantages.**

s217.568 km/h. This new speed record was almost 50 per cent faster than the record of 166.7 km/h he set in the summer of 2019 at Elvington Airfield in York, using Fastrac One – JCB's first record-setting tractor.

"BKT's goal for this world record was to use a tyre that already existed in our product range and to apply our know-how to adapt it for the extreme operating conditions confronted by a five-tonne tractor producing over 1,000hp," Dilip Vaidya, BKT president and director of technology, states. "This is why we have chosen RIDEMAX IT 696. It is an ideal tyre for industrial applications, with a tread pattern that is suited for paved roads. Without changing the tread design, we have focused on the casing structure and its compounds, so that the end product could withstand the enormous stresses imposed by ultra-high speeds achieved by JCB's record-breaking tractor. Extensive testing and development – in close co-operation with JCB – allowed us to reach an extraordinary technical achievement." ■



The Middle East and North Africa are currently accountable for 47 per cent of the world's desalination capacity.

# KSA water and sewage projects worth US\$20.7bn

To counter water-related challenges and prepare for the future, US\$133bn to be pumped into Middle East and Africa water and sewage projects.

There are 17 countries below the water poverty line set by the United Nations in North Africa and the Middle East, making it the world's most water-scarce region.

**O**NE OF THE major challenges facing policymakers focused on global development issues is water shortages and raising the investment required to overcome water scarcity.

In a recent UN report, it was revealed that more than five billion people could suffer water shortages by 2050, due to climate change, increased demand and polluted supplies. Globally, 22 countries are above the 70 per cent water stress level as set by the UN, and are therefore, under serious water stress.

Water demand is predicted to increase significantly over the coming decades. In addition to the water demand of the agricultural sector - which is currently responsible for 70 per cent of water abstractions worldwide - large increases in water demand are predicted, particularly for industry and energy production.

The global water and sewage projects pipeline is worth US\$431.0bn. Asia-Pacific

dominates, with projects valuing US\$161.3bn, followed by the Middle East and Africa with projects valuing US\$133.2bn.

China has the highest value of water and sewage construction projects, with US\$73.7bn, closely followed by the US with US\$72.9bn. India and Saudi Arabia follow, with projects valuing US\$38.7bn and US\$20.7bn respectively. The Americas has water and sewage projects with a value of US\$101.0bn, while the pipeline for Europe is valued at US\$35.0bn.

The report, *Global Water and Sewage Construction Projects* by Reports and Markets, provides analysis based on projects showing total project values and analysis by stage and funding for the top ten countries.

The top 50 global projects are listed giving country, stage, value of water and sewage construction projects. Ranked listings of the vital operators for the sector are also



provided showing the leading contractors, consulting engineers and project owners. Country profiles are provided for the top 10 countries including the China, the US and India.

One of the major challenges facing policymakers focused on global development issues is water shortages and raising the investment required to overcome water scarcity. The highest value of projects are at the execution stage, with US\$249.5bn, followed by projects at the pre-execution stage with US\$71.7bn.

Public investment is responsible for the funding of the highest proportion of projects, with 54 per cent with joint public/private funding at 32 per cent and the remaining 14 per cent of projects financed by private funding.

Assuming all projects tracked go ahead as planned, the highest value of projected contract value is in 2020, with US\$69.6bn,



Photo Credit: Adobe Stock

*The UAE has embarked on a Water Security Strategy 2036 to reduce total demand for water resources by 21 per cent.*

falling to US\$21.3bn in 2023.

Collection and transmission projects account for the highest value with US\$197.9bn followed by treatment plants with US\$69.5bn.

Of all the water projects, the highest valued contracts are in the area of desalination for a value of US\$52.7bn. The

Middle East and North Africa are currently accountable for 47 per cent of the world's desalination capacity. The highest investment in desalination is Kuwait with US\$17.6bn and Oman with US\$11.8bn.

The report highlights the region's top consulting engineers are Lahmeyer International, based in Germany but part of Tractebel Engineering based in Belgium, and Amec Foster Wheeler (Wood Group), based in the UK. In desalination, top contractors are Korea-based Hyundai Engineering Company and China's Sepco III Electric Power Construction Corporation.

There are 17 countries below the water poverty line set by the United Nations in North Africa and the Middle East, making it the world's most water-scarce region. Research and Markets highlights that water scarcity not only creates economic hardship; it can also be a possible source of hostility between countries over water in the region.

The report also adds that inadequate water supply and wastewater treatment is a constant threat in sub-Saharan Africa due to the potential of wide scale epidemics.

The region's water supplies are also becoming increasingly strained due to rapid population growth, economic progress and the effects of global warming, which include prolonged periods of drought. ■

## We continue to capitalise on Reverse Osmosis (RO) as the preferred and most cost-effective technology for water desalination.

**Mohammed bin Jarsh Al Falasi, undersecretary of the Abu Dhabi Department of Energy (DoE)**

### Abu Dhabi targets 100 per cent use of recycled water by 2030

SPEAKING AT THE second annual Cairo Water Week (October 20 to 24, 2019), Mohammed bin Jarsh Al Falasi, undersecretary of the Abu Dhabi Department of Energy (DoE), said, "Water intensity is high in Abu Dhabi due to the hot desert climate and limited rainfall. Our supply mix comprises 60 per cent ground water, 30 per cent desalinated water and 10 per cent recycled water. However, with 79 per cent of groundwater reserves being highly saline, we rely heavily on desalination to provide usable water."

He added, "Abu Dhabi is one of the world's largest desalinated water producers – we have nine desalination plants with total capacity of up to 960 million imperial gallons per day, transported through a 3,500 km network and distributed across a 13,000 km pipe network."

The highest demand for water is driven by agriculture and irrigation - which account for 70 per cent of water consumption - in addition to the climate, government commitment to large green spaces, residential buildings, commercial and industrial uses.

Al Falasi said, "While our population grows and demand for water increases, our ground water supplies decrease. Currently, we have 200,000 wells producing 2 billion cubic metres of ground water per year, of which 87 per cent is used for farms consumption."

To counter these challenges and prepare for the future, the UAE has embarked on a Water Security Strategy 2036 to reduce total demand for water resources by 21 per cent, increase the reuse of treated water to 95 per cent, and increase national water storage capacity up to two days.

The DoE undersecretary added, "In Abu Dhabi, we have set targets to minimise water losses to 10 per cent, reduce indoor and outdoor water use intensity to 12 per cent, and increase use of recycled water to 100 per cent by 2030."

He went on to note, "We continue to capitalise on Reverse Osmosis (RO) as the preferred and most cost-effective technology for water desalination. Today, 120 MIGD of our total desalinated water is produced through RO while 840 MIGD is

produced using traditional thermal desalination methods."

Al Falasi then explained how Abu Dhabi's reliance on RO technology will increase when the mega water desalination project at Taweela Power and Water Complex is fully operational in 2022 as the new plant features a capacity of 200 MIGD.

He highlighted the Liwa aquifer – the world's largest reserve of 26 Mm<sup>3</sup> of high-quality desalinated water, which Abu Dhabi completed in January 2018. This project is sufficient to store 5.6 billion gallons of water, or enough to provide 180 litres of drinking water to one million people for up to 90 days.

Another highlight of the presentation was the launch of Abu Dhabi Demand Side Management and Energy Consumption Rationalisation Strategy 2030.

Through nine core programmes, including district cooling, efficient water use and water reuse, the strategy aims to reduce water consumption by 32 per cent and energy consumption by 22 per cent by 2030, based on a 2013 baseline.



*The pavilion will reflect the nation's historic journey towards growth.*

# Peru pavilion breaks ground at Expo 2020

The country's participation aims to attract tourism, boost exports and generate investment, the statement said.

**The competition entry by Habitare Architecture and Engineering was adjudged the best and will now rise as Peru's pavilion at Expo 2020 Dubai.**

**S**HOWCASING ITS STANDING as the country with the world's largest reserves of silver, as well as the largest gold, lead and zinc reserves in Latin America, the Peru pavilion at Expo 2020 has now broken ground.

Peru's participation at the Expo 2020 Dubai aims to attract tourism, boost exports and generate investment. The Expo represents an ideal opportunity to position Peruvian products such as unalloyed zinc, grapes, quinoa, prawns tails, and pomegranate, among others, on the world market and increase their demand. The Peruvian Amazon contains rich deposits of oil and natural gas, as well as forest resources. Furthermore, the coast is renowned for its maritime resources and export-oriented agribusiness.

The pavilion will reflect the nation's historic journey towards growth, looking to the future while keeping the past alive.

Peru kicked off its plans at Expo 2020

Dubai with a ground-blessing ceremony, led by Edgar Vásquez, the minister of foreign trade and tourism of Peru, Luis Torres, the ex-ecutive president of the Commission for the Promotion of Peru for Export and Tourism (PromPerú), Alvaro Silva Santisteban, director, Trade and Tourism of Peru, UAE, and deputy commissioner general of Peru for Expo 2020, and other senior officials.

The ceremony officially marks the beginning of the construction of Peru pavilion at Expo 2020. Rising in the Mobility District, it will bring to life the country's cultural diversity and ancient wisdom that still surprise the world.

From January to August last year, Peru's total exports to the UAE totalled US\$610mn, an increase of 344 per cent compared to the same period of 2018, exceeding the export record obtained in 2017. In seven years, Peru has gone from exporting US\$6mn to the UAE to more than US\$600mn.



The design for the Peru pavilion was selected through a national design competition, which witnessed diverse participation from architects and the country's talent.

The entry from Habitare Architecture and Engineering was adjudged the best and will now rise as Peru's pavilion at Expo 2020 Dubai. Under the theme 'Timeless, Always Peru', the pavilion will feature a unique architectural design that evokes the path the nation has traveled through the past 10,000 years. The pavilion will reproduce the last Inca bridge, Q'eswachaka, welcoming visitors and symbolising the connection between the past, present and future of Peru.

"This bridge, which is woven annually by communities in Cusco, represents the path

**From January to August last year, Peru's total exports to the UAE totalled US\$610mn, an increase of 344 per cent compared to the same period in 2018.**

that Peru has travelled throughout its history, nourished by multiple influences and events that have given us the identity



*The pavilion will feature a unique architectural design.*

Photo Credit: Habitare Architecture and Engineering

that today fills us with pride. It also represents the path we are travelling, one that will take us to the future as a country with infinite wealth, great export products and beautiful tourist attractions for the world to see. This path is based on the sustainability of our biodiversity, our history and our cultural diversity, and shows our contribution towards the construction of a better future for humanity," highlighted Vasquez Vela.

The Peruvian pavilion will have dedicated spaces for work meetings with potential investors. In addition, the tourism industry will benefit from the visit of tourists and from investments in hotel infrastructure and connectivity. Moreover, new markets will be sought for trade, mainly in superfoods,

alpaca, and coffee.

Luis Torres, executive president, PromPerú, said, "We are extremely proud to be part of the most anticipated World Expo in history. We are coordinating with our partners from the public and private sectors to guarantee a great representation of Peru at the Expo."

Boasting 12 UNESCO world heritage sites and vast natural reserves, Peru is dotted with archaeological sites that tell the story of ancient civilisations. Peru's 31 million population speaks around 50 languages including Spanish, Quechua and Aymara.

Peru's thriving melting pot of cultures reflect a vibrant, diverse community, many with roots that go as far back to the Incas and other sophisticated pre-Columbian civilisations. The cultural legacy still lives on in the art, customs and traditions found in modern-day Peru. The highly diverse country has 11 eco-regions and 84 of the 117 life zones that exist in the world.

A diverse country, the habitats in Peru range from the arid plains of the Pacific coastal region in the west to the peaks of the Andes mountains, from the north to the southeast of Peru, to the tropical Amazon Basin rainforest in the east with the Amazon river.

PromPerú contributes to the sustainable economic growth of Peru by identifying business opportunities, promoting exports and tourism, internationalising companies and attracting foreign investments. The office helps to establish, foster and maintain strategic alliances with public and private institutions all over the world, and strengthens the presence and participation of Peru at international level. ■



*The design for Peru pavilion was selected through a National Design Competition.*

Photo Credit: Habitare Architecture and Engineering

# Massilatech leads with innovation

The METCO subsidiary has undertaken several projects to tackle challenges of ICT companies.



*The company provides end-to-end solutions, project deployment and management, including design, engineering and maintenance.*

Photo Credit: Adobe Stock

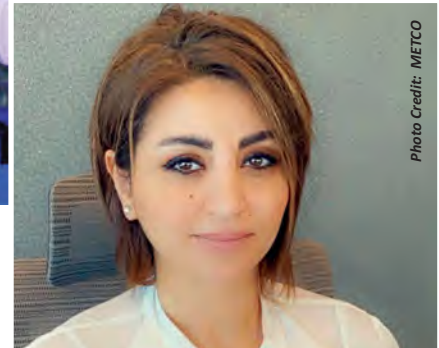
**M**ASSILATECH UAE IS an Information Communication Technology (ICT) Company, operated by Middle East Telecommunications Company (METCO). Massilatech is a strategic partner to recognised companies as it caters to a wide variety of their ICT needs. It is a provider of solutions such as Unified Communication, Customer Experience Management, Network, Security, and Internet of Things (IoT). The company provides end-to-end solutions, project deployment and management, including design, engineering and maintenance.

Today, projects in the ICT industry have different demands due to technological advancements. The introduction of 5G and the rapid spread of IoT, have led to newer requirements for artificial intelligence (AI), cloud computing solutions, and mobile virtual network operators (MVNOs). These trends have led system integrators and operators to lead the change and cater to the evolving demands of the market. Companies in the ICT industry are investing in newer and smarter systems, upgrading

current systems and enhancing training programmes for employees to adapt to these changes.

Changes in the industry have imposed certain challenges that ICT companies need to grapple with. IoT and AI have stimulated growth in big data. Along with the data come challenges pertaining to security. In order to prevent data theft and breaches, systems with better security are required, adding a financial strain on companies due to higher costs of implementation. Therefore, the biggest challenge for companies is to provide an efficient solution, while keeping cost optimisation in mind.

To address these challenges, Massilatech has undertaken several innovative projects such as the launch of Cyber Security Operations Center (SOC) in Dubai under the name CyberFort 365. Through this center, Massilatech delivers Managed Security Services 24x7, Remote Network Monitoring, and CISSP Professional Trainings. Other projects include Wi-Car, smart fleet management tracking solution, for connected vehicles, all-in-one outdoor and indoor HetNet Radio 4G/5G RF planning and



*Soha A Jalil, general manager, Massilatech UAE*

Photo Credit: METCO

optimisation tool, Network Advanced Testing and advanced EYEC IP Cameras.

Massilatech has deployed multiple projects such as LTE drive tests, CSG IIB projects, CWDM & DWDM projects, ESN deployment, and indoor coverage solutions in the UAE and Oman. Partnerships with companies and system integrators like Microsoft, CISCO, Logicom, Teleopti, HPE, Avaya, Ranplan Wireless, AtBB, Rosenberger and others have created the right ecosystem for Massilatech to offer diverse solutions.

Established in 1978, as a subsidiary of Towell International Holding, Middle East Telecommunications Company (METCO), is one of the region's fastest-growing ICT companies. METCO caters to telecommunications carriers, private enterprises, and government institutions. METCO operates in Kuwait, Saudi Arabia, UAE, Sudan, Oman, and Iraq. ■





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*Batteries pouring from new factories in China, the US, Thailand and elsewhere will further drive down prices, which have already fallen by 85 per cent since 2010.*

# Future for Li-ion batteries in UPS for data centres

The primary downside is that because the technology is so new, many manufacturers have limited experience in UPS applications. However, this is changing rapidly, with successful deployments.

**A development based on lithium-ion will likely succeed far more than an innovation based on a radically different approach.**

**I**NTEREST IN LITHIUM-ION (Li-ion) remains intense, as it's the technology of choice for electric vehicle motive power. Yet, within reserve power applications such as UPSs, lead-acid, usually valve-regulated lead-acid (VRLA) remains the firm favourite. With decades of operational experience, VRLA is trusted within data centres, while significantly higher pricing and other factors inhibit Li-ion penetration. So, is this balance likely to change in the future?

## **An incumbent technology**

The huge potential of the automotive industry continues to spur lithium-ion investment and development – and, for electric vehicles, it's probably already in an unassailable position. And, according to a Bloomberg report, this lead will only widen as a wave of planned new lithium-ion factories comes online over the next five years. Batteries pouring from new factories

in China, the US, Thailand and elsewhere will further drive down prices, which have already fallen by 85 per cent since 2010. This level of commitment will create a powerful incentive for the industry to keep tweaking Li-ion technology, improving it bit by bit, rather than adopting something else.

The report quotes Gene Berdichevsky, co-founder and chief executive of Sila Nanotechnologies – a company investing and innovating in lithium-ion technology. He points out that lithium-ion manufacturing capacity has almost tripled in the last five years alone, to reach 302.2 gigawatt-hours (GWh). The next five years' expansion is planned to bring a further 603.8 GWh on line. With this level of incumbency, a development based on lithium-ion will likely succeed far more than an innovation based on a radically different approach.

## **New developments**

Sila, for example, is developing a silicon-



based powder that can be fashioned into an anode; at the atomic level, this can contain more lithium than can the carbon in graphite, the most common anode material. As a result, the company claims, a lithium-ion battery's energy storage can be boosted by 20 per cent or more.

Another lithium-ion enhancement is being developed by Ionic Materials. The company is trying to perfect a solid-state battery which uses a polymer electrolyte. This will replace the flammable liquid which creates a fire risk for lithium-ion batteries.

### Impact on the UPS market

If future lithium-ion batteries can offer greater benefits including lower pricing, improved energy density and better safety, their penetration of the data centre battery market seems likely to increase. A forecast from Bloomberg New Energy Finance certainly believes that it will; this projects a market share growth from 1 per cent in 2016 to 35 per cent in 2025.

As the barriers of cost and safety concerns are eroded, and performance improves, it will be interesting to see if the two other major impediments to the batteries' acceptance for UPSs are reduced or removed. The first relates to the current difficulty of designing lithium-ion batteries with lower autonomies without using more

expensive higher discharge-rate cells; the other factor is the difficulty and expense of recycling life-expired lithium-ion batteries.

It's also important to remember that VRLA, just like Li-ion, will continue developing and fighting for its market share. While not mandatory for VRLA, increasing use is being made of battery monitoring and management systems. Kohler Uninterruptible Power's (KUP) PowerNSURE system, for example, can increase battery life by up to 30 per cent, while also increasing reliability and reducing maintenance costs.

KUP maintains a neutral position in this debate, and will continue to do so. The company can supply either technology, and

can accordingly offer customers unbiased advice on the optimum solution for their particular application.

Some of the primary benefits of switching to lithium-ion UPS batteries include significantly longer service life. Lithium-ion provides a greater cycle life (the number of charge/discharge cycles ranges from extends into the thousands, versus approximately 500 for VRLA batteries), as well as a longer warranty, according to power management firm Eaton. Furthermore, the lighter weight and smaller footprint are other benefits. ■

Source: Kohler

## Growth of green data centres

GREEN DATA CENTRES have been talked about for years, but in 2020 we should expect a serious push for reducing carbon footprints. AI and automation technologies will play a role in sustainability by improving visibility to data and allowing data centre managers to fine tune their energy consumption and reduce their carbon footprint, according to Schneider Electric.

Globally, there is much interest in green data centres, which could lead to new sustainability regulations. Even without regulations, more and more organisations are looking to reduce their carbon footprint, partly as a result of pressure from employees who'd rather work for socially responsible companies. The pressure is likely to intensify as millennials make up more of the workforce and push for companies to adopt their values. According to IDC, 83 per cent of technology buyer respondents in a survey about procurement consumption models "have sustainability pledges or programmes in place," and 99 per cent either work only with partners that have a commitment to sustainability or give preference to those with such a commitment.

## Digitalisation seen as a competitive advantage by Middle East private businesses: report

PRIVATE BUSINESSES IN the Middle East recognise the potential for growth that comes with building their digital capabilities, according to the *2019 Middle East Private Business Survey*, released by PwC, for which 200 private businesses across nine Middle East countries were interviewed.

However, the levels of investment and implementation when it comes to digital technologies are still far from being advanced when compared to European counterparts and there is much work to be done.

A critical factor that may urge private businesses to act is the changing economic environment. Although half of the survey respondents report that they expect their companies' revenues to improve over the next twelve months, there is concern about the general business climate.

Peter Englisch, PwC EMEA entrepreneurial and private business leader, comments, "The cautious mood in the Middle East echoes the global sentiment that the pace of economic activity has been weak. Many note clear evidence of a global slowdown in 2019, which looks set to continue, driven largely by declining growth in China and uncertainty caused by the US-China trade war – and trade friction between the US and India and Mexico too. And in October, the International Monetary Fund cut its growth forecasts for the Middle East and Central Asia to 0.9 per cent, compared to 1.9 per cent in 2018."



Photo Credit: Adobe Stock

According to PwC's survey, 78 per cent of Middle East private businesses acknowledge that digitalisation will impact the long-term viability of their business.

While private businesses recognise the value of digitalisation, they are still reluctant to commit to large related investments. Only 18 per cent of companies intend to allocate more than 5 per cent of their overall investment to building their digital capabilities.

This allocation varies by industry. The service sector stands out with 34 per cent of respondents saying they would spend more than 5 per cent of investments on digitalisation, compared with 17 per cent in industry and manufacturing and just 12 per cent in retail.

# Emicool expands to eight sectors

As district cooling is fast gaining traction, the Dubai-based provider's pipeline network crossed 240km.

**T**HE MIDDLE EAST'S leading district cooling provider Emicool has expanded its services to larger diversified sectors like residential, retails, commercial buildings, hotels, schools, universities, hospitals, furnished apartments, industrial and labour accommodation across the UAE.

The wholly owned subsidiary of Dubai Investments now has a network with mega reach; the total linear length of its pipeline network has crossed over 240km during 2019, representing an increase of 38 per cent over the last five years in Emicool's pipeline network coverage and a growth of 75km. The impending growth in the district cooling sector indicates an increase in demand for efficient cooling services as a climate-resilient, resource-efficient, low-carbon and affordable solution.

By connecting to more than 2,200 buildings across the UAE in 2019 spanning eight sectors, Emicool's statistics of projects, agreements and contracts reflect the awareness of owners and developers of the growing importance of energy-saving and environmentally friendly district cooling systems.

The expansion of Emicool's pipeline network is a direct result of the company's strategy to cater to the increasing demand for district cooling services in many residential and commercial projects, and to continue contributing to the development of its infrastructure, in line with the objectives of the Dubai Energy Strategy 2030 and 2050.

Commenting on the sectorial increase and resulting increase in the pipeline



*Emicool's advanced equipment and pipes pass without causing any road damage, or disrupting traffic flow.*

Photo Credit: Emicool

network, Dr Adib Moubadder, CEO, Emicool, said, "District cooling is fast gaining traction as an alternative cooling solution, in response to its contributions towards environmental conservation, reducing carbon emissions and 40 per cent of grid electricity needs as compared to conventional cooling systems. The diversity of Emicool's customer base and the key sectors served is testimony to increasing investments in infrastructure development, coupled with growing demand for reliable and cost-efficient cooling systems, driving the cooling market."

Over the years, Emicool has succeeded in creating smart solutions in response to the evolving growth challenges faced by the cooling industry. Emicool's advanced equipment and pipes pass without causing any road damage, or disrupting traffic flow.

Innovative technologies are used to control water flow, through faucets and special equipment, to complete the process of switching cooling systems without interrupting the service.

The company's new pipeline technologies contribute to reducing carbon emissions and reducing water and energy consumption by providing efficient and environmentally-friendly district cooling services that allow in maintaining cooling, without being affected by external factors and high temperatures, especially in the summer.

With the current total operating capacity of 355,000 RT from the plant within DIP and MotorCity in Dubai, Emicool provides district cooling services to DIP, Dubai Motor City, Dubai Sports City, Uptown Mirdif, Palazzo Versace, Damac Hills and Mirdiff Hills, Night Souk by Nakheel, RTA Metro Stations (Expo line) & DWTC at Expo 2020.

Emicool contributes to efforts to reverse climate change by reducing consumption relying on larger operational cycle and conserving natural resources, using environmentally friendly district cooling systems, which in turn contributes to cost reduction for consumers while facilitating sustainable development. ■

**The growth in district cooling indicates an increased demand for efficient cooling services as a climate-resilient, resource-efficient, low-carbon solution.**



# Saudi investment in HVAC to exceed US\$34bn

HVAC R Expo Saudi returns to Riyadh as business opportunities grow on the back of a construction boom.

**H**VAC R EXPO SAUDI, Saudi Arabia's largest event dedicated heating, ventilation, air conditioning and refrigeration (HVAC R) industry, will return for a fifth edition at Riyadh International Convention & Exhibition Centre from 11-13 February, 2020, announced event organisers DMG events. The announcement comes as opportunities for HVAC R stakeholders in the Middle East market are growing exponentially. GCC investments in HVAC R systems over the next decade are estimated to exceed US\$68bn in total, according to a recent report published by DMG Events and MEED Projects.

As for the Kingdom itself, event director for HVAC R Expo Saudi, Roni El Haddad said, "On the back of a construction boom in the country, Saudi Arabia alone represents over 50 per cent of the total needed investments for HVAC R solutions in the GCC over the next 10 years, with US\$34bn worth of systems expected to be installed in that time.

He added, "As demand increases the market will need to develop in line with government goals such as energy conservation and smart initiatives, making it the perfect time for the local and overseas industry to gather under one roof at HVAC R Expo Saudi."

Expecting to host over 80 exhibiting brands from around the world, HVAC R Expo Saudi is the region's largest, three-day event presenting a platform for HVAC R industry professionals to network, do business and discover new technologies.

Saud Nasser Al Khusaibi, secretary general of GCC Standardisation Organisation (GSO), commented, "The mission of GSO is to unify standardisation activities among the GCC member states in order to promote industry and to boost sustained development of the collective economy in turn. Such activities adhere to the best international practices, and contribute to the protection of the customer, environment and public health.

"In light of this mission, GSO is



HVAC R Expo will feature 30 free-to-attend and CPD (Continuing Professional Development) workshops.

participating at HVAC R Expo 2020 to provide the kingdom's industry professionals with an overview of the latest technical legislation requirements applying to them and their field, and to encourage growth and development in the HVAC R sector."

**The three-day event presents a platform for HVAC R industry professionals to network, do business and discover new technologies.**

Products on display at HVAC R Expo Saudi will relate to climate control, air quality and ventilation, air conditioning, refrigeration and heating, HVAC equipment and services, and building automation.

Industry heavyweights already signed up

to exhibit include the likes of Carrier Middle East Equipment, Zamil Air Conditioners, Alessa-Samsung-Craftt, Conex Banninger, and for the first time, GreenAire.

Vineet Kashyap, managing director, Carrier Middle East Equipment said, "We are happy to participate in this annual forum as KSA is a key geography for us and we are very committed to the segment. We get to meet customers and regulators during the HVAC R Expo and explain our offerings to them, while learning from their experience of what they need."

To encourage knowledge transfer at the event, HVAC R Expo will once again feature 30 free-to-attend and CPD (Continuing Professional Development) workshops. Running across two theatres, workshops will be split between the Master Class series and Training Theatre sessions.

The Master Class series will offer a first hand-look at new solutions and innovations in the HVAC industry, delivered by manufacturers themselves, whereas the Training Theatre sessions will delve into the latest trends and approaches in the worldwide market, presented by consultants and regulators in the field. ■

# Beyond the digital frontier

Tech transformation is throwing up a stream of challenges and opportunities for power and utility companies.

**T**HE TECH TRENDS report by international research company GRS Explori sought the opinions of over 2,220 C-suite executives, senior managers, engineers and business developers operating in the MENA region. The consensus was that power and utility companies are facing “a non-stop stream of questions, challenges and opportunities”. While change will be a constant in areas such as regulation, external threats and consumer expectations, new technology tools will help enhance the sector’s efficiency, making it more resilient.

Important technology advances in the utilities sector have been identified as security for distribution grids, data insights from smart meters and improved training and certification with online tools. The report, produced in co-operation with Informa Markets, organiser of the flagship Middle East Energy show (Dubai World Trade Centre; March 3-5, 2020), also says sector leaders need to be on top of technology trends to succeed.

Macro technology, AI influences, increased cloud migration, greater product connectivity, data-enabled marketing, tighter cybersecurity and digital road maps for a sustainable future are some of the key trends in the sector.

“Developing a systematic approach for identifying and harnessing opportunities born of the intersections of technology, science, and business is an essential first step in demystifying digital transformation, and making it concrete, achievable, and measurable. To reduce the cost of power line inspections, utilities are exploring the use of drones to gather unstructured data. Operators use enhanced visualisation and interfaces to operate the drones as they gather vast amounts of data for further analysis that can recognise conditions such as vegetation encroachment, downed power lines, smoke, or pipeline maintenance issues,” the report says.

Other predictions include a grid move towards multi-directional networking with millions of buyers and sellers with pilot technologies including Blockchain for secure financials, IoT for grid monitoring and AI/data science to predict supply and demand transforming the industry.

Pressure to limit O&M costs and meet increased regulation will see utilities adopt DevOps and containerisation, using the cloud to build highly flexible platform-agnostic IT solutions including energy



Photo Credit : Middle East Energy

Middle East Energy will feature dedicated product sectors for power generation, transmission & distribution, renewables and digitalisation.

efficiency portals and seamless customer self-service applications that transcend services and geographies.

New products will feature greater connectivity, a new generation of micro marketing tools and techniques will emerge powered by data-enabled technologies while savvy operators will strengthen their approaches to cyber security and cyber risk.

“What is being projected is an industry set for a complete 360 degree transformation where techies, scientists and business developers work together to advance the sectors, keep pace with ever rising customer expectations, maintain tight cost controls, meet new compliance standards and ring fence their cyber and operations assets,” explained Gareth Rapley, group director, industrial, Informa Markets. “And while the challenges may seem immense, they bring with them huge opportunities for those determined to deliver a hyper efficient, profitable and secure industry.” ■

## Energy digitalisation sessions at MEE

THE ADOPTION OF digital technology is fast becoming mainstream (as the power and electricity sector continues to grow across the region). The convergence and implementation of machine learning, big data, cloud technology, blockchain, artificial intelligence, and other new technologies, has major implications for those working across the whole industry. The Digital Theatre at Middle East Energy will showcase cutting-edge content from those at the very forefront of the industry’s digital revolution. The free-to-attend seminar series is split into three themed days: Smart Building and Office Workspace, Digital Grids and Digital Future Cities. The sessions will provide insights and access to key players from across the full industry value chain (including relevant government-related entities, utility providers, developers, investors, manufacturers, automation providers, academics, R&D specialists and engineers).

## About Middle East Energy

AFTER 45 YEARS as Middle East Electricity (MEE), the rebranded Middle East Energy, organised by Informa Markets, is the region’s leading trade event for the power industry. In 2020, MEE will feature dedicated product sectors for Power Generation, Transmission & Distribution, Energy Consumption & Management, Renewables and Digitalisation.



Cyber security is a core element of the Digital Grid Centre.

# Fostering digitalisation

Siemens new Digital Grid Centre is a collaborative space for development, demonstration and testing of digital technology in energy systems.

**S** IEMENS HAS OPENED a Digital Grid Centre in Abu Dhabi, UAE, to advance the digitalisation of energy systems in the Middle East, supporting smarter cities and industry. The centre enables Siemens to collaborate with customers in developing, demonstrating and testing digital energy solutions, and provides remote support for the utilities, oil & gas, industrial and infrastructure sectors.

Using lab simulations and live data connections, the Digital Grid Centre enables Siemens to remotely provide service and support for customer operations, including preventative and corrective maintenance, simulation and testing. For example, customers will be able to witness Factory Acceptance Tests conducted abroad without needing to travel, using a live remote monitoring system to ensure equipment is ready to be installed on-site.

“Our energy systems are evolving as decentralisation and a diversifying energy mix impose greater complexity on our electricity grids,” said Franco Atassi, head of smart infrastructure for Siemens in the Middle East. “Managing and protecting these intricate energy systems requires intelligent application of digital technologies, and our Digital Grid Centre directly addresses this challenge. We will use the centre to support our customers in their digital transformation, working together to develop and implement technology for smarter cities and industries in the Middle East.”

With a dedicated team of engineers, the centre focuses on six pillars of digitalisation: Remote Collaboration, Cloud & Data (IoT), Cyber Security, Digital Substation, Digital Twin and Energy Efficiency Analytics.

The centre demonstrates the potential of connecting energy systems to the Internet of Things (IoT), capturing data for consolidation, visualisation and analysis in a cloud-based operating system such as Siemens’ MindSphere.

MindSphere enables the connection of products, plants, systems and machines to the Internet of Things, deriving real-world value from data using advanced analytics. The Digital Grid Centre will show how these technologies can turn big data into smart data, unlocking greater potential from energy networks to improve reliability, efficiency and grid safety.

**Customers will be able to experience how digital twin technology can replicate physical grid infrastructure in the virtual world.**

Customers will be able to experience how digital twin technology can replicate physical grid infrastructure in the virtual world, simulating the performance of energy networks before they’re constructed. Insights from these digital twins can then be used to support the planning and design of grids for long-term reliability, performance and cost efficiency.

Cyber security is a core element of the Digital Grid Centre. Operational Technology (OT) is a rapidly growing target for cyber-attacks and the protection of critical infrastructure requires a holistic, always-active approach to security. Siemens offers comprehensive cyber security services for industry, utilities and power grid operators, and the Digital Grid Centre allows customers to embrace the digital transformation while keeping data and equipment secure.

The Digital Grid Centre joins the company’s MindSphere Application Centres in UAE, Saudi Arabia and Egypt as part of an ongoing regional investment into digitalisation. The MindSphere Application Centres enable Siemens to work closely with customers using digital technologies - including Artificial Intelligence, data analytics and the Internet of Things - to solve specific challenges.

Siemens has also made a series of software grants to regional universities in order to support the education, training and skill development of students preparing for careers in a digital economy. ■



# Making sense of solar systems

Seven questions that should be asked before installing solar panels.

**H**OMES AND BUSINESSES across the world are transitioning away from fossil-fuelled electricity grids towards clean energy. Property owners need to remember that the amount of solar energy needed depends on consumption, so it makes sense to trim usage as much as possible before installation. Start with an energy audit and look for efficiency upgrades before drawing up blueprints.

## Here are seven questions to ask before installing solar panels.

### 1. Is there a roof, car park or a canopy that can support the solar panels?

This is a key assessment required. If the roof is shaded most of the day or potentially could be in shade in a few years' time from growing trees, it might not have a favorable enough "solar production" to justify the costs of panels. If there is a suitably sunlit rooftop to work with, Sandhya Prakash, founder and managing director of Beacon Energy recommends checking that it's structurally sound. Solar installations today come with warranties for 20 to 25 years. If the roof needs repairs, it is easier to carry them out before the solar array goes up, to save time and money spent disconnecting the panels and putting them up again afterwards. It's also important to ensure rooftop solar systems have not been banned in the villa community for aesthetic reasons.

### 2. Which kind of solar makes sense?

The two dominant solar technologies are photovoltaic, which uses arrays of cells to convert sunlight into electricity, and thermal, which uses sunlight to heat water or air for use inside. If hot water is a continuous requirement, then a solar thermal investment for both centralised water heating and solar hybrid air conditioning could break even much faster.

### 3. How long does a residential solar PV system take to install?

Once the installers are finalised, necessary site visits and planning are done, the actual installation of a home solar system only takes two to three weeks of work. Design and material procurement could take four weeks. Approvals for setting up net metering could take two to six weeks, the authority inspections could take about three weeks at various stages until the panels are properly connected to the grid. Overall, while the decision process for solar panels can take some time, the installation timeframe is quick and straightforward.

### 4. Does solar make sense for shorter tenancies of fewer than 25 years?

The Middle East can be a transitory place, where homeowners often ask what happens if they move after installing solar panels. A typical solar panel system lasts for 25 to 30 years. Solar panels increase the value of a property and can actually expedite

property sales attracting buyers eager to buy a solar home with the benefit of zero utility bills. As of now, there are no incentives or tax credits for residential home solar systems.

### 5. What percentage of a property can be powered by solar electricity?

Ideally, 100 percent. However, although a solar rooftop PV system can theoretically offset all energy use, it depends on the plant sizing, available space, energy consumption and the sun hours per day. Leading panel manufacturers recommend homeowners factor in a 25 percent cushion when calculating their target for solar panel offset. The main reason being solar panels cannot operate at maximum efficiency all the time. There will be certain days when grid connection is necessary to fully cover power usage. However, with net metering, one can benefit from surplus production days and not pay utility fees, while still relying on the grid for backup storage.

### 6. Are there experts in the Middle East to consult for feasibility and estimates?

Today in the Middle East, if someone wants to buy a car, for example, there are plenty of people who've done it and can tell you how the process works. While installing solar panels costs as much as a car, the number of experienced buyers is much smaller. The number of customers who have owned a solar system through its full lifecycle is even more limited. Prakash recommends, "If you are making the jump to solar energy, don't just speak to friends in Germany, USA or India, speak to local experts. They understand the process and stringent rules and regulations in their geography. After all you are buying a solar system as a long term investment."

### 7. Should a property owner lease or buy a system?

Buying costs more upfront but pays bigger dividends. Leasing provides cheaper electricity with little or no money down, but the benefits are more limited. While the home owner pays the company that owns the system; when the lease is up, it can take the system away. Buying ensures the system keeps working for the owner long after the cost of purchase has been paid off. It's important to compare the total lifecycle cost of the lease and weigh savings against benefits from ownership. While panels can function for decades, other electronic equipment in the system, like the power inverter, have a shorter lifespan. The cost of replacements for system components have to be factored in when budgeting the cost of the project. ■

For more details, [www.beacon-energy.com](http://www.beacon-energy.com)

Write to: [sandhya@consultbeacon.com](mailto:sandhya@consultbeacon.com)

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# Saving lives with collision avoidance systems

At the Dubai HSE Forum, Cherian Varghese, founder & CEO, VIN Technology Systems, discussed how collision avoidance systems can save lives and improve vehicle safety on construction/mining sites and in warehouses.

**A**CCIDENTS INVOLVING HEAVY vehicles and construction equipment are the leading causes of fatalities at construction sites, mostly due to blind spots and workers getting caught while backing up. These accidents, caused by man-machine interference, account for 25-50 per cent of heavy-equipment related accidents, according to the National Institute for Occupational Safety and Health (NIOSH).

At the Dubai HSE Forum (November 24-25, 2019), Cherian Varghese, founder and CEO, VIN Technology pointed out that man-machine interaction cannot be avoided in the construction and mining industry. "Collisions arising due to blind spots are one of the key reasons of fatalities and injuries in the warehouse, construction and mining industry," said Varghese. "Today, we have proven technologies which we can use to overcome this."

VIN Technology Systems is a market leader in collision avoidance systems, designed to detect people and objects in blind spots, significantly reducing accidents. They detect stationary and moving objects, providing the driver with in-cab visual and audible warnings – alerting the operator whose attention cannot be focused on all danger areas. The latest technologies such as AI, Machine learning and IoT are integrated to ensure total 360 degree safety.

The benefits of collision avoidance systems include:

- Safety to operators, workers and vehicles
- Efficiency improvement
- Compatibility to all type of equipment
- Ruggedness to work in any environment from -20 deg C to 60 deg C
- Incident reporting which will help in preventing incidents and analysing
- Eliminates blind spots
- Proximity warning based on systems selected and settings from 3-100 metres
- Camera systems from front/ reverse to 360 bird eye view.



Cherian Varghese,  
founder and CEO, VIN Technology

Photo Credit: Alain Charles Publishing

## Success stories

VIN has manufacturing bases in Bahrain and Saudi Arabia and is opening a UAE factory to cater to the Middle East and Africa. Among their notable successes is Saudi Aramco. "Saudi Aramco, which has a robust safety management system, has incorporated Proximity Warning Systems into their Construction Safety manual, to eliminate

accidents / fatalities due to collisions, which are mostly because of blind spots," explained Varghese. "We were one of the first few companies to manufacture these systems and first in the GCC to develop and manufacture them. We now have more than 15,000 PWAS/collision avoidance systems in Saudi Arabia, where we have been operating since 2013, with more than 70 per cent market share."

Forklift collisions in the aisles of industrial warehouses occur frequently, with one in six workplace fatalities linked to forklifts and 20,000 injuries caused by forklifts every year. Varghese added, "Warehouses have many accidents, and these accidents cost money. Our warehouse safety system can help with aisle management, where pedestrians will hear an alarm when a forklift arrives."

Commenting on the evolution of HSE Varghese said, "LTIs and fatalities are much reduced compared to ten years ago, but we have still much more to do. We have many technologies in our hands; we need to make the best use of these to eliminate incidents, and should not stop until we are 100 per cent incident free." ■

**“Collisions arising due to blind spots are one of the key reasons of fatalities and injuries in the warehouse, construction and mining industries.”**

Cherian Varghese, founder and CEO,  
VIN Technology

## Bobcat presents new expanded telehandler range

WITH THE INCLUSION of the latest high performance 8m TL43.80HF and 7m TL30.70 telehandlers, Bobcat now offers a choice of 13 rigid frame telehandler models for applications in construction, rental, recycling, waste and general industry, covering maximum lifting capacities between 2.6 and 4.3 tonne with lifting heights from 6 to 18m.

The new TL43.80HF increases the lift capacity in the Bobcat range to 4.3 tonne, combining this with a maximum lift height of almost 8m. The TL43.80HF is a compact telehandler offers high productivity, robustness and rough terrain ability. It provides a new solution for heavy lift handling applications found in general industry, manufacturing, building materials, warehousing, quarrying and mining. The TL43.80HF is also suitable for farming work.

The very high stability of the TL43.80HF is due to the box welded frame, the low load centre, the long wheel base and the new massive rear counterweight, allowing Bobcat to minimise the overall dimensions of the machine, resulting in a width of only 2.30m and a length of less than 5m from the rear to the fork face. Together with a short turning radius of just 3.71m, this new Bobcat telehandler is a very manoeuvrable machine, a particularly useful feature when it comes to working in confined environments.

### Another compact solution

The TL30.70 is capable of providing maximum lift capacity of 3 tonne and a maximum lift height of nearly 7m, for a wide range of applications in construction/rental/recycling/waste/general industry. The compact width of 2.1m in the TL30.70 ensures it provides a cost-effective format in the 7m class. The compactness and stability of the TL30.70 makes this machine a suitable tool for easy pick and go or for lifting materials to height on housing and commercial property developments.

The TL30.70 offers a compact and cost-effective alternative to larger 7m models, especially where

working spaces are tight and increased manoeuvrability is required. In addition, performance is not compromised as the TL30.70 offers maximum reach of 4m with a load of more than 1 tonne. At the maximum lift height, users can lift up to 2 tonne of weight, which is sufficient to place a pallet of heavy bricks in most conditions.

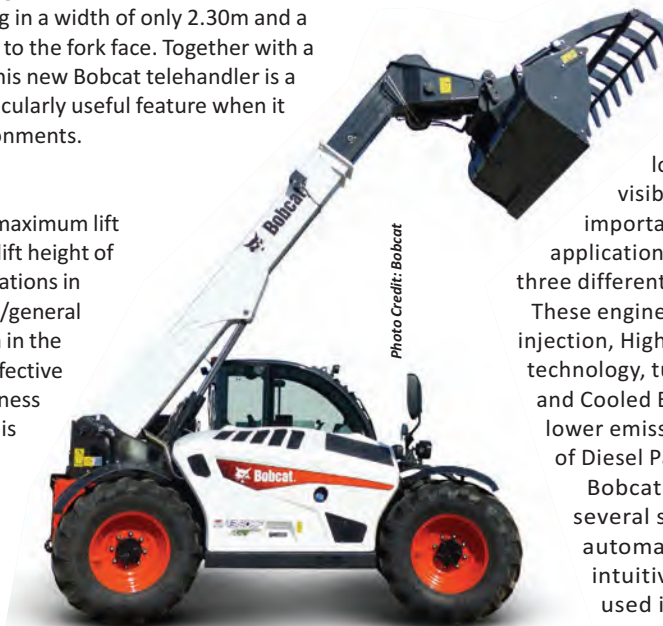
All Bobcat telehandlers are covered by a three year/3000 hour warranty as standard, with the option of extending the warranty to five years/5000 hours.

### Bobcat D34 Engine

The Bobcat D34 engine has been developed and manufactured internally specifically for use in the company's new generation Stage IV rigid frame telehandlers for highly regulated markets in EMEA. This has resulted in optimised performance throughout the range. The compactness of the D34 engine, combined with a styled low profile engine hood improves visibility on the engine side, which is important for material handling applications. The D34 engine is available in three different sizes – 75, 100 and 130 HP.

These engines share the same electronic fuel injection, High Pressure Common Rail technology, turbo-charged air management and Cooled Exhaust Gas Recirculation for lower emissions and do not require the use of Diesel Particulate Filter (DPF) technology.

Bobcat telehandlers incorporate several standard features such as an automatic parking brake with an intuitive operation similar to those used in the automotive industry, providing greater safety and control.



8m TL43.80HF from Bobcat.

Photo Credit: Bobcat

## Advanced Case wheeled loader concept wins Good Design Award

CASE CONSTRUCTION EQUIPMENT has received the Good Design Award for Project Tetra, its methane-powered wheeled loader concept.

The Case wheel loader concept, jointly developed by the Case engineering and CNH Industrial international design teams, reimagines wheel loader design. It demonstrates the viability of alternative fuels in construction equipment and the feasibility of using fuel generated from waste products and renewable sources.

The methane-powered wheel loader, first unveiled in April 2019 at BAUMA, was chosen for its vision of the future of construction as a sustainable, connected and technologically advanced industry. As a winner of the award, Project Tetra will be featured in the Good Design Yearbook for 2019-2020.

The concept offers safety features that use biometric technologies and an obstacle detection system derived from CNH Industrial's autonomous vehicle research and development programme.

The Case methane-powered wheel loader concept has been



Case Concept Wheel Loader

Photo Credit: CNH Industrial NV

tested in real-world construction environments, demonstrating its feasibility and proving its business case in terms of sustainability, reduced overall Total Cost of Ownership and operational viability.



## Updated AC electric drive system to enhance reliability and safety of CAT 7495, 7495HF shovels

CATERPILLAR HAS UPDATED the AC electric drive system for Cat 7495 and 7495 HF electric rope shovels to deliver greater reliability, improved maintenance access, enhanced safety and expanded ability to perform at high altitudes and in extreme temperatures. The updated system is designed to easily integrate with advanced technologies.



“Caterpillar and our predecessor in shovel design and manufacturing, Bucyrus, have supplied more than 300 AC electric rope shovels,” said Dale Blyth, product manager, electric rope shovels.

Updates include a liquid-cooled motion regulator cabinet for more efficient dissipation of heat generated by electrical components. The new system enables shovels to operate at temperatures of -40 degrees C/F to +50 degrees C (122 degrees F) and altitudes of 5,250 meters (17,220 ft) without derating. The reliable system eliminates airborne contaminants in the cabinet and lengthens service intervals—for reduced costs and greater uptime. Additionally, a new, faster propel transfer switch cuts lag time by 75 per cent for improved productivity.

New technologies enable consolidating two

cabinets in the machinery house to create space for easier maintenance access. The updated maintenance station is designed for integration of current and future technology solutions, including Cat MineStar.

The drive system design uses common motors in multiple applications. That means fewer parts to stock, improved parts availability and simplified maintenance. The new motors have higher power densities, smaller frame sizes and optimized footprint, which aids access.

The new electric drive system will be on all new production 7495 and 7495 HF shovels beginning in late 2020. The system is not intended for retrofit, though some elements, such as the fast propel transfer switch, are available as upgrades to machines already in service.

## Schneider Electric launches Easy UPS 3M- 3-Phase UPS with internal battery modules

SCHNEIDER ELECTRIC HAS introduced the first version of Easy UPS 3M 3-phase Uninterruptable Power Supply (UPS) with 60 and 80 kVA (400V) internal high-capacity battery modules.

Easy UPS 3M are easy to install, use and service, providing business continuity for small and medium businesses. It is suitable for use in both the data centre space and in industrial environments.

Easy UPS 3M with internal battery modules is available in all 400V regions globally, except China, Japan, and India.

Easy UPS 3M was introduced earlier this year for external batteries supporting 60-200 kVA. With Easy UPS 3M with internal battery modules, users can now easily select



Easy UPS 3M 3-phase Uninterruptable Power Supply

the UPS with a predefined runtime for their loads, simplifying the selection process and enabling faster deployment of the solution.

“With its optimised footprint design and competitive product features, Easy UPS 3M with internal battery modules allows Schneider Electric to better meet customer needs and partner requirements in a wide range of industries, making it an excellent fit for small and medium businesses, data centers, and manufacturing facilities,” said Christopher Thompson, vice-president, 3-Phase Line of Business, Schneider Electric. “Easy UPS 3M fills a growing market need for a reliable and convenient solution, delivering power availability, manageability, and quality while reducing total cost of ownership.”

## Deep Sea Electronics to roll out load sharing control module DSE8920

DEEP SEA ELECTRONICS (DSE) is set to launch the advanced load sharing control module DSE8920 for multiple synchronising gensets in parallel with the utility supply, with support for the latest Stage 4F and Tier V engines.

Featuring a 7 inch full colour TFT display, optically bonded and sunlight readable, the display presents on-screen information via the impressive 800 x 480 pixel graphical user interface for the clearest user during the extreme conditions.

The DSE8920 can be configured for use as a DSE8910 control module via a simple switch within the software, for stand-alone, off-grid synchronising systems. With built-in sophisticated features such as AVR, Governor and CAN control, two types of KW/VAR sharing support (Isochronous or Droop) and drag and drop PLC functionality, the control module is expected to set new standards across the industry.



The DSE8920 can be configured for use as a DSE8910 control module.

Vital load sharing features include:

- IEEE 1547TM-2018 compliant
- Peak lopping/load sharing
- 2 starting sequences included: start all/ start as load requires
- Manual voltage/frequency adjustment
- ROC.OF and vector shift protection
- Generator load demand
- Automatic hours run balancing
- Mains/Utility decoupling
- Bus failure detection
- Direct governor and AVR control
- Volts and frequency matching
- kW and kvar load sharing
- Dead bus synchronising

The product will be launched at the Middle East Energy show, Dubai in March.

For further information, visit the Deep Sea Electronics stand #S1 C30 at MEE Dubai.

## ESMA and Mercedes-Benz Trucks showcase the first partially automated driving truck

TOGETHER WITH ESMA, Mercedes-Benz Trucks, a division of Daimler Commercial Vehicles MENA, performed a test-drive of the semi-automated Mercedes-Benz Actros from Dubai to Abu Dhabi.

The new Actros offers elevated safety for all road users, efficiency for operators, and comfort for drivers. The important and innovation is Active Drive Assist, with which Mercedes-Benz Trucks puts partially-automated driving into series production. "Actros 5th generation with Active Drive Assist is the first partially automated assistance system on a series produced truck in the world. Today marks the first time these vehicles hit the roads of the Middle East and Africa," stated Kay-Wolf Ahlden, president and CEO of Daimler Commercial Vehicles MENA. "The new Active Drive Assist can brake, accelerate, and steer the truck independently," added Ahlden.

Unlike systems that only work at certain speeds, Active Drive Assist, or ADA, offers partially-automated driving at all speeds for the first time in a series-produced truck. New elements include the active latitudinal control and the combination of longitudinal and lateral control at all speeds through the



The test drive was organised in collaboration with ESMA.

Photo Credit: Mercedes-Benz Trucks

fusion of radar and camera information. Active Drive Assist builds upon the tried-and-tested adaptive cruise control with stop-and-go function and the lane-keeping assistant from Mercedes-Benz. While responsibility for monitoring the traffic situation remains with the driver, the system provides substantial support and significantly contributes to increased road safety. The Active Drive Assist system, which enables Level 2 automated driving, is currently only available in the EU markets.

Khalaf Khalaf Al Hammadi, director of Standards at ESMA, stated "In the UAE, we are committed to achieving sustainable and environmentally friendly transportation

solutions. To fulfil this pledge, we follow the vision of our nation's leaders to have a transportation sector that is sustainable and future-ready."

The test drive was organised in collaboration with ESMA, and demonstrated the use of this system and its benefits in terms of vehicle handling and road safety. Mercedes-Benz Trucks constantly works on improving the product portfolio and DCV MENA is dedicated to the Middle East and North Africa region, believing strongly that the benefits of this system can be realised in this region, alongside professional driver training and customer awareness of proper and safe system usage.

## Topcon introduces new scanning robotic solution for vertical construction

TOPCON POSITIONING GROUP has launched a new generation of scanning robotic total stations — the GTL-1000. A compact scanner integrated with a fully featured robotic total station, the system is designed to offer a powerful instrument for single-operator layout and scan on a single set up. Combined with ClearEdge3D Verity, it offers a new standard of construction verification workflows.

The instrument includes a complete robotic total station that provides full-featured layout functionality with single operator control. The system is designed to build upon proven prism tracking and accuracy that allows operators to confidently layout points in challenging construction environments. With the press of a single button, operators can then initiate a scan.

The instrument is designed to enable significantly faster speeds than comparative site scanning workflows. "Operators can conduct a full-dome 360-degree scan in just a few minutes. More



GTL-1000 from Topcon.

Photo Credit: Topcon

traditional systems and methods take considerably longer," said Ray Kerwin, director of global product planning.

After processing with Magnet Collage, the workflow is completed with ClearEdge3D Verity, an advanced software tool that automates construction verification.

"The seamless integration of the GTL-1000 and Verity creates a complete package that is perfect for construction verification

using 3D modeling techniques," said Kerwin. "The result is a system that offers ultra-powerful full-dome scanning to quickly capture duct work, columns, beams, girders, flaps, penetrations and structural steel. It helps to improve quality assurance, providing clear visual indication of construction quality heat maps to minimise the effects of mistakes before they become expensive problems."

Nick Salmons, principal laser scanning surveyor at Balfour Beatty, said, "At Balfour Beatty, we are dedicated to driving innovative new working practices across our business as part of our 25 per cent by 2025 initiative. The new Topcon robotic scanning solution can increase productivity on site by accelerating the construction process and identifying design challenges.

Additionally, the instrument includes on-board MAGNET Field software designed to offer real-time field-to-office connectivity, and TSshield for investment protection and maintenance.





إصلاحات مشهودة وزيادة تدفقات الاستثمار تشير إلى عام من الآمال العراض

الإفريقية، إذ يتطلب هذا وجود طرق وموانئ وسكك حديدية ووصلات جوية وشبكات من كابلات الألياف البصرية. ووفقا لتقديرات البنك الأفريقي للتنمية، يبلغ تطوير البنية التحتية في إطار الدول الإفريقية جنوب الصحراء الكبرى 170 مليار دولار أميركي سنويا، مع وجود فجوة في التمويل تصل إلى 107 مليارات دولار أميركي. وختاما، توفر أفريقيا العديد من الفرص التي لم تستغل بعد ولكنها تواجه تحديات هائلة في دوائر الاستثمار.

الإنشاءات المتعلقة بتطوير البنية التحتية. وفي سيناريو إيجابي، إذا ارتفعت معنويات المستثمرين في العام الجديد نتيجة لحل التوترات التجارية والجيوسياسية، فإن النشاط العالمي الأقوى قد يعزز نمو الدول الإفريقية جنوب الصحراء الكبرى بما يتجاوز التوقعات الحالية من خلال زيادة الصادرات وزيادة تدفقات الاستثمار في مشاريع التعدين والنفط/الغاز والبنية التحتية. ويتعين على المنطقة إغلاق العجز السريع في البنية الأساسية من أجل تحقيق أهداف اتفاقية التجارة الحرة في القارة

وتواجه القارة الأفريقية، بجانب القوى المعاكسة الخارجية، الضغوط المالية التي قد تعرقل التقدم الذي تحقق «بشق الأنفس» في النمو والتنمية على مدى العقد الماضي. فقد رفعت العديد من البلدان مستويات الديون، الأمر الذي أدى إلى استنفاد احتياطات النقد الأجنبي وضعف القوائم المالية المصرفية.

في عام 2018، عانى أكثر من خمسي دول أفريقيا جنوب الصحراء الكبرى من «أزمة الديون» أو «المخاطر العالية»، حيث تجاوز الدين الحكومي نصف الناتج المحلي الإجمالي في 23 دولة، وأكثر البلدان مديونية هي أنجولا وجمهورية الكونغو وإريتريا وموزامبيق وتوجو وزامبيا. ويعمل ارتفاع مستويات الديون وانخفاض الاحتياطات الخارجية – وبالتالي القدرة المحدودة على السداد – على تغذية نقاط الضعف، لا سيما مع تحول أسهم الديون العامة من المصادر الرسمية المتعددة الأطراف والثنائية إلى المصادر التجارية.

### تطلعات حميدة

إذا نظرنا إلى المستقبل، فمن المتوقع زيادة النمو الإقليمي مع ارتفاع الطلب المحلي، فضلا عن ارتفاع أحجام التجارة، بدعم من الارتفاع التدريجي في الاقتصاد العالمي. ويتصور صندوق النقد الدولي زيادة النمو لعدد 13 دولة من أصل 45 دولة في أفريقيا جنوب الصحراء الكبرى بنسبة 6 في المائة أو أكثر، بقيادة إثيوبيا وساحل العاج ورواندا، والتي صنفت على أنها أكثر اقتصادات العالم ازدهارا. وعلاوة على ذلك، يتوقع نمو الناتج المحلي الإجمالي بنسبة 4 إلى 5 في المائة بالنسبة لعدد 15 دولة، بقيادة بوتسوانا والكاميرون وغانا وسيراليون وتنزانيا.

غير أن الانتعاش لا يزال غير منتظم، كما أن مستويات الديون مرتفعة، مما يؤكد الحاجة إلى مواصلة الإصلاحات الهيكلية لتعزيز الاستثمار الداخلي، والقدرة التنافسية والتجارة داخل المنطقة في سياق منطقة التجارة الحرة في القارة الإفريقية. ويمكن أن يتجاوز التوسع المتوسط الأجل في الدول الإفريقية جنوب الصحراء الكبرى (باستثناء نيجيريا وجنوب أفريقيا) 5 في المائة، مدعوما بالنمو القوي في الخدمات، ولا سيما تجارة التجزئة والجملة والاتصالات والخدمات المصرفية/المالية، فضلا عن

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التأمين ضد المخاطر، مما يؤدي إلى عكس اتجاه تدفقات رأس المال، فضلا عن مواجهة عبء الديون. وقد صرح ألبرت زوفاك، كبير الاقتصاديين في القارة الإفريقية بالبنك الدولي قائلا: «ستكون المخاطر التي تهدد النظرة الكلية في الغالب في الجانب السلبي، وسيظل التعافي هشاً». إذ يتوقع البنك أن يبلغ متوسط نمو الدول الإفريقية جنوب الصحراء الكبرى 3,1 في المائة في عام 2020.

ويعتقد صندوق النقد الدولي أن تكثيف التوترات التجارية في الاقتصادات المتقدمة يمكن أن يقلل الصادرات العالمية بمقدار 674 مليار دولار والدخل العالمي من خلال ضح 1,4 تريليون دولار، مع وجود خسائر في جميع المناطق. ونتيجة لذلك، يمكن أن تشهد القارة الإفريقية انخفاضا بنسبة 2 في المائة في نمو الناتج المحلي الإجمالي في حالة تصاعد الحرب التجارية بين الولايات المتحدة والصين، إلى جانب الظروف المالية العالمية الأكثر تشدداً. وتعتبر القطاعات الأكثر تضرراً هي السلع الأساسية مثل المعادن والمنتجات ذات الصلة بالأغذية وغيرها من السلع التجارية.

كما أن من شأن التباطؤ الحاد في الصين، بسبب ارتفاع التعريفات الأمريكية على الصادرات، أن يؤثر بشدة على أسعار السلع الأساسية مع هبوط الاستهلاك الخاص وانخفاض الطلب من الصين على الصادرات الأفريقية. وعلى نحو مماثل، فإن الركود في منطقة اليورو من شأنه أن يحد من النمو الإقليمي من خلال خفض الاستثمار وتعكير صفو قنوات العرض العالمية بشكل مفاجئ، حيث تمثل الصين والمنطقة الأوروبية خمس وثلاث إجمالي التجارة، على التوالي، في حين تشكل أوروبا والصين كبار المستثمرين الأجانب في الدول الإفريقية جنوب الصحراء الكبرى. وقد يؤدي إحكام الظروف المالية بشكل حاد (مثل أسعار الفائدة) - في الاقتصادات المتقدمة - إلى ارتفاع «النفور من المجازفة» والذي من شأنه أن يزيد من الضغوط المفروضة على الأسواق الحدودية من حيث إعادة التمويل ومخاطر أسعار الصرف وارتفاع تكاليف خدمة الديون نتيجة الاعتماد بشكل أكبر على الديون الخارجية التجارية وسندات اليورو. وفي عام 2019، قُدرت إصدارات البلدان الإفريقية للسندات السيادية في أسواق رأس المال الدولية بمبلغ 14 مليار دولار أمريكي.

/ الاستثمار الخاص ونمو الإنتاجية وبرنامج البنية التحتية العامة.

ولا يزال يقوض النمو الضعيف في نيجيريا وجنوب أفريقيا وأنجولا مع مجموع الناتج المحلي الإجمالي والسكان في عام 2018 بقيمة 871,4 مليار دولار أمريكي و284,5 مليون دولار (بيانات البنك الدولي)، على التوالي، الأداء العام للدول الإفريقية جنوب الصحراء الكبرى ومن المتوقع أن يظل النمو بين المراكز الثلاثة الأولى بطيئا في غياب إصلاحات هيكلية بعيدة المدى.

### التجمعات ثلاثية المستويات

تضم القارة الإفريقية اقتصادا إقليميا متنوعا للغاية ومُصنفا إلى ثلاث فئات عريضة. حيث يشمل أصحاب «النمو الأعلى» 10 دول وهي: بوركينا فاسو وساحل العاج وإثيوبيا وغانا وغينيا وكينيا ورواندا والسنغال وتنزانيا وأوغندا.

ويبلغ عدد سكان هذا التجمع 375 مليون نسمة، وينتج ربع مجموع الناتج المحلي الإجمالي للدول الإفريقية جنوب الصحراء الكبرى. بينما يضم أصحاب «النمو المتوسط» 14 دولة وهي: بنين وبوتسوانا والكاميرون وجمهورية أفريقيا الوسطى والكونغو (الديموقراطية) وجمهورية غامبيا وغينيا بيساو ومدغشقر ومالي وموريشيوس وموزمبيق والنيجر وسيراليون وتوغو. ويبلغ عدد سكان هذا التجمع 237 مليون نسمة، وينتج عشر الناتج المحلي الإجمالي الإقليمي. أما مجموعة «النمو الأدنى» فتتمثل أكثر من 40 في المائة وتلثي عدد سكان الدول الإفريقية جنوب الصحراء الكبرى والناتج المحلي الإجمالي على التوالي، وتشمل نيجيريا وجنوب أفريقيا وأنجولا، بالإضافة إلى بوروندي وتشاد وجمهورية الكونغو وغينيا الاستوائية وإسواتيني والجابون وليسوتو وليبيريا وناميبيا وجنوب السودان وزيمبابوي. وتحظى هذه البلدان المتنوعة، التي تنتهج سياسات حكيمة وتحسن بيئة الأعمال التجارية، بنمو اقتصادي أعلى بكثير في المتوسط.

### عوامل الخطر

تواجه القارة الإفريقية تحديات خارجية وإقليمية ناشئة عن تزايد سياسة الحماية الجمركية، وتباطؤ الشركاء التجاريين الرئيسيين، وارتفاع حاد في أقساط

العالمي. فقد أشار صندوق النقد الدولي في شهر أكتوبر/تشرين الأول 2019 في تقريره عن التوقعات الاقتصادية الإقليمية إلى الوضع الاقتصادي قائلا: «يتمثل التحدي الذي يواجه المنطقة في تعزيز النمو من أجل خلق فرص العمل للقوى العاملة المتنامية، بينما يوفر الحماية ضد نقاط الضعف والمخاطر المرتبطة بالديون الناجمة عن البيئة العالمية الصعبة».

### الاتجاهات المتباينة

تجاوز تقديرات البنك الأفريقي للتنمية لعام 2019 لنمو الناتج المحلي الإجمالي بنسبة 4 في المائة كلا الرقمين من البنك الدولي وصندوق النقد الدولي بنسبة 2,6 في المائة و3,2 في المائة على التوالي. في حين يعيق النمو الضعيف المستدام في جنوب أفريقيا ونيجيريا القارة، فاستبعادها من الحساب يجعل بقية الدول الإفريقية جنوب الصحراء الكبرى تنمو بمعدل صحي يبلغ نحو 5 في المائة.

ويعكس التباطؤ الإقليمي في الأساس ضعف الاستثمار الثابت وصافي الصادرات. ففي عام 2019، شهدت الصناعات التحويلية والتعدين توسعا متواضعا، ولكن قطاع الخدمات فقد بعض الزخم، وعانى الناتج الزراعي من ظاهرة النينو (أي الجفاف الشديد) في أجزاء من أنجولا وبوتسوانا وإثيوبيا وكينيا وزامبيا وزيمبابوي، في حين تعرضت موزامبيق وغيرها من بلدان الجنوب الشرقي للأعاصير، الأمر الذي أدى إلى ارتفاع التضخم وانخفاض عائدات الدولة.

ويستمر أداء النمو في إظهار تباين ملحوظ في مختلف البلدان. فوفقا لصندوق النقد الدولي، تنمو البلدان غير كثيفة الاستخدام للموارد بمعدل أسرع بثلاث مرات تقريبا (بنسبة 6 في المائة في عام 2019) مقارنة بالدول المصدرة للنفط والبلدان الأخرى كثيفة الاستخدام للموارد بنسبة 2,1 و2,7 في المائة على التوالي، أي أقل بكثير من النمو السكاني. كما يعكس النمو غير الكافي المستمر في المجموعة الأخيرة (باستثناء القليل منها) - إلى حد كبير - القيود الهيكلية والافتقار إلى التنويع وانخفاض الاستثمار في القطاعات غير النفطية، وضعف كفاءة المؤسسات العامة. وعلى النقيض من ذلك، فإن النمو في البلدان غير كثيفة الاستخدام للموارد مدفوع بالاستهلاك





العديد من الدول الإفريقية جنوب الصحراء الكبرى في طريقها إلى الانتعاش الاقتصادي

## توقعات عام ٢٠٢٠ للقارة الإفريقية

في هذا المقال، يجري الخبير الاقتصادي، معين صديقي، تقييم الفرص والتحديات المالية التي تواجه القارة الإفريقية. فبشكل عام، لا يزال النمو في الدول الإفريقية جنوب الصحراء الكبرى، والتي يقطنها أكثر من مليار شخص، دون المستوى المتوقع في السنوات الأخيرة بسبب استمرار القوى المعاكسة الخارجية والصدمات المناخية، مثل الجفاف والأعاصير والأمطار الغزيرة المقترنة بالتوترات الأمنية ونقص الإصلاحات المحلية في بعض البلدان.

إجمالي الناتج المحلي في الدول الإفريقية جنوب الصحراء الكبرى، والتي تحتضن نحو ثلثي إجمالي السكان. في حين تنعكس أسعار السلع الأساسية الأكثر هدوءاً في العوامل الاقتصادية الكلية الإقليمية الأضعف، الأمر الذي يؤدي إلى هبوط الطلب على الواردات، والتحويلات المالية ونشاط القطاع المالي، وبالتالي الحد من نمو الناتج القومي وتفاقم الأوضاع المالية والخارجية في أغلب البلدان. وثروات أفريقيا ترتبط ارتباطاً وثيقاً بالاقتصاد

فقد هبطت تدفقات رأس المال إلى الدول الإفريقية جنوب الصحراء الكبرى، جنباً إلى جنب مع انحدار مؤشر التجارة العالمية والتصنيع، في حين تسببت الحرب الجمركية بين الولايات المتحدة والصين في خفض صادرات المنطقة، والتي أثرت في أغلبها على البلدان المصدرة للنفط والمعادن. والواقع أن الدول المصدرة للسلع الأساسية، بقيادة البلدان ذات الاقتصادات «الثلاثة الأولى» (نيجيريا وجنوب أفريقيا وأنجولا) تحمل ثقلاً أكبر بكثير في

حالة عدم الاستقرار العالمي تلقي بثقلها على ثقة الشركات ومعنويات المستثمرين وأسعار السلع الأساسية، والتي من المتوقع أن تظل دون الذروة التي بلغت في عام 2018. وقد أدلى صندوق النقد الدولي ببيان مفاده: « إن عوامل ضعف النمو العالمي، وهبوط أسعار السلع الأساسية وزيادة التوترات التجارية وتزايد حالة عدم اليقين والتي تتفاقم بفعل تباطؤ وتيرة الإصلاحات المحلية، تلقي بثقلها على النشاط التجاري في مختلف أنحاء المنطقة.»

# المحتويات

القسم العربي

تحليلات

هل سيكون عام 2020 مواتياً لأفريقيا؟ ..... ٤



ملخص محتويات القسم الإنجليزي

آفاق ٢٠٢٠: تقرير النشرة التقنية الصناعي شاملا الإنشاءات، الطاقة، المرافق والخدمات اللوجيستية.

تحليلات: بداية نمو القطاعات غير النفطية في دول مجلس التعاون الخليجي.

لمحات عن بعض البلدان: الكويت.

لمحات عن بعض القطاعات: إدارة المياه.

فعاليات: معرض الشرق الأوسط للكهرباء - دبي، معرض السعودية للتدفئة والتهوية وتكييف الهواء والتبريد.

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# النشرة التقنية

SERVING THE REGION'S BUSINESS SINCE 1984 ١٩٨٤ في خدمة شركات المنطقة منذ

الشرق الأوسط

## توقعات عام ٢٠٢٠ للقارة الإفريقية

زيادة تدفقات الاستثمار يمكن أن تؤدي  
إلى ازدهار طويل الأجل في إفريقيا.