

TECHNICAL REVIEW

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EDITOR'S NOTE

WHILE THE SPOTLIGHT has focused on the UAE and Saudi Arabia's economic growth since the beginning of 2018, Oman has been experiencing a positive economic turnaround as it joins other GCC countries in embracing diversification. Read economist Moin Siddiqi's expert analysis on p12. The sultanate's ports also play a critical role as the regional gateway for Asia and Africa (p18) and business is brisk. Coming back to the UAE, customisation is driving this market – especially in heavy vehicles. Dubai has witnessed several trucks launches in the last two months (p22) including Mercedes-Benz, Volvo Trucks and Ford Trucks. Besides these, don't miss the reviews of Middle East Electricity 2018 and The Big 5 2018 (p32 & 46) as well as the feature on Alain Charles Managed Event's 2nd Annual Refrigeration Conference (p54).

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

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Briefly

Saudi Building Code mandatory for large projects in kingdom

IT IS COMPULSORY to follow the Saudi Building Code for the large construction projects in the country, as recommended by the National Committee for the Saudi Building Code committee.

As reported by *The Saudi Gazette*, Dr Saad Al-Qasabi, head of the Saudi Building Code National Committee, said that the code will be applied to buildings which begin with the reports of the spatial elevation issued by the municipalities in July 2018. According to him, applications are compulsory for the large engineering projects in Saudi Arabia that will begin on 1 January 2019.

According to the Saudi Building Code National Committee, in spite of construction and building sector is one of the major economic pillars in the country, there are examples of chaos in studies, technical planning and implementation between parties operating in building and construction sector.

Aldar to build first commercial Hyperloop System in UAE

THE US-BASED HYPERLOOP Transportation Technologies (HyperloopTT) has signed an agreement with Aldar Properties PJSC, one of the leading real estate developers in Abu Dhabi, to build a Hyperloop system, Hyperloop XO Square Innovation Centre and a Hyperloop Visitor Centre.

Located in Aldar's Seih Al Sdeirah landbank in Abu Dhabi, the construction site is situated on the border of Abu Dhabi and Dubai, close to the Expo 2020 site and Al Maktoum International Airport.

The construction will be done in several phases starting within the 10km allocation, with further development aimed at creating a commercial Hyperloop network across the emirates and beyond, said the company.

Bibop Gresta, chairman of HyperloopTT, said, "This agreement creates the basis for the first commercial Hyperloop system in the world here in the emirates, with the goal of eventually connecting Abu Dhabi to Al Ain, Dubai, and Riyadh, Saudi Arabia."

MENA needs US\$260bn investment to meet power demand over next five years

THE MIDDLE EAST and North Africa (MENA) region will require US\$260bn of investment to meet rising and suppressed electricity demand, said Arab Petroleum Investments Corporation (APICORP) in its latest research report on the regional power sector.

In the GCC, governments have coped well with rising electricity demand. However, recent increases in electricity prices in Saudi Arabia are seen to slow demand growth, noted APICORP.

The report has also revealed that electricity demand and consumption have been growing rapidly in the MENA region, driven by population growth and urbanisation, rising income levels, industrialisation and low electricity prices.

In order to meet this rising demand, APICORP estimates that MENA power capacity will need to expand by an average of 6.4 per cent each year between 2018 and 2022, which corresponds to an additional capacity of 117 GW. The report forecasts that US\$152bn will be needed to deliver this additional capacity, with a further US\$108bn needed for transmission and distribution.

Turning to more specific parts of the MENA region, the GCC is seen to lead in the region. While it currently represents 47 per cent of current MENA power generating capacity, APICORP forecasts that it will need to invest US\$55bn to create 43 GW of additional generating capacity and another US\$34bn in transmission and distribution over the next five years.

Among the GCC countries, Saudi Arabia has taken steps to control demand, as a means of keeping required levels of investment in capacity at manageable levels. This is in line with the Saudi Arabian government's recent round of price increases, as demand had risen significantly on the back of cheap electricity.



Photo Credit : Todd Klassy/Flickr

The UAE needs to invest at least US\$33bn to meet its expected additional 16 GW capacity requirement over the medium term. APICORP estimates that nearly 10 GW of capacity additions are already in execution, including 5.6 GW of nuclear. Solar power also features heavily in the UAE's plans and is expected to account for 25 per cent of the generation mix once its latest US\$13.7bn solar park is fully commissioned.

In other GCC countries, Kuwait's generating capacity will need to reach 24 GW by 2022, requiring US\$15bn of investment. Oman's rising electricity demand will require an additional four gigawatt of generating capacity, which APICORP estimates will cost US\$8bn. Bahrain will need to grow capacity by six per cent per annum, with US\$3bn of investment to meet capacity additions of 1.4 GW.

Iran is likely to need an additional 25 GW over the next five years. In Iraq, an additional 12 GW of power generation capacity is required over the next five years. Egypt will need to invest US\$28bn in power generation and a further US\$18bn in transmission and development, said the report.

Kuwait to upgrade two power plants for US\$141mn

KUWAIT'S MINISTER OF electricity and water, Bakheet Al-Rashidi has signed two deals worth US\$141mn to upgrade a couple of power plants.

According to the deals, fuel reception and control systems will be upgraded in the Doha West and Sabiya power plants at a cost of US\$123mn and US\$18mn respectively.

Countries in the Middle East like Kuwait have been expanding and upgrading their power production capabilities to satisfy rising domestic demand.

The Doha West project, with a set timeframe of 30 months, also includes replacing dilapidated fuel pipelines, in addition to setting up early detection systems to prevent gas and hydronic radiant leaks that prove

injurious to the pipelines, the statement added. The Sabiya project involves overhauling fuel gas conditioning (FGS) systems over 36 months.

Meanwhile, a seawater desalination project using reverse osmosis technology in Doha West power plant, worth US\$384.7mn, has been 76 per cent completed, Al-Rashidi revealed. He pointed out that the project continues to run on schedule and will be completed no later than 29 November, enabling the plant to churn out 60mn gallons of water per day. The minister went on to put Kuwait's current water production capacity at more than 620mn imperial gallons, foreboding "peak water demand" during the summer.



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30-2 May	Oman Energy & Water	MUSCAT	www.energyandwateroman.com

MAY

1-3	Automechanika Dubai	DUBAI	www.automechanikadubai.com
2-3	Future Blockchain Summit	DUBAI	www.futureblockchainsummit.com
7-9	Saudi Elenex	RIYADH	www.saudielenex.com

JUNE

19-22	Intersolar Europe	MUNICH	www.intersolar.de
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SEPTEMBER

4-6	Middle East Stone	DUBAI	www.middleeaststone.com
15-17	The Big 5 Construct Egypt	CAIRO	www.thebig5constructegypt.com
23-25	Windows Doors and Facades	DUBAI	www.windowsdoorsandfacadeevent.com
23-25	FM Expo	DUBAI	www.fm-expo.com

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Saudi Arabia's construction sector strengthens steel industry in Middle East

SAUDI ARABIA PREFABRICATED building and structural steel market reached a value of nearly US\$1bn in 2016, the market is expected to grow at a CAGR of nearly five per cent during 2017-2022, reaching a value of around US\$2bn by 2022.

Saudi Arabia is currently facing a shortage of affordable housing as a result of growing population and an influx of expatriates. This has encouraged the demand for prefabricated homes as they are cost-effective and time efficient. Further, prefabricated buildings are more environmental friendly than conventionally constructed buildings as they do not generate any on-site waste. This is projected to positively influence the market demand in the upcoming years. Moreover, energy efficiency, design flexibility and faster completion are some of the other advantages of prefabricated building, which are anticipated to drive the market growth.

Construction activity is expected to record steady growth next year as global oil prices rationalise and the kingdom prepares for long-term economic growth. In December, Saudi Arabia unveiled its 2018 budget and allocated US\$14.4bn in infrastructure spending for the current year compared to US\$13.86bn in 2017.

This makes Saudi Arabia one of the favorite destinations for the steel majors due to thriving construction sector and soaring steel demand.

At present, the steel industry in Saudi Arabia is highly import



Saudi Arabia is forecast to become the fastest steel producing and consuming nation in the Middle East region.

Photo Credit: Sarunas Vaitkus/Adobe Stock

oriented. However, the situation is expected to reverse in future with the escalation of domestic production. And the business sentiment is set to improve across Saudi Arabia's construction sector over the next 12 months despite challenging economic conditions, according to law firm Pinsent Masons' Annual GCC Construction Survey in January 2018.

At the seventh edition of International Exhibition for Machinery, Steel Fabrication and Metal Works, participants and visitors can take advantage of the networking benefits and push for more sales prospects in the kingdom's burgeoning construction market. The event is slated to take place in Riyadh International Convention & Exhibition Center from 29 April to 2 May 2018.

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AS MANY AS 11 international companies and consortiums have shown interest to participate in the tendering process for the development of a new major independent water project (IWP) in Muscat. According to *Muscat Daily*, Oman Power and Water

Procurement Company (OPWP) is developing the addition of new water desalination capacity of approximately 300,000 cu/m per day to be located at Ghubrah. In February 2018, OPWP had announced the launch of the qualification process for developers

through a request for qualification (RFQ) tender for the project. OPWP announced that the statements of qualification were received from 11 applicants in response to the RFQ tender.

www.technicalreview.me/power-a-water

TUNISIA IS SET to launch an international tender for the procurement of 1,000MW of wind and solar power, a project that is estimated to be worth US\$1.04bn.

Speaking about the renewable energy project in the North African country, Youssef Chahed, the prime minister of Tunisia, said that the project will be situated in the regions of Kairouan, Tozeur, Tataouine, Sidi Bouzid, Kebeli and Tataouine, cited the source. As reported by *Reuters*, the tender is scheduled to start on 27 April 2018.

www.technicalreview.me/power-a-water

RESEARCHERS FROM THE Massachusetts Institute of Technology (MIT) have unveiled a new device that is expected to get drinkable water out from the driest desert air. The system is based on relatively new high-surface-area materials called metal-organic frameworks (MOFs).

The currently available fog-harvesting methods require higher levels of 100 per cent humidity in the air and the dew-harvesting refrigeration-based systems require 50 per cent humidity. Both the existing methods also require high amounts of energy for cooling. According to MIT researchers, the new system extracts drinking water from very dry places in the desert air with relative humidities even as low as 10 per cent.

The new system is field-tested on a rooftop in the dry air of Tempe, Arizona. The researchers said that although it was a small proof-of-concept device, once scaled up, its output is set to be equivalent to more than a quarter-litre of water per day per kilogram of MOF.

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Sultanate gets in shape

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The upturn in the Oman's economy is mainly driven by the positive impact of economic diversification efforts that include promotion of FDIs and tourism-related activities. Economist Moin Siddiqi reports.



Supported by easing fiscal adjustment, infrastructure spending and structural reforms, Oman is anticipated to record stronger growth over the medium-term.

Manufacturing, logistics, tourism, ITC, and services are key areas where increased FDI will help transform Oman into a dynamic GCC economy.

FACED WITH DWINDLING oil reserves, Oman has pursued a shrewd reform agenda built on three pillars – economic diversification, privatisation, and downstream industrialisation. The sultanate is also encouraging foreign companies to invest in transportation/logistics and tourism. “The reforms brought in by the government will certainly make the economy more efficient,” Fabio Scacciavillani, chief economist of Oman Investment Fund said, citing efficiency as the most influential factor in economic growth.

The government enacted a series of measures throughout 2017 aimed at improving the business environment and facilitating private sector growth. These included online single window system for foreign trade, thus reducing the time required for documentary compliance and improving cross-border trade, easing processes related to obtaining construction permits; and expediting the incorporation of businesses. The reforms helped Oman rank 71st out of 190 countries in the World Bank’s ‘Doing Business’ 2018 index – overall score (67.2) exceeded the Middle East and

North Africa regional average of (56.7).

Total foreign direct investment (FDI) as of September 2017 stood at US\$21.62bn, according to the National Centre for Statistics and Information (NCSI). The UK remains the largest investor followed by the UAE (see chart).

Draft bills to ease workforce restrictions and allow 100 per cent foreign ownership should further increase FDI flows. Devised with World Bank’s consultation, the proposed new law would raise the cap on foreign ownership of firms from 35 to 100 per cent, whilst abolishing the minimum capital threshold of US\$390,000. Manufacturing, logistics, tourism, ITC, and services are key areas where increased FDI will help transform Oman into a dynamic GCC economy.

Supported by easing fiscal adjustment, infrastructure spending and structural reforms, Oman is anticipated to record stronger growth over the medium-term. The International Monetary Fund (IMF) expects real GDP growth at healthier 3.7 per cent this year – above the GCC average of 2.9 per cent (see Table).

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Washington-based International Institute of Finance (IIF) noted: “Infrastructure projects, including new airport, roads, hospitals and Port of Duqm, will add momentum to non-hydrocarbon growth.” Oman has unveiled an expansionary 2018 budget. Oil price recovery will allow state financing to complement growing levels of private infrastructure investment facilitated by favourable regulatory climate and public-private partnership (PPP) framework.

Overarching strategy

This year marks the middle of Oman’s ninth five-year plan (2016-20) that builds on a longer term vision of nurturing a vibrant non-oil economy through large-scale development of petrochemicals, mining, manufacturing, tourism and fisheries sectors, as well as power generation and water desalination. Tourism and gas-based industries are key components of Oman’s diversification strategy. The plan aims to cut the oil industry’s contribution to GDP from 44 to 22 per cent.

“The diversity of its natural resources presents the sultanate a unique competitive advantage in regional and global markets, as well as an opportunity to achieve its economic diversification objectives,” stated ninth FY plan. The government projects an annual investment of US\$21.32bn with increased input from the PPPs. In fact, the private sector is expected to provide over half of total investment against two-fifths in the last plan.

Authorities are targeting heavy industries with specific policies to boost their GDP contribution from currently one-fifth to 29 per cent in 2020. Meanwhile, annual growth of six per cent is targeted for mining activities, with a host of regulatory initiatives to entice prospective investors. Further, Oman aims to attract 2.7mn visitors annually by 2020, up from 1.9mn in 2015, and increase the contribution of tourism to GDP to six per cent over the next two decades.

Selected Macroeconomic Indicators

	2014	2015	2016	2017	2018
Nominal GDP (US\$bn)	81.03	69.83	66.30	72.00	76.00
Real GDP growth (%) annual	2.5	4.2	3.0	0.7	3.7
Real Non-oil GDP growth (%)	6.7	4.2	3.4	2.5	3.5
CPI inflation (average)	1.0	0.1	1.1	3.2	3.2
Fiscal Balance*	-1.1	-15.7	-21.6	-13.0	-9.3
Government Debt*	4.9	15.3	33.6	44.5	50.8
Current Account Balance*	5.8	-15.5	-18.6	-14.3	-13.2

* Percent of gross domestic product.

Sources: National authorities, IMF, World Bank, IIF and estimates.

The Oman Power and Water Procurement Company (OPWP) intends raising electricity generating capacity by half from 7.7 GW to 11.7 GW by 2023 to meet robust demand. Eleven firms have submitted applications to develop a 750-850MW power plant at Misfah for start-up in 2022. It also plans to install 90MW of renewable energy capacity by 2020; UAE’s Masdar is building a 50MW wind farm at Harweel in the Dhofar region.

Meanwhile, Oman’s first coal-fired independent power project (IPP) with a generation capacity of 1,200MW will be established in Duqm. The announcement was made in April 2018 and OPWP issued a request for qualification (RFQ) tender inviting developers to submit their statements of qualification for a new clean coal independent power project at Duqm.

The aims of Oman’s long-term vision are being realised, as new projects and clusters of industries spring-up across the sultanate. The private sector’s participation in investment programmes rose to 60 per cent in 2017, up from 52 per cent in 2014, according to the official data.

Regional logistics hub

The Sultanate Logistics Strategy 2040 seeks to double transport sector’s GDP contribution to US\$7.8bn by 2020. Oman continues to inject funding into roads, highways, railways, airports and ports in order to improve connectivity. All three major commercial ports (Duqm, Sohar and Salalah) – gateways to West Asia and Africa – are expanding.

The Omani government also intends to entice high-tech investors to free zones situated at these ports, which offer various benefits, chiefly tax holidays, lower Omanisation requirements, 100 per cent foreign ownership and waivers and reduction of corporate tax and customs duties.

A 2040 master plan for Sohar Port and Free Zone is being finalised, according to media reports. The 2,000 hectare (ha) port area, which has already received US\$26bn in investment over a decade of operations, has a capacity of 1.5mn twenty-foot equivalent units (TEUs). This is expected to reach five million TEUs by 2020 following the completion of a new container terminal. The Port of Duqm will also receive large investment following recent awarding of US\$278mn contract to Turkish firm Abdali Holding, for the construction of a pair of container terminals – with a combined 3.5mn TEU capacity upon completion in mid-2019. The Port of Salalah is developing three new container berths and a dedicated cruise terminal, among other projects.

The Oman National Railway Project with a potential budget of US\$15.5bn – currently at engineering, procurement and construction (EPC) tender stage – would improve access to remote areas and boost internal trade. Three consortia: Korea Rail Network Authority, Técnicas Reunidas and Parsons International were short-listed for Project Management Consultancy contract, which has yet to be awarded. Planned network – connecting Sohar, Duqm and



An artist's rendering of the Batinah Expressway.



BP Oman's Khazzan natural gas project is on track.

Salalah ports – comprising 2,244km of track with 35km of tunnels, 40km of bridges, 50 terminals and eight marshalling yards – will carry both freight (120km/hour maximum speed) and passenger (220km/hour max speed) traffic.

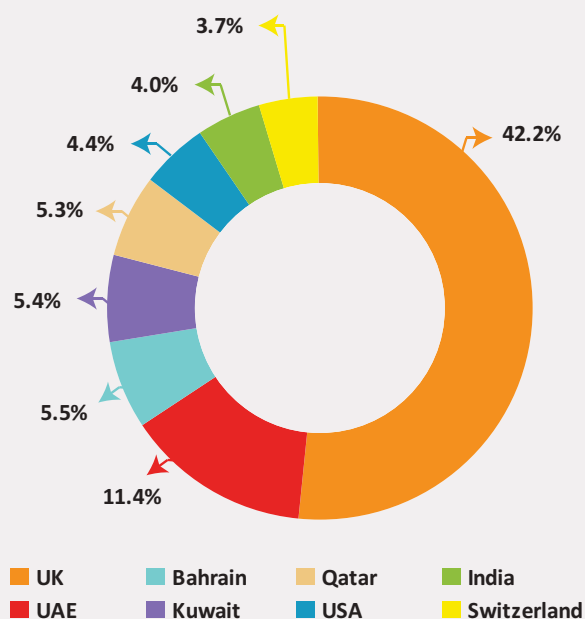
Muscat International Airport is also expanding with a new terminal designed by French ADPI to handle annual capacity of 12mn passengers (up from 10mn in 2015), with subsequent phases of expansion allowing for 48mn passengers.

Upcoming projects

As with other GCC countries, Oman is moving ahead with megaproject development worth nearly US\$200bn, which are either underway, near completion or in planning stages. These include:

***The Khazzan and Makarem** gas fields development (budget US\$16bn), operated by BP covering an area of 2,800km containing tight gas reservoirs. BP plans to drill

Major Foreign Investors by Country, 2017
in percent of Total Direct Investment



Source: National Centre for Statistics & Information (NCSI).

around 300 wells over 15 years to produce 28.3mn cubic metres/day of gas plus 25,000 bpd of gas condensate. The project has the potential of delivering 40 per cent of Oman's gas supply by 2020.

***The US\$6.5bn Liwa** Plastics Industries Complex will be Oman's first steam cracker, allowing it to produce diverse chemicals products and provide new opportunities for downstream industries. The project, owned by Oman Oil Refineries and Petroleum Industries Co, entails awarding four EPC packages: 859,000 tonnes/year (t/y) steam cracker, 880,000 t/y polymer units, a natural gas liquids (NGL) extraction unit and a 300km-long NGL pipeline.

***Duqm oil refinery** project (budget US\$6bn) is being developed by Duqm Refinery and Petrochemical Industries Co. (DRPIC), a 50:50 joint venture of Oman Oil Company and Abu Dhabi's International Petroleum

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Power on

Investment Co. (IPIC). Phase 1 entails building a 230,000 bpd grassroots merchant export refinery within the Duqm Special Economic Zone – using delayed coking technology for bottom-of-the-barrel processing. Phase 2 is planned as an associated petrochemical facility. The front-end engineering design (FEED) contract was awarded to UK-based Foster Wheeler.

***The Batinah Expressway** – one of the biggest road projects in Oman – will act as an extension of the Muscat Expressway and run for 265km to the Oman-UAE border. The entire stretch of Batinah Expressway will be opened for motorists on 7 May 2018. The expressway has been divided into six packages with a total length of 265km, stretching from Halban to Khatmat Malaha in the Wilayat of Shinas. The road has four lanes on each direction with four-metre islands in between. The road is one of the strategic projects implemented by the Ministry of Transport and Communications.

Package 1 starts from Al Filaij roundabout in the Wilayat of Barka and ends in the Wilayat of Al Rustaq. Package 2 spans the distance between the Rustaq to Suwaiq with a total length of 42km. The 46km long Package 3 stretches from Suwaiq to Saham, where the fourth package starts and stretches to the Wilayat of Sohar with a total length of 50km. Package 5 starts at the Wilayat of Sohar and ends in the Wilayat of Liwa with a total length of 41km. The 45km Package 6 starts from the Wilayat of Liwa and ends at Khatmat Malaha.

Parsons International and Turkey's Bosphorous Technical Consulting Corp; are providing consultancy services for the US\$3.9bn project – owned by Ministry of Transport & Communications.

***Sur Steel Plant** project (worth US\$400mn) owned by Sun Metal Casting involves building an integrated steel mill with capacity of 2.5mn t/y of liquid steel – convertible into finished products such as TMT re-bars, low alloy rounds, carbon



Photo Credit : Orpic

Orpic, the sultanate's refining and petrochemicals flagship, plans to establish a worldwide network of offices to support the marketing of the huge quantities of polymers that will be produced when its Liwa Plastics mega venture comes on stream in 2020.

construction and low alloy sections, and stainless steel seamless pipes. South Korea's Posco Engineering and Construction is undertaking EPC, operation and maintenance of the plant. Sojitz Corp, (Japan) has been appointed as raw material supplier and finished product offtaker. Upon completion, it will be the first non-oil-based industrial investment in Sur Industrial Estate.

Future looks bright

Economic growth in Oman is expected to accelerate this year and the next, as the biggest Middle Eastern oil producer outside OPEC boosts oil and gas exports, BMI Research said. Real GDP adjusted for inflation is projected to expand by 3.2 per cent in 2018 and 3.6 per cent in 2019, from an estimated 0.6 per cent last year, BMI, a unit of Fitch Ratings said in a report released in March. However, the outlook from 2020 and beyond is more bearish on oil and gas output and real GDP is expected to moderate, unless the sultanate makes new

oil and gas discoveries, it said.

"We expect Oman to see a substantial uptick in real GDP growth over the coming quarters, on the back of rising hydrocarbon sector output," BMI Research added. "Oil and gas production gains will facilitate an increase in exports, as well as government revenue, which in turn will have knock-on effects on government consumption, fixed investment and private consumption."

The future of Oman, situated along a vast stretch of coastline reaching the strategic Strait of Hormuz, is linked to global trade; hence its ability to leverage this connection will be the key to sustainable development and prosperity.

By using enhanced oil recovery techniques, Oman has succeeded in boosting oil output since 2009, giving the country more time to diversify. Compared to other medium-income economies, Oman boasts significant potential to diversify, especially in terms of tourism, natural resources and a skilled labour force. ■

**The Sultanate
Logistics Strategy
2040 seeks to
double transport
sector's GDP
contribution to
US\$7.8bn by 2020.**

Oman Fact File

Area (sq km): 212,460. Population: 4.5mn (2017). GNI per capita (2016): US\$18,080. GDP Purchasing Power Parity (2016): US\$173.9bn. Distribution of GDP (2016): Agriculture (2 per cent); Industry (48 per cent), of which manufacturing 8 per cent; and Services (50 per cent). Labour Force: 2.4mn (2016). Currency: Oman rial pegged to the US dollar. Proved Oil Reserves: 5.4bn barrels. Gas Reserves: 23 trillion cubic feet. Oil and other liquids production: 1mn bpd (2016). LNG total capacity: 10.5mn tonnes/year. Non-hydrocarbon resources: Copper, Asbestos, Marble, Limestone, Chromium, Gypsum. Non-oil exports: Chemicals, Plastics, Fertilisers, Processed aluminium, Rubber, Metals/products, Electric machinery. Sovereign Credit Rating (2017): Standard & Poor's (BB); Moody's (Baa2).

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TRUCKS

Ports performance at its peak

Economic growth in the GCC spells good news for the Omani ports. Martin Clark reports.

WHATEVER THE FORECASTS on the world economic growth, the Gulf Cooperation Council (GCC) nations' ports continue to thrive as the region's position as a maritime gateway between east and west matures.

The sea ports of the Middle East have long been a conduit for the oil and gas industry, helping to shuttle crude and products exports across the world.

But the development and increased sophistication of the GCC markets generally has also resulted in rapid evolution in the ports sector too.

Jebel Ali has long been one of the world's top container handling ports, and the biggest in the GCC, followed by Sharjah, reflecting the UAE's high international trading profile.

But there are other notable shifts taking place too, including long-term plans to divert traffic away from the congested Strait of Hormuz.

What is happening in Oman right now is a good illustration, with the evolution of new developments at Sohar, Duqm and even Salalah, already an established container port.

While Salalah, the country's biggest port, cannot be considered 'new' – the area has a trading history dating back hundreds of years – it is only in the last 20 years or so that the port has emerged as a major trans-shipment hub and a bridge to Asia.

Located in Oman's southwest, it was originally envisaged as a viable alternative to Aden, the historical gateway into the Red Sea and Suez Canal, which has suffered due to the turmoil in neighbouring Yemen.

Salalah's strategic position, overlooking the Indian Ocean and reaching out to international shipping lines, means it is well placed to capture such a role.

In just two decades, Salalah has invested almost US\$1bn in infrastructure that includes cranes to handle the world's largest vessels, as well as plenty of yard capacity to ensure further growth.

In just two decades, Salalah has invested almost US\$1bn in infrastructure that includes cranes to handle the world's largest vessels, as well as plenty of yard capacity to ensure further growth.



Photo Credit : Port of Salalah

From 1999 up to 2013, container growth jumped by 665 per cent, with general cargo growth also rising steadily. The growth continues: in 2017, the port's container terminal handled 3.94mn TEUs, up from 3.32mn TEUs the previous year, a rise of about 19 per cent.

There is no doubt that Salalah has now established itself as one of the GCC's primary international trade hubs.

Keen to expand on this, Oman has prioritised port and infrastructure developments elsewhere.

Duqm, in central eastern Oman, is a multipurpose port that is undergoing a massive upgrade in support of the fast industrial expansion of the area. This includes the proposed development of a US\$6bn refinery, a key project for the Duqm industrial zone. The expansion of this economic zone is one of the government's flagship projects to diversify away from oil revenues.

Construction of a new container terminal is also now underway at the port, with the completed facility expected to be operational in 2019.

A 1,600-metre length of the commercial quay has been set aside for the development of the dedicated container terminal, which will ultimately have a throughput capacity of 3.5mn TEUs. Other

facilities, including a new dry dock ship repair area, will help elevate Duqm's significance for regional shipping as it seeks to grow into a world-class, multipurpose commercial gateway.

Elsewhere, Sohar Port, another deep sea port and freezone development in Oman's north, is likewise a priority for the government. The port, a specialised facility for cargo, containers and liquid materials, saw its traffic grow by 26 per cent in 2017.



Sohar's three major business areas – logistics, petrochemicals and metals – will also soon be joined by Oman's first ever terminal dedicated to the handling of agricultural bulk, to help manage the nation's strategic food reserves.

Attracting foreign investment in these economic zones, the expansion of the ports sector has generated lot of work for equipment suppliers, consultants and contractors in the maritime sector.

With the development of other key infrastructure, including rail links and a new airport at Duqm, to ensure greater connectivity with the rest of the country and the wider market, Oman increasingly views itself as a long-term and viable entry point to the entire GCC.

The enhanced capacity of the nation's ports shows that it means business. ■

Albert Pang, CEO Hutchison Ports Sohar

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Genavco has enjoyed a 70-80 per cent y-o-y growth primarily in asphalt pavers with the supply of specialised pavers from VÖGELE.

Photo Credit: Genavco

The road to success

As Genavco completes 50 years in the UAE, the supplier of road construction equipment talks about what it takes to be the leader in the GCC's No.1 construction market.



Saif Abadan Khan is the senior sales manager at Genavco.

WITH A RAPID global population rise, it is no surprise that, by 2050, 70 per cent of the population will move to urban cities thereby presenting many developmental opportunities. In order to accommodate this expansion in urban dwelling, experts estimate that US\$57 trillion in global infrastructure investment is required by 2030 alone. In the UAE, fast track developments are taking place owing to the Expo 2020 Dubai, which is a boost to the evolving construction industry.

General Navigation and Commerce Company (Genavco), a Juma Al Majid Group company, has been a part of the UAE development journey for 50 years with its Construction Equipment portfolio. Franchisee of world-leading brands under the John Deere umbrella namely Wirtgen, VÖGELE, Hamm, Kleemann and Benninghoven, Genavco has been a part of many iconic landmarks in the UAE.

As the country gets ready for Expo 2020 Dubai with a renewed vigour, activities related to setting up the venue especially the Dubai Metro expansion and other infrastructure projects leading to Expo site are supporting the demand of construction equipment.

Saif Abadan Khan, senior sales manager at Genavco spoke with *Technical Review Middle East* about the company's No.1 position in the country as suppliers for Road Construction Equipment.

TRME: Can you talk about Genavco's road building business?

Saif Abadan Khan (SAK): We offer the best German solutions for road construction and road rehabilitation activities that include asphalt milling machines, asphalt pavers, road recycling machines, road rollers and compactors. We have enjoyed a 70-80 per cent year-on-year (y-o-y) growth primarily in asphalt pavers with the supply of specialised pavers from VÖGELE. With regard to road milling, we provide Wirtgen milling machines and in this segment we enjoy 80-100 per cent market share. For road compaction, we have wide range of rollers from HAMM, single drum compactors, vibratory/oscillatory tandem rollers and pneumatic tyre rollers. In this category too, our market share is quite substantial, ranging from 50-70 per cent in different segments of rollers market.

We are proud to say that almost all the road contractors in the UAE use our products and our machines have been a part of prominent projects namely Al Maktoum International Airport, Dubai International Airport, Abu Dhabi Airport, Sharjah Airport, Dubai Autodrome, Formula One Race Course Abu Dhabi and all the major highways in the country.

TRME: What is Genavco's focus on aftersales services?

SAK: Road construction is not an easy job – it involves several equipment and experienced manpower, a typical job site

will have a paver and about six rollers following it, six to eight tipper trucks standing in queue to feed the paver. If the paver breaks down in the process then all other equipment and manpower will be stranded and the asphalt can go waste. Any form of breakdown in a machine needs to be attended immediately. So the support on the machine is critical. Otherwise there will be a lot of consequential losses for the contractor. Our factory-trained technical team has the expertise on every machine we sell to train the customers and attend a breakdown at a short notice. We maintain high inventory of factory recommended spare parts as well. We also provide Annual Maintenance Contracts to our customers.

The regulations for road construction in the UAE are very stringent with an objective to offer the best quality roads in the world. The contractors need to achieve IRI (International Roughness Index) below 0.9. If this is not achieved, the asphalt layer needs to be removed and re-laid, which is a loss for the contractors. Pavers and rollers play an important part in achieving these results. Our customers have achieved an average IRI of 0.4-0.5 by using our pavers with multiplex ski sensing system and delivered expected results below the set IRI parameters, thereby increasing productivity.

Our objective is to provide complete solution to the customers, it is not just to sell the right machines but also ensure that the machines are used properly, we provide

operators training and application training to ensure that the customer achieve the desired results. Our technical expertise are quite vast, we also provide technical support to other GCC countries as well as Africa when requested by the OEMs.

TRME: What are the new technologies that are paving their way into the UAE?

SAK: We just don't sell technology but we are also at the forefront for introducing new technologies to the country, thus aligning with UAE Vision of 'Go Green' and reducing carbon footprint.

We have introduced HAMM's oscillation rollers technology in the UAE, not new to Europe. We worked closely with the authorities and road contractors, explaining them the benefits of this technology that include reduced noise pollution, less wear and tear to surrounding structures as well as faster compaction results. The oscillation rollers are particularly in demand for bridge construction and road projects in the populated areas of the city.

Another eco-friendly project we are involved here is road recycling. With government's aim to go green and reduce carbon footprint, the focus is on road rehabilitation and recycling. The most efficient and economical way to rehabilitate is to recycle the existing roadways. The traditional way of road rehabilitation is to remove different road layers and sometimes removing the complete asphalt layers, dump the material at the dump site and construct the road with new aggregate and asphalt. As roads are becoming older and aggregates becoming expensive, more focus is turning towards recycling the roads. Wirtgen provides solutions for cold and hot recycling for building the roads both in place and mobile plant solutions. This way the contractors save on new aggregate cost, transportation costs, to bring in new materials and sending the milled material to the dump site. These measures reduces operating costs and carbon footprint. We are closely working with authorities and the contractors to promote this technology. We have recently sold a Wirtgen in place cold recycler and stabiliser to a contractor in Abu Dhabi. Our aim is to make it successful enabling the stakeholders to save on resources and reduce carbon footprint.

TRME: But doesn't less work mean a downturn for Genavco?

SAK: With UAE Vision 2030, there are a lot of infrastructure projects lined up. We got your point that with the recycling technology, the number of usual road construction

equipment demand will reduce. However, even with fewer new road building activities the technology to regenerate the roads will be in demand. Road recycling is the future and we have to adopt the change in technology to tap the new opportunities. So in total, the value of the business will be more or less equal for us and will continue to be this way. With the reduced number of machines on recycling projects, it will affect the revenue of the after sales service to certain extent but if we do not take the lead then someone else will and efficient technology is the need of the hour. In the end it is not about the business only but also how we could contribute to the country with the right and cost effective technology.

Even the road contractors vouch for machines that are more versatile and can do multiple jobs in lesser time. This way, their capital investment would be less and they could generate more profit. We had been on the forefront for this kind of technology whether it is oscillation rollers or high compaction screeds technology for the asphalt pavers, where the number of compaction rollers could be reduced.

The road building industry is constantly evolving and we are trying our best to fulfil the UAE government's criterion to build the world's best roads.

TRME: How was 2017 for Genavco?

SAK: Last year was not too bad considering the given market circumstances but we achieved our figures. We have sustained our number one position in asphalt paving equipment market.

Looking at 2018, the initial two months were slow, but I anticipate that this year will get us more business as the market is picking up and we are optimistic for H2 2018. In Dubai, particularly, the projects need to be completed by 2020. The Dubai government recently awarded US\$33mn infrastructure projects for roads and bridges leading to Expo 2020 site. We have to fulfil our commitment with the customers by maintaining the right inventory levels of machines and parts. As I mentioned, Northern Emirates is picking up a lot of infrastructure development projects and in Abu Dhabi, projects are going steady. This makes us optimistic for this year and the next.

TRME: What major trends do you spot in the global road building sector?

SAK: Minimising costs and better returns tops the list world over, customers are looking for reducing total cost of ownership i.e., reducing owning and operating costs.

Genavco provides latest technology machines considering these factors. VÖGELE asphalt paving technology – InLine Pave – is the answer to this. With InLine Pave, two pavers are used together, the top two layers, binder and wearing (surface) courses are laid together in immediate succession, meaning 'hot-on-hot'. The pavers are equipped with high compaction screeds, it reduces number of rollers to compact the asphalt. The contractors reduce the resources and number of machines to almost half by using InLine Pave technology.

As roads become older in many cities, the next step would be road recycling and it is been practised world over. As I mentioned, Wirtgen Group is leading in this technology and are providing cost-effective solutions to the customers.

Lastly, demand for faster compaction and reduced noise pollution will pave the way for oscillation rollers. HAMM is the inventor of oscillation technology and had patented it for many years. Now other manufacturers are also following this path. ■

BEST OF BOTH WORLDS

On 1 December 2017, Deere & Company completed its acquisition of Germany-based Wirtgen Group, leading manufacturer worldwide of road construction equipment, for US\$5.2bn.

Samuel R. Allen, Deere & Company chairman and chief executive officer, stated in a press statement, "The Wirtgen Group will enhance the size, scale and stature of our construction equipment business and will help Deere continue its global growth."

Wirtgen's product portfolio is complementary to Deere's existing construction equipment offering and establishes Deere as the industry leader in the global road construction. The Wirtgen Group has premium brands across the entire road construction sector spanning milling, processing, mixing, paving, compaction and rehabilitation.

The Wirtgen Group has a global footprint with approximately 8,200 employees and sells products in more than 100 countries through a large network of company-owned and independent dealers. With the acquisition of Wirtgen Group, John Deere is now the third largest equipment manufacturer after Caterpillar and Komatsu.

Asif Khan, general manager, plant and equipment at Genavco, added, "Genavco is very proud to be associated with the Wirtgen Group and now John Deere. Our success is a joint one in the UAE."



Photo Credit : Daimler

AS THE GLOBAL economy recovers with the rising oil prices, the global truck market is steadily moving forward. This is also the case in Middle East and North Africa (MENA) region where countries such as the UAE, Saudi Arabia, Kuwait, Oman, Iran and Turkey are attractive markets for commercial vehicles. This is due to their role in industries such as construction, mining and petrochemicals, and it is expected to boost the overall demand for trucks in the region.

Apart from complying with emission standards and providing competitive total cost of ownership, customisation plays a vital role in selecting the right heavy vehicle.

The local connect

At a glitzy ceremony in March 2018, Mercedes-Benz launched two all-new model series – Actros and Arocs – in Dubai. Assembled at the world's largest truck plant located in Woerth, Germany, the trucks come in specifically developed variants for the Middle East, designed and built to withstand the harshest operating conditions.

The new Actros meets the needs of long-distance haulage as well as heavy-duty short-radius transport and distribution haulage. When exceptional robustness is required, along with maximum load-bearing capability for use on construction sites or away from surfaced roads, then the new Arocs is ideal. The resilient Arocs can work under the toughest off-road conditions, far from any highway.

On the same day, FAMCO and Volvo Trucks Middle East introduced the Euro 5-compliant trucks in the emirate. Emirates Authority for Standardization and Metrology (ESMA) mandated that all trucks imported starting 2018 must meet Euro 4 emission standards.

Vladimir Knezevic, managing director of FAMCO UAE, said, "As the whole industry is shifting its focus to decreased fuel consumption and increased fleet efficiency, Volvo Trucks with its advanced safety features and Euro 5 emission standards is in

a class of its own. The new trucks, in addition to supporting the government's efforts to lower pollution levels, also ensure our customers drive environment-friendly trucks that are more fuel-efficient and provide greater productivity and returns."

In Oman, MAN Truck & Bus showcased the CLA truck range in March. The range of trucks embodies MAN's design concept 'Rugged, Reliable, Functional'. In Oman, MAN's CLA range includes the 16.220 4x2 Chassis, the 20.280 4x2 Chassis and the 26.280 6x4 Chassis (soon to be upgraded to 31.280 6x4 Chassis). The introduction of these commercial vehicles marked MAN Trucks' continued efforts towards meeting the rapidly changing trucking landscapes in the region; setting new benchmarks in cost-effectiveness and ease of handling as well as ease of maintenance. MAN Truck & Bus also re-entered Iran last year with the TGS and TGX series of trucks, and other solutions.

Service at your doorstep

In recent years, the importance of commercial vehicles aftersales services has grown since the margin for new truck sales has eroded. With stagnant market in the Middle East, buyers are opting for heavy vehicles that provide additional mileage as well as 'omnipresent' aftersales services and availability of sales parts. This can help manufacturers secure existing clients and create new client base.

Mercedes-Benz's regional logistics center in Jebel Ali, Dubai, ensures a fast and reliable distribution of GenuineParts to the authorised general distributors of Mercedes-Benz across the region. It is a state-of-the-art warehouse, spanning over 24,000 sq m and storing more than 72,000 spare parts and the centre runs six days a week.

Despite challenging conditions in some markets, the Japanese truck manufacturer UD Trucks has achieved significant sales growth across the entire region last year, with particularly strong results in Saudi Arabia and Bahrain. Complementing the new

trucks sales, UD genuine parts sales have also increased its sales penetration. UD Trucks' regional offices in Dubai include a parts distribution centre, which delivers over 12,000 different spare parts to UD Trucks partners across the region.

Accommodating the demanding operating conditions in the Middle East, MAN Truck & Bus Middle East provides full-fledged turn-key solutions for both goods and passenger transportation by road through its light (TGL), medium (TGM) and heavy-duty (TGS WW) ranges of trucks, and MAN and NEOPLAN buses and coaches that provide basic to VIP luxury transport and travel requirements from its local coordination office in Dubai as well as extensive network of private dealers across the Middle East.

Blooming business

Heavy vehicles manufacturers such as Volvo Trucks, Ford Trucks, MAN Trucks and Mercedes Benz are recognising this need of the hour and are focussing on sales in these emerging markets. Several trends influence truck manufacturing as well as sales competition in the region.

A report published by Future Market Insights titled 'Commercial Vehicles (Trucks) Market: Middle East & North Africa (MENA) Industry Analysis 2012 – 2016 and Opportunity Assessment 2017-2027' estimates a revenue growth from nearly US\$5,250mn in 2017 to nearly US\$8,500mn by 2027 end, resulting in a CAGR of five per cent during the period of assessment.

In terms of volume, the MENA commercial vehicles (trucks) market was pegged at 1,52,191 units in 2017 and is poised to reach a figure of 2,12,232 units in 2027, and display a CAGR of 3.4 per cent in the forecast period.

The Middle East is giving the global truck manufacturers a chance to plough into the market. Competition is tough and the pie small. But nonetheless, it is tempting and lucrative. ■

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Photo Credit: Ford Trucks

Tailor-made for tough terrains

Ford Trucks recently unveiled the new tractor head series for construction sector in the UAE and has also set up a new liaison office in Dubai for the Middle East and Africa region for commercial vehicles.

CUSTOMISATION IS THE key to a customer's heart. A burgeoning truck market like the UAE is slowly coming out of the shadows of Europe and Asia-make models to cater to its own specifics like extreme climatic conditions besides tackling tougher terrains with bigger and more robust tyres. And what better way than to get the keys to your favourite truck that meets all your demands. After all, improving the customer experience is at the heart of manufacturers' ambitions to transform and perform.

For the first-time ever, in April 2018, Ford Trucks launched the new 6x4 Tractor Head series (3543T) exclusively for the UAE market.

The 3543T offers advanced specifications such as 10mm 500 MPa strong steel chassis, twin clutch, 16-speed ZF transmission, and day and sleeper cab options.

"A truly competitive, viable and economical alternative, the Ford Trucks 6x4 Tractor Head series are powerful and capable vehicles tailored to meet the specific needs of the UAE market. The 3543T is now equipped with 24-inch tyres in response to the market requirement and is currently being offered with a comprehensive warranty that can be extended up to five years," said Ashok Khanna, Chief Executive Officer, Al Tayer Motors.

The tyres provide superior ground clearance and high traction in challenging conditions, while the high front axle capacity increases durability and the high towing capacity allows transportation of heavy loads.

The managing director Middle East of Ford Trucks, Mustafa Caner Sinanoglu added that Ford Trucks is continually focused on building long-term relationship with its

customers by understanding the true need of each customer and the regional requirements. "It is always Ford Trucks' aim to provide a unique experience to each customer by finding the right solution based upon their business needs. As a reflection of that Ford Trucks' global aspect, our new series has been designed and developed with consideration of our GCC clients' needs and market requirements."

The trucks are ideal for rugged terrains, including quarries, mining and construction.

Powered by a 12.7L engine, the 6x4 Tractor Head is ideal to move heavy loads, and provides better traction for off-road jobs such as construction and quarry sites.

It can deliver more power to tyres – thereby producing better control and overall vehicle operation that makes it perfect for long distance haulage.

The engine brake engages at the right



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moment, thereby mitigating any risk – be it on or off-road – at any load. It delivers high level of comfort due to its automated transmission.

Besides comfort, safety features like automatic traction control (ATC), anti-skid braking system (ABS) and engine brakes are standard in the 6X4 trucks. For the logistics customers, Ford is offering lane departure system and advance braking system.

Sinanoglu added, “We offer entire aftersales service and support benefits, along with preventive service contract and comprehensive service contracts, which the customers can always tailor to their specific needs with an additional fee.”

Quality and durability with low cost of ownership

As with all of its offerings, the new Ford Trucks series continues to be cost-effective, offering a competitive advantage with 25 per cent reduced maintenance costs with an extendable service periods of up to 40,000km/800 hours for the customers in the logistics and construction sectors.

With an array of automated fleet management solutions to help owner track all attributes of the vehicles – telematics, real-time inspections as well as vehicle movement status, Ford Trucks helps risk mitigation. “We provide 20 to 30 per cent more information on our fleet than the standard requirement that helps drive



The 3543T Tractor Head series is equipped with 24-inch tyres is currently being offered with a comprehensive warranty that can be extended up to five years.

efficiency and safety,” Sinanoglu reiterated.

Additionally, models such as 1843T tractor, 1833 (4x2), 3543P/M/D (6x4) and 4143M/D (8x4) mixer can be customised with transmission and cabin modules for on-road and off-road conditions.

As Ford Trucks keeps building its local content with regards to its heavy vehicles, it then only makes sense that with the latest

launch, a facility in the UAE would be apt for Ford Trucks to penetrate further into the market. Ford Trucks currently enjoys of a 40 per cent share in 6X4 heavy vehicle segment in the UAE and with the launch of the new tractor head, the manufacturer hopes to double its market share in the country.

Ford Trucks is also renovating its facility in Abu Dhabi and the new-state-of-the-art facility will reopen in June 2018. In Q4 2018, its Fujairah workshop will be launched, mainly catering to the commercial vehicles.

After the UAE, Sinanoglu revealed that Ford Trucks is focusing on the Omani market with its 6X4 Tractor Head Series. “We are looking at other GCC markets as well. The vehicles, of course, will be customised according to the demands as no two markets are alike. Ford Trucks is a solution provider – be it product, finance or the truck type. We would like to drive our customers’ business in the region.” ■



Ford Trucks can handle heaviest loads with ease. With optimum wheelbase and improved steering system, maneuvering is easy.

The ‘Extreme’ Deal

The new series is equipped with ‘Hot Climate Package’ that delivers better comfort for drivers in the GCC’s ambient conditions – heat and dust – with better air conditioning and radiator performance, and improved cabin isolation and increased filtration. A result of two-year durability tests in simulated ambient laboratory conditions, the package is offered exclusively with Ford Construction Series.

A LONG WAY TOGETHER



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The power of the polymer

WACKER's advanced polymer binders for dry-mix mortars not just enable better adhesion but also enhance sustainability properties of a building. Rhonita Patnaik gets hands-on experience at the company's factory in Burghausen, Germany.

**WACKER
POLYMERS' sales
rose four per cent in
2017 to US\$1.54bn.
The growth was
fueled by higher
volumes for
dispersions and
dispersible polymer
powders.**

ACCORDING TO A report by the United Nations (UN), seven out of ten people will be living in an urban area by 2050. Growing urbanisation, along with new legislation from governments and independent agencies, is driving developers, consultants and contractors to embrace sustainable design, materials and building techniques.

Polymers have become increasingly important as engineering materials in the past decade and applications in the construction industry are expanding.

According to a Rapra Review Report, materials used in construction applications must possess critical properties, depending on the exact use. In general, the important property requirements are mechanical, weathering, permeability, flammability and thermal conductivity properties. The environmental impact is also important as global concerns are increasing about pollution, depletion of energy sources and re-use or recycling of waste products.

Concrete is a versatile construction material, but could benefit from improved strength, toughness, ductility and durability.

One approach is to develop cement based composites. Polymer mortars and concretes are finding increasing use in applications such as protective coatings. Polymer concretes are structural materials capable of withstanding highly corrosive environments. Polymers also offer the chance to increase the ductility of reinforced concrete to prevent cracking under load.

Quick fix from WACKER

WACKER possesses an extensive portfolio of high-performance polymers and silicone products for new and enhanced construction materials that meets global demands for an energy-efficient, healthier and more flexible living environment.

It has huge potential, for instance, in the market for polymer-modified dry-mix mortars. Without polymer modification, numerous modern construction applications simply would not be possible.

Christophe Berset, strategic marketing manager, Construction Polymers, WACKER, said it's no surprise that, especially in Asia, where construction is booming, dry-mix mortar production experienced double-digit

growth from 2005 on – even outpacing Europe's dry mix mortar consumption in 2015. Yet, the potential is far from fully exploited. In Europe, some 60 per cent of the dry mix mortar market is already polymer modified, but in Asia that figure is only around 20 per cent. Thus, the process of driving the transformation of dry-mix mortars forward will act as a growth engine for WACKER POLYMERS. Dry-mix mortars modified with WACKER polymers are used all around the globe in energy-saving insulation systems, flexible tile applications and self-leveling flooring compounds.

In the arid regions of the Middle East and Africa, the temperatures sometimes reach 50°C causing the mortar to dry out very quickly. Deploying dispersible polymer powders would prolong the pot life of the dry-mix mortar considerably, by 10 to 15 minutes, while at the same time reducing the formulation costs for many customers.

In ceramic tile adhesives, especially, dispersible polymer powders facilitate the switch from traditional thick-bed mortars to modern, highly efficient thin-bed types. This can cut consumption of raw materials (mostly sand and cement) by up to 80 per cent, while doubling the laying efficiency and reducing CO₂ emissions by 40 to 80 per cent. Aside from the environmental aspect, the labour cost is the main trigger point for the transformation. In mature markets where labour costs are high, the positive impact of greater productivity has cancelled out the additional costs entailed in polymer modification.

WACKER POLYMERS and its portfolio are adapting to local markets, customer needs and future requirements. With the VINNAPAS®, PRIMIS® and ETONIS® brands, WACKER is an enabler of novel techniques and enhanced materials. By engaging in continuous innovation, the division is following and actively shaping the evolution of construction techniques: from pumpable and self-leveling subfloors requiring less manpower and fewer resources, to effective moisture barriers to speed up construction through, to enabling the use of recycled material to reduce the need for mining sand. Further trends being addressed are 3D concrete printing, adapted thermal insulation renders for minimising energy consumption; water management for megacities built with pervious concrete, smart sewerage and waterproof catch basins.

WACKER POLYMERS' Dubai-based regional technical director Mohammed Sanaobar said that WACKER's dispersible polymer powder (DPP), used in dry-mix mortars,

In ceramic tile adhesives particularly, dispersible polymer powders enable the switch from traditional thick-bed mortars to modern, highly efficient thin-bed mortars. This reduces raw material consumption (mostly sand and cement) by up to 80 per cent, while doubling the application efficiency and reducing CO₂ emissions by 40 to 80 per cent.



Photo Credit: WACKER CHEMIE AG

boosts durability, tensile adhesive strength on many substrates, and resistance to abrasion, moisture and airborne pollution. The polymers impart flexibility to the rather brittle mortar, enabling the hardened construction material to accommodate slight stresses between the substrate and tile. That boosts the level of adhesion between mortar and substrate. The modified mortar can be processed faster and more easily, because dispersible polymer powders optimise such key parameters as non-slump properties and open time (i.e. how long the mortar can be worked). "These binders based on vinyl acetate and ethylene, made many modern construction applications, such as EIFS/ETICS, thin-bed mortars and lightweight construction materials, possible. The fine white powders also radically changed tile laying. Thanks to dispersible polymer powders in the tile adhesive, nowadays only a very thin layer of mortar is needed, instead of the thick mortar beds in which tiles used to be set. Builders, thus, achieve higher productivity, coupled with lower error rates and better quality," Sanaobar added.

Continuous development

Sustainability is a key factor behind the

success of WACKER POLYMERS. For this reason the development of sustainable products and manufacturing technologies and their implementation are core elements of the innovation portfolio. Such innovations are also a proven way of proactively setting new best-of-class technology standards.

What sets WACKER POLYMERS apart from its competitors is customer proximity. The business division operates 15 technical centres around the world, each of which serve as local development and test laboratories for polymeric dispersions and dispersible polymer powders.

A fully-owned WACKER subsidiary was established in Dubai to service this region in 1999, and, in the year 2002, the technical centre was launched as a development and testing lab for construction-chemistry applications.

In recent years, WACKER Chemicals Middle East and Africa witnessed a 10-15 per cent growth across its territory.

The Dubai office now comprises five technical labs and an additional lab based in South Africa to serve the regional needs. These labs and technicians are specialised to serve region specific solutions. ■



Photo Credit : Fronius

High on performance, low on maintenance

Fronius solar inverters are well-suited to endure the region's high ambient temperatures.

DIRT AND DUST particles, when enter solar electronics, can cause short circuits and other defects. Fronius tested the Fronius ECO (25-27) and the SYMO (10-20) at the TÜV InterCert S.r.l.-Group of TÜV Saarland with regards to the working behaviour of both the instruments during a sandstorm. The result: even in the worst case scenario, the samples withstand the test without blocking for 60 minutes, after sand particles need to be removed due to jam in the fans. The protection class IP 66/ IP 65 guarantees that there will be no dust within the power electronic parts.

Breakthroughs in Middle East

Eng. Gorkem Soyumer from Dubai-based Enerwhere Sustainable Energy was upbeat about 123.5kWp Solar Carpark System that was commissioned in October 2016 at Mall of the Emirates.

He said that the inverters have not reported any failure due to harsh weather conditions. Four Fronius ECO 27 and one Fronius SYMO 20 have been installed outdoors shaded by the solar car park structure to avoid direct radiation. And the temperature losses are minimal.

"We have recorded 54°C by the temperature sensors reporting through the remote monitoring system. Every quarter we perform a cleaning of the inverters from

inside. We are satisfied with the outdoor performance," Soyumer added.

Michael Koch from Premier Composite Technologies said the same about an in-house 80kWp rooftop Solar PV System in Dubai Investment Park with five Fronius SYMO 10 and one Fronius SYMO 20, commissioned in January 2016.

"We didn't face any sand or dust problem with the Fronius inverter. We clean the inverters from inside every six months. The highest module temperature spotted was above 70°C."

Raed Rabadi, general manager of Edama Solar Energy Co., Ltd., based in Jordan's Amman, commissioned Jordan's first Fronius inverter in November 2014.

"When we changed the filter in 2017, there was almost no sand accumulated around the fan itself. Overall outdoor inverters are performing well, when proper sizing is taken into consideration. We did not face any failure case due to stuck sand in the inverter."

According to the Dubai Clean Energy Strategy, Dubai aims to produce 75 per cent of its energy requirements from clean sources by 2050.

Korayem Razik, managing director of Fronius Middle East FZE, which opened Fronius Service Support Centre in Dubai Investment Park, stated, "Fronius is

expanding in the Middle East and we have a big market share in residential, and small and medium commercial PV projects in the whole region. We have hired a new technical manager to look after our aftersales support processes. Our focus is to ensure the best customer experience during the entire service life of the inverters."

He further stated, "We believe that the future is about how to connect with our clients. Hereby, we are working on a digital revolution in Fronius, which the clients will experience in the coming period."

Fronius has been working in the field of PVs since 1992 and over the years has become one of the pioneers in the field of renewable energy. Its customers benefit from long-lasting, high-performance solar electronics systems that meet the highest quality standards.

In the research and development (R&D) facilities in Austria, which has more than 500 employees from the total of 4,300 Fronius employees, Fronius devices are thoroughly tested during stringent trials in order to endure a minimum duration of 20 years in service even in harsh conditions. All products undergo additional and unique robustness tests, as durability test (fluctuations in temperature from -20 to +100°C), salt spray and moisture test, sand test and many others. ■

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Three-fold success for Perkins at MEE 2018

The revolutionary engines delivered a significant uplift in power at the Dubai power event in March.

WITH THE LAUNCH of three brand new engines, the Perkins Engines team witnessed a lot of momentum at their stand during the Middle East Electricity (MEE) 2018 show that took place from 6-8 March in Dubai.

The trio – 7 litre 1206, 9.3 litre 1706 and 18 litre 2806 engines – reaffirm Perkins' strong position in the Middle East region's booming power sector. Each engine has been designed to deliver high power density with reduced operating costs and market-leading performance, all from a reduced package size.

Perkins' marketing and distributor operations director David Nicoll says, "The key attribute that pulls the trio together is the improvement of power density as well as our innovative aftermarket solutions for our broad range of engines."

According to Karan Ohri, product marketing manager (EP), compact size and Stage III A-compliant emission levels make Perkins engines most fitting for global market requirements, including the Middle East.

Triple power

The all-new 7 litre Perkins® 1206 engine leverages the latest technology to draw maximum power from a smaller package. Across the Electric Power (EP) sector, the trend for engines with increased power density is growing. With rising fuel prices, the new Stage V emissions standard set to arrive in Europe in 2019 and the complexity of transporting heavy engines to consider, more customers are searching for engines that are smaller, cleaner and built for the future.

"For original equipment manufacturers



The Perkins® My Engine App is a free app available in multiple languages to support maintenance, service and repair of the Perkins engines.

Photo Credit : Perkins

(OEMs), improved power density is a critical customer requirement," Karan adds. "Each of our new engines delivers the same or better performance as engines that were historically much larger and heavier."

The 1206 has 20 percent improved power density and is 22 percent lighter than the existing 8.8 litre 1506 platform and in the 200-275 kVA power range. From a smaller package size, the same power is delivered with a positive and direct impact on the bottom line for EP customers.

The 9.3 litre Perkins® 1706 engine is aimed at helping EP customers add value to their business with more power and improved fuel economy from a smaller engine that is less complex than its

predecessors. Prior to this breakthrough offering, customers would have turned to the 13 litre Perkins® 2206 platform for 350 kVA of power. The 9.3 litre 1706 can now do it with 22 percent improved power density.

Key features of the 1706 include enhanced air cleaner packaging, which makes the engine more compact. Improvements to the fan drive system, new fuel lines and a new-generation fuel system provide the building blocks to deliver exceptional engine performance from such a small engine size. It has all the technologies required to meet the full range of global emission standards including EU Stage V and U.S. EPA Tier 4 Final. "It's an engine designed to serve global markets," Karan reiterates.

Prior to now, one of the biggest challenges for engine manufacturers pursuing smaller engines with high power density has been reliability under extreme environmental conditions. The latest fuel systems and cooling packs allow the engines to reach their maximum power ratings even at high altitudes and ambient temperatures of up to 55°C.

One of the company's latest innovative offerings, the 'smart' oil cap, can be used on new and existing Perkins mechanical and electronic engines.



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Offering an alternative to the 750 kVA power of the 23 litre 4006, the 18 litre 2806 provides 28 percent improved power density, a 35 percent reduction in package size with a footprint that is 48 percent smaller and a 23 percent reduction in height. And the 2806 will use 10 percent less fuel than the previous model, which adds up to major savings on fuel spend.

The engine boosts Perkins' competitiveness in the EP sector by delivering a solution, for the first time, to customers looking to achieve 750 kVA in territories operating at 50 hz. It also provides power density uplift for customers operating at 60 hz.

The 2806 engine offers a lower cost alternative to the current engine, delivering reduced running costs from a smaller package size and with broad emissions compliance. The engine features twin parallel turbochargers serving three cylinders each. It also features the latest power generation technology, new pistons, an upgraded camshaft, new air cleaners and fuel system, and an upgraded radiator.

Added bonus

Perkins also showcased the new and innovative Perkins® SmartCap and Perkins® My Engine App to MEE visitors. The Perkins SmartCap won Gold at the 2018 Edison Awards.

One of the company's latest innovative offerings, the 'smart' oil cap, can be used on



(From left) Karan Ohri, David Nicoll and Michael J. Wright at Middle East Electricity 2018 in Dubai.

new and existing Perkins mechanical and electronic engines. Installed simply by replacing the existing oil filler cap, this solution allows end users to connect their mobile device to their engine via the free Perkins My Engine App on their smartphone. The cap monitors the Perkins engine and sends data direct to the app, which can be downloaded now from the Apple and Google App stores.

"This patented device is the world's first low cost engine-specific connectivity device," reveals Michael Wright, Perkins general manager – aftermarket. "It provides the only way to add any connectivity to a mechanical engine and the only way to add telematics with no ongoing costs. We are watching its popularity grow with each passing day as we meet the needs of our global customers with

this innovative and breakthrough step forward in the aftermarket."

The offering also provides easy access to engine specific information such as build list, series, type, model, the Perkins® Platinum Protection indicator and the operation and maintenance manual (OMM).

Optimistic outlook

David sees a lot of opportunity in the Middle East market for Perkins latest offerings. "Rising oil prices are helping the Middle East directly. In Dubai, construction, infrastructure, telecoms and healthcare are driving our market. The year 2017 was an upturn with improved construction also taking place in North America, China, Brazil as well as the rise in mining activity across the world, depending on commodity prices. We continue to see increasing consumer confidence and low interest rates, favorable economic indicators."

Road less taken

Perkins is not just an engine manufacturer but a responsible one. Elaborating on this, David mentions that in the EP space, Perkins is constantly educating its OEMs and end-users on emission standards and the benefits of 'green engines'. "Perkins has sold more than 20 million engines until now, of which 4.5 million are still working around the world. We want to take care of those users with our repair options, product care and aftersales services."

According to Michael, aftersales service is a huge advantage for Perkins with a global network of 97 distributors, who in turn, have service dealers to ensure local coverage. In the Middle East, Perkins' authorised dealer Kanoo Machinery supports the business locally. ■



Photo Credit : Perkins

The 1206 engine has 20 percent improved power density and is 22 percent lighter than the existing 8.8 litre 1506 platform and it produces 200-275 kVA.

Kanoo Machinery behind Perkins powerplay in the GCC

BUILDING ON A heritage that dates back to more than a century, Yusuf Bin Ahmed Kanoo (YBA Kanoo) is one of the largest family-owned multinationals in the Middle East with an extensive portfolio of complementary businesses and strategic partnerships. Established in Bahrain in 1890 as a family trading and shipping business, the group has evolved into a diversified conglomerate that provides a broad range of quality products and services that meet the highest international standards. Kanoo Machinery has, either directly or through its associated companies, been a distributor for Perkins products for more than 57 years within the GCC.

The appointed Perkins distributor within the GCC and oversees Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, the UAE and Yemen markets, Kanoo Machinery is also responsible for the management of Perkins aftermarket parts and product support capability across the region.

Key focus areas for Kanoo Machinery specific to Perkins include –

- Industrial engines sales and application solutions and support to original equipment manufacturers (OEMs) based in the GCC.
- Aftermarket part sales to support Perkins customers.
- Technical advice and support to OEMs in the region.
- Ensure consistent level of product support to Perkins engines within the Middle East territory.
- With an authorised Perkins District Training Centre, Kanoo Machinery provide Perkins engines training to its distribution network, OEMs, OEM dealers, large fleet owners and end users.
- Quick resolution for customer engine breakdowns through regional workshop teams during warranty period and beyond.

With more than 5,000 product applications, Perkins is a market leader in the power generation sector and a household name across the Middle East region. OEMs and customers alike are drawn to the Perkins brand not only because of proven engineering excellence, coupled with quality and reliability, but also because of the consistent aftersales support they get from Kanoo Machinery.

With an extensive aftersales network of dedicated Perkins technicians that offer field service and workshop repairs in addition to regional technical product support, Kanoo Machinery ensures multiple spare parts outlets in each territory to improve parts availability and customer engine uptime. Kanoo Machinery Perkins technicians have undergone rigorous Perkins certified training to gain the technical knowledge, expertise and diagnostic skills needed to carry out all servicing and maintenance on Perkins engines.

Working hand-in-hand with Perkins, Kanoo Machinery also promotes the Perkins® My Engine App, which is available for free in multiple languages to support maintenance, service and repair of their engine on mobile or tablet. Genuine Perkins spare parts can be sourced via Kanoo Machinery in accordance with its quality assurance manifest. The distributor firm stores a stock of more than 5,000 active Perkins spare parts and uses parts identification system to minimise customer machine downtime.

To meet the demands of the ever-changing product support requirements for the new generation of Perkins engines entering the market, Kanoo Machinery works with regionwide distributor facilities to ensure Perkins global parts and service support standards are delivered at every location across the Gulf.

To know more, visit Kanoo Machinery at Stand No: 3A18 during Saudi Elenex, taking place 7-9 May 2018, in Riyadh International Convention & Exhibition Center.



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The Middle East connection

Photo Credit: FG Wilson

With more than 40 years in the region, FG Wilson has strongly positioned itself to nurture local needs.

The US\$26mn investment in FG Wilson's Engineering Centre of Excellence provided world-class validation and testing facilities and also houses Europe's largest fully automated hemi-anechoic chamber, providing state-of-the-art acoustic research and test capabilities.

UK-BASED GENERATOR SET
specialist FG Wilson showcased its various ranges, for rental, prime and standby applications, at the Middle East Electricity (MEE) show that was held at in Dubai from 6-8 March 2018.

The FG Wilson range of generator sets covers power ratings from 6.8 – 2,500 kVA and since 1990, which is as far back as their IT systems can report, over 600,000 generator sets have been installed worldwide, of which 140,000 are in the Middle East.

Speaking of the presence at the show, Graham Scandrett, Middle East area sales manager, said that FG Wilson was at MEE because it is a key power generation show in the world and also within the region. Therefore, FG Wilson made an effort to display new products with partners and dealers to network and connect with new customers.

Strong lineup in Middle East & Africa

The Middle East is a growing region for power generation and will require additional capacity to meet its economic ambitions and the needs of its people.

At MEE 2018, FG Wilson exhibited a broad range of products, including the P22-1 with a 600-litre fuel tank, a P33-1 with a new enclosure, a PRO500 from rental product range and a P1250P3 with a set mounted circuit breaker.

Naveen D'Souza, vice-president at FG Wilson Engineering FZE, FG Wilson's dealer in the Gulf, said, "In the Middle East, we have a product offering from 6.8 kVA to 2,500 kVA. The smaller range is ideal for telecoms, the mid-range, from 100-700 kVA, is used for construction activities. Then we have larger products above 1,000 kVA for camps and as emergency standby power for buildings."

He added that the UAE is one of FG Wilson's biggest markets and the emergency loads are increasing as Expo 2020 Dubai is approaching. Other than that FG Wilson sees good growth in Kuwait and Oman with regard to infrastructure projects.

Graham added that although Africa and the Middle East has been a challenging market for the last three years with regard to lowered oil and commodity prices, the last six months have been holding steady, which is a positive sign for the region. In 2018, FG Wilson expects the regional market to perform 10 per cent higher in numbers than 2017. "Government and private investments are back on track which demand an 'On Power' generation and FG Wilson can provide that. Also, with our strong dealership network we are trying to fulfil local demands in the region."



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Dealership strength

FG Wilson has always prided itself in having a strong dealership network across the region.

Naveen said, "As a dealer for this region, we work very closely with the FG Wilson team in the UK and our technicians are factory-certified and trained by the FG Wilson. This helps us, in turn, to pass on the training to our customers on troubleshooting and maintenance. FG Wilson provides us all the technical tools and sales support and we provide them with information and data on local requirements. This is a two-way relationship."

Graham added that this helps FG Wilson to really focus on their solutions for the Middle East region. "Our machines are designed for local ambient conditions that go up to 50°C. This happens in a stage-wise manner. FG Wilson takes the data and designs a prototype, which is then rigorously tested before launch."

Across the entire product range, FG Wilson takes the same approach to product design and launch, whether the generator set is large or small. Nothing is released for sale until it's been rigorously tested, validated and a full suite of parts is ready for customers. All of this goes on at an Engineering Centre in the UK, a US\$26mn investment.

Naveen says, "FG Wilson FZE is where the connection is made with customers. From our end for FG Wilson, we work closely with our end-users. Our warehouse in the Jebel Ali Freezone (JAFZA) in Dubai holds 500 generator sets at any given time for a quick delivery across the Gulf region. Some customers can walk in and drive away with a generator set, while for others it's a major project. That means working with consultants on load requirements,



Photo Credit : FG Wilson

An FG Wilson generator set on showcase during MEE 2018.

finding the right generator set, designing the complete layout of the plant room including exhaust and fuel systems, installation and commissioning. We also hold a stock of spare parts worth US\$2.5mn as well as a good number of technicians who can connect with the customers in case of any breakdown. Customers can call and get expert advice on 800FGWilson anytime."

The FG Wilson dealer network in the Gulf region is a one-stop shop that comes with a pre-sales and aftersales support. These include engine room design, manufacturing on demand, execution of project, installation and commissioning. FG Wilson also offers a broad depth of operator training for clients and dealers. This is fulfilled by the regional training centre in Dubai.

Naveen mentioned, "FG Wilson is one of

the very few companies that offer a single point of warranty. This means that we offer servicing and warranty for the entire machine, even on the engine or alternator breakdown, so the customer doesn't have to go to multiple channels. This is one of the biggest advantages when a customer buys from FG Wilson."

Do you buy or rent a generator set?

Naveen says it depends on the type of project. "Where there's a short term need for power, it makes sense to rent. And for those who operate rental fleets, the FG Wilson PRO rental range is an excellent addition to any rental fleet. It's designed for a long operating life, extremely robust, has low operating costs and will retain a higher than average resale value. Where you need more long term power, it becomes a buying decision. Units are usually bought outright, but we're also seeing more customers interested in leasing."

Keeping up with global standards

FG Wilson has always been at the forefront of global standards, complying fully with BS and IEC standards and manufacturing in facilities certified to ISO9001, 14001 & OHSAS18001 standards.

Exhaust emissions regulations play a big part as well. Graham says, "We constantly review emission controls and offer a wide range of models, powered by either a EU Stage III A emissions-compliant engine for emissions-regulated territories or a fuel optimised engine for other regions. We're also making use of the most modern and fuel-efficient engines in our products."

You can find out more about FG Wilson at www.fgwilson.com ■



FG Wilson Genuine Parts are designed to complement the other components of a generator set, optimise product performance, fuel efficiency and lifespan.

Photo Credit : FG Wilson

'We tailor products for the right fit'

AT THE MIDDLE East Electricity (MEE), Italy-headquartered Soga Energy Team showcased its AC and DC alternators, welders, permanent magnet generators (PMG) for gensets and power on demand, alongside with some of its models of motors and electronic drives for motion control. The group includes brands namely SOGA, SINCRO, AGROWATT, SOGAENERGIES and CMZ.

The group's offerings exceeds 850 models up to 2.6MW, also extending to a huge possibility of custom-dedicated executions. This is made possible by the group's business model based on a 'think different' approach.

Enrico Soga, Group CEO, asserts that Soga's range is unmatched in the market: it's one of the widest today, available from 1kVA to 2.6MW, including AC and DC solutions for low and high speeds.

"We can boast of 265 models of synchronous alternators, 59 different-sized power take-off (PTO) tractor-driven generators, 80 models of permanent magnet and ip54 generators, 345 models of induction electric motors, 130 types of brushless and stepless motors. That's referring to the standard versions as in our catalogues. All models can be produced with made to measure executions. Offering a range like this gives OEMs an extraordinary choice."

Soga makes this possible with the company's unconventional thinking. Enrico added: "We like to take alternative roads to a solution. We are global specialists in rotating electrical machines and motion control drives, by offering solutions engineered with an out-of-ordinary approach in mind."

Although the Middle East market just makes up for 15 per cent of Soga's business share globally, mainly in alternators, and is a demanding market, Enrico reiterated that Soga does not pursue a market for business: choose it or create it. "We're not interested in producing higher powered units, neither rely on quantities and numbers alone. Our focus is the quality of our presence in a market. What we strive for is to always keep working on continuous innovation and technical enhancement with our R&D on the range diversification and the development of the most suitable products and solutions for OEMs, as well as on strong personal relationships with all our customers."

Speaking during MEE 2018, sales director Giuseppe Traversa pointed out that Soga has a very good demand for alternators for gensets being provided for the Middle East market and many of its clients are present at the show. "Our compact alternators help OEMs save space in the canopy. They are the most compact in the market and well appreciated. We also have DC alternators for battery charging both for hybrid and telecoms. We have been the first in developing this kind of a product to supply DC output from alternators.



Photo Credit : Soga Energy

The group's offerings exceeds 850 models up to 2.6MW, also extending to a huge possibility of custom-dedicated executions.

"The show, I can witness, is the biggest and the centre of gravity for power suppliers worldwide. I can see customers from all over the world at this platform. We are here because we think it is the right place to show the world what we do."

Focusing on power generation and talking about SINCRO and AGROWATT alternators, the Group CEO stated that the brands of the Soga Energy Team are renowned in 80 countries and include synchronous alternators, PTO generators and welders that exceed in performances and quality. AGROWATT is recognised as the international leading name for PTO generators.

The range includes AC and DC alternators up to 2,600kVA and welders/generators from 130A to 500A, dedicated to industrial, construction, marine, oil and gas, agriculture, telecoms and lighting towers.

Meanwhile, at the SOGA division, asynchronous electric motors are manufactured, mostly in custom version used in a variety of industrial equipment and railway, powering the braking systems on high-speed trains.

The SOGAENERGIES division (energy special projects) is involved with the production of PMGs for wind turbines working at variable speed and direct-drive technology. The efficiency values of the EV generators are much higher than the market average, ranking among the best ones available with nominal levels higher than 95 per cent.

CMZ provides electronic systems for industrial motion control: axis controllers, brushless and stepless motors and drives, I/O modules, HMI panels and libraries. The division can also develop customised projects, being certified as a Research Laboratory by the Italian Ministry for Scientific Research.

IGEL's new multi-motor starter system reduces cost and space

IGEL ELECTRIC MADE a successful start into the New Year with its presence at the Middle East Electricity (MEE) from 6-8 March 2018.

The development of solutions based on customer requirements, which the system integrator for electric drive technology demonstrated last year in the shape of the flexible draw-out module, is a development that will be successfully continued in 2018 with the new multi-motor starter system, as demonstrated during the show. The new multi-motor

starter system facilitates the sequential and/or parallel starting of several motors using a single soft starter switch. The use of a single starter for several motors means the electronic performance is used optimally. Additionally, based on its extremely compact design and construction, the system requires very little space. It is considered to be the motor starter system with the smallest dimensions in the market. In its development IGEL has paid attention to ease of access for servicing purposes,

ensuring that the system can be quickly assembled and installed.

The presence at this year's MEE show reflects the positive business development of IGEL Electric in recent months, with the result that IGEL plans to further expand its business activities this year. Michael Kleibohmer, chief executive of IGEL Electric, said, "2018 has provided a good start for us, so that we can pursue our plans to expand our business activities fully motivated. The MEE has shown that our system solutions are in great demand."

Baudouin celebrates centennial at Middle East Electricity with latest equipment

THIS YEAR, MOTEURS Baudouin is celebrating a very special milestone – its 100-year anniversary.

From humble beginnings making petrol engines for fishing boats, it has grown into a leading force in the marine industry, globally recognised for its durable, reliable and efficient engine and power generation products.

A century ago, in 1918, Charles Baudouin set to work creating his first five hp engine, constructed just a few metres from the Mediterranean Sea, in a small metal foundry in Marseille, France. And in ten decades since, the engines have become cutting edge, and the customer base has grown to include a variety of applications both at sea and on land. But one thing remains: marine is in Baudouin's DNA.

This marine heritage lies at the heart of Baudouin's success. In the unforgiving environment at sea, there is no room for unreliable engines. So even when used in power generation applications, customers are assured that every Baudouin product is crafted to the same exacting standards demanded of the harsh ocean-going environment – durable, robust, and built to last.

This is evident in the company's comprehensive range of engines and generators – M26.2 series and the latest M26.3 common rail engine range, which extended marine power to 1650hp while offering unmatched continuous power to weight ratio and noise reduction technology.

In 2017, Baudouin launched their innovative PowerKit range of engines for power generation applications. Using the same design philosophy of the marine engines, every PowerKit product includes the engine, cooling system and air cleaner, with a choice of outputs spanning 15 to 2,000kVA



Photo Credit: Baudouin

The latest M26.3 common rail engine range from Baudouin.

for both 50 and 60 Hz applications.

In addition to high-end components and engineering excellence, every PowerKit product is backed by one of the best warranty programmes on the market: two years and unlimited hours for prime power applications and four years for standby power applications.

Baudouin also delivers some of the longest intervals between servicing and overhauls in the industry. This, combined with excellent fuel economy, gives their engines one of the best and most competitive 'total cost of ownership'. Yet another reason clients all over the world trust Baudouin to stay up and running, whatever their power needs.

"As we enter a new century in Baudouin's history, durability, reliability and clean power remain our key focus areas," said Fabrizio Mozzi, the company's president and managing director.

"Our completely new and extended product range meets the most stringent customer requirements, allowing us to access the majority of global markets and applications. We have never been better equipped to power our clients' success, as we look to the next 100 years of excellence in the engine industry."

New gensets portfolio from Cummins

CUMMINS INC, THE US-based power generation company, showcased its latest product – C450 D5, as part of the QSG12 series diesel generator sets, during the Middle East Electricity (MEE) exhibition in Dubai.

Designed for the commercial and industrial markets, the product is available from 400-450kVA and powered by a Cummins four cycle, inline, six-cylinder dual speed diesel engine. Talking about the technological superiority, power generation business director Alok Joshi said, "This is a 12-litre product and has an electronic fuel system. This is a different generation of technology."

According to Cummins, the new genset series is designed for a wide variety of applications in different markets such as hospitals, manufacturing, commercial and industrial facilities. The C450 D5 model offers robust performance using less fuel with features such as extended service intervals of 500hrs, lower fuel consumption and unaided cold start capability at 12°C. Supplying electrical efficiency of up to 43.8 per cent,

the upgraded model can reduce total cost of ownership for its customers and deliver world-class power efficiency.

The product can run parallel with other gensets and grids to fit diverse project site customer requirements. "It can be paired with multiple generators and can easily be synchronised with the grid," Joshi added.

At the MEE, Cummins also exhibited C1540 N5CC, the other new addition to the QSK60 gas engine portfolio, 9.5-litre G-Drive Coolpac series in black colour and Digital Master Control (DMC) 8000, a fully automatic, distributed logic controller. It is suitable for remote applications capable of controlling

diverse power sources such as solar, genset and wind.

On use of green technology, Joshi added that Cummins' product strategy is not only focused on reducing the impact on the environment, but also adding value to customers through benefits in performance and running costs. "We have fuel-optimised and emission-optimised products. We have gas products which are ultra-low on emissions. We are also developing

hybrid products such as diesel-solar and gas-solar."



Photo Credit: Cummins

C450 D5 is part of the QSG12 series diesel generator sets.



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Mahindra Powerol launches 250kVA and 320kVA diesel gensets

MAHINDRA POWEROL, A business unit of the US\$19bn Mahindra Group, announced its entry into the higher kVA diesel generators with the launch of its new range of 250kVA and 320kVA gensets powered by Mahindra mPower series engines.

Designed at Mahindra Research Valley in Chennai and manufactured at Chakan plant near Pune, this new 9.3-litre engine range is the latest addition to Mahindra Powerol's mPOWER series and comes equipped with the technologically advanced CRD engine. The CRD engines are powered with superior and advanced common rail diesel engine (CRDe) technology.

Hemant Sikka, president- chief purchase officer, Powerol & Spares Business, Mahindra & Mahindra said, "This future ready CRDe technology is set to deliver lesser emissions and higher performance at a lower operating cost, thereby raising the bar in customer centricity. These products offer a good value proposition for our clients."

The key feature of the gensets include fuel efficiency, high block loading capacity and low noise level which promises to significantly reduce pollution by going beyond the standard emission norms. The product is suited for hot, humid and dusty climatic conditions.

For the India-headquartered Mahindra Group, GCC is an important market where scaling up business is on the agenda. "We already have on-ground presence in Dubai and we have partners in every major country of GCC. We bring cost competitiveness from India." The company added that they are looking for right talent within the GCC to hire local people and create jobs. "As our business picks up in this market, we are willing to add more people," said Sikka.

After engines, KOHLER-SDMO launches service facility in UAE

WHEN THE KD Series large diesel industrial generators were unveiled in October 2016, KOHLER-SDMO also announced the planned expansion for the new line, which would grow to encompass generators as large as 4,200kVA (50Hz) and 4,000kW (60Hz).

Today, based on strong worldwide response to the initially-launched models – utilising KOHLER's own diesel engines ranging from 800kVA/800kW to 2800kVA/2500kW – KOHLER-SDMO have expanded the KD Series with the rollout of several new generators ranging up to 3500kVA/3250kW.

The newest KD Series diesel industrial generators are powered by two new compact and powerful KOHLER V16 engine models. The KD36V16 is a 16-cylinder engine with 36-litre displacement, which will power the 60Hz KD1250 and KD1350 as well as the 50Hz KD1250, KD1400, and KD1500. The other new engine is the KD83V16, a 16-cylinder model with 83-litre displacement, which will power the 50Hz KD3100, KD3300, and KD3500.

Easy and simple control of gensets

Launched in October 2017, the new APM403 command control is available on all Industrial KOHLER-SDMO references. The novelty lies in the integration, as an option, of a remote management function. This will ensure users a complete visualisation of the operating state of its generating sets. Due to the dedicated web interface (Websuperviseur), accessible from a PC/tablet/smartphone, the operating parameters of the equipment are sent back to a server via a communication (GSM/3G or 4G).



Photo Credit : KOHLER-SDMO

With its Rental COMPACT line, KOHLER-SDMO is providing the practical solution that rental customers of generating sets demand.

Service centre

The genset specialist has also joined hands with Dubai-based Mideast Data Systems to open a 5,000 sq m service facility in Ras Al Khaimah. With a total investment of about US\$4mn, the facility will be able to support KOHLER-SDMO gensets technically.

Robert Najjar, managing partner, Mideast Data System, said, "After the launch of the engines, it was necessary to have an installation base in the region to compete against our competitors. We can fix any KOHLER-SDMO genset that uses KOHLER, Volvo, Mitsubishi and Perkins engines. The relationship between Mideast Data Systems and KOHLER-SDMO is a historical one and we are building this facility for the future."

The facility will also house a training centre as well as a rental fleet. The facility will cater to markets that include the UAE, Saudi Arabia, Oman, Kuwait and Bahrain.

INMESOL's control units facilitate dual gensets supply

BY USING A simple system of accessories such as the INMESOL's automatic switchboard ATS DSE334, it is possible to supply power in applications, usually considered complex, with any pair of generator sets or a fleet of rental gensets with regular control panels featuring control units with start-up by external signal option available.

Automatic switchboard has a DSE334 type control unit programmed to alternate the supply service gensets that supply the installation. In addition, it detects failures in the generator set that is supplying the power, sending a start-up signal to the switchboard of the other generator set in stand-by, making the supply switch possible. The panel, provided in a metal cabinet with IP-67 protection, includes the following components:

- Two contactors or motorised selector, with mechanical and electrical latching, preventing both from being simultaneously closed, thus avoiding possible short-circuit situations
- Protective fuses
- Terminal block for controlling and operating the generator set as



Photo Credit : INMESOL

well as input power cables, mains input, and load output

- Wiring connection of all electrical elements in the panel.
- Transformers, Emergency stop pushbutton, Starter switch
- DSE 334 control unit

The rental and the telecommunication sectors are among the ones with the highest demand for this application.



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C-Type from Mecc Alte set to redefine the alternator market

ITALIAN COMPANY MECC Alte, offering a wide range of alternators from 1 to 5,000kVA, exhibited the next generation of alternators at MEE 2018.

According to the company, the C-Type series offers compact, efficient, lighter and more intelligent solution in a single package. The company press release stated, "The C-Type Series represents a completely new approach to design, both inside and out that brings a raft of innovations and benefits to our customers and end users."

The products in the range are efficient and easier to integrate, reconfigure and maintain.

"Optimisation and flexibility have been at the forefront of the development process," the company stated.

The C-Type series is easier to assemble, reducing production times. Special AVR



Photo Credit: Mecc Alte

C-Type alternators make the most of energy conversion to produce the maximum power to size ratio. This increased power density means that they really do punch above their weight.

access panels using an easy flip hinge allow for simple and safe adjustment. For the

ECP32 C-Type the drive end protection screen can be slid back for engine assembly rather than being removed totally.

The digital regulator protection includes under/over speed, over load, short circuit protection and the possibility of excitation loss function, with visual indication and optional APO output for external equipment by others. An alarm log is also available

Mario Carraro, director at Mecc Alte, said, "Power equipment manufacturers usually introduce small changes and improvements to their products over time. As an independent company, we are more agile and respond to market needs for compact and more diverse power components, more quickly."

The company has manufacturing facilities in Italy, the UK, China and India.

Bahra Electric eyes multinational projects with new products

BAHRA ELECTRIC, ALSO known as Bahra Cables, showcased the company's new product type tested MV SWG's for primary and secondary distribution, and type tested LV PCC's & MCC's up to consumer units at Middle East Electricity (MEE) 2018 held in Dubai from 6-8 March.

The Saudi Arabia-based company, headquartered in the industrial city of Bahra, has grown to expand beyond cable manufacturing to switchgears, transformers, busway, busbar, metal and PVC pipes, load centers and wiring devices.

Talal K. Idriss, CEO at Bahra Electric, explained, "Now we can take up a total project as opposed to offering products in bits and pieces and compete with the multinationals. Switchgear is an important part of that process. We will be launching other products as we go along, offering more content than before."

Though the main markets serviced by the company are Saudi Arabia and the GCC countries, the company is fast expanding to Africa, Europe and other markets. "We are competing to gain more market share by being a competitive producer with quality," Idriss added.

The company believes that despite competition, there is a possibility to increase the market share as Saudi Arabia made products are recognised as good quality in the region. The company's plans are afoot to enter the markets of Singapore, Pakistan, Bangladesh and the regions of Latin America.

The company has a multi-purpose factory that houses design offices, laboratories and storage area. The factory is located on a 500,000 sq m land area in Bahra, 35km from Jeddah.

The Bahra Cables factory in Bahra.



Photo Credit: Bahra Cables

First-time exhibitor AblereX sees a lot of potential in Middle East and Africa

ABLEREX ITALY, PART of AblereX Group, world-leading manufacturer of uninterrupted power supply (UPS) and power quality devices showcased its state-of-the-art off-grid solar inverter, made in Italy three-phase UPS, single-phase on-line/line interactive, ATS and other accessories during MEE 2018.

Popular via OEMs UPS markets, Chawki Karime, export sales manager, said, "AblereX is now looking to extend its own business awareness in the region under the AblereX brand as we believe that during times like these, the regional market needs a brand with high quality products and reasonable price. And this is what AblereX offers with more than 1,000 employees, 120 R&D engineers and its own factories in Italy, Taiwan and China.

Besides UPS, the Italian company also manufactures energy storage systems, photovoltaic devices (on-grid, hybrid and off-grid), active power filter for harmonic solution, automatic transfer switch and wireless battery monitoring systems.

AblereX has offices in Taiwan, USA, Singapore, China, Japan and Italy, and factory in Italy Taiwan and China.

AblereX complies with quality assurance ISO systems and the products have also achieved international safety recognitions of TCL, CE, UL, CD and VDR, etc.



Photo Credit: AblereX

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Al-Bahar launches Next Generation Cat® Equipment at The Big5 Heavy

AL-BAHAR, IN PARTNERSHIP with Caterpillar, successfully participated in The Big 5 Heavy 2018 held at the Dubai World Trade Centre from 26-28 March.

The one-of-its-kind event, happening for the first time, witnessed Al-Bahar alongside Caterpillar, leveraging the platform to demonstrate the most recent Cat® Next Generation solutions and services that help its customers succeed. The theme this year for the Caterpillar/Al-Bahar stand was 'NEW RANGE. NEW RULES.'; reflecting the idea of pushing old rules aside to make way for new ones with the Next Generation series of Excavator.

The Caterpillar/Al-Bahar stand unveiled two new machines – Cat 320 Excavator and Cat 962L Wheel Loader. In addition to these two launches, the stand exhibited a wide range of latest offerings including – Cat 950 GC and 966L Wheel Loaders, Cat D8R-2 Dozer, Cat 340 Excavator and Cat 239D Compact Track Loader. Cat Connect offerings, including both the technological updates and services, were among the other updates displayed at the Caterpillar/Al-Bahar Big 5 Heavy exhibit.

Next Generation Cat Excavators

Speaking about the new products, Samer Ismail, Earthmoving & Excavation Product Manager, said, "The two new machines introduced at The Big 5 Heavy are revolutionary machines with unique features that are highly useful to customers across industries. Cat 320 belongs to the recently launched Next Generation series of excavators that promise 45 per cent more productivity, 25 per cent less fuel consumption and 15 per cent reduction in maintenance

costs. While the Cat 962L belongs to the new L series family of Wheel Loaders, which are known to have more thirst for work than fuel. Therefore, both the models are market challengers with their game changing features and enhancements. Caterpillar introduced the models globally for all regions, but these have been introduced to Middle East markets by Al-Bahar at the event."

Customer experience was the priority, while designing the new range of excavators. Helping an average operator to become a great operator, were among the primary objectives while developing the new series. In addition to enhancing operator skill, the aim was to address fuel and maintenance costs, jobsite safety, operator comfort and variations in market requirements with the new range.

Commenting on the industry and the new range, Ismail added, "The construction

industry is one of the most demanding segments these days. With newer challenging projects and scenarios, the industry is known for its attribute to stay competitive. We understand the industry is in need of revolutionary solutions, and as a leading brand offering construction machinery, we are prepared to help our customers navigate through challenges with the New Challenger range that will help their operations succeed."

"Our exhibit has helped our customers to realise the benefits of our new and latest range of offerings. The idea was to show our customers what Caterpillar along with Al-Bahar could offer them throughout their project life cycle, from beginning to end. We are glad to have showcased our commitment to excellence, adding value for customers," added Ismail.

Commenting on Al-Bahar's relationship with Cat, Ismail stated that the relationship is almost six decades old. Both Cat and Al-Bahar work together as partners not just with each other, but also with customers; and it has always been a win-win situation. "We rely on quality promised by Cat products and they rely on our expertise in reaching the regional markets, along with our unmatched support offerings."

Other stand highlights included dedicated section for product support services with focus on services like repair options and online parts availability. The key messages, underscored customer benefits of Cat products' durability, reliability, safety and Al-Bahar's aftermarket product support services and solutions, enabling customers lower operating costs, minimise downtime and increase safety and productivity – all highly critical for success and growth.



Photo Credit : Al-Bahar

The Cat 320 Excavator.



Photo Credit : Al-Bahar

The Cat 962L Wheel Loader.



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NFT towers over other manufacturers at The Big 5 Heavy

NFT, ALONG WITH Manitowoc, showcased the new Potain HUP tower crane and the CCS range by Potain at The Big 5 Heavy 2018 in Dubai.

However, the highlight at the show was the VR technology in NFT booth where clients and attendees could take a sneak peak of NFT's 300,000 sq m yard in Abu Dhabi, remotely.

Nabil Al Zahlawi, CEO and Managing Partner at NFT Specialized in Tower Cranes LLC, said that as the sole distributor of Potain tower cranes the brand strength leverages on its product portfolio and aftersales services in the UAE and supporting facilities in Europe and Asia. The burgeoning construction sector has kept NFT on its feet with almost 100 cranes in operation currently just in Abu Dhabi and Dubai.

"In Meydan Mall, we have 35 cranes operational in addition to 32, and counting, at the Expo 2020 Dubai site. In Abu Dhabi, we have been awarded a 14-crane contract for the Reem Mall. The Louvre Museum used 13 of our tower cranes for construction. We believe that the market is picking up and we continue to build loyal customers."

Similarly, the Kuwait market figures are a good boost for NFT's business. "We have invested heavily there over the past year because Kuwait has a lot of potential due to its significant fiscal reserves. NFT Kuwait has achieved a significant milestone by being awarded the biggest contract in Kuwait history to date by the Turkish contractor Limak İnşaat: the construction of the new International Airport, a project worth US\$4.34bn dollars. We have installed and are servicing 40 Tower Cranes for that project alone. Between 2017 and 2018, we have captured more than 50 per cent market share there."

NFT's leadership status in rental across in the GCC market is driven by three main factors – quality, availability and aftersales services.

Even as a price conscious market, the GCC has not shied away from quality, Al Zahlawi said. "Potain is a French brand. Even if it has an Asia range that allows the brand to be more competitive, the structure, quality control, design and ergonomics remain fundamentally French. That's why we have a campaign running under the flag 'FRENCH ENGINEERING' because regardless of where it is made, the skeleton of every Potain tower crane is French; and that has not changed since its inception in 1928." Competition is not



Photo Credit : NFT Cranes

NFT's leadership status in rental across in the GCC market is driven by three main factors – quality, availability and aftersales services.

just about quality; it's also about the technology. Potain's hi-tech cranes come with anti-collision system to ensure safety at job sites.

The VR showcasing NFT's impressive yard at The Big 5 Heavy allowed visitors to see the supplier's gigantic stock of 2,000 tower cranes readily available to be shipped to any jobsite, whether locally or internationally. Through the VR, customers could also see the reconditioning facilities that allow to repair and refurbish second hand tower cranes to almost a brand new status.

NFT's has a reputation worldwide for being specialised in giant cranes (40 tonnes) especially luffing models, with the MR 418 and MR 608. All tower cranes are supplied with advanced technical and operations support from installation, to maintenance, spare parts and troubleshooting.

Based in the UAE capital of Abu Dhabi, NFT enjoys a strong presence in the GCC and Middle East and is seeing its business grow beyond the region. The company has office in Asia, Europe, Africa and the most recent being Australia due to which NFT's clients all over the world can enjoy its complete offer of products and services.

Scaffolding with the highest level of safety

ITALY-BASED AMADIO & C showcased its scaffolding and construction equipment at The Big 5 Heavy that was held from 26-28 March.

The company is well-equipped with design, manufacture, sell shoring systems (horizontal formwork, post shores, shoring towers), scaffolding and building equipment. According to the company, its goal is to serve rentals and large construction companies worldwide, offering technical customised solutions.

Products at display during The Big 5 Heavy included:

RapiDeck: RapiDeck is a system of horizontal formwork, ideal for all types of reinforce concrete decks of large dimensions casted in place. It is fast as well as safe during assembly and disassembly thanks to the reduced number of elements (highly integrated

with each other and interchangeable) and a full range of accessories (props DIN EN 1065), with which one can make any kind of configuration in an easy and economical way, thus minimising and facilitating the infill zone needed and the side closing. The aluminum frame ensures lightness, while the mantle phenolic plywood makes it water resistant and, therefore, durable (100+50 uses minimum).

RapiDeck is available in both fixed head and drop head configuration. This facilitates the earlier stripping, guaranteeing a considerable saving of time and number of panels.

Shoring accessories: A complete range of accessories simplifies and make easier the shoring, increasing ulteriorly the safety and the productivity. They were studied to reduce the use of nails and hammer, and guarantees precision in the

assembly even of complex structures. All the props (post shores) are certified in accordance with the recent European Norm DIN EN1065 by the German technical institute Landesstelle Foto-EN-Afür Bautechnik of Stuttgart. Designed to ensure maximum safety while using hand scissor safety and disengagement system, it is characterised by load capacity defined and certain, with high safety factor, reaching in this way, the highest level of development achieved so far in the field of shoring. To satisfy any requirement, the props have been divided in four classes, depending on their load capacity: Class B, the lightest, until class E the heaviest. The quality of the materials used, together with innovative production processes, ensures solidity and durability superior to the traditional products.

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Hitachi excavators make a big impression at The Big 5 Heavy 2018

HITACHI CONSTRUCTION MACHINERY Middle East participated at the launch event of The Big 5 Dubai, from 26-28 March, along with its partner Middle East Crane Equipment Trading (MECET).

HMEC general manager Piet van Bakergem said that unlike previous The Big 5 editions, which were diverse in product offerings, The Big 5 Heavy focused on the construction portfolio.

“Therefore, we chose this platform to showcase our wheeled and mini excavators for the UAE market. These products are focussed at urban construction so as to not damage the surface in the cities. HMEC’s agile mini excavators and wheeled excavators help protect pedestrian pavements with their unique engineered structure.”

With models in operation worldwide, ranging from 800kg to 5,400kg, Hitachi mini excavators provide the right type of service for the required construction needs. The increasingly-popular zero tail swing type has a reduced cabin back that doesn’t hang over the crawler. This prevents damage from contact with job site obstacles, which in turn reduces operator stress from worrying about accidents. This is why so many of Hitachi’s zero tail swing mini-excavators are used for narrow job sites. Hitachi mini excavators come equipped with various safety features, such as TOPS (tip-over protective structure) and FOPS (falling object protective structure). To avoid the dangers of urban construction, Hitachi’s machines meet ISO safety standards.

Hitachi’s wheeled excavators are fast and offer mobility to save time for job-to-job movement. They are also multi-purpose like the crawler type excavators, as the front attachment can be switched. With this kind of mobility and usability, Hitachi’s wheeled excavators give increased productivity. Low maintenance costs and long life are the other added benefits.

Showcasing the new series coming up from the Hitachi wheeled excavators – ZX 170W-5A, 190W-5A, 210W-5A, USB65, ZW180 as well as minis for the UAE market, Piet added that Hitachi continues to invest in better machinery and brand awareness. “We are best known for reliability, and with a partner like MECET, we are getting more customer



Hitachi Construction Machinery was participating alongside MECET during The Big 5 Heavy 2018.

Photo Credit: Technical Review Middle East

interests in this part of the region. HMEC looks very sharp with regards to its market share here in the Middle East. That’s what counts.”

Since early 2011, MECET is the appointed UAE dealer for Sumitomo Crawler Cranes and for the last two years, the trading company has been selling Hitachi’s construction machinery to the local market. In October 2018, Piet revealed that MECET will open a new premise in Jebel Ali Industrial Park, Dubai.

MECET takes responsibility as a full liner for the sales and after sales services of Hitachi Construction Machinery as well as Hitachi Sumitomo Crawler cranes.

That’s what they call one stop shopping!

JK Cement Works Fujairah unveils ‘designer’ white cement

INDIA-HEADQUARTERED AND OPERATING in the UAE since 2014, JK Cement Works Fujairah (FZC) is already one of the global leading manufacturing groups of white cement. Showcasing at The Big 5 Heavy was the group’s latest product in focus – JK White Cement CEM II 42.5 newton (N).

Speaking at the event, Tamim Emad Youssef Erian, application manager at JK Cement Works, said the product has gained a good market share in the Middle East and Africa market because of its durable, smoother and economical nature. The cement is particularly suited for architectural uses and provides attractive and durable concrete, rendering and mortar usage and cast stone, architectural concrete, paving stone, street furniture and terrazzo.

“Apart from having high early strength compared to Grey Cement, the White Cement CEM II 42.5 has low heat of

hydration and high fineness that allows to obtaining perfect surfaces. It is used in dry mix by many manufacturers in the region,” Erian added.

With a production capacity of 0.7mn MT per annum, in four years since the inception, JK Cement Works FZC has managed to gain more than 50 per cent share in the GCC region. However, the factory has dual processing units to produce white cement and ordinary Portland cement (OPC).

As per European standards and due to the use of less clinker in the production process, CEM II is as an eco-friendly product. The white cement is also ISO certified for quality management and environmental management. The JK Cement Works factory in Fujairah is environmentally-friendly, which gives the producer an added benefit of market strength in the GCC.

Quality and price are the key factors

that are unique to JK Cement Works positioning in the market but so is corporate social responsibility.

Erian explains, “JK Cement Works started collaborating with universities in the GCC in 2016 as well as with consultants and architects in the Middle East with technical projects and internships. This also helps us in creating awareness about the white cement, which is used in abundance but few know the benefits of the white cement, including consultants who can help create the need in the market.”

The application manager also endorsed ‘JK Wall Putty’ which is already in use in Saudi Arabia and Bahrain. JK Cement Works is now planning to bring the product to the UAE market.

JK Cement Works exports white cement to Saudi Arabia, Bahrain, Oman and Kuwait apart from Southeast Asian and African countries, a total of 40 countries worldwide.

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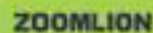
► Central Tire Inflation System (CTIS)



► Utility Specialized Trucks



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



► Forklifts (Diesel - Gasoline LPG - Electrical)



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Reduce, reuse and recycle with MB Crusher

AT THE BIG 5 Heavy 2018 that took place from 26-28 March in Dubai, Italian bucket specialist MB Crusher featured crusher buckets and attachments for the construction and mining sectors. Meanwhile, the company is also at the forefront of promoting reuse and recycle to reduce waste. Crushing and recycling is taking a key role in demolition and building operations today. The need to make the most of all available material, has prompted astute operators to use the waste material which once was simply piled up, discarded or brought to a disposal centre. That's the reason why it's important to find new solutions to recycle inert waste at low cost.

As the UAE grows, so does the amount of rubbish it produces.

At the beginning of this year, Masdar reported that waste generated in the UAE increased from 6.6mn tonnes in 2010 to 8.4mn tonnes in 2017. For the entire GCC region, almost 29mn tonnes of rubbish is anticipated, creating a waste management industry that potentially could be worth US\$1.69bn. Dubai Municipality estimates that the city recycles 25 per cent of its refuse, but it aims to increase it to 75 per cent by 2021. Public-private partnerships will play a crucial role in meeting this aim.

The "circular economy", involving recycling and reusing materials to put them back into manufacturing, will become increasingly important. The massive step is having the easy-to-access infrastructure for the consumer to recycle because in the UAE the landfill is still very cost-effective.

Waste becomes a resource with MB Crusher

MB Crusher has created a product line that make possible to manage the complete recycling phase directly on-site, by simplifying the operations of crushing, screening and handling of aggregates. Crusher and screening buckets, drum-cutters and sorting grapples are installed directly to a heavy equipment machine and powered by its hydraulic system.

Compact attachments come with a low acoustic impact, in compliance with the terms laid down in ISO 3744 and the Machinery Directive 89/392 EEC. MB crushing and screening buckets can be equipped with a magnetic kit to collect iron from debris and a dust suppression kit that sprays water to control the dust.

Aggregates and debris resulting from a working site can be processed by MB Crusher machinery and transformed into material



Photo Credit: MB Crusher

MB offers the widest range of crusher buckets, 12 models from the smallest, for mini excavators, a special range dedicated to wheel loaders, skid steer loaders and backhoe loaders, to the largest suitable for excavators from 70 tonnes and more.

ready for re-use on the site itself, or sold for other applications. This way, companies are no longer compelled to dispose of it at the dump, but can put it back into the working cycle, saving time and money.

With MB Crusher machines, the material is recycled on the spot, thereby avoiding the landfill costs, transportation cost as well as pollution created by vehicles driving to and from the dump. Plain advantages are not just for the company that is using them and the workers, but mostly for the environment.

This is applicable to all kinds of sites, from road construction sites to demolitions, to the laying of new pipelines, to mines and quarries, to the disposal of railway sleepers, lamp posts and vineyard poles, but also to large recycling centres where iron materials, foundry waste, glass and many other materials are salvaged.

Even large companies, that already have big crushing plants within their quarries,

decide to adopt MB crusher attachments which allow them to cover many situations and special processes, such as confined areas and spaces difficult to access.

An MB attachment can help companies save money, minimise workplace risks and recycle materials already at their disposal.

MB Crusher is the inventor of world's first crushing bucket and the world leader in the field of equipment for crushing, demolition and recycling. It offers the widest range of crusher buckets, 12 models from the smallest, for mini excavators, a special range dedicated to wheel loaders, skid steer loaders and backhoe loaders, to the largest suitable for excavators starting 70 tonnes.

The MB range of attachments is completed by screening buckets, drum-cutters and rotary grapples. They are powered by the heavy machinery hydraulic plant, are easy to transport, have low maintenance costs and do not require an additional operator.



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CNC lathe HAAS, SL-20TNE, max. turning-ø 262 mm, X/Z = 203/508 mm, HAAS-control, C-axis



CNC lathe SPINNER, UP 65, X/Z = 220/640 mm, SIEMENS SINUMERIK 840 D



CNC lathe, hollow spindle, MAX MUELLER, AMW-63, rotation-Ø over bed 1200 mm, distance 2800 mm, hollow spindle bore 350 mm, NUM 750



CNC stamping and punching machine, LVD, DELTA 1500 LB-TK, working range 2625 x 1550 mm, max. plate thickness 6,4 mm, MNC 3200



Hydr. punch press MUEBA, HP 1000/760, punch power 1.600 kN



CNC horiz. bandsaw, automatic, BTM, 560 A, cutting range round 560 mm Ø, square 560 x 560 mm, CNC CEB, SKW III



CNC lathe GUIDENDESTER, CTX 400 Serie 2, rotation-Ø over bed 570 mm, X/Z = 220/635 mm, GE FANUC Series 21-T



Bed-type milling machine ZAXER, RT 2200, table: 2200 x 1060 mm, SA 58, X/Y/Z = 1980/1000/1015 mm, SIEMENS SINUMERIK 840 C



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The refrigerants market is expected to witness an increase in demand for natural refrigerants, which in turn, is expected to be an opportunity in the GCC market.

Don't let your business freeze

The 2nd Edition Refrigeration Conference will promote discussion to innovate and improve technology to combat climate challenge and fulfil environmental regulations.

Photo Credit : adisa/Adobe Stock

THE REFRIGERANTS MARKET is projected to reach US\$18.05bn by 2022, at a CAGR of 4.5 per cent between 2017 and 2022. The drivers for this market are the increasing demand for consumer appliances such as refrigeration and air-conditioning equipment and growing cold chain market.

Factors such as growth in organised retail framework, shift towards horticultural crops, and growth in the processed food sector have also contributed to the growth in demand for refrigerants.

Increasing regulations against the use of fluorocarbon refrigerants and flammability and toxicity issues are expected to be restraints for the refrigerants market. Owing to increasing regulations on the use of fluorocarbons, the refrigerants market is expected to witness an increase in demand for natural refrigerants, which in turn, is expected to be an opportunity in the refrigerants market.

Meanwhile, the refrigerants market in the Middle East and Africa is projected to grow at the fastest rate from 2017 to 2022. In the region, growth in applications such as large-scale refrigerators and chillers are driving the growth of the refrigerants market.

Macroeconomic factors such as massive economic growth, steady population growth, increasing tourism, and economic

diversification (shifting dependency from the oil and gas industry to the retail and service industry) are responsible for the increase in the use of refrigerants in various applications.

Fluorocarbon refrigerants lead the overall refrigerants market. However, with several countries agreeing to completely phase out the usage of fluorocarbons by 2047, the market for this segment is expected to witness a decline. The European Union (EU) has already stopped the usage of HCFCs in cooling equipment manufactured after 2000. Thus, the hydrocarbon refrigerants segment is expected to be the fastest-growing refrigerant type owing to its low environmental impact and long term viability.

Moreover, use of advanced technology in refrigeration is anticipated to drive refrigerant market for the forecast period. Stringent regulations and environmental concerns are the major factors restraining the global refrigerants market.

Technical Review Middle East magazine hosted the 2nd Edition Refrigeration Conference on 25 and 26 April 2018 in The Wyndham Grand, Manama, Bahrain.

The conference focusses on the Saudi Arabia's and Bahrain's surge in demand for refrigeration systems integrated with smart technology for supermarkets and retail businesses.

The two-day conference will address

challenges faced by the refrigeration industry and promote discussion to help existing processes to innovate and improve technology for industrial refrigerators.

The event aims to demonstrate how digitalisation and innovation can tackle challenges of the sector like temperature abuse, retrofitting refrigerants, containing refrigerant leaks and how to avoid contaminated refrigerants, as well as working with efficient digital commercial refrigeration unit and smart appliances.

Some of the topics include *Energy efficient initiatives* by Brian Suggitt from Eurovent Middle East; *Implementing food safety in refrigeration* by Ibrahim Alanazi from Saudi Food and Drug Authority; *Future trends in industrial refrigeration* by Carsten Dahlgaard from Danfoss, Netherlands; *Temperature abuse in frozen food* by Irshad Muhammad from Gulf Salt Company, besides others. The Masterclass on refrigeration systems on Day 2 will be held by global refrigeration consultant Simon Clarke.

The conference format comprises technical workshops and a knowledge sharing platform along with networking opportunities with industry experts and government regulators.

Danfoss is the Strategic Partner of the 2nd Edition Refrigeration Conference. ■



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The event will attract health, safety, security, environment, and social responsibility leaders and professional working in the international oil, gas and construction sectors from Kuwait. Alongside the conference, the exhibitors will showcase the latest technologies, products, and industry services from around the world

OVERVIEW

BAHRAIN HEALTH & SAFETY FORUM 2018

5th November, 2018 - Manama, Bahrain

HSE Forum- Bahrain will be held on 5th November, 2018 in Bahrain. The event will attract health, safety, security, environment, and social responsibility leaders and professional working in the international oil, gas and construction sectors from Bahrain. Alongside the conference, the exhibitors will showcase the latest technologies, products, and industry services from around the world

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22nd - 23rd October 2018 - Dubai, UAE

Continuing our highly acclaimed annual HSE event series, the **4th Annual Health, Safety & Security Forum 2018** is being held on the 22nd - 23rd October 2018 in Dubai. The forum will provide a platform to promote discussions on critical issues such as emergency preparedness and response, unforeseen hazards, legislation for occupational safety etc. through keynote presentations, interactive panel discussions and delegate Q&A sessions.

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Solar energy in Saudi Arabia's hot seat

By 2040, 55 per cent of the kingdom's power supply will come from alternative energy sources like renewables, nuclear and geothermal energy, according to King Abdullah City for Atomic and Renewable Energy (KACARE).

SAUDI ARABIA HAS unveiled plans to transform its solar power production, in line with the Vision 2030 strategy to diversify the country's economy and end its reliance on oil.

Under the Solar Power Project Plan 2030, the kingdom expects to produce 200 GW of solar energy by 2030, according to the *Saudi Press Agency (SPA)*.

At the launch of the plan, experts said the project will transform the kingdom into a leading exporter of sustainable energy, thanks to its natural resources and environmentally friendly industries relying on sun, wind, and silica-rich sand.

Solar power will be the world's largest energy source by 2050, according to International Energy Agency.

In March 2018, Saudi Crown Prince Mohammed bin Salman and SoftBank Group Corp's chairman and CEO Masayoshi Son also signed a memorandum of undertaking to build a US\$200bn solar power project. According to *Bloomberg*, at 200 GW, the planned project would be about 100 times larger than the next biggest proposed development. The project is likely to create as many as 100,000 jobs and reduce US\$40bn in power costs.

The Saudi solar initiative will help to diversify the national economy and stimulate investment in non-oil industries. The project will also reduce solar power production costs and create employment opportunities for Saudi workers, with up to 100,000 jobs in solar power schemes alone.

Meanwhile, King Saud University in Riyadh has joined a research project with Japan and Peru to monitor changes in the sun and its effects on Earth.

The kingdom's history of solar research goes back 38 years, when King Salman opened the research plant at King Abdul Aziz City — the first solar power site in the kingdom. The plant provided solar electricity to Uyayna, Jubaila and rural centers near Riyadh. The solar village, part



Photo Credit : Saudi Elenex

The Saudi Elenex 2017 had more than 3,500 visitors at Riyadh International Convention & Exhibition Center.

of a Saudi-US partnership, produces 350kW of electricity through concentrated photovoltaic complexes.

Prince Turki bin Saud bin Mohammed, president of King Abdul Aziz City for Science and Technology, said, "Saudi Arabia's current energy needs are 75 GW. The 2030 solar plan would enable the kingdom to export surplus electricity and thus provide alternative energy to the kingdom's oil."

So it is pretty obvious that world's largest oil exporter is now pitching to sell solar energy.

However, even nuclear energy is pushing its agenda in the country. The country has accelerated plans to build 16 nuclear reactors over the next two decades, according to officials and analysts, at a cost of around US\$80bn. The reactors are expected to generate 17.6 GW of electricity — 10 per cent of the country's power needs — by 2040.

Construction of the reactors will start

next year although they are not expected to begin operating before 2027, Sabery said.

Energy consumption in Saudi Arabia has been rising at more than five per cent per year although growth slowed in 2017 after the government cut subsidies and hiked prices.

Electricity consumption is expected to double over the next 15 years, reaching 120 GW by 2032, Abdullah al-Shehri, governor of Saudi Arabia's Electricity and Co-generation Regulatory Authority, told French news agency *AFP*.

Keeping these major changes in mind, the Saudi Elenex event, from 7-9 May at Riyadh International Convention & Exhibition Center, will focus on the projects in the energy sector within the kingdom and identify opportunities for collaboration. Organised by Riyadh Exhibitions Company, the annual event will feature companies from electricity, water and renewable sectors. ■

The next level for Industry 4.0

This year's event features six parallel trade shows: Industrial Automation, Motion & Drives, Digital Factory, Energy, Industrial Supply and Research & Technology.

THIS YEAR, WITH 'Integrated Industry – Connect & Collaborate' as its lead theme, HANNOVER MESSE, is taking its Industry 4.0 commitment to the next level with a strong lineup of keynote themes.

These include the integration of industrial IT and automation, artificial intelligence, predictive maintenance, the industrial platform economy, people and work, SMEs and technology users, interoperability, security and standards, to name but a few.

The central discussion platform for these themes will once again be the 'Industry 4.0 meets the Industrial Internet' forum in Hall 8. International experts will take the stage at the forum to present new use cases, test beds, technologies and service offerings. There will also be daily panel discussions, where representatives from business, science and government will debate the big issues.

"With numerous exhibitors from every segment of HANNOVER MESSE highlighting the lead theme, Industry 4.0 will feature prominently throughout the halls," said Arno Reich, global director IAMD and digital factory for HANNOVER MESSE. "But the epicentre of it all will be the IAMD and Digital Factory shows. The solutions and insights on offer at those two shows are what undeniably make HANNOVER MESSE the world's leading showcase for Industry 4.0."

The automation and industrial IT sectors are prime examples of the changes brought by integration in terms both of intelligence and convergence at the technology level and of interconnectedness and collaboration among enterprises. Traditional boundaries and demarcations are breaking down as classic automation specialists morph into software experts and classic IT providers forge alliances with major industrial corporations.

These trends are also reflected in the merger of the Industrial Automation and MDA shows of past years to form the new IAMD – Integrated Automation, Motion & Drives show. The merger was the logical consequence of market changes in the age of digitisation.

"The market for multidisciplinary solutions and integrated products is growing all the time," Reich said. "The new tradeshow makeup is just another example of how we are systematically building on our Industry 4.0 strengths. Like no other trade fair, HANNOVER MESSE showcases complete Industry 4.0 solutions – everything from smart components to cloud-based data management – and not just the individual building blocks." ■

HANNOVER MESSE takes place from 23-27 April in Hanover, Lower Saxony, Germany.



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Trimble launches Tekla 2018 BIM software solutions

TRIMBLE HAS INTRODUCED three new versions of its software for structural engineering, fabrication and construction teams – Tekla Structures 2018, Tekla Structural Designer 2018 and Tekla Tedds 2018. These solutions provide increased control and improved documentation through Building Information Modeling (BIM) workflows for stakeholders in structural steel and precast and cast in place concrete, including designers, detailers and fabricators, concrete contractors, contractors and structural engineers.

“We develop software solutions that bring a growing synergy to our customers in their daily work,” said Ville Rousu, responsible for Tekla software development at Trimble. “Trimble’s focus on advancing technology throughout the entire structural BIM workflow, from design to fabrication and construction, allows us to deliver the BIM tools that contribute to the transformation of the building and construction industry,” said Rousu. Tekla Structures 2018 brings faster 3D modeling processes, more precise detailing, better control over changes and quicker production of drawings with less effort, in addition to workflow-related efficiency gains. The new version also supports point clouds, allowing delivery of coordinated, constructible designs that fit existing structures seamlessly. The improvements in drawings include quicker drawing production with less effort and reviewing and adding content faster. The collaborative workflow from design and analysis to detailing and fabrication is smoother than before, regardless of structural material.

Tekla Structural Designer 2018 delivers new features and enhancements focused on structural design workflow productivity. For example, the new rigorous non-linear concrete slab design feature automates loading simulation through construction to help save engineering design time. Tekla Tedds 2018 introduces a variety of new calculations that vastly improve productivity for civil and structural engineers. The easy-to-use software offers a quality assured library of code compliant calculations that are visible for easy review and validation.

Sandvik installs Volvo Penta’s Stage V solutions into mining loaders and trucks

AS THE NEXT level of EU emissions regulations comes ever closer, manufacturer Sandvik has chosen Volvo Penta as the ideal provider of Stage V solutions for its mining equipment. With some of the toughest working conditions in confined areas, underground mining has many physical aspects to consider and more requirements than most industries for stringent rules on emissions.

“Volvo Penta has been very accommodating in working with our technicians and designing an engine package to fit our machines,” said Wayne Scrivens, vice-president of product line, load and haul at Sandvik. “Our units have a low profile for working in confined spaces and tunnels, so they must be compact, and Volvo Penta has found solutions for us.”

Due to the nature of the industry, underground mining faces particular challenges in relation to environmental health and the ways in which emissions are minimised.

“Ventilation in mines requires fresh air being pumped underground both for human needs and to dilute the exhaust emissions, and this is then pumped back up to the surface,” says Scrivens. “In deep mines, this air can be refrigerated, so the processes all add up to considerable cost. With Stage V, reduced emissions from the engine means reduced ventilation requirements, so it lowers the costs for the operator.”

Sandvik is installing Volvo Penta’s Stage V solutions, in its underground loaders and trucks, for underground mining operations, following



Photo Credit : Volvo Penta

Volvo Penta’s Stage V engine range offers power from 105 to 565kW (143-770 hp).

prototyping and extensive testing. In particular, the 17-tonne Sandvik LH517 underground loader has shown to be running successful trials with a Stage V engine in Finland.

“The engine has to be robust to perform well in underground conditions – it’s a very harsh environment,” added Scrivens. “Both Volvo Penta’s technicians and ours have analysed results to see whether any modifications would be needed before going into serial production. So far, things have gone really well.”

Sandvik currently offers its underground loaders and trucks with several engine options – Stage II, Stage III and Stage IV – to accommodate different countries’ emissions requirements and customers’ abilities to use ultra-low sulfur diesel (ULSD); ULSD is used mainly in Europe, North America and Australia. To comply with forthcoming EU standards, Sandvik will offer Volvo Penta’s Stage V engine solutions which are certified by the US Department of Labor’s MSHA (mine safety and health administration) and Canada’s CANMET – both of which stipulate regulations for ventilation in mining.

Chicago Pneumatic makes first sale in Egypt

CHICAGO PNEUMATIC HAS marked the first sale of its CPSG range of generators in Egypt after its authorised distributor, ARAK Heavy Equipment, received two separate orders.

The tough, powerful and easy-to-maintain machines are being used by two leading government contractors, Nile for Roads and New Sharm Contracting. The companies selected CPSG generators as they required a consistent source of power to support their operations, which include maintaining critical infrastructures such as roads and government buildings in Egypt.

The first order received by ARAK Heavy Equipment came from Nile for Roads, a governmental company providing civil contracting for infrastructure projects, and comprises two CPSG 525 generators. The second sale includes three CPSG 65 generators,

purchased by New Sharm Contracting, which are providing power to Justice Ministry.

Chicago Pneumatic CPSG units are built to withstand tough working conditions, making them ideal for operators seeking a consistent source of power for 24/7 operations. The CPSG range of generators is built with a galvanised canopy and comes with a spillage free-frame, which is designed to contain all fluids inside the machine. The range features an advanced control panel that enables users to control and operate it remotely.

The CPSG generators are easy to maintain, with a simple to follow process ensuring that maintenance takes a matter of minutes. The CPSG range from Chicago Pneumatic comprises over 15 models, ranging from nine to 750kVA and are available in 50 Hz or 60 Hz versions.

Multiphase pumps see success in Middle East

MULTIPHASE PUMPS HAVE been successfully used for onshore and offshore applications worldwide. The technology gained increasing acceptance among the global oil and gas producers for keeping marginal and declining oilfields to reduce flaring as a contribution to a cleaner environment.

The majority of multiphase pumps operating are based on twin screw pump technology. These self-priming pumps are of double volute design and hence, hydraulically balanced. The possibility of speed variation by means of variable frequency drives offers a wide operating envelope. Twin screw multiphase pumps are available for flow rates up to 5,000 cu/m/h (755,300 bpd) and differential pressures up to 150 bar (2,175 psi). The pumps are designed to handle high gas volume fractions (GVF) and to tolerate gas slugs with 100 per cent GVF.

One of these installations with twin screw multiphase pumps has been commissioned on a wellhead platform in the UAE coastline. Abu Dhabi owns the majority of the UAE hydrocarbon resources. The production from these fields is pumped from the wellhead platforms to central onshore or offshore facilities for processing, storage and export.

The field with the multiphase pump installation is located a few kilometres offshore the UAE coastline. The field was discovered in the late 1960s and the oil production commenced in the middle of

the 1980s. Around the turn of the century, the production forecasts predicted a decline of the oil production associated with an increase in water cut. To sustain the field's oil production at the current level the implementation of short term development projects were initiated, which consisted of installing electrical submersible pumps (ESP) and a multiphase pump (MPP) at selected wellhead platforms (WHP).

The engineers proposed MMP as a cost-effective technology to transport multiphase fluid via a single pipeline instead of separating oil, water and gas at gathering stations and exporting oil and gas through separate pipelines to central production facilities. Multiphase pumps are essentially a means of adding energy to the unprocessed well stream, which enables liquid/gas mixtures to be transported over longer distances without the need for prior phase separation.



The multiphase pump skid on the multiphase pump test bed.

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Pumping the multiphase fluid directly to the central processing facility eliminates the requirement for separators, heater treaters, pumps, compressors and storage tanks at the in-field gathering stations and offers –

- Reduction of installation space requirements due to less equipment
- Reduction of operation and maintenance interfaces due to less equipment
- Reduction of manpower due to the fact that MPP installations are suitable for remote control and require no permanent manning

Multiphase pump technology also allows –

- De-bottlenecking of existing flow lines by maximising the throughput
- Integration of low and medium pressure wells into a high pressure manifold/separator
- Integration of marginal fields or remote tie-backs to existing facilities
- Segregated production schemes of medium and low pressure wells by using dedicated multiphase pumps
- Production restoration of dead wells by reduction of the well back pressure
- Maximum utilisation of existing production facilities on a declining field by adding production from remote wells
- Elimination of flaring and gas recovery by boosting the unprocessed well stream to central separation facility
- Reduction of unstable flow regimes in multiphase pipelines to higher superficial velocities

Multiphase pumps are designed to operate with variable suction pressures. This is a major advantage over conventional separation systems featuring compressors, which are designed to operate solely at a pre-determined fixed inlet pressure level.

For the installation of the multiphase pump the operators chose production facilities on a wellhead platform with six wells. There were three low pressure wells intermittently flowing or not flowing at all due to the high pressure from the remaining wells into the common manifold. Therefore, it was considered technically and commercially feasible to install a multiphase pump at the wellhead platform connecting the low pressure wells.

The multiphase pump system on the wellhead platform consists of a pump skid with the multiphase pump, electric motor, lube and seal oil system, an automatic filter, liquid management system, on-skid piping with motor operated valves and the on-skid instrumentation; an air conditioned and pressurised control container for the VFD, PLC, etc.; a transformer; a low voltage distribution board (LVDB)

The space available for the installation of the multiphase pump system on the wellhead platform represented a major challenge. Due to the small surface area for the equipment, the skid had to be designed as compact as possible. Since there were no close limitations in the equipment height it was possible to install pump and drive above the liquid management system in order to reduce the width of the skid. Another challenge was the small space provided for the transformer. However, finally a manufacturer was found who could meet both the project specification and the required footprint.

Due to the H₂S concentration and the high chloride content of the produced water, all the wet parts of the pump and skid components are made from Duplex Stainless Steel, that meet the requirements of NACE MR0175. The casing insert (liner) is wear resistant coated with Stellite®. The pump shafts are sealed by double acting, balanced mechanical seals in back to back arrangement. In case of slug flow,



Photo Credit : Leistritz

Pump skid, control container and transformer on an offshore platform.

the liquid management system provides sufficient liquid seal to the area between screw tips and casing insert to guarantee uninterrupted production. Pump bearings, timing gears and the mechanical seals are lubricated and cooled by a combined lube and seal oil system which is also accommodated on the pump skid. The automatic filter protects the pump internals from wear and damages by solids travelling with the multiphase fluid from the wells.

Before being shipped to the UAE, the pump skid and all accessories were extensively tested on the multiphase pump test bed of the pump and system manufacturer and the premises of the selected sub-vendors. All tests have been witnessed by the end customer.

The multiphase pump skid has been successfully commissioned. A new production manifold was installed to separate the flow between the high pressure flowing wells and the low pressure flowing wells. The low pressure wells are connected to the suction line of the multiphase pump, resulting in a reduction in back pressure for the weak wells and hence, a considerable increase in production.

A job well done

When the project started a couple of years after the turn of the century, experiences with multiphase pumping technology in the Middle East were only marginal. The application presented serious challenges in view of the design for the restricted space available and the selection of the construction materials.

After almost four years of operation the installation can be considered as successfully completed by both the operator and the manufacturer and supplier of the multiphase pump system. ■

Bobcat taking performance to new levels

THE NEW GENERATION of Bobcat's two to four tonne new compact excavators meet the upcoming European Stage V engine emission regulations and introduce new levels of operator comfort, enhanced controllability and smoothness of all working functions complemented by new user-friendly design features and styling.

According to Bobcat's details on the new two to three tonne E26, E27z and E27 models, all three models offer best-in-class stability as well as complying with weight limits for easy trailer. The main focus has been on operator comfort with the new machines incorporating many innovative features and offering an enhanced level of quality and robustness. They form a new flexible machine platform with different configurations of machines and specifications to suit a wide range of applications and customer needs.

A similar radical transformation is taking place in the three to four tonne range. The new E34 and E35z have been developed to reinforce the Bobcat product offering in this category of compact excavator.

Providing a maximum lift capacity of three-tonne and a maximum lift height of nearly seven metres, the new TL30.70 compact telehandler from Bobcat is designed for a wide range of applications found in the construction and rental industries.

The TL30.70 provides an excellent cost-effective alternative to larger seven metres models, especially where working spaces are tight and increased manoeuvrability is required. With the new model, Bobcat has completed the full range of products from the company for the telehandler market. Performance is not compromised as the TL30.70 offers an outstanding maximum reach of four meters with a load of more than one tonne. At the maximum lift height, users can lift up to two tonne of weight, which is sufficient to place a pallet of heavy bricks in most conditions.

The new version of the T870 features a torsion suspension undercarriage, introducing a completely new undercarriage design to the Bobcat compact track loader range. The torsion suspension undercarriage features torsion axles that dampen vibration, combining the comfort of roller suspension and the stability of a solid mount undercarriage with other new features to provide a tracked loader that outperforms all other machines on the market.

The new T870 torsion suspension machine offers a rated operating capacity of 1,726kg (more than 10 per cent more than the previous roller suspension model). It is available with a wide range of standard and optional features and in a range of configurations to match emissions and specification requirements for all European, Middle East, Africa and Russia and CIS markets.

End-to-end solutions

Bobcat offers customers so many advantages in the attachment market. These include the company's One-Stop-Shop approach – providing every possible combination of machine and attachment from one source and a massive stock of products available for immediate shipment worldwide.

This is backed by the service support of the vast Bobcat dealer network, Bobcat Service Specialists and Parts warehouses around the world to reduce downtime. The warranty protection available from Bobcat allows customers to avoid the disputes that may arise



The new two to three tonne E26, E27z and E27 models.

Photo Credit: Bobcat

from the compatibility and operating problems that are caused by the use of non-approved attachments.

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ميناء الدقم - ميناء تجاري إستراتيجي على بحر العرب

أما عن ميناء صحار، الذي يعد مرفأً بحرياً عميقاً، فتعطيها الحكومة أيضاً، إلى جانب المنطقة الحرة بصحار، أولوية التطوير. وهذا الميناء منشأة متخصصة في مناولة الشحنات والحاويات والمواد السائلة العامة، وقد شهد زيادة السفن العابرة بنسبة 26 في المائة في 2017. ومن المقرر أن يضم الميناء ثلاثة قطاعات رئيسية: وهي الخدمات اللوجستية والبتروكيماويات والمعادن، في أول محطة من نوعها في عمان مخصصة لمناولة البضائع الزراعية للمساعدة في إدارة الاحتياجات الغذائية الاستراتيجية في السلطنة.

إن أعمال توسعه وتطوير قطاع الموانئ، إذ تهدف إلى جذب الاستثمارات الأجنبية إلى هذه المناطق الاقتصادية، قد وفرت أيضاً الكثير من الوظائف لموردي الأجهزة والمعدات والمستشارين والمقاولين في قطاع النقل البحري، فعلى سبيل المثال، تتواجد «هولوت جروب»، الشركة الفرنسية المصنعة لمنصات العمل الهوائي بشكل مألوف في ميناء جبل علي، كما تزود السلطنة بالأحواض الجافة لميناء الدقم.

وبالإضافة إلى ذلك، يجري استخدام أسطولها من الرافعات المصلية، البالغ طولها 41 متراً في مختلف أرجاء الترسلة البحرية لبناء السفن وإجراء الأعمال الهندسية البحرية. هذا فضلاً عن السفن الرملية وطلاء السفن وإجراء أعمال الإصلاح وتحويلات السفن.

ومع تطوير مرافق البنية التحتية الرئيسية الأخرى، مثل خطوط السكك الحديدية والمطار الجديد في الدقم، والتي تضمن سهولة الاتصال بباقي أنحاء السلطنة والأسواق بوجه عام، تُرسخ السلطنة وجودها كنقطة دخول حيوية طويلة الأجل لمنطقة مجلس التعاون الخليجي بالكامل. وتُعطي القدرات المحسنة لموانئها دلالة على رغبتها في جذب الاستثمارات.

مشروع كبير يخدم الأهداف الطموح التي تنطلق إليها المنطقة الصناعية بالدقم، وتعد توسعه هذه المنطقة الاقتصادية أحد المشاريع الحكومية الرائدة لتنويع الموارد الاقتصادية بعيداً عن عوائد النفط.

ويجري الآن أيضاً إنشاء محطة حاويات جديدة في الميناء، ومن المتوقع أن يكتمل إنشاؤها ودخولها حيز التشغيل في 2019. وقد تم تخصيص رصيف تجاري بطول 1600 متر لتطوير محطة الحاويات، ويُتَظَر أن تبلغ طاقتها الإنتاجية 3.5 مليون وحدة مكافئة لعشرين قدماً. وهناك منشآت أخرى، منها منطقة إصلاح السفن الجديدة في حوض جاف، سوف تلعب دوراً كبيراً في تعظيم أهمية ميناء الدقم على صعيد الشحن الإقليمي في إطار جهود السلطنة لتطويره بحيث يصبح معبراً تجارياً متعدد الأغراض على الطراز العالمي.



ميناء صحار يعد مرفأً بحرياً عميقاً وهو منشأة متخصصة في مناولة الشحنات والحاويات والمواد السائلة العامة

فخلال العقدين الماضيين فقط، تم استثمار ما يقرب من مليار دولار أمريكي في تطوير البنية التحتية لميناء صلالة، توجه جزء منها إلى تطوير الرافعات المستخدمة في التعامل مع أكبر الحاويات في العالم، هذا فضلاً عن إجراء أعمال التوسعة الإضافية لضمان تحقيق المزيد من النمو. ومن العام 1999 وحتى العام 2013، حقق عدد الحاويات، التي يتعامل معها الميناء، نمواً هائلاً بلغت نسبته 665 في المائة. هذا إلى جانب هو عدد الشحنات عموماً بشكل مطرد. هذا النمو أخذ في الاستمرار، ففي 2017، أتمت محطة الحاويات بالميناء مناولة 3.94 مليون وحدة مكافئة لعشرين قدماً بعد أن كانت 3.32 مليون وحدة في العام السابق، مسجلة زيادة تبلغ نحو 19 في المائة.

ولا تزال هذه النسبة متواضعة إذا ما قورنت بميناء جبل علي، غير أن ميناء صلالة - بدون أدنى شك - قد نجح في تأصيل مكانته كأحد المراكز التجارية الرئيسية العالمية في دول مجلس التعاون الخليجي. وفي إطار حرصها على مواصلة هذه المسيرة، منحت عُمان الأولوية لأعمال تطوير الموانئ والبنية التحتية في أماكن أخرى.

فميناء الدقم، الذي يقع في وسط شرق عمان، هو ميناء متعدد الأغراض يخضع لأعمال تحديث ضخمة حتى يواكب التوسعات الصناعية التي تجري على قدم وساق في المنطقة. ويشمل ذلك استثمارات مقترحة بقيمة 6 مليارات دولار أمريكي لتطوير مصفاة الدقم، وهو



تعزيز قدرات موانئ السلطنة يهدف إلى جذب الاستثمارات

أداء موانئ عُمان على طريق النمو والازدهار

أيا كانت التوقعات بشأن النمو الاقتصادي العالمي، تواصل الموانئ في دول مجلس التعاون الخليجي النمو والتطور. ويعود الفضل في ذلك إلى موقع المنطقة كبوابة بحرية تربط بين الشرق والغرب، ولطالما كانت الموانئ البحرية بمنطقة الشرق الأوسط ممرات لعبور النفط والغاز. وقد ساعدت في نقل صادرات النفط الخام ومشتقاته ذهاباً وإياباً إلى مختلف أنحاء العالم، غير أن التطور والتعقيد المتزايد الذي طرأ على أسواق دول مجلس التعاون الخليجي قد ألقى أيضاً إلى نمو قطاع الموانئ، وخاصة في سلطنة عُمان.

المنطقة تحظى بتاريخ تجاري يرجع لمئات السنين. يقع الميناء في جنوب غرب عمان، وكان يُنظر إليه - في الأصل - باعتباره بديلاً حيوياً عن ميناء عدن، الذي يعتبر بوابة العبور التاريخية إلى البحر الأحمر وقناة السويس، والذي تضرر نتيجة الاضطرابات التي تشهدها اليمن المجاورة للسلطنة. وجدير بالذكر أن الموقع الاستراتيجي لميناء صلالة، المطل على المحيط الهندي وانتقاه على خطوط الشحن الدولية، يعني تأهله لأداء هذا الدور.

تشمل الخطط طويلة الأجل التي تهدف إلى تحويل حركة المرور بعيداً عن مضيق هرمز المزدهم. ويرجع ما يحدث في عُمان الآن دليلاً على ذلك، إذ تشهد السلطنة بناء موانئ جديدة في صحار والدقم، وحتى صلالة التي تضم ميناء قائماً للحاويات. ولا يمكن اعتبار ميناء صلالة، الذي هو أكبر موانئ السلطنة، جديداً. ومع ذلك فإنه لم يزل مكانته كمركز لتبادل الحاويات وكمعبر إلى آسيا سوى خلال العشرين عاماً الأخيرة، مع العلم بأن

يعد جبل علي - منذ أمد بعيد - واحداً من أكبر موانئ العالم في مناولة الحاويات، وأكبرها على الإطلاق في منطقة الخليج، يليه ميناء الشارقة. ويعكس ذلك مدى مساهمة دولة الإمارات العربية المتحدة في حركة التجارة العالمية. ويخطط ميناء جبل علي - حالياً - لأعمال التوسعة التي تعمل على زيادة قدرة المناولة الإجمالي للميناء إلى 22.1 مليون وحدة مكافئة لعشرين قدماً في 2018. ليس هذا فحسب، فهناك العديد من التحولات البارزة أيضاً، والتي

١٤٨,٧ مليار دولار عطاءات الإنشاءات في دول مجلس التعاون الخليجي عام ٢٠١٨

يشهد الطلب في قطاع الإنشاءات بدول مجلس التعاون الخليجي ارتفاعاً ملحوظاً مدفوعاً بارتفاع أسعار النفط، وزيادة الإنفاق الحكومي. فمن المتوقع أن تبلغ قيمة عطاءات المقاولين في أسواق المنطقة 148,7 مليار دولار أمريكي في 2018، حسب تقرير جديد. وقال أحد المتخصصين في مجال البحوث بشركة «فينتشارز أوسايت» إن الإمارات العربية المتحدة ستظل في الصدارة بلا منازع في إجمالي عطاءات مقاولي الإنشاءات على مستوى دول مجلس التعاون الخليجي في عامنا هذا ونشير التقديرات إلى أنه في 2018 ستكون قيمة عطاءات مقاولات البناء، التي تبلغ 79,1 مليار دولار أمريكي، من نصيب الماني في دول المجلس، تليها مشاريع الطاقة (44,9 مليار دولار أمريكي)، ثم هذا، وسوف تشهد القيمة الإجمالية المتوقعة لعقود مقاولي الإنشاءات في 2018 زيادة طفيفة عن تلك الخاصة بعام 2017 (إذ بلغت 147,8 مليار دولار أمريكي) وفقاً لما ذكرته «فيتشرز». فالمنطقة تشهد ازدهاراً للنشاط الاقتصادي في ظل نمو القطاع غير النفطي، وإجراء الإصلاحات الاقتصادية الواسعة. ومن المتوقع أن يبلغ نصيب دولة الإمارات 33 في المائة (50,4 مليار دولار أمريكي) من إجمالي عطاءات مقاولي الإنشاءات، تليها المملكة العربية السعودية بنسبة 27 في المائة (40 مليار دولار أمريكي)، وسوف يسجل قطاع الماني أكبر نمو من سنة لأخرى. تستحوذ فيه الإمارات أيضاً على النصيب الأكبر. ومن المنتظر أن تبلغ نسبة الزيادة في عطاءات مقاولي إنشاءات الماني، البالغة قيمتها 79,1 مليار دولار أمريكي في دول مجلس التعاون الخليجي، 10 في المائة عن العام السابق، وتبلغ حصة دولة الإمارات من هذا المبلغ 37,3 مليار دولار أمريكي.



د. نام هون كانغ مع محمد جميل الرمحي

«مصدر» وكوريا الجنوبية تبحثان سبل التعاون والاستثمار في مجال الطاقة المتجددة

أعلنت شركة أبوظبي لطاقة المستقبل «مصدر» عن توقيع مذكرة تفاهم مع الوكالة الكورية للطاقة، وذلك بهدف دراسة سبل التعاون والاستثمار في مجال الطاقة المتجددة بين البلدين. وهو حسب مذكرة التفاهم، سوف تعمل «مصدر» والوكالة الكورية للطاقة، على التأسيس لشراكة إستراتيجية، وتشجيع الاستثمار في مجال الطاقة المتجددة في كوريا الجنوبية، هذا إلى جانب تطوير عدد من مشاريع الطاقة المتجددة التي تعتمد على تقنيات الطاقة الشمسية وطاقة الرياح وتخزين الطاقة والطاقة الشمسية العائمة وتحويل النفايات إلى طاقة، وما إلى ذلك.

وقد اتفق الطرفان أيضاً على إمكانية توسيع نطاق التعاون في المستقبل ليشمل تبادل الخبرات في قطاع الطاقة المتجددة، ومجالات أخرى جديدة ذات صلة بقطاع الطاقة؛ تشمل التدقيق في استهلاك الطاقة والشبكات الذكية وتخزين الطاقة وغير ذلك من المجالات ذات الصلة.

وبهذه المناسبة، قال محمد جميل الرمحي، الرئيس التنفيذي لشركة «مصدر»: «إن شراكتنا مع الوكالة الكورية للطاقة تعمل على إتاحة الفرصة لنا لتعزيز شراكتنا مع كوريا الجنوبية، وتسريع وتيرة الاعتماد على الطاقة المتجددة، وتنفيذ مشاريع جديدة في مجال الطاقة لتأمين الطاقة، وكذلك تحفيز الابتكار في مجال تنمية المدن الذكية».

ومن جانبه، قال الدكتور نام هون كانغ، المدير التنفيذي للوكالة الكورية للطاقة: «من دواعي سرورنا عقد هذه الشراكة التي تجمعنا بشركة «مصدر»، والتي ستضع حجر الأساس للتعاون فيما بيننا وتحقيق منافع متبادلة. وسوف تسهم المعارف والخبرات الواسعة، التي تمتلكها كل من «مصدر» والوكالة الكورية للطاقة، في دعم جهود جمهورية كوريا الجنوبية لتحقيق أهدافها المنشودة في مجال الطاقة المتجددة».

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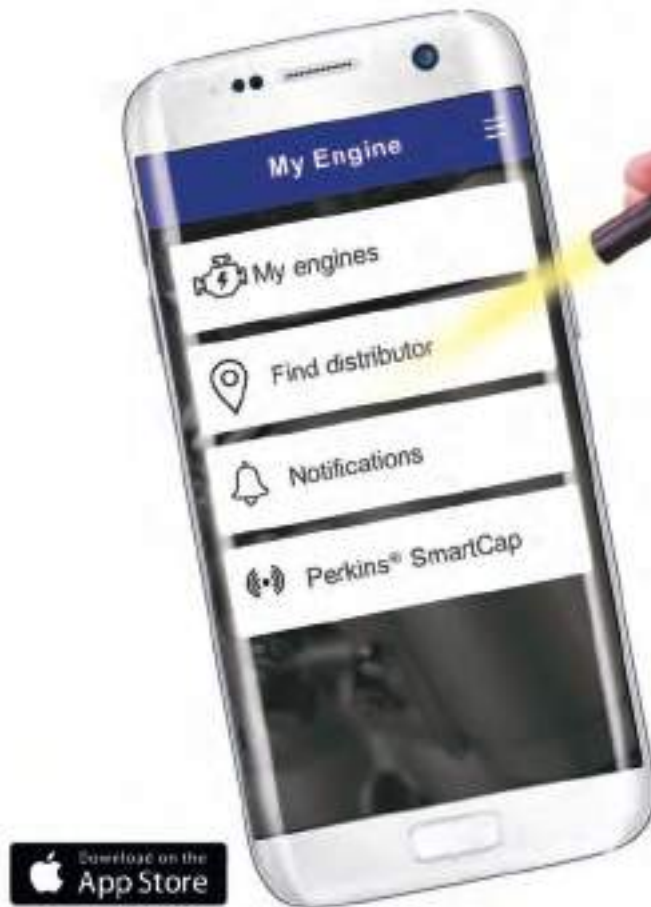
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