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EDITOR'S NOTE

HAPPY NEW YEAR! As the World Future Energy Summit (WFES) celebrated its 10th edition in January 2017, countries such as the UAE and Saudi Arabia again upped their game plan for the renewable energy agenda. This has put solar (p20) and nuclear (p30) power firmly back in the investment spotlight in the region. The GCC is also set to invest US\$252bn over the next five years in setting up new power plants and supply grids across the region, giving delegates even more reason to look forward to this year's Middle East Electricity, the leading annual power showcase in Dubai. Read all about the expected launches and advance news from the show (p42-76). While we're on the subject of investments, Iran continues to intrigue with its potential as a global trade hub and economic powerhouse. The lead analysis (p14) digs deep to provide unique market insight. We also have news and analysis on wastewater (p38) and formwork and scaffolding (p40).

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

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TECHNICAL REVIEW

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

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

Printed by: Buxton Press

Printed in: February 2017

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

Arabic Typesetting: Lunad Publicity, Dubai

© Technical Review Middle East ISSN: 0267-5307

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Briefly

Port of Duqm work to be completed by 2019-end, CEO confirms

ALL MAJOR WORKS at the Port of Duqm will be completed by Q4 2019, paving the way for it to become operational as a full-fledged port by the beginning of 2020. With all major packages awarded in recent months and the award of a contract for a liquid berth expected soon, the port is on track to become a fully-functional facility. The contracts awarded recently include gates, superstructure, remaining work at terminals, port buildings and dredging work. "With the authority awarding several packages for building the port, foreign investors are confident that they will now be connected to the rest of the world. Lately, there has been a growing interest among foreign investors about the port," Reggy Vermeulen, Port of Duqm CEO, told *Times of Oman*. Once the port starts its full-fledged operations sometime at the beginning of 2020, it will have a 2.2-kilometre long commercial berth, a 2.2-kilometre long container berth, a kilometre-long government berth, a liquid berth and a break bulk berth for miscellaneous cargoes.

ENGIE awarded Fadhili independent power project in Saudi Arabia

ENGIE HAS BEEN awarded the contract and has achieved financial closing for the greenfield Fadhili independent power project (IPP) in Saudi Arabia.

Located in the east of Saudi Arabia, 50km northwest of Jubail Industrial City, the Fadhili project is a combined cycled gas power plant with a capacity of 1,507MW. It will produce the equivalent of the electricity consumption of 1.4mn people, according to the company. It will also produce 1,447 tonnes per hour of steam and 768.8 tonnes per hour of feed water. Saudi Electricity Company (SEC) will be the off-taker for electricity and Saudi Aramco for the steam and feed water under 20-year purchase agreements. ENGIE will have a 40 per cent equity ownership in the project company, SEC will hold 30 per cent and Saudi Aramco Power Holding Company (SAPHC), 30 per cent.

Iraq signs mega deals with GE to generate more than 2 GW of power supply

GE HAS SIGNED agreements that will add in excess of 2 GW of power, and secure the delivery of more than 1.75 GW of existing power to Iraq's national grid in order to strengthen the power infrastructure.

GE will set up the Samawa and Dhi Qar Power Plants, adding 1,500MW to the grid. In the first phase of the project, GE will install four 9E gas turbines in simple cycle at each site by 2018. The second phase will entail the combined cycle conversion of the 9E units.

GE is also supplying advanced heat recovery steam generators (HRSGs) and steam turbine technology, as well as serving as the engineering, procurement and construction (EPC) contractor for the projects.

Under Power Up Plan Phase II – a plan with the Iraqi Ministry of Electricity (MoE) for critical electricity generation and maintenance projects throughout the country – GE will add over 580MW to the national grid through upgrade and rehabilitation works at four power plants.

Additionally, under Power Up Plan Phase II, GE will sustain 1.75 GW of existing power generation through the maintenance of 9E turbines across six different power plants in Iraq. The activities will help enhance the reliability and efficiency of Iraq's installed base.

GE has also been working with regional and international institutions to facilitate financing to help Iraq execute these and other projects. Since 2016, GE has helped the country secure US\$2bn in financing for projects in the energy sector leveraging its global sourcing capabilities coupled with its strong lender relationships.



The signing ceremony between Iraqi and GE officials. (Photo: GE)

Musab Al-Mударis, spokesperson for Iraq's Ministry of Electricity, said, "The agreements with GE are another strong statement of our commitment to strengthen the nation's power infrastructure. We are focused on delivering reliable, uninterrupted and efficient electricity supply for both residential and commercial use. The public-private partnership with GE serves as a new business model, where we work with our partners to secure financing and technology, enabling faster project delivery."

The announcement builds on GE's successful delivery of more than 700MW of additional capacity through existing power generation infrastructure to the national grid last year as part of Phase 1 of the Power Up Plan.

Steve Bolze, president & CEO of GE Power, said, "Using GE's expanded portfolio of technologies and solutions, this project will provide more reliable and sustainable electricity to help the country achieve better operations and higher levels of efficiency."

Iran Khodro signs joint venture with Mercedes-Benz

IRAN'S LEADING CAR manufacturer Iran Khodro Company (IKCO) recently signed three joint venture contracts with the German automaker Mercedes-Benz, said a report.

A total of three cooperation deals have been signed between the IKCO and Mercedes-Benz while two more contracts are in the final stage



Iran's automotive industry is the second largest in the country. (Photo: Wikimedia Commons)

of negotiations and will be finalised in the near future, Hashem Yeke Zare, chief executive, IKCO, was quoted as saying in an *Iran Daily News* report, citing *Tasnim News Agency*.

Zare further pointed to a recent contract with France's PSA Peugeot Citroën, adding that the first series of the Peugeot 2008 cars manufactured by IKCO will enter the market in the coming months.

Iran's automotive industry is the second largest in the country after its oil and gas industry, accounting for 10 per cent of the country's gross domestic product, added the report.

The industry is expected to grow significantly after Iran and six world powers in July 2015 reached a conclusion over the text of a comprehensive deal on Tehran's nuclear programme and started implementing the agreement on 16 January 2016.



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Briefly

Kuwait to spend US\$15.6bn on infrastructure in 2017-18

KUWAIT IS SET to spend around US\$15.6bn on infrastructure and other projects in 2017-18 with the private sector contributing 16.9 per cent of the total investment. Kuwait will invest in housing, roads, electricity, ports, airports, telecommunications and renewable energy, according to *Al Anba* newspaper, quoting Khaled Mahdi, secretary general of General Secretariat of Supreme Council for Planning and Development.

The government will contribute 49.3 per cent of the investments, revealed Mahdi. Around 33.8 per cent will be spent by the state-owned oil sector, while 16.9 per cent will be spent by the private sector within a public-private partnership (PPP) programme, Mahdi said.

Among the strategic projects outlined in the development plan are the Sabah Al-Salem University City; Zour refinery; Kuwait Airport expansion, Terminal 2; Sheikh Jaber Al-Ahmad Bridge; South Al Mutlaa City; Sheikh Saad Al Aballah Islamic Centre in Jahra; and Kuwait Centre for rare manuscripts and publications.

Saudi Arabia launches mega Jeddah projects to develop transportation

THE SAUDI ARABIAN government has launched three major infrastructure projects in the port city of Jeddah, including the Corniche Tram, which is parallel to Jeddah's Northern Corniche Road, said a report.

In addition, the government also plans to develop a marine taxi network that will link the Sharm Obhur area with central and northern Jeddah, and a key bridge, which links north Obhur with south Obhur, reported the *Saudi Gazette*.

These public transport projects are vital for the Makkah and Jeddah region, as it provides an easy service to pilgrims and visitors to the Grand Mosque, revealed Prince Khaled Al Faisal, adviser to the Custodian of the Two Holy Mosques and Emir of Makkah. On the Makkah project, Al Faisal said that it will be implemented in two phases – the first will be the year-round metro service for Haj and Umrah pilgrims, and second, a network of fast transport buses.

Expo 2020 Dubai announces contracts worth US\$3bn for 2017

EXPO 2020 DUBAI will award 47 construction contracts worth US\$3bn in 2017 as preparations for the first World Expo in the Middle East, Africa and South Asia continue to gather pace.

A further 98 non-construction contracts totalling more than US\$98mn will also be distributed before the end of the year. These will range from legal advisory services to event management and merchandising.

The construction contracts for 2017, which are open to local, regional and international businesses, include the third and final infrastructure package for the event's support areas, including car parking.

Other key awards for the year ahead include the construction of the three Thematic Districts that will host the majority of the pavilions, as well as the public areas, and the design, development and delivery of all temporary architecture and infrastructure required to stage the event.

The Expo 2020 Dubai eSourcing Portal includes details of upcoming tender opportunities, as well as announcing contracts already awarded. These range from smaller contracts to larger, multi-billion dollar opportunities.

The procurement process, from initial registration on the portal to tender participation, has been based on three key principles: transparency, simplicity and inclusivity.

A meeting led by HH Reem Al Hashimy, UAE Minister of State for International Cooperation and Director General, Dubai Expo 2020 Bureau, reviewed Expo procurement to date, and discussed tenders to be awarded in the months ahead.

The meeting was also attended by Expo 2020



The aerial view of Expo 2020 Dubai site as on 15 September 2016. (Photo: Expo 2020 Dubai)

Dubai Higher Committee members, Hussain Nasser Lootah, director general of Dubai Municipality, and Khalifa Al Zaffin, executive chairman of Dubai Aviation City Corporation (DACC), as well as members of the Expo 2020 Dubai Real Estate & Delivery and Procurement Departments.

Ahmed Al Khatib, vice-president of Real Estate & Delivery, Expo 2020 Dubai, said, "While 2016 was an important year for design, 2017 is when the momentum of construction will really build, ahead of international participants beginning work on their pavilions in 2018."

Early works on site are now complete, with more than 4.7mn cu/m of earth moved. The first infrastructure contract, covering the deep infrastructure of the non-gated Expo area, including the Expo Village, was awarded to Tristar Engineering and Construction in July 2016.

More than 12,000 suppliers and vendors from 121 countries are currently registered on the portal, of which 66 per cent are classified as SMEs.

In 2016, Expo 2020 Dubai awarded over 1,200 contracts, investing more than US\$544.5mn in the economy.

GCC aluminium production hits 5.2mn tonnes in 2016

THE FIVE PRIMARY aluminium producers of the GCC region — EGA (UAE), Alba (Bahrain), Ma'aden Aluminium (KSA), Qatalum (Qatar) and Sohar Aluminium (Oman) — collectively produced 5,229,115 tonnes of primary aluminium in 2016.

"During 2016, the GCC aluminium smelting and downstream sectors were going through disciplined productivity improvement and value creation initiatives, while maintaining key competitive advantage of having the most sophisticated facilities to produce a variety of value added products for local and international markets. At the same time, it has preserved its leadership position of high environmental standards, compared to the rest of the world," said Mahmood Daylami, secretary general of Gulf Aluminium Council (GAC).

GCC aluminium production constitutes 10 per cent of total world production and is considered one of the key economic drivers for the region. Around 40 per cent of total production is utilised by downstream aluminium industries in the GCC and 60 per cent exported to different parts of the world. The GCC remains one of the leading regions for aluminium production with higher environmental standards compared to the rest of the world, according to reports.



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EXECUTIVES' CALENDAR 2017

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12-14	Saudi Water & Electricity Forum	RIYADH	www.saudiwaterenvironment.com
14-16	Middle East Electricity	DUBAI	www.middleeastelectricity.com
14-16	Solar Middle East	DUBAI	www.solarmiddleeast.ae

MARCH 2017

6-8	Kuwait Build Exhibition & Conference	KUWAIT CITY	www.kuwaitbuild.com
6-9	Buildex	DAMMAM	www.buildex-sa.com
7-8	Middle East Rail	DUBAI	www.terrapinn.com/exhibition/middle-east-rail
7-11	CONEXPO-CON/AGG	LAS VEGAS	www.conexpoconagg.com
13-16	The Big Show Oman	MUSCAT	www.thebigshow-oman.com
26-28	PowerGen Middle East	ABU DHABI	www.power-gen-middleeast.com
27-30	The Big 5 Saudi	JEDDAH	www.thebig5saudi.com

APRIL 2017

4-6	GCC Environment Forum	JEDDAH	www.gccenvironmentforum.com
25-26	MENA New Energy	DUBAI	events.newenergyupdate.com/mena/

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

ON THE WEB

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

Siemens and Strata to develop 3D-printed aircraft parts for Etihad

SIEMENS AG, STRATA Manufacturing PJSC and Etihad Airways have announced partnership to develop first 3D-printed parts for Etihad Airways' aircraft interiors in the MENA region.

According to the companies, the partnership aims to revolutionise the aerospace industry, leveraging additive manufacturing – 3D printing – to help airlines improve their designs, including making complex parts on demand and manufacturing discontinued parts.

www.technicalreview.me/manufacturing



Badr Sultan Al-Olama, CEO of Strata, and Assem Khalaili, executive vice-president, Industry Customer Services, Siemens Middle East, at the signing ceremony. (Photo: Siemens)

ABB installs 315 kW solar plant at its Dubai office

SAEED MOHAMMED AL Tayer, MD & CEO of Dubai Electricity and Water Authority (DEWA), has inaugurated ABB's new 315 kW solar power plant in Dubai, one of the largest of its kind in the region. The plant is located in the ABB offices in the Al Quoz industrial area and will produce electricity using solar energy. The inauguration was attended by Frank Duggan, president of Asia, Middle East and Africa (AMEA), and member of the Group Executive Committee; Gianandrea Bruzzone, electrification division manager for Middle East and Africa at ABB; Waleed Salman, executive vice-president, strategy & business development at DEWA; and Yousef Al Akraf, executive vice-president, DEWA, besides other ABB and DEWA staff.

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Iran: Land of rising opportunities

In this first part of a two-part feature* on Iran's economy, economist Moin Siddiqi looks into the country's emergence as a global economic powerhouse.

According to recent reports, Iran attracted US\$11.8bn in FDI during the 12 months up to December 21. (Photo: Borna_Mirahmadian/Shutterstock)

The lifting of global sanctions has reopened the country to a stream of investments across a range of industries including financial services, consumer electronics and renewable energy.

The reintegration of Iran into international trade and financial systems bodes well for businesses in the Middle East. Global financial institutions describe Iran as one of the most promising economies of the 21st century, possibly the 'next China'. Even with sanctions, Iran ranked among the world's 20th largest economies on a purchasing power parity basis at US\$1.36 trillion in 2015 (World Bank estimate). Its challenges are fostering conditions for sustained robust growth and attracting much-needed foreign direct investment (FDI) in a big economy.

Iran, emerging from years of geopolitical isolation, boasts solid potentials; chiefly abundant and mostly [untapped] resources, a young, tech-savvy/urbanised population, skilled workforce and an extensive industrial base and services sectors, coupled with a strategic location connecting the Middle East, Europe and South Asia. Despite sanctions, the country's infrastructure is relatively developed in the areas of

telecoms, power and transport. Today, Iran is a leading developing country in cutting-edge sciences such as stem cell research and nanotechnology.

Iran is more diversified than peer energy-rich countries with its non-oil sector representing over 70 per cent of GDP. The economy rebounded strongly last year as oil-exports reached pre-sanction levels, whilst increased activity in agriculture, auto production, trade and transport services led the recovery in non-oil sector. The International Monetary Fund predicts real GDP growth at 6.6 per cent in FY2016/17. In February 2016, Iran's access to the Society for the Worldwide Interbank Financial Telecommunications (SWIFT) system was restored. This has improved general trading conditions, while lowering cross-border transaction costs.

National Agenda

Key priorities of the sixth five-year development plan (2016-21) are developing

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a resilient economy and reducing state intervention as well as enacting institutional/transformational business reforms, including within the banking sector. It envisages attracting US\$50bn/year in private investment to meet an ambitious eight per cent GDP growth target. In the longer term, Tehran aims to create investment opportunities of US\$1.5 trillion between 2016 and 2025 for domestic and foreign investors.

In line with 'Vision 2025', significant funding is required for upgrading several economic activities, thereby enabling Iran to compete with global peers across the industry. These include petrochemicals, steel, copper mining, pharmaceuticals, telecoms, aviation, energy, tourism and information and communication technology. More specifically, strategic objectives have been unveiled for sustainable development. These include productivity enhancement through the adoption of advanced technologies; a focus on innovation-driven manufacturing; diversification from upstream oil and gas to high value-adding downstream segments; and the establishment of joint-venture manufacturing plants to lower export costs.

The post-sanction era provides real opportunities for market developments, inward investments and, for Iranian professionals to exchange ideas more easily across the globe. FDI is beneficial to emerging Iran in terms of access to new technology,

global best practices, and in helping expand production facilities and marketing networks.

The government plans to incrementally increase its net investment in manufacturing. This focus on industrialisation presents openings for foreign firms to participate in Iran's ongoing transformation, whether through investing in the manufacturing of petrochemical products, steel, automobiles and consumer goods, or by providing services related to technology, output process enhancement (i.e. value-added activities) and the financial sector.

FDI Entities

The lifting of global sanctions has reopened the country to a stream of investments across a range of industries including financial services, consumer electronics and renewable energy. London-based fDi Markets observed a surge in greenfield investment during Q1 2016 with 22 FDI

projects, creating 5,376 jobs, with capital expenditure (Capex) of US\$3.49bn. In contrast, Iran in 2013 attracted just three projects (Capex of US\$79mn). The primary investing countries were South Korea and Germany, which together had a Capex of US\$2.15bn.

Interest from European companies has grown exponentially over the past year. The Airbus Group has signed a US\$18bn contract with Iran Air to sell 100 planes. It also includes pilot training, airport operations and air traffic management. German truck-maker Daimler AG has preliminary agreements with Khodro Co. (Iran's biggest automaker). Daimler believes that it could sell 40,000 trucks a year. Peugeot-Citroen is due to produce 200,000 cars a year under a US\$430mn deal with Khodro Co. starting in 2017. Steel firm Danieli (Italy) signed an agreement worth US\$6bn to supply heavy machinery. Iran is also engaging with Italian ship-maker Fincantieri SpA and power engineering firm Ansaldo Energia SpA. French state-owned railway Co. SNCF has an agreement with its Iranian counterpart. Saipem, a subsidiary of Italian energy major Eni, has signed an MoU with the Persian Oil & Gas Co, among other reported deals.

Outside the hydrocarbons sector, petrochemicals and mining offer tremendous investment possibilities – where 80 per cent of taxable income is exempted for a four-year term. Iran possesses 68 types of minerals and 60bn tonnes of mineral reserves (seven per cent of the global total). It aims to produce over 60mn tonnes of steel, 1.5mn tonnes of aluminium, 800,000 tonnes of copper, and other minerals by 2025. But the sector's under-development requires US\$30bn to US\$50bn of investment over the medium-term.

The petrochemical industry – mostly in private or semi-private hands – produces around 60mn tonnes per year, generating annual revenue of US\$20bn. Many of these companies have previously received financing or entered into partnerships with

The economy rebounded strongly last year as oil exports reached pre-sanction levels, whilst increased activity in agriculture, auto production, trade and transport services led the recovery in non-oil sector.

The Airbus Group has signed a US\$18bn contract with Iran Air to sell 100 planes. (Photo: vaalaa/Shutterstock)



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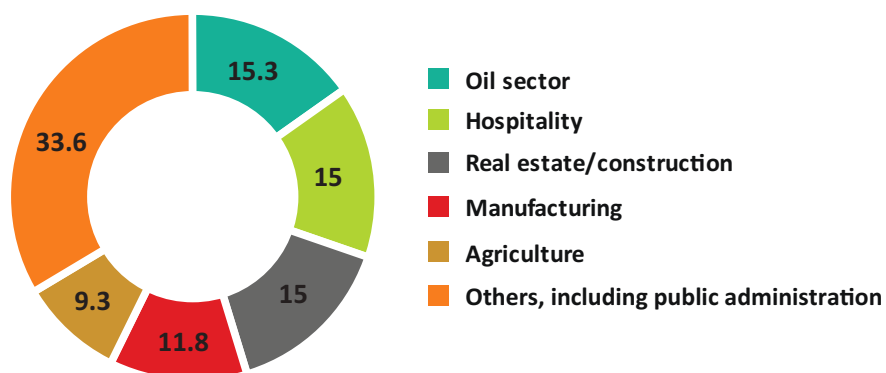
Selective macroeconomic indicators, 2015/16-2019/20

	Projections				
	2015/16	2016/17	2017/18	2018/19	2019/20
Real GDP growth /	0.0	6.6	4.0	4.1	4.4
CPI inflation //	15.1	11.5	8.3	6.3	5.0
Domestic investment (%) of GDP	30.9	31.3	31.1	30.9	30.8
Exports ~	67,185	81,990	94,841	102,021	107,111
o/w: Non-energy exports (%) of total	47.4	40.7	37.0	36.0	36.0
Imports ~	59,230	67,541	74,074	78,546	82,477
Trade surplus ~	7,955	14,449	20,767	23,475	24,634
Gross official assets/reserves ~	128,940	142,096	159,898	179,310	198,194
External debt (%) of GDP	2.5	2.6	3.0	3.3	3.7

/ Annual per cent change; // Annual average; ~ US\$ million; * Incl. frozen assets
The Iranian fiscal year ends March 20.

Source: IMF estimates & projections

Composition of GDP, 2014-15 (per cent of total)



Main Exports: Oil, Refined products, Natural gas, Petrochemicals, Cement.

Main Imports: Iron & Steel, Chemicals, Machinery, Transport vehicles.

global firms. An estimated US\$80bn is needed over the next decade to expand petrochemicals capacity, much of which could derive from foreign investors. Cheap, abundant energy gives Iran a competitive edge in the production of metals and other industrial goods. The country sits on the largest gas reserves (ahead of Russia).

A resurgent Iran could trigger a regional economic boom (assuming good relations with Mideast Gulf monarchies). Tehran has a vision to attract US\$1.3 trillion of capital inflows by 2025. The first tranche of investment will target infrastructure, and GCC states, particularly the UAE and Saudi Arabia, with their well-developed construction and real estate industries, standing to gain. Required oil and gas related investment could total US\$300bn. The whole of the GCC could benefit, whether engaging the Iranian investment opportunity or not, simply by creating a lower risk premium for corporate and sovereign debt markets in post-sanction capital markets.

Challenges and Risks

Iran is on the road to a much higher growth trajectory, with renewed appetite for doing business with Western players. For the recovery to be sustained, radical structural reforms are needed in areas of liberalisation and privatisation to foster a level playing field for all investors, in addition to addressing macroeconomic issues. The reformist government needs time to help Iranian companies re-connect within the global financial and trade system. Opportunities for service/technology providers and resource investors to establish joint ventures are vast in Iran.

Note of Caution

In-depth due diligence and risk management for future FDI projects are advisable for prospective investors. The World Bank ranked Iran [120] out of [190] economies in its "Ease of Doing Business" report in 2016. Foreign companies should also ensure that their business collaboration with Iranian entities are not

FACT FILE

Area: 636,368 miles (world's 18th largest country).

Population: 79.11mn (2015) – second-largest in Middle East (after Egypt).

Gross Domestic Product: US\$397bn (2015) – second-biggest region's economy (behind Saudi Arabia).

GDP Per Capita: US\$6,019 (2016) – upper middle-income category.

National Currency: The Rial – currently two forex rates co-exist: the market rate and official rate (controlled by the Central Bank of Iran).

Natural Resources: Crude oil (157.8bn barrels); Natural gas (34 trillion cu/m); Iron ore (2.7bn tonnes); Copper (two billion tonnes); Zinc (300mn tonnes).

Heavy Industry: Petrochemicals, Automobiles, Manufactured metals (Steel), Cement and Mining.

Legal System: Based on Sharia principles with elements from the French commercial code and company law.

FDI Inward Stock: US\$45.1bn (2015).

FDI Net Inflows: US\$19.8bn (2010-15).

FDI regime is governed by the 2002 Foreign Investment Promotion and Protection Act (FIPPA). This grants permission for 100 per cent equity in most sectors (e.g. agriculture, transportation, energy supply, water and communications) and unlimited transfer of capital and dividends.

Basic Infrastructure: Paved roads (199,000km); Rail network (10,000km).

Power Generation Capacity: 74 GW; Telecoms – Fixed-line (30.2mn), Mobile phones (69.8mn) and Broadband (50mn).

on the 'SDN List' of Specially Designated Nationals or Blocked Persons, which is maintained by the US Department of the Treasury's Office of Foreign Assets Control. Thus far, European Union and USA sanctions are intact for companies owned, directly or indirectly, by the Islamic Revolutionary Guard Corps (IRGC), which controls large parts of Iran's economy. ■

– By Moin Siddiqi, economist

*The next issue will examine Iran's infrastructure development programme

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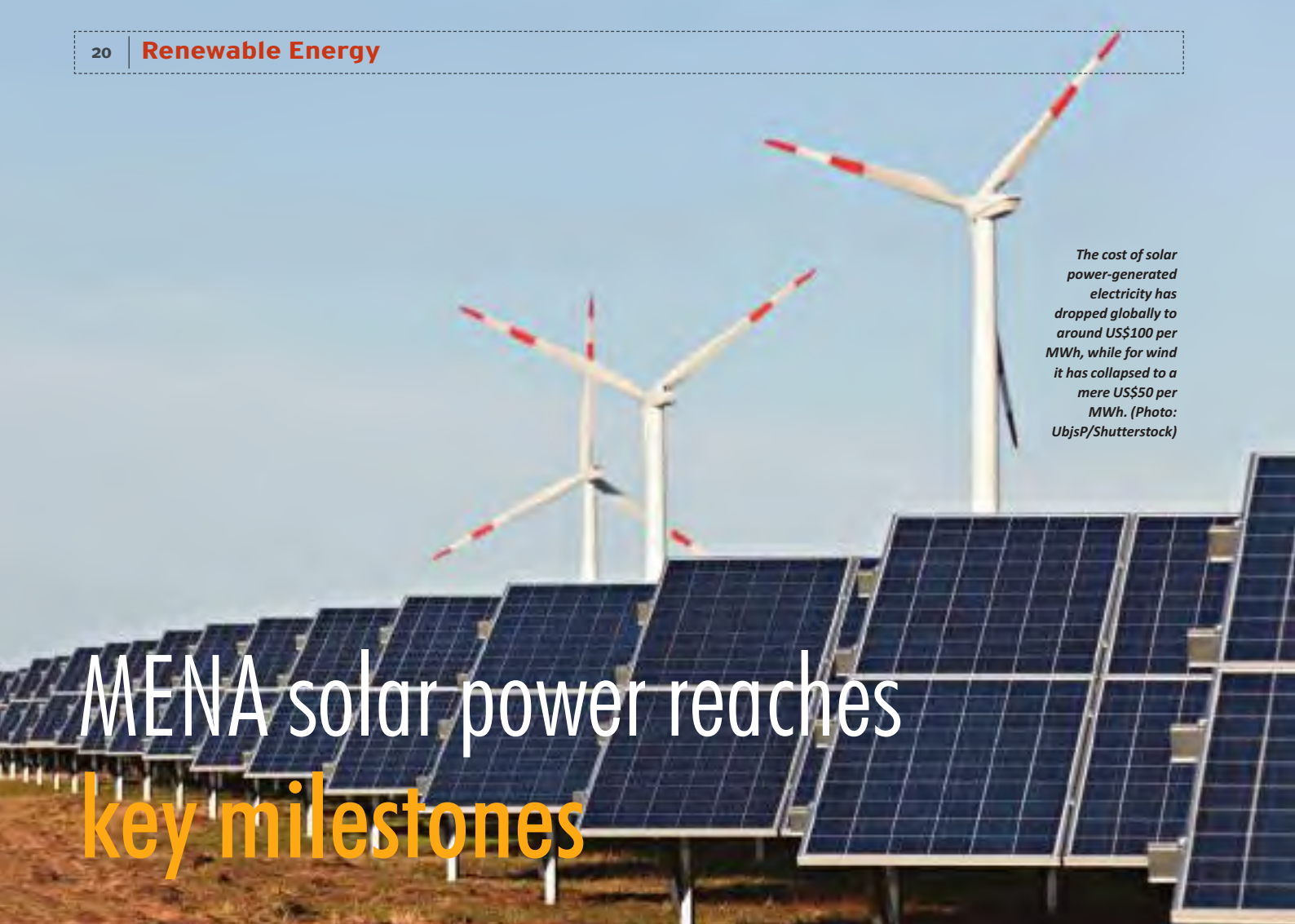
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The cost of solar power-generated electricity has dropped globally to around US\$100 per MWh, while for wind it has collapsed to a mere US\$50 per MWh. (Photo: UbjsP/Shutterstock)

MENA solar power reaches key milestones

Technological advancements are surely pushing the region's renewables sector in the right direction. The question now is, will MENA be the next leader? Nnamdi Anyadike explores the possibilities.

The region is already setting the agenda for utility scale projects, with bids for projects in the UAE dropping below US\$3 per kWh during 2016.

THE GROWTH OF solar and wind power worldwide has now reached a tipping point. Latest data from the influential World Economic Forum (WEF) foundation shows that in more than 30 countries, solar and wind power is now either the same price or indeed cheaper than new fossil fuel capacity. Ten years ago, the cost of solar power-generated electricity was about US\$600 per megawatt per hour (MWh). By comparison, the cost of coal and natural gas-generated power was just US\$100 per MWh. Today, however, the cost of solar power generated electricity has dropped globally to around US\$100 per MWh, while for wind it has collapsed to a mere US\$50 per MWh.

Even more impressive has been the drop in solar power prices in the Gulf. In 2016, the Dubai Electricity & Water Authority (DEWA) managed to secure a record breaking bid of US\$2.99¢/kWh for the expansion of the Mohammed bin Rashid Al

Maktoum Solar Park. This was the lowest solar price bid in history when it was signed in May. But it was followed in September by an even lower bid of US\$2.42¢/kWh for a solar PV project planned for the town of Swaihan, Abu Dhabi.

Yet, despite these successes – and the fact that the Middle East and North Africa (MENA) region straddles some of the most arid latitudes of the world – the region has lagged behind similar sun drenched areas like California and Australia in its implementation of solar power. Now though MENA is catching up fast. Saudi Arabia recently announced its Vision 2030 programme to boost domestic renewable energy and help satisfy its growing energy consumption, which is set to increase three-fold by 2030. A target of 9.5GW has been set, supported by the development of large-scale solar power plants.

Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the



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STAND S3 A50

UAE and Ruler of Dubai, has announced plans to invest a whopping US\$163bn in renewable energy projects. The aim is to eventually generate almost half the country's power needs from renewable sources. Some substantial strides have already been made in this direction. In 2013, the world's largest concentrated solar power plant – Shams 1 – was opened in Abu Dhabi. It has the capacity to provide electricity to 20,000 homes. And last year, Dubai announced plans to build a 1,000MW solar power plant by 2030. By then, it hopes to have achieved its target of reaching 25 per cent electricity generation from renewable energies.

Jordan has announced several renewable energy projects with a total capacity of

If the world more than doubles its renewable energy share to over 50 per cent by 2030, then global GDP would increase by US\$1.3 trillion, according to IRENA.

Morocco has an even more ambitious clean energy target. A partnership between the government and the private sector is building what will be the largest solar plant in the world in the desert outside Ouarzazate. The US\$3.9bn plant is expected to produce enough electricity to power more than a million homes when it's completed in 2018. By then, the country will

today's solar inverters are about 98 per cent efficient, a silicon carbide inverter allows an additional one per cent in power conversion efficiency. At first look, this may not seem like much, but if a 100MW solar plant was just one per cent more efficient, this would result in approximately US\$2.5mn more power being produced over the plant's lifetime," Majzoub said.

However, more still needs to be done with regards to technology, to reduce costs further. There is the option of reducing cost through improvements to the PV system's DC voltage capacity. Already, there has been the successful move from 600VDC to 1,000VDC voltage capacity. And today, developments at GE have created a shift towards 1,500VDC architecture. This is widely seen as the next natural step in the evolution of utility scale PV power plants. "By increasing the voltage level, the inverter has higher power density and decreased system losses that balance with plant costs. It can help reduce up to three per cent system cost and save up to 15 per cent inverter operating expenses," added Majzoub.

Another option for boosting renewables, according to a Booz Allen Hamilton report, is the deployment of 'smart grids'. The US management consulting firm says streamlining utilities services will open up new opportunities for renewable energy production and storage. Kuwait's Ministry of Electricity and Water (MEW) has already announced a plan to replace old meters with 'smart' meters. And Dr Walid Fayad, executive vice-president at Booz Allen Hamilton MENA, stated, "Increasingly, we are seeing that MENA utility companies are becoming open to employing smart grid technologies. Smart grids provide an opportunity for the region to modernise its infrastructure and lay the foundations for renewable energy development."

Even with the impressive advances that have been made, many states in MENA are only just scratching the surface of their potential. By the end of this decade, however, the region may well be transformed into a world leader in renewable energy. ■



The MENA countries are developing utility-scale solar power sources to save domestically produced oil and gas for higher yields as exports. (Photo: Troy Williams/Flickr)

1,800MW. They are expected to be connected to its national power grid by the end of 2018. Private firms have already built 12 solar plants and are in the process of building at least seven more. Together, they form the largest collection of privately owned power plants in the region.

The impetus behind the MENA region's drive towards renewable energy is twofold. The bid to cut costs and carbon emissions is playing a key role. However, at least as important is the recognition by regional governments that MENA's energy consumption is rising fast. The MENA region is already one of the world's biggest energy consumers and, according to the Oxford Institute for Energy Studies, is forecast to account for the largest proportion of global energy consumption growth until the 2030s. In North Africa, Egypt plans to raise its share of renewable energy to 20 per cent by 2022.

be on track to have 42 per cent of its installed energy capacity from renewable sources by 2020.

GE is one of the companies at the forefront of developing solar power across the region. Hani Majzoub, leader of GE's Power Conversion and Renewables Sales Segment in the MENAT (MENA plus Turkey) region, says the company is developing technological solutions to enable it to deal with the challenges of installing solar power equipment in remote desert conditions. The MENA region has up to nine hours a day of sunlight year-round and temperatures of up to 53°C, which can cause equipment failures.

One GE innovation is the liquid cooling of inverters through the use of silicon. GE has developed a range of carbide solar inverters from a synthetically produced crystalline compound of silicon and carbon. "Whereas

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VISA SPA IS set to officially unveil a series of new products at Middle East Electricity (MEE) 2017 at Dubai World Trade Centre from 14-16 February.

Visa SpA provides energy solutions in more than 80 countries, exporting 90 per cent of its production and focusing its attention on the ever-changing demands of a global market. With a background of more than half a century in the design and manufacture of diesel generators, the company offers a comprehensive range of technologies.

With generators ranging from 9 kVA to 2,500 kVA, Visa SpA solutions offer high quality and reliability and can be tailored to a host of different situations. Every year, nearly 5,000 generators roll off the production lines at the company's modern new factory in Fontanelle, near Venice, in northeastern Italy.

Visa SpA has prioritised investment in product research and development, as well as focused on improving the vertical manufacturing process, and indeed, these two elements have become standard practice for the company.

Currently, Visa SpA is working on a number of major projects, that will be announced during the show. Some of the details regarding these new products include:

- The AirFOX range: A series of air-cooled machines equipped with Deutz engines, adaptable to all environmental conditions. It can also be integrated with renewable energy sources.
- The LPG range: A flexible and versatile new series of gas engine generating sets, created in partnership with leading manufacturer Perkins Engines, in order to respond to the demand for cleaner, more reliable power, with guaranteed low costs and continuous power generation. This kind of generator has proved a big success in areas where carbon-emissions and noise are a factor, in addition to cost.
- Dry Prime Motorpump range: Building on the significant specialist knowledge acquired through the company's lengthy



The new Visa SpA factory in Fontanelle, Italy. (Photo: Visa SpA)

experience in production diversification, Visa SpA is currently focusing its attention on construction equipment for dewatering and sewage, offering a complete series of dry prime pumps. This range represents the perfect mobile solution for transporting or draining water with abrasive solids in suspension, and can be used across a range of applications, such as construction and mine sites.

- The Hybrid Power Module and Hybrid Battery Module: Two innovative solutions officially presented during the recent November edition of Africom, the largest and most influential Africa-focused tech event in the world, will once again be showcased in Dubai, with a new range of features for this ground-breaking hybrid technology. In the Hybrid Smart Power System, the DC genset is connected to the battery module, creating a DC hybrid system that can be integrated with renewable energy sources. In addition to the PMG DCs application recently presented, visitors to MEE this year will also be able to see the PMG DCc version.

Besides these, Visa SpA will also be introducing two units from the widely-recognised VM range, for the construction and rental sectors.

All Onis Visa products can be easily integrated with renewable energy sources, and can play an active role in any smart grid system.

Developing and innovating across all product ranges, the Visa SpA team of engineers work alongside distributors and clients, learning from the real experts who use the gensets every day, and who are capable of identifying the various demands of a constantly-evolving market.

Each Onis Visa generator set comes with the full support of highly-qualified technicians, who accompany customers through all stages of the project, from early drafts and initial designs right through to manufacturing, installation and commissioning. ■

To find out more, visit their website at www.visa.it

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Masdar CEO, Mohamed Jameel Al Ramahi, is optimistic about UAE's renewable energy future.

Leading the UAE in sustainable energy

Mohamed Jameel Al Ramahi, CEO of Masdar, shares his views on the future for renewable energy, and Masdar's role in sustainable energy development.

“Investment in technical innovation is a key component in accelerating the adoption of renewable energy.”

Technical Review Middle East (TRME): What is your view on the global outlook for renewable energy?

Mohamed Jameel Al Ramahi (MJAR): Firstly, I would like to emphasise that we are proud that Masdar has been a first mover in the adoption of renewable energy and clean technologies, particularly in the Arab world, over the last 10 years. In the next decade, we aim to reinforce our position as a market leader.

The business case for renewable energy and clean technologies is stronger than ever. More than US\$200bn per year has been invested over the last three years in the renewables sector – and this investment took place at a time of low oil prices. Emerging markets will be a key driver of the sector's continued expansion, because they are where energy demand is growing the fastest.

Research indicates that solar power is

becoming the cheapest form of new electricity, especially in those emerging markets that aren't competing with existing large-scale conventional power plants. Today, the world is adding more capacity for clean energy each year than for coal and natural gas combined.

The GCC countries are expected to increase their installed solar capacity fifty-fold between 2015 and 2025. The UAE raised its clean energy target to 50 per cent by 2050 on the eve of this year's Abu Dhabi Sustainability Week (ADSW). Saudi Arabia alone has announced plans for an additional 9.5 GW of renewable energy by 2030. Outside the GCC, India is targeting 175 GW by 2022, including 100 GW of solar. And Morocco is targeting 42 per cent clean energy by 2020 and 52 per cent by 2030.

The fact that these goals are so ambitious illustrates the growth potential of the renewable energy sector.

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What will be Masdar's focus in 2017?

MJAR: Masdar will continue the development and deployment of renewable energy projects in our home market, the wider MENA region and strategic international markets – with a focus on solar and wind energy. A Masdar-led consortium is developing Phase 3 of the Mohammed Bin Rashid Al Maktoum Solar Park in Dubai, which will break ground this year. At 800 megawatts, this will be the largest single-site solar park in the world. Our second large-scale offshore wind farm in the UK, Dudgeon, will also come on stream this year. And in November, we unveiled a landmark carbon capture utilisation and storage (CCUS) project in partnership with Abu Dhabi National Oil Company (ADNOC). Al Reyadah will mitigate an estimated 800,000 metric tonnes of carbon dioxide per year. So our operations are well-diversified, geographically and technologically speaking, and this is obviously a strength as we pursue future commercial opportunities.

Aside from expanding our clean energy portfolio, we will continue to ramp up development of Masdar City, Abu Dhabi's flagship sustainable urban development, with the construction of new residential property, office space, hospitality and commercial real estate. Agreements for 400,000 sq m of new sustainable real estate development were either signed or approved last year alone, evidence of the impressive progress Masdar City is making.

“The combined value of renewable energy projects around the world in which Masdar is an investor is US\$8.5bn; Masdar's share is US\$2.7bn.”

What are the key factors needed to create an enabling environment for the development of renewable energy?

MJAR: There are a number of basic questions that any renewable energy developer or investor would normally ask. Is the technology proven? Is the project bankable? And are the necessary regulatory safeguards in place now and throughout the life of the project?

Over the last decade, Masdar has advanced clean-tech innovation through the early adoption of new technologies at scale. Shams 1 in Abu Dhabi was the largest concentrated solar power plant in the world at the time of its inauguration in 2013. The Gemasolar thermal power plant in southern Spain was the first plant to generate electricity 24 hours

a day using molten salt storage. Masdar is participating in a pilot project with international partners to study more energy-efficient seawater desalination technologies as alternatives to thermal desalination techniques widely used in the Gulf.

Investment in technical innovation is, therefore, a key component of accelerating the adoption of renewable energy. And that is why our relationship with the Masdar Institute of Science and Technology, our core tenant of Masdar City and the first graduate-level university in the world specialising in advanced energy and sustainable technologies, is so important. Since its inception, the Institute has obtained 14 full US patents, published 1,500 articles in peer-reviewed journals, made more than 140 invention disclosures, and facilitated a number of technology-based start-ups. We partner with the Masdar Institute in around a dozen demonstration projects at Masdar City. Such collaboration is contributing towards the long-term development of commercially viable clean technologies.

In the UAE, and other parts of the Middle East, public-private partnerships – where the independent developer and the government are both shareholders in the project – have helped to attract investment and enable the development of large-scale clean energy plants.

In the case of the Mohammed Bin Rashid Al Maktoum Solar Park in Dubai, having a reliable electricity customer in place – state-

Located in western Abu Dhabi, Shams 1 is the largest renewable energy project in operation in the Middle East and is a project majority-owned by Masdar in partnership with French oil and gas company Total.



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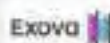
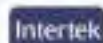
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backed off-taker and co-investor Dubai Electricity & Water Authority (DEWA) – has allowed the project's bidders to propose extremely competitive tariffs. A transparent tendering process has also given investors greater confidence to accept risk.

In terms of the UAE's performance, the country has long been recognised as a hub for business and investment, and it has been extremely vocal and proactive in its support of renewable energy development. It was one of the first countries in the MENA region to announce a formal clean energy target, which it raised to 27 per cent by 2021 during COP22.

Investment conditions in other countries are not necessarily as stable due to a range of factors, including regulatory changes, currency fluctuations, lack of transparency, limitations to the scope of the off-take agreements, or the complexity of the asset under development, such as the need to fund publicly owned infrastructure besides the power plant itself.

The track record of companies, including Masdar, in renewable energy investment over the last 10 years has demonstrated the importance of scale and operational experience. The combined value of

renewable energy projects around the world in which Masdar is an investor is US\$8.5bn; Masdar's share is US\$2.7bn. The gross capacity of these projects is 2.7 GW.

TRME: How can government and business work together to implement the Paris climate agreement?

MJAR: As we all know, 195 countries adopted the first potentially legally binding climate agreement at COP21 in Paris, the aim of which is to limit global warming to below 2°C. The UAE was the first Gulf country to ratify the agreement. At Masdar, we are fully committed to strengthening the role renewable energy plays in the energy mix in the UAE and around the world.

In order to deliver on the Paris Agreement, we need to significantly scale up renewable energy financing. Much of that investment will go to developing countries where the demand for energy is growing the fastest. The willingness of MENA countries to drive large-scale renewable energy investment is a positive sign.

There are a number of areas in which government and business can work more closely. As explained, the public-private

partnership model has incentivised major clean energy projects in the UAE at increasingly competitive prices. The Masdar-led consortium appointed to develop Phase 3 of the Dubai Solar Park quoted a record-low tariff for solar power generation of US\$2.99 per kilowatt-hour. That was a game-changing moment for both Masdar and the wider renewable energy sector – and was a byproduct of effective government-business partnership.

Local and international banks need to show commitment to the renewable energy sector as lenders, and developers like Masdar need to encourage such lending by delivering projects on time and to budget. Governments also need to ensure there is a level playing field for the renewable energy sector. Historically, in the Gulf region, energy and water subsidies have been as much as 10 per cent of GDP. In recent years, these subsidies have been rolled back. This trend must continue.

Today, there is widespread acceptance that government and business need to be doing more to mitigate climate change and advance renewable energy development. Interestingly, a global survey of youth attitudes towards renewable energy, sustainable development and climate change, which Masdar commissioned last year to mark its 10th anniversary, found that 81 per cent of 18-25 year-olds – the demographic cohort known as Generation Z – believe that government and the private sector share an equal responsibility to combat climate change. ■

“Today, there is widespread acceptance that government and business need to be doing more to mitigate climate change and advance renewable energy development.”



The UAE raised its clean energy target to 50 per cent by 2050 on the eve of this year's Abu Dhabi Sustainability Week that took place from January 16-19.

Rising power demand in the Middle East countries and the pressure to reduce carbon emissions will remain a persuasive driver for nuclear power development. (Photo: gc85/sxc.hu)

UAE powers ahead on Middle East nuclear road

With the region looking to fulfil its energy needs with alternate sources, the nuclear option doesn't seem to lag too far behind. In fact, nuclear energy is one of the most sought-after options for the energy mix. Lynda Davies validates the point.

Over the next 10 years, Middle East will see a modest 6 GW build up in nuclear power generation, according to an IEA forecast.

IN THE FACE of rapidly rising electricity demand, a number of Middle East countries are looking to add nuclear power to energy mix as they seek to improve their energy security and reduce reliance on fossil fuels and cut carbon emissions. But progress is mixed. To date, the UAE is the only country among Arab nations to start a nuclear power building programme. While Jordan's and Egypt's nuclear plans are at an advanced stage, the former is struggling to secure project finance. Kuwait, last year, is said to have scrapped its plan to build a nuclear power plant, citing cost concerns.

At the centre of the UAE's nuclear power programme is the Barakah NPP in the western region of Abu Dhabi. Barakah's first 1,400MW capacity reactor could begin operating as early as May this year after the Emirates' Federal Authority for Nuclear Regulation (FANR) issued licences last

December for the transportation of unirradiated nuclear fuel to the plant and for the handling and storage of nuclear fuel at the site. Sources, citing FANR, say the first nuclear fuel cargo could be shipped from South Korea in the coming weeks. However, the Barakah NPP still awaits approval of a FANR licence to operate in order for the nuclear fuel to be loaded into the first reactor.

The project's promoter, state-run Emirates Nuclear Energy Corporation (ENEC), says construction of Barakah's first and second units is complete and units three and four are 62 per cent and 35 per cent finished, respectively. The plant is scheduled to be complete in 2020. When fully online, it is expected to deliver up to a quarter of the UAE's electricity needs and save up to 12mn tonnes in carbon emissions every year.

The UAE's commitment to a nuclear future has been further underwritten with a

recent deal with Korea Electric Power Corporation (KEPCO), the prime contractor on the Barakah NPP. ENEC and KEPCO last October had signed a joint venture agreement establishing a long-term partnership, including the setting up of an independent subsidiary owned by both companies, to represent the commercial and financial interests of the NPP project. The South Korean state-owned utility company is investing US\$900mn in exchange for an 18 per cent stake in Barakah One PJSC. The agreement also entitles KEPCO to an 18 per cent interest in ENEC's subsidiary, Nawah Energy Company, established last May to operate and maintain Barakah units 1 to 4.

ENEC CEO Mohamed Al Hammadi says the deal with KEPCO would bring a lot of nuclear expertise to the UAE.

Financial constraints

Jordan signed a US\$10bn agreement with Russia to build the country's first nuclear power plant in March 2015. Under the deal, Russia's Rosatom State Nuclear Energy Corporation would build two reactors of 1,000MW capacity each at Quseir Amra, 80km southeast of Amman. But the key problem for Jordan's nuclear plans is finance.

Jordan Atomic Energy Commission (JAEC) chairman Khaled Toukan last year stated the plant could be operational by 2025 if sufficient financing is secured by the end of 2017. Under the original agreement with Russia, the Russians would put up 49 per cent of the project's costs with Jordan responsible for the remainder. Recently, the JAEC said Jordanian investors would contribute around 30 per cent of the project cost and shortly would appoint an international consultant to help attract a third partner. Jordan's share in the planned nuclear power facility would be reduced to 26 per cent, JAEC said.

Jordan is also said to be considering small modular reactors, possibly utilising US technology, as an option for its nuclear power programme. The country currently relies on imports to meet around 97 per cent of its energy needs, equating to about one-fifth of its GDP, and is seeking greater energy security as well as lower electricity prices. The two reactors once fully operational are expected to contribute about 48 per cent of Jordan's energy. In addition to providing electricity, the NPP also will be used for desalinating water.

However, in addition to funding challenges, Jordan's nuclear power

Reports suggest that nuclear energy is set to play a key role in a future energy system that looks to mitigate the worst effects of the climate change.

programme faces other serious hurdles. These include growing public opposition, especially in the area where the project is to be located, and fears that security threats could spill over into the country from neighbouring countries. Water scarcity is another issue although the plans to incorporate desalination into the project will help address these concerns. There are also the technical challenges of incorporating large generation capacity into Jordan's small, and relatively outdated, electricity grid.

But Jordan is making some progress with personnel training for the future nuclear power facility. It completed a 5MW nuclear research reactor in December 2016 at Irbid. As well as for education and training, it will be used to develop medical and industrial radioisotopes and new materials.

Russian hegemony

Egypt is another country in the region with nuclear power plans. With installed power capacity struggling to keep pace with demand and its electricity requirements expected to grow by some six per cent per year up to 2035, the North African country needs to build a lot more power generating capacity, and is keen to include nuclear power as part of its future energy mix. It has been considering an NPP at El Dabaa on the Mediterranean Sea coast on-and-off since the 1980s.

Egypt and Russia have been ironing out the finer details of a deal to build a plant at El Dabaa comprising four nuclear power units of 1,200MW each, with funding from Russia. The cost of the project is put at US\$30bn. Technical negotiations for the plant, which would be built by Rosatom, have now been concluded, according to *Daily News Egypt*, citing government sources. Both parties also recently agreed on banking guarantees, the news outlet reported. Russia will provide a 13-year government loan of US\$25bn to finance equipment and services for construction and operation. The loan will be used to finance 85 per cent of each of the four construction contracts, while the remaining 15 per cent will be funded locally. A final

deal between the parties could be reached within the first quarter of this year, according to the *Daily News Egypt* report.

But as in Jordan, Egypt's nuclear power ambitions have come under fire, not least on the grounds of the high upfront cost and nuclear's huge demand on water resources in a country already high water deficit.

Elsewhere in the region, Saudi Arabia has an ambitious target of generating six to seven GW of electricity from nuclear by 2032, rising to 17 GW and supplying 20 per cent of power by 2040, as it seeks to diversify its energy sources. The Kingdom soon will choose a site for its first NPP and concrete plans could be announced in the next 12 months, according to its energy minister Khalid Al-Falih.

Morocco, Tunisia, and Algeria are also investigating their nuclear options. Morocco is understood to be considering beginning a nuclear power project by 2030. Building on a 2015 MoU, Tunisia and Russia last September inked an agreement on the peaceful uses of atomic energy, which included assistance in the development of nuclear infrastructure. Algeria has also been courted by the Russians. A recent intergovernmental agreement, signed in September 2016, provides for the design, construction, operation and servicing of NPPs as well as research reactors in the country. There has been talk of the consultations targeting the construction of an NPP in Algeria as early as 2026.

Positive energy

Rising power demand in the Middle East countries and the pressure to reduce carbon emissions will remain a persuasive driver for nuclear power development. Iran was the first country in the region to introduce nuclear power. The UAE is nearing the finishing post, with its development of the Barakah NPP. Much of Barakah's success is down to the UAE government's ability to finance the project. But for many of the region's other countries looking to include nuclear power in their future energy mix, financial and/or technical challenges as well as security concerns, political hurdles and public opposition could slow progress. ■

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ACWA Power signs Jordan PV deal with record-low tariff

ACWA POWER WILL develop, finance, construct, own and operate a new 61.3MWp photovoltaic project in Eastern Jordan's province of Risha. The Saudi Arabia-based company has submitted a record-low tariff of US\$0.59 per kWh, the lowest tariff for solar energy presented for a Jordan-based project. It is 3.3 per cent lower than the previous lowest tariff provided to Jordan with the Mafraq PV project, also developed by ACWA Power under Round II of Proposals for Renewable Energy in Jordan.

Ibrahim Saif, minister of energy & mineral resources in Jordan, and Thamer Al Sharhan, chairman of CEGCO, ACWA Power's O&M subsidiary, attended the signing ceremony that sealed the commitment to develop the Risha project on the sidelines of the World Future Energy Summit (WFES) 2017.

When completed in Q1 2019, the plant will power 12,000 households in the province.

Saif said, "Today, Jordan takes another step toward sustainable and enduring energy security. Under the leadership of HH King Abdullah II, the country has set ambitious renewables targets that not only reflect our needs at present but also safeguard us for the future. Energy projects are long-term by nature, and in selecting ACWA Power, we have partnered with a business that is invested in Jordan's energy infrastructure. With Al Risha, ACWA Power is coming on board as an investor, as well as a developer, and that commitment reflects their continued confidence in Jordan's political stability and economic viability."

Demand for electricity in Jordan is climbing at seven per cent per year, due to the country's population boom and mounting industrial



The signing agreement at World Future Energy Summit 2017 in Abu Dhabi. (Photo: ACWA Power)

needs. Roughly 1,000MW of solar and wind projects are underway, with a goal of raising renewables generation capacity to 20 per cent of the capacity of Jordan and reach 15 per cent of the energy mix by 2020.

According to the company, the new clean energy plant will be developed aside the existing CEGCO asset of the Risha 150MW gas turbine plant utilising synergies from the existing plant to enhance efficiencies.

Localisation key to Saudi renewables development

SUPPLY CHAIN LOCALISATION will be a prerequisite for companies bidding on phase one of Saudi Arabia's upcoming renewables programme, according to HE Khaled Al-Falih, minister of energy, industry and mineral resources.

In a one-on-one session as part of WFES 2017's Global Action Day, he revealed that the first bid round for an initial 10 GW of capacity will be announced within weeks. "Within Vision 2030 we're driving a 15-year plan for energy diversification, so we're bringing in renewables in a big way," he said.

Phase one of the Kingdom's renewables programme will also see a move away from liquids. Utilities, which are primed to reach 100 GW in the near future, will also be 70 per cent gas-fuelled. The initial phase will be primarily solar and wind, with some geothermal and waste components, and will be developed at a cost of US\$30bn to US\$50bn with a targeted operational date of 2023.

Al-Falih added: "We are investing in sophisticated technologies to improve efficiency. We are also investing heavily into carbon capture, and will be one of the largest converters of carbon value. "Saudi Aramco has acquired a company and technology that will convert CO₂ to polyurethanes and SABIC has multiple industrial-scale plants that are converting carbon into CO₂."



HE Khaled Al-Falih (right) in conversation with Becky Anderson from CNN.

He says this will all come together to make Saudi Arabia one of the leaders in sustainability while maintaining its position as a leading global energy provider.

HE Al-Falih also confirmed the country's civilian nuclear ambition, noting that early feasibility and design studies are being conducted for two 2.8 GW reactors, with site selection and technology development also underway. Alongside plans for renewable energy, Saudi Vision 2030 also includes a commitment to safeguard the environment by increasing the

efficiency of waste management, establishing comprehensive recycling projects, reducing all types of pollution, and fighting desertification. In water management, it aims to promote the optimal use of resources by reducing consumption and utilising treated and renewable water, as well as protecting and rehabilitating beaches, natural reserves and islands. Plans call for both private sector and government involvement, and endorse public-private partnerships in sustainable development. Furthermore, as part of the Kingdom's National Transformation Plan and in line with its Vision 2030, the country will seek to rapidly diversify its domestic power mix, targeting 9.5 GW of renewable energy by 2023.

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The battle against counterfeit

The growing market of counterfeit alternators poses a major threat to the industry, impacting productivity and creating unsafe work environments. *Technical Review Middle East* looks at measures taken by Cummins Generator Technologies to protect consumers from the perils of counterfeit machines.

IT IS ESTIMATED that counterfeiting is a US\$600bn problem that affects manufacturers in almost every industry across the globe. Counterfeit alternators continue to flood the international market posing risks to user's reputation, finances and employee safety. These counterfeits are untested, non-compliant and not designed to work in harsh environments such as parts of the Middle East and Africa.

Poor design and flawed assembly of such counterfeit machines often leads to serious mechanical faults that include the cracking and break-off of cooling fans, casting defects on hubs, haphazard rotor over-coats and even loose wiring, all of which pose a danger to individuals working near the machines.

Trevor French, general manager of AvK global sales and marketing at Cummins Generator Technologies, said, "Although it is often the case that end users are not even aware machines they are using are counterfeit alternators, the consequences can be very severe."

"Put simply, counterfeit products result in poor fuel economy, reduced generator life and of course the financial implications of unforeseen down time. Most importantly, loose wiring, poor assembly and mechanical faults lead to counterfeit products posing a significant threat to personnel."

Protection against counterfeits

Cummins Generator Technologies has launched its latest STAMFORD S-Range family of alternators, which apart from being a much anticipated refresh of its most popular machines, also represents a further development in the company's fight against fake products. The new range – from 7.5 to



Cracking and break-off of cooling fans are common defects found in counterfeit alternators. (Photo: Cummins Generator Technology)

5,000 kVA – sees Cummins Generator Technologies leading the industry-wide battle to protect end users and customers from the perils of counterfeit machines. The new S-Range of alternators incorporates new patented technology, as well as the visual markers of a genuine product.

"We adopt a zero tolerance approach to counterfeiters in order to protect our customers from what has become a global threat" noted French. "This involves significant investment in implementing a global anti-counterfeit strategy and to pursue counterfeit manufacturers in order to break the supply chain."

A key component of the Cummins Generator Technologies' counterfeit crackdown strategy is ensuring that the maximum legal protection is given to its alternators. This is achieved through the extensive registration of trade marks in all major markets, patenting new technologies, such as its latest CoreCooling innovation on

the new STAMFORD S-Range family and making sure that the STAMFORD brand is visible on all its equipment.

According to the company, although the STAMFORD brand is legally protected, this does not always stop the most motivated counterfeiters. In order to give customers the chance to see if a potential alternator is indeed genuine, all Cummins Generator Technology machines have a unique high security 3D hologram affixed to its casing. This gives customers a clear visual confirmation that the product is a genuine product. Moreover, each of its alternators has a unique serial number that can be verified

online, which gives an instant 'valid or invalid' response.

Raising awareness

Aside from protecting customers and preventing counterfeiting, Cummins Generator Technologies also aims to raise awareness of the danger of counterfeiting and promote the benefits of using genuine equipment. For example, customers are encouraged to report incidents of suspected counterfeit by emailing report.counterfeit@cummins.com.

"The fight against counterfeiting will continue across the manufacturing industry and its many sectors," stated French. "However, it is up to businesses to protect customers from criminal behaviour by giving them the tools to discover counterfeit products. After all, it is not only manufacturer's reputations which are damaged by counterfeit products," he reiterated. ■

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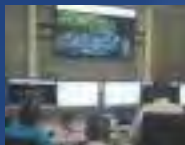
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Utility companies adopt smart grids to manage energy consumption

A REPORT BY Booz Allen Hamilton has revealed that an increasing number of utility companies in the MENA region are adopting smart technology – particularly smart grids – to manage their energy consumption.

According to Masdar Institute of Science and Technology in Abu Dhabi, smart grids can play a major role in achieving the objectives spelt out in Abu Dhabi's 2030 Economic Vision and indeed the other emirates.

Walid Fayad, executive vice-president at Booz Allen Hamilton MENA, said, "Increasingly, however, we are seeing that MENA utility companies are becoming open to employing smart grid technologies to manage their operations more efficiently. Smart grids provide an opportunity for the region to modernise its infrastructure and lay the foundations for renewable energy development which can help economic diversification."

In its latest report, *Switched On: How MENA Can Build Smart Grid Success*, Booz Allen states that customising smart grid strategies to suit an organisation's objectives and mitigate challenges, while focusing on business transformation will determine the successful adoption of smart grids in the UAE.

Built on the foundations of advanced metering infrastructure, smart grids are an integrated system that enables two-way communication between utilities and their customers. It uses a blend of classic electric grid with information, communication and control technologies, and can thereby help utilities companies manage their operating and customer services more efficiently. Smart grids can give greater control over the production, transmission, distribution



Smart grids can play a role in laying the foundations for renewable energy development, which can help economic diversification.

(Photo: haraldmuc/Shutterstock)

and retail of electricity, as well as increased efficiency along with the reduced consumption and cost of energy.

The report points out that the benefits of a smart grid are multiple, including opening up new opportunities for renewable energy production and storage. They also help cost-cutting, system upgrading and maintenance and improve customer service to end-consumers. Furthermore, smart grids introduce new metering, billing and payment methods, as well as greater access to, and accuracy of, data and information for customers and utilities alike.

DEWA opens new substation in Dubai to enhance transmission network

DUBAI ELECTRICITY AND Water Authority (DEWA) has inaugurated a new 132/11 kV substation with a total capacity of 150MVA at Al Quoz 4 to meet the increasing demand for electricity.

According to DEWA, this is in accordance with DEWA's continued efforts to increase the efficiency and reliability of

its line of 132 kV substations. The project aims to increase the capacity and efficiency of electricity and transmission networks at Al Quoz 4.

DEWA has extended ground cables with capacity of 132 KV to connect it to the 132/11 kVA and the 132/400 kVA at Al Quoz.

"We strive to enhance infrastructure

and utilities in Dubai according to the highest international standards, which in turn will further strengthen the UAE economy and enhance its position. This is in adherence with the directives of HH Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, and it is also aligned with our vision to become a sustainable innovative world-class utility," said Saeed Mohammed Al Tayar, CEO of DEWA.

"This substation applies and uses state-of-the-art digital technologies, contributing to promoting their efficiency and reliability, and will eventually serve urban and ambitious goals of Dubai Plan 2021. DEWA is working to upgrade existing substations by increasing their capacity and introducing the latest globally-adopted technologies.

"This modern electricity network will help to position Dubai as one of the cities with the best infrastructure. DEWA is set to complete the construction of one hundred 132/11 KV substations in different phases over the next three years," Al Tayar stated.

Saeed Mohammed Al Tayar is the CEO of DEWA. (Photo: DEWA)



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Decoding credible water reuse

Fady Juez, managing director at Metito, speaks about the growing emphasis on sustainability in the water desalination industry in the Middle East.

THE GCC REGION is one of the most water scarce regions in the world and as the population continues to grow, so does the reliance on desalinated water to fill in the gap between natural supply and demand.

Speaking about the water desalination market in the GCC, Fady Juez, managing director at water management solution company Metito, said, “Seawater desalination is a process that people are familiar with and trust. In Qatar, for example, the population relies on seawater desalination plants for the majority of its potable water requirements – this reflects how dependable and accepted the process is.”

However, he pointed out for the need to usher in sustainable practices into the industry. It is important for industry leaders to shift mind sets and convince decision makers to try alternative solutions, exploring other more economically and environmentally credible processes such as water reuse, he added.

“Decision makers recognise that seawater desalination is an expensive and energy-intensive process that carries some valid environmental and energy concerns. This has compelled them to explore more affordable and sustainable options to power desalination in the long-term, such as using renewable energy that will reduce carbon emissions, and in turn, the impact on the environment.”

Sustainable technology

Discussing the current technological trends in the industry, Juez pointed out that a key focus in water desalination is developing technologies that reduce both power and chemical consumption and that can eventually bring costs down.

“Metito continues to perform membrane-based desalination because we believe that it still is a cleaner process. It is more sustainable for the simple reason that no heating is required, and by



Seawater desalination plays a major role in meeting water requirements in the Middle East. (Photo: shao weiwei/Shutterstock)

going from liquid to liquid means that it is better for the environment.”

Juez also explained how reverse osmosis processes are also advancing and technological improvements such as enhanced membranes and energy-recovery devices have helped to improve its performance.

Innovations from Metito

Metito has recently launched Biopipe, which Juez describes as “the world’s first biological wastewater treatment pipe, which is inspired by nature and uses a simple, sustainable and cost-effective process to treat wastewater”. The treated water can then be used for organic farming, irrigation, underground aquifer injection or safely released into lakes, rivers or sea or be stored in a clean water tank for later use.

“What is so impressive is that it is one of the eco-friendliest wastewater treatment processes in the world today. Unlike other traditional wastewater systems, it produces no sludge, no odor, no sound, and no waste – the Biopipe wastewater treatment system really is a game changer,” Juez revealed.

Another innovation that Metito has been involved in is Optiqua’s EventLab, a real-time continuous solution for monitoring water quality and detecting contamination. It has a wide range of functions including monitoring water quality at treatment plants, distribution networks and at intake points, as well as surface water monitoring.

“Real-time monitoring at the precision of EventLab is crucial to any utilities’ provider because it will simply enable prompt and efficient on-site identification and prompt responses to unexpected – sometimes unknown pollutants – and to perform qualitative and quantitative laboratory analysis of the pollutants with speed. The safety, security and financial returns from such an innovative and cost efficient solution are monumental,” Juez stated. ■

It is important for industry leaders to shift mindsets and convince decision makers to try alternative solutions, exploring other more economically and environmentally credible processes.



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Global formworks company PASCHAL has launched three logistics modules for safe, fast and target-oriented work, designed for transportation and for use on the construction site, the building yard and the warehouse. The three modules – the stacking pallet, lattice box and transportation box can be handled by cranes and stacked transported by forklift trucks on the construction site. All three logistics modules can be stacked on top of each other. This helps to reduce the loading area on trucks and the storage space required on the construction site and in the warehouse.

According to PASCHAL, the modules allow for large and small parts to be packed and transported safely, clearly and effectively and placed where they are needed at the



PASCHAL's three logistical aids are designed to support the workflow. (Photo: PASCHAL)

construction site. This clear mode of delivery using the logistic modules also has the advantage of being able to perform controls more quickly and thus save time during material transfer, delivery and return.

The stacking pallets come in two sizes, long and short, and have been specially developed for long and/or round system components such as adjustable props and

slab props. Based on past experience, round components must be packed carefully to ensure safe transportation.

The PASCHAL lattice box, which can be moved by crane, complies with Standard 435-3 and is currently available in 1,240 x 835 x 970mm dimension.

According to the company, large and small parts can be loaded and unloaded quickly, safely and clearly with the PASCHAL lattice box. A crane is enough to move the lattice boxes on the construction site. The PASCHAL transportation box has been specially equipped with different compartment sizes for small and very small parts.

Therefore, the handling of numerous small and very small parts is also easier and more efficient as there is no need for tedious searching.

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Ushering in safety and flexibility in scaffolding

PERI HAS ANNOUNCED the launch of PERI UP Easy façade scaffold system, which aims to solve the challenges faced in day-to-day construction site operations through its new frame scaffold, which supports safe and fast assembly.

The integrated scaffolding nodes allows PERI UP Easy to be combined with the PERI UP Flex modular scaffolding, thus ensuring maximum flexibility even when dealing with complex building geometries. In addition, PERI offers its customers a wide range of services relating to planning, tendering and project execution through to the entire planning and construction process.

Construction work is becoming increasingly more complex resulting in greater demands on safety requirements. Time pressure of projects and the interaction of various trades often require changes to previously planned implementation solutions to be made at very short notice. A scaffold must therefore also be extremely flexible during its use by different project participants while at the same time providing the highest possible level of safety. According to the company, the PERI UP Easy frame scaffold system fulfils these requirements through its new design configuration as well as compatibility with the PERI UP Flex modular scaffolding.

With this latest generation of PERI façade scaffolds, the development placed a particularly focus on the elimination of tripping hazards and other sources of danger. All decks are flush mounted side-by-side resulting in a gap-free surface throughout which means no additional components are required to close any openings, ensuring greater safety.

Each PERI UP Easy deck is also equipped with protection against lifting: an integrated clamp engages the rectangular ledger of the frame immediately after the deck has been installed.



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GCC countries can save up to US\$10bn in infrastructural investment by 2020 through the use of smart grids.
(Photo: gui jun peng/Shutterstock)



'Smart grids to boost ME future power efficiency'

The 42nd edition of Middle East Electricity (MEE), scheduled to take place from 14-16 February 2017, is looking into the future and promoting 'Smart Cities' concept. In an interview with *Technical Review Middle East*, Anita Mathews, director, Informa Energy Group, talks about the opportunities in the Middle East's electricity sector.

Technical Review Middle East (TRME): With the sluggish growth in oil prices, how do you think the Middle East electricity industry is faring?

Anita Mathews (AM): Despite low oil prices, there are many opportunities for growth in the industry over the coming years. The power construction industry in the Middle East is expected to register robust growth with the UAE, Saudi Arabia and Kuwait being attractive markets for power plant opportunities, as they increase generation capacity to cope with future population growth. With further advancement in technology, reduction of prices and clean technology, solar power is going to experience phenomenal growth and could soon be the preferred source of energy in the Middle East. Across the GCC, it is estimated that US\$316bn of investment is needed in the power sector by 2020, and so reform efforts will open up the power sector for private investment in generation, transmission and distribution.

The GCC power construction contractor awards are also set to increase from US\$22.3bn in 2016 to US\$25.52bn in 2017. Saudi

Arabia is expected to register the highest contractor awards in 2017, at around US\$12.35bn, an increase of over 50 per cent from its 2016 award value. Elsewhere in the GCC, the value of power construction contract awards will also significantly increase in Bahrain, Kuwait and Oman. GCC countries are also set to invest US\$252bn over the next five years in projects for setting up new power production plants, distribution systems and supply grids.

TRME: Have you seen an evolution of the electricity sector in the past year? What are the core subsectors that the industry needs to focus on in the region?

AM: Over the past year, we have seen huge investment in renewables, with Dubai announcing the third phase of its record breaking Mohammed Bin Rashid Al Maktoum Solar Park and investment in other major solar projects in Saudi Arabia and Kuwait. It seems clear that this is a trend set to continue as nations in the Middle East strive to reduce their carbon footprint and increase generation capacity.



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As mentioned above, with approximately US\$316bn investment needed by 2020 to meet power needs in the GCC, this year has seen a great deal of planning for the future and rising populations and demand. The introduction of independent power producers (IPPs) in the GCC has been instrumental in meeting rapidly rising electricity demand. Oman was the first country to open up its power-generating sector through reforms and reform efforts are currently underway to achieve the same in the other GCC countries.

TRME: What is your opinion on smart grid initiatives in the Middle East and do you think that smart grid is the future?

AM: As populations in cities across the Middle East continue to grow, the need to sustainably and efficiently manage energy supply increases. Smart grids will form a key part in boosting power efficiency in the Middle East in the coming years, as well as enabling and facilitating increased use of renewables. Across the region, we have seen plans in many cities in recent years to adopt smart grid technology, for example as part of the 'Smart Dubai' initiative, and it is clear that this technology is going to have a great impact on the industry's future.

It is estimated that GCC countries can save up to US\$10bn in infrastructure investment by 2020 through the use of smart grid, which optimises supply and demand by using information technology to provide a two-way flow of real time information between power generation, grid operators and consumers.

One of the pioneering government bodies for this technology is DEWA, which is fully-prepared to turn this vision into reality through



Anita Mathews is the director of Informa Energy Group. (Photo: Informa)

new smart initiatives and services. DEWA invests heavily in innovation in the field of renewable and clean energy technology, and is spearheading developments such as Shams Dubai, which connects solar power in homes and buildings to DEWA's grid, smart applications via smart meters and grids, and the green charger to build the infrastructure and electric-vehicle charging stations. The project will include the construction of a smart grid model at DEWA's headquarters, which will include solar panels, an energy storing system (ESS) and integrated operating system.

TRME: What can we expect from Middle East Electricity 2017?

AM: The theme for this year's show is 'Smart Cities', an idea that has become a huge focus within the industry and will be one of the goals driving future growth. Dubai Municipality is partnering with Middle East Electricity on the theme. They are currently working on a Smart City goal and will use MEE 2017 to update the industry on their progress. Our conference programme on 'Energising the Smart City' will cover a wide range of the challenges and opportunities around providing innovative urban energy solutions, from regulation to alternative materials.

This year also sees the creation of the 'Smart Cities Innovation Zone', which will feature the industry's leading names presenting their latest technologies and case studies on building integrated smart energy systems. The fourth edition of the Future Generation Competition will also be taking place, giving students from UAE universities a platform to present their own projects and technologies around the theme of 'Smart Cities'.

We are striving to make this year's show more accessible than ever, with a segmented floorplan, making it far easier for visitors to connect with the companies they need to meet. Guided product tours will also be offered for the first time to ensure our visitors can make the most of the event, introducing them to the best suppliers of cables, switchgear and panels, transformers and energy management systems.

In response to feedback from last year's event, we have also created improved networking opportunities. The Consultants Arena will see engineering consultants discuss key concepts and regulations such as project management tools and the UAE's green guidelines and regulations, as well as giving our exhibitors more opportunity to network with world-class consultants. We will also be running a VIP Meetings Programme for our exhibitors to meet with representatives from utilities and municipalities across the MENA region as well as our B2B Meetings Programme. This will facilitate our exhibitors in making essential connections across the industry and the region. ■



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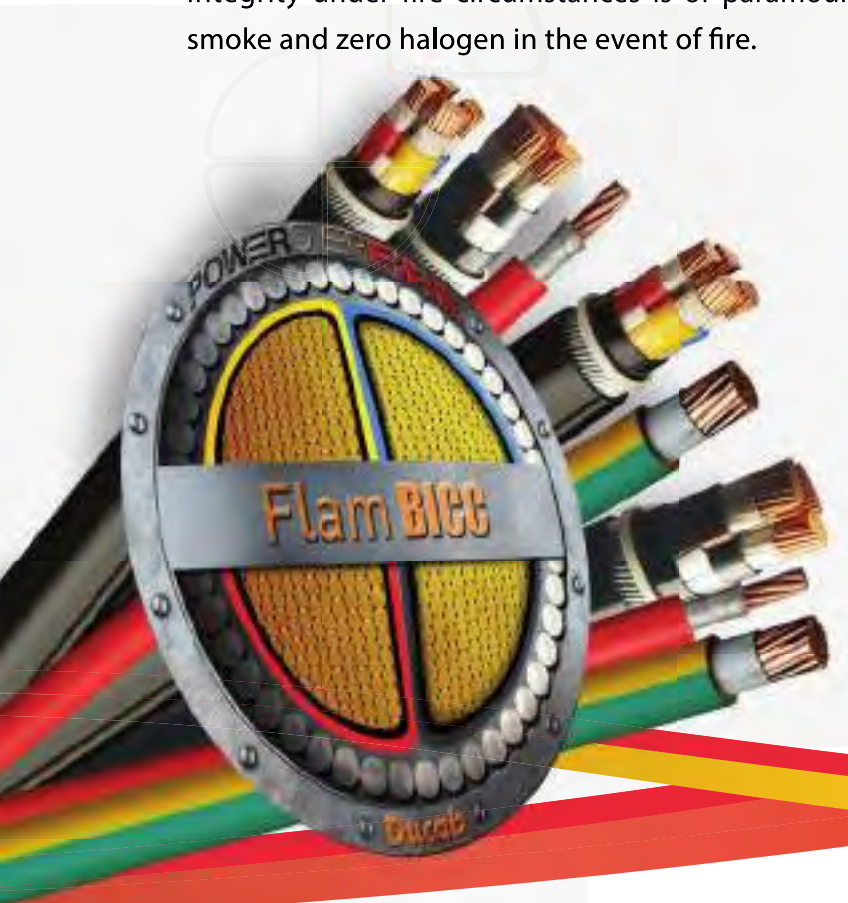


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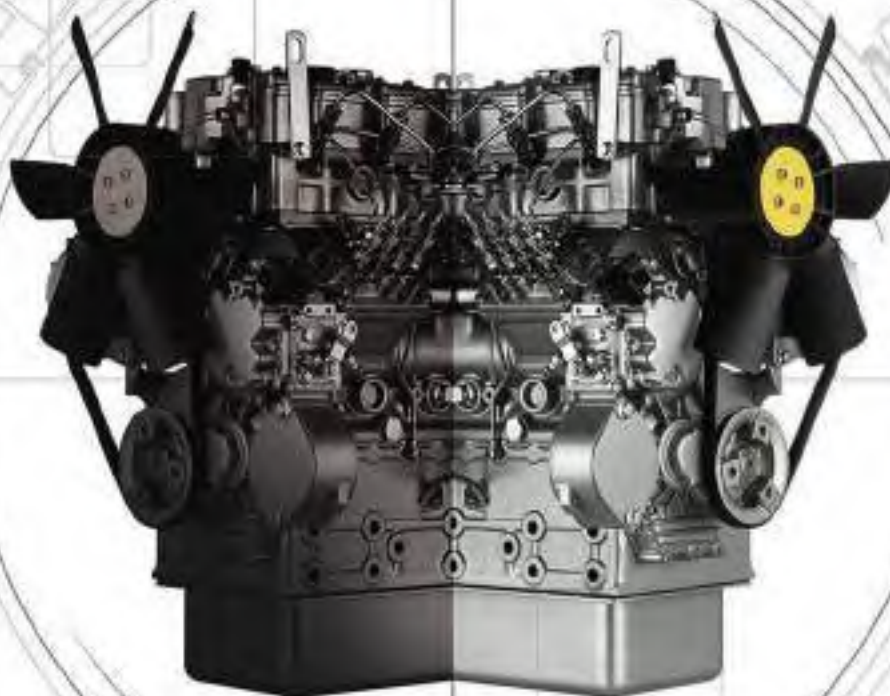
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Replacement engines minimise expensive tier upgrade costs with a like-for-like engine replacement.



4000 Series engines and much more from Perkins

We have been exhibiting at MEE for many years as it's an excellent forum for meeting OEMs and end users, finding out about their challenges and offering them the right power solutions.

Trevor Toulson, director of EAME and CIS sales and distribution, Perkins

THE PERKINS TEAM returns to Middle East Electricity (MEE) in 2017 to promote the full range of its diesel and gas electric power engines.

Taking pride of place is the 4000 Series platform, which is designed to provide prime or standby power in critical applications.

The evolution of the Perkins 4000 Series

The steady evolution of the powerful 4000 Series has taken place over a number of years, thanks to significant investment from Perkins. Its development means the engine is used for prime and standby applications by original equipment manufacturers (OEMs) and end-users.

The 4000 Series is tough and durable, provides consistent performance in the harshest conditions, and is proving to be a constant, reliable electric power source for prime applications all over the world.

Perkins sells hundreds of 4000 Series engines every year into the prime power market. It has built more than 50,000 4000 Series engines for some of the world's biggest businesses, and up to 30 per cent of those are for prime use in the electric power sector. Perkins 4000 has helped power hospitals, telecoms, data centres or manufacturing plants.

The high performance range includes diesel and gas engines, from six to 16 cylinders, with exceptional power-to-weight ratios and a compact design. The engines are easy to transport, install and maintain.

Simon Gray, product marketing manager, says, "For more than 20 years, Perkins has made major investments in the design and manufacture of the 4000 Series. The heritage of the 4000 Series diesel and gas engines goes back to the early 1990s.

"The 4000 Series platform was seen very much as a standby only engine in the market. But over more than 20 years, Perkins has made major investments in the design and manufacture of the 4000 Series. The current platform is so far removed from the original that it's virtually unrecognisable.

"We launched the 4008 at the end of 2015 and, alongside the revamp of the 4006, 4012 and 4016, this completes the overall product line-up. Be it for powering hospitals, telecoms, data centres or manufacturing plants, the Perkins 4000 Series provides dependable power 24/7, 365 days a year."

Being so confident about its reliability, Perkins has extended warranties on the 4000 Series to one year of unlimited hours; two years or 6,000 hours for prime power users; and three years or 1,500 hours (with a maximum of 500 hours per year) for standby.

Gray adds, "We have a programme of continuous improvement in place focused on the design of components such as seals, gaskets, injectors and valves, to continually increase the performance, reliability and durability of our engines.

"Today the 4000 Series is all about quality and reliability. Not just for standby, but for prime. Where quality and reliability are paramount, you can depend on the Perkins 4000 Series to keep the power on... permanently."

What's new at Perkins stand?

As the cost of new machines continues to rise, more people are looking at major overhauls as an alternative to buying new. Perkins provides the industry's most

4016-61TRG Electric Power Diesel Engine.



complete range of remanufactured and replacement engines that are now more cost-effective and more readily available than ever before, no matter where in the world a customer is located.

Perkins helps customers to meet emissions standards and remain productive with as-new engine performance, 100 per cent genuine parts and factory-standard warranties.

As a leading supplier offering a full range replacement engine programme, Perkins can help end users minimise downtime in the event of in-field failures with more flexible overhaul options and shorter lead times.

"Our services are now more competitive and offer better availability than ever before, including support for previous engine generations and even competitor brands," states parts marketing manager Helen Hagan.

She continues, "With as-new engine

performance, genuine Perkins parts and factory-standard warranties, we also help customers to extend the residual worth of their machine when they decide it's time to sell."

Perkins offers off-the-shelf, new complete replacement engines on select models which meet emissions standards and are a drop-in aftermarket overhaul solution.

- **New Long Engines and Reman Long Engines:** Long engines are built to a design specification that provides flexibility and value for customers requiring a re-power.
- **New Short Engines and Reman Short Engines:** Short engines are an economical repair option with minimal downtime, delivering a dependable solution for major engine seizures.
- **New Complete Head:** If the cylinder head is damaged but the rest of the engine is in good condition, the complete heads are a quick and cost-effective solution.
- **Additional products and services:** To complement the replacement engine solutions, Perkins also offer exclusive aftermarket products such as extended warranties and specially formulated engine oil and coolant.

According to Perkins, its re-engineered replacement engine solutions offer significant benefits to end users, including –

- Like-for-like engine performance at a fraction of the cost of a new machine.
- Minimising expensive tier upgrade costs with a like-for-like engine replacement.

**Perkins has built
more than 50,000
4000 Series engines
for some of the
world's biggest
businesses.**

- Greater return on the investment by extending the life of your machine and improving its resale value.
- Order processing as quick and easy as buying new, which maximises productivity and minimises downtime.
- Dependability – all replacement solutions comprise 100 per cent genuine Perkins parts and come with standard factory warranties.

Helping users to maintain their engines

A new range of 'service kits' for Perkins electric power (EP) engines will be showcased at MEE 2017. The kits provide end users with all the parts they need to carry out 500 hour and 1,000 hour services for most standard EP engines.

The new service kits make ordering and reordering simpler, and there is the extra benefit of having all the parts boxed up in an easy-to-transport package. The parts are also numbered, making them easy to track what has been changed and when.

There are 12 service kits in total, which cover the 400 and 1100 Series standard EP engine builds, while end users will have assurance in the knowledge that they will be working with Perkins genuine parts. And these come at an extremely competitive price as part of the pack.

Perkins offers off-the-shelf, new complete replacement engines on select models, which meet emissions standards and are a drop-in aftermarket overhaul solution.

Each kit comes with everything needed to carry out the service, including oil, fuel and air filters, belts, the correct rocker gasket cover for replacement when the valve lash is checked and, where required, the pre-filter for fuel and safety air filter.

Manufacturers of the power generation set will be able to offer the kits to their customers – providing the end user with value by ensuring they have genuine Perkins parts fitted from day one – but they can also be ordered separately as a simple, easy solution for onsite servicing with everything required in the box.

Julian Wood, parts marketing manager, summarises that the service kits have provided major benefits for equipment manufacturers, and he stresses the advantages of having guaranteed Perkins genuine parts.

"The parts in these kits are a carefully selected set to help users complete everything required in our recommended service. They have been precision engineered to fit our engines and are, of course, rigorously tested for quality.

"Our parts are designed to match the individual engine characteristics across the whole Perkins engine range, to fit first time and save on costly downtime," Wood notes. ■

For more information, visit Perkins at Stand No: S1.C10

The EP kits for electric power engines.



Perkins completes 85 years

TODAY, PERKINS HAS expanded from its original focus on the motor and agricultural sectors to operate in five main markets – agriculture, construction, electrical power generation, general industry and materials handling.

The electric power sector continues to be an important focus, with new additions throughout the power range for regulated and unregulated territories, including the 2,500 kVA 4016-16TRG, the most powerful engine manufactured by Perkins, to date.

With manufacturing facilities operating around the globe, Perkins has the capacity to produce up to 900,000 units a year, ensuring it remains one of the world's leading suppliers of diesel and gas engines in the 4-2000kW (5-2800 hp) market.

The Perkins industrial engine product range extends from the compact 400 Series engine, producing 50kW (67 hp), to the 2800 Series, producing up to 597kW (800 hp) and offering enhanced productivity and low cost of ownership.

Beyond that, the Perkins electric power and gas engine range includes further models up to the 4000 Series, which produce up to 2500kVA (2000 kWe).

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HIMOINSA sets eyes on leading the genset sector



The HRFW-250 T5 model.

AT MIDDLE EAST ELECTRICITY (MEE) 2017, HIMOINSA will showcase a complete series of generator sets with increased autonomy, less operation costs and reduced noise emissions.

HIMOINSA generator sets have become an interesting option for companies looking for profitable equipment. In addition to their design to withstand extreme conditions, HIMOINSA has developed more versatile and autonomous gensets that can operate in different markets; generator sets with more running time, increased maintenance intervals and, therefore, less service trips; and new ranges with reduced noise emissions.

The generator sets that will be displayed at the show include –

- **Silent Plus Range for the rental market:** The HRFW-250 T5 is the first model of a new range of quieter generator sets for the rental sector. The HRFW-250 T5, powered with FPT engine, guarantees a noise level of 61dB ± 2 at a distance of seven metres thanks to the improved and more complex design of the air intakes and outputs. The generators incorporate two exhaust silencers as standard and top quality insulating materials, such as high-density, 100mm thick rock wool, not to mention silent blocks were specifically resized for the engine-alternator assembly and its dynamic characteristics.



The 1,000-hour maintenance kit.

- **1,000-hour maintenance kit to reduce operation expenditure:** The HIMOINSA generator sets with Yanmar engine can include a special kit that allows for longer maintenance intervals up to 1000 hours. It is a very interesting advantage for rental and telecom applications because it guarantees more autonomy and reduced operation costs, especially for those that will be installed on remote sites. The kit includes a larger tank, which supplies extra oil to the engine, which implies a significant reduction on filter costs and downtime. This feature is available in both the industrial range – HYW from 8 to 45 kVA and the rental range – HRYW from 16 to 40 kVA.
- In addition, the generator sets from the **Industrial Range** can incorporate a fuel tank of 1,000L, 10 times bigger than what it is offered as standard, which translates into less trips to the site for refuelling operations. Considering that the genset works 8 hours a day, this new feature guarantees up to 70 days of running time.
- **HSW-650 T6/5 Dual Frequency:** This genset, powered with Scania engine, supplies 806kVA of stand-by power at 60Hz and 738kVA at 50Hz. Its dual frequency capability meets the versatility required by companies, which operate both in Saudi Arabia, a 60Hz market, as well as in other countries with a 50Hz frequency within the GCC region.
- **Same power, less space:** HIMOINSA will be exhibiting its HTW1030 T5 model, which supplies up to 1,130 kVA of power in less space. The company's engineering team has been able to reduce the size of this model genset by 8.5 cu/m to fit it inside an L canopy (5,960 x 2,250 x 2,555 mm), adding one more soundproofed constructive version to the already existing 20-foot container (6,058 x 2,438 x 2,896mm).

Stand No: H3.E10



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Aksa Power Generation to display hybrid technologies at MEE 2017

MIDDLE EAST ELECTRICITY (MEE) 2017 gold sponsor Aksa Power Generation is showcasing its silent hybrid generator at Dubai World Trade Centre from 14-16 February.

Aksa Power Generation has been providing sustainable solutions that achieve savings while generating energy for many years. Using renewable energy sources as the basis of its research and development (R&D) activities, Aksa Power Generation's hybrid

generator technology is powered by wind and sun.

Presenting the hybrid generator technology that consumes less fuel with low-noise and low exhaust emissions, Aksa Power Generation CEO Alper Peker says, "As a result of the success of our R&D team on renewable energy sources, we have included our hybrid generator project into our product portfolio. Sustainability has now become a priority for international industry.

"As a company that manufactures in compliance with the environment, we are proud to launch our hybrid project created through integration of renewable energy sources. We will keep on providing economic, innovative and environment friendly solutions to our customers through our R&D investments."

Up to 70 per cent saving

Underlining the fuel saving characteristic of hybrid generator technology, Peker adds, "The Aksa's hybrid generator system is designed to decrease fuel consumption and maintenance expenses. With the hybrid generator we provide fuel savings of up to 70 per cent compared to a conventional AC installation."

Remote monitoring system for telecommunications

Designed for high quality power and effectiveness, hybrid generators are particularly interesting for companies working in telecommunication field with its easy-to-use functions. Suitable for remote and high altitude climate conditions, the Aksa hybrid generators provide its users with the opportunity to remotely access and control data entries with its remote monitoring system (RMS) software. Controlling all installation areas through the map, users can monitor their status with colourful indicators.

HSE first

What is noteworthy is the production processes and recycling that Aksa Power Generation complies to. "We use environmentally friendly TGIC-FREE Triglycidyl Isocyanurate and lead-free polyester powder paint for painting cabins and chassis. By using such paint, we both protect the health of people working in production and avoid environmental pollution," the CEO reiterates.

Speaking about MEE 2017, Peker says, "MEE is the most important show in the world for energy sectors, including generation, transmission and distribution, as well as renewable energies and lighting. With our participation at MEE, we aim to broaden and strengthen our presence in this market, and introduce our new technology. This year, we will be presenting our hybrid generator considered as the future technology, which has been produced exclusively with our own R&D activities."

Aksa Generators manufactures gasoline, diesel, natural gas powered gensets, marine generating sets, lighting towers and generating sets hardware. ■



The hybrid genset from Aksa Power Generation.

Stand No: S3.D10

Lucy Electric going the 'smart grid' way

SPECIALISTS IN HIGH-PERFORMANCE medium voltage switchgear for utility, industrial and commercial applications, Lucy Electric is bringing two new products to Middle East Electricity (MEE) 2017.

- **The 36kV RMU:** A first for Lucy Electric, it is an extension of the popular Aegis range, using the company's proven and reliable technology. Suitable for 36kV networks and renewable power generation connections, its uniquely compact design offers one of the smallest footprints on the market. Easy to install with simple and virtually maintenance-free operation, its combination of the highest power ratings, equipped with the highest safety features and compliance with the latest IEC standards, make the range suitable for both indoor and outdoor power distribution applications. Automation-ready with an integrated remote terminal unit (RTU), wide range of options and accessories it offers customers a cost-effective and reliable 36kV solution.
- **Additions to the GridKey range:** The new 318 monitoring module, which features all core monitoring functionality, provides an entry level model for network operators rolling out the first stages of low voltage monitoring on their network; plus extended data centre solutions and additions to the company's range of highly sophisticated analytical tools. These new elements complement the existing GridKey monitoring range, which now offers a complete suite of products to measure, communicate, store and analyse real-time data, flexibly and cost-effectively meeting customers' LV monitoring needs.

Carl Sellick, global sales director at Lucy Middle East, says, "We are seeing an increasing number of companies in the region investing in automation and smart grid projects to manage the growth in connectivity of renewable sources and also to help realise efficiencies, improve quality of supply and future-proof the infrastructure here. To meet these changing needs we have been developing and expanding our automation and monitoring solutions. We will be launching the latest developments in these areas – our first 36KV ring main unit and the development of our GridKey range – at the show.

"Suitable for 36KV networks and renewable power generation connections, its uniquely compact design offers one of the smallest footprints on the market. Automation-ready with an integrated RTU, and a wide range of options and accessories, it offers customers a cost-effective, reliable and high-performance 36kV solution. We are also expanding our award-winning GridKey range to include cost effective entry-level monitoring units, extending our data centre solutions and adding to the range of highly sophisticated analytical tools available. We now offer a complete suite of low voltage monitoring solutions under the GridKey range which measure, communicate, store and analyse real-time data, to flexibly and cost-effectively meet customers' changing LV monitoring needs."

Speaking about the current energy market, Sellick states that



*Carl Sellick is optimistic about the smart grid sector growth in the Middle East region.
(Photo: Lucy Electric)*

external factors, such as political instability, fluctuating oil prices and lower government investment have, of course, had an impact on the market. "While we expect to see continued investment in infrastructure, we do anticipate a slowdown or delays in implementation of new projects over the short term."

Lucy Electric has been attending MEE for over 16 years as it believes the event presents the perfect opportunity to showcase products, services and leading expertise in secondary distribution networks to one of its key growth markets.

"Our focus at the show will be on our automation solutions. We will be launching some new products and showcasing a range of our existing products and services, including the Gemini 3 RTUs, Solid Blade AX Air Break Disconnect switches, SCADA systems and energy services," Sellick reveals.

Lucy Electric's current business in the region is primarily long term supply contracts rather than project-based and it expects to see this continuing in the foreseeable future. The company is anticipating continued growth across the MENA region, particularly in smart grid developments and automation projects. "This presents many opportunities for Lucy Electric and is a good example of where we can help our customers. We have been continuously developing our automation and monitoring solutions to meet changing requirements and our experts are working at the cutting edge of distribution projects. We can help organisations scope and specify future-proofed solutions, which are cost-effective and specifically tailored to their needs," the global sales director adds. ■

Stand No: H2.D10

Ducab's new state-of-the-art lab in focus at MEE

DUCAB, THE UAE-BASED leading manufacturer of high-quality cables and cabling products, owned equally by Investment Corporation Dubai (ICD) and Abu Dhabi's Senaat, announced the opening of a newly built state-of-the-art fire testing laboratory in January 2017, specifically built for the Ducab FlamBICC range of fire performance cables and according to BS EN/IEC standard and Ducab NuBICC nuclear cables, tested in accordance with IEEE International standards.

At this year's edition of Middle East Electricity in Dubai, the company will be speaking about its new facility, besides its offerings for fire safety across the globe.

The new fire test facility at Ducab is equipped with the latest laboratory, operated by highly qualified and trained manpower and offers various fire and smoke tests in accordance with BS8519 Code of Practice. IEEE 1202 is specifically used for testing Ducab NuBICC range of nuclear grade



Ducab FlamBICC cables are installed for power supply to equipment used in fire-fighting, elevators, sprinkler pumps and in large complex buildings, where fire strategy involves evacuation of occupants in a phased manner.



Various cable offerings from Ducab.

cables making it the only facility to conduct this test in the region. The BS EN 50399 test is a new requirement to meet CPR (construction product regulation) for assessment of the 'reaction to fire' performance of cable, which will be mandatory across Europe by 1 July 2017.

Mohammed A. Al Mutawa, Ducab's chief commercial officer, says, "Ducab commits to meet and adhere to all new certification standards as laid down by the UAE and international authorities, and we are confident of meeting the new standards in the UAE as well. We believe that we have a responsibility to elevate the overall cable standards in the industry and reduce instances of loss to property and life due to non-certified and fake cables. Our state-of-the-art laboratory will test all Ducab FlamBICC series cables, ensuring that all material used will behave predictably in the unfortunate instance of a fire. It is imperative to gain as much time for a safe evacuation as possible in the event of a real fire scenario."

According to Dubai Civil Defence and

Ducab, major loss of property and life can be avoided by eliminating substandard and non-certified cables, which produce poisonous gases with black smoke obscuring visibility in the event of a fire.

Ducab ensures that its cables and accessories are certified to meet strict international codes of practice, thereby reducing the risk to life and property and pride itself on producing and achieving independent UAE Civil Defence, Hong Kong Fire Authority and other International approvals with LPCB & BASEC Accreditation.

Ducab cable manufacturing ensures all cables are subject to extensive testing during each phase of production, certified by independent LPCB and BASEC UK to meet the latest BS EN, IEC and IEEE standards and current code of practice. These standards provide recommendations and guidelines to the industry for the selection and installation of fire resistant power and control systems. ■

Stand No: H8.E10

**Optimisation:
How many birds can your wires hold?**

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Bahra Cables Company to bring efficient distribution system to MEE 2017

MANUFACTURER AND DISTRIBUTOR of electric cables up to 400kV, Bahra Cables Company will be exhibiting cast resin/dry type transformers at MEE 2017.

Cast resin transformers are used in a vast range of applications including service sector, infrastructure, HVACR, among others. Using such a transformer comes with many advantages that include low fire hazard (self-extinguishing); no risk of insulating fluid losses into the environment (no oil); availability of reduced loss range (energy saving); reduction of the overall dimensions; reduction of expensive construction; possibility of installation inside buildings; possibility to increase the power through the application of special ventilation system (temporary overload or high environmental temperature); and no maintenance is required besides the standard periodic checks.

Established in 2008, Bahra Cables Company, produces 80,000 tonnes a year of copper and 45,000 tonnes a year of aluminium. The annual production of PVC is 36,000 tonnes.

"Middle East Electricity is an important event for the Middle East and North Africa (MENA) market. We are looking to highlight our new products at the stand. It has been a quiet 2016 but this year we are looking to expand to new territories," says a company spokesperson.

Bahra Cables Company range of products include building wires,



Bahra Cables Company is part of Saudi Arabia's Kingdom Tower project. (Photo: Flickr)

high voltage power cables, low-, medium- and high-voltage power cables, fire resistant wires and cables, control and auxiliary cables, among others.

Stand No: H8.C10

UL Middle East looks to promote high safety standards

SAFETY SCIENCE COMPANY UL has more than a century of expertise innovating safety solutions regarding electricity to new breakthroughs in sustainability, renewable energy and nanotechnology. Dedicated to promoting safe living and working environments, UL helps safeguard people, products and places.

UL certifies, validates, tests, verifies, inspects, audits, advises and educates. It provides the knowledge and expertise to help customers navigate growing complexities across the supply chain from compliance and regulatory issues to trade challenges and market access. Looking to network with existing clients and meeting new ones at Middle East Electricity, UL will be demonstrating its three businesses – commercial and industrial, consumer and UL Ventures, and a growing range of services to offer solutions needed in a constantly evolving world.

Looking to also promote testing, certification, advisory and training services in the building and electrical products space, UL has recognised the need of a local qualified lab and has now built a state-of-the-art facility for testing, verification and certification of products

UL also provides UL certification, IEC type test examination certificates, verification testing, that are widely accepted in the Middle East region.



UL Middle East lab in Dubai. (Photo: UL)

The first phase of the UL Middle East Lab has incorporated the principles of Lean Sigma and is laid out in clear zones signifying the class of testing. It offers safety, performance and reliability testing services, training through knowledge transfer for the local economies from UL's global experts, research in electrical safety as well as tailored testing and inspection solutions.

The heat zone is one of the world's largest temperature rise test facility with current capacity up to 2,00,00A /@50 and 60Hz and elevated controlled ambient of 70° C in a room of 100 sq m in an area at a height of five metres. This is fully

automated and remotely accessible.

The environmental zone offers multiple mechanical tests for ordinary and hazardous location assemblies and environmental tests for extreme corrosion, damp heat, humidity, UV and thermal stability.

The dust zone consists of one the world's largest chambers for ingress protection testing up to IP X6 at a volume of 35 cu/m.

The aqua zone Water test is designed to cater to IP for IEC standards as well as TYPE ratings for NEMA/UL standards. The rotating table can be inclined and bear a load up to four tonnes.

Stand No: CB.20

alfanar brings automation solutions to MEE 2017

HEADQUARTERED IN RIYADH, Saudi Arabia, alfanar operates in construction and manufacturing businesses, design and development centres and host of facilities across the globe, including Dubai (the UAE), London (UK), Frankfurt (Germany), Ankara (Turkey), Ascoli Piceno (Italy) and Chennai (India).

The company produces switches and sockets, load centre, breakers, wires and cables, lighting, low and medium voltage switch gears, automation and transformers. Its products can be applied in most electrical projects either in mega projects or in residential buildings.

Returning to Middle East Electricity (MEE) this year, which alfanar has taken part in since 2011, the company says the exhibition provides an ideal platform for industry experts from the region to see the latest solutions, to meet and discuss new trends and requirements in the electrical products field and find potential opportunities.

At this year's show, alfanar will be showcasing a new substation automation system (SAS) and the new design of its LV switch gear, and its new range of switches and sockets (Granada).

The SAS automatically controls and monitors the required operations and status of the power system substations through the grid via intelligent electronic devices. Operators and engineers can control and monitor the information remotely on computer displays, graphical wall screens or laptop computers, and locally at the device or



Low voltage systems from alfanar. (Photo: alfanar)

on front-panel displays.

Granada, for home, office and leisure environments, is a range of wiring accessories that encompasses futuristic design and cutting-edge technology. It is also easy and safe to install, says the company.

alfanar has also exclusively developed and launched the first Smart RMU for the distribution automation system (DAS) in Saudi Arabia. With this, the operators and engineers can easily control and monitor all information,

status and command signals locally or remotely from the whole RMU and components in the electric distribution grid.

For the Riyadh Metro project, it is the key supplier of MV cables. This project also marks the debut of 33kV electrical supply. alfanar has manufactured and supplied 93 per cent of the 33KV medium voltage cable for the metro project, totalling 1,115km.

Stand No: H6.E10

Onsite electrical consultation from BAUR GmbH at MEE 2017

A MARKET LEADER in the field of service and maintenance of electrical power distribution systems and their components BAUR GmbH will be showcasing high grade products, onsite consultation and intensive training programmes at Middle East Electricity (MEE 2017).

Besides these, attendees can also find out about the comprehensive service BAUR offers for monitoring electrical insulation materials and power supply systems.

The BAUR testing and measurement technology helps prevent damage to networks and systems, allows for accurate planning of investments for maintenance and locates faults as precisely and quickly as possible.

One of the offerings include the ATG 2 burn down transformer. It is used for impedance reduction of cable faults in low-



Find cable fault location with the BAUR ATG 2. (Photo: BAUR GmbH)

and medium-voltage networks. The short circuit proof 2,300VA stray field transformer delivers a maximum voltage of 10kV and is housed in an enclosed 19-inch unit. Benefits include –

- Portable device for changing the fault resistance

- Useful for cables that are difficult to access
- Proven methods for complicated faults
- As a stand-alone version or built-in module in cable fault location systems

BAUR offers high quality products, consultation on site, comprehensive service and special training in the areas namely –

- Cable fault location
- Cable testing and diagnostics pertaining to the reliability of cable systems
- Dielectric insulation testing.

BAUR customers include power plant companies, mains operators and public utility companies, as well as industrial and service companies around the world.

Stand No: H1.H19

INMESOL consolidates its presence at MEE 2017



*Stand-by range genset with
VOLVO engine, model IV-165.*

FOR THE SIXTH consecutive year, genset developer INMESOL will take part as an exhibitor at the Middle East Electricity (MEE) 2017 from 14-16 February, which is the most important international meeting of the energy sector worldwide and will be held at Dubai World Trade Centre.

According to the company, the results of the last edition were particularly positive. "We had the opportunity to strengthen our relationship with our existing clients from the Middle East, Africa, and Asia and, on the other hand, new business opportunities that are now gradually consolidating were opened," the company spokesperson says.

This year INMESOL will showcase three generator sets aimed at

different applications and with different engines, as well as the latest lighting tower designed by INMESOL, the IT05.

Among the ranges that will be on display at MEE 2017 include:

- Rental range 42 kVA LTP genset, soundproof, with KOHLER engine, model IKRN-042
- Stand-by range 165 kVA LTP genset, soundproof, with VOLVO engine, model IV-165
- Industrial range 22 kVA LTP genset, soundproof, with PERKINS engine, model IP-022
- Four-spotlight lighting tower, with 8 kVA LTP genset, model IT05

Stand No: S1.A40

New option to alternate between two generator sets

THE INMESOL R&D department has developed a new programme option for the DSE334 control module that enables any pair of generator sets with remote start, to work in a dual mutual stand-by mode.

According to INMESOL, the rental sector will huge benefit from this option.

Uninterrupted power supply is required for rental applications such as construction, shows and telecommunication systems, which are usually located in remote places where there are no mains available. These are the typical scenarios where this option is ideal.

Under normal situations, using a single generator has a number of disadvantages namely –

- Supply is lost when unforeseen circumstances disrupt the proper functioning of the genset



- The continued use of a single genset leads to greater wear on the equipment, reducing its useful life
- When performing maintenance tasks, the genset engine must be stopped and, therefore, the supply is interrupted

With the option in the DSE334 control

module, all of these issues can be resolved by using a control panel with transfer switch and the control module connected to both generator sets.

The new programme enables the alternate use of both generator sets according to a time period scheduled and, if one of them fails, the other one automatically starts working and quickly replaces it. With this system, maintenance services can be carried out without prolonged interruption to the electric supply and the useful life of the generators is extended.

However, each one of the gensets should feature preheat resistance and a battery charger and each charger will keep the battery on the stand-by generator charged with the power generated by the working genset.

Megger presents world's most powerful cable test van system

CENTRIX 2.0 BY MEGGER is the world's most modern and powerful cable test van system for fast, easy and non-destructive fault location up to 33kV, says the company.

To be showcased at MEE 2017, the system is equipped with the latest generation of cable diagnostics in conjunction with powerful VLF testing technology. Centrix 2.0 makes it possible to perform standard-compliant cable testing with accompanying partial discharge diagnosis.

The van's unique operating concept uses automatic measurement sequences, a touch display and JogDial to simplify operation and faults can be located quickly.

Centrix 2.0 is available in 1-phase or 3-phase versions.

Centrix 2.0 sets new standards with regards to user friendliness and performance:

- Linux® based control system – for the highest level of stability and security for the future
- Intuitive easyGO® operation using the 21.5" touch display and JogDial



Centrix 2.0 is equipped with the latest generation of cable diagnostics in conjunction with powerful VLF testing technology. (Photo: Megger)

- Step-by-step operator guide
- Data automatically recorded and stored in the history database
- Decay plus double impulse procedure up to 80 kV
- ARM® live burning
- Highest standard of safety with

safeDischarge technology

- Simultaneous inspection and diagnosis with new 50 Hz slope technology
- System powered by Li-ion batteries
- Remote control of important system functions – for fault location that is non-destructive to the cables

The powerful computer has a 21.5-inch touch display, a hard drive scalable to one's needs, and an integrated recovery system. This ensures the security and stability of the system over its entire service life. The Linux® operating system is completely maintenance-free: No viruses, no defragmenting, no expensive antivirus programmes.

The system controls are kept separate from the office application and graphic information systems (GIS) to ensure optimal stability and security. Office applications, Geomap and database software can be displayed on an optional additional monitor.

Visit Megger at Stand No. H4.A01 for more information on its wide range of products

Portable hi-end switchgear test systems from KoCoS

GERMAN FIRM KoCoS is one of the leading manufacturers of switchgear test systems worldwide. Switchgear testing is one of KoCoS' core competencies, the products and solutions reflect its extensive know-how in this area. At Middle East Electricity (MEE) 2017, KoCoS will present its latest switchgear test system ACTAS, which is a portable and stationary test system for performing fully automatic function tests on all types of switchgear devices, including the drive units of switch bays.




ACTAS P 260 from KoCoS.

ACTAS P 260 and ACTAS P 360 are two new, portable systems with an integrated carrying case for comprehensive tests on medium-, high- and extra-high-voltage switchgear.

The integrated control panel with seven-inch touch screen and the testing software, which has been specially developed for it make for easy operation and optimum display of all information. The extremely rugged and compact suitcase-style housing protects ACTAS P260 | P360 on site and during transport.

KoCoS develops, manufactures and sells measuring and test systems for equipment in electricity supply systems and laser-optical inspection systems for quality monitoring in the semi-conductor, automotive and food industries.

Stand No: Z2.H35



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14 - 16 February 2017
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Stand Z3.B16

Cummins set to launch new STAMFORD alternator

CUMMINS GENERATOR TECHNOLOGIES will launch its latest product in the new STAMFORD S- Range of alternators at Middle East Electricity 2017.

The new STAMFORD S6 (810 – 1400 kVA+), featuring patented CoreCooling™ technology, brings advances in power density, quality and reliability to industrial marine and commercial applications. It is part of a rapid global product development programme launched by Cummins Generator Technologies, manufacturers of STAMFORD and AvK alternators, which replaces the current STAMFORD range – from 7.5kVA to 5000kVA+ - in a phased introduction.

The new S-Range family of alternators is offered with a three-year warranty as standard, across all customers, applications and regions.

The S-Range builds on the proven technology of the popular STAMFORD range of products from UC22 – P80. However, using innovative thermal, electromagnetic and mechanical levers, CoreCooling™ enables the new STAMFORD S-Range to deliver an increase in power density when compared to predecessors – the STAMFORD HC4, HC5 and HC6, says the company.

Trevor French, general manager of AvK global sales and marketing at Cummins Generator Technologies, says, “As the global market leader in alternators we have been able to adapt quickly to market demand and, by making refinements and improvements, can now offer customers a range of enhanced machines that more

directly meet their needs. Over the coming months the market will see more products introduced, all of which will give customers market leading power density and improved performances.”

Scott Strudwick, director, global sales and marketing, adds, “CoreCooling™ is the name we have attributed to a suite of advanced technologies being implemented across the S-Range of products. The new patented technologies target performance enables us to make significant changes on both current and future products. It’s a key enabler to improve power density and deliver industry leading reliability to our customers.

“This new product range will be available from our China and European manufacturing facilities. Each development programme for the range will be led from one of our regional design centres, enabling us to leverage our global expertise and knowledge in product development.”

The CoreCooling™ brand name will be displayed on the drive end bracket covers on all STAMFORD S-Range products fitted with this new technology.

Cummins Generator Technologies manufactures premium quality alternators up to 11,200 kVA under the STAMFORD and AvK brands. The company designs, manufactures and distributes engines and

related technologies, including fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems.

Following on from the successful launch of the STAMFORD S0/S1, S4 and S5 products, the STAMFORD S6 shares the same modular foot flexibility that facilitates greater compatibility with customers’ existing genset designs and for ease of assembly.

S-Range alternators meet the critical needs of various applications, be it oil and gas auxiliary, combined heat and power, critical protection and UPS, continuous power and standby – each demanding the highest level of performance.

Sridhar Narayanan, global product engineering team leader at Cummins Generator Technologies, reiterates, “With over 100 years’ experience we have put a great deal of time, investment and expertise into research and development, constantly looking for ways to innovate, update and improve our products. The STAMFORD S6 encompasses a range of solutions put together in the right mix in order to enhance product capability.”

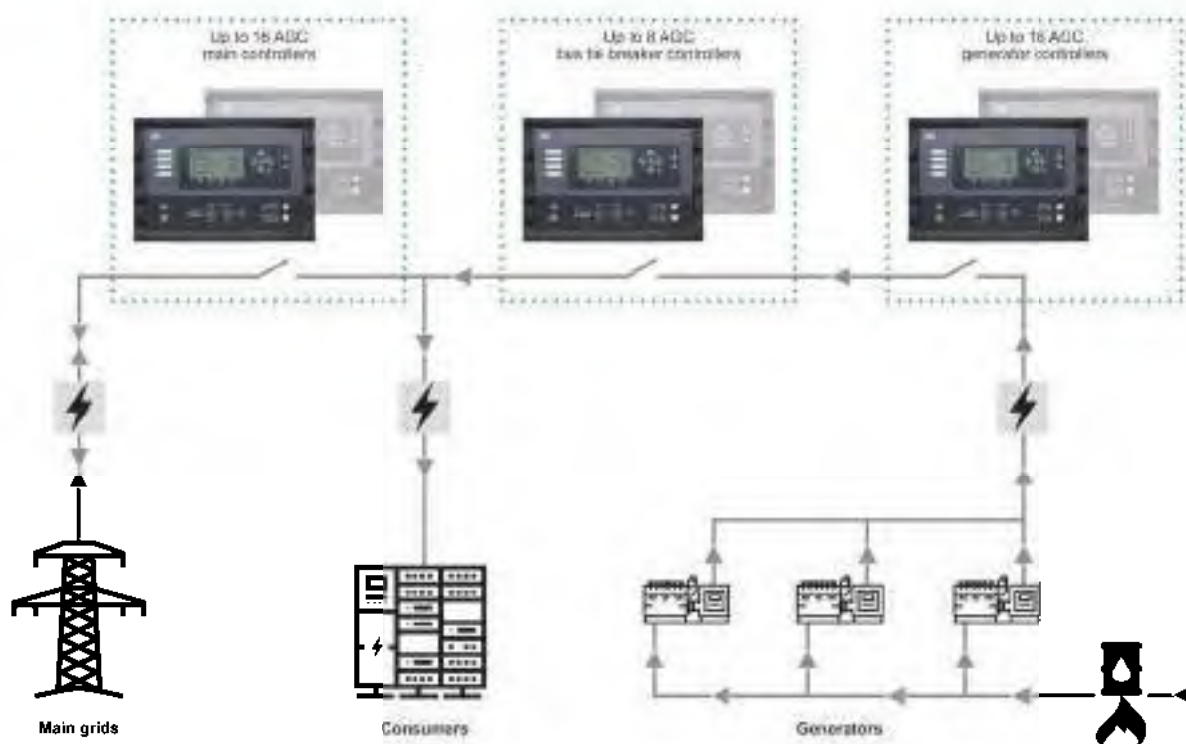
The new STAMFORD S-Range draws upon the company’s market leading expertise and heritage to create a family of alternators that provide solutions for a wide range of industrial, marine and commercial applications. ■

Stand No: S3.E30



STAMFORD S6 alternator. (Photo: Cummins Generator Technologies)

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Safety enclosures from Rittal Middle East at MEE

RITTAL MIDDLE EAST, a subsidiary of Rittal GmbH & Co. KG, is a leading system supplier for industrial enclosures, power distribution, climate control, IT infrastructure and software and services. The company will be participating at Middle East Electricity 2017 with key highlights that include:

- World's first – Blue E+ cooling solutions with up to 75 per cent energy savings
- New TS 8 Enclosures and variants with more benefits
- Integrated solutions with Rittal Enclosures on Ri4Power platform

Commenting on this year's participation at MEE 2017, Joseph Najjar,



The TS 8 sheet steel baying system, with its symmetrical profile in the width and depth, offers a significant space gain, plus simple interior installation. Additionally, the integral, automatic potential equalisation of all enclosure panels and the triple surface treatment ensure optimum safety. (Photo: Rittal Middle East)

managing director, Rittal Middle East, says, "Rittal participation at MEE has always been of foremost importance to connect and empower our partners and customers in the region. This is undoubtedly the best platform to showcase our innovative product offerings and services to a mix of audience from all industries."

Embracing standards and empowering the industry is one of the key messages to the audience and visitors that Rittal Middle East wants to deliver.

Industrial and electrical portfolio include AE Enclosures, CM Enclosures, TS-8 Enclosures, stainless steel products, EX Enclosures, RiLine components complying to global standards and certifications along with Ri4Power (Form-4, Type Tested MCC's Acc. to IEC 947), SE Enclosures, Cooling Units with 'Blue-E+' technology.

Stand No: H5.D10



Joseph Najjar is the managing director of Rittal Middle East.

John Deere Power Systems to display first engine in new generator drive range

AT MIDDLE EAST Electricity 2017, John Deere Power Systems (JDPS) will unveil the very first engine of its new generator drive range aimed at non-emissions regulated markets.

The new product covers the key 200 kVA prime node.

"Our OEMs and customers are asking for more cost-effective diesel engine solutions for power generation but they would not compromise on the quality, reliability or performance" says Arnaud Blanchard, market and product planner for Europe, Middle and Africa.

As a result, JDPS is developing a new range of products for the power generation segment, optimising 30 kVA to 250 kVA nodes, all made in France. Blanchard continues, "This new engine line up was developed based on market research and will demonstrate our commitment to meeting the increasing expectations of our OEMs and end-users."

As an entirely independent engine manufacturer of diesel driven power generation engines, JDPS offers OEMs

The JDPS stand at a previous edition of Middle East Electricity.



unbiased engine expertise and a complete range of products from 30 kVA to 630 kVA that meets most worldwide emissions regulations – from non-regulated engines to EU Stage IIIA and EPA Final Tier 4.

According to the company, JDPS engines meet emissions regulations while delivering quick-starting, clean-running, and fuel-efficient performance. Plus, the

renowned power density allows manufacturers to assemble compact and lightweight generator set packages. "We work closely with the leading generator manufacturers around the world to deliver uninterrupted power that protects your bottom line."

Stand No: S2.C30



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H2.F38

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H2.F31

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Annicom has been one of the UK's leading design and manufacturing companies for more than 30 years and produces a range of compact, reliable, innovative and competitive products for use in the Building Controls & HVAC industry under its brand name 'Axio'. Annicom manufactured products have a five-year warranty.

BEAMA

H2.G12

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BEAMA members are manufacturers in the energy, electrical installation and power sectors, a UK industry with a turnover of £13 billion and employing 137,000 people. BEAMA has considerable influence on standards and legislation in the UK, Europe and worldwide. Our interest spans from market models, regulations, products and system integration.

BG Electrical Ltd

H2.F19

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Contact: Laura Collins

BG Electrical Ltd, a division of Luceco Plc are a leading manufacturer and supplier of high quality electrical accessories including the market leading 'Masterplug and Permaplug' branded portable power products.

Boardman Transformers Ltd

H2.F35

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Contact: Mr Martin Boardman

Boardman Transformers design and manufacture Control and Industrial Transformers along with din rail mounted switch mode power supplies (SMPS). We are constantly investing in new CNC Automated machinery for efficient and reliable manufacturing of our products.

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H2.G20

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H2.F16

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H2.G14

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H2.F34

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Flexicon Limited H2.F28

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HOBUT (Howard Butler Ltd) H2.G29

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Contact: Mr Stephen Lawson

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M2 Electrical and Centaur H2.F17

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Contact: Mr Paul Brighton; Mr David Farrell

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Mettex Electric Co Ltd H2.G11

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P & B (PBSI Group Ltd) H2.F25

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P & B Metal Components Ltd H2.F30

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Futuristic control technologies from DEIF

AT THIS YEAR'S Middle East Electricity (MEE) that will be held at Dubai World Trade Centre from 14-16 February, DEIF will launch its new all-in-one gas controller unit, GPC 300 Gas, with integrated CODESYS. The new system eliminates the need for a programmable logic controller (PLCs). Part of a revolutionary new controller platform, the GPC is just the first of a range of solutions packed with functionality that will ease work and reduce costs from Day One, says the company.

At the show, DEIF executives will reveal how one can improve power efficiency using its innovative, remotely monitored and environmentally friendly control technology. Its retrofitting and new build solutions are ideal for hybrid microgrids, IPP plants, rental sites and mission-critical facilities such as data centres for power efficiency.

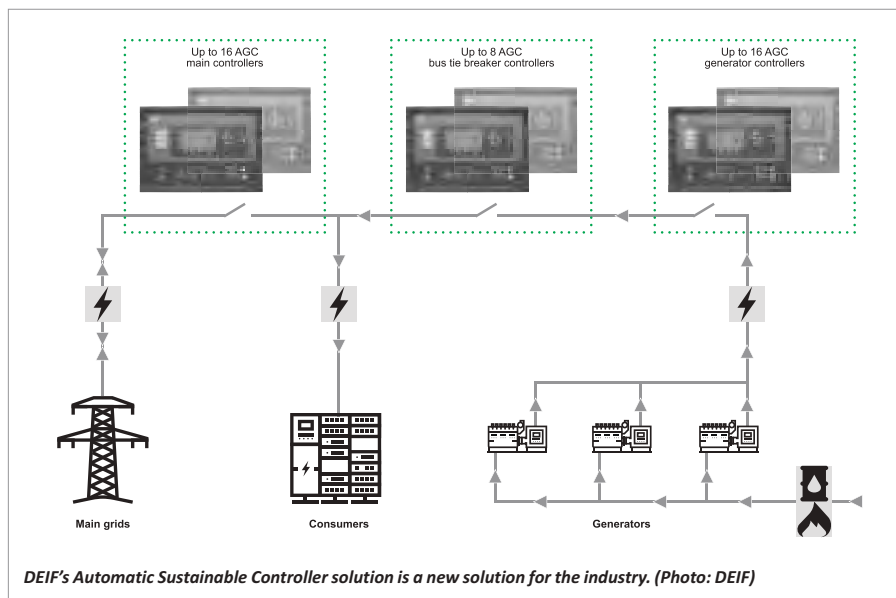
Power technology is about to change

The new GPC 300 helps cut costs, increase flexibility and simplify daily operations. The GPC 300 is part of DEIF's new Multi-line 300 platform.

Complete with built-in troubleshooting and fuel-efficient technology, all platform units are based on a versatile and modular base-mounted hardware platform developed for all levels of control solutions: from simple stand-alone engine control to complex and engineered power management systems. Using advanced processor technology, ML 300 units feature redundant high speed internal communication lines capable of handling protection functions at record speeds. Adapting to your application automatically, the quality controller range equals user-friendly operation and supports DEIF's hallmarks of green, safe and reliable performance.

Hybrid microgrids: First-mover in modular power control solutions for any operation mode

A reliable, fully integrated and optimising link between sustainable power plants and genset power plants, DEIF's Automatic Sustainable Controller solution (ASC) is a



new, market-leading solution for the industry.

DEIF ASC is scalable, flexible and modular, supporting multiple operating modes including off-grid, grid-tied, and combination (off-grid/grid-tied), and interfaces to a wide range of sustainable power sources, including PV inverters, battery inverters, wind turbines, and even weather stations from well-known makers using industrial standard/OEM specific protocols.

IPP: Unbeatable in power capacity and scope

An environmentally friendly alternative that provides 100 per cent automatic control from diesel to grid, DEIF's award-winning plant management solution for independent power producers secures stable and automatic plant management, control and protection of mega IPP projects of up to 992 gensets.

According to DEIF, this solution has revolutionised power management of temporary plants with fuel-saving information exchange between generator, transformer and fuel supply, and replacing traditional manpower-heavy operation with automatic control and protection.

Rental: Control at the push of a button

DEIF controllers are plug & play solutions that eliminate the need for wiring and the need to change controllers when changing applications: it's all done and dusted with the push of a button. With password protection and locks, installation is so safe and simple one can trust its driver to set up their rental equipment, says DEIF.

Data centre: Protect your assets from power blackouts

The average cost of a data centre outage has steadily increased from US\$505,502 in 2010 to US\$740,357 today. That's an increase of 38 per cent.

Outages have many causes, some of which are very hard to avoid. A surprise to many, however, the root cause of a stunning 22 per cent of all unplanned outages is human error. Human error today is the second-largest single cause of error, only surpassed by UPS system failures.

Learn more at MEE 2017 how DEIF counters this with fully automatic and redundant critical power management solutions. ■

Stand No: S2.B50

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Quick and easy three-phase testing of power transformers

TESTING AND DIAGNOSTIC solutions provider OMICRON claims it has developed the world's first portable, three-phase test system, which supports all common electrical tests on power transformers – TESTRANO 600. Weighing just 20kg, it is ideal for routine and diagnostic testing on-site and during factory acceptance tests (FAT). In addition, its innovative design reduces wiring efforts, cutting down testing time to one third compared to conventional single-phase testing.

At Middle East Electricity (MEE) 2017, held from 14-16 February at Dubai World Trade Centre, OMICRON will be displaying this system and offering solutions on the ground.

One system – multiple tests

With TESTRANO 600, operators need just one common set up to perform multiple tests, such as transformer turns ratio, exciting current, DC winding resistance, dynamic resistance, short-circuit impedance/leakage reactance as well as frequency response of stray losses (FRSL). By combining it with the accessory CP TD1, it can also test power/dissipation factor and capacitance up to 12kV.

The magic number '3'

In order to work with TESTRANO 600, just three cables have to be connected – one to the high-voltage side, one to the low-voltage side and one to the tap changer. Three integrated sources ensure measurements with high accuracy and make TESTRANO 600 a powerful test system (3x33A DC and 400V AC). Compared to conventional single-phase test sets, a true three-phase test system offers several



TESTRANO 600 is OMICRON's portable three-phase power transformer test system. (Photo: OMICRON)

advantages, such as shorter testing times when energising all three phases at once, and a fully automated control of the tap changer during testing.

Flexible and smart operation

In order to fulfil individual customer requirements, TESTRANO 600 offers a flexible operating design. It can be operated via the smart TESTRANO TouchControl on the integrated touch display or by using the established Primary Test Manager™ software on the laptop.

Active discharge and quick demagnetisation

The controlled discharging function (patent pending) of TESTRANO 600 automatically discharges the winding within seconds, for example, after resistance tests have been performed. This increases efficiency and safety during testing.

Operators can also quickly demagnetise the power transformer's core before and after testing using TESTRANO 600.

Demagnetisation is recommended after



DC has been applied on a power transformer, for example, during winding resistance tests. A demagnetised core reduces the risk of high inrush currents and avoids the influence of a magnetised core on subsequent tests, such as excitation current tests or sweep frequency response analysis.

Safety first

TESTRANO 600 follows the 'safety first' principles and is equipped with an emergency stop button as well as safety and warning lights. The unique connector plugs and the simple wiring concept with labelled connection leads leave an extremely narrow margin for wiring errors.

Compact and rugged for on-site testing

With all its accessories, TESTRANO 600 comes in a portable case and is easy to transport. Its rugged design makes it ideal for on-site testing even in rough operating conditions.

Stand No: H2.B20

Thermal protection for electrical applications from Pentair

PENTAIR MIDDLE EAST FZE Technical Solutions will be present at Middle East Electricity (MEE) 2017 showcasing some of the world's most sensitive electrical and electronic equipment, as well as heat management solutions.

These have been designed to provide thermal protection to temperature sensitive fluid applications and engineered electrical and fastening products for electrical, mechanical and civil applications.

The Technical Solutions products include mild steel, stainless steel, aluminum and non-metallic enclosures, cabinets, cases, subracks, backplanes, engineered fastening solutions across a wide range of industries and thermal management systems including heat tracing, floor heating, fire-rated and specialty wiring, sensing, and snow melting and de-icing solutions.

The brand names for Technical Solutions offerings include CADDY, ERICO, Hoffman, LENTON, Raychem, Schroff and Tracer.

The ERICO brand offers grounding, bonding and lightning protection solutions for electrical installation and protection, data communications and telecom, utility and industrial facilities.

The ERIFLEX brand offers engineered solutions for low-voltage and grounding connections for industrial and commercial enclosures, automotive, transportation, machinery, oil and gas, chemical, defence, aerospace, and food and beverage applications.

The CADDY brand offers fixing, fastening and support products for use in electrical installation, datacom, telecom, fire protection, seismic and HVAC applications.

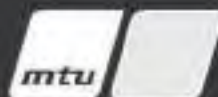
Hoffman designs and manufactures systems that protect the electronic controls and mission critical electrical systems in industrial, data communications, commercial construction and government applications.

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Intelligent range of innovations from DSE

AT THIS YEAR'S Middle East Electricity, DSE will be showcasing a wide range of new product innovations including the launch of their new brand – DSEControl®. With this, DSE continues to strive on innovation and excellence to continually make new product advancements.

DSEControl® includes –

- **The New DSEE100 Engine Controller:** A new product for engine control that includes sophisticated features such as fully configurable inputs and outputs, multiple engine maintenance alarms, battery voltage monitoring, engine run time scheduler and an event log showing the 50 most recent events.
- **DSEM640 Programmable Controller for vehicles and off-highway machinery:** Sophisticated engine controller specifically designed for mobile engine applications, with a powerful 32-bit processor with 220 MHz clock speed. Comes with robust die-cast aluminium design with IP67 for superior environmental protection, Ethernet communications and flexible user programming.
- **DSEM240 CAN Slave Module for vehicles and off-highway machinery:** CAN Slave module specifically designed for mobile engine applications. With multiple configurable inputs (digital and analogue) and outputs (digital, PWM and PWMi), the robust aluminium die-cast design offers IP67 protection against harsh environmental conditions.
- **M840 Programmable Display for vehicles and off-highway machinery:** Robust HMI/programmable display specifically designed for mobile engine applications. Includes an optically bonded 4.3-inch colour screen, analogue camera interface, and superior components for high performance and reliability.
- **M870 Programmable Display for vehicles and off-highway machinery:** Robust HMI/programmable display specifically designed for mobile engine applications. Includes an optically bonded seven-inch colour screen, two analogue camera

interfaces and superior components for high performance and reliability, such as ARM cortex A9 processor at 800 MHz and 512 MB of SDRAM and 2GB NAND mass storage; PC-based commissioning screens to aid system set-up, an increased number of multiple configurations and supported and improved under frequency roll off (UFRO) control.



The DSE M640 provides advanced programmable control options for vehicles and off-highway machinery and has been developed specifically for mobile applications. Sealed to IP67, the device incorporates a breather to allow the M640 to equalise pressure and reduce condensation whilst filtering out liquids and other contaminants. The unit features Ethernet, USB, CAN and configurable I/O.

DSEPower® includes –

Intelligent Battery Charger Innovations

- **DSE9479 24 Volt 100 Amp Intelligent Battery Charger:** Features super efficient power to size ratio offering compact and lightweight charging, the charger has CAN and RS485 connectivity and supports multiple battery chemistries.
- **DSE9473 12/24 Volt 15 Amp Intelligent Battery Charger:** Offers a compact and lightweight design with RS485 capability, allowing charger parameters and instrumentation to be extracted into existing business/ information management systems.
- **DSE9462 12/24 Volt Dual Output Battery Charger:** Offers two fully independent charge outputs to correctly and safely charge multiple battery chemistries. With a wide thermal operating range of -300°C to +700°C and temperature compensation on each output. The charger is suitable for applications including emergency vehicles.

All chargers are fully programmable using DSE Configuration Suite PC software to meet the exact demands of the battery specification and application and are designed with a high number of battery and charger protections.

DSEgenset® Innovations includes –

- **Updated DSE106 MKII Digital Automatic Voltage Regulator:** Now includes RS485 connectivity (instead of USB) for improved robustness and live diagnostics while running. Further innovations include changes to start-up circuitry and control functionality for improved operating performance.
- **Updated DSE8003MKII:** The DSE8003MKII offers enhanced remote display options for multiple DSE control modules. Improvements to the hardware enable a faster response and screen transition time and the graphical interface re-design offers simplified modern looking screens, including enhanced readability in sunlight conditions. Improvements to the internal hardware and middleware design provide a solid platform for greater product support and resource efficiency.
- **Updated DSE7XXX MKII Auto Start/Auto Mains Failure Control Modules:** The industry leading single-set generator control modules will be introducing built-in SNMP support, support for battery chargers over DSENet®, increased expansion module support, improved fuel level, fuel efficiency and fuel instrumentation and additional alternative configurations to support a range of different voltages and frequencies.
- **Updated DSE86XX MKII Auto Start Load Share Control Module:** New features include a selection of new control modes including constant power factor mode, voltage reactive power mode and frequency power mode, the ability to run the set without a bus circuit breaker, in-built SNMP support, battery charger support over DSENet®, User configurable CAN messages (two-way) and manual circuit breaker control. ■

Stand No: S2.H40

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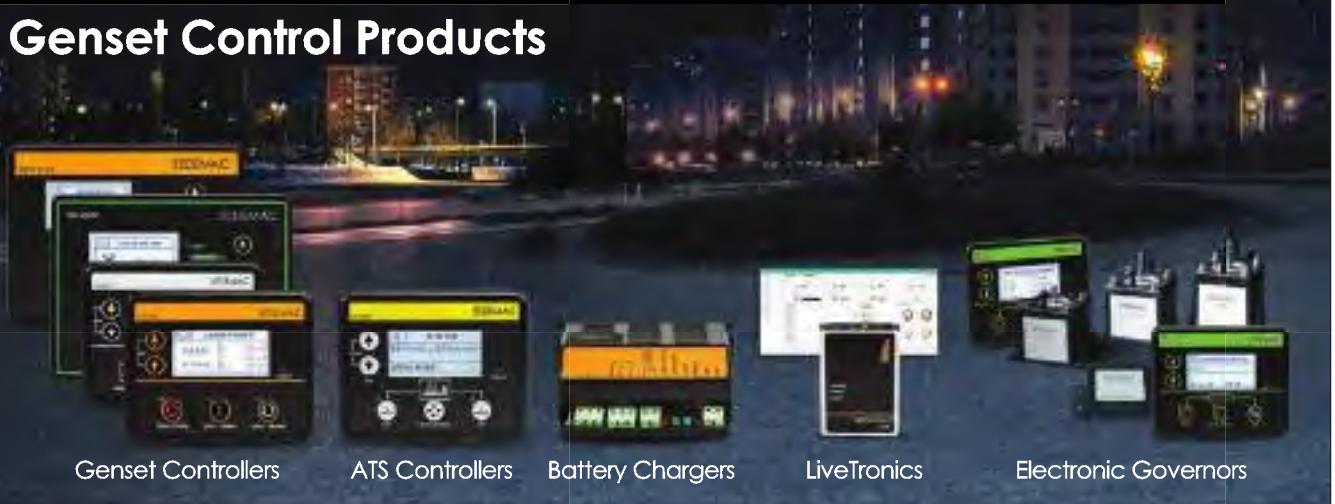
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2017 'big year' for Middle East's renewable energy industry

THE RENEWABLE ENERGY industry is bracing itself for a critical year of positive activity in 2017 as key markets across the GCC and the Middle East and North Africa (MENA) region accelerate their energy diversification programmes to meet national targets, according to Nasser Saidi, chairman of the Clean Energy Business Council (CEBC), a non-profit organisation dedicated to promoting clean energy.

CEBC will be taking part at Solar Middle East 2017, that will be held alongside Middle East Electricity (MEE) 2017, from 14-16 February at Dubai World Trade Centre.

According to Saidi, the region's shift to low carbon energy sources will have a strong impact on the renewable sector. The market is expected to be led by countries like Saudi Arabia, which plans to install 3.5 GW of renewables by 2020 – in line with the Kingdom's National Transformation Plan.

"2016 has been a positive year in which record low bids for utility scale solar power, primarily in the UAE, have positively and irreversibly changed the dynamic of solar," says Saidi. "But this is only the beginning of what we believe to be a paradigm shift in the pace of clean energy deployment in this region."

He adds that 2017 will be crucial to the long-term success of the energy diversification strategies across the Middle East, as the 2020 milestone draws closer. "What we see from markets such as Saudi Arabia, in particular, during the early part of 2017 will be a key indicator of renewed momentum – beyond 2017 – leading a major shift in the regional dynamic for renewables for the next decade and beyond," he reiterates.

Kuwait and Bahrain are targeting five per cent of installed capacity



The region's shift to low carbon energy sources is expected to provide a strong boost to the renewable sector. (Photo: Carlos Koblicsek/sxc.hu)

from renewables by the same date. The UAE plans to derive 21 per cent of its power from clean sources by 2021. Jordan will connect 1,800MW of renewable power to its national grid by the end of 2018 and Egypt plans to raise its share of renewable energy to 20 per cent by 2022. Additionally, Morocco is expected to have 42 per cent of its installed energy capacity from renewable sources by 2020.

Saidi also states that developers and financiers are positive that these energy diversification plans will create opportunities for the renewable sector.

Stand No: Z2.B54

Improving the aesthetics of solar panels

A JOINT VENTURE between Dubai Investments PJSC and SwissINSA SA, Emirates Insolaire has developed and pioneered coloured solar glass panels with its Kromatix patented technology, which are suitable for façades, rooftops and carports.

The company will be displaying its latest solutions and products at Solar Middle East, held alongside Middle East Electricity (MEE), from 14-16 February at Dubai World Trade Centre.

The Kromatix Solar Glass is CE certified and is available in various colours. These glass panels have an opaque finish, making the inner workings of the solar panels invisible and, thus, enhancing the overall aesthetics of the solar panels. It also helps to avoid the glare effects often caused by solar panels. Colour of the panels remains stable with time and sun exposure and average transmittance is above 85 per cent. The solar panels offer high efficiency while allowing vertical integration and less demand on horizontal required space.

Kromatix glass is available in dimensions up to 2,250 x 3,210mm and thicknesses comprised between 3.2 and



Solar façades are being increasingly used in sustainable building projects across the world. (Photo: Martina I. Meyer/Shutterstock)

eight mm. It can be processed in the same way as standard solar glass in order to fit the customer production process and can be delivered already cut-to-size, heat-strengthened or fully tempered. The glass panels can be applied on all available PV technologies and does not require any modification of the lamination or mounting process. It can be simply washed and installed on solar panels in the same way as usual transparent glass covers.

Kromatix Module is another product on offer by Emirates Insolaire. These modules are OEM manufactured using KromatixTM

solar glass to the highest industry standards. The modules carry industry standard guarantees and have all required certification specifications. Kromatix PV modules are available as framed mono-crystalline glass/backsheet modules or as frameless mono-crystalline.

Although the efficiency of the Kromatix modules varies slightly depending on the colour used, on average, it is above 15 per cent.

The coloured solar panels offer high efficiency, with each PV module capable of generating 170 to 190 watts per sq m for roof or 110 to 130 watts per sq m for facades. Emirates Insolaire's coloured solar panels and photovoltaic modules enhance the design of any building and can be easily integrated into any façade or roof.

Emirates Insolaire created history in May 2015 with the successful installation of the world's first coloured solar panels on a building façade in Lausanne, Switzerland. Two other projects in Basel, Switzerland, and Austria have also been completed.

Stand No: Z1.C50



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'GCC is power hungry'

The region's power construction contractor awards will witness a 14 per cent year-on-year rise in 2017.

Investments of US\$252bn over the next five years in projects is predicted for setting up new power production plants, distribution systems, and supply grids. (Photo: Wang An Qi/Shutterstock)

THE RECENT GCC Power Market report published by Ventures Onsite, on behalf of Middle East Electricity (MEE), forecasts GCC power construction contractor awards to increase from US\$22.38bn in 2016 to US\$25.52bn in 2017.

Saudi Arabia is expected to register the highest contractor awards in 2017, at around US\$12.35bn, an increase of over 50 per cent from its 2016 awards. Elsewhere in the GCC, the report predicts the value of power construction contract awards will also significantly increase in Bahrain, Kuwait and Oman. The GCC countries are also set to invest US\$252bn over the next five years in projects for setting up new power production plants, distribution systems and supply grids.

The GCC currently represents 47 per cent, or 148 GW, of the current MENA region's power-generating capacity, according to the Arab Petroleum Investments Corporation. Recent years have seen a steady rise in levels of energy demand in the GCC due to factors such as population growth, urbanisation, improvement in income levels, industrialisation and low electricity prices. This trend looks set to continue in the coming years.

In order to meet this demand, the GCC power capacity needs to expand at an average annual pace of eight per cent between 2016 and 2020. This will require US\$85bn for the addition of 69 GW of generating capacity and another US\$52bn for transmission and distribution over the next five years. This is accompanied by reforms to the structure of the electricity

market, which are gradually picking up throughout the GCC. The governments have increased water, electricity and fuel prices to ease the burden on state budgets, which are part of a broader programme that aims to liberalise domestic energy prices over the medium term. Recently, there has also been a pressing need for a shift towards smart power grids, as smart grids can reduce the stress on the grid, defer the investments for upgrades, improve the power system efficiency and reduce emissions.

To support this growth phase, the organisers of MEE have, for the first time ever, created a Consultants Arena, which will see engineering consultants discuss key concepts and regulations such as projects management tools and the UAE's green guidelines and regulations.

Speakers include Holley Chant, executive director Corporate Sustainability at KEO International Consultants, who will be discussing zero carbon projects and Abdulmajid Karanouh, director and head of Innovation Design, Façades & Sustainability at Ramboll, speaking on context inspired innovation. The aim of this platform is to give exhibiting companies and attendees more opportunity to network with world-class consultants.

Ahead of her talk at MEE, Chant highlights the heavily subsidised unit cost of energy, and incentivising energy efficiency in design and construction. "The elephant in the room for energy efficiency is the heavily subsidised unit cost of energy within the GCC. The Abdullah Bin Hamad Al-Attayah

Foundation for Energy & Sustainable Development November 2015 report states that this is as much as 66 per cent for some GCC countries. Given the promising development of low carbon infrastructural energy generation projects, the hidden costs of subsidised energy are reducing. Nonetheless, addressing this difference would be the strongest incentive. Since utility costs are rising, a clear road map of future financial impacts would further support this stimulus."

Currently, GCC government organisations and businesses are also witnessing the benefits of renewables as a cost-effective and reliable power source. The GCC countries have all targeted that 10 per cent of the power production comes from renewable sources of energy by 2020 and are rapidly moving towards realising this target. The key to renewable energy development in the GCC region is solar power, as it is the single most abundant renewable source of energy available.

The topography of the region gives it immense solar energy potential and benefits from the space to develop large solar power plants. Almost 85 to 90 per cent of the money spent on renewable energy development is for solar energy. The UAE, Saudi Arabia and Kuwait are the biggest solar markets in the MENA region.

Middle East Electricity 2017 and Solar Middle East 2017, hosted by the UAE Ministry of Energy, will be taking place February 14-16 at the Dubai World Trade Centre. ■

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Intersec 2017 draws the crowds

Global product launches, live demonstrations, new bilateral agreements, and updated UAE fire safety codes were among the many highlights of Intersec 2017.

ACCORDING TO ORGANISER Messe Frankfurt Middle East, Intersec 2017, which took place from 22-24 January in Dubai with the support of the Dubai Civil Defence, the Dubai Police, and the Dubai Police Academy, registered a five per cent year-on-year growth in both visitor numbers and exhibition size. The world's leading trade show for security, safety and fire protection attracted 33,501 visitors from 127 countries, and 1,304 exhibitors from 58 countries, across the seven show sections covering commercial security, fire & rescue, safety & health, homeland security & policing, information security, smart home & building automation and physical & perimeter security.

"The Middle East commercial security, homeland security, and the fire safety market continue to grow, and consequently there's a strong need for technological advancements in solutions in terms of features, specifications and upgrades," said Ahmed Pauwels, CEO of Messe Frankfurt Middle East. "Intersec plays a crucial role by putting global and local providers directly in touch with regional and international buyers."

Intersec 2017 featured 17 of the world's top 20 security solutions providers, and saw the launch of new products in areas ranging from drones to IP video technology.

The Dubai Civil Defence had a significant presence at the event, where it announced long-awaited updates to the UAE Fire Protection and Life Safety Codes. Chapters that have been updated include those relating to fire doors; cladding in buildings;



The busy exhibition floor at Intersec 2017.

access for civil defence trucks to reduce incident response times; and educating consultants, contractors and end-users on the latest modifications.

Other major initiatives announced by Dubai Civil Defence included an MoU with 911 Challenge Events Management to jointly organise and host the 1st GCC Firefighters Challenge Championship 2018 in Dubai.

With 83 per cent of exhibitors based outside of the UAE, Intersec's international

participation was spearheaded by a 10 per cent year-on-year increase in exhibitors from Germany and the UK, as 82 German companies lined up alongside 143 British companies, with the UK Department for International Trade's Defence and Security Organisation launching the UK Fire Resilience Offer.

Key features at Intersec 2017 included an Outdoor Demo Area & Drone Zone, a Jobs & Careers Pavilion, the Techtextil Pavilion, a Safety Design in Buildings Pavilion, and a Smart Home and Building Automation Pavilion.

Meanwhile, a three-day conference programme kicked off with the Fire Safety Conference on 22 January, and the Security Industry Regulatory Agency (SIRA) Forum on 24 January, where details about Dubai's new Regulation of Security Industry Law were provided. ■

Dubai Civil Defence had a significant presence at Intersec, where it announced updates to the UAE Fire Protection and Life Safety Code.



The Dubai Metro is one of the longest driverless metro lines in the world and carried 164mn passengers in 2014 travelling on two Red and Green Lines across the city. (Photo: S-F/Shutterstock)

On the fast track

MENA's best supported railways conference and exhibition is positioning itself as a global logistics hub.

RAILWAY AND METRO schemes worth US\$245bn are currently being planned in the Middle East and North Africa (MENA) region in preparation for mega events such as Expo 2020 Dubai and the 2022 FIFA World Cup Qatar, according to experts.

The region is already working on US\$89bn worth of projects, including the first phase of the Doha Metro, which is underway, and the Riyadh Metro project.

The European Union (EU), where cross-border railway system is the key component of the transport network, also announced plans in January 2017 to sign an MoU with the Gulf Cooperation Council (GCC) to lend full support in terms of experience and regulatory provisions to build and operate the Gulf railway. The cost of linking the six GCC member states by rail is estimated at US\$250bn.

The proposed MoU between the EU and the GCC, once endorsed by both sides, will be an important step to cater to the transportation needs of the GCC, which has one of the highest rates of population growth today. The construction of the 2,117 km-long GCC railway network is expected to be completed by 2021.

The Dubai Metro, the first-of-its-kind in the GCC region, has increased rapidly since its launch in 2010, and the Roads and

Transport Authority (RTA) expects to extend the Metro tracks to 110km by 2020 and to 421km by 2030. The RTA has already awarded the US\$2.88bn contract for the Route 2020 metro expansion to the Expolink Consortium led by France's Alstom in June 2016. The group, which also includes Spain's Acciona and Turkey's Gulermak, has begun construction of the 15km route linking the Nakheel Harbour and Tower station on the metro's Red Line to the Expo 2020 site.

The metro is one of the longest driverless metro lines in the world and carried 164mn passengers in 2014 travelling on two Red and Green Lines across the city.

With tunnelling complete and less than three years to go before the Doha Metro launches passenger operations, Qatar Rail aims to finish 70 per cent of the project by 2017-end. According to *Doha News*, this entails – completing track installation works; taking delivery of the first four of its 75 driverless trains in Doha; and awarding key operator contracts.

Riyadh is planning to build the biggest-ever mass transit system created from scratch. The US\$23bn Riyadh Metro Rail project will include nearly 117km of track and include six different rail lines and 85 stations. The system is aimed at helping

reduce traffic congestion and air pollution in a city whose population is expected to rise from 6.5mn today to 8.3mn by 2030.

All these developments will be the core focus of the 11th edition of Middle East Rail, which has grown to become the largest and most established rail event in the Middle East, North Africa and Central Asia.

Taking place from 7-8 March 2017, it is the only rail event to be run in partnership with the UAE government, hosting more regional and international government representatives than any other rail show. Global companies will come together to help build and operate brand new rail infrastructure, as well as upgrade legacy networks across MENA, Turkey, the Indian subcontinent and Central Asia.

In 2017, Middle East Rail will once again deliver an unrivalled conference, hosting over 200 speakers. As the leading rail conference for the regional markets, it will extend its project overviews into the Indian subcontinent and Central Asia.

The event will witness the presence of transport ministries from the regional markets, rail developers, transport operators, government, contractors and suppliers to talk strategy, technology and innovation for passenger and freight projects. ■

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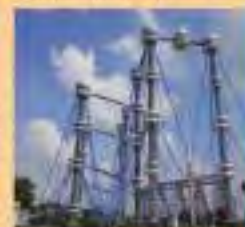
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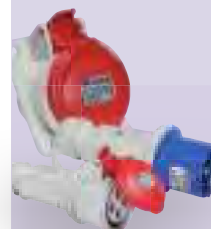
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FM Expo Saudi 2017 ends on a high note

The first edition of the only dedicated facilities management event in Saudi Arabia welcomed thousands of visitors.

SAUDI ARABIA'S FACILITIES management (FM) market, the largest in the GCC, has plenty of room to grow in both value and sophistication. Fuelled by Saudi Arabia's Vision 2030 and the National Transformation Plan, which includes improving across its healthcare infrastructure, the value of the FM industry in the kingdom is rising from an estimated US\$20.3bn in 2014 to a forecast US\$29bn by 2017. Moreover, with the rapid increase in population and mega developments, demand for cleaning solutions that use less water, less energy and generate less waste is also gaining momentum.

It is in this framework that FM Expo Saudi and Saudi Clean Expo 2017, which took place in Jeddah from 15-17 January, provided an effective platform for industry professionals to source new products, discover innovative solutions, network and learn.

"As the industry leaders, FM Expo Saudi 2017 and Saudi Clean Expo offered a unique opportunity for our speakers, exhibitors and visitors to learn from experts, delve into key industry influencing trends and discover new and innovative technologies," Alexis Wheatley, event director for dmg events Middle East, Asia & Africa, said.

At the Facilities Management Leaders' Summit hosted by the exhibition, industry leaders met to discuss the future of FM in Saudi Arabia, and solutions to improve efficiency as well as operational performance through a value-based approach.

According to Alistair Stranack, partner at Credo Business Consulting, without a significant change in approach and quality of FM provision, it is very hard to maintain the kind of new building stock being built in Saudi Arabia. "Technology can improve how buildings are maintained, but the challenge is that the prevalent contract structures in Saudi are very much input based and focused on cost per person. The overall economics of the whole building



The exhibition gave its attendees the chance to explore product and service innovations, enjoy good networking opportunities and participate in the free educational programmes. (Photo: dmg events)

cycle can be handled much more cost effectively if you have a proper maintenance programme," he commented.

On the second and third days of the event, the Middle East Facility Management Association (MEFMA) hosted a series of certified CPD workshops addressing some of

Saudi Arabia is the largest facilities management market in the GCC, representing some 55 per cent of spending on the industry in the region.

the most critical challenges in the Saudi Arabian market.

"Continuing professional development is a vital tool for industry professionals who want to stay on top of the fast moving developments in their sector," Wheatley added. "That's why we believe the free-to-attend certified CPD workshops that we have worked with MEFMA to create are so important to the success of our event."

"We are very optimistic about the facilities management market in Saudi Arabia," Saleh Al Rajhi, general manager, Advanced Facilities Management, the headline sponsor of FM Expo Saudi 2017, stated. "As the country enters a new era with the implementation of the National Transformation Plan, demand for facilities management is expected to grow in parallel to the projects being announced. We have seen a keen interest from the healthcare, industrial and real estate sectors.

Event organisers announced that the next edition of FM Expo Saudi and Saudi Clean Expo will take place from 15-17 January 2018 at the Jeddah Centre for Forums & Events. ■



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Witness the future of construction in Las Vegas

Held once every three years, CONEXPO-CON/AGG 2017 will bring together iconic brands from across the globe to the biggest event for the construction industry.

Connected equipment is driving the mining market and advancements in one market today are having a trickle-down effect on future technologies making their way into the construction industry.

The connected mining market is adopting new technologies and adding connected equipment at a rapid rate. These advancements will soon translate to the construction jobsite.

Connected mining uses technology to achieve better productivity and safety and reduce operational costs. It includes remote-controlled, robotic machinery. By using integrated automation and control systems, organisations can deploy driverless trucks, implement real-time monitoring of productivity data and supervisory control of operations from remote centres.

Sensors enable autonomous trucks to safely operate in critical situations in coordination with a GPS system, an obstacle detection system and a wireless network system. These autonomous systems can also integrate dozers, loaders and shovels with each other to allow unmanned operation. Highly advanced safety systems enable autonomous haul trucks to operate reliably in and around other equipment and light vehicles.

To focus more on such technology, CONEXPO-CON/AGG 2017 is set to take place from 7-11 March at the Las Vegas Convention Center, Las Vegas, USA. CONEXPO-CON/AGG 2017 is co-located with the 2017 IFPE exposition for fluid power/motion control/power transmission.

Attracting businesses involved in all segments of construction, aggregates and ready mixed concrete industries, including contractors, materials producers, and government and institutional sector officials, CONEXPO-CON/AGG will exhibit latest technologies and innovations in equipment, products and services for the construction industries. Product concentration areas, as well as specialised exhibit pavilions, will make it easy for visitors to locate specific



Volvo has selected 'push boundaries' as its theme for CONEXPO-CON/AGG 2017 to showcase its technology advancements. (Photo: Volvo)

products, services and exhibitors of interest.

CONEXPO-CON/AGG will also offer a comprehensive education programme during the five-day exposition, with seminars emphasising industry issues and trends, management and applied technology.

Besides mining technology, the growing application of commercial drone-enabled services in construction, agriculture and law enforcement will witness high growth during the next four years.

One of the latest developments in this market is the integration of commercial drones with VR technology. The growing popularity of camera drones is another trend gaining significance in the market.

The application of drones in construction sites is comparatively new and occupies the highest share in the market. By providing aerial photography, these drones assist contractors in supervising the progress of a project for its entire lifecycle.

Construction engineers can also use drones to precisely monitor projects and compare plans to better coordinate material and labor distribution on site. Drones are also used to develop 3D models promptly

and with accuracy. Drones are fabricated to access unapproachable locations such as eroded coastlines and mountaintops. They help in obtaining high-resolution data that can be used later for 3D mapping and contouring of locations.

To stay better connected and informed, CONEXPO-CON/AGG & IFPE 2017 have released a new mobile app, powered by CAT, to help attendees efficiently pre-plan their show visit and stay connected onsite.

The new show app is enhanced with beacon technology and features interactive 3D contiguous maps to help attendees more easily navigate the show floor.

It also continuously syncs to the online show planner where attendees can create a personalised agenda of can't miss exhibits, education and meetings, and edit it pre-show and onsite.

Attendees can also use the show app to stay connected with real-time show notifications; access news content; participate in gamified show activities; network with fellow attendees; and share updates, photos and video via social media. ■

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SteelFab 2017 strengthens metal industry's growth

The growing demand for metalwork due to strategic expenditure is reinforcing the event's significance, besides presenting a regional platform to explore modern equipment and metalwork and steel industry technologies.

THE 13TH EDITION of SteelFab 2017, organised at Expo Centre Sharjah, witnessed a huge turnout of businessmen, investors, decision-makers and representatives of steel, iron and heavy industries manufacturers from 17-19 January.

According to organisers, SteelFab 2017 attracted over 1,000 national and international brands, representing a wide array of Emirati and international companies, exhibiting their latest products over an exhibition area of 26,000 sq m. It served as an ideal platform to showcase the latest technologies and hardware in metal fabrication, surface engineering, metal finishing, metal shredding, milling, cutting and equipment manufacturing, in addition to other related engineering specialties.

Saif Mohammed Al Midfa, CEO of Expo Centre Sharjah and chairman of UFI's MEA Chapter, said that organising the 13th edition of SteelFab with this remarkable number of international exhibitions clearly demonstrated the significance of the event on national, regional and international levels, while its impressive success over the years has brought together leading manufacturers under one roof. "The event has become an excellent platform for the exchange of expertise and views among major industry players and decision makers", he stated.

Al Midfa clarified that the iron and steel industry is a strategic sector and the increased demand signals industrial and economic growth. He added that the GCC countries' government expenditure, mainly on real estate development and infrastructure, will boost the stability of these major sectors in the GCC states in the long run.

He also stressed that Expo Centre Sharjah is committed to supporting the steel and iron industries locally and regionally, by hosting SteelFab Middle East and promoting it as a major international event.

The exhibition included special pavilions and offered visitors the opportunity to explore cutting-edge equipment, advanced technologies and products, and modern applications.
(Photo: SteelFab)



The recent announcement of new projects signals a steady flow of investments into sectors like infrastructure and manufacturing, which is set to generate contracts for regional steel fabricators in the GCC.

Some of the recent projects that will keep the order books of regional fabricators busy include the US\$3bn worth of contracts for the construction of UAE's first nuclear energy plant; the US\$10mn contract to manage engineering, procurement and construction of the new gas and condensate pipeline of Kuwait Gulf Oil; and the US\$135mn contract to build a stadium for Qatar's 2022 FIFA World Cup.

"Several new projects have been announced in infrastructure, pipeline, airports and industrial sector recently. With economic diversification becoming the crux of development strategy, the UAE and the rest of the region are also focusing on the non-oil sector to contribute to economic growth. The immediate beneficiary here is the core sector that propels the steel fabrication and metal working industry," said Abdalla bin Sultan Al Owais, chairman,

Sharjah Chamber of Commerce and Industry & Expo Centre Sharjah, had said earlier.

The recovery in oil prices, though not as quick as expected, from below US\$30 a barrel to close to US\$55 also shows that the GCC has successfully withstood market challenges, and raises prospects for better economic growth and flow of funds into existing as well as new projects.

"The infrastructure and manufacturing sectors are looking positively at the recovery of oil prices, along with new policies and guidelines being announced to inject fresh vigour into the non-oil sector. They are also expecting investments from upcoming mega events like Expo 2020 Dubai and 2022 FIFA World Cup preparations, which have gathered pace," added Al Midfa.

"Steel fabricators can be assured of a steady rise in requirements from different sectors. SteelFab will help them explore and acquire cutting-edge equipment, advanced technologies, new products and applications for all their metal forming, fabricating, welding and finishing needs." ■

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WFES sees 60 per cent growth in business meets

Majority of the business interests piqued by Saudi Arabia's 9.5 GW and India's 175 GW renewable energy deals.

THE 10TH EDITION of the World Future Energy Summit (WFES) ended on 19 January 2017, with strong growth in commercial activity surrounding the event and the number of hosted business meetings surging by more than 60 per cent.

Hosted by Masdar as part of Abu Dhabi Sustainability Week (ADSW), WFES aims to promote the business case for industries involved in sustainable energy, water, and waste management. Organisers say that the rapid acceleration in the renewable energy market across the MENA and South Asian markets had a clear impact on business at the event.

Mohamed Jameel Al Ramahi, CEO of Masdar, said, "The success of the WFES over the last decade has been built on partnership – on bringing together governments and businesses, and sharing the goal to make renewable energy successful, dependable and commercially viable. We are delighted to have hosted an event that has encouraged such lively debate, based on shared knowledge from around the region and international markets. The event has also helped both new relationships to be forged, and existing relationships at home and abroad to be cultivated. Most importantly, the WFES has once again inspired real decision-making. We are proud that the 10th edition of this global event has been a successful platform for new agreements, partnerships and initiatives that will take the renewable energy and clean technologies sector forward."

While the value of most deals signed during the event is confidential, growth in attendance is outpaced by the indicators of business activity. Calculated at the start of the event's final day, WFES 2017 hosted almost 8,600 business meetings as part of its Business Connect matchmaking programme. This compares with around 5,300 in 2016 – a rise of almost 62 per cent year-on-year.

As predicted, Saudi Arabia's plans to add



WFES 2017 welcomed around 880 exhibiting companies from about 40 countries, and 38,000 attendees from 175 countries. (Photo: WFES)

almost 10 GW of renewables to its energy mix offered the most immediate business opportunity. Leading the delegation at tailored meets at the event, the Kingdom's energy minister, Khalid A. Al-Falih, confirmed that the first round of tenders for around US\$50bn worth of projects would be launched in February this year.

India's plans to add 175 GW of renewables by 2022 also attracted considerable interest, with a national delegation meeting potential partners in a dedicated India Investment roundtable meeting. India's energy minister, Piyush Goyal, held private meetings with organisations including Masdar and DEWA.

Major announcements at WFES included a joint DEWA and Masdar agreement to start building the third stage of the Mohammed bin Rashid Al Maktoum Solar Park, which at 800MW will be the world's largest PV plant on completion; a US\$50mn UAE fund for renewable energy projects in the Caribbean; a cooperation agreement between Masdar, Qatar Electricity and Water Corporation, and Nebras Power to develop renewable and sustainable energy projects; Masdar's purchase of a 25 per cent stake in the pilot Hywind Scotland floating offshore wind farm in the North Sea; and an

agreement between Masdar and Bee'ah to develop a 300,000-tonne waste-to-energy plant in Sharjah. Masdar will also provide consultancy services for the building of a five megawatt grid-connected solar power plant in Seychelles.

Reflecting the maturity of the sustainable energy market, renewable sources of electricity were joined by the latest advances in storage – seen as the key to confirming the effectiveness of renewables as a consistent and reliable energy source – and innovations in fields such as carbon capture, as part of the WFES exhibition and conference programme.

First held in 2008, WFES has expanded beyond its main energy focus to include co-located events for a range of interlinked markets. The 2017 edition also hosted the 5th International Water Summit (IWS), held in strategic partnership with Abu Dhabi Water and Electricity Authority (ADWEA), and the 4th EcoWASTE exhibition and conference, held in partnership with Tadweer, The Center of Waste Management in Abu Dhabi (CWM).

Also returning for the second year was Solar Expo, dedicated to advances in solar energy, while 2017 marked the launch of the Energy Efficiency Expo. ■

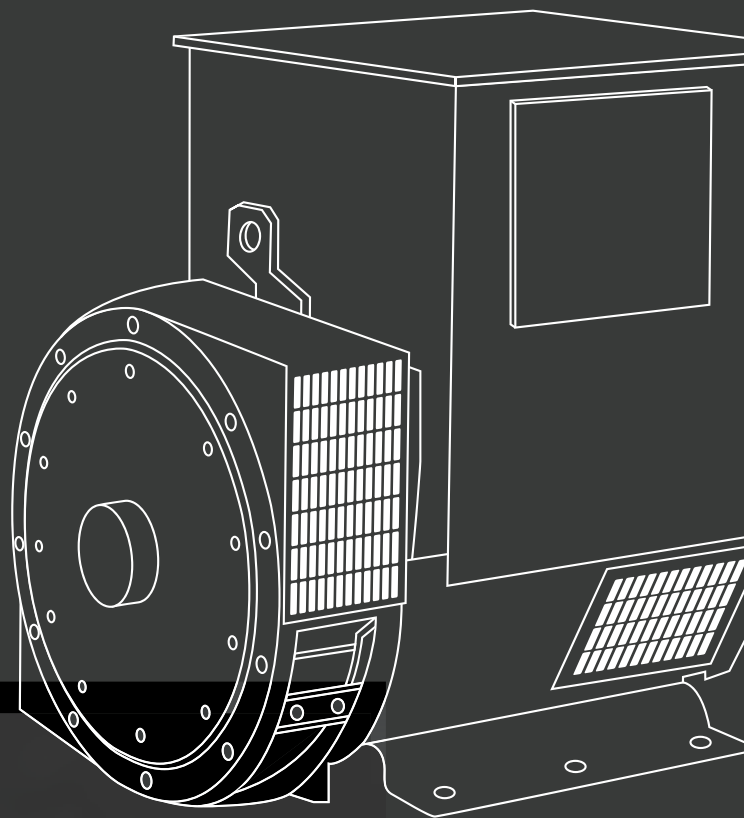
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Ganesh Iyer (left)
with Ann Brown.

Caterpillar power generation embraces a bright future

Ganesh Iyer, global director, power generation for Cat and FG Wilson, speaks with *Technical Review Middle East* on striking a balance between two iconic brands.

“People who buy generator sets aren’t buying the metal. They are buying guaranteed power, and with that comes a responsibility that you will honour the customers’ trust.”

GANESH IYER IS a man on a mission. Since early 2015, he has held the reins of one of Caterpillar’s most significant power generation teams. His reach covers Cat branded generator sets up to 750 kVA and the entire FG Wilson range from 7 kVA to 2,500 kVA. It is a task which compliments him hugely and has his undivided attention.

What makes Ganesh’s task interesting is that it embraces the generator set industry’s two most iconic brands, which together have an enviable global presence.

Caterpillar have been in the business since 1939, the first engine manufacturer to provide a complete factory-produced generator set, and globally today Cat brand generators lead the way in quality, durability and world-class support.

The FG Wilson brand was founded in 1966 and was acquired by Caterpillar in 1999. Ganesh talks candidly about what attracted Caterpillar to FG Wilson. “It was the modern factories, the distribution channel, the ability to reach new customers and most important of all, the entrepreneurial spirit within the brand.”

Alongside the premium Cat brand generator set range, FG Wilson allowed Caterpillar to reach a wider group of customers. Having a brand like FG Wilson inside the stable was something of a learning experience for Caterpillar, which today owns many ‘non-yellow’ brands. In the late 90s, however, much of this was new to the organisation.

Ganesh says, “At first, little changed for the FG Wilson brand. Then gradually over

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time, we tried to make things more efficient, with common products, common processes and the ultimate was a common marketing team between the Cat and FG Wilson brands.”

It might have seemed efficient, but it was also diluting the essence that made the FG Wilson brand unique. Slowly, it was losing its voice, inside and outside the organisation.

In mid-2016, Ganesh changed all that. “One thing that is abundantly clear to me is that the FG Wilson brand is critical to our future success. It was time to step back, really think about our customers, set out where we want to take our business and how we can grow while serving customers even better.”

The first step was the appointment of a new managing director for FG Wilson, Ann Brown. A grounded professional with seventeen years in the industry, Ann hails from an operations background. She is now surrounded by an experienced team, many of whom started their careers at FG Wilson and were instrumental in driving FG Wilson growth.

Ganesh sees that reaffirmation of FG Wilson brand values as key. The market for generator sets is a crowded and unforgiving place. He adds, “The basic technology in a generator set really hasn’t really changed for a long time. We have a 70-year old Cat generator set on display at our Larne visitor centre in the UK, which wouldn’t look out of place at a customer site today. Engines have become more efficient and customers can work remotely with generator sets but really, the basic core product is the same. This means it’s relatively easy for new generator set packagers to enter the market with similar products, so it’s a mature and very crowded market.”

What is much more difficult, reveals Ganesh, is to build up distribution networks and be capable of supporting generator sets effectively and consistently on site. “People



who buy generator sets aren’t buying the metal. They are buying guaranteed power, and with that comes a responsibility that you will honour the trust customers give when they buy.”

With 600,000 generator sets installed since 1990 alone, FG Wilson doesn’t take any chances with customer trust. Every new product is put through rigorous testing and validation at a US\$26mn engineering centre in Larne, which also houses Europe’s largest fully automated hemi-anechoic chamber, providing state-of-the-art acoustic research and test capabilities. And every product is released with a full suite of parts at the brand’s main aftermarket facility, which stocks 11,500 product lines and ships three million parts a year.

This focus on service is a huge priority for Ganesh. “Few of us now tolerate loss of power. Talk to any person who has lost their Wi-Fi or data connection. Today, we all expect more from what we buy, and customers who own generator sets expect the same level of service as they get when they buy a consumer product. This is where FG Wilson is really investing time and resources.”

Supporting customers is a global network of over 400 dealers with over 700 touch points, all of them painstakingly recruited and trained. Many have been in partnership with FG Wilson for two or three decades.

Ganesh notes, “What makes the FG Wilson distribution network really special is that their main, or usually, sole focus is on our generator sets – this is what they do, so they are complete specialists. They understand the business and customers better than anyone.”

That expertise can reach into extremely complex projects. In the early days, FG Wilson built up its name designing, building and commissioning mini power stations in the Middle East, often in the most inhospitable operating environments. That tradition continues today. In some European and Middle East cities, it is possible to look across the skyline and tick off large landmark buildings that rely on an FG Wilson generator set for standby power. Developing this custom business for large generator sets is important to Ganesh. “We believe this is something that FG Wilson does extremely well. We have a long track record of experience, within our organisation and within the dealer network, world-class facilities, and very importantly, the innovation and product development from custom projects can work its way through to our more standard ranges.”

The future is very obviously where Ganesh’s mind is. Yet, he is very conscious of the heritage of FG Wilson. He says, “Last May, we marked 50 years of FG Wilson with an event at our Larne facility among long-standing employees and representatives of the Wilson family. The warmth and goodwill at that event is something I will never forget. This is a great and historic brand with a 50-year history, and it is our job to preserve and grow it for the future.”

According to Ganesh, the benefits of the changes are already being felt across the organisation. “We are writing another chapter of a great brand. It is like a business school case study coming to life.” ■

Visit FG Wilson at Stand no: S2.D10 during Middle East Electricity 2017

“Few of us now tolerate loss of power. Today, we all expect more from what we buy, and customers who own generator sets expect the same level of service as they get when they buy a consumer product. And this is where FG Wilson is really investing time and resources.”

FG Wilson reaches for the Sky

IN MANY PARTS of the world, seismic certification is becoming a key requirement for generator sets, especially when they are installed in large buildings or facilities in urban areas.

FG Wilson distributor FGW Jenerator Turkey recently achieved full IBC seismic certification as part of a project to install 19 x 1,700 kVA and 2 x 800 kVA generator sets at Skyland Istanbul, the second largest construction project in Turkey in 2016. The site includes two towers almost 300 metres high, the seventh tallest buildings in Europe / CIS, which are part of a huge office complex, shopping mall, a residential tower and 5-star hotel.

FG Wilson P1700 and P800 generator sets were manufactured in Larne, UK, then tested and certified in Rome in July 2016 at the only shaker table test facility outside the USA able to accommodate machines of this size. The test included a 30-second seismic shake, after which the generator sets were started up and functioned normally. To demonstrate reliability and performance after the seismic test, the generator sets were then returned to FG Wilson's Larne facility, which houses Europe's largest testing and development facility for generator sets, built at a total investment of US\$26mn.

Project requirements include sound-insulated container type enclosures incorporating seismic specification for the larger generator sets, synchronization system, Scada and energy management system, fuel automation system and critical silencer. Strengthened baseframes and control panel stands and seismic anti-vibration mounts were specially engineered into the generator sets at the Larne facility.

This is the first time FG Wilson has achieved seismic certification for large generator sets and is believed to be the first time a generator set powered by a Perkins 4000 Series engine has achieved full seismic certification.

For FGW Jenerator Turkey, this was part of a memorable 2016, which saw a large number of installations at some of Istanbul's most prestigious buildings, as well the completion of a project to power the new Yavuz Sultan Selim Bridge in Istanbul, the world's tallest suspension bridge and one of the world's widest.

Speaking about the installation, Koksai Er, CEO of FGW Jenerator Turkey, said, "We closely monitor urban transformation trends and we've been actively participating in many major power projects in Turkey and especially in Istanbul. Skyland is an Eroğlu Real Estate

Skyland Istanbul.



project, which is located in a premium area of Istanbul and its architect is globally recognised Broadway Malyan. We are very pleased to provide uninterrupted energy to this major project in which only the best materials are used."

Ann Brown, managing director of FG Wilson, added, "This is a wonderful endorsement of the quality and durability, which are designed into generator sets from FG Wilson. We're delighted that FGW Jenerator Turkey is successfully participating in very demanding projects of this kind with our products. This project really highlights how closely we co-operate with our dealers in terms of sharing expertise and resources. It's an outstanding team effort for the benefit of our customers."

FGW Jenerator Turkey has represented FG Wilson since 2005 and is a full service dealer, with a strong focus on large and complex projects from initial design through to installation, commissioning and aftermarket support. The dealer is based in Istanbul-Umraniye, with regional offices in the Marmara, Aegean, Mediterranean, Central Anatolian and Black Sea regions and northern Iraq in Erbil.

FG Wilson generator sets being inspected.



Serving Kuwait's construction industry

Al Ourifan, a leading Kuwaiti construction sand supplier, has expanded its CDE sand washing installation with the addition of a M4500 sand washing plant.

AL OURIFAN, A Kuwaiti construction company and quarry operator, provides aggregate materials to the local building industry. In 2013, the company purchased a CDE M2500 E3X sand washing plant to treat raw wadi sand in order to obtain a 0-5mm washed sand for use in the local construction industry. The quantity and quality of its products increased, leading to growth in demand for its offering. Within a year of successful commissioning, the company decided to purchase a powerful upgrade of its existing M2500 wash plant that would allow it to increase production and diversify its offering by adding 0-5mm washed concrete sand to its portfolio. The CDE M4500, commissioned in April 2016 to run alongside the M2500, has dramatically increased Al Ourifan's capacity by injecting an extra 200 tonne-per-hour dimension to the company's sand washing operations. Today, Al Ourifan's M2500 produces 100 tonnes per hour of washed sand, whilst its M4500 produces 200 tonnes per hour of concrete sand, enabling the company to meet its clients' requirements in terms of quantity, quality and speed of delivery.

Mr Ourifan, owner of Al Ourifan, says, "With the construction industry leading economic growth in Kuwait, sand quality-enhancing systems are more than ever the key to keeping a competitive edge, with demand for high quality sands and aggregates driving construction companies to raise the stakes by adopting innovative technologies.

"Our CDE M2500 had proven to be an excellent choice in terms of reliability in production of different grades of sand and return on investment. When demand started to grow beyond the capacity of the M2500, we naturally turned to CDE for an upgrade."

Designed to accommodate an 'all in' feed of material to wash and grade three different types of material simultaneously, and with a capacity of 450 tonnes of materials per hour, the M4500 combines feeding, screening, sand washing and stockpiling onto one compact chassis. Although packing an impressive number of features, it can be deployed in record time and accommodated in a small footprint thanks to its modular design.

Cost savings on all fronts

To ensure optimal efficiency in a dry environment where every drop of water matters, Al Ourifan has installed a CDE AquaCycle, a highly effective water recovery system benefiting both the business and the environment, which enables the company to recycle up to 90 per cent of the water used in the sand washing process.

In addition, as the CDE equipment is designed to be managed through a user-friendly one-touch electric system, Al Ourifan's energy costs have been reduced by approximately 75 per cent.



The M4500 sand washing plant in action.

After being processed and classified, the final products are stockpiled. This is facilitated through the inclusion of three integrated stockpile conveyors and a radial conveyor to ensure maximum stockpile capacity, eliminate unnecessary double handling of the material and reduce vehicle movements on site, bringing additional cost savings.

The integrated dewatering screen on the integrated EvoWash sand washing plant also allows for the material to be much drier and ready for sale faster.

Enhanced customer relations

Ruchin Garg, CDE regional manager for MENA, states, "Being based in the Middle East means that we are only just a phone call or a short trip away, so I have the opportunity to visit the Al Ourifan CDE plant regularly. It allows us to iron out any issues arising and keep the conversation going on how CDE can help to reach new performance requirements quickly and efficiently, as we did with the introduction of the M4500.

"Our experts work closely with clients on location to design and develop the most efficient and value-for-money installations. As CDE Global builds installations in its dedicated production facilities in Northern Ireland, the final product is tailor-made to each client's exact specifications. This ability to control the product from start to finish is key to delivering tailor made turnkey plants that will take minimum installation time and produce high returns on investment.

"The flexibility offered by the CDE equipment is also a very attractive proposition to companies that want the option to expand their operations in the future. Al Ourifan is a case in point." ■

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Bobcat launches new telehandlers for construction and rental applications

BOBCAT HAS INTRODUCED a new range of rigid frame telehandlers for the construction and rental industries.

The 11 new generation models cover maximum lifting capacities between 2.6 and 4.1 tonnes with lifting heights from six to 18 metres. They are the TL26.60 and TL30.60 compact telescopic loaders; the TL35.70, T35.105, T35.105L and T36.120SL middle lift telehandlers; the T35.130S and T35.140S rental industry-oriented telehandlers; and the T35.130SLP, T41.140SLP and T40.180SLP high lift telehandlers.

They are available in versions for markets with non-regulated emissions such as the Middle East and Africa, where high performance is ensured by Perkins Stage IIIA/Tier 3 diesel engines, providing plenty of power and torque even in the most difficult ground conditions.

The new generation telehandlers incorporate several new features such as an automatic parking brake with an intuitive operation, an optional air dual suspension seat, an



The T40.180SLP high lift telehandler.








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optional auto fan inversion, and a rotating beacon/back-up alarm as standard, and cushion retract on the three TL models. The new optional fan system with automatic inversion is electronically controlled to adjust rotation speed depending on the temperature, which results in energy savings.

There are also a number of smart operating features still offered as standard, including a speed management system, smart handling system, auxiliary flow management and fast connect system.

An ergonomic array of machine controls is provided within easy reach of the operator, including a forward/reverse (FNR) control button on the joystick; a digital display; an adjustable steering wheel and an integrated airflow solution.

The TL26.60 and TL30.60 are available with two different overall machine heights with a cab which can be mounted in two different ways – in a low position that results in the very low 2.1 metre height or a higher position to optimise visibility.

With nearly 18 metres lift height and a maximum capacity of four tonnes, the T40.180SLP gives top-class performance for high-lift jobs. Its compact stabilisers, frame leveling and boom positioning system gives greater productivity for material lifting or people elevation.

An integrated CAN bus technology limits the number of cables and connectors on the machine. This automotive system has been optimised by Bobcat to manage and display numerous parameters on the dashboard screen. It also reduces machine downtime thanks to quick error diagnosis and good accessibility to electrical controllers.

On the TL35.70, replacing the TL470, there is an improved load chart providing an additional 500kg (3,500kg) of lifting capacity at the maximum lifting height.

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Haulotte Group launches new range of telescopic booms

HAULOTTE GROUP HAS introduced its versatile HT28 range of telescopic booms, which easily adapts to all projects and applications such as building works, finishing, maintenance and inspection work, renovation of buildings, demolition, shipyard construction, mining, landscaping and tree surgery.

The HT28 range is the first to feature Haulotte Group's innovative high performance lighting system, ACTIV'Lighting System-Safe Load. Located at several points around the machine, this lighting system illuminates controls and the area around the boom, promoting safe manoeuvring. It also features the new generation secondary guarding system Haulotte ACTIV'Shield Bar 2.0, which shields users from risk of crushing without compromising productivity.

The boom has a maximum outreach of

The HT28 range can be used in a variety of applications.



The boom has a maximum outreach of 24 metres.



nearly 24 metres, enabling users to reach even the most inaccessible work areas, and quickly extends to its full height. It includes a 230kg/350kg dual load capacity as an option. In 350kg mode, the platform can accommodate an extra 40 per cent of equipment by weight.

The HT28 range is designed to move easily, even on rough terrain or inaccessible areas, offering advantages such as an oscillating axle for superior ground adhesion; hydraulic differential wheel lock to effectively distribute power to the wheels; high ground clearance to get over obstacles; and gradeability up to 45 per cent.

Offering flexibility and precision, the range incorporates standard features of all new Haulotte machines, such as a standard upper control box designed to carry out drive and elevation movements with accuracy and

precision, and standard tool tray.

In common with all new machines developed by Haulotte Group, the range incorporates the latest design standards, ensuring robustness and high durability.

The HT28 range is equipped with ACTIV'Screen on-board diagnostics system, supporting users daily in carrying out maintenance operations, as well as a universal telematics connector as standard, which adapts to any type of telematic system, and a STOP emission system that automatically stops and restarts the engine, reducing the use of the engine and peripheral components by up to 20 per cent.

Offering maximum safety, the Haulotte aerial work platforms comply with the most advanced international regulations, notably with European, Asian, Australian and North American standards.

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Volvo's new excavator designed for efficiency and comfort

THE NEW EC140D excavator from Volvo Construction Equipment has been designed for the Middle East (excluding Turkey) market.

The excavator is equipped with a powerful Tier 2-compliant D3.8F engine that works in harmony with the hydraulics to deliver exceptionally low fuel consumption in the 12.8-15.8 tonnes weight class, according to the company.

Operators can choose from five intelligent work modes – I (Idle), F (Fine), G (General), H (Heavy), and P (Power Max) – to ensure only the right amount of flow is delivered for the task at hand. Volvo's popular ECO mode is also included for the first time in this weight class to help reduce consumption even further while still maintaining digging power and swing torque. Automatic engine shutdown is also available as a new option on the EC140D excavator.

In difficult terrain, the Volvo EC140D's long, wide undercarriage and heavy counterweight ensure excellent stability. The durable components also contribute to high machine uptime.

Regular service checks can be carried out safely, quickly and easily, thanks to anti-slip plates, ground-level service access and centralised filters and greasing points. These features are a significant help for owners in getting the most out of their machine. So too are the wide range of attachments, which allow the Volvo EC140D to be adapted for almost any crawler excavator application.

The Volvo EC140D is compatible with many different bucket, breaker and piping options. A password protected attachment management system, accessed via the monitor inside the cab, allows



The Volvo EC140D excavator. (Photo: Volvo CE)

the operator to configure and store hydraulic flow settings for up to 20 different attachments.

When it comes to operator comfort, the Volvo EC140D excavator offers a comfortable and productive operator environments. The spacious premium cab with the latest styling is equipped with an easy-to-view monitor, adjustable seat and ergonomic controls. A rear-view camera is also available as a new option.

New telescopic crane at work

WITH ITS COMPACT dimensions and its flexibility, the SENNEBOGEN 653 telescopic crane lifts not only the steel elements in position, but also carries the hammer on the hook. With the vibrator, the sheet piles are finally driven deep into the ground and strengthen the structure and surrounding buildings.



The SENNEBOGEN telescopic cranes. (Photo: SENNEBOGEN)

Already used in a Paris project by Leduc TP recently, Etienne Brenckmann, managing director of Leduc TP, says, "Thanks to the robust design and strong full-power boom of the SENNEBOGEN telescopic cranes, our foundation projects can be realised in a confined space and the machine can be maneuvered safely under load."

Speaking about advantages of SENNEBOGEN 653, crane operator Ullrich Knöpke simply puts it as, "Simple to operate, many uses."

The crane was used at Bauer Spezialtiefbau as a rental crane in mid-2016 in Paris when an expansion of an industrial building required foundation work to lay the slab of the building. The flexibility allowed the crawler-mounted telescopic crane to be used for all the logistics and hoisting work at the construction site. Steel parts up to 19 metres long for anchor drilling work, construction equipment and containers are only a few examples of the various lifting jobs. The boom can be extended up to 30.4 metres. The telescopic crane is powered by a 119kW diesel engine and the crawler undercarriage is extendable for maximum stability in any situation.


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New rolling platform ladder from Ascend Access System

UAE-BASED MANUFACTURER OF movable aluminium scaffolding and ladders, Ascend Access System, is introducing an easy-to-erect platform ladder and a new safety system. The company says that thanks to continuous research and development in aluminium scaffolding, its innovative products have been crafted to last longer and for greater ease of assembly.

The rolling platform ladder aimed specifically for exhibition stand builders and interior decorators. Being lightweight, the platform ladder is easy to erect and fold by just one person. It is available in different adjustable working heights. The platform ladder has been designed in accordance with the latest health and safety standards and is very compact for storage and easy to transport, says the company.

Ascend is also introducing the 'Advanced Guard Rail' (AGR), designed as a collective

fall prevention system when assembling or erecting mobile access towers. The AGR is mounted on the external edge of the tower before the working platform is installed. The system has been designed to be safer than assembling a tower using the usual 3T (through the trap) method. Although the 3T method is still widely accepted as a safe means of tower assembly, more sites across the UAE and Qatar are now insisting on AGRs being used, says the company. AGR frames are fully compatible with Ascend's standard mobile access towers. The AGR is available for DIY as well as industrial towers and can be used on narrow as well as wide towers.

Ascend has started the process of having its mobile access towers recognised by Kitemark™, a registered trademark awarded by the British Standards Institution for products that have demonstrated standards for quality and safety, and which is one of the most recognised symbols of quality and safety.

The company says that it is the only mobile access tower manufacturing company in the Middle East that is an associated member of the UK's 'Prefabricated Access Suppliers Manufacturers' Association' (PASMA), which is the lead trade association for the mobile access tower industry. Ascend's PASMA-approved training centre will be located at Nad Al Hamar, Dubai, where it will provide training in mobile access tower erection, dismantling and safe use from first week of March 2017. Ascend's state-of-the-art production and distribution centre is now located at Nad Al Hamar, just a mile away from Downtown Dubai. ■



Platform ladder assembled.



Platform ladder folded.

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Terex Finlay's impact crusher gives improved material flow

THE TEREX FINLAY I-140 direct drive $\phi 1,270\text{mm} \times 1,240\text{mm}$ horizontal impact crusher with variable speed gives operators unprecedented levels of production in recycling, mining and quarrying applications. The robust and proven Terex CR032 chamber gives excellent reduction ratios and high consistency of product shape.

A significant engineering approach being introduced in this model is the material flow through the plant. The flow of material has been significantly improved by increasing the width of components as the material moves through the machine.

The machine features an advanced electronic control system that monitors and controls the speed of the rotor and regulates the heavy duty vibrating feeder with integrated pre-screen to maintain a consistent feed of material into the impact chamber for optimal crushing conditions. Material from the integrated pre-screen can be diverted to a stock pile via the optional by-pass conveyor, or it may join the crushed product on the main belt.

Terex Finlay I-140. (Photo: Terex Finlay)



The standard hopper capacity of six cu/m places the machine at the forefront in this competitive market sector.

"The introduction of the Terex Finlay I-140 represents a significant step change in our family of impact crushers. Our field test results of extensive testing have recorded significant productivity increases depending

on the application, over the model that it replaces.

"The enhanced material flow process of the plant represents a significant step change to our engineering ethos and in due course will be extended to encompass our range of impact crushers," said Alan Witherow, product manager.

Brady's unique device quickly and securely locks electrical circuits

THE UNIQUE TAGLOCK™ lockout solution by Brady Corporation enables operators, mechanical engineers, maintenance and safety personnel to quickly and easily lock out electrical circuits in order to prevent accidental engagement while maintenance is ongoing. With TAGLOCK™, the risk of electrocution and other accidents related to re-energising can be reduced.

PREVENT ACCIDENTS

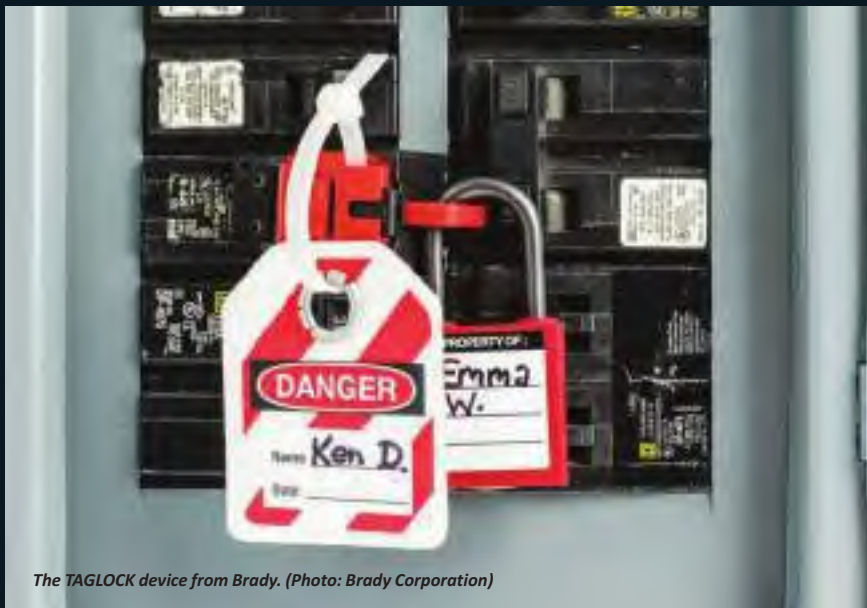
TAGLOCK™ blocks circuit breakers in the off-position to prevent accidental re-engagement while maintenance is ongoing. By securing circuit breakers in the off-position during maintenance, you can reduce the risk of electrocution and other, re-energising related, accidents with potentially severe consequences.

MULTIPLE USERS

Up to four workers can use the circuit breaker lockout device simultaneously, each with their personal, colour-coded cable tie. Once the job is completed, workers can remove their tie and tag. The last worker also removes the circuit breaker lockout device when maintenance is done to allow circuit breaker re-engagement. TAGLOCK™ can be installed quickly and easily –

- Apply the circuit breaker lockout device
- Run a cable tie through its hole
- Add a tag
- Attach a padlock for extra security

The TAGLOCK™ lockout devices are small enough to be applied on most circuit breakers that are positioned next to each other. Run one nylon cable tie through the holes of the applied circuit breaker lock-out devices to block all circuit breakers involved in the off-position. The design of TAGLOCK™ devices eliminates the need to use locks, while allowing users to prepare and pre-load their ID tags and then secure the TAGLOCK™ to the designated energy control lockout points. They provide the same range of fit on all primary circuit breakers as Brady's original line of circuit breaker lockouts.



The TAGLOCK device from Brady. (Photo: Brady Corporation)

Chicago Pneumatic widens LED light tower offering

CHICAGO PNEUMATIC HAS introduced its new series of electrically-powered light towers. Available in both metal and LED versions, CPLB2 light towers are designed with a choice of high-quality bulbs to enhance visibility, wheels for optimal ease of movement and a robust canopy. They simply plug into a power source, such as an outlet or generator, for instant, reliable site lighting.

The CPLB2 LED is the fourth LED light tower in the Chicago Pneumatic portfolio. Together with three other models: the CPLT V15 LED, CPLB6 LED and CPLT H6, LED it provides users with the widest choice when it comes to sourcing the safest and most efficient light tower for multiple applications and industries.

The CPLB2 LED light tower is ideal for construction, mining and events, to name just a few industries. Featuring heavy duty build up and high protection index (IP 67), its four high-efficiency LED lamps give an average coverage of 3,000 sq m with a diameter of 61 metres – allowing 10 luxes. The seven metre-long mast requires height to achieve maximum light coverage, the light tower's manual lifting system is ideal for this.

"The newest addition to Chicago Pneumatic's portfolio of light towers offers a still improved luminosity and transportability, both essential for operators working in the dark hours. We have a firm commitment to offer our customers' choice when it comes to light towers, ensuring efficiency for multiple applications; they are robust, efficient and powerful enough for even the most demanding jobs," states Ignacio Picatoste, spokesperson for light towers at Chicago Pneumatic.

Easy service and transportability have also been factored into the design of the new light tower. Its compact frame allows up to 32 units to be transported on a single truck and offers simple access points for maintenance work.

Up to four CPLB2 LED light towers can be connected together and powered by one of Chicago Pneumatic's newly launched single portable inverters.



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SDLG loader kicks off Turkish coal mine operations

A 20-TONNE SDLG L968F wheel loader is spearheading a new coal mining operation run by the Yurtsever Group in the foothills of the Ilgaz mountain range, 60km south of the Black Sea town of Kastamonu in Turkey.

The machine, which was supplied by Turkish SDLG dealer Ascendum Makina August 2016, is clearing overburden and shifting the 50 tonnes of coal produced every day at the 4,000 sq m site.

Having commenced operations on the site in May 2016, the group has so far only established a relatively small scale coal mining operation. However, production is expected to grow six-fold within the next 12 months, as site director Mehmet Aydas explains.

"On this site, which sits at about 900 metres above sea level, we have both open cast and underground mining possibilities," Aydas says. "So far, production has only been from the vein of coal underground as we are still preparing the open cast pit; this will come on line after the winter."

"We're using the SDLG L968F wheel loader to clear overburden from the open pit as well as handle the coal that's coming up from 50m underground," adds Aydas. "Despite the varied workloads and different demands placed on the machine, it has not missed a beat and we're very happy with the decision to turn to SDLG. The machine and support we've had from the dealer has been 100 per cent."



The SDLG L968F wheel loader.
(Photo: SDLG)

The L968F, which is fitted with a 3.6 cu/m capacity SDLG rock bucket, boasts Z-bar linkage offering up to 210kN of breakout force, which Aydas believes is more than enough to get the job done.

Furthermore, the 20-tonne class wheel loader is fitted with SDLG's VRT200 rigid-axle transmission converter and synchronized four-speed transmission, which has been developed to enhance stability, traction, reliability and efficiency. When this is combined with the machine's 191kW engine, it can drive up inclines of up to 28°.

This feature is much appreciated by Aydas considering the mountainous landscape in which the mine is set. "What's more, when it comes to stopping, the hydraulic wet disk brakes have proved equally effective and reliable," he adds.

Versatility in extreme conditions

During the summer, the region sees temperatures of over 30°C, while in for the

winter it can drop to below -25°C. "We have up to five months of snow, and sometimes it can reach depths of over 75cm, so as well as handling production, the L968F is also tasked with snow clearing duties," states Aydas. "What we've seen since taking delivery of this machine is that it clearly has the capabilities and reliability to keep production going whatever the weather throws at us."

Business as usual

Regardless of the time of year or ground conditions, regular duties for the L968F wheel loader include loading trucks and feeding the hopper for the sorting plant.

"We sort the extracted coal into dust: lumps between 12-25mm and lumps between 25-80mm," explains Aydas. "While our whole output is used for generating commercial power at various companies within a 200km radius, our customers have different requirements so we sort on site to maximize efficiency and quality."

Coal mined by the Yurtsever Group is already powering the likes of a salt factory, a wheel manufacturer's plant and a brick factory. As production capacity increases, the list is sure to grow.

An SDLG L968F wheel loader is proving instrumental to the operation of a new Turkish coal mine in the foothills of the Ilgaz mountain range.

CAT launches new 980L medium wheel loader Middle East and Africa

THE NEW 980L medium wheel loader is more powerful and fuel-efficient than its predecessor, featuring significant drive-train and hydraulic-system refinement, operator safety and convenience enhancements. It also boasts of proven Z-bar linkage, Cat Performance Series buckets, and options such as automatic traction control, enhanced ride control system, and Cat Connect Technologies.

- **Reliability:** The 980L uses a productive and fuel-efficient Cat C13 ACERT engine with a maximum gross power rating of 303 kW (412 metric horsepower) and approximate operating weight of 30,090kg. The power-dense engine uses a combination of proven electronic, fuel-injection and air-systems.
- **Productivity:** The 980L's updated and refined Cat ACERT engine offers increased engine power by five per cent compared to the 980H, greatly improving machine performance and response. The 980L uses a 4F/4R power-

shift transmission. A high-capacity torque converter uses a lock-up clutch for efficient grade and high-speed performance, and the Caterpillar Advanced Productivity Electronically Controlled (APEC) control system maintains torque flow during range shifts for faster acceleration on ramps and smoother shifts in the transmission's direct-drive mode.

- **Fuel efficiency:** The power-dense ACERT engine burns less fuel by providing power and torque when needed. The innovative powertrain, hydraulic, cooling and electronic systems intelligently lower average working



engine speeds and reduce overall system heat loads resulting in significantly improved performance and fuel efficiency. Furthermore, the productive Economy Mode provides maximum fuel savings with minimal productivity impact. The system is designed to deliver more engine power to the wheels at partial hydraulic flow, allowing faster cycle times in load-and-carry and ramp operations, as well as higher rimpull when digging.

- **Technology:** Cat LINK technologies, such as the Product Link system, help fleet owners manage equipment utilisation and lower owning and operating costs through the online VisionLink interface. Cat PAYLOAD technology accurately weighs materials being loaded and hauled to improve productivity, reduce overloading, and track material movement. Cat DETECT technology enhances visibility behind machine to help operators work safely.



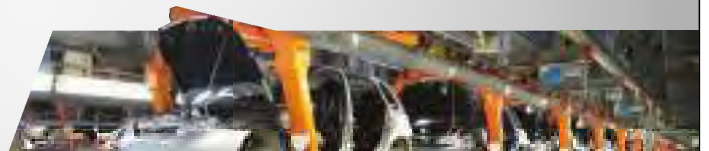
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Leroy-Somer to supply controllers and alternators to UPS

LEROY-SOMER ELECTRIC POWER Generation, a leading global manufacturer of industrial alternators, will supply a new range of alternators and generator set controllers to Ultimate Power Solution (UPS), a leading generator manufacturing company in the UAE. These include ControlReg, the first integrated Genset Controller & Automatic Voltage Regulator.

Based in Sharjah Airport International Free Zone (Saif Zone), UPS, a preferred partner of Leroy-Somer in the UAE, is the first generator set manufacturer in the world to use ControlReg,

ControlReg combines full-fledged generator set controls (such as start preparation, start/stop sequences, fuel level) with typical AVR (Automatic Voltage Regulator) features: voltage adjustment, U/f function, PID setting or motor soft start. The ControlReg package, which includes an industrial alternator, cables and the ControlReg generator set controller offers a complete solution for generator set manufacturers to ease and speed up assembly time and configuration.

Advantages of ControlReg include cost-effectiveness, standard controller features and display, easy genset configuration, AVR information displayed, data logging, predictive maintenance and quick setup.

UPS specialises in diesel generator sets, gas generator sets, marine auxiliary generator sets, mobile generator sets, hydro generators, heavy fuel power stations, wind turbines, solar power stations and tower lights etc. Target buyers are big dealers and construction companies across the EMEA region. The company provides round-the-clock after sales service, including immediate trouble-shooting.



Leroy-Somer and UPS will work together to promote the new range of alternators and genset controllers

Khaled Al Nablsee, chairman at UPS, said that UPS enjoys a significant market share in the local generator market. "This share has been expanding steadily thanks to the reputation the company enjoys due to its quality products manufactured with the support of the Sharjah Safe Zone Authority, headed by HH Sheikh Khalid Al Qassimi," he added.

Leroy-Somer and UPS will work together to promote and market the new and wide range of alternators and generator set controllers, and offer the most innovative power generation solutions to the local market.

TigerPROFILES launches Versatile smart cladding system

WITH EVERY GREAT design and architectural vision comes the challenge of finding the right material and solution for a potential 'translation of design-to-reality' dilemma.

TigerPROFILES has long been aware of the importance of supporting architects and designers, and has introduced Versatile – a smart cladding solution, with this aim in mind. Versatile in name, nature and ability, the tiles enable the realisation of a design vision for any surface – interior, exterior, domes, roofing and cladding – and are available in any metal material, texture and finish.

With domes, for example, the Versatile cladding solution can take



Versatile cladding can enhance a wide range of surfaces.

the shape of the designed dome, to ensure the desired look and feel. Using Versatile will allow a roof to become part of the architectural appeal of any design. Versatile not only looks good, it is also available with and without an insulation option.

Versatile cladding can also bring new life into existing buildings. It is an ideal smart solution to give a building a cost-efficient and highly attractive new look without having to stop any internal operations, or compromise on any thermal, acoustic or fire properties.

The use of Versatile is not limited to the exterior of a building. Beautiful and richly decorated interiors can be achieved with the use of Versatile interior material options. From mirrored finishes, to a velvety or fabric-like look and feel, Versatile will lend its appeal to any interior or exterior column.

Versatile is the latest in a line of products that have been recently launched by TigerPROFILES, including its concealed fix façade panel. TigerPROFILES façade panels are an innovation aimed at providing clients with an alternative product that provides thermal insulation and fire properties with outstanding aesthetic appeal in one panel, instead of with a layered build-up as is typical with ACP applications.

Fixed horizontally or vertically, TigerPROFILES panels not only provide much needed architectural solutions to the market, but also provide outstanding resistance to fire, as evident in the fact that its panels have both horizontally and vertically successfully passed the stringent NFPA 285 as a mandated test by Dubai Civil Defence. NFPA 285 is a standard fire test method for evaluation of fire propagation characteristics of exterior non-load-bearing wall assemblies containing combustible components.

The panels are available with the same range of insulation options as the company's concealed fix wall panels.

Revolutionising ME energy use with blade compressors

FROM PNEUMATIC CONVEYING to wastewater aeration to supplying air for the alumina or oil and gas industries, compressors are an essential component of most major operations.

Yet, despite their ubiquitous use, making up a global market well in excess of US\$30bn per annum, there hasn't been a widely applicable innovation within the compressor industry for over 80 years. The launch of Lontra Blade Compressor is bringing a change in that perspective.

Steve Lindsey is the founder of Lontra and designer of the blade compressor. (Photo: Lontra)



The blade compressor can best be imagined as a piston and cylinder, but with the cylinder wrapped around. With a traditional piston and cylinder machine, the piston draws in air above it as it drops down in the cylinder, and it compresses air in front as it goes up again. In the compressor, there is a constantly open intake port without valves, and as the piston or blade rotates, it draws in air behind it in the same way as the piston dropping down in a traditional piston and cylinder machine.

As it gets back to the starting point, it has drawn in a complete volume of air behind it. Yet unlike the traditional piston and cylinder that has to stop to change direction, the blade passes through a disc, and the volume of air that was trapped behind the blade is now in

front. This feature ensures that it has an almost continuous cycle of drawing in air behind and compressing air in front, resulting in a new family of machines that is quieter, smoother, and more efficient.

Opportunities in the Middle East

For water, wastewater and power: The Middle East and North Africa (MENA) region is expected to fund major developments in the power and water sector over the next five years, according to *Middle East Business Intelligence* (MEED). As a result of this development, the power generation, transmission and distribution market across the region is projected to be worth US\$283bn by 2018, with US\$500mn expected to be invested in water projects across the UAE this year.

Such projects are being driven by the Gulf Corporation Council (GCC) countries, each of which has dedicated officials governing the control and management of their water industries. With awareness of energy efficiency in the sector at the top of the agenda, Lontra's Blade Compressor technology is perfectly placed at a time of great need. But the water industry is not the only sector that stands to benefit.

For cement plants

GCC plants had been initially designed for a clinker production capacity of one million tonnes per year, but due to market demand and plant modification programmes, the production output of clinker now reaches in excess of 2.8mn tonnes annually – a significant output that comes at great cost.

The cement industry consumes approximately 15 per cent of the total energy used by all industry across Europe and the Middle East, of which about six per cent is on air compression. This makes the energy efficiency of air compressors a key decision making factor for equipment purchasers, which is why Lontra's Blade Compressor has such a potential in these markets, particularly where energy and cost efficiencies are concerned.

Lontra is already considering the opportunities available to cement manufacturers in the Gulf. Raysut Cement Oman is intending to upgrade its capacity at its Rasut plant in Salalah by 140,000 tonnes per year. Lontra's Blade Compressor technology offers a key opportunity to help the Omani government in making this plant more efficient, saving both energy and money.

Self-retracting lifeline for harsh environments

HONEYWELL HAS INTRODUCED the Miller DuraSeal Self-Retracting Lifeline (SRL), designed to provide greater reliability and safety in the harshest environments – including offshore wind, onshore and offshore oil and gas, mining, and petrochemical sites.

The DuraSeal SRL introduces patent-pending sealed technology that prevents contaminants from entering the mechanism – earning the design an IP69K certification, the industry's highest sealed technology rating – and ensures that the self-retracting lifeline's brake system, power spring and bearings are never exposed to debris, water or chemicals.

The product includes many other

advanced, practical features. The braking system is designed to withstand multiple falls. The Miller Rapid Replace Lifeline is a feature of the Miller DuraSeal that enables a person to replace a lifeline in the field. In the event of a fall, or activated load-indicator, the lifeline can quickly and easily be replaced in the field. The unit also can be installed and transported easily. Engineered to be up to 30 per cent lighter in weight than competitive sealed SRLs, the DuraSeal reduces user fatigue and increases productivity.

With a weight capacity of 140kg, the DuraSeal provides protection for a wider range of workers who often carry heavy tools. The DuraSeal requires no annual recertification, keeping the product in the

field longer while increasing the safety of workers.

"Honeywell identified a gap in the market for a truly robust SRL that not only can withstand the harsh environments common in the offshore oil and gas and wind industries but also provide reliable, long-term performance," says Corentin Barbieux, product manager, Honeywell Industrial Safety EMEA.

"As it implies in the name, the DuraSeal is extremely durable when put to the test. Also, because it is hermetic, the SRL's sealed technology is resistant to debris, water or chemicals. The product performs extremely well in very challenging conditions, enhancing the safety of workers out in the field," Barbieux adds.



مدينة دبي .. الطاقة النظيفة والطاقة المتجددة

للتأكد من تحقيق الزوار أقصى استفادة ممكنة من الحدث، وتعريفهم بأفضل موردي الكبلات، وأجهزة توصيل الكهرباء، واللوحات والمحولات، وأنظمة إدارة الطاقة. كما قمنا أيضاً بتوفير فرص أفضل للتواصل بناءً على التعليقات التي أدلى بها الزوار حول مؤتمر العام الماضي.

في ساحة المستشارين، يناقش المستشارون الهندسيون المفاهيم واللوائح الرئيسية، مثل أدوات إدارة المشروعات واللوائح والإرشادات الخضراء السارية في دولة الإمارات. هذا إلى جانب منح العارضين فرصة أفضل للتواصل مع المستشارين العالميين. كما سندير برنامجاً لاجتماعات كبار الشخصيات يتيح للعارضين إمكانية مقابلة مندوبين عن المرافق والبلديات من مختلف أنحاء منطقة الشرق الأوسط وشمال إفريقيا، فضلاً عن برنامج التقاء الأعمال ببعضها (B2B). فلاشك أن هذا يعمل على تسهيل مهمة العارضين في إجراء الاتصال وإقامة العلاقات المهمة على مستوى الصناعة والمنطقة.

الذكية. ومن المقرر أن يستغلا المعرض لتحديث الصناعة أثناء التقدم الذي يحرزانه في هذا الشأن.

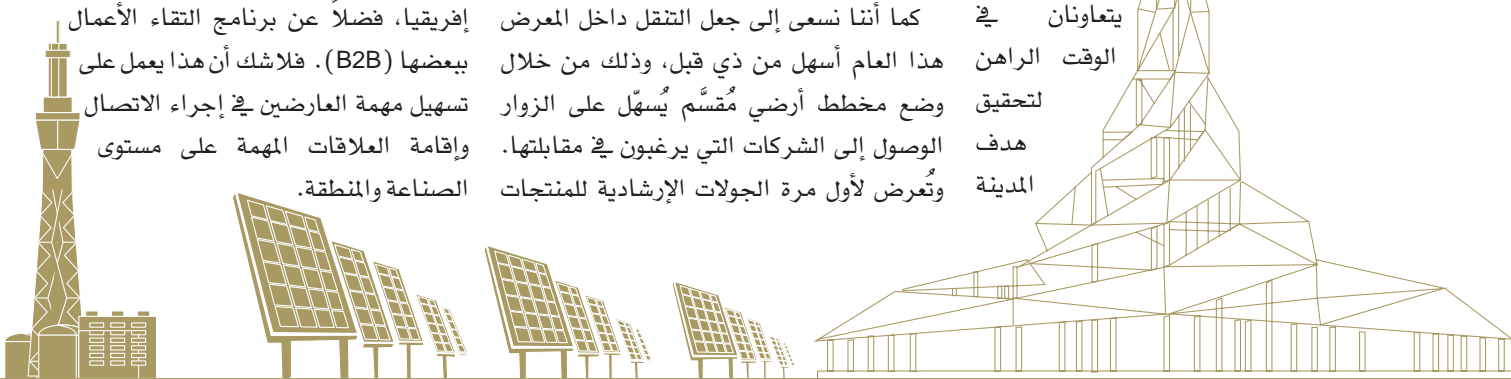
سوف يتناول برنامج المؤتمر حول «تنشيط المدينة الذكية» مجموعة كبيرة من التحديات والفرص حول توفير حلول مبتكرة لتعزيز الطاقة الحضرية. كما سيشهد هذا العام أيضاً إنشاء «منطقة الإبداع بالمدن الذكية». فسوف تقدم الأسماء البارزة في هذه الصناعة أحدث التقنيات التي تم التوصل إليها، ودراسات الحالة حول إنشاء أنظمة الطاقة الذكية المتكاملة. كما ستقام فعاليات النسخة الرابعة من مسابقة جيل المستقبل، التي تهدف إلى منح طلاب الجامعات الإماراتية منصة لتقديم مشروعاتهم وتكنولوجياهم الخاصة تحت شعار «المدن الذكية».

كما أننا نسعى إلى جعل التنقل داخل المعرض هذا العام أسهل من ذي قبل، وذلك من خلال وضع مخطط أرضي مُقسَّم يُسهِّل على الزوار الوصول إلى الشركات التي يرغبون في مقابلتها. وتُعرض لأول مرة الجولات الإرشادية للمنتجات

التكنولوجية، وهي على استعداد كامل لتحويل هذه الرؤية إلى واقع ملموس من خلال المبادرات والخدمات الذكية. وتضخ هيئة كهرباء ومياه دبي استثمارات ضخمة بهدف الإبداع في مجال تكنولوجيا الطاقة النظيفة والطاقة المتجددة. كما أنها تقود تطورات مثل مبادرة شمس دبي التي تربط الطاقة الشمسية في المنازل والبنائات بشبكة هيئة كهرباء ومياه دبي، وتستخدم التطبيقات الذكية عبر العدادات والشبكات الذكية، والشاحن الأخضر لإنشاء البنية التحتية ومحطات شحن المركبات الكهربائية. وسوف يشمل المشروع إنشاء نموذج لشبكة ذكية في مقر هيئة كهرباء ومياه دبي من المقرر أن يضم ألواحاً شمسية ونظاماً لتخزين الطاقة ونظام تشغيل متكامل.

• هل يمكن أن تحدثينا عن نسخة العام ٢٠١٧ من معرض كهرباء الشرق الأوسط؟ وما هو الجديد الذي يمكن أن نتوقعه؟

•• يقام معرض كهرباء الشرق الأوسط هذا العام تحت شعار «المدن الذكية»، وهي الفكرة التي أصبحت تحظى باهتمام كبير في هذه الصناعة، وسوف تصبح أحد أهداف تحقيق التنمية في المستقبل. وتشارك بلدية دبي معرض كهرباء الشرق الأوسط في هذا الشعار. وهما يتعاونان في الوقت الراهن لتحقيق هدف المدينة





المستقبل يبدأ هنا ... مجّمع محمد بن راشد آل مكتوم للطاقة الشمسية

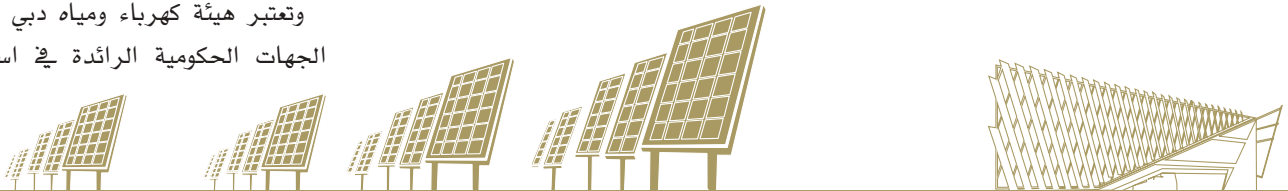
تعزيز كفاءة الطاقة في الشرق الأوسط خلال السنوات المقبلة، هذا علاوة على تمكين وتيسير زيادة استخدام مصادر الطاقة المتجددة. لقد رأينا خططا في العديد من المدن بالمنطقة، خلال السنوات الأخيرة، تتبنى تكنولوجيا الشبكة الذكية، على شاكلة مبادرة «دبي الذكية»، ومن الواضح أن أثر هذه التكنولوجيا سيكون كبيرا على الصناعة المستقبلية.

وتشير التقديرات إلى قدرة دول مجلس التعاون الخليجي على توفير ما يقرب من ١٠ مليارات دولار أمريكي عبر استثمارات البنية التحتية بحلول ٢٠٢٠، وذلك من خلال استخدام الشبكة الذكية، والتي ستعمل على تحسين العرض والطلب باستخدام تكنولوجيا المعلومات لتوفير تدفق المعلومات الآنية ثنائية الاتجاه بين مُشغلي توليد الطاقة والشبكة والمستهلكين.

وتعتبر هيئة كهرباء ومياه دبي ضمن إحدى الجهات الحكومية الرائدة في استخدام هذه



هيئة كهرباء ومياه دبي تستخدم العدادات والشبكات الذكية لتوفير أقصى المنافع للمستهلكين





ندوات فنية عالية الجودة في معرض كهرباء الشرق الأوسط

هذا العام الكثير من التخطيط للمستقبل وأعداد السكان المتزايدة والطلب المتنامي. وقد لعب استقدام شركات توليد الطاقة المستقلة لدول مجلس التعاون دوراً فعالاً في تلبية احتياجات الكهرباء الآخذة في الزيادة. وكانت عُمان هي الدولة الأولى التي طوّرت قطاع توليد الطاقة الخاص بها عبر إجراء الإصلاحات. كما يتم في الوقت الراهن بذل جهود الإصلاح المماثلة لتحقيق ذلك في دول مجلس التعاون الخليجي الأخرى.

• ما رأيك في مشروعات الشبكة الذكية في الشرق الأوسط؟ وهل تعتقدين أن المستقبل سيكون للشبكات الذكية؟

• مع تزايد أعداد السكان في مدن الشرق الأوسط، سنكون في حاجة إلى إدارة الزيادة في إمدادات الطاقة على نحو مستدام وفعال. ولا شك أن الشبكات الذكية سوف تقوم بدور أساسي في

• هل لاحظت تطوراً في قطاع الكهرباء خلال العام الماضي؟ وما هي القطاعات الفرعية الأساسية التي يجب التركيز عليها في المنطقة؟
• خلال العام الماضي، شهدنا استثمارات ضخمة في مصادر الطاقة المتجددة. فقد أعلنت دبي عن انطلاق المرحلة الثالثة من مجمع محمد بن راشد آل مكتوم للطاقة الشمسية الذي حطم الأرقام القياسية. هذا إلى جانب ضخ الاستثمارات في مشروعات أخرى كبرى لتوليد الطاقة الشمسية في المملكة العربية السعودية والكويت. ويتضح أن هذا التوجه أخذ في الاستمرار، إذ تسعى دول الشرق الأوسط إلى تقليل بصمتها الكربونية ورفع قدرتها على توليد الكهرباء.

وكما ذكرت آنفاً بشأن حجم الاستثمارات التقريبي الذي يبلغ ٢١٦ مليار دولار أمريكي والمطلوبة بحلول ٢٠٢٠ لتلبية احتياجات دول مجلس التعاون الخليجي من الطاقة، فقد شهد

قطاع الطاقة للاستثمار الخاص في توليد الكهرباء ونقلها وتوزيعها.

ومن المتوقع أيضاً أن تشهد عقود إنشاء محطات توليد الطاقة زيادة من ٢٢.٣ مليار دولار أمريكي في ٢٠١٦ إلى ٢٥.٥٢ مليار دولار أمريكي في ٢٠١٧. وتشير التوقعات إلى أن المملكة العربية السعودية سوف تُسجل أعلى قيمة لعقود المقاولات في ٢٠١٧، وهي حوالي ١٢.٣٥ مليار دولار أمريكي، بزيادة تتجاوز ٥٠ في المائة من قيمة العقود الممنوحة في ٢٠١٦. وبالمثل تشهد قيمة عقود إنشاء محطات توليد الطاقة في دول مجلس التعاون الخليجي الأخرى، مثل البحرين والكويت وعمان، زيادة كبيرة. وتستعد دول مجلس التعاون الخليجي أيضاً لاستثمار ٢٥٢ مليار دولار أمريكي على مدى السنوات الخمس المقبلة في مشروعات إنشاء محطات توليد الكهرباء الجديدة، وأنظمة التوزيع وشبكات الإمداد.



أنيتا ماثيوز مديرة مجموعة إنفورما الصناعية

أنيتا ماثيوز للنشرة التقنية: الشبكات الذكية ستعزز كفاءة الطاقة في الشرق الأوسط

من المقرر إقامة النسخة الثانية والأربعين من معرض كهرباء الشرق الأوسط في الفترة ما بين ١٤-١٦ فبراير/شباط ٢٠١٧. وهذا المعرض يتطلع إلى تقديم رؤية مستقبلية ومفهوم تعزيز «المدن الذكية». وفي هذه المقابلة، التي أجرتها معها مجلة «النشرة التقنية - الشرق الأوسط»، نتحدث أنيتا ماثيوز، مديرة مجموعة إنفورما الصناعية، حول الفرص المتاحة في قطاع الكهرباء بالشرق الأوسط.

• مع الارتفاع الطفيف في أسعار النفط، ما هو رأيك وضع قطاع الكهرباء في الشرق الأوسط؟
• على الرغم من انخفاض أسعار النفط، هناك العديد من فرص تحقيق التنمية في هذا المجال خلال السنوات المقبلة. فمن المتوقع أن تسجل صناعة منشآت توليد الطاقة في الشرق الأوسط نمواً هائلاً في كل من دولة الإمارات العربية المتحدة، والمملكة العربية السعودية، والكويت، فهي تمثل أسواقاً واعدة تزخر بفرص إنشاء محطات توليد الطاقة. وهذه الدول تسعى إلى رفع قدراتها على توليد الكهرباء لمواجهة الزيادة السكانية المرتقبة. ومن المرجح أن تشهد الطاقة الشمسية، مع التطور التكنولوجي الكبير وانخفاض الأسعار

والتكنولوجيا النظيفة، نمواً هائلاً، بل قد تصبح قريباً مصدر الطاقة المفضل في منطقة الشرق الأوسط. وتشير التقديرات إلى أن حجم الاستثمارات المتوقعة المطلوبة في قطاع الطاقة سوف يبلغ ٣١٦ مليار دولار أمريكي بحلول العام ٢٠٢٠ في دول مجلس التعاون الخليجي، وسوف تعمل جهود الإصلاح على تهيئة الطريق أمام

إستراتيجية دبي المتكاملة للطاقة، والتي تسعى إلى تقليل الطلب على الطاقة بنسبة ٣٠ في المائة بحلول ٢٠٣٠.

وذكر بيرجرسون أن الخبرات الدولية قد أظهرت الدور المهم للدعم الحكومي القوي في تشجيع ملاك المنازل على اعتبار كفاءة استهلاك الطاقة نوعا من الاستثمار، وليس مجرد تكاليف لا طائل وراءها.

التحديثات. ففي إطار مبادرة «وفر طاقة»، تولى مكتب أبوظبي للتنظيم والرقابة، وهو جهة مستقلة منظمة في قطاع مياه الشرب والصرف الصحي والكهرباء، تحديث ١٠ فيلات سكنية لرفع كفاءة استهلاك الطاقة. ثم عقد فيما بعد مقارنة بين تكلفة الاستهلاك قبل التحديثات وبعدها لعرض التكاليف الموفرة على ملاك المنازل.

وتعتبر التحديثات أيضا جزءا مهما من

المباني من ٣٠ إلى ٤٠ في المائة من الطاقة. غير أن هذه النسبة ترتفع إلى ٨٠ في المائة تقريبا في دول مجلس التعاون الخليجي. فإذا تم تحديث المباني بمنتجات توفر كفاءة استهلاك الطاقة، مثل العزل المحسن، فسوف يمكن تقليل استهلاك الطاقة بمقدار النصف.

يجدر بالذكر أن العديد من البرامج يجري تطبيقها الآن في دولة الإمارات بهدف تعزيز هذه

الانتهاء من ٧٠ في المائة من مشروع مترو الدوحة بنهاية العام

تركيب المعدات الكهربائية، واستكمال بنية هذه المحطات. ومن المتوقع افتتاحها أمام الركاب في أواخر ٢٠١٩/أوائل ٢٠٢٠ بثلاثة خطوط: الأحمر والأخضر والذهبي. وسوف يتصل المترو أيضا بمشروع سكك حديدية منفصلين آخرين، وهما قطار النقل الخفيف بمدينة لوسيل، الذي تعهد المقاولون بالانتهاء منه بحلول ٢٠٢٠، وقطار المسافات الطويلة لنقل الركاب والبضائع، ويتصل بسكك حديد دول مجلس التعاون الخليجي، ولا يزال الجدول الزمني للعمل به غير معلوم.

القطرية (الريل): «نحن على وشك بدء العمل في المرحلة الأكثر أهمية ضمن برنامج تطوير السكك الحديدية، وسوف نتحول في القريب العاجل من مطور إلى مُشغل للسكك الحديدية. وتحرص الشركة أيضا على إنجاز المشروع بتكلفة مجدية، وتبحث في طرق استخدام التطوير العقاري، والبيع بالتجزئة والإعلان، وذلك للمساعدة في استدامة عملياتها في المستقبل».

وخلال النصف الثاني من العام الفائت، بدأت شركة سكك الحديد القطرية في التركيز على

مع استكمال حفر الأنفاق، وقبل أقل من ثلاث سنوات على افتتاح المشروع أمام الركاب، تهدف سكك الحديد القطرية (الريل) إلى الانتهاء من ٧٠ في المائة من مشروع مترو الدوحة بنهاية ٢٠١٧. ووفقا لموقع الدوحة نيوز، يستلزم ذلك استكمال أعمال تركيب الخط الحديدي، واستلام أول أربعة قطارات بدون سائق من جملة ٧٥ قطارا من هذه النوعية في الدوحة، ومنح العقود للمُشغلين الرئيسيين. وفي بيان له، قال سعد المهدي، الرئيس التنفيذي لسكك الحديد

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فبراير/شباط

١٦-١٤..... معرض الشرق الأوسط للكهرباء

أبوظبي

١٤ - ١٦..... معرض الشرق الأوسط للطاقة

الشمسية دبي

٢٤-٢٧..... معرض إيران للبناء طهران

مارس/آذار

٨-٦..... مؤتمر ومعرض الكويت للبناء الكويت

٧ - ١١..... معرض التشييد والبناء والخرسانة

المسلحة لاس فيجاس



سكك الحديد القطرية (الريل) تعتبر حاليا واحدة من أكبر مشروعات السكك الحديدية في العالم

الكويت تنوي إنفاق ١٥,٦ مليار دولار على البنية التحتية



سيتم إنفاق ١٦,٩ في المائة في إطار برنامج الشراكة بين القطاعين العام والخاص

تنوي الكويت إنفاق ما يقرب من ١٥,٦ مليار دولار أمريكي على البنية التحتية وغيرها من المشروعات الأخرى خلال العام المالي ٢٠١٧-٢٠١٨، على أن يسهم القطاع الخاص بنسبة ١٦,٩ في المائة من حجم هذه الاستثمارات. وسوف تخصص الدولة استثمارات ضخمة لإقامة مشروعات الإسكان والطرق والكهرباء والموانئ والمطارات والاتصالات والطاقة المتجددة، حسب تصريحات دكتور خالد مهدي، الأمين العام للمجلس الأعلى للتخطيط والتنمية، التي نقلتها عنه صحيفة الأنباء العربية.

وذكر المهدي أن الحكومة سوف تسهم بنسبة تبلغ ٤٩,٣ في المائة من الاستثمارات. وأضاف أن قطاع النفط، المملوك للدولة، سوف ينفق ما يقرب من ٣٣,٨ في المائة، بينما ينفق القطاع الخاص ١٦,٩ في المائة ضمن برنامج شراكة بين القطاعين العام والخاص. وصرح أيضا بأن «تتضمن خطة التنمية لعام ٢٠١٧-٢٠١٨، والتي تعد جزءا من الخطة الخمسية الثانية، مشروعات تهدف إلى تنويع مصادر الدخل، وتطوير قطاع السياحة وزيادة عوائد الاستثمار».

ومن بين المشروعات الاستراتيجية، التي تشملها خطة التنمية ٢٠١٧-٢٠١٨، مدينة صباح السالم الجامعية، ومصفاة الزور، ومشروعات الطاقة

النظيفة، وتوسعة مطار الكويت، الصالة ٢، وجسر الشيخ جابر الأحمد، ومدينة جنوب المطلاع، ومعالجة مياه الصرف الصحي، ومستشفى الصباح الجديد، والمباني الجديدة في مستشفى الفروانية، ومبنى جديد في مستشفى العдан، ومركز الشيخ سعد العبد الله الإسلامي في الجهراء، ومركز الكويت للمخطوطات والمطبوعات النادرة.

تجديد المباني القديمة يمكن أن يوفر ٥٠ في المائة من تكاليف الطاقة

معرض كفاءة استهلاك الطاقة ضمن القمة العالمية لطاقة المستقبل.

وفي معرض حديثه على هامش القمة العالمية لطاقة المستقبل، قال جينس بيرجرسون، الرئيس التنفيذي لمجموعة ROCKWOOL، إن دولة الإمارات حققت خطوات متقدمة في مجال كفاءة الطاقة في مشروعات الإنشاءات الجديدة، مما ساعد في كبح زيادة الطلب على الكهرباء. وقال إن هذه الخطوات قد أصبحت مدعومة بالسياسات الرامية إلى دعم التجديدات التي من شأنها رفع كفاءة استهلاك الطاقة في المباني القائمة. وذكر بيرجرسون أن الجزء الأكبر من تكلفة الطاقة في دولة الإمارات كان عائدا إلى أجهزة تكييف الهواء، ولهذا فإن العزل الحراري يعمل على توفير الكثير من التكاليف.

وقال جينس بيرجرسون: «انتشر الحديث عن حلول الطاقة الذكية، ولكن من المهم للغاية أن نفكر في حجب المباني. فعلى الصعيد العالمي، تستهلك

المبادرات الحكومية الرامية لجعل المباني القديمة أكثر كفاءة في استخدام الطاقة، بإمكانها بدولة الإمارات، حسبما ذكر خبراء خلال فعاليات



الجزء الأكبر من تكلفة الطاقة في دولة الإمارات كان عائدا إلى أجهزة تكييف الهواء

المحتويات

القسم العربي

أخبار

- ٤ الكويت تنوي إنفاق ١٥,٦ مليار دولار على البنية التحتية
- ٤ تجديد المباني القديمة يمكن أن يوفر ٥٠ في المائة من تكاليف الطاقة
- ٥ الانتهاء من ٧٠ في المائة من مشروع مترو الدوحة بنهاية العام

تحليلات

- ٦ أنيتا ماثيوز: الشبكات الذكية ستعزز كفاءة الطاقة في الشرق الأوسط



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تحليلات: نظرة على الاقتصاد الإيراني، مقابلة مع الرئيس التنفيذي لمصدر.

طاقة: الإرسال والتوزيع، الطاقة المتجددة.

إنشاءات: أعمال الطرق، قوالب الخرسانة والسقالات.

فعاليات: معرض كهرباء الشرق الأوسط، القمة الدولية لطاقة المستقبل، معرض إنترسك، المعرض السعودي لإدارة المرافق.

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مديرة النشر: بلاتي باندي

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هاتف: ٩٣١٠ ٤٤٨ (٤) ٩٧١، فاكس: ٩٣١١ ٤٤٨ (٤) ٩٧١، بريد إلكتروني: graham.brown@alaincharles.com

المكتب الرئيسي:

Alain Charles Publishing Ltd

University House, 11-13 Lower

Grosvenor Place

London SW1W 0EX UK

هاتف: ٧٨٣٤٧٦٦ (٠) ٢٠٧٨٣٤٧٦٦ +٤٤

فاكس: ٧٨٣٤٧٦٦ (٠) ٢٠٧٨٣٤٧٦٦ +٤٤

الطباعة: مطبعة الإمارات - دبي

مكتب الشرق الأوسط الإقليمي:

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دبي - الإمارات العربية المتحدة - صندوق بريد: ٥٠٢٢٠٧

هاتف: ٤٤٨ ٩٣٦٠ (٤) ٩٧١ +

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

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

الإنتاج: دوناتيللا مورانيلي، ناتانيل كومان، صوفيا هوابت، نيكيتا جين، بريانكا تشربوتري.
بريد إلكتروني: production@alaincharles.com
الإشتراكات: بريد إلكتروني: circulation@alaincharles.com



رئيس مجلس الإدارة: دريك فوردهام

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