

# TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

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Vol 32/Issue Two 2016

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AND SOLUTIONS

### Refocusing the Kingdom

Market opportunities in Saudi Arabia's  
non-hydrocarbon sectors

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Nuclear power generation takes a  
step closer in the Middle East

## INSIDE

Lighting  
Smart Grid  
Waste Management  
Paints & Coatings  
The Big 5 Saudi

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32 Years

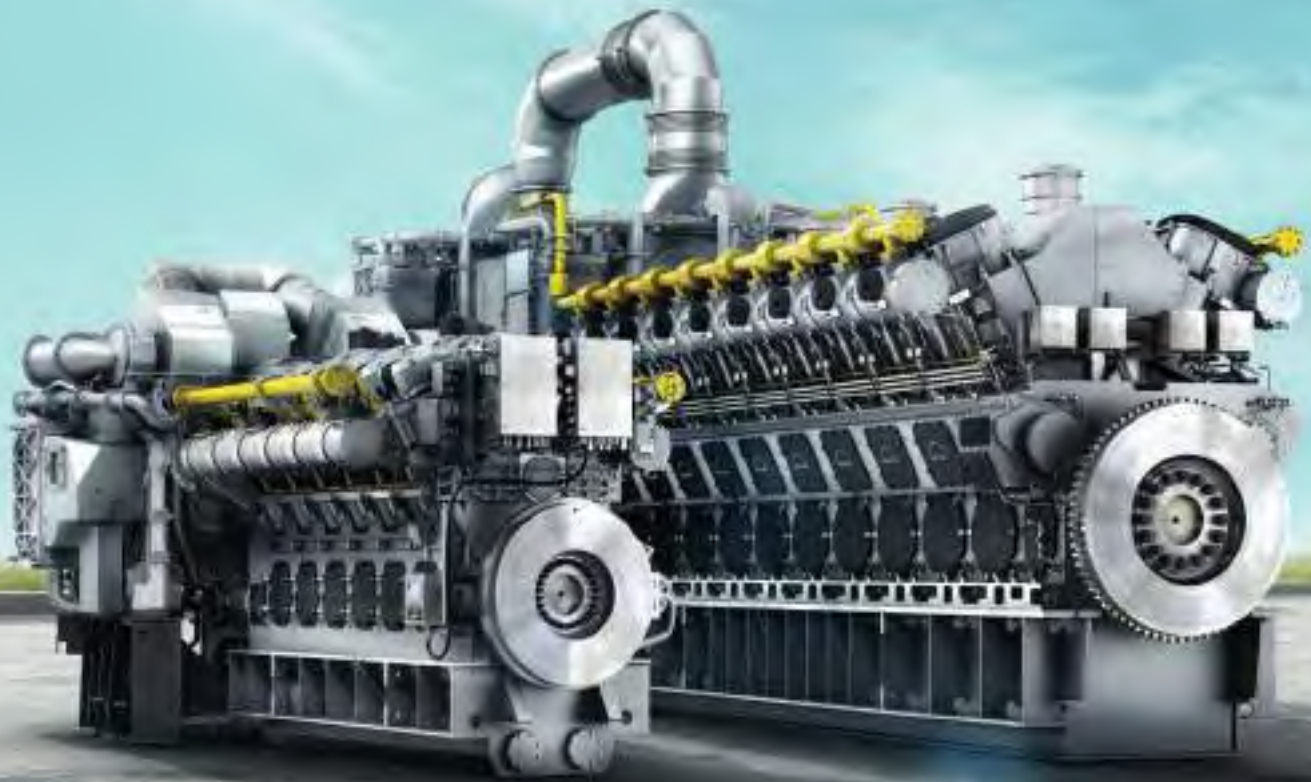
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## EDITOR'S NOTE

THERE'S ALWAYS A buzz when a major event comes to town, and this March it's no different as the region's leading power showcase, Middle East Electricity, returns to Dubai World Trade Centre.

Away from hydrocarbons, the energy industry is continuing to perform strongly, with opportunity and innovation at their highest levels for a while. In this bumper issue of *Technical Review*, we have all the news ahead of the show (p46-p82).

As expected, we've placed a heavy emphasis on the energy sector in this issue, with features on the nuclear (p28), renewable (p20) and lighting (p32) industries. But we've ensured that those of you in construction and logistics have not been forgotten, and we have news and analysis on formwork and scaffolding (p42), the region's port facilities (p32) and the latest innovations from the paint and coatings industry (p44).

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

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## TECHNICAL REVIEW

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## Briefly

### Bahrain islands project awarded to South Korean construction firm

THE BAHRAIN MINISTRY of Housing has appointed SSH as contract manager and site supervision consultant for the construction of the primary infrastructure and bridge construction on Islands 13 and 14 (East) of Al Madina Al Shamaliya Islands (AMAS).

The mixed-use development project will create a new urban town on reclaimed land off the northern coast of Bahrain. Island 13 and 14 (East) will be expected to deliver close to 2,000 housing units under a government-led affordable-housing scheme.

This project will require primary infrastructure networks comprising of roads of more than 5.5 km, installation of utilities such as storm water, potable water, electrical, irrigation and telecommunications network, and the construction of vehicular and pedestrian bridges to connect the two islands.

"AMAS is a very large project and will create an autonomous living space for thousands of people," said SSH infrastructure director Mark Jamieson.

"We are glad we're able to serve them with good, quality and sustainable infrastructure that is quality-assured."

### Milestone year for Kuwaiti projects market

LAST YEAR PROVED to be a milestone for Kuwait's projects market, according to an *Arab Times* report. More than KWD9.7bn (US\$32.4bn) worth of contracts were awarded during 2015, representing an increase of 20 per cent on the previous year.

More than half of the contracts signed were in the oil and gas sector, including awards for the long-delayed New Refinery contract at Al-Zour for KWD3.9bn (US\$13bn) and the contract for the development of the Lower Fars Heavy Oil production facility for KWD1.2bn (US\$4bn).

The transportation sector, meanwhile, saw the award of a KWD1.3bn (US\$4.3bn) contract for the construction of the new terminal building at Kuwait International Airport.

## More than US\$133bn needed to maintain Saudi Arabian power demands over next 10 years

SAUDI ARABIA WILL need to invest US\$133.3bn in electricity projects over the next 10 years in order to cope with rising power demand, the Kingdom's electricity and water minister has said.

Minister Abdullah al-Hussayen announced that the country expects peak electricity to hit 90,000MW in 2022. The current installed capacity is around 70,000MW.

Saudi Electricity Company (SEC), the largest power producer in the Kingdom, said in September last year that peak electricity load hit its highest level ever in August 2015 driven by local demand for power during the summer. SEC's peak load rose by 10.2 per cent to 62,260MW from 56,547MW a year earlier.

"The expansion plan in the sector requires the execution of electricity projects for the next 10 years whose costs will exceed US\$133.3bn and in which the private sector is expected to take part," Hussayen said, "Contracts to build an electricity grid to connect Saudi Arabia and Egypt



Saudi Arabia's energy consumption is expected to grow by four to five per cent annually over the next few years. (Photo: Bohbeh)

will be signed before mid-2016 and the project would operate at full capacity before mid-2019."

Reuters reported that the project aims to allow power trading between the two countries. Peak-time summer power consumption in Saudi Arabia falls between noon and mid-afternoon, when air conditioners are used most

intensively, while in Egypt the peak is after sunset.

According to deputy oil minister Prince Abdulaziz Bin Salman, Saudi Arabia's energy consumption was expected to grow by four to five per cent annually in the next few years, reaching double its current level by 2030 if no efficiency measures are taken.

## Joint venture to help increase engineer numbers in Oman

SPECIALIST AWARDING ORGANISATION EAL and the Institution of Mechanical Engineers (IMechE) have agreed a joint venture to increase the number of professional registered engineers, technicians and engineering training facilities in Oman.



The joint venture will help boost the number of engineers gaining professional registration in Oman. (Photo: Christian Lagerek)

The agreement was unveiled before industry leaders and VIPs at a ceremony at the British Embassy in the Omani capital of Muscat.

Stephen Tetlow, chief executive of IMechE, said, "We are delighted to agree this joint venture which will help boost the number of Omani engineers gaining professional registration.

"This will help ensure the development of engineering skills, which are so critical to the growth and progress of Oman's economy."

Julia Chippendale, managing director of EAL, said, "I am delighted that this

project between EAL and IMechE, to set standards and train thousands of young Omanis, will really help to build a bright future for a country that has developed further and faster than any other country in the last 45 years."





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## Briefly

### Ssangyong lands UAE construction contracts

SOUTH KOREAN CONSTRUCTION firm Ssangyong has won three big projects in Dubai worth an estimated total of US\$1.6bn following the formation of a three-way joint venture with contractor Besix and China State Construction Engineering Corporation.

Members of the consortium will build the US\$840mn Royal Atlantis Hotel, the US\$386mn Palm Gateway project and an unnamed office building complex for approximately US\$370mn, according to *The Korea Times*.

A spokesperson for Ssangyong E&C remarked, "It is very meaningful for us to secure a construction project in Dubai again, our first deal in 13 years.

"We will continue to win more deals in the UAE and nearby Middle Eastern countries."

### SEC orders six gas turbines from GE

SAUDI ELECTRICITY COMPANY (SEC) has ordered six General Electric (GE) trailer-mounted, fast-starting TM2500+ mobile aero derivative gas turbine packages for power plants in Jizan and Tabouk.

The turbines, which feature 'black-start' capability, are able to serve as emergency generators in the event of a power outage, can deliver around 30MW, totalling approximately 180MW, and will be able to provide the equivalent power needed to supply nearly 70,000 Saudi Arabian homes.

Ziyad Al Shiha, chief executive officer of SEC, said, "Given the peak demands we experience during the summer, especially in the desert terrains, we must increase our capacity quickly and efficiently.

"By enhancing our fleet with proven technology from GE, we will be prepared for this summer's power needs and able to manage the rising demand even in isolated areas of the grid."

Mohammed Mohaisen, president and chief executive officer of Gas Power Systems, Middle East and North Africa for GE Power, remarked that the TM2500+ mobile technology would enable SEC to quickly meet peaking demands from Saudi Arabia's isolated grid, which is set to increase by between 10-12 per cent annually."

## ENEC and TRANSCO sign nuclear power deal

EMIRATES NUCLEAR ENERGY Corporation (ENEC) has signed a deal with Abu Dhabi Transmission & Despatch Company (TRANSCO) to establish an operating framework for electricity generated at ENEC's nuclear energy units to be transmitted to the UAE grid.



ENEC CEO Mohamed Al Hammadi. (Photo: ENEC)

The Connection & Interface Agreement (C&IA), signed at TRANSCO's Abu Dhabi offices by ENEC CEO H.E. Mohamed Al Hammadi and TRANSCO

acting managing director Mohammed Bin Jarsh, comes as ENEC prepares for the energisation of its switchyard ahead of the delivery of its four nuclear energy reactors, with the generated electricity set to be transmitted to the grid via TRANSCO's power lines.

"This is a pivotal agreement and the result of hard work and a close collaboration between ENEC and TRANSCO", remarked Al Hammadi. "Close working partnerships and relationships with our stakeholders are vital components for the success of ENEC's programme and for the organisation to continue to deliver each milestone of the UAE peaceful nuclear energy programme."

Progress on the nuclear energy units at Barakah continues apace with Unit 1 now more than 84 per cent complete, according to ENEC. Unit 2 is currently 64 per cent complete, with Units 3 and 4 at completion levels of 41 per cent and 25 per cent, respectively. The four units have been scheduled to be operative by 2020.

Bin Jarsh noted, "We are pleased to support ENEC in what is a strategically important development for the UAE. Finalising the Connection and Interface Agreement is a milestone event that signifies the commitment of TRANSCO to this project and its objectives."

## BP predicts region to maintain top ranking in oil exports

BP IS PREDICTING the Middle East will maintain its role as the world's top oil exporter in 2035 as part of its *Energy Outlook for 2016*.

The company's annual *Energy Outlook* presentation contains 'forward-looking statements' to 2035 regarding global economic growth, population growth, energy consumption, energy efficiency and policy support for renewable energies.

BP is also predicting that the Middle East will remain the largest oil producing region, accounting for a third of the world's oil in another 20 years.

The oil giant has claimed that the region is set to become the "largest consumer of oil per capita by 2035, surpassing North America", with a 60 per cent predicted total growth in oil consumption.



According to BP, the Middle East is set to become the "largest consumer of oil per capita by 2035". (Photo: Ulrich Mueller)

However, the share of non-fossil fuels in the region's energy mix rises from just one per cent today to no more than four per cent by 2035.

The report explained, "CO2 emissions increase by 52 per cent however emissions rise more slowly than primary energy as oil's share of energy

falls from 47 per cent today to 42 per cent in 2035, displaced by natural gas, nuclear and renewables."

BP has said its statements "involve risks and uncertainties because they relate to events, and depend on circumstances, that will or may occur in the future'.





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# ON THE WEB

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

## Volvo Trucks registers Middle East growth

VOLVO TRUCKS SAW its sales rise across most Middle East markets despite challenging economic conditions in the second half of 2015.

According to the Swedish manufacturer, full-year sales were up in most of Volvo Trucks' Middle East markets. The company enjoyed a particularly successful year in Bahrain, Kuwait, Lebanon and Qatar, more than doubling sales in all four markets.

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



The Volvo FH range for the Middle East region. (Photo: Volvo Group)

## Increase in GCC aluminium production

THE COLLECTIVE OUTPUT of primary aluminium by the five GCC producers — Emirates Global Aluminium in UAE, Alba in Bahrain, Ma'aden Aluminium in Saudi Arabia, Qatalum in Qatar and Sohar Aluminium in Oman — stood at 5.27mn tonnes in 2015, marking an increase of seven per cent on 2014's figures.

GCC aluminium production constitutes 10 per cent of the total world production and is considered one of the key economic drivers for the Gulf region.

Mahmoud AlDaylami, secretary general of Gulf Aluminium Council, said, "Record GCC output reflects the continuous improvements in efficiency and optimisation of resources." [www.technicalreview.me/manufacturing](http://www.technicalreview.me/manufacturing)

## Profit rise for flydubai in 2015

FLYDUBAI HAS REPORTED profits of US\$27.4mn for 2015 following a stronger second half-year, which saw increased numbers of passengers travelling on its extensive network.

Total revenue for the full year was US\$1.33bn, an increase of 11 per cent compared to 2014.

Sheikh Ahmed bin Saeed Al Maktoum, chairman of flydubai, said, "2015 was a year in which, through determination and commitment, we continued to realise our vision to increase connectivity in support of the UAE's economic development." [www.technicalreview.me/logistics](http://www.technicalreview.me/logistics)



From May, flydubai will begin to take delivery of 16 new aircraft over the following 24 months. (Photo: aeroprnts.com)

## Outokumpu to build dowel bars for Qatar reservoirs

HABTOOR LEIGHTON GROUP (HLG), contractor for PRPS 3 and Big Blue, has made a supplier agreement to use stainless steel dowel bars manufactured by Outokumpu for the Mega Reservoirs PRPS-3 at Rawdat Rashed in Qatar.

Outokumpu's bars will be supplied in grade Supra 316L/4404 and will be used in the expansion joints for rafts and walls of the reservoirs. Outokumpu will provide 350 MT of round stainless steel dowel bars for the reservoirs.

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

## DEWA invests in extension of water network

DUBAI ELECTRICITY AND Water Authority (DEWA) has awarded a contract worth a total of US\$35.4mn to extend its water network in order to meet increasing needs for water and building infrastructure.

DEWA CEO Saeed Mohammed Al Tayer said, "These projects include the 600-1,200mm per diameter extension of glass-reinforced epoxy (GRE) main water pipelines, using the non-destructive road crossing (NDRC) tunnel-digging method to protect the infrastructure and services for major water transmission networks located around the emirate." [www.technicalreview.me/power-a-water](http://www.technicalreview.me/power-a-water)



Saeed Mohammed Al Tayer, CEO of DEWA. (Photo: DEWA)

## Galva Coat launches new galvanising plant

ABU DHABI-BASED Galva Coat has launched a new galvanising plant to meet the market requirements of hot dip galvanising (HDG).

Galva Coat inaugurated the plant, which employs a number of new technologies to improve the quality of galvanisation, at an industrial unit in Musaffah Industrial Area in Abu Dhabi.

HDG is a form of corrosion protection, which involves coating an iron or steel structure with molten zinc. It is later cooled to form a fairly strong metal coating (zinc carbonate) that protects the metal underneath from corrosion.

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





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# EXECUTIVES' CALENDAR 2016

## MARCH

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7-10	<b>The Big 5 Saudi</b>	JEDDAH	www.thebig5saudi.com
8-9	<b>Middle East Rail</b>	DUBAI	www.terrapinn.com
28-31	<b>Buildex</b>	DAMMAM	www.buildex-sa.com

## APRIL

12-13	<b>Tank World Expo</b>	DUBAI	www.easyfairs.com
13-17	<b>Iran Plast</b>	TEHRAN	www.iranplast.ir
19-21	<b>WEPower</b>	DAMMAM	www.wepower-sa.com
25-27	<b>USETEC</b>	KARLSRUHE	www.wetex.ae

## MAY

9-11	<b>Saudi Power</b>	RIYADH	www.saudi-power.com
9-12	<b>Project Qatar</b>	DOHA	www.projectqatar.com
15-16	<b>Oil Rail &amp; Ports Iran</b>	TEHRAN	www.oilrailports.com
16-18	<b>Saudi Safety &amp; Security</b>	DAMMAM	www.sss-arabia.com

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

### Tech innovation at tank storage exhibition

THE REGION'S ONLY tank storage event, Tank World Expo 2016, will witness the launch of a number of innovations and technologies to markets throughout the Middle East and Africa.

Taking place on 12-13 April 2016 at the Dubai World Trade Centre, the event will target terminal managers, technicians, engineers and other tank storage professionals.

Major names at the event will include Emerson Process Management, Kanon Loading Equipment and Endress+Hauser, while a selection of niche suppliers will also be in attendance at the exhibition.

Among the products on display at the event will be Knowsley SK's Turbinator, designed to accurately mix foam concentrate liquid with either freshwater or seawater, while Arflu Industry Valves will present its dual expanding plug valve. Meanwhile, Loadtec Engineered Systems will be highlighting its wide range of tanker loading arms and Mascoat, a global leader in thermal insulating coatings, will be demonstrating its latest coating – the Mascoat Industrial-DTI.

Tank World Expo 2016 will also feature a two-day conference programme, with 18 leading industry figures speaking, from organisations such as the UAE Ministry of Energy, OTTCO, Oiltanking Odfjell Terminals Oman, Dubai Mercantile Exchange and CITAC Africa.

According to the event's organiser, the recent merging of Tank World Expo and Tank Storage Middle East has allowed a greater focus on the African sector, and Burgan Cape Terminals CEO Muziwandile Mseleku will be at the supporting conference discussing opportunities within the African bulk liquid storage sector.

### Iran to host oil and ports expo

THE FIRST EVER International Oil Rail & Ports Conference will take place in Iran on 15-16 May 2016 in Tehran.

Organised by global rail sector organisation UIC and ITE Group subsidiary ITE-EUF, and hosted by Railways of the Islamic Republic of Iran (RAI), the event will host decision makers from across the transport and logistics sectors of the Middle East and Central Asia, and will have a particular focus on relations within the oil and gas transportation market. The event will be the first international UIC/ITE conference



*The event will focus on oil and gas sector relations with logistic industry partners. (Photo: iurii)*

dedicated to cooperation between railways and the oil and gas industry, as well as ports throughout the Middle East, Central Asia and neighbouring regions.

The conference will be co-located with RAILEXPO 2016 and held under the patronage of the Iranian Ministry of Roads and Urban Development, Ports and

Maritime Organisation and the Ministry of Petroleum.

A host of high-level speakers from across the industries covered at the event will be in attendance, with themes set to be addressed during the two-day conference including the multimodal transport chain for oil and gas products and international rail freight corridors.





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# Adjusting to a challenging environment

Engineering, procurement and construction companies, project financiers, investment banks and general services providers have benefited from an investment-led boom in Saudi Arabia over the past decade. But amid tumbling oil prices and fiscal constraints, economist Moin Siddiqi looks at whether businesses in Saudi Arabia are preparing for a prolonged market downturn or a temporary growth slowdown.

(Photo: Hugo Brizard - YouGoPhoto)

**“The oil slump has pushed the government to mull putting projects on hold, sell bonds and order departments to search for savings.”**

**Finance minister Ibrahim Al-Assaf**

**S**AUDI ARABIA HAS been one of the ‘Group of Twenty’ strongest growing economies – with non-oil growth of almost seven per cent over 2009-13. The International Monetary Fund (IMF) noted, “Rising oil prices and production resulted in large external and fiscal surpluses. The economy benefited from strong government spending, boosting private sector activity, while government deposits in the banking system increased to over half of GDP.”

The United Nations Development Programme described the Kingdom as a nation that undertakes notable human developments and maintains advancement. Saudi Arabia ranked 39 (out of 186 countries) on the international benchmark of the Human Development Index 2015.

Activity in the construction, commerce and manufacturing sectors is heavily correlated to the ‘oil cycle’. Thus, sustained cheap oil would, over time, impact the macroeconomy and the financial sector

through fiscal tightening and lower credit extension. The government plans to spend SAR840bn (US\$224bn) in 2016, down from SAR975bn (US\$260bn) on last year. It is also slashing energy subsidies, which cost the Treasury 13.2 per cent of GDP, introducing VAT and launching a privatisation programme, which could entail selling ports, railways, utilities and airports, as well as an initial public offering in Saudi Aramco.

The aggregate deficit for 2015-2017 is likely to exceed US\$300bn, according to a report by HSBC. On a more positive note, public debt is among the world’s lowest, with a gross debt-to-GDP ratio of 7.8 per cent in 2015 based on IMF estimates and, therefore, provide ample scope for tapping capital markets. Saudi Arabia will likely sell another SAR120bn (US\$32bn) of debt in 2016, compared to SAR135bn (US\$36bn) last year, according to Saudi Fransi Capital. Underpinned by strong credit ratings, the government is considering an international sovereign bond issuance.



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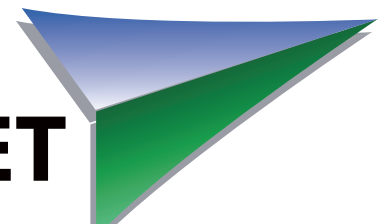
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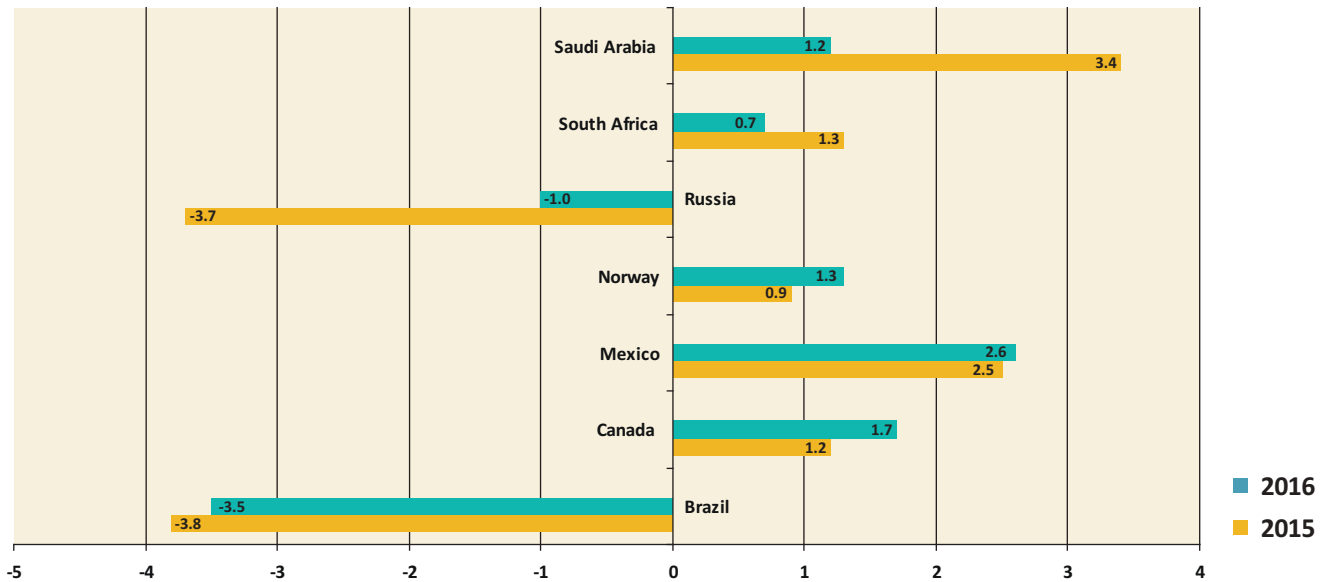
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## The Kingdom's Real GDP Growth vs G20 Economies Peers



Source: IMF World Economic Outlook Update, Jan 2016

### Huge infrastructure needs

Nonetheless, demographic pressures to provide jobs and public services for a booming young population continue. The proportion of working age Saudis (aged between 15-64) is projected to reach 74 per cent by 2035, according to the UN Department of Economic and Social Affairs.

Saudi Arabia has a large agricultural and industrial base and, therefore, faces soaring demands for electricity and water due to ever increasing industrialisation and urbanisation throughout the country.

Power generating capacity is poised to reach more than 120GW by 2030, as new 'mega-cities' will demand significant energy resources. Large-scale investments across transmission and distribution segments from 2010 to 2018 have been estimated at US\$80bn. The Kingdom also consumes nearly seven million cubic metres of water per day, of which 60 per cent is desalinated. The National Water Company plans to spend US\$66.4bn in water and wastewater projects over the next seven years to cope with demand. Awarded contracts for the

sector reached US\$12.5bn in 2014, according to Ventures Middle East. Furthermore, the authorities have pledged to build 500,000 new homes each year.

Saudi Arabia's foreign reserves are a confidence booster to maintain priority spending in 2016-17 – thereby alleviating the impact of lower oil prices. Net foreign assets held by the Saudi Arabian Monetary Agency (SAMA) stood at US\$627.7bn in November 2015.

"Saudi development policy has always been strategically anchored and it is highly unlikely that the oil cycle (which is what it is) would meaningfully derail this," a regional analyst told *Arab News*.

Saudi Arabian-based Jadwa Investment expects subdued growth in both petroleum and non-oil sectors to impact the broader economy this year. "However, we think that government will maintain a level of spending high enough to continue supporting positive growth in the non-oil private sector. It will most likely highlight the strong focus on economic diversification as spending on physical and social

infrastructure is likely to remain at elevated levels," it noted.

The banking system is well positioned to weather the impact of an increase in non-performing loans (NPLs) and weaker deposit inflows that may come with a protracted period of low oil prices and sluggish non-oil GDP growth. Capital buffers and provisions for NPLs are presently above those in peer commodity exporting countries. Overall, corporate balance sheets are in healthier shape, but profits have fallen, led by the petrochemicals sector.

### Slower project implementation

Sizeable cuts in capital spending are likely this year. Projects deemed 'non-essential' will be first to be shelved, including those that were tendered but not awarded. Payment delays could slow the completion of some projects. Finance minister Ibrahim Al-Assaf said, "The oil slump has pushed the government to mull putting projects on hold, sell bonds and order departments to search for savings. Major development initiatives won't be delayed, signalling that

The heavy urban investment of the past two decades has transformed the landscapes of Saudi Arabia's cities. (Photo: mmuenzl/Shutterstock.com)



SERIES 2016



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projects like the Riyadh metro system are unlikely to be affected.”

Middle East infrastructure expert Sachin Kerur at UK law firm Pinsent Masons agreed, noting, “Saudi Arabia’s infrastructure deficit remains significant and therefore it is unlikely there will be a cull of key projects. What may well emerge is a solid programme of must-have projects, some of which will be financed by alternatives other than government spend.”

Saudi Arabia remains the Gulf’s biggest construction market – with a total value of development projects under construction or planned by the end of 2020 estimated at US\$1 trillion, including transport, housing, oil and gas, power and water – thereby supporting the private sector where necessary. International contractors working on infrastructure projects include Bechtel Group Inc. (US), Fomento de Construcciones y Contratas (Spain), Ansaldo STS SpA (Italy) and Drake & Scull International PJSC (UAE), among others.

The changing demographics (nearly two-thirds of the Saudi population is aged under 30) are prompting a dramatic change in its construction market. Underway already are a list of strategic projects such as six new “smart” economic cities (costing more than US\$110bn) to house facilities for 4.5mn people; public transportation (more than 4,000 km of roads as well as a national railway); social infrastructure such as healthcare and education (the building of 28 universities and 10,000 new-generation schools); mass social housing; and power and desalination projects. Last year, capital spending totalled an estimated US\$102bn. Approximately SAR140bn (US\$37.3bn) of construction contracts were awarded in the

**“The GCC countries (of which Saudi Arabia is the kingpin) have the benefit of reserves, which they have built up as a buffer and which they can continue to use to achieve their outlined strategies.”**

#### The International Monetary Fund

first half of 2015, up 12.4 per cent on the previous corresponding period, according to National Commercial Bank.

King Abdullah Economic City, King Abdul-Aziz International Airport, Haramain High Speed Rail and the Riyadh Metro are among the mega-projects currently underway. The two huge schemes in a ‘pre-execution’ stage are Al Mozaini – Riyadh East Sub Centre, an administrative hub, budgeted to cost US\$15bn and the Khozam urban regeneration project in Jeddah for US\$13.3bn. Moreover, Saudi Arabia is also focusing on religious tourism, including plans for a ‘Pilgrim City’ in Madinah with a capacity for 200,000 pilgrims during Hajj and Umrah seasons, which will include hotels, apartments, railway and hospitals.

#### Need for greater efficiencies

Any major changes to subsidised fuel prices would affect energy-intensive industries (plastics, petrochemical and aluminium) since their production costs will increase – thus eroding their competitive advantages in global markets. However, improving competitiveness and the business climate could help the economy adapt to higher

energy prices over time, including measures to support energy efficiency in Saudi Arabia. Higher energy prices create incentives for industries to pursue strategies to minimise energy costs, making them more efficient, and strengthen incentives for research and development in energy-saving and alternative technologies, advised the IMF.

The oil price slump has increased the urgency to diversify the economy into more high-productivity activities – prerequisites for faster job creation and rising private investment.

The IMF echoed, “This [situation] prevents a unique opportunity to accelerate the diversification of the economy. Achieving that goal will require both bold reform decisions and sustained and effective implementation.” Saudi Arabia is focusing on developing industrial clusters around hydrocarbons and mining sectors, and joint ventures in refining, mining, petrochemicals, automobiles, pharmaceuticals and banking.

“The GCC countries (of which Saudi Arabia is the kingpin) have the benefit of reserves, which they have built up as a buffer and which they can continue to use to achieve their outlined strategies. Therefore, they are expected to continue to spend on infrastructure and capital projects in order to achieve their strategies for diversification of their economies,” said Andrew Jeffrey, director of Deloitte’s Middle East capital markets advisory service.

In sum, Saudi Arabian authorities remain confident the economy is resilient enough to withstand the current volatility of the international oil market, although spending cuts and austerity will be evident this year and next as Saudi Arabia seeks to rebalance public finances and improve the structure of its economy. Oil GDP is projected to grow by 1.5 per cent each year from 2017–20, driven by domestic consumption, while non-oil growth is expected to be around 4.2-4.5 per cent. ■



*Falling oil prices has led to a reduction in hydrocarbon revenues in Saudi Arabia and an increasing need to diversify the Kingdom’s economy. (Photo: anekaho)*



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*PPAs have an important role to play in the transition to renewable energy in multiple markets throughout the world. (Photo: Ollyy)*

# Financing renewable energy projects with PPAs

Can purchase power agreements invigorate the renewable energy sector? A report from Baker McKenzie explores the possibilities.

**The benefits of corporate renewable PPAs to offtakers and generators are substantial, but careful consideration needs to be given to unique risks.**

**F**ROM REGULATORY UNCERTAINTY to low fossil fuel prices, the renewable energy industry is challenged on a number of fronts around the world. But in the last three years a new development has emerged that has the potential to breathe new life into the sector – the corporate renewable energy power purchase agreement (PPA).

What are corporate renewable PPAs? Instead of buying power direct from utilities, a number of businesses are now purchasing electricity under long-term PPAs directly from independent generators, as well as investing themselves in generation assets. Though captive power and industrial power supply arrangements have long been a feature of the conventional power sector, the last three years have seen the growth of this phenomenon in the renewable energy sector, led by non-industrial corporate purchasers.

The Baker McKenzie report provides market intelligence into corporate renewable PPAs and the various ways to negotiate, document and finance corporate renewable PPA transactions. It is based on a survey of more than 100 senior executives and complemented by in-depth interviews with high-level individuals active in the market.

The report found that corporate renewable PPAs are surging around the world. In the US alone, almost 1.6GW of renewables capacity was contracted through corporate renewable PPAs in first half of 2015. This is a huge figure given that just 650MW was contracted between 2008 and 2012, according to the American Clean Skies Foundation. This trend shows no sign of abating. Nine out of ten survey respondents expect more corporates to enter into renewable energy PPAs in the next 18 months than in the last 18 months.





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The early entrants to the corporate renewable PPA market are some of the largest businesses in the world, including Google, Facebook and Amazon. Despite corporate renewable PPAs being very complex to negotiate and finance, survey data indicates that small and mid-sized companies can also sign these deals.

In Europe, smaller companies are forming consortia to generate sufficient power demand to make a PPA feasible.

The primary motivation behind renewable PPAs is economic, with green/sustainable advantages as a runner up. Some 60 per cent of surveyed corporates exploring renewable PPAs cited economic factors as their primary reason for doing so, while 30 per cent cited environmental motivations.

From the perspective of generators, corporates are often prepared to offer

higher prices than utilities in markets where commodity prices are low. This price difference can be the difference between a project going ahead or not.

Agreeing a fixed electricity price under a corporate renewable PPA will also give the generator, and its financiers, certainty as to the revenue that will be realised from electricity sales and remove the risk associated with exposure to volatile spot prices in wholesale electricity markets. This price certainty may also help a

**“The early entrants to the corporate renewable PPA market are some of the largest businesses in the world.”**

project secure finance and proceed forward towards implementation.

The benefits of corporate renewable PPAs to offtakers and generators are substantial, but careful consideration needs to be given to risks that are unique to these deals.

Power price fluctuations, and specifically that wholesale power prices may decline below the agreed strike price for a longer period of time than anticipated, top the list of corporate renewable PPA risks. Some 45 per cent of corporate survey respondents said power price fluctuations were a high risk, more than double the number that identified any other risk as ‘high’.

Additional risks include counterparty credit risk, accounting considerations and regulatory/subsidy issues. There are numerous ways to structure corporate renewable PPAs, many of which are complex. According to the Rocky Mountain Institute’s Business Renewables Center, three quarters of corporate renewable PPAs structured in Q1 2015 were synthetic. There are three primary types of synthetic PPAs – contract for differences (CFDs), options and commodity hedges.

According to the survey data, corporates have a preference for contract-for-differences PPAs, although preferences depend on a variety of factors.

Financing renewable energy projects with corporate PPAs is more challenging than financing projects with standard utility PPAs due to the often lower credit ratings of corporates, corporates’ more frequent fluctuations in power demand, collateral allocation and other issues.

Every surveyed bank seeks a first lien on specific project collateral in loan documentation underpinning corporate PPAs. However, three quarters of surveyed corporates and corporate advisors stated that security over specific collateral should be sought in the PPA documentation. Careful consideration therefore needs to be given to how this collateral is allocated between these two parties. ■

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*According to a recent survey, 9 out of ten respondents expect more corporates to enter into renewable energy PPAs in the next 18 months than did so within the last 18 months. (Photo: Andrzej Wilusz)*





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## Briefly

### World's first bioenergy research facility using desert land in Abu Dhabi

THE SUSTAINABLE BIOENERGY Research Consortium (SBRC) has announced that in March 2016, it will begin operating the world's first bioenergy research facility using desert land – irrigated by seawater – to produce both food and aviation fuels.

The facility is located on a two-hectare site at Masdar City, a low-carbon, low-waste sustainable urban development in Abu Dhabi.

Dr. Behjat Al Yousuf, interim provost, Masdar Institute of Science and Technology, said, "This game-changing research places Abu Dhabi at the centre of a global movement to advance technologies to produce sustainable, commercially viable bioenergy.

"Abu Dhabi's commitment to advance breakthrough research that addresses water and food security – with tremendous growth potential – underpins the nation's transformation into a knowledge-based economy. Considering that 97 per cent of the world's water is salt water and about 20 per cent of the world's land is desert, this approach turns a land and water resource scarcity problem on its head," she added.

### MENA set to tender 4GW solar projects in 2016

SOLAR USE IN the Middle East is expected to expand further with an estimated 4,000MW of new projects lined up for tendering in 2016, according to a report by the Middle East Solar Industry Association (MESIA).

MESIA has released its annual *Middle East Solar Outlook* in which it noted that 2016 will be characterised by more and more lower levelised costs of solar electricity generation.

"Claims that the growth of solar energy will slow down in 2016 because of low oil prices, appear to be unfounded," remarked Dr. Raed Bkayrat, director of research at MESIA.

"It is incorrect to assume that solar growth will need to be subsidised by petro-dollars, when all the evidence points to solar being cost competitive with every conventional energy generation resource, on an unsubsidised basis."

## Morocco unveils Phase 1 of world's largest CSP plant

MOROCCO'S KING MOHAMMED VI inaugurated Noor 1 – first phase of what will become the largest concentrated solar power plant in the world – near the Moroccan city of Ouarzazate.

At completion, the 580MW complex will provide clean electricity for more than one million people, helping Morocco reach its goal of generating 42 per cent of the country's energy



King Mohammed of Morocco will host COP22 in Marrakesh this November.

needs from renewable sources by 2020 and 52 per cent by 2030.

Morocco is scheduled to host the next Conference of Parties to the UN Framework Convention on Climate Change (COP22) in Marrakesh this November.

The *2016 Climate Performance Index* ranked Morocco among the top ten countries making the most progress in addressing climate change and number one among newly industrialised countries, citing the country as one that shows 'the potential of developing countries to move forward'.

The World Bank has said that at a time when many economies are exhausting their natural resources and face constraints exacerbated by climate change, Morocco is setting an example by designing and embracing green growth strategies across sectors, noting that the right to a healthy environment and sustainable development has been enshrined in Morocco's constitution since 2011.

King Mohammed VI noted in a speech at COP21 in Paris last December, "Morocco's proactive policy on sustainable development and environmental protection encompasses a wide range of policies. These include energy subsidy reforms, coastal zoning, pollution and waste regulation, fisheries management, dam and watershed development, climate-smart agricultural practices, and beyond."

Marie-Francoise Marie Nelly, World Bank country director for Maghreb and Malta, has said, "What's encouraging is that in all these areas there is a deliberate choice and clear policies that have been spelled out by the government, and they are actually walking the talk in terms of putting the resources and in terms of implementation."

## Dubai's Phanes Group targets 500MW

DUBAI-BASED SOLAR developer Phanes Group is set to increase its global installed solar capacity by 500MW over the next two years.

The firm, which already has projects in the UK and the Dominican Republic, plans to expand in the UAE, Chile and South Africa.

Phanes Group is set to build solar plants in these targeted regions, implementing a range of investment strategies to fund the projects.

The company's managing director Martin Haupts stated, "The regional and global solar energy landscape is changing, presenting clear opportunities for developers and investors that can create the right partnerships and provide innovative structures that support the rapid scale up of solar in the energy mix.

"The GES investment and our robust project



Phanes Group has plans to expand throughout the UAE.

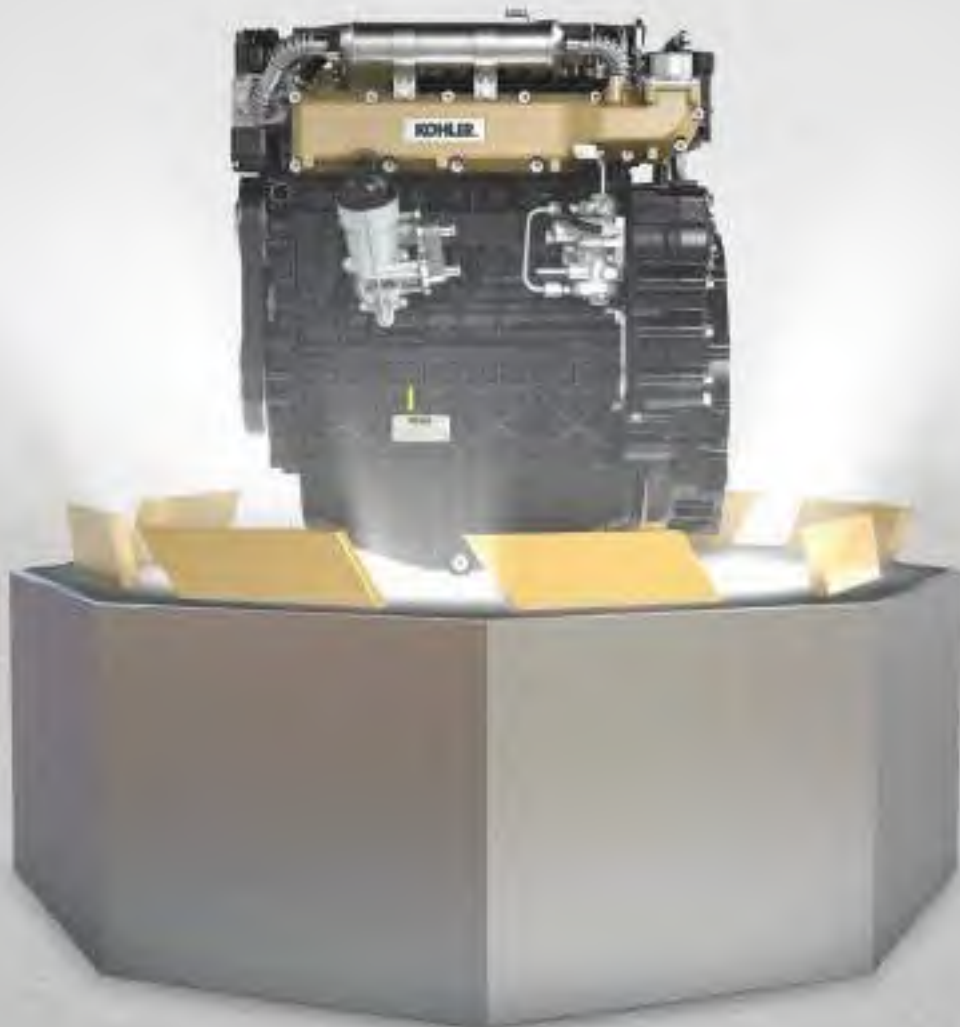
pipeline are a demonstration of our unique value proposition, engineered to facilitate the shift to centralised and decentralised solar in markets where it offers clear value."



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# The nuclear future

For the UAE, nuclear power will play a big role in the country's future energy mix. The Gulf's first reactor will be commissioned on behalf of ENEC in 2017. Others will follow. Robert Adams reports.



*A 6GW build-up in nuclear generation capacity is expected throughout the Middle East over the next decade. (Photo: TTstudio)*

**T**HE UAE'S GROUND-BREAKING 5,600MW station, currently under construction at Barakah, is a world leader in the application of large-scale modular (four-reactor, third-generation) design in an OPEC country. And even more ambitious plans are being pursued in Saudi Arabia.

First commercial-scale output is expected in Abu Dhabi by 2017, with the rest following rapidly through 2020. This is an era-changing project on a truly grand scale; other MENA countries are weighing up their options in the light of the low oil-price scenario.

Simultaneously with Japan's ongoing nationwide shutdown following the Fukushima disaster of 2011 – now being slowly reversed on a plant-by-plant basis – global output of nuclear-generated electricity grew by an above-average 1.8 per cent in 2014. This was “the first time nuclear power has gained global market share since 2009,” according to BP's latest *Statistical Review (June 2015)*, which covers all forms of energy. Total consumption reached 574mn tonnes oil equivalent (mntoe) – compared with 635 mntoe in 2006 – due to reduced generation in OECD countries where many first-generation plants have become time expired.

Compared with the burgeoning of renewables nearly everywhere, nuclear supply is “stable”, according to the International Energy Agency's *World Energy Outlook* (November

2015). Reactor-based generation faces challenges to deployment in some industrialised countries, and stronger support in others, including Japan, where both the Sendai I and II reactors were back online at the end of October. Many others have still to be recommissioned in a rolling programme.

Nearby, China has particularly ambitious plans for latest-generation nuclear deployment, including 58GW online through 2020. In 2014, China's nuclear generation amounted to just 28.6 mntoe, well down the international league. Based on gross generation unrelated to cross-border supplies, US consumption in that year amounted to 189.8 mntoe – but China is catching up fast as the role of coal is run down.

## A new scenario from the IEA

Under the IEA's 'New Policies' scenario (thought to be even more realistic after the major commitment successes notched up at COP 21 in Paris in December 2015) world-scale nuclear generation is expected to rise from 2,478TWh [approximately 560 mntoe] in 2013 to 3,186TWh in 2020, followed by a major leap to 4,606TWh just 20 years later as Generation IV reactors contribute their share. Under the Agency's ambitious '450' scenario, the final total will have to be a massive 6,240-plus TWh if today's 60-year probable life span proves to be reproducible with G-IV plant.

This will be difficult to achieve in the face of the major retirement programme that is now being implemented (along with significant improvements in lifetime extensions) in the nuclear-sceptical industrialised countries. The government financiers behind world-scale new-build schemes like Barakah I-IV benefit from the very expensive lessons learned about this technology – including long-term waste disposal and eventual decommissioning costs – overseas.

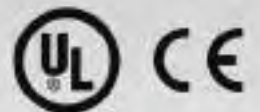
**Various countries in MENA are investigating their nuclear options, including Algeria, Egypt, Morocco and Tunisia.**





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## Nuclear development in the UAE

Foremost in local development plans are those of Emirates Nuclear Energy Corporation (ENEC), which is planning to introduce to the Gulf grid the first of four 1,400MW reactors at Barakah within a couple of years.

At the end of November, ENEC reported the region's very first commercial-scale reactor as being four-fifths complete, with Unit II at the 60 per cent stage. The utility has been issuing regular updates on progress at a project which represents a huge breakthrough in regional power security.

In accordance with the tight regulations administered by the International Atomic Energy Agency, the first operating licence is currently being applied for to the local regulators by ENEC itself. The complex planned for completion within five years or less consists of four proven pressurised light water reactors designated as APR-1400 ("Advanced Power Reactor") type. Construction has been entrusted to a consortium led by Korean Electric Power Co, which will also be responsible for training the necessary staff, creating an invaluable pool of new-skills talent which does not as yet exist anywhere within the MENA region.

A completely new range of local employment opportunities is therefore being opened up by this game-changing situation, a development which the whole close-knit nuclear world has already noticed and for which further plans are already being laid (in Egypt, subject of a special Forum at Sustainability Week, for example). This will complement the real progress that has been made across the region in developing a qualified young workforce equipped with today's renewables engineering and maintenance skills.

## Big plans in the MENA region and beyond

Over the next 10 years the Middle East will see a modest 6GW build-up in nuclear generation capacity, according to the IEA's central forecast, which includes the landmark development in the UAE. This will need to be followed by a further 9GW through 2040, the Agency says. These are small but helpful totals that will significantly improve global energy security at an uncertain time. Apart from more connections becoming possible, the impact will be largely on a lot more Gulf gas being released for other purposes.

These totals compare with rest of Asia's 80GW and 88GW increments respectively, the results of a marginal increase in nuclear's overall share of global power generation – but a major advance in China.

The bottom line is that only around 13 per cent of forthcoming



*Just 13 per cent of forthcoming total global spend on new power plants will be on the nuclear sector. (Photo: Wlad74)*

total global spend on new power plants will be on the nuclear sector, much less than on renewables, with both the Gulf and some North African states making significant contributions in terms of upfront investment and regulation costs, CO<sub>2</sub> savings, and a general increase in worldwide energy security.

## Obstacles, challenges and cautious markets

The background to all these exciting developments is that nuclear power is still usually associated with baseload generation, being an inflexible source of supply that brings with it very high investment but very low operating costs, construction times of four years or considerably more, and those very welcome greenhouse-gas reductions.

Additionally, nuclear fuel supplies are not normally considered to be a significant problem, although maintaining their physical security at times like these definitely is.

After the Fukushima Daiichi incident in March 2011, brought about by an earthquake/tidal-wave event off the coast of Japan, operating global nuclear capacity accounted for just 11 per cent of electricity generation, compared with more than half as much again as recently as 1996. Most of this was from aged early-generation plant located in OECD countries.

Another wave, a much more welcome one of new retirements this time, is now on its way, and most of the greenfield capacity currently under construction at brand-new locations such as Barakah is being installed in order to meet fast-growing demand for power. Gulf electricity markets with their above-average rates exemplify this, but the really big increments will be coming from China and India, two old hands at nuclear generation.

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## Under the IEA's 'New Policies' scenario, world-scale nuclear generation is expected to rise from 2,478TWh in 2013 to 3,186TWh in 2020.

"Government policy underpins the outlook for nuclear power," cautioned the IEA at the end of last year, pointing out the vital role of regulatory and funding administrations in markets where state-owned entities build, own and operate their own plants.

Elsewhere, attitudes to nuclear power are more critical to its future development, says the energy watchdog, referring to the aftermath of tragic events like Three Mile Island (Pennsylvania, 1979) and Chernobyl (Ukraine, 1986). Publicly aired matters typically include day-to-day operational safety, radioactive waste management including ultimate disposal, the possibility of weapons proliferation, transparency in matters relating to governance, heading off of climate change, and general energy security.

Hence the value of top-level international get-togethers such as the Energy Ministry's Strategic Dialogue which took place with US Deputy Secretary Elizabeth Sherwood-Randall in Abu Dhabi in September 2015.

### The role of nuclear power after the COP21 agreement

Nuclear power remains central to projections on future energy security, whichever of the IEA's cautious Scenarios turn out to be the most accurate after last month's Paris breakthrough. "Nuclear power is one of a limited number of options available at scale to reduce CO<sub>2</sub> emissions," said the agency, just a month before the UN-sponsored talks began.

It reiterated the main issues as being energy security, environmental considerations, waste disposal, governance and public engagement, with the addition of water consumption, all topics that were gone into fully here before the construction programme even began.

Elsewhere, already at an advanced stage of nuclear planning, is Jordan, which imports nearly all its fuel, but plans to be in a position to export power from its own relatively small grid eventually.

The Jordanian Atomic Energy Commission was established in 2008 and its president addressed the World Future Energy Summit in Abu Dhabi in January this year. Current plans are to develop the industry, in association with desalination, in the vicinity of Aqaba. The Hashemite Kingdom is blessed with its own resources of uranium, and already produces the phosphate intermediates needed to process these economically.

With the aid of various NGOs, numerous cooperation deals have been signed with major nuclear players in countries such as Canada, China, South Korea and Russia; the French uranium mining industry is already at work there too. Various energy resources companies have been established locally, and the university has its own school of nuclear engineering.

Under the aegis of the Tunis-based Arab Atomic Energy Agency, various other countries in MENA are currently investigating their nuclear options. These include Algeria, Egypt, Morocco and Tunisia.

KA-CARE, a new city in the vicinity of Riyadh, has been devoted to the development of peaceful nuclear issues. Plans include the supply of 15 per cent of Saudi Arabia's electricity by 2040. ■

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## Surge predicted in global smart grid market

A NEW REPORT has revealed that the smart grid market is set to rise in value from US\$40bn in 2014 to US\$120bn by 2020.

The report by Zion Research found that the global smart grid market would grow at a CAGR of slightly above 18 per cent between 2015 and 2020.

Entitled *Smart Grid (Advanced Metering Infrastructure, Distribution Automation, Software & Hardware, Communication Technologies, Transmission Upgrades and Cyber Security) Market: Global Industry Perspective, Comprehensive Analysis, and Forecast, 2014-2020*, the report noted that Europe, Latin America, the Middle East and Africa were important regional markets for the smart grid industry, which expected to exhibit significant growth in the coming years. The market was dominated by Asia Pacific, which has a 30 per cent share of the total revenue generated in 2014, with strong demand deriving from emerging economies such as China and India. North America was the second largest market for smart grid in 2014.

Smart grid, an innovative power distribution technology, facilitates secure, efficient and effective control of the production and distribution of electricity. Comprised of several instruments and appliances that work together to analyse the flow of current, smart grids effectively measure and balance the demand and supply of electricity at the connected device across the remote areas.

The growth in demand has been driven by the need of growing markets that are undergoing rapid industrialisation and require the effective and efficient distribution of electricity with minimum loss

during transmission. Higher reliability, safety and efficiency are other factors driving the market, with advanced metering infrastructure, distribution automation and cyber security among the key technologies involved.

The market has seen plenty of action in the Middle East in recent years. In February last year, energy management solutions provider Landis+Gyr and mobile giant Ericsson entered into a partnership to offer smart metering solutions that would aim to provide smart grid environments to cities across the Middle East.

The middle of the year saw a deal between Alstom and National Grid to develop Saudi Arabia's power infrastructure, which promised cooperation on a number of power sectors, including smart grid and super grid applications, while in Dubai, DEWA announced plans to install more than a million smart meters by 2020 across the emirate in a drive to improve power connectivity ahead of Expo 2020.

At the time, DEWA CEO Mohammed Al Tayer said, "Our objective in the transition to become the smartest city in the world is to provide instant and seamless smart services anytime, anywhere. Dubai has all the elements to reach top positions globally and has become a leading global hub for business, finance, tourism, green economy and sustainability. The smart grid will contribute to the infrastructure by connecting renewable sources of energy and promoting environmental initiatives supported by qualified staff, thus building a sustainable future for Dubai."



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*LED makes environmental and financial sense for Al Ain.*

# A green glow for the Garden City

The picturesque city of Al Ain, in the Abu Dhabi emirate, is experiencing the benefits of an eco-friendly lighting system in a partnership with GE Lighting.

**The technology proved its merits in Las Vegas, with its extreme heat, which was also an important consideration for Al Ain.**

**A**N ENERGY-EFFICIENT LED street lighting solution is expected to reduce carbon emissions in the UAE city of Al Ain by more than 234,000 kg per year. Known as the Garden City, for its scenic location, plentiful oases, and impressive greenery, Al Ain has always stood out for its excellent quality of life. It is hoped that the partnership between the city's municipality and GE Lighting continues this tradition.

The retrofit project is now complete with GE Lighting installing energy-efficient LED street lights across the Al Ain Municipality, with the aim of not just reducing carbon emissions but also to maintain the visual appeal of the Garden City.

"As a government entity committed to enhancing the well-being of the people, we deliver the best in-class and customer-oriented municipal services," said a spokesperson for the Al Ain Municipality.

"As part of our emphasis on optimising energy use and in line with the green vision

of the government, we decided to revamp our street lighting with LED solutions."

GE Lighting installed its ERS 2 557 94W lamps incorporating them into the original street lighting design. Adhering to the existing street lighting system was a challenge, which GE addressed by drawing on its experience of working on similar projects globally, choosing technology that has already proved its merits at earlier applications in cities such as Las Vegas in the USA. The extreme heat of Las Vegas meant that the LED lighting had to be durable, and this was also an important consideration for the Al Ain project.

As a result, the residents of Al Ain now enjoy sustainable street lighting that provides the benefits of reduced glare and better lighting control which, in turn, improves road safety. In addition, the long lifespan of up to 50,000 hours and reduced maintenance requirements mean the new lights make financial sense for Al Ain. ■



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DP World plans to add an additional two million TEU of capacity at Dubai's Jebel Ali port. (Photo: DP World)

# Growing container volumes drive port ambitions

GCC states are expanding capacity and investing billions of dollars in their ports to accommodate booming traffic. Lynda Davies reports.

**“Despite new capacity additions and the softer volumes in Q4 2015, utilisation at Jebel Ali remains high at approximately 90 per cent.”**

**DP World's chairman Sultan Ahmed bin Sulayem**

**C**ONTAINER PORT CAPACITY in the GCC countries is soaring as governments and port operators continue to invest heavily in port infrastructure to accommodate growing container movements and increasingly larger ships. Despite the perception that overcapacity could develop as a result of the raft of new projects, the high productivity levels of many of the region's ports, coupled with consistent growth in container and trade volumes, are a testament to GCC port operators' intentions to keep a stronghold on the world's lucrative cargo volumes.

Ports in the UAE dominate the region's container traffic. DP World, the UAE's largest port operator, will add an additional 2mn TEU of capacity at Dubai's Jebel Ali port when its third container terminal becomes fully operational in the second half of this year. Last July, the operator announced it had begun construction work on a fourth terminal at the port. The completion of the first phase of this new terminal is targeted for 2018 and will boost Jebel Ali's overall capacity to 22.1mn TEU.

DP World's chairman Sultan Ahmed bin Sulayem said the further expansion is in response to customer demand for greater capacity at Jebel Ali, given the strong domestic and regional growth outlook, including the lead-up to Expo 2020.

“Despite new capacity additions and the softer volumes in Q4 2015, utilisation at Jebel Ali remains high at approximately 90 per cent,” he said.

Jebel Ali and DP World's other terminals in the UAE, which comprise facilities in Fujairah, Mina Rashid and Mina Al Hamriya, together handled 15.59mn TEU in 2015, representing a growth of 2.3 per cent on 2014's 15.25mn TEU. The vast majority of the throughput is handled at Jebel Ali.

Meanwhile, Abu Dhabi's main container port, Khalifa Port Container Terminal, is preparing for the next phase of expansion with new equipment set to be added this year and in 2017. Port operator Abu Dhabi Terminals handled a total of 1.5mn TEU at the terminal in 2015, up from 1.14mn in 2014, representing a 31.6 per cent increase year on year. With a current installed handling capacity of 1.9mn TEU, last year's throughput represents an average utilisation of some 78 per cent. Three additional ship-to-shore (STS) gantry cranes and 10 automated rail-mounted gantry cranes are set to be added to increase the terminal's annual capacity, which will reach 2.5mn TEU on completion of the expansion, anticipated by 2020.

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years of operation, traffic through the terminal has grown at the fastest pace of any container terminal in the Middle East, experiencing double-digit annual growth and doubling the volume of containers handled. Martijn Van De Linde, Abu Dhabi Terminals CEO, attributes the rapid growth to the significant expansion of Abu Dhabi's industry as well as a substantial increase in the role it plays in regional transshipment and the increase in the number of shipping lines calling at the terminal. He said the planned new capacity is to satisfy the future demand and meet the expected growth of the local and regional industry. According to de Linde, Khalifa Port Container Terminal has future expansion capabilities to grow its annual throughput capacity to five million TEU.

Gulftainer's Khorfakkan Container Terminal (KCT) in the UAE emirate of Sharjah saw a 14.4 per cent growth in container throughput in the first half of 2015 compared with the same year-earlier period. Gulftainer attributed this growth to the general increase in demand of goods across the GCC countries, as well as growth in UAE imports due to investments in local infrastructure and the economy by local governments.

The operator said it has a strong focus on improving infrastructure. In November 2014, for example, it completed US\$60mn of new investment at KCT with the addition of four new ship-to-shore (STS) cranes and 12 rubber-tyred gantry (RTG) cranes. This scaling-up of equipment enabled the terminal to handle the new 18,000 TEU class of container ship.

Gulftainer plans to develop additional quay facilities and create further yard area at KCT, providing for an annual handling capacity of six million TEU by the end of this year and eight million TEU by 2020. Current capacity is some five million TEU. Whilst KCT serves the region at large, Gulftainer's smaller Sharjah and Ruwais container terminals provide specialised service for businesses in Sharjah and neighbouring emirates. Annual throughput at the Sharjah Container Terminal surpassed 400,000 TEU for the first time in 2014. Altogether, Gulftainer's UAE terminals handled a total volume of 3.8mn TEU in 2014.



The DP World control room at Jebel Ali Port. (Photo: DP World)

### Saudi port initiatives

Saudi Arabia container handling capacity continues to grow. In late April 2015, the Kingdom saw the start of commercial operations of a second terminal in Damman's King Abdul Aziz Port, the largest port on the Arabian Gulf and second only to the Port of Jeddah in shipping traffic in the Middle East and North Africa.

Operated by Saudi Global Ports LLC (SGP), a joint-venture company formed between Saudi Arabia's Public Investment Fund and Singapore-based port and terminal operator PSA International,

this first phase of the new terminal has 16 metres of water depth, the deepest in the region. It is equipped with six quay cranes on 700 metres of quay, providing an annual handling capacity of some 900,000 TEU. When fully developed, the new SGP terminal will have a quay length of 1,200 metres and 12 quay cranes, with a design capacity of 1.8mn TEU per annum.

Shipping line users say the new terminal has brought to the region much needed-handling capacity, alleviating rising congestion experienced by the port's users in the past three years. PSA International believes the new terminal, once fully completed, will transform Dammam into the "key gateway on the Gulf" and will be able to handle around 30 per cent of Saudi Arabia's cargo.

The other container terminal at King Abdul Aziz Port is operated by International Ports Services Co. Ltd. (IPS), a subsidiary of Hong Kong-based Hutchison Port Holdings Ltd., in a joint venture with one of Saudi Arabia's largest maritime companies, Saudi Maritime Company for Navigation. The terminal provides an annual handling capacity for around 1.5mn TEU.

Meanwhile, King Abdullah Port, opened in late 2013 and Saudi Arabia's first privately-funded port development, launched its fourth berth in May 2015, increasing its annual container-handling capacity to over 2.7mn TEU. The new berth offering a depth alongside of 18 metres can accommodate some of the largest container ships and has contributed to a major increase in the port's container storage capacity to three million containers per year. King Abdullah Port handled 1.307mn TEU in 2015. Located some 100 km north of Jeddah, the port was developed to take some of the pressure off Jeddah Islamic Port which has limited scope to expand.

### Oman expansion

In Oman, Sohar, already one of the fastest-growing ports and free zone developments, has ambitious plans to expand its annual container-handling capacity by 650 per cent to around six million TEU. Existing capacity at the port's Oman International Container Terminal (OICT) is 800,000 TEU. Much of the investment to date by OICT's owners, a joint venture of Hutchison Port Holdings Ltd., the Oman government, Dutch firm Steinweg and a number of Omani investors, has been focused on Terminal C. Additional new investment is earmarked for fast-tracking further development of Terminal C and there also are plans for building a brand new terminal - Terminal D - at OICT. Construction work on Terminal D could start as early as 2018/2019.

In addition to organic growth, OICT has benefited from the relocation of all commercial traffic from Port Sultan Qaboos in Muscat as of September 2014. Container traffic at Sohar port grew five per cent over the nine months to 30 September 2015 to reach over 407,000 TEU compared with the same year-earlier period, according to Port of Sohar data.

The Port of Duqm, Oman's newest gateway, is being primed to handle container traffic as part of 'early phase operations' that also envisage the introduction of a container feeder line which will link Duqm with Salalah and Sohar and the UAE's Jebel Ali, targeted to start this year. In addition to serving as a gateway for a special economic zone being developed in parallel with the port, Duqm is aimed at evolving into a container transshipment hub of the future, according to the port's developer and operator, Port of Duqm Company (SAOC), a 50:50 joint venture between the Omani Government and the Consortium Antwerp Port (CAP). Current facilities at the port can handle up to 200,000 TEU annually and vessels up to 3,000 TEU. But SAOC sees these facilities as "stop-gap", until a fully-fledged container terminal facility can be commissioned, anticipated from 2018. ■



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The Garbage Converter container by MAC, currently undergoing trials at Specialist Services LLC facility in Abu Dhabi. (Photo: MAC)

# Do away with offshore garbage the MAC way

The first containerised garbage converter by Marine Assets Corporation (MAC) not only disposes of waste, but makes it 'disappear' altogether. An exclusive report by *Technical Review Middle East*.

**The DNV-specified containerised unit reduces waste volume by up to 80 per cent whilst also reducing the weight by as much as 50 per cent.**

**A**S THE WORLD'S population continues to expand and technology advances ever further, garbage production continues to increase along with associated problems such as stench, harmful bacteria and pollution, leading to disease and untold misery for many.

Now imagine that garbage as we know it became a thing of the past and that there was a system to convert it into a useful fuel, with an added byproduct – water. Imagine also the implications this would have on mankind, wildlife and the environment.

Marine Assets Corporation (MAC), along with its partners, has developed a unique containerised system to do exactly this. Launching first in the Middle East, the Garbage Converter Container can tackle waste from onshore and offshore facilities

and remote islands as well as municipal, retail and domestic waste.

To deal with larger volumes of waste offshore, the company has also developed the Garbage Converter Vessel, designed to deal specifically with garbage accumulating on remote oil rigs and remote offshore facilities. The vessel collects rig garbage on-board and converts it into refuse derived fuel (RDF) whilst operating in the field, reducing the need for costly trips back and forth to shore. The vessel can, at the same time, be utilised as a supply and emergency vessel equipped with firefighting equipment, as well as deploying oil spill and recovery systems.

Andy Walker, sales director at MAC, says, "We looked at the current problems specifically offshore and quickly identified that firstly, there is problem with garbage;



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MAC sales director Andy Walker. (Photo: MAC)

**“The converter system is a perfect fit with our own environmental policies and sits well in our portfolio of products and services. We are delighted to have signed a contract with MAC to supply the converter container, complimenting it with our own service and maintenance facilities.”**

**MI SWACO, part of Schlumberger group of companies and one of the strategic partners working with MAC in the region.**

secondly, nobody appeared to be doing anything about it; and thirdly, the problem is getting bigger by the day.”

The DNV-specified containerised unit reduces the volume of the waste by up to 80 per cent whilst also reducing the weight by as much as 50 per cent by utilising its unique patented evaporation technology to remove the water content from the garbage.

### The concept

Raw garbage, either loose or in bin bags, is thrown into the converter chamber and the lid is closed, creating a vacuum environment. Once the cycle begins, the blades inside the chamber rotate at a high speed to grind and macerate the waste. The resultant friction causes the garbage temperature to rise to around 85°C, releasing the moisture content of the garbage. Once the moisture content is removed the temperature, again through friction, rises to around 115°C, which sterilises the waste. Due to the vacuum

environment created by the process, there is no smell during or after the cycle. Safety and shutdown features protect the system at all times during the cycles, along with user identification and password protection to avoid unauthorised access and operation of the system.

### The outcome

Dry, sterilised inert processed garbage or RDF resembling ‘fluff’, is then dispensed into a holding bin that contains a sealable vacuum bag. The RDF can be stored for months before being used as a fuel substitute or being disposed of.

In essence, the process allows for the equivalent of eight fully-loaded garbage bins to be converted into one bin of dry, sterile fuel substitute. The converter can treat materials including food, plastics, glass, rubber, paper and tins.

Each cycle is complete in between 25-35 minutes depending on the moisture content of the waste. Under normal conditions, the converter container can process the garbage of a rig with a personnel on board (POB) complement of up to 250 people who would normally generate, on average, around 500 kg of garbage per day. This particular converter container can process around 35 kg per cycle with a mixture of wet and dry garbage. Larger machines are capable of processing 500 to 1,000 kg in a single cycle and are also available from MAC.

The current containerised system produces around 15 litres of water per cycle, again depending on the initial moisture content. This can be used for irrigation, further purified for use in processes or sent directly to the sewers.

Walker revealed that during recent trials and demonstrations for prominent oil and gas companies in the UAE, the response was incredibly positive, with attendees

impressed with the machine’s QHSE, environmental and operational cost reduction benefits as they continuously strive to find new and innovative ways to help the environment and develop greener policies within the industry, whilst reducing costs to their own operations.

“We initially looked specifically at the oil and gas sector; however, it soon became clear that garbage is a problem faced by everyone,” says Walker.

“We identified the generic garbage problem with each industry specifically in the UAE and worked with this in mind. Now we have a solution for dealing with everyone’s garbage.

“We don’t expect to change the world’s garbage problem overnight; however, by tackling it head on we hope to begin to make a difference changing people’s perception of what garbage is as well as what it can be transformed into, as we make inroads towards zero landfill in the future,” he adds.

Two units have already entered the market, and MAC is now looking to increase its fleet this year and beyond.

Speaking about the garbage converter being essential and critical for offshore operations, Walker says, “The biggest task for offshore operators is to reduce costs. Utilising the Garbage Converter Container reduces waste volumes by 80 per cent, which directly impacts the transportation of that waste. The fact that the waste is now essentially a fuel and a desired commodity is an added bonus, the sale of which can be offset against either purchase or rental costs. From a QHSE perspective, the hazards that rotting waste presents are also removed, protecting personnel from bacterial infections, vermin and food poisoning, thus further reducing down time and cost. The storage of the processed RDF

**“Launching first in the Middle East, the Garbage Converter Container can tackle waste from on and offshore facilities and remote islands, as well as domestic, retail and municipal waste.”**





*Dry, sterilised, inert processed garbage or RDF resembling 'fluff' is created out of the miscellaneous garbage that may include glass, food, steel, rubber, amongst other waste matter. (Photo: MAC)*

is easier and cleaner, and clients that utilise the system don't have to worry about carrying their hazardous garbage around. It really is an economically-sound proposition."

The converter container series is housed in a standard 20' ISO container and is used for treating general household, organic and infected waste. The unit's weight is around 12,000 kg and consumes power at 140 amps 3 phase 400 volts. The design concept is "plug and play", allowing very fast mobilisation, installation and maintenance of the units. It is easy-to-operate and is password protected.

The low maintenance converter is marketed in the UAE and Gulf region by Marine Assests Corporation DMCC, along with its strategic partners.

The units can also be customised for hazardous zone 2 areas if and when required.

The containers are also very scalable – a 10-foot container is available, designed specifically for use on jack-up rigs where space is at a premium.

Large converter machines can also be purchased from MAC as standalone fixed systems dealing with large quantities of waste. For a central processing facility MAC will specify, install, commission and maintain a purpose-built converter system.

"As long as garbage exists and continues to be produced, we will try to convert as much as we can into a useful commodity instead of dumping it out of sight where it damages the environment, pollutes our natural resources and heaps misery onto people less fortunate than ourselves," concludes Walker. ■

**For more information, please contact  
andy.walker@macoffshore.net**

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## Briefly

### Construction and mining leaders set to converge on Munich

FROM 11-17 APRIL, delegates from around the world will be attending bauma 2016, the leading trade fair for machinery, vehicles and equipment for the construction and mining industries.

As well as hosting a wide range of construction and mining exhibitors, one of the highlights of bauma 2016 will be the announcement of the winner of this year's bauma Innovation Awards.

The five categories for the awards are: Machinery; Components; Construction Process/Construction Work; Research; and Design.

In total, 118 applications were received from Germany and abroad. The jury has selected three new developments in each category to go to the final round, with the winners announced on 10 April.

## Safety scorecard

**BROGAN GROUP, WHICH provides scaffolding solutions in the UAE and UK, undertook its first Considerate Contractors Scheme (CCS) Audit at Goodmans Field in London.**

**The group scored 42 out of a possible 50 points for this site, which is broken down into five categories: Appearance, Community, Environment, Safety and Workforce with each category achieving Excellent or Exceptional scores.**

**The Brogan site is now a registered CCS 'Ultra Site'. Ultra Sites is a new initiative from CCS where registered sites always use registered companies, and goods and materials are sourced from registered suppliers.**

## Taking steps for ladder safety

PREVENTING DANGEROUS BACKWARD and downward falls from ladders has been made easier with the development of new fall arresters by Honeywell Industrial Safety.

Designed to be used in conjunction with the company's Söll GlideLoc ladders, the Söll BodyControl shuttles attach to the ladder and the worker's harness to ensure ease of movement and comfort, as well as making ladder tasks safer.

The shuttles are fitted with large, sturdy polymer wheels that move in a suspended axle to ensure smooth running.

Additionally, the shuttle is fitted with a large, easy-to-grip karibiner for improved ergonomics when working at height, and is easy to operate when wearing gloves.

A sternal attachment allows workers to stay close to the ladder, which is essential in confined spaces, and 80 per cent of the shock absorbers are covered in a housing to extend the product life and reduce maintenance costs. It has also been designed with a range of ladder behaviours in mind, such as leaning backwards, which can lead to particularly serious falls if safety procedures are not put in place by operators.

These shuttles work well with Miller Revolution harnesses and attach easily to the sternal loops of the Revolution R5 harness. The Söll BodyControl II attached well to the sternal loops and ventral D-ring of the Revolution R6 model.

Before work commences, the system's visual fall indicator can be used to easily inspect the ladder and assess the risks.

## Safety products for work zones

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## Virtual formwork live at bauma 2016

VISUALISING A FORMWORK project in the virtual world before undertaking the task in the real world can prove to be a boon to construction managers. The Paschal Group will be exhibiting the latest version of their formwork software, PPL 10.0, at the bauma 2016 trade fair in Munich from 11-17 April.

Based on Java technology, the software's new features include 3D visualisation, interfaces for import and export, extended layout input for features such as gable walls, slopes on the upper sides of walls and floor slabs, integrated CAD functions, the ability to use several formwork systems in the one virtual project, a dynamic material list and a warehouse module.

The warehouse module offers a complete warehouse management function so operators can keep track of formwork, building equipment and construction machines, as well as manage the site efficiently.

PPL 10.0 is fully functional on Windows and Mac computers and can be installed on Windows, Linux, Unix and OS X systems.



Visualising a formwork project means better on-site outcomes.



## Calculating risks when reshoring slab formwork from MEVA

CALCULATING A CONCRETE slab's load-bearing capacity is essential for construction projects, particularly when multiple slabs have to be poured in quick succession.

When putting formwork onto slabs, it is critical to determine the capacity. To further complicate the task, a slab's load-bearing capacity has to be activated.

This is achieved by releasing all the formwork props for a moment and then retensioning them in order to reshore the slab. When the props are released, the slab can bend through and develop its required strength.

If this is not done, however, the slab cannot generate its own load-bearing capacity fully or carry the load of the slab works above it. It passes the surplus load down through the props. These may be damaged or bent.

Also, the slab could develop cracks, allowing moisture to creep in and cause the rebar to rust. Adhering to the rules of reshoring and correctly calculating the props also helps operators save on material and rental costs.

Formwork system producer MEVA has developed a calculating tool to assist with this process. The



*Proper calculations reduce risks when pouring slabs.*

calculator works out the number of props per sqm needed to support the slab and carry additional loads on it. The tool also shows when props may be overloaded, enabling construction site operators to plan workflow to avoid any dangerous risks.

MEVA Calc can ascertain the fresh concrete pressure, the pour speed for wall formwork systems and the reshoring for slab formwork. It is available online at [www.meva-international.com](http://www.meva-international.com) and from the Apple and Google online stores.

## Briefly

### Formwork company outlines GCC construction challenges for 2016

DOKA, A FORMWORK company with a strong Middle East presence, has outlined the top five challenges for GCC construction in a statement on its website. It nominates the challenges as: uncertainty over oil prices; skills shortages; delayed payments; profitability; and extra scrutiny over safety and quality.

In particular, the volatile oil price may cause many projects across the GCC to be mothballed despite plans for big spending on construction to grow the private sector, according to the Doka statement.

The statement also outlined the issues associated with payments often taking more than 200 days, and extra expenses incurred when operators need to train low-skilled workers and meet the requirements of strengthened regulatory environments across the region.

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# Keeping the Gulf covered

Without modern surface finishes, MENA would be drab. Fortunately the world's top suppliers of paints and industrial coatings come to Dubai every year to show what's brightest and best.

**T**HIS YEAR'S MIDDLE East Coatings trade show (14-16 March) has been billed as the largest industrial coatings event for the whole MENA region. Paint technologies and finished products will be covered too, both sections of this high-tech event featuring chemical and other raw materials, various forms of testing equipment (resistance to corrosion and weathering, colour measurement, etc.), general manufacturing plant, and other machinery such as mixing and process-control equipment.

Related products for today's surface-finishing trades will also be on display in Dubai, including cataloguing and colour 'swatches'. These are precisely-matched colour cards, available in various universally-recognised competing systems for the print, construction materials and metals/plastics finishing industries.

Whatever their purpose, all paint and industrial coating materials have to be chosen and applied so as to avoid failure due to typical application problems. Apart from selecting the wrong material in the first place, these include: peeling as a result of inadequate surface preparation (the most common); using the product in an incorrectly diluted form; blistering due to exposure to sunlight; chalking (progressive fading and powdering of the pigment component); surface cracking (usually the result of inadequate drying between coats); contamination; and general weathering. Physical damage can also result from careless product selection.

However advanced in terms of the technologies they employ, paint and coatings manufacturers function at different points along the same process spectrum. The materials they deal with include binders, solvents and pigments, all working in a defined sequence of individual

coats. Various additives can be incorporated to modify the flow qualities and surface tension of the product as it is actually being applied, improve the stability of the pigments under subsequent intense sunlight, enhance the final gloss and durability of the dried finish, and so on. This is just one of the reasons why thorough mechanical mixing is needed before (and usually during) application. Careless use is the main cause of paint and coatings failure.

Common binders incorporate a carrying vehicle known as a thinner which together form a stable film over a primed surface. Often polymer based, the binder provides properties such as durability, flexibility and degree of surface reflectance. The volatile solvent dissolves the binding materials, carrying the non-volatile components such as pigments and affecting the viscosity of the liquid coating throughout the application process. This can be either oil- or conveniently water-based, the former including petroleum and other organic distillates. Familiar emulsion or 'latex' paints as widely used for indoor applications typically use plain water as the vehicle and are usually welcomed by tradesmen because of their general convenience.

Pigments are carefully selected solids incorporated within the material to provide the required colour (or not in the case of varnishes) and are usually combined with various forms of 'filler' to improve the final texture. These pigments can be either natural or synthetic in origin and a suitable degree of opacity can be selected for an undercoat(s).

Titanium dioxide and various forms of calcium carbonate are typical examples of pigments used in commercial paints today; fillers can incorporate essential inert materials such as fine-powdered quartz, which provides a toughened surface for

floor paints and vandal-proof materials. Anti-fouling paint, as used in ship- and rig-building and repair, is another example of a specialised application.

In various forms these components are combined in standard paint and coating materials. Other protective products that are widely encountered include wood stains and lacquers. Enamels are solvent-based materials that dry rapidly and produce an especially durable finish. And finely ground glass or metal particles may be incorporated to provide special qualities to metal substrates.

Branded paints are manufactured by fiercely competing suppliers in most countries, often under licence, and there are many specialised national trade and technical associations which represent this industry such as the Japan and Indian Paint Manufacturers Associations (Tokyo and Kolkata, respectively).

Most have members who support trade exhibitions such as ME Coatings and Paint India (January 2017, Mumbai). One of the largest of these umbrella groups, the American Coatings Association (Washington, DC) covers both sections of this diverse and vital business.

The specialised industrialised coatings industry is generally a more technical activity, typically being based on composite polymers and the design of materials for protective rather than decorative purposes. Corrosion control for steel structures is the most widely served segment of this market; fire resistance and road/pavement marking are others. Apart from the UAE's own show in March 2016, first contact points could be either SSPC in Pittsburgh (formerly the USA's Steel Structures Painting Council) or the US National Association of Corrosion Engineers (Houston). Both organise their own technical events. ■



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More than 60,000 visitors are expected to flock to Dubai World Trade Centre for MEE 2016.

# MEE to host inaugural regional Power Congress

The region's leading power showcase returns and is set to introduce a congress for regional government, regulators and public sector stakeholders to discuss the key to powering purpose built cities, and best practice on supporting energy innovation.

**“Middle East Electricity continues to maintain its growth in spite of the challenging market conditions.”**

**Anita Mathews, director,  
Informa Energy Group**

**M**IDDLE EAST ELECTRICITY (MEE) will open its doors for the 41st time in March and will witness the launch of its inaugural Power Congress, which is set to bring together a selection of the region's pioneering and governing minds on sustainable energy, power security and regional growth strategies.

Hosted by the UAE's Ministry of Energy, the one-day congress will be made up of five high-level keynote sessions covering energy development and management throughout the Middle East.

The congress will look to address how regional governments have been acting to redefine what is possible in urban development and what support is planned for greenfield cities such as the Expo 2020 site and numerous new residential and business communities.

UAE Minister of Energy H.E. Suhail Al Mazrouei will deliver the opening keynote session during which he will discuss new

ways in which the Ministry is aiming to balance power economies with power requirements, as well as sharing his long-term vision toward sustainability in the UAE.

Other government spokespersons will include H.E. Dr. Omar Kittaneh, Minister of Energy and Natural Resources, State of Palestine, who will discuss ways in which the territory is rethinking how best to meet its growing energy requirements and how supporting widespread solar could potentially improve Palestine's energy efficiencies, energy supply and energy independence.

Eng. Jamila Matar, Director of the Energy Department for the League of Arab States will address how power security is being addressed throughout the region through the linking of the GCC's power systems and linking that of the GCC with neighbouring countries. Other C-Level speakers will include Steve Severance, development manager for Masdar City, who will look at



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how innovation within fast-growing urban centres comes with an increasing demand for sustainable energy.

### Influential power platform

Today, MEE is the world's largest power event. The 2016 edition of MEE will have more than 1,500 exhibitors from 62 countries in attendance, along with 24 government-supported country pavilions from across Europe, Asia, Americas and Africa. The exhibition and supporting conference are expected to attract close to 22,000 unique visitors this year, with a total attendance across the three days estimated to reach 60,000.

Testament to the long-standing appeal MEE has for the industry's key players is that around 85 per cent of the companies that have confirmed their participation at MEE 2016 are repeat exhibitors. Among them, major players on the show floor will include Cummins/Stamford AVK, Perkins, Skipper, Alfano, Ducab and ABB.

Anita Mathews, director, Informa Energy Group, said, "Middle East Electricity continues to maintain its growth in spite of



*H.H. Sheikh Hamdan Bin Rashid Al Maktoum inaugurating the 40th Edition of MEE last year.*

the challenging market conditions we are all currently facing. The exhibition has grown by 10 per cent this year compared to 2015, and exhibitor presence from countries such as Germany, Turkey, China and Saudi Arabia is on the rise.

"MEE hosts exhibitors from 61 countries, covering a gross area of 67,000 sqm, and has established itself as a highlight on the international energy calendar attracting close to 60,000 attendees over the three days," she added.

Other leading features at this year's edition of MEE will include the popular solar-focused conference, The Solar

Agenda; a range of Technical Seminars during which exhibitors will be able to explain their technologies in depth at various locations throughout the show floor; and the 'Power Over Fire' truck, which Ducab, in partnership with The Civil Defence, will be stopping off at the event as part of its campaign to highlight the current British Standards for Fire Performance cables.

The event will take place from 1-3 March 2016, returning to regular venue Dubai World Trade Centre. ■

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# Showtime for power and solar solutions

Anita Mathews, director, Informa Energy Group, organisers of Middle East Electricity (MEE), talks to *Technical Review Middle East* about the background and developments at the forthcoming show.

**Technical Review ME (TRME): With the recent slump in the global oil price, how do you think the Middle East and North Africa's (MENA) power and electricity market is faring today?**

**Anita Mathews:** According to a report we recently commissioned from Ventures Onsite, the GCC power sector will require about US\$50bn of investment in new power-generating capacity. The GCC alone will add 76.8GW of capacity between 2016 and 2020 (pan-Arab energy investment bank APICORP estimates). According to the International Renewable Energy Agency (IRENA), GCC electricity consumption is expected to reach 856 terawatt hours by 2020, requiring 100GW of additional power over the next 10 years to meet demand.

Strong economic and demographic growth, driven in part by the GCC economies' highly energy-intensive industrialisation programmes, has led to a dramatic surge in power consumption. As demand increases, the GCC is also experiencing significant power infrastructure development.

At our inaugural Power Congress, we will discuss collaboration on a joint Gulf power grid to develop the region's electricity network and also help unify the six member countries. The grid has already led to savings of US\$3bn in investments and US\$330mn in operating costs and fuel, according to the Gulf Cooperation Council Interconnection Authority.

**TRME: What about the emergence of renewable energy in the region?**

**Mathews:** The GCC's interest in renewable energy has grown significantly in the past decade. For a region that has such strong regular sunshine and vast amounts of space to build large-scale solar facilities, there is no wonder it's at the top of the agenda for most governments here.

These countries are expected to save up to three billion barrels of oil if they reach



Anita Mathews, director, Informa Energy Group.

their 2030 renewable-energy targets, which would come with a monetary saving of about US\$200bn.

Renewables have become an important part of the GCC governments' strategies to diversify their domestic energy mix. The UAE is likely to be the most successful in diversifying its energy sources within the next decade, with the development of a nuclear power plant and increasing focus on renewable energy. However, natural gas will continue to play a crucial role in fuelling its power sector.

**TRME: With the growth in solar projects throughout MENA in the past two years, do you think Solar Middle East 2016 will provide further impetus?**

**Mathews:** It has been a very popular attraction since its inception. The exhibition, conference, workshop and technical seminars are all well attended across the three days of the show. It has steadily grown, and, in 2016, we are seeing a record 45 per cent growth in solar content.

A key area we are developing at our events, especially at Solar Middle East, is the knowledge platforms. We have a series of conferences, workshops and technical seminars that will be running alongside the exhibition that are free to attend. These are all CPD-accredited to ensure attendees can get credits to help them with their

professional development. Solar Middle East 2016 will also host the third edition of Future Generation – a competition for undergraduate engineering students across the UAE to exhibit their innovative solutions for alternative energy, energy efficiency and energy conservation. Visitors to MEE 2016 and Solar Middle East 2016 can speak to the students about their concepts and vote for their favourite.

**TRME: What can we expect at MEE 2016?**

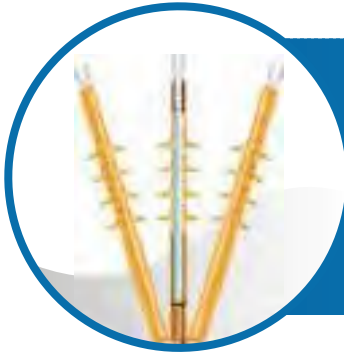
**Mathews:** This year, following feedback from all our stakeholders, we have employed some new initiatives to improve the visitor experience. We appreciate that professionals within this industry have tight deadlines, so to ensure visitors have the most productive and efficient visit to the show, we have developed the new 'Middle East Electricity' app which is available now for download from the App Store and Google Play.

The app will allow visitors to select exhibitors they wish to meet based on their products, and then navigate to their stand using our interactive map. Also, Dubai Civil Defence and Ducab will re-launch their educational roadshow, which allows visitors to learn about the latest British Fire Standards for electrical cables to prevent and contain fires.

**TRME: What other markets are you involved with?**

**Mathews:** We have an active portfolio of events across MENA: Power Nigeria, Electricx and MEFSEC in Egypt, and Saudi Power and Saudi Aircon in which we are investing heavily this year. We are also going through a significant rebrand, which we will announce at MEE 2016. This will pull all of our regional brands together under one umbrella and, through the help of cutting-edge content platforms, further position our standing as the region's leading provider of power events.





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# Push for renewables only way ahead: Lucy Electric

With more and more green energy projects coming onboard in the region, the specialist in secondary power distribution solutions reveals that the market is just getting bigger for Lucy Electric.

**Lucy Electric's business in the region is primarily long-term supply contracts and it expects to see this continuing in the foreseeable future.**

**T**HE MIDDLE EAST market is moving forward at pace with regards to automated solutions for electrical distribution systems. Utility companies are increasing their use of renewable sources of energy – photovoltaic (PV), wind and geothermal, in particular, – all of which are driving the need for network automation, as has already been seen in Western Europe.

In an interview with *Technical Review Middle East*, Ahmed Abdallah, director/general manager of sales and marketing at Lucy Middle East-Dubai, says that in North Africa the company is seeing similar development in the more politically and economically stable countries. However, it will be of no surprise that those markets, that have seen unrest in recent years are not experiencing the same speed of change or investment, he adds.



*At Middle East Electricity (MEE) 2016, Lucy Electric will showcase its latest generation Gemini 3 remote terminal units, which provide customers with a highly flexible platform for advanced feeder automation. (Photo: Lucy Electric)*

In the push for green energy, Ahdallah said that there is great potential for high volumes of PV energy generation in the region, which could really advance the role of renewables in the energy mix, but currently there isn't a financially viable energy storage system, which is needed for this to be a primary source of generation. "At present, battery storage at the scale required is very expensive, so what is needed is a technology that will enable cost-effective and scalable energy storage – this would really help unlock the drive towards greater renewables."

Talking about Lucy Electric's specialised solutions for the electrical industry in the MENA region with regards to low, medium and high voltage, the executive says that they are experts in secondary distribution solutions, providing equipment that is safe, robust and provides reliable operation in the most challenging of

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Ahmed Abdallah is the director/general manager of sales and marketing at Lucy Middle East-Dubai. (Photo: Lucy Electric)

climactic conditions — even the extremes of temperature and arid climate of the Middle East.

“With the growth of renewable generation sources in the region, automation techniques are playing a key part in helping companies manage the added complexities this brings. Lucy Electric’s experienced engineers work at the forefront of design and implementation of automation projects and can help customers develop the right solutions for their needs from concept to deployment,” he notes.

The extensive range of automation products by Lucy Electric, according to Abdallah, deliver fast response and enhanced network intelligence, helping the customers to rapidly locate, isolate and rectify faults, improve network efficiency, and ultimately increase their quality of service.

The monitoring solutions also extend to low voltage networks via the GridKey range, a new addition to its product offering. GridKey products collect and store real-time data and, through a suite of analysis tools, translate this into actionable information.

The COP21 Paris climate summit in December 2015 paved the way for solar power, and Abdallah believes that there is a clear move towards renewables in the region and there are significant projects for PV, wind or geothermal generation, depending upon the location. However, without a source of cost-efficient energy storage, more traditional, fossil fuel generation will remain an essential part of the generation mix to ensure a stable and reliable, round-the-clock electricity supply, he adds. “With the growth in renewables

worldwide, we are constantly developing and adding switchgear products suitable for embedded generation sources to our ranges to meet the needs of the marketplace.”

With dropping oil prices being one of the major hindrances to push for a better market in the MENA region, demand for oil is increasing globally and he expects to see excess supply being depleted in the mid-term. In fact, Abdallah points out that there are already indications that this is starting to happen and, as a result, he doesn’t expect to see this issue affecting markets in the longer term.

Talking about Lucy Electric’s current and upcoming projects in the region, Abdallah says that the 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.

“We are anticipating continued growth across the MENA region, particularly in infrastructure investment and automation projects. This presents many opportunities for Lucy Electric to supply robust and reliable secondary distribution products and to continue developing and implementing automation solutions to help our customers’ address the changing needs of the market.”

Lucy Electric also attended Electricx 2015 in December, which was its first time and proved to be a successful show for it, delivering lots of new business opportunities. The show also provided an excellent platform to announce its new partnership with the Sakr Factory for developed industries to jointly manufacture ring main units in Egypt.

Regarding Lucy Electric’s showcase plans for MEE 2016, Abdallah reveals that the company will be showcasing its expertise in secondary distribution networks. Its stand will feature the latest generation Gemini 3 remote terminal units, which provide customers with a highly flexible platform for advanced feeder automation, plus its best-in-class Ring Main Units and switches for overhead line equipment.

“We’ll also be launching our new GridKey solution, a low-voltage continuous monitoring system that collects and stores real-time data and through a suite of analysis tools translates this into actionable information. Lucy Electric is a long-term supporter of MEE and we have been attending for a number of years, so we know it’s the perfect opportunity to showcase our products, services and leading expertise to what is a key growth market for us.” ■

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## Cummins to unveil new range of alternators at MEE

LEADING MANUFACTURER OF alternators Cummins Generator Technologies will be revealing a new range of STAMFORD® alternators targeting the 7.5-62.5kVA power range at Middle East Electricity 2016.

Cummins Generator Technologies will introduce to the market what it has described as “the most compact and lightweight industrial alternators of its kind”, which will primarily be aimed at the global standby market.

The new range of STAMFORD® S0 and S1 alternators have been designed for enhanced usability, drawing on the company’s 100 years’ of experience in developing and manufacturing high-performance and efficient power generation technology.

Cummins Generator Technologies, which worked in partnership with its customers to



*The new S0 and S1 from Cummins Power Generation have been designed to be lighter and more compact than previous alternators without compromising on quality.*

develop the new user-friendly range of alternators, said that the new range would deliver proven reliability of more than 20,000 hours. The alternators have been designed to enable easier coupling,

reducing generator-set assembly time by around 20 per cent.

Scott Strudwick, director – global sales and marketing at Cummins Generator Technologies, remarked, “We recognise that reliability is a priority for the standby market, alongside the delivery of a product which is both compact and lightweight. We have therefore worked with our customers to develop a technological solution that will support their long-term business growth.

“Our rigorous research and development process has enabled us to deliver a product range which is durable, reliable and easy to assemble.”

Cummins Generator Technologies, has manufacturing facilities in India, China and Europe. It manufactures alternators up to 11,000kVA under the STAMFORD® and AvK® brands, and is part of global power leader Cummins Inc.

**Stand: S3E30**



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## French genset manufacturer SDMO to exhibit new product lines at MEE 2016

GLOBAL GENERATING SET specialist SDMO will be exhibiting several new products and ranges for the first time at Middle East Electricity in Dubai this year.

The new K66 industrial range of generators, fitted with Kohler diesel engines (KDI – 22-66kVA), feature reduced fuel consumption, less vibration for better resistance, and a high-power density for better compactness. According to the manufacturer, the new range has been designed to be easier and more cost-effective to maintain.

SDMO will also present its new lighting mast featuring LED technology, which has been designed especially for the export market, particularly for end users and suppliers throughout markets in the Middle East and Africa.



Visitors to SDMO's MEE stand will get a chance to learn more about the new K66 industrial range of generators. (Photo: SDMO)

Utilising its expertise in the design and manufacture of autonomous energy solutions, SDMO has extended its range of lighting towers designed for the high demands of the construction sector, and the RL4500-5 will be on display on the company's stand throughout MEE 2016.

The new lighting mast features reduced fuel consumption totalling up to 37 per cent, according to SDMO. The 3x450W LED lamps generate the equivalent of 4,500W of light using classic lighting technology. The LED technology used within the mast has been designed for use in extreme conditions, and the product has an operating lifetime of 50,000 hours.

The company will also be presenting the J250K for the first time at MEE. The product helps complete the company's range of 1kW to 220MW power solutions, offering 250kVA (182kWe) in the smallest available package. The product measures only 2.4 metres long by 1.12 metres wide, and is targeted at contractors active in both urban areas and remote locations.

The J250K complies with Class G3 requirements for transient performance and is available with or without a canopy.

The company's presence in the Middle East has been strengthened in recent years with the introduction of a new sales office and the expansion of its storage facility in Dubai, while support for other parts of the wider Arab world comes from its sales office in Egypt.

The company aims to help industry professionals throughout the region who are looking for efficient and effective power solutions.

Stand: S1F10



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Experience Empowering Excellence

## John Deere Power Systems to showcase latest engine technologies at MEE 2016

JOHN DEERE POWER Systems (JDPS), one of the most recognisable names within the power generation industry, will be participating at Middle East Electricity once again this year, exhibiting its range of products covering ratings from 30-450kVA.

Among the products set to be showcased on its stand will be generator set power units (GSPUs) and bare engines. According to the company, the engines displayed on its 2016 stand will include a 2.9L non-certified, a 4.5L Stage III A, a 13.5L Tier 3 and a 6.8L 250kVA.

JDPS, who does not make generator sets itself, counts a number of leading generator set manufacturers among its OEM customers, and possesses what it describes as “a unique insight into the market and its demands”.

Known for its ultra-reliable and low-maintenance engines, JDPS focuses on providing quick-starting, clean-running and fuel-efficient generator set power, which it says leads to a low overall cost of ownership.

With dual frequencies at 1,500 rpm and 1,800 rpm, the engines can be used in a large variety of applications.

JDPS offers a complete power range that meets most worldwide emissions regulations – from non-emissions certified engines to Stage III A (Europe) and Final Tier 4 (North America).

With more than 4,000 service locations worldwide, John Deere says its extensive worldwide service network provides end users



John Deere Power Systems' booth at Middle East Electricity 2015 featured a selection of the company's power generation experts and engines.

with conveniently located expert assistance and customer support, as and when it is required.

**Stand: S1K30**

## Powering Ahead



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The POWEROIL product range of lubricants also include Turbine oils for the power industry. The company has also been at the forefront of developing and marketing high performance conductors which includes AL 59, AL-59 / TW, TACSR, ASCC, ACSS / TW, GZTACSR / GTACSR, STACIR / AW, ACCC etc. and is the largest exporter of these POWERLINE conductors from India.

Apar also offers a comprehensive range of Power and Telecommunications Cables under the UNICAB brand name.

Apar is a technology driven customer focused company with the ability to deliver innovative quality products and services that match the exacting customer needs with cost effectiveness and timely deliveries. The company continues to enjoy the trust of major Power Generation, Transmission and Distribution companies, OEMS & Utilities world over.



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## New functions for BAUR cable test van

BAUR GMBH HAS expanded the range of equipment available for its new, fully automatic cable test van, 'titron'.

The new equipment will help to provide quick cable diagnostics, as well as improved, non-destructive location of cable faults.

With the partial discharge measurement and dissipation factor measurement ( $\tan \delta$ ), titron now offers various cable diagnostics options. All testing and diagnostics functions can now be effectively managed via the central software of the cable test van. The testing and measurement sequences are in accordance with international standards and can be initiated via a mouse click. The results then flow into a joint cable database, which then provides the asset management team with a valuable basis for decision-making.

With the new "Remote App" for Android and iOS smartphones, important functions of titron can be remotely controlled. The app



displays the map section of the BAUR GeoBase Map required for the fault location and information on the cable. During pinpointing, important information on the status of the system is visible on the screen, e.g. voltage, surge sequence and surge energy.

BAUR's expanded range of equipment for its cable test van 'titron', will enable faster cable diagnostics and improve the location of cable faults.

**Stand: S1A19**



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## UK pavilion: focus on energy storage

BEAMA WILL AGAIN host the UK Pavilion at this year's Middle East Electricity in Dubai. The trade association represents manufacturers of electrical infrastructure from transmission through distribution to environmental systems and services in the built environment.

Representing more than 300 companies, it has significant influence over UK and international political, standardisation and commercial policies.



*The UK Pavilion at MEE 2016 will feature some of the most innovative power solutions from British suppliers and manufacturers. (Photo: Gary Blakeley)*

The association recently launched the Building Based Energy Storage Group in preparation for a future energy system that it says will be increasingly dominated by variable, low carbon energy sources (solar, wind and tidal) requiring a significant degree of energy supply flexibility. It adds that energy storage will become an important element of the energy infrastructure of the future, right down the energy supply chain, up to and including the building; and that this will take the shape of discrete and stand-alone storage technology or products with inherent storage potential.

BEAMA says it is very well placed to help storage equipment manufacturers deliver propositions for a growing market globally; the organisation has been taking the smart metering, smart grid and connected homes story to energy and utility shows overseas, and will be at MEE in March.

"We see building-based energy storage as a natural extension of our well-established expertise in membership representation across many technology sectors that rely on system integration, connectivity and communication protocols," said BEAMA.

At this year's MEE, UK gold sponsors include Cummins Generator Technologies, Dale Power Solutions, IPU Group and Perkins Engines.

Cummins Generator Technologies (**Stand: S3E30**) will be displaying the STAMFORD P80 high-voltage industrial alternator with its innovative lightweight construction, providing a highly optimised power-to-weight ratio. Best-in-class design and manufacturing makes P80 suitable for standby, prime power and critical protection applications.

Dale Power Solutions (**Stand: S1J30**) will be showcasing its range of industrial uninterrupted power solutions (UPS) and DC systems, commercial UPS and diesel generators. The company's UK and GCC-based experts will be on the stand to talk about developments in its 'no-break' UPS that help prevent costly outages and downtime, and fuel-polishing services to prevent fuel contamination and maintain and extend the life of pumps, engines and generators.

Perkins (**Stand: S1C10**), a leading supplier of off-highway diesel and gas engines, offers power up to 2,500kVA in diesel or 1,000kW in gas. It says it provides cost-effective solutions, from competitive fuel consumption to ease of maintenance, whatever the power requirement. At MEE 2016, Perkins will exhibit its new 4008-30TAG ElectropaK, an eight-cylinder engine developed to achieve higher power nodes. With nodes from 750-1250kVA, this 30-litre engine delivers power normally associated with a 12-cylinder engine. Perkins will also show a new 20kVA natural gas-powered 2.2-litre engine, the 404S-22, aimed at the residential and telecommunication markets.

Meanwhile, IPU Group (**Stand: S1J30**) designs and manufactures engine controls, fuel-polishing systems and oil-conditioning products for diesel and gas engines. Its intelligent software solutions enable engineers and fleet managers to remotely capture and monitor engine data on the move or from the office. IPU is the distributor of Governors America Corp (GAC) products, which provide engine control solutions in some of the world's harshest environments. Using the latest testing and treatment techniques, IPU fuel-conditioning products and services can detect and eradicate harmful contamination in diesel. Fuel conditioning is critical to the safe storage of fuel in bulk fuel storage tanks, day tanks, vehicles and gensets. While IPU's oil conditioning products can help extend the life of engine and transmission oils and hydraulic fluids by removing harmful contaminants and by monitoring and analysing contamination levels.

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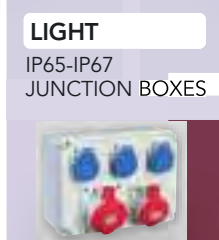
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# Eaton Middle East gets on the road with tech truck

The company is displaying its latest range of products with the launch of Mobile Tech Days in the region.

**E**ATON MIDDLE EAST is introducing its complete range of products to the market with its specially designed Mobile Tech Day truck.

The tour will take place until April, with 30 events across six cities in the Middle East.

The 40-foot container brings together Eaton's broad portfolio of power management products including a range of medium-voltage (MV) and low-voltage (LV) products, single and three-phase UPS, and safety, lighting, wiring devices, automation and controls, among others.

Having made its mark in the UAE already, the truck spent two weeks visiting existing customers as well as new contacts in order to showcase the broad range of solutions that Eaton can provide. Specifically created for the commercial construction sector, the container acts as an experience centre, where attendees can see the products in a working environment, with product experts on hand to discuss technical details and applications.

Frank Ackland, general manager, Eaton Middle East, said, "If you sliced any building down the middle, you could find Eaton supporting its functionality across a full range of solutions.

"Our acquisition of Cooper Industries in 2012 saw our portfolio in this sector grow substantially, and our Mobile Tech Day provides the opportunity to see this complete portfolio in an 'as live' experience; customers can see and feel

**"Mobile Tech Day provides the opportunity to see the complete portfolio in an 'as live' experience."**



*The truck is currently visiting existing customers as well as new contacts in order to showcase the broad range of solutions that Eaton can provide. (Photo: Eaton Middle East)*

the quality and capability of our products for themselves."

In the Middle East, Eaton currently employs more than 300 people in 14 offices. Eaton's legacy in the region can be traced over four decades to the 1970s, as the company was part of the formation of the country's infrastructure through power management solutions that include legacy brands Westinghouse, BILL, MEM, Cutler-Hammer, Powerware, and Moeller.

"With a 40-year history in the region, Eaton has a strong reputation for bringing efficient and reliable power management solutions to customers," continued Ackland, adding, "The Mobile Tech Days provide us with the opportunity to take that full portfolio to them and perhaps show them some of our solutions that they haven't been aware of previously. We work across such a broad range of industries that customers that have worked with us for years on our fire safety solutions are now becoming aware of the support we can also provide with UPS or lighting, for example."

According to Eaton, it is strongly focused on engaging with customers to understand where their specific challenges lie and how it can work to solve those, particularly as market conditions remain volatile.

Power management is a core component for all industries, and Eaton works to develop products that help companies to manage their power in reliable but more efficient way, helping to create energy savings without having to compromise on quality. According to a recent report published by the Economist Intelligence Unit (EIU), the demand for electrical power is estimated to grow by seven per cent annually in the coming decade. As key industries, such as construction and infrastructure, continue to dominate the Middle Eastern economy, as seen through the launching of many high-profile, billion-dollar projects, Eaton remains optimistic that the expertise it brings to the market puts the company in a strong position to support stability and sustainable growth in the region. ■

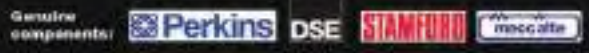


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Hall Saeed 2, Stand S2F30

## HIMOINSA to showcase new products at Middle East Electricity

HIMOINSA'S RANGE OF diesel generators for the rental market has been bolstered by the HIMOINSA models HRGP 25 T5 LPG, HRGP 40 T5 LPG and HRGP 60 T5 LPG.

The new gas-powered generators feature integrated LPG tanks offering 25, 40 and 60 kVA of continuous power. The new rental canopy version incorporates enough LPG storage for 24 hours of continuous operation without refuelling. The features of the generators, which can be connected



*The HRGP60 T5 LPG generator from HIMOINSA will be on the company's stand during MEE 2016.*

to an external tank to extend their autonomous operation for as long as desired, will be presented at MEE 2016, with the HRGP60 T5 LPG model on the company's stand in Sheikh Saeed Hall 3.

HIMOINSA has also launched the new HMW-1270, a soundproofed generator set fitted inside a 20-foot container.

The new unit provides more power in less space as, until now, generators of this power with an MTU engine could only be assembled in 40-foot containers due to the size of the engines.

The HMW-1270 has been designed to provide an outstanding performance in extreme temperature conditions and has an integrated 1,250-litre fuel tank and will be exhibited for the first time at MEE 2016.

Attendees to this year's exhibition will also



*HIMOINSA's HYW 35 T5 model comes with a 1,000-hour service interval.*

have the opportunity to learn about the company's new HYW 35 T5 model, which comes with a 1,000-hour service interval. The generator sets from the Industrial Range feature Yanmar engines (8-45 kVA) and can incorporate a 1,000-litre fuel tank, which is 10-times larger than what it is offered as standard and translates into less trips to the site for refuelling operations.

**Stand: S3E20**

## LV switchgear preventive maintenance from UAE-based Powertech Switchgear

WITHIN THE FACILITIES management segment in the UAE, there is a growing demand for periodic maintenance of low voltage switchgear equipment. End-users and sub-contractors for building maintenance and facility management have become cautious and have gradually come to recognise the benefits of preventive maintenance of electrical power distribution systems.

**Cost benefits:** The cost of periodic switchgear maintenance is more sustainable compared to the cost of failure, which is not only limited to financial loss, but also extends to human injury or death. Any critical failures in residential or commercial establishments can result in colossal losses for the operator.

**Prevention:** Maintenance carried out at regular intervals ensures prevention of critical failures, allowing for checks on settings, sizes, operation sequences particularly if there have been any modifications in the utility systems at site.

**Minimises down time:** Potential downtime and loss of productivity due to



*Powertech Switchgear has offices in Dubai, Sharjah and Ajman.*

equipment failure or outages can be averted, the company said.

Powertech Switchgear Industries is a low-voltage panel builder with a presence in the service segment and is proficient with the regulatory requirements and standards across the UAE.

With offices in Dubai, Sharjah and Ajman, the company has dedicated, experienced teams of technicians and supervisors that are available on call.

"We are witnessing a growing awareness of safety and preventive maintenance procedures implemented by end users," remarked a leading source at Powertech.

Service contracts encourage maintenance at regular intervals and allow for greater awareness among facilities management teams, noted the company.

"A key aspect of our business is working with the client to understand their requirements. Our services range from low voltage switchgear maintenance, replacement of parts as well VFD programming, installing and commissioning," the source added.

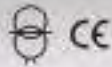
Integral to providing maintenance services is safety of personnel.

"All of our staff are trained and provided with insulated tools, as well personal protective equipment."

Powertech is certified as per ISO standards and all procedures conform to ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 and ISO 29001:2010.



# THREE PHASE TRANSFORMERS



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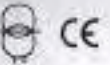
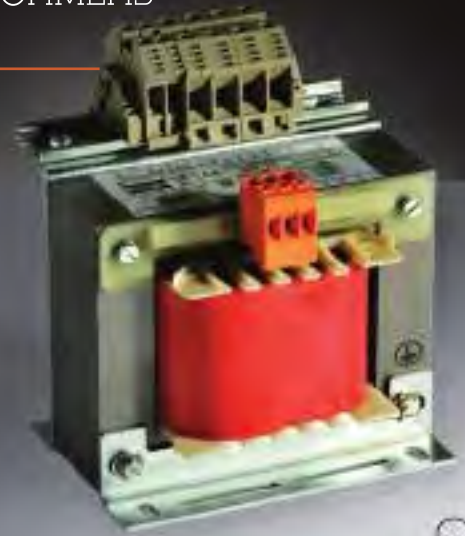


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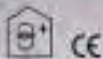
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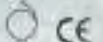
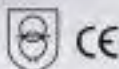
## SAFETY TRANSFORMERS



## ISOLATION TRANSFORMERS FOR MEDICAL LOCATIONS



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## Ready-to-use power units from Kohler Engines

THE KDI POWER Unit range of engines for the power generation market represents a ready-to-use, versatile, high-output solution for end users and OEMs, according to developer Kohler Engines.

The compact units feature low fuel consumption, noise and vibration, and provide excellent reliability. Recently, the Power Unit line of KDI Diesel engines has been expanded with the addition of a new 3.4-litre model to the range.

The KDI Power Unit is a 'plug & play' solution that represents an effective answer for generator manufacturers looking for a complete high-performance drive system that can be easily implemented in their product range due to the availability of a package of standard components and accessories. The KDI Power Unit line boasts a compact size and a light weight, and Kohler Engines has engineered a complete, cutting-edge line for the low- and medium-power generator sector, covering a range of 20 to 60 kVA at 50 HZ (1,500 rpm) and 20-70 kVA at 60 HZ (1,800 rpm), respectively.



*The compact and light weight KDI Power Unit line offers 'plug & play' solutions for the low- and medium-power generator sector.*

The main feature of the new Power Unit range offered by Kohler Engines is the highly innovative layout, born of a design philosophy that, the company said, makes it "virtually unique" on the market, offering end users significant operational advantages in addition to the manufacturing and logistical benefits.

The high power density of the line allows KDI engines to obtain the same power

outputs while using smaller displacements than those that have been required to date, allowing the machines to be used with lower fuel consumption (up to three per cent less than other direct injection engines). These are also more easily managed in mobile applications.

It also enables OEMs to obtain a significant reduction in generator dimensions for the same power output, quantifiable as between 15-30 per cent smaller than the typical dimensions (with important effects on manufacturing and transport costs, as more units can be transported in the same space).

According to Kohler Engines, the KDI family of engines has been developed in a differentiated manner by energy supply frequency and emissions standards in order to supply solutions to meet the requirements of all destination markets. The addition of a series of optional extras and accessories will allow OEMs to develop generation systems for use in the most wide-ranging sectors of application.



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## Enclosures and innovations on Rittal Middle East's stand

RITTAL MIDDLE EAST has invited channel partners and customers to witness its latest innovations on the company's stand at MEE 2016 and network with its industrial and electrical experts.

The company, a system supplier for industrial enclosures, power distribution, climate control, and software and services, will once again be participating at MEE, where highlights on its Innovations Stand



Rittal Middle East managing director Joseph Najjar.

in Hall 5 will include the world's first BLUE E+ cooling solutions, new TS 8 Enclosures, and a number of integrated solutions for Rittal enclosures on the R4Power platform.

Visitors to the company's stand will also be able to experience its full range of industrial and electrical enclosures, from AE Enclosures and CM Enclosures, to TS-8 Enclosures and EX Enclosures.

Joseph Najjar, managing director of Rittal Middle East, commented, "Embracing innovation and industry standards, and empowering our channel and customers will continue to be our focus at MEE, while also addressing the all markets in Middle East region.

"MEE continues to be the ideal platform for launching our innovative products and solutions for the industry," Najjar added.

Rittal Middle East FZE, which is composed of an active team of more than 30 professionals who address the Middle East market, is part of German industrial and electrical sectors supplier Rittal GmbH & Co. KG.

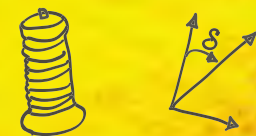
The parent company was founded in 1961 and is today active worldwide with 11 production sites, 64 subsidiaries and 40 agencies. It employs 10,000 people worldwide and is the largest company of owner-operator Friedhelm Loh Group of Haiger, Germany.

Rittal is the largest company of the owner-operator Friedhelm Loh Group. The entire group employs 11,500 people and generated revenues of close to EUR2.2bn (US\$2.43bn) in 2011. Rittal promotes itself as providing products from "a single source, all in top quality", with its tagline being "Faster – better – everywhere".

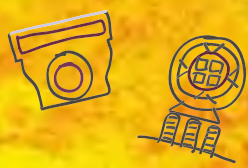
Rittal's off-the-shelf standard, modified standard and custom-engineered products are known throughout the world as high-quality, affordable solutions for practically any industrial or IT infrastructure application – from single enclosures to comprehensive systems.

The TS 8, one of Rittal's most popular enclosure products, has sold more than 10mn units to-date around the world and is available in carbon, and 304 and 316 stainless steel varieties for various environments.

Stand: 5D10



AGING



3PAR



POLE TIP



Stefan Böhler  
Application Engineer

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## Mecc Alte takes on the counterfeiters with 'stamp of authenticity'

MECC ALTE WILL be debuting its latest product innovations and developments in alternator technology at Middle East Electricity 2016. The company will also be promoting its stance against the global counterfeit phenomenon by unveiling the Mecc Alte Hologram and 'stamp of authenticity'.

Mecc Alte's targeted approach of making just one type of product has helped it to maintain a specific customer focus, centring its business on meeting the requirements and power needs of its customers. The company, the largest independent producer of alternators in the world, introduced the Mecc Alte Hologram in order to protect its customers from insufficient products, with counterfeited goods endangering customers and businesses in a variety of ways, ranging from financial, health and safety, and quality hazards.

The artificial nature of counterfeit goods does not guarantee Mecc Alte after-sales service and care, and with the manufacturers of counterfeit goods an ever increasing threat, Mecc Alte hopes its Hologram will protect its customers' business while also preserving and defending the Mecc Alte brand against the various impersonators in the market.

A variety of different features have been incorporated into the Hologram that have not only made them impossible to impersonate, but also promote Mecc Alte's heritage, quality and safety.

Each Hologram provides customers with full-line traceability through a seven-digit serial number that enables customers to



*Mecc Alte Hologram helps protect customers against potentially unsafe counterfeit products.*

verify all product test certificates, build data, and find complete product part breakdowns. Mecc Alte will be releasing the full details of its Hologram and how the extensive range of features incorporated within it protect and safeguard its customers at Middle East Electricity this year.

**Stand: S1E40**

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**ATM POWER BACK-UP SOLUTION**



**ONLINE UPS**



1KVA to 10KVA  
(10 In - 10 Out)    10KVA to 100KVA  
(30 In - 30 Out)    1KVA to 10KVA  
'Built-in Battery'

**HIGH CAPACITY INVERTER**



10KVA to 100KVA  
(30 In - 30 Out)

**SOLAR PRODUCTS**

- Solar Inverter(1KW-100KW)
- Solar Hybrid Inverter 600 VA-6 KVA
- Solar Panel(10W-300W)
- Solar Charge Controller PWM & MPPT
- Solar Conversion Kit (Solar Con)
- Solar DC System 120W
- Solar Street Light (4W-100W)
- Solar Home Lighting System
- Grid Tie Inverter

**SOLAR PROJECTS**





**Su-Kam Power Systems Ltd.** Corporate Office: Plot No. 54, Udyog Vihar, Phase VI, Sector-37, Gurgaon-122001, Haryana, India.  
Tel. No. : 91-124-4170500, +91-8130192199; export@su-kam.com | www.su-kam.com



**BEAMA**

**2F59**

Ground Floor, Westminster Tower  
3 Albert Embankment, London SE1 7SL  
Tel: 0207 793 3000  
Email: Exhibitions@beama.org.uk  
Web: www.beama.org.uk  
Contact: Vera Pokoo  
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**

**2G19**

Building E, Stafford Park 1, Telford TF3 3BD  
Tel: +44 1952 238100  
Email: Laura.collins@bgelectrical.co.uk  
Web: www.nexusinds.com/bg/uk  
Contact: Laura Collins  
BG Electrical Ltd, a division of Nexus Industries 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**

**2F53**

Units 1 & 2 Low Mill Business Park, Ulverston, Cumbria, LA12 9EE  
Email: martin@boardman-transformers.co.uk  
Web: www.boardman-transformers.co.uk  
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.

**BPC Energy Ltd**

**2E55**

BPC House, Unit 12, Romsey Industrial Estate, Greatbridge Road, Romsey SO51 8ES  
Tel: +44 (0) 1794 521200  
Email: sales@bpc-ups.com

Web: www.bpc-ups.com  
Contact: Emily Digweed  
BPC manufacture and distribute a wide range of UPS and related power protection products aimed at the Computer Networking, Telecom, Midrange Computer, Emergency Lighting and Three Phase sectors of the market. BPC is at the forefront of modern power protection technology with the expertise in the design, development and manufacture of special and custom battery systems.

**Brecon Energy Ltd**

**2F01**

Prince of Wales Industrial Estate, Darren Drive, Abercarn, Newport, South Wales. NP11 5AR  
Tel: +44 (0) 1495 248779  
Web: www.breconenergy.com  
Contact: David Roberts  
Brecon Energy Limited, joint venture, ELMECON and SPE combining 32 years specialists experience in design, development, certification, manufacture, installation and testing of high voltage switchgear. Displaying TITAN SF6 insulated RMU, GENISYS solid dielectric fixed pattern vacuum circuit breaker and Orion integrally earthed, vertically isolated vacuum circuit breaker and panel.

**Broyce Control Ltd**

**2G21**

Pool Street, Wolverhampton, WV2 4HN  
Tel: 01902 420 639  
Email: michaelgough@broycecontrol.com  
Web: www.broycecontrol.com  
Contact: Michael Gough  
Design and manufacture wide range of protection and control relays. Including earth leakage & toroids Earth fault: over current IDMT; voltage; three phase; single phrasing preventors; liquid level and pump control; timers; plus bespoke/customised design & manufacturing services and products for specific customer applications.

**Crabtree Volex (Electrium Ltd)**

**2G17**

Lakeside Plaza, Walkmill Lane, Bridgtown, Cannock WS11 0XE UK  
Tel: +971 4 3660684  
Email: export@electrium.co.uk

Web: www.electrium.co.uk  
Contact: Sunil Chouhan and Mazen Zein  
UK brands Crabtree & Volex are leaders in British Standard markets around the world, and offer designers & specifiers a wide range of quality wiring accessories that cater for a vast array of applications including Commerce, Offices, Education, Hospitals & Health, Hotels & Leisure facilities.

**EA Technology Ltd**

**2F18**

P.O. Box 46153  
Abu Dhabi, UAE  
Tel: +971 (2) 6503629  
Email: alan.preece@eatechnology.com  
Web: www.eatechnology.com  
Contact: Alan Preece  
EA Technology is a world leader in high voltage asset condition assessment, both in the electrical utility and private network operator sectors. On display you will see our latest top of the range Partial Discharge condition monitoring equipment along with information on our wide range of technical and consultancy services.

**Ellis Patents Ltd**

**2G28**

High Street, Rillington, Malton North Yorkshire, YO17 8LA  
Tel: +44 1944 758395  
Email: sales@ellispatents.co.uk  
Web: www.ellispatents.co.uk  
Contact: Tony Conroy

**Flexicon Limited**

**2F28**

Roman Way, Coleshill, Birmingham, B46 1HG  
Tel: +44 1675 466 900  
Email: Colin.Legg@flexicon.uk.com  
Web: www.flexicon.uk.com  
Contact: Mr Colin Legg  
Flexicon is a market leading manufacturer of flexible conduit products & solutions, with over 52 different systems to choose from, available in either metallic or non-metallic. We are the specialists when it comes to Cable Protection whatever your application.



**GW Wiring Products Ltd****2G27**

Unit 2 Wharfside, Rosemont Road,  
Wembley, Middlesex, HA0 4PE  
Tel: + 44 2087 952 099

Email: [gwcabletie@aol.com](mailto:gwcabletie@aol.com)

Contact: Mr Ying-Chuan Chou

Distributors of high quality cable ties, cable management products, stainless steel cable ties and crimp terminals.

**HOBUT (Howard Butler Ltd)****2F27**

Crown Works, Lincoln Road,  
Walsall, WS1 2EB

Tel: 01922 723 626

Email: [sales@hobut.co.uk](mailto:sales@hobut.co.uk)

Web: [www.hobut.co.uk](http://www.hobut.co.uk)

Contact: Paul Collins

Hobut is a UK manufacturer employing over 100 people. We manufacture current transformers, analogue and digital instrumentation, protection relays, transducers, earth leakage devices and more.

**Instrument Transformers Limited****2G18**

2-4 Lithgow Place, East Kilbride,  
Scotland UK. G74 1PW

Tel: +44 1355 236 057

Email: [sales@itl-uk.com](mailto:sales@itl-uk.com)

Web: [www.itl-uk.com](http://www.itl-uk.com)

Contact: Paul Munro

ITL provide a wide range of indoor & outdoor solutions with primary currents from 1A to 24,000A and secondaries typically 1A or 5A but can be customised for exact applications. Accuracy measurement classes from 0.1 and classes 5P, 10P, PX, TPY for protection purposes with insulation levels up to 400kV.

**Insulated Tools Ltd – ITL****2F55**

Charlwoods Road, East Grinstead,  
West Sussex, RH19 2HR

Tel: +44(0) 1342 324255

Email: [enquiries@insulatedtools.co.uk](mailto:enquiries@insulatedtools.co.uk)

Web: [www.insulatedtoolsgroup.com](http://www.insulatedtoolsgroup.com)

Contact: Mark Wardle

ITL, manufactures of unique injection moulded insulated tools. ITL's tools are longer lasting, harder wearing and safer than anyone else's. The ITL range exceeds the highest electrical specifications. Every tool is tested and passed to IEC60900:2012 and Category C, the extreme temperature test, prior to shipment. Widest range on the market with over 750 lines! Lifetime guarantee.

**IPEC Limited****2F17**

Rutherford House, Manchester Science Park  
M15 6SZ

Tel: 0161 226 0045

Company Email: [sales@ipec.co.uk](mailto:sales@ipec.co.uk)

Web: [www.ipec.co.uk](http://www.ipec.co.uk)

Contact: Francine Turner Gros

IPEC Ltd are experts in On-line Partial Discharge (PD) testing of MV and HV plant. We have world leading technology for the detection and location of PD in cables, switchgear and accessories. Our PD test equipment ranges from handheld to permanently installed solutions and are used all around the world.

**Lawson Fuses Limited****2G10**

Meadowfield, Ponteland  
Newcastle-upon-Tyne, NE20 9SW

Tel: + 44 1661 823 232

Web: [www.lawson-fuses.com](http://www.lawson-fuses.com)

Contact: Mr Stephen Lawson

Lawson Fuses manufactures LV fuse-links and fuse-holders for use in distribution networks, house service, industrial applications, motor circuits and semiconductor protection. Products are ASTA 20 Authorised to the latest IEC/BS standards. The Final Distribution Product range includes mcbs, isolators and distribution boards. Lawson Fuses is accredited to ISO:9001 and ISO/IEC:17025.

**Ledtech Ltd****2F55**

Trading name: Visive  
(UK head office): Unit 9, Ash Road South,  
Wrexham Industrial Estate,  
Wrexham, LL13 9UG

Tel: (UK head office) 00 44 1978 660181

Email: [info@visivegroup.com](mailto:info@visivegroup.com)

Web: [www.visivegroup.com](http://www.visivegroup.com)

Contact: John Scholey

Formed in 2000 we offer UK designed and manufactured quality assured architectural LED and smart electronic controls products along with technical expertise and back-up. We have supplied over 1000 sites (350 km) of LED contour tube to global clients including BP, Adidas, Marriott Hotels, Pizza Hut, Sweaty Betty, Ducati and Calvin Klein.

**Mettex Electric Co Ltd****2G11**

Beaumont Close,  
Beaumont Road Industrial Estate  
Banbury, OX16 1TG  
Tel: +44 1295 250826

Email: [sales@mettex.com](mailto:sales@mettex.com)

Web: [www.mettex.com](http://www.mettex.com)

Contact: Gill Fearon

Mettex has been manufacturing high quality flexible braid products for over 40 years. Accredited to BSEN ISO 9001 Mettix has a global customer base across the electrical, automotive, aerospace, rail and renewable energy industries.

**Nortech Management Ltd****2F26**

Unit 2 Deer Park Business Centre,  
Woolas Hill, Eckington, Pershore,  
WR11 7SS, United Kingdom.

Tel: +44 8700 111992

Email: [info@nortechonline.co.uk](mailto:info@nortechonline.co.uk)

Web: [www.nortechonline.co.uk](http://www.nortechonline.co.uk)

Contact: Julian Brown

Nortech's provide remote monitoring technology for Fault Passage Indicators, LV Substations and Active Network Monitoring solutions. Electricity Utilities use Nortech's iHost™ Platform to better manage and exploit the potential of the increasing number of small, low cost, communicating 'smart field devices' and sensors installed throughout the distribution network.

**One Electrical Ltd****2F55**

Bankfield Road, Tyldesley,  
Manchester, M29 8QH

Tel: 0161 703 2201

Email: [ghall@oneelectrical.com](mailto:ghall@oneelectrical.com)

Web: [www.oneelectrical.com](http://www.oneelectrical.com)

Contact: Gerard Hall

Established in Manchester, UK in 2000, the company has grown to a leading name in the commercial LED Lighting sector. Providing well in excess of 5m LED fittings to their wholesale base, there is little surprise of the 1,000 returning clients each month from around the globe.

**P & B Metal Components Limited****2G20**

Tyler Way, Whitstable, Kent CT5 2RR

Tel: 0044 1227 791200

Email: [sales@p-and-b.com](mailto:sales@p-and-b.com)

Web: [www.p-and-b.com](http://www.p-and-b.com)

Contact: Lyle Abbott

P&B is a UK Private Company specialising in manufacturing Silver Contacted Stamped Assemblies for the Electrical, Thermostat, Automotive and Relay Industries exporting to over 30 Countries World-Wide. Established for over 50 years, P&B has an excellent reputation for Service and Quality meeting both ISO and TS Standards.





**Power Testing Electrical Contracting & Maintenance LLC** 2F15

Al Ghaith Tower, PO Box 36796,  
8th Floor, Office Number 841  
Hamdan Street, Abu Dhabi, UAE  
Tel: Office: +971 02 5089105  
Mob: +971 55 5610488  
Web: [www.powertestingllc.ae](http://www.powertestingllc.ae)  
Contact: Mark Thurston

Power Testing LLC is a British company with 50 years experience in High/Low voltage Electrical Maintenance, Commissioning and Value Engineering now established in Abu Dhabi. We are a proactive 9001:2008 registered company with the intent on COST SAVING through working safely, being reactive, delivering quality works and solving problems.

**Preformed Line Products (Great Britain) Ltd** 2F50

East Portway, Andover, Hampshire  
SP10 3LH United Kingdom  
Tel: +44 (0)1264 366 234  
Email: [plp@preformed-gb.com](mailto:plp@preformed-gb.com)  
Web: [www.preformed-gb.com](http://www.preformed-gb.com)  
Contact: Trevor Taljaard

Preformed Line Products (GB) Limited is an award winning company established in Andover, UK since 1957. It is a wholly owned subsidiary. We manufacture a comprehensive range of products in an ISO 9001 environment for the Overhead Electrical Power Transmission and Distribution and Telecommunications Industries.

**Qlite Ltd** 1C21

Unit 4, Severnlink, Newhouse Farm Industrial Estate, Chepstow NP16 6UN, UK  
Tel: +44(0)1600772297  
Company Email: [craig@qliteglobal.com](mailto:craig@qliteglobal.com)  
Web: [www.qliteglobal.com](http://www.qliteglobal.com)  
Contact: Craig Bligh

Qlite UK is an ISO 9001 company that designs and manufactures state of the art, cost effective and optimised solutions for Hotel Guest Rooms, Home Automation, Dimming and Lighting Control Wiring Accessories and sensors, LED Lighting Qlite has the ability to meet any market standard – Worldwide.

**REPL International Ltd** 2F19

REPL House, Kingsdown Road, SN25 6PB  
Tel: 01793 821 220  
Email: [graham.gardner@repl.com](mailto:graham.gardner@repl.com)  
Web: [www.repl.com](http://www.repl.com)  
Contact: Graham Gardner

REPL International Ltd ([www.repl.com](http://www.repl.com)) is a global manufacturer of cable accessories for low & medium voltage joints and terminations. We are one of the largest independent companies specialising in heatshrink, coldshrink, smart-termination and push-on products.

**Scapa UK Ltd** 2G29

Manchester Road, Ashton-under-Lyne, Greater Manchester, OL7 0ED, UK  
Tel: +44 (0)161301 7400  
Email: [scapacable@scapa.com](mailto:scapacable@scapa.com)  
Web: [www.scapa.com/cable](http://www.scapa.com/cable)  
Contact: Mr. Shrikanth Naidu (+60 (0)17 364 9666)

Cable Protection solutions for a Joined-up World Scapa has 104 years of experience in the development and manufacture of cable tapes and components. With a wide product range and excellent R&D we partner and supply most of the world's cable manufacturers of HV power, control and fibre optic cables.

**Scolmore International Ltd** 2F10

Scolmore Park, Landsberg, Linchfield Road Industrial estate, Tamworth, Staffordshire, B79 7XB  
Tel: 01827 63454  
Email: [jeromeleve@scolmore.com](mailto:jeromeleve@scolmore.com)  
Web: [www.scolmore.com](http://www.scolmore.com)

For more than 25 years, CLICK UK Scolmore group has manufactured quality electrical accessories ideally suited to living space applications. We will be featuring new ranges of wiring accessories (Black DEFINITY range, MODE wide rocker switches), LED lighting solutions, Wireless system and launching DUCERI, a new range of emergency lighting.

**SilverTeam Recycling GmbH** 2G20

Altstaedter Strasse 15  
DE-87527 Sonthofen, Germany  
Tel: +49-8321-6186870  
Email: [info@silvertteam-recycling.com](mailto:info@silvertteam-recycling.com)  
Web: [www.silvertteam-recycling.com](http://www.silvertteam-recycling.com)  
Contact: Walter Beckers, Michael Kipping  
SilverTeam is a leading specialist for refining

of Non-Precious, Precious Metals and End-of-line scrap. We are offering a full range like logistics, pick-up service of scrap metals, analysis in metal labs and transfer of precious metals (Silver, Gold, Palladium, Copper).

**Terasaki Electric Europe Ltd** 2F20

80 Beardmore Way, Clydebank Industrial Estate, Clydebank, Glasgow, G81 4HT  
Tel: + 441 419 411 940  
Email: [marketing@terasaki.co.uk](mailto:marketing@terasaki.co.uk)  
Web: [www.terasaki.com](http://www.terasaki.com)  
Contact: Graham Inglis

TERASAKI is a world class specialist in innovative circuit protection, control and system products for electrical energy distribution.

**Whitby & Chandler Ltd** 2F16

Green Road, Penistone, Sheffield S36 6PH  
Tel: +44 1226 370380  
Web: [www.whitby-chandler.co.uk](http://www.whitby-chandler.co.uk)  
Email: [enquiries@whitby-chandler.co.uk](mailto:enquiries@whitby-chandler.co.uk)  
Manufacturers of gaskets, seals and rubber mouldings, with a particular focus on the T & D industry. We have a wide range of products and materials in use and approved at many of the world's major transformer manufacturers.

**Whitelegg Machines Limited** 2F29

19 Crompton Way, Manor Royal, Crawley, West Sussex, RH10 9QR  
Tel: +44 1293 526 230  
Email: [info@whitelegg.com](mailto:info@whitelegg.com)  
Web: [www.whitelegg.com](http://www.whitelegg.com)  
Contact: Mr Glyn Dawson  
Established in 1930, Whitelegg specialises in supplying equipment and tools for the repair of AC and DC electric motors. We have a full range available for all rewinding needs. On display will be winding fixtures, hand tools and much more.

**3GK Ltd** 2F29

Unit 3 Price Street Business Park, Park Street Birkenhead, Wirral CH41 3PE, UK  
Email: [greg@3gk.co.uk](mailto:greg@3gk.co.uk)  
Website: [www.3gk.co.uk](http://www.3gk.co.uk)  
Contact: Greg Kemp  
3GK Ltd are the distributors of AEV Ltd in the Middle East and offer the full range of electrical varnishes and resins. We also supply a full range of electric motor spares (32) and ancillary items including cables, insulation for electric motor repairers – the one stop shop solution.



## ABB to upgrade SCADA system at Dubai International Airport

POWER AND AUTOMATION technology group, ABB, will upgrade its SCADA (supervisory control and data acquisition) system for the power network at Dubai International Airport.

The company, which will be exhibiting at Middle East Electricity 2016, will upgrade the system at the world's busiest international airport, replacing the central computers and deploying the latest



*ABB delivered the first SCADA system to Dubai International Airport in 2004.  
(Photo: Sorbis/Shutterstock.com)*



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Visit us at the  
Middle East Electricity  
in hall 1, booth S1A19

version of ABB's Network Manager software. Connecting to the existing field devices (remote terminal units, bay control units and main distribution boards), the upgrade will increase the operational reliability and efficiency of the power network to support a large-scale airport expansion plan.

ABB delivered the first SCADA system to Dubai International Airport in 2004, with the monitored network since growing five-fold.

In addition to augmenting capacity and offering advanced features include highly efficient real-time alarms and event handling.

ABB's SCADA solution provides a common power distribution automation system and is today capable of handling data signals from approximately 100,000 sources distributed over the entire power network at any given time.

"This upgrade will provide advanced automation of the power distribution network and enable reliable and efficient power supplies to the world's busiest international airport, optimising the use of resources and minimising disruption to passengers," said Claudio Facchin, president of ABB's Power Grids division.

"Grid automation and leveraging our software portfolio to deliver enhanced customer value are key elements of our Next Level strategy supporting our Internet of Things, Services and People approach," he added.

**Stand: 4D20**

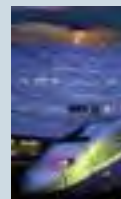
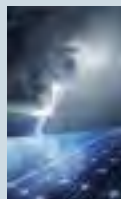




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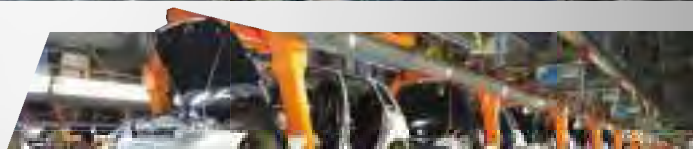
For more information about the **new DEHN subsidiary in Middle East** visit: [www.dehn.ae](http://www.dehn.ae)

DEHN MIDDLE EAST FZE  
Jebel Ali Free Zone Area, Dubai / U.A.E., [info@dehn.ae](mailto:info@dehn.ae)

ICAR SpA | Via Isonzo, 10 | 20900 Monza MB - Italy | Phone +39.039.83.95.1 | Fax +39.039.83.32.27 | Mail [icar@icar.com](mailto:icar@icar.com)



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LIGHTING CAPACITORS  
TRANSFORMERS and CHOKES**

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

## Mosdorfer to present Spacer Damper

AUSTRIAN MANUFACTURER MOSDORFER will be showcasing a completely new damper, which has been developed for the special requirements of the Saudi Arabian utility Saudi Electricity Company (SEC), for the first time at Middle East Electricity 2016.



*The new Spacer Damper has been specially developed for the unique requirements of Saudi Electricity Company.*

Without having any bolted connection, the company said that the new Spacer Damper guarantees a high degree of safety during installation by avoiding failures that might occur during the fixation of a damper in the line. Furthermore, the Spacer Damper is resistant to high operational temperatures in transmission lines with HTLS conductors.

Mosdorfer's product portfolio includes fittings for overhead transmission lines, damping systems, insulators and end fittings as well as fittings for high-temperature conductors up to 1,200kV.

Mosdorfer has been present in the damping systems sector under its brand name Damp for more than 35 years. It has more than 100 reference projects in the Middle East.

**Stand: S1A10**

## Imequadri strengthens its presence in the region's vital oil and gas industry

LOCATED IN THE UAE, the BU HASA Extraction Plant produces NGL, which is pumped to Ruwais Plant. The plant receives gas from the ADCO oilfield, exporting residue gas to the Habshan Gas Network, which represents one of the biggest plants for the production of gas in the Middle East.

Through Matrix Construction, Imequadri Duestelle has been participating in activities on the BU HASA project via the replacement of power skids for Cluster 40-45. This project consisted of supplying 30 compartments of medium-voltage metal clad LSC2B-PM class switchboards of the Normoclad Series (3.3kV 630A 25kA) for surface and submersible pumps and their commissioning on site.

Imequadri, part of IME Group and a Middle East Electricity 2016 exhibitor, operates within the market of electrical switchgears, relevant components and services for the generation, transmission and distribution of power and energy. Formed in 1962, the company has been actively operating in the oil and gas market since the early 2000s, with a particular focus on the Gulf region.

**Stand: 3D14**



*The Normoclad MV switchboard for submersible pumps.*

## Sand-proof generators from Genmac 'perfect' for Middle East's arid conditions

WHEN, IN 2008, Genmac started selling in the Middle East, the company was focused on finding solutions for the two main environmental problems in the region – high temperatures and sand infiltration.

Genmac's R&D department studied air flow and how to channel it inside the generator enclosure to ensure proper cooling of the engine at more than 50°C, without compromising noise reduction. To assure longer engine life and cut maintenance costs, the company said it became "a must" to solve the problem of sand, so it developed custom canopies equipped with mechanical sand traps and tropical radiator, with two separate compartments for engine and alternator. Genmac went further by using oversized oil sump and special filters, which

*Genmac's Sand-Proof Generator line has proved popular with customers in the telecoms and railway industries.*



extended maintenance intervals to more than 1,000 hours, with the result of the project the Sand-Proof Generator line.

The specifically designed range of generators are manufactured by Genmac for desert applications, and has become one of the best-selling ranges of generators in the telecoms and railway sectors.

**Stand: S2C01**

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The **ISA-TS** soft starter (200 kW to 3 MW, up to 11 kV) is suitable for drives with a low starting current and/or a high starting torque. As compared to a frequency converter of similar rating the **ISA-TS** needs just 50 % of the space and reduces costs and energy consumption.

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Fax: +971 4 331 6719

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**Valued Quality. Delivered.**



## Panasonic's solutions to introduce "a paradigm shift" at MEE

THE ENERGY AND power sectors in the Middle East have witnessed an unprecedented growth and will continue to prosper as huge investments are being initiated. Government authorities in the GCC have indicated plans to adopt the smart city initiatives with an intention to rationalise energy usage at large.

As demand for modern technology takes centre stage in meeting the overall goal of efficient and smart energy management, the business environment becomes challenging yet competitive.

Panasonic Middle East and Africa is a global leader in technology, offers high-quality and reliable energy management solutions in electrical, lighting and air category. As the current industry scenario shows an inflating scope for these solutions, Panasonic is bringing to the region the best-in-class products that will boost the smart city vision.

The latest products within the domain of energy creation, wiring and lighting as well as indoor air quality solutions by Panasonic, will be seen at Middle East Electricity exhibition 2016.

Offering an expansive range of products, Panasonic has been a pioneer in inventive energy solutions and a trusted brand for many decades. As the brand continues to pursue its vision of providing better life, visitors at MEE will be pleased to experience the latest sustainable living concepts which will be the core of Panasonic's showcase.

An engaging and demonstrative show will be put up at Dubai World Trade Centre by Panasonic and visitors will get the opportunity to view the variety of its products presented at the



*Panasonic will be among the best known brands on the show floor at MEE 2016. (Photo: Panasonic)*

event. From high-efficiency solar panels and energy recovery ventilators, to eco-lighting solutions and reliable wiring devices – Panasonic's MEE 2016 booth set up will look to produce a state-of-the-art impression on industry patrons.

**Stand: 8G10**

## BASEC to advise on new construction products regulation for cable manufacturers

THE BRITISH APPROVALS Service for Cables (BASEC), a leading international test and certification service for energy, data and signal cables and ancillary products, will be offering its advice to cable manufacturers and distributors supplying cable products to European markets on the forthcoming launch of Construction Products Regulation (CPR) for cables during Middle East Electricity.

CPR will be implemented in July 2016 and will have implications for all cable manufacturers who export into the European Union.

The new regulations will come into force on 1 July 2017, and will introduce new testing and certification requirements, as well as new CE marking requirements. There will be a 12 month transition period from the launch date for cable manufacturers to establish CE marking of power, control and communications cables under EN 50575.

"Manufacturers should be aware that CPR is a regulatory system and will need to be implemented separately from any voluntary cable product approvals or testing," said Dr Jeremy Hodge, chief executive at BASEC.



*BASEC is an independent and non-profit accredited certification body. (Photo: Alaettin Yildirim)*

"In addition, end users in the Middle East region may find the classification system useful for their own applications."

BASEC has recently been awarded extended ISO/IEC 17025 accreditation for its cable fire testing capabilities, which it says demonstrates its commitment to the industry through its investment in high-

quality personnel and equipment.

"Accreditation of the EN 50399 test, building on our existing accreditations to EN 61034, EN 60754 and EN 60332-1-2, will allow manufacturers and suppliers to start confidently with their preparations for the introduction of CPR for cables, with accredited tests," Dr Hodge added.

"We are already using our facilities for regular BASEC cable approvals testing, and also for accredited testing for a range of customers in specialist areas such as marine, rail, fibre optic and communications cables."

In the UAE, BASEC holds pre-qualification status as an independent testing laboratory for low-voltage cables by the Abu Dhabi Water and Electricity Authority (ADWEA). BASEC representatives have been working in the Middle East for more than a decade serving cable manufacturers who hold BASEC certification for their products.

"We are looking forward to meeting with delegates at MEE and offering advice on how to prepare for CPR going live," noted Dr Hodge.

**Stand: 8F39**



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# High demand for Hauff-Technik's solutions

**W**ITH ITS CORE expertise lying in the creation of hermetically-sealed partitions in buildings and structures built from concrete, brickwork or sheet steel walls, Hauff-Technik's business is to offer its customers effective and high-precision designed medium-voltage cables or stainless steel sleeves for high-voltage shore connection systems.

The Middle East Electricity exhibitor is now planning to make its mark within the field of renewable energy, where it has been experiencing high demand.

"Hermetically-sealed' equates to much more than the usual IP protection ratings against the intrusion of solid objects, liquids and gases," commented Hauff-Technik CEO Michael Seibold. "For us, 'sealed' is not just the description of a state, it is a promise that we make to our customers.

**"For us, 'sealed' is not just the description of a state, it is a promise that we make to our customers."**

**Hauff-Technik CEO Michael Seibold**

"We can meet even more stringent requirements with our special designs and custom-made items, which can be produced and supplied to our customers within a few days thanks to our extensive in-house manufacturing capabilities," added Seibold. "In our capacity as leading innovators, alongside our high-volume production, we are just as capable of handling small batch sizes – right down to a single unit – with our sophisticated manufacturing processes."

According to the company, its standard sealing systems can remain tightly sealed even when immersed in water up to 50-metres deep.

## Cable entry system as a modular system

The company's HSI 150 cable entry system acts to ensure a quality seal for all types of cables fed through the walls of power stations, plant buildings and basements. The certified oil leak tightness prevents interferences such as transformer oil from getting into the soil or groundwater, and the building blocks of this system consist of concrete-cast components, which have been retrofitted with screw-on aluminium flanges in front of core drilling holes, and supplementary components.



*Image 2: The system covers for storing three interchangeable 120° circle segment inserts ('segmento').*



*Image 1: The range of system covers includes those with sockets for sealing the cable using a hot or cold shrinking process.*

These supplementary components include various cover systems which fulfil the required sealing functions for cables as well as cable ducts that require tight connections or flexible conduits.

The block is characterised by the inner system diameter of 150mm, which is required within the wall to be penetrated. All system covers offered for this purpose not only provide the seal for the inner system diameter, but also for the cable(s), which are to be fed through.

The range of system covers includes those with sockets for sealing the cable using a hot or cold shrinking process (*see image 1*); system covers for storing three interchangeable 120° circle segment inserts ('segmento') (*see image 2*); press seal covers (elastomer rubber press technology) in a closed design with individually punched holes; in a split design with individually punched holes, also with a removable insert ring; or the universal model with hole diameters (split, variable press seal cover DG), which can be made at the construction site to suit the particular cable in question.

Hauff-Technik, one of Europe's leading manufacturers of cable and pipe wall penetrations, has been developing solutions for the energy supply and construction industries since 1955. It has a range of more than 3,000 products and will aim to intensify its expertise in the energy transformation markets, while continuing to increase turnover over the next few years. ■

**Stand: S2C34**



## US suppliers out in force at MEE 2016

US COMPANIES WILL be out in force at this year's MEE. Organised by Kallman Worldwide, the official US representative of the show, in partnership with the US Department of Commerce, the US International Pavilion covering nearly 500 sqm will be a primary destination for buyers looking for an efficient way to meet US companies and an on-site business hub for US exhibitors wanting to maximise their exposure and impact to the region's power industry. US exhibitors will include such industry leaders as Eaton Corporation (**Stand: S3B10**), Governors America Corp. (**Stand: S3D29**), The H-J Family of Companies (**Stand: S3B20**) and Ametek Power Instruments (**Stand: 5B10**).

Kallman Worldwide president and CEO, Tom Kallman, said, "Our team is proud to help our exhibitors capitalise on this influential business event to grow their share of the regional marketplace, and further extend our nation's global power industry leadership."

In addition to organising the national pavilion, Kallman Worldwide is promoting all US exhibitors with its "Ask America First" on-site advocacy campaign. The message will be placed prominently around the US International Pavilion, integrated into hospitality events during the show and promoted in social media.

Among the exhibitors will be Applied Composite Material (**Stand: S3D22**), which produces various specifications of high-quality copper clad aluminium composite (CCAC) busbars. It says CCAC possesses the physical, chemical and mechanical properties of both copper and aluminium and is characterised by good electrical and thermal conductivity, corrosion resistance, anti-blast properties, superior intensity, strong anti-vibration fatigue and is lightweight while being affordable. CCAC is replacing copper as a primary material for electrical and thermal conductors and other specific industrial products, according to the company.

Another exhibitor La Marche Manufacturing (**Stand: S3D21**) will be showing a new microprocessor controlled smart battery charger for the utility, switchgear and oil and gas markets. It claims that the la Marche A77 12-Pulse rectifier design significantly reduces total harmonic distortion and improves efficiency and power.

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# Battery matters

Reliable high-density energy storage has been a research goal for decades. Li-ion seems to be in the lead in both gadget store and garage, but there are wider applications on the way.

*Li-ion products have been incorporated in a host of hand-held and larger devices.  
(Photo: Janaka Dharmasena)*

**A** **SILENT FLEET OF** driver-less vehicles will waft visitors along Masdar City's cool undercroft thoroughways. Under Tesla Motors Powerwall and related SolarCity concepts (conceived in California, of course) banks of rooftop-mounted PV cells will keep domestic utilities functioning through the night – and under householder control too. Meanwhile, NASA's Curiosity rover continues to return astonishing images from its travels across the dusty landscape of the planet Mars.

All these startling developments are reliant on the latest generation of high-tech lithium-ion (Li-ion) DC battery cells, at least one of which will be carried as a handy power pack by most visitors to this month's MEE.

In response to the fervour for this technology, a worldwide hunt has started for new sources of the essential chlorides that carry this invaluable ultra-lightweight (but heavy in terms of energy density) metal, which is so easily shipped across borders and the world as a powdered carbonate or hydroxide.

Currently, the Andes foothills are where most surface deposits are exploited. Chinese interests are searching hard underground in Australia; Mexico is another hotly-tipped spot, conveniently close to the huge processing facility currently being constructed by Tesla in Nevada. Within just a few years this SpaceX-linked business hopes to ship enough battery packs to power half a million vehicles.

Right now the largest Li-ion suppliers are well-known multinationals (electronics, automobiles) based in Korea and Japan. China is on the fast track as a new source of pre-prepared cells for incorporation in high-capacity battery packs. So, the future shape of what amounts to a brand new industry is emerging fast. With world-scale technology clusters like IRENA and the Masdar Institute, the renewables-savvy Gulf is a major focus for sales activity. And that includes events with global reach like MEE of course.

Li-ion products of various capacities, forms and applications have been widely incorporated in a host of hand-held and larger devices since this useful technology was first developed on a commercial scale in Japan in the 1990s. Power tools, personal ICT products (especially mobile phones and laptops) and infrastructure-scale telecoms have been the most widely developed applications so far; Tesla's new and spectacularly-performing Model X must be a hint of the future.

More mundane, but just as useful, are the electrically-powered buses that are transforming inner-city transport. And behind the scenes are the efforts renewables-based power suppliers like AES are making to incorporate grid-scale battery technologies into their daily hard-to-serve periods (overnight, when large solar plant cannot contribute directly, for example).

All will be on display here in the Gulf, in line with the objectives of Reed Expo's latest Future Energy conference held recently within Abu Dhabi's 2016 Sustainability Week.

These climate-saving changes are being encouraged by the technical advances taking place in rechargeables generally, and in lightweight Li-ion in particular. These include major improvements in durability, energy density, safety, output performance, temperature operating range, charging time and necessity (no need to await 'deep-draining', for example), scaling-up in manufacturing, along with falling costs all round.

The result is that many of today's most energy-intensive movable devices are now powered by clean and handy Li-ion packs, increasingly fitted to climate-saving electric vehicles because of the major weight savings they offer over conventional lead and even nickel-cadmium batteries.

For today's electric cars, a driving range of 200 km or more should be feasible under standard Gulf conditions. That's more than enough for daily use within local cities; recharging is now safe, rapid and possible as a top-up as long as proper battery management technology is employed and the manufacturer's guidelines are followed. However, the installed cost is still coming out at around US\$500/kWh, out of line with the cost of a conventional prime mover except for image-conscious "first-adopters". But it's falling fast.

Improved electrode design is a current focus of cost-cutting research, including solid rather than liquid or gel-type electrolytes. This would create a safer, heavy-duty, solid-state power pack, complementing all the other electronics installed within the latest vehicles. ■



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# Lovato Electric to showcase solutions at MEE 2016

**L**OVATO ELECTRIC IS a family-owned business established more than 90 years in Bergamo, Italy. One of the leading manufacturers worldwide in the Industrial Controls and Energy Management business, Lovato Electric is well known for its technological advances, as well as the high level of quality in all its products in Italy, Europe and globally.

Lovato Electric's vision is to provide competitive products and services in the Industrial Automation and Energy Management fields, with a special focus on manufacturers of control panels for pumps, gensets, OEM and system integrators looking for complete solutions from metering to remote supervision.

## Lovato specialises in producing components for energy management and automation

With 13 branches around the world and a presence in more than 100 countries, through its distributors the company is continually expanding and developing.

Although Lovato Electric has been in the GCC region for the past 30 years through its distributors, the company decided to move to the next level by setting up a regional office in Dubai, UAE.

In 2012, it established an office in Dubai Silicon Oasis as the company management had a vision that it would be the future technological hub of Dubai. The operations were initiated with a representative office setup without stocks.

Through constant and flexible business development strategies, Lovato Electric has been able to put in place a professional distribution network throughout the GCC covering all major segments.

In the last quarter of 2015, Lovato Electric made the next leap into local stocking in



*The team at Lovato will be out in force during the upcoming Middle East Electricity exhibition in Dubai.*

Jebel Ali Free Zone. Today, Lovato Electric ME FZE operations have been fully setup to handle an expected surge in the demand for high-quality products with a strong and professional team and technologically-superior products.

With the region turning towards renewable energies, Lovato Electric is well equipped to support this segment through its key products dedicated for solar PV applications, such as DC switch

disconnectors, DC Surge Protection Devices, DC fuse holders and fuses and Protection Interface relays.

Lovato Electric strives to support the growth of the economy by continually innovating and offering the best in commercial and technology to its clients.

Lovato Electric is exhibiting at the Middle East Electricity 2016 exhibition in Hall 3, **Stand: 3B20**, and its sales team would be glad to welcome visitors to its stand. ■



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## Innovative controls for generator sets and small gasoline engines

SEDEMAC MECHATRONICS PVT Ltd (SEDEMAC) has grown over the past 10 years to become one of India's largest electronic product suppliers for the power generation industry.

The company's patent-applied solutions include a 'sensor-less' electronic governor for all varieties of generator sets and a 'minimalistic' variable speed governor for telecom backup generator sets.

These applications are fitted on thousands of 5-250kVA genset engines each month throughout India and southeast Asia, and the company is now building a network of dealers and distributors throughout the Middle East and Africa.

SEDEMAC designs and produces AMF controllers with user-friendly interface, full graphics LCD, RS-485 MODBUS and a



SEDEMAC Mechatronics will be hosting demonstrations of its product on Stand S2B01 at MEE 2016.

plethora of digital/analogue inputs and outputs. According to the company, one of its USP solutions is its integration of 'engine controls' (e.g., electronic governor) into its 'AMF controllers', and it claims to be the only independent controller brand in the world to integrate these two technologies into a single product package.

These AMF controllers command 'rotary

actuators', offered as an optional accessory, and are responsible for controlling the fuel delivery in mechanical fuel systems. As a result, the customer receives the highest class of engine-speed governing (ISO 8528:G3), an unmatched ability to absorb transient block loads, and extremely high reliability at costs comparable to that for the traditional 'mechanical governor + engine-stop solenoid' solution.

SEDEMAC also offers a wide range of control solutions, including 'smart ignition' – a control solution for 2-wheelers and 3-wheelers, as well as 'electronic fuel injection controllers', 'integrated starter-generator controllers' and automated manual transmission controllers.

Stand: S2B01

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# MENA region on the right track

Increasing infrastructure and regional trade ties are pushing the cause for a better rail network in the region and Middle East Rail 2016, the largest rail conference and expo in the region, will further this cause.

**T**HE MENA COUNTRIES plan to establish a strong passenger and freight transport network with 16 major railway projects worth US\$352bn currently underway in the region, according to Terrapinn Middle East, organiser of Middle East Rail.

The 2016 edition will be held on March 8 to 9 at Dubai International Convention and Exhibition Centre.

Jamie Hosie, project director, Middle East Rail, said, "With current market conditions as they are, it's a great opportunity for international rail suppliers to enter the market. The MENA governments are now diversifying their resources, putting more emphasis on non oil-related projects.

"With the transport and logistics sectors playing an increasingly important role in the region's economies, governments are now looking towards innovative technologies to boost economic sectors that will boost intra-regional trade and tourism activities."

According to ICAEW Economic Insight Middle East report, Kuwait, Saudi Arabia, the UAE and Oman will likely net the biggest windfalls, with logistics forecast to contribute 13.6 per cent, 12.1 per cent, 11.7 per cent and 11.7 per cent to their respective economies by 2018.

Middle East Rail will be held under the patronage of HH Sheikh Mansour Bin Zayed Al Nahyan, deputy Prime Minister, Minister of Presidential Affairs, UAE, and in partnership with the Ministry of Public Works UAE and the Federal Transport Authority – Land & Maritime.

Commenting on the 10th anniversary of



*MENA governments are now diversifying their resources, putting more emphasis on projects that are not oil-related.  
(Photo: stockphoto mania/Shutterstock)*

the show, Hosie said, "For almost a decade, Middle East Rail has helped shape the regional rail market through knowledge sharing, educating the market and facilitating influential meetings. In 2016, visiting ministries and rail operators from the Middle East, North Africa, Central Asia and the Indian subcontinent will discuss the development of passenger and freight rail projects alike and the key challenges faced in rolling out and operating successful rail networks."

During two days of speeches, panel discussions and research-sharing, the show will provide projects updates, with key

government departments, railway operators and construction companies offering a first look at 2016 tenders and an understanding of the techniques and technologies being implemented to build the futuristic networks.

The show will also feature more than 300 exhibitors, covering all aspects of rail infrastructure including rolling stock, fixed stock, systems integrators, consultancies, operators, signaling and communications, maintenance and more. Many of the exhibitors are upgrading the size of their stands this year, according to the organiser, Siemens, Greenbriar, Bombardier, Autodesk and Ansaldo are among the main sponsors of the show.

Workshops for the conference include stations and terminal design, building intelligent transport IT solutions and GCC rail interoperability to name a few. A dedicated Cargo Zone will focus on how businesses can best utilise the multimodal infrastructure in the region. ■

**According to recent reports, rail infrastructure projects are booming in the UAE, Saudi Arabia and the GCC, but falling oil prices are impacting their viability.**





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# Opportunities for developers at Project Qatar

The prospective 2022 FIFA World Cup in Qatar has brought the country to international prominence and has underlined the importance of businesses working in the country to collaborate with each other.

*The event will provide networking opportunities for members of the industry across the entire Gulf region.*



**H**AILED AS ONE of the largest business-to-business construction fairs throughout the region, Project Qatar plays a leading role in technology transfer between Qatar and its trading partners. Throughout its 12-year history, the show has provided a dedicated avenue for tens of thousands of leading manufacturers and exporters from all over the world, and hundreds of thousands of importers and industry professionals from across the region to leverage the numerous opportunities and work together in Qatar's construction market. The event is a focal point for the country's growing and diverse construction market.

Project Qatar will be held from 9-13 May 2016. It is set to maintain its position of importance throughout the industry, following the high number of visitors and exhibitors at last year's event.

Qatar has embarked on a massive nationwide programme of investment to expand and upgrade its infrastructure, stadiums, facilities and transportation systems towards realising the Qatar National Vision 2030. With the awarding of the 2022 FIFA World Cup, Qatar has been catapulted onto centre stage of investment; growing awareness and interest have also led to greater opportunities throughout the country.

The scope of planned projects and the scale of required investment are massive. With nearly US\$346bn of projects currently in the planning or construction phase, and an estimated US\$168bn worth of projects to be awarded over the next few years, Qatar has become the centre of attraction for large companies and a source of significant opportunities for entrepreneurs.

Qatar has capitalised on its rapid success in recent years, boosting nearly all domestic sectors, improving capabilities in project management, innovative products, cutting-edge material, technology transfer and reshaping solutions to match the country's environment.

This tailor-made platform will present solutions for the market's needs and will cover the entire industry, including the latest in building materials and equipment, architectural finishing products, stone, marble and granite products, construction tools and technology, engineering services, infrastructure materials, security and safety systems, and many more. ■

**Qatar has been catapulted to the centre stage of the world's investment hubs and a growing awareness and interest have led to greater opportunities.**



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*Big 5 Saudi will feature free CPD-certified workshops for participants.*

# The return of Saudi Arabia's premier construction show

The Big 5 Saudi, dedicated to all things construction, is back this year, with more workshops, seminars and exhibits for professionals in the construction industry.

**The show will provide an overview of Saudi markets in the short and medium term to help gain market insight.**

**T**HIS YEAR'S EXHIBITION, to be hosted at the Jeddah Centre for Forums & Events over four days from 7-10 March, will bring together many of the world's leading construction suppliers as well as key architects, engineers, contractors and developers and give thousands of visitors access to diverse certified workshops and seminars, all free of charge.

Workshops will be conducted on different topics, including International Federation of Consulting Engineers (FIDIC) contracts, dispute resolutions in construction claims, sustainable design and construction, safety management, seismic design among many others; 27 of these workshops are CPD certified.

Jones Lang LaSalle national director and country head for Saudi Arabia, Jamil

Ghaznawi, said, "2016 will see the commencement of the FAKD, Business Park, Al Khozama Project and several residential projects all over the Kingdom. I also believe that the new facilities provided by the Saudi Arabia General Investment Authority to promote foreign investments will attract more organisations to open local offices in Saudi. This will accordingly increase the demand on office fit out."

The show seeks to bring together professionals who want to develop their careers in a challenging climate. Participants will be provided with an overview of Saudi markets in the short and medium term and gain market insight.

The IMF recently released a report predicting a steady growth of three per cent in the medium term for the Saudi Arabian economy. Despite the current gloom in the



# Over Five Golden Decades of Dedicated Service to Power Sector

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industry due to the slump in oil prices, many have a positive outlook for the future. However, widespread unemployment remains a significant challenge, and regional conflicts paired with the drop in oil prices continue to contribute to market volatility.

The show features a dedicated concrete zone and an outdoor plant machinery and vehicles (PMV) zone where visitors can learn about the latest in concrete technologies, get a first-hand experience with plant and machinery and watch live demonstrations that will include earthmoving equipment, lifting equipment and material handling machines.

Another big focus this year will be Saudi Arabia's adoption of the standard form contracts published by FIDIC for government contracts.

Experts at the event will explain the benefits of this move to developers, contractors and sub-contractors, which are primarily to simplify disputes and make it easier for international companies to operate in the kingdom.

Day one will focus on quality management in construction contracts, FIDIC conditions of contract, dispute resolution in construction claims and the effect of chemical attacks on concrete structure. Apart from this, attention will be paid to sustainable design, which is a relatively new but growing field in the Middle East. The discussions will cover

topics like innovative design, smart building, material recycling and water efficiency.

Day two will see a continued focus on sustainable design and construction under which subjects like innovative design and indoor environmental quality, will be covered. A session will be dedicated to reducing costs through energy efficiency which is a recent subject of interest for builders around the globe. Energy efficiency can help reduce overall costs, improve operating performance, extend lifespan of equipment and building and contribute to corporate responsibility while being at the same time a smart business practice.

The 'Vision in Construction' seminar series will host panel discussions offering expert insight and analysis on the state of the market, building information modeling (BIM), business opportunities in the country, risk management and project finance, along with other pivotal industry issues. This is touted to be one of the most important ones during which the future of Jeddah's construction sector will be discussed, alongside a discussion of business-critical topics across the kingdom.

Incorporating local influences into innovative, contemporary design is another subject of interest that will see discussions on the local architecture and traditional design and aesthetics specific to the Gulf region. This would also entail evaluating

natural landscapes, observing indigenous plantation, looking at regional influences and reviewing similar existing projects - a very productive session for designers and engineers alike.

An interactive session on LEED Lab has also been organised which will bring experts and participants together to answer questions pertaining to LEED compliance and engineers' scope of work on LEED projects. The resource panel will include Green Technologies' engineering manager, Reniel Barroso and projects manager, Hasitha Herath. There will be three sessions conducted over the second and third day given the vast array of questions expected for the panel.

The final day brings with it more sessions on project and safety management, conducting business in Saudi Arabia and cultural awareness. Safety management comprises new topics like toolbox talk, introduction to weighing injury costs versus safety investment and general understanding of accident reporting and investigation while also having a special focus on safety in the construction industry. There is also a unique session on 'cultural awareness' highlighting the importance of this for managing a successful international business. Sessions on quality control and testing of high-performance concrete and fracture of concrete sections will be among the last workshops.

This year's educational programme promises to be the most comprehensive one yet, with extensive sessions on a variety of subjects exclusive to the construction sector in order to enable participants to gain a better understanding of the future market outlook. ■

**The IMF recently released a report predicting a steady growth of three per cent in the medium term for the Saudi economy.**



*The line-up of events is ideal for professionals in the construction sector.*





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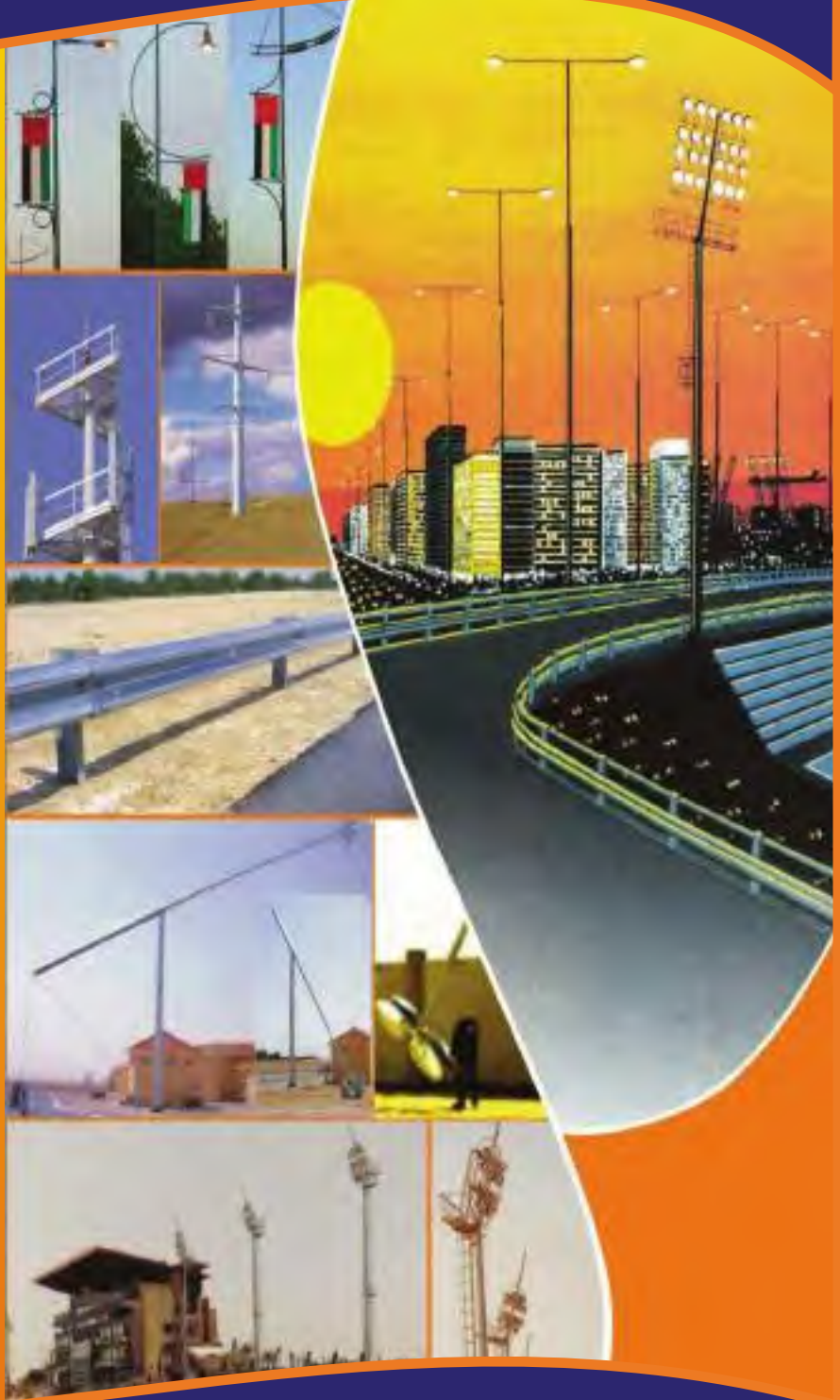


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## Sustainability to be key emphasis at 2016 edition of Big 5 Saudi

THE BIG 5 Saudi has a special place this year for in-depth exploration of sustainable design, construction and related themes.

The workshop programme at the four-day event this March will focus heavily on practical insights and technical details of the latest industry trends, tools, applications and technologies. A big part of this is intelligent structure building and design, which is progressively gaining more attention.

There will be a workshop on incorporating local influences into innovative, contemporary design and how regional inspiration can be used in different aspects of design, including materials, colour palette and form.

Another course on sustainable design and construction will explore designs that are both sustainable and innovative in nature, materials and resources, focusing on indoor environmental quality, energy and atmosphere, and helping to improve water efficiency and encouraging the recycling of used building materials.



*Sustainable design will be in the limelight this year as one of the hot topics of discussion during The Big 5 Saudi. (Photo: Dandesign86/Shutterstock)*

The programme will also look at the latest trends and developments in sustainable design, such as LEED principles in design and performing a cost-benefit analysis of sustainable materials and a brief introduction to life cycle costing. There will also be project case studies showcased featuring innovative designs that improve the sustainability of a building. Bio facades, kinetic facades and sustainable façade strategies will be explored in particular.

There will also be a workshop dedicated to how energy efficiency can improve operating performance, extending the lifespan of the equipment and the building, increase employee well-being and reduce initial and maintenance costs.

Managing energy is being increasingly viewed as a smart business practice, while also demonstrating corporate responsibility. Among the names leading the sessions will be Zuhair Fayez Partnership sustainability manager Ahmed Sayed and Dr. Daan Elffers, founder of the Islamic Reporting Initiative.



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Concrete Technologies Worldwide

**Case study:****Breakthrough for Danfoss in UAE – ICF keeps plant oil and margarine at the right temperature in Dubai**

In March 2015, Danfoss and cooling experts Fanar Al Khaleej proudly present the first cold storage with Danfoss ICF the current six and four module block valves in the UAE region. The brand-new cold storage facility has been built for Dubai-based United Foods, a food and processing company that produces several brands of edible oils, margarine, butter, and ghee (clarified butter) for both the domestic and export markets. Due to the very high cost of land in Dubai, the refrigeration solution had to be compact with a particularly small footprint.

Fanar Al Khaleej has been a Danfoss customer for more than 15 years. When they expanded their business recently and decided to move to Dubai's industrial zone, they also decided to go for ICF technology from Danfoss, despite ICF being new to the UAE region.

"We have chosen an ICF valve solution from Danfoss, with two new ICF valve stations. What convinced us to buy these products from Danfoss was that we wanted a solution strongly focused on safety. This ammonia-based refrigeration solution is also environmentally friendly. Furthermore, we did not want the refrigeration plant to take up a lot of space. The solution from Danfoss meets all our parameters, and we are extremely satisfied with the solution," comments Alap Shah, Project Sales Manager, from Fanar Al Khaleej.

Vegetable oil, butter, ghee, and margarine are stored at different temperatures. Food safety and quality are extremely important for United Foods, and they will never compromise quality. Alap Shah from Fanar Al Khaleej comments: "Butter and margarine must be stored at 4 °C, whereas the ideal temperature for vegetable oil is 20-22 °C. Other products have to be at -18 °C. We therefore need different types of cold storage systems within the same cold room."

"We have enjoyed an exceptionally good relationship with our customer. We are very appreciative that Fanar Al Khaleej took the opportunity to become a frontrunner in the United Emirates market. Trying something new or shifting from old to new technology are always difficult decisions. Fanar Al Khaleej and Danfoss have worked closely together for 15 years, and our joint success is based on trust. The award-winning ICF is already well known in the region, but achieving a breakthrough and changing customers' mindsets takes time. They do not simply shift to new technology overnight. Our ICF is a popular choice worldwide for ammonia solutions, and I am proud that the ICF is now being used in Dubai. I am convinced that many other customers will quickly see the clear benefits of the Danfoss and Fanar Al Khaleej storage solution, and that our ICF will become popular throughout the United Arab Emirates very soon," concludes Suresh N Sharma, Sales Manager, Danfoss Industrial Refrigeration.

Ammonia is a natural refrigerant whose ozone-depletion credentials are far superior to those of common alternative refrigerants. It also saves money. The payback time for the ammonia-based refrigeration system is only five years.

**About the ICF valve station:**

The ICF is designed for quick and easy installation. The plug-and-play ICF unit requires only two welds, whereas conventional valve stations with six or more individual components require up to twelve welds. The ICF valve station incorporates several functions in one control body. An ICF valve station replaces a series of conventional mechanically, electro-mechanically or electronically operated valves. This offers a number of advantages, not only in the design phase but also in the installation, service, and maintenance of a refrigeration plant. Read more about the ICF on [www.danfoss.com](http://www.danfoss.com)

**Theme of the Event****"Engineering Tomorrow's Industrial Refrigeration Solutions in KSA"****Date****11th April 2016 - Jeddah KSA****Date****13th April 2016 - Riyadh KSA****Guest Speaker****Ghaleb M. Abusaa - CEO - EN3 Solutions - The Three Factors Company****Organised by****Media Partner****Hosted By**



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# Made in India, for the world

Indian off-highway tyre specialist Balkrishna Industries Ltd inaugurated its latest manufacturing plant in Bhuj, Gujarat in December 2015, firmly establishing its presence in the tyre manufacturing business.



*The testing track at the Bhuj plant is in demand by several tyre manufacturers in India. (Photo: BKT)*

**T**HE VISION OF BKT is to become a leader in the global off-highway tyre market, which is why it decided to build a manufacturing unit. This way, the company is better positioned to make use of business opportunities.

The company's newest Bhuj plant is located about 100 km from Pakistan and 60 km from the port of Mundhra, which is on the Arabian Sea.

Spread across 300 acres, the US\$500mn plant, by the time of formal inauguration, had already achieved a daily production capacity of around 150 MT. It is expected to touch 325 MT a day, according to Rajiv Poddar, BKT's joint managing director.

While the first tyre was rolled out in March 2012, the entire project will be completed by 2016. The tyres currently being made at the plant include 22 sizes of the Maglift solid tire, various measures of Liftmax LM 81 tire (both for forklifts), Portmax PM 93 in size 280/75 R 22.5 for straddle carriers and the giant Earthmax SR 45 Plus tire for dumpers.

Construction of the plant began in 2011. Company officials at the press conference, recounted the various hardships they had to endure during construction, including harsh weather conditions and presence of wild animals at the project site. BKT needed a continuous expanse of land for sustained construction of the plant and related facilities, such as a power plant and a reservoir. Shortly after construction of the plant began, an eight km-long pipeline for drinking water as well as 13 km of electricity lines were laid out.

Lucia Salmaso, managing director of BKT Europe, said, "The Bhuj production site is a milestone in BKT's growth, not only for its high levels of technical and quality standards, but also because it is situated close to a port - a decisive factor to speed up delivery time.

"Likewise, this is a great benefit for companies that have chosen BKT tires as an original equipment manufacturer."

Like all BKT plants, Bhuj has obtained the ISO 9001:2000 Quality Certificate. As far as

production parameters, quality control and environmental regulatory requirements are concerned, BKT adheres to the strictest international standards.

In addition to being a world-class manufacturing facility, the Bhuj plant also has a host of amenities such as a testing track, an R&D centre, thermoelectric plant and water reserves. BKT's testing track is said to be one of the best in the country, and is in demand by several Indian tyre manufacturers for testing purposes.

A specific and handy aspect of the BKT plant was a fire station – considering how far away the plant is from the city, having a fully-loaded fire station is a matter of assurance for the thousands of workers.

According to Arvind Poddar, chairman and managing director of BKT, the key to the growth and success of any business is its staff.

"On more than six hectares of the Bhuj site, a small town for the employees was built, which included modern flats for 406 families, a mall, a green area, a recreation center, a medical centre and a fire station," he revealed.

The launch was attended by media representatives worldwide, who got a chance to witness the various production aspects and processes at BKT's plant. Through this milestone, BKT feels ready to embrace challenges and become a game changer in the market. ■

**The Bhuj production site is a milestone in BKT's growth, not only for its high levels of technical and quality standards but also because it is situated close to a port.**





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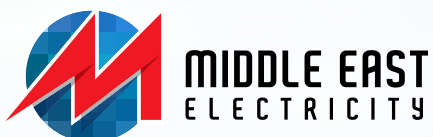
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# New stainless steel air hoist concept by JDN to be launched at LogiMAT 2016

FOR THE FIRST time, materials handling specialists J D Neuhaus (JDN) will present its concept study of a stainless steel air hoist at the LogiMAT 2016 exhibition that will take place in Stuttgart, Germany, from 8-10 March 2016.

Under the motto 'engineered for extremes', JDN's pneumatic and hydraulic hoists and crane systems are used under the harshest of conditions like drilling platforms, underground, in foundries, in arctic temperatures as low as  $-45^{\circ}\text{C}$ , and even under water.

Indoor uses can be just as extreme as these outdoor ones, namely in areas that require constant cleaning and hygiene. With regards to this, JDN will present the conceptual study of a stainless steel air hoist at LogiMAT for these areas specifically. The sectors JDN is targeting with this study are the use of food safe plastics within the F&B industry, chemical and pharmaceutical companies, medical and aerospace technology.

The study combines the advantages of using compressed air as a method of operation with the hoist construction material of stainless steel. The products will, therefore, be resistant to corrosion and high levels of humidity. They will also be easy-to-clean and disinfect, according to the company.

JDN notes that high-pressure cleaners are simple to use too. As the outgoing air is extracted and the chain is protected by bellows, they can also be used in clean rooms like optical and semiconductor industries. Since compressed air is used as a method of operation, the hoists are explosion-protected (ATEX) where they can be used in potentially dangerous areas where organically flammable chemicals are handled.

The company will also present information on its comprehensive project planning and maintenance facilities that consists of overhauls of JDN products. For optimal parts supply, the JDN team has designed spare parts kits and general overhaul kits, which offer the customers an improved service for ordering spare parts. The JDN service programme also offers training courses and, where necessary, rents hoists.

In addition, the company will exhibit samples of standard JDN hoists with an extensive range of accessories during the show.

JDN air hoist Profi 2 TI in motor trolley. (Photo: JDN)

Stand: 6G60



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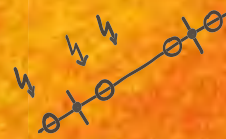
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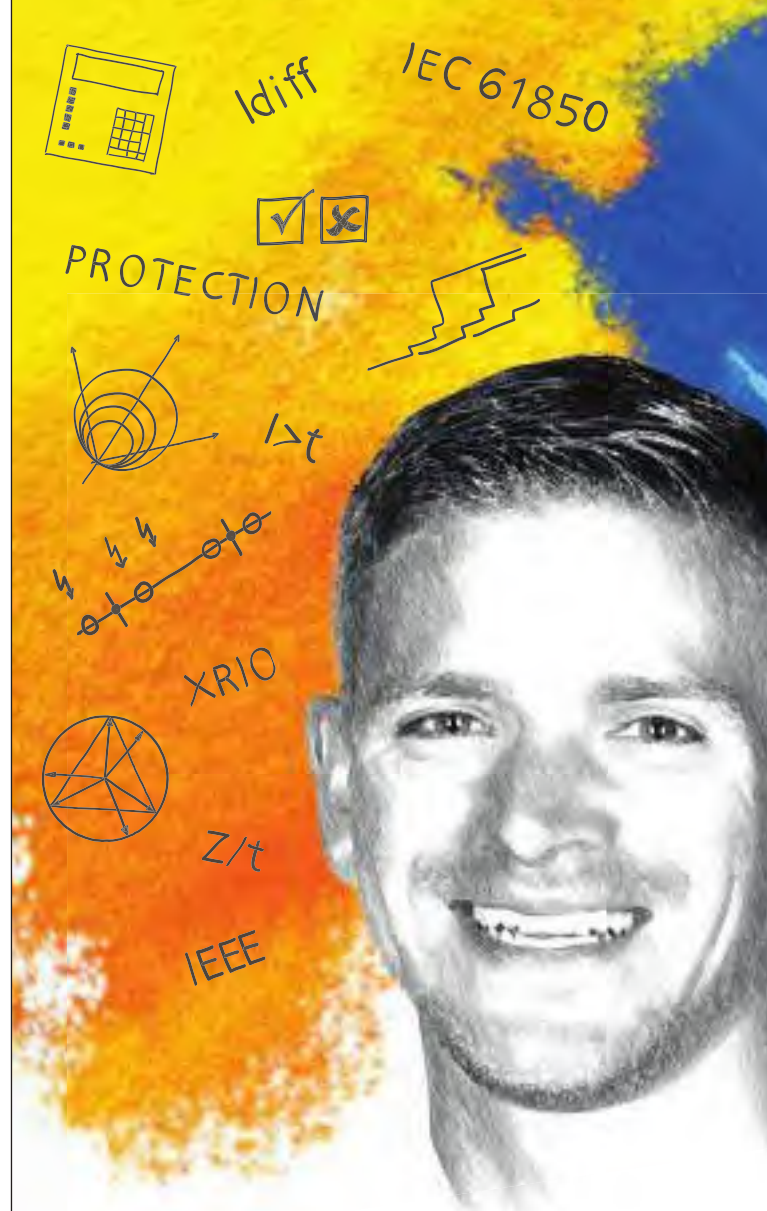


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# Easy-to-erect mobile tower and new safety system

**UAE-BASED MANUFACTURER** of movable aluminium scaffolding and ladders, Ascend Access System, is introducing an easy-to-erect mobile tower 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 company is introducing a mobile tower aimed specifically for exhibition stand builders and interior decorators – the ‘One Man Tower’. Being lightweight, the aluminium mobile tower is easy to erect and dismantle by just one person, with the base unit forming a trolley for fast

storage and transportation. It is available in different working heights. The tower 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

**The aluminium mobile tower is easy to erect and dismantle by just one person, with the base unit forming a trolley for fast storage and transportation.**

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 is located at Business Bay, Dubai, where it provides training in mobile access tower erection, dismantling and safe use. ■



*Ascend Access Systems has a broad portfolio of moveable aluminium scaffolding and ladders.*





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# RANCO seeks to diversify economy

RANCO is in the process of setting up a modern sand processing plant for grading and further enhancing the quality and consistency of its silica sand.

**R**ABIAH & NASSAR Group (RANCO) has appointed staff in the Business Development Department (BDD) of the company to lead and oversee professional development of the new industrial business opportunity.

The company is mainly into developing silica sand derivative industries in the country. Its high purity silica mine in Riyadh covers a total area of more than five million sqm. It recently conducted a detailed geological survey of the land, which revealed that it possesses much larger reserves of high-purity silica sand (>99 per cent silicon dioxide), compared to what was shown in Saudi Geological Survey (SGS) reports.

In the recent past, BDD was successful in forming a joint venture with Europe's second largest and Germany's largest company in the paints sector, CAPAROL (Germany). RANCO is currently in the process of establishing showrooms, warehouses and local agents in all the regions of Saudi Arabia, for the distribution of CAPROL brand products, which will soon be followed by setting up paint manufacturing facilities throughout the country.

BDD also accomplished the acquisition of a large share in Sure Energy Systems, a highly-specialised company involved in the engineering, procurement and construction, as well as the setting up of solar power plants in India on a turnkey basis.

Once the market in Saudi Arabia opens up further for renewable energy, RANCO has confirmed that it will be in a strong position to



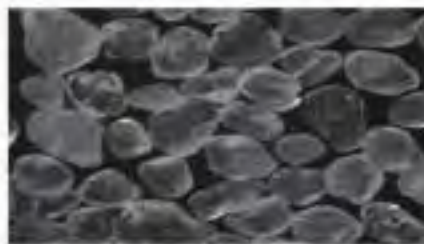
RANCO is aiming to establish an industrial silica sand production facility as part of a plan to enter into the market for higher value-added derivatives production.

take on further projects with its Indian partner. BDD has big plans to ensure that RANCO silica sand mine has been fully utilised for establishing value-added products to Saudi Arabian customers, as well as for export markets. RANCO has said it wants to play its role in diversifying the country's economy from its oil and gas base to minerals. The utilisation of silica sand in the country fits perfectly into such objectives of the government, the company said. ■

## RANCO FRAC SAND PICTURES OF 20/40 MESH & SIEVE ANALYSIS

### SIEVE TEST ANALYSIS RESULTS At ALLGAEIR (GERMANY)

SIZE	% OF TOTAL
6/12	0.5
8/16	3.8
12/20	12.0
16/30	30.3
20/40	51.8
30/50	50.1
40/70	30
70/140 (100 mesh)	5.3

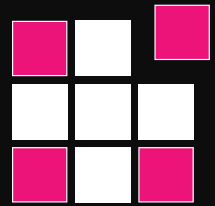


RANCO Silica Sand is tested in the laboratories of SGS (Jeddah) and ALLGAEIR (Germany) and found to be conforming to the API standards for Fracking applications for the recovery of oil and gas from unconventional drilling. Around 50 per cent of the RANCO sand falls in between 20 and 40 mesh size, which happens to be the predominant mesh size used in the fields. RANCO claims this silica sand is better than the API standard criteria in terms of sphericity, roundness and crush strength. A wider survey for assessing the quality of mine for the Frac sand applications is underway. Once completed, RANCO said it would be in a position to offer commercial quantities of Frac Sand to Saudi Aramco and international markets. According to RANCO, the projected consumption of Frac Sand for the North American market alone, in 2016, is 80mn tonnes.



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## Chicago Pneumatic launches brand new range of hydraulic compactor attachments

INTERNATIONAL CONSTRUCTION EQUIPMENT manufacturer Chicago Pneumatic has launched its latest generation of rig-mounted hydraulic compactor attachments. The RC range includes five new models, for use on carriers with an operating weight of 1-40 tonnes. It offers maintenance for applications including slope, trench and waste compaction, side development and piling.

Chicago Pneumatic spokesperson for rig-mounted attachments, Ralf Majchrzak, said, "In today's high pressure construction and demolition industries, where every minute of downtime and resulting loss in budget is scrutinised, operators are increasingly demanding products that are more durable, long-lasting and simple to maintain. For this reason, we have developed our new range of rig-mounted hydraulic compactors to specifically address these requirements, and make our customers' lives that little bit easier."

All models in the RC range are designed for instant use, according to the company. It combines high compaction frequency with high vibrating force to enable operators to make most compaction jobs quicker. To reduce stress on the compactor during operation, the housing is offset by 15 per cent. This provides better force distribution across the plate, in addition to reduced wear and tear.

All models also come equipped with integrated flow rate and

pressure controls to ensure the hydraulic compactors are protected against overloads. This ensures operator safety and also saves time when the compactors are used on different carriers. The use of solid rubber isolators also provides excellent shock dampening of return vibrations, meaning there is no apparent limitation of back pressure in the return line.

RC compactors are virtually maintenance free, says the company. The oil bath around the shaft bearing ensures continuous greasing, while their in-house AutoLube system eliminates the need for regular manual greasing.

All RC compactors come equipped with connection hoses that are designed to withstand the strains of demolition work, with protection against chafing provided by a spiral steel wire. A range of additional options are also available, including a continuous rotation device for easy positioning and higher productivity, and new backfill blades for smoother leveling.

Apart from the hydraulic compactor attachments, Chicago Pneumatic also offers a wide range of pneumatic and petrol-driven equipment, portable compressors and generators, light towers, rig-mounted attachments and compaction equipment for the construction and demolition industry.



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## Volvo Trucks opens new CKD assembly line in Iraq

SWEDISH MANUFACTURER OF medium and heavy duty vehicles, Volvo Trucks, has recently officially opened a new CKD assembly line in cooperation with the State Company for Automotive Industry (SCAI) based in Babel, Iraq. The facility was inaugurated by minister of industry and minerals HE Mohammed Sahib Al-Daraji and Volvo importer, Zamzam Spring General Trading's chairman, Bagher Al Mashat.

Volvo Trucks has also announced an increase in sales last year compared to 2014 across most of the Middle East markets. The announcement came after significant activity by the company in the region, including the opening of an AVI production facility in King Abdullah Economic City in Saudi Arabia in cooperation with Zahid Tractor last year. The company enjoyed a particularly successful year in Bahrain, Kuwait, Lebanon and Qatar, more than doubling sales in all four markets and a double digit growth in Oman, which is Volvo Trucks' third largest market in the Middle East.

Volvo had launched a new range of trucks – the FH, FM and FMX – in early



One of the FMX models, launched by Volvo Trucks. (Photo: Volvo)

2014 with new enhanced features such as the 12 speed I-Shift gearbox, a fully automated gearbox designed to provide comfort for the driver and maximise fuel efficiency. The company also worked on strengthening the sales financing schemes that were introduced in conjunction with the launch of the new range. This combined with the comprehensive 'driver development programme' has contributed greatly to the success.

Volvo Trucks Middle East president Lars-Erik Forsbergh said, "The opening of the new production facility in Saudi Arabia demonstrated our on-going commitment to the region. We will continue to build on this in 2016, by developing our network, by ensuring we offer customers premium products tailor-made to suit their needs, premium services and financing, and to add value to our customers' businesses."

## Powerphase upgrades gas turbine to 'Turbophase'

POWERPHASE HAS REPORTEDLY managed to upgrade a 7FA gas turbine allowing for a five per cent improvement in fuel efficiency and 31.5MW increase in power, also stating that "an installation of five modules would result in an output increase of 22.5MW. At 50°C ambient, this results in a 19 per cent

output increase and a 3.5 per cent heat rate improvement" in its project summary.

The system is said to have thus been able to demonstrate a 99.3 per cent availability in ambient conditions up to 55°C at both base-load and part-load conditions.

Powerphase president and CEO Bob Kraft

said, "Our analysis indicates a substantial power increase and fuel savings for nations in the region if they implement our upgrades across their gas turbine fleet. The Turbophase system can be integrated into a new or existing gas turbine plant at a much lower cost than building new plants and improving the fuel efficiency by more than five per cent. If implemented across the gas turbine fleet in the region, the Turbophase system would add more than 5GW of power and would save more than 18mn boe per year. It's a generational leap in new gas turbine technology, representing billions in potential savings for the region."

The Turbophase dry air injection system is modular and additive. This allows a gas turbine OEM, like GE, Siemens or Mitsubishi, to meet a specific power target, either alone, or as an addition to any combination of OEM upgrade or inlet conditioning. The same Turbophase system installed in the Middle East is expected to be able to operate everywhere else as well, promising similar output and fuel efficiency benefits, including GE 7EA & GE 7FA gas turbines.



Gas turbine upgrades could help the region meet its growing power needs. (Photo: Photo Smile/Shutterstock)

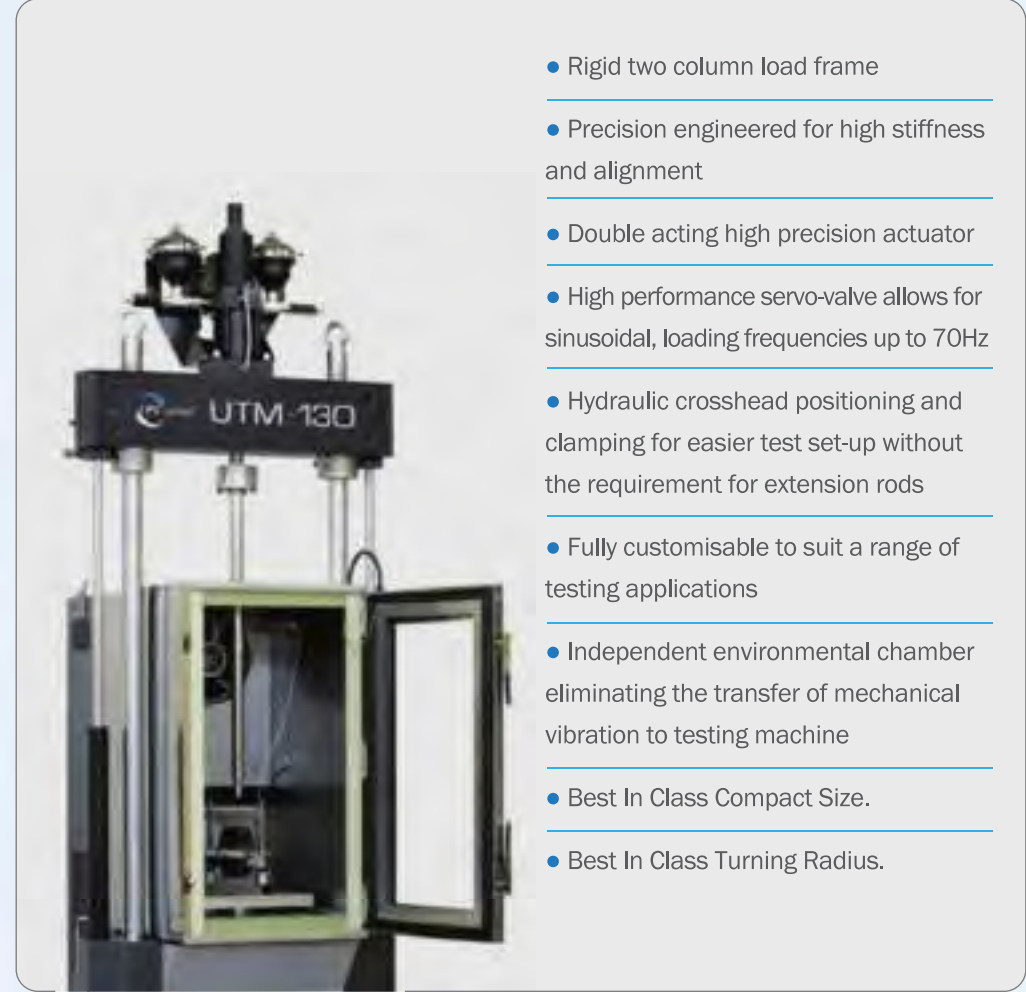


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من المنتظر أن تشهد منطقة الشرق الأوسط على مدى السنوات العشر المقبلة تراكماً في قدرات توليد الطاقة النووية يقدر بـ ٦٠ جيجا واط

الثاني من هذا العام، وتهدف الخطط الحالية إلى تطوير هذه الصناعة، فضلاً عن تحلية المياه بالقرب من العقبة. فقد أنعم الله، سبحانه وتعالى، على المملكة الأردنية الهاشمية بمصادرها الخاصة من اليورانيوم، كما أنها تنتج بالفعل مركبات الفوسفات الوسيطة اللازمة لمعالجة اليورانيوم على نحو اقتصادي. ووقعت المملكة، بمساعدة مختلف المنظمات غير الحكومية، اتفاقيات تعاون عديدة مع الجهات النووية الفاعلة الكبرى في دول مثل كندا والصين وكوريا الجنوبية وروسيا. هذا علاوة على أن صناعة تعدين اليورانيوم الفرنسية تعمل أيضاً هناك. كما تم تأسيس العديد من الشركات العاملة محلياً في مجال مصادر الطاقة، وافتتحت الجامعة أيضاً كلية للهندسة النووية.

تتحقق العديد من البلدان الأخرى في منطقة الشرق الأوسط وشمال أفريقيا الآن من خياراتها النووية، وذلك برعاية الهيئة العربية للطاقة الذرية التي تتخذ من تونس مقراً لها. وتشمل هذه البلدان الجزائر ومصر والمغرب وتونس. مدينة الملك عبد الله للطاقة الذرية والمتجددة هي مدينة جديدة بالقرب من مدينة الرياض مخصصة في بحث القضايا المتعلقة بتطوير الاستخدام السلمي للطاقة النووية. وتشمل خطط هذه المدينة توريد ١٥ في المائة من الكهرباء التي تحتاجها المملكة العربية السعودية بحلول عام ٢٠٤٠.

شيروود، نائب وزير الخارجية الأمريكي.

### دور الطاقة النووية بعد اتفاقية مؤتمر المناخ في باريس

الطاقة النووية لاتزال تمثل عنصراً جوهرياً في توقعات أمن الطاقة في المستقبل سواء ثبتت أم لا دقة أي من السيناريوهات الحذرة لوكالة الطاقة الدولية بعد الطفرة التي حدثت مؤخراً في باريس. وقد صرحت الوكالة، قبل شهر واحد من بدء المحادثات التي ترعاها الأمم المتحدة، بأن «الطاقة النووية هي أحد الخيارات المحدودة المتاحة على نطاق واسع للحد من انبعاثات ثاني أكسيد الكربون» وكررت جميع القضايا الرئيسية التي تمت مناقشتها بالكامل هنا قبل بدء برنامج البناء، والمتمثلة في أمن الطاقة والاعتبارات البيئية والتخلص من النفايات والحكم والمشاركة العامة مع إضافة استهلاك المياه.

في مكان آخر تخطط الأردن، التي وصلت إلى مرحلة متقدمة من التخطيط النووي والتي تستورد تقريباً كافة احتياجاتها من الوقود، لأن تصبح في وضع يمكنها في النهاية من تصدير الطاقة من شبكتها الصغيرة نسبياً.

وقد تأسست هيئة الطاقة الذرية الأردنية في عام ٢٠٠٨ وألقى رئيسها خطاباً في القمة العالمية لطاقة المستقبل التي عقدت في أبوظبي خلال يناير/كانون

تلقى ترحيباً كبيراً هذه المرة، حيث يجري إنشاء محطات جديدة في مواقع جديدة مثل البركة من أجل تلبية الطلب المتنامي على الطاقة. وتجسد ذلك أسواق كهرباء الخليج بمعدلاتها فوق المتوسطة. ولكن الزيادات الضخمة سوف تأتي من دولتي الصين والهند اللتين تتمتعان بخبره في مجال توليد الطاقة النووية. وقد حذرت وكالة الطاقة الدولية، في نهاية العام الماضي، من أن «سياسة الحكومات هي التي تشكل التوقعات المستقبلية للطاقة النووية»، مشيرة إلى الدور الحيوي للإدارات التنظيمية، والتمويل في الأسواق، حيث تبني المؤسسات المملوكة للدولة محطاتها الخاصة وتملكها وتشغلها.

ومن جهة أخرى، صرحت هيئة الرقابة على الطاقة أن السلوك تجاه الطاقة النووية يُعد أمراً بالغ الأهمية للتنمية المستقبلية، مشيرة إلى آثار الأحداث المأسوية؛ مثل حادث جزيرة الثلاثة أميال (بنسلفانيا ١٩٧٩) وكارثة تشيرنوبيل (أوكرانيا ١٩٨٦). وعادة ما تشمل الأمور التي تبت على الملأ السلامة التشغيلية اليومية، وإدارة النفايات المشعة، بما في ذلك التخلص النهائي منها، وإمكانية انتشار الأسلحة، والشفافية في المسائل المتعلقة بالحكم، ومنع تغيرات المناخ وأمن الطاقة العام.

ومن هنا تأتي قيمة اللقاءات الدولية رفيعة المستوى؛ مثل الحوار الاستراتيجي في وزارة الطاقة، الذي عقد في سبتمبر/أيلول ٢٠١٥ مع إليزابيث





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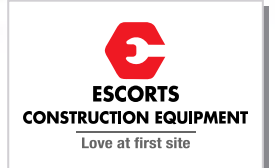
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١٣ في المائة فقط من الإنفاق العالمي على محطات توليد الطاقة سيوجه إلى القطاع النووي

الهندسة، وصيانة أنواع الطاقة المتجددة.

اهتماماً أقل إلى مصادر الطاقة المتجددة. فحول الخليج وبعض دول شمال أفريقيا تقدم مساهمات كبيرة في مجال الاستثمارات المسبقة وتكاليف التنظيم، فضلاً عن التقليل من ثاني أكسيد الكربون، والزيادة العامة في أمن الطاقة في جميع أنحاء العالم.

### خطط كبيرة في منطقة

#### الشرق الأوسط وشمال أفريقيا وخارجها

ستشهد منطقة الشرق الأوسط، على مدى السنوات العشر المقبلة، تراكمًا في قدرات توليد الطاقة النووية يقدر بـ 6 جيجا واط، وفقاً لتوقعات وكالة الطاقة الدولية المركزية، والتي تشمل التطورات البارزة في الإمارات العربية المتحدة. وسيتبع هذا 9 جيجا واط إضافية بحلول عام 2040، على حد قول الوكالة. هذه القدرات قد تكون صغيرة، إلا أنها مفيدة للمجاميع الإجمالية للإنتاج، والتي ستعمل على تحسين أمن الطاقة العالمي في الأوقات العصيبة. وفضلاً عن الاتصالات الإضافية التي أصبحت ممكنة، سيكون لذلك تأثير كبير على كميات الغاز التي تنتجها منطقة الخليج لأغراض أخرى.

وبمقارنة المجاميع الإجمالية للإنتاج، مع المجاميع الإجمالية لآسيا المُقدرة بـ 80 جيجا واط، والزيادة اللاحقة ليصل إجمالي الإنتاج إلى 88 جيجا وات، ونتائج الزيادة الهامشية في الحصة الإجمالية النووية لتوليد الطاقة العالمي، نجد أن الصين قد أحرزت تقدماً كبيراً في هذا المجال.

خلاصة القول أن نحو 13 في المائة من إجمالي الإنفاق العالمي المُرتقب على محطات الطاقة الجديدة سيكون في القطاع النووي، بينما يُولى

الطاقة النووية. أما الممولون الحكوميون لمخططات بناء المحطات الجديدة على نطاق عالمي، مثل البركة 1-4، فسوف يتعلمون من الدروس المكلفة جداً والمستفادة من هذه التكنولوجيا، بما في ذلك التخلص من النفايات على المدى البعيد والتكاليف المحتملة لوقف التشغيل.

### تطوير مشروعات الطاقة

#### النووية في الإمارات

تصدر مؤسسة الإمارات للطاقة النووية خطط التطوير المحلية. فهي تخطط لتقدم لشبكة الخليج، خلال عامين، واحداً من أربعة مفاعلات بقدرة 1400 ميجا واط في البركة. فقد ذكرت مؤسسة الإمارات للطاقة النووية، في نهاية نوفمبر/تشرين الثاني، أن أول مفاعل نووي على نطاق تجاري في المنطقة قد اكتمل بنسبة أربعة أخماس، وأن الوحدة الثانية قد اكتملت بنسبة 60 في المائة. وتصدر المؤسسة تحديثات منتظمة للتقدم الذي تم إحرازه في المشروع الذي يمثل طفرة كبرى في مجال أمن الطاقة على الصعيد الإقليمي.

ووفقاً للوائح الصارمة للوكالة الدولية للطاقة الذرية، يجري حالياً تطبيق رخصة التشغيل الأول للمنظمين المحليين من خلال مؤسسة الإمارات للطاقة النووية.

ويتكون المُجمَع، المزمع الانتهاء منه في غضون خمس سنوات أو أقل من أربعة، من مفاعلات الماء الخفيف المضغوط من النوع الذي يُطلق عليه APR-1400 (مفاعلات الطاقة النووية المتقدمة).

وقد عهد بتأسيس هذا المُجمَع إلى اتحاد شركات ترأسه الشركة الكورية للطاقة الكهربائية التي تتحمل مسؤولية تدريب الموظفين اللازمين، وخلق مجموعة المهارات الجديدة التي لا تقدر بثمن وغير المسبوقة في أي مكان داخل منطقة الشرق الأوسط وشمال أفريقيا.

حالة التغيير هذه تخلق مجموعة جديدة تماماً من فرص العمل المحلية. ويمثل ذلك تطوراً لاحظه العالم في المجال النووي، والذي يجري بالفعل وضع خطط أخرى له (فعلى سبيل المثال كان ذلك موضوع المنتدى الخاص بأسبوع الاستدامة المقام في مصر). وسوف يكمل ذلك التقدم الحقيقي الذي تم إحرازه في جميع أنحاء المنطقة، في مجال تطوير القوى العاملة الشابة المؤهلة والمجهزة بمهارات

### العقبات والتحديات والأسواق الحذرة

خلفية كل هذه التطورات المثيرة، هي أن الطاقة النووية عادة ما ترتبط بتوليد الحمل الأساسي الدائم، لكونه مصدراً غير مرّن للإمداد الذي يجلب معه استثمارات عالية جداً بتكاليف تشغيل منخفضة للغاية، ومدة بناء تبلغ أربع سنوات أو أكثر من ذلك بكثير، فضلاً عن الانخفاضات المرحب بها كثيراً لانبعثات غازات الاحتباس الحراري.

إضافة إلى ذلك، عادة لا تعتبر إمدادات الوقود النووي مشكلة كبيرة، إلا أن الحفاظ على أمنه المادي في مثل هذه الأوقات يمثل بالتأكيد مشكلة ضخمة. فبعد حادثة فوكوشيما دايتشي، التي وقعت في مارس/آذار 2011، والناجمة عن حدوث زلزال/سونامي، شكلت القدرة النووية العالمية العاملة 11 في المائة فقط من توليد الكهرباء، مقارنة مع أكثر من نصف هذه الكمية في عام 1996. وكان أغلب هذه المحطات من محطات الجيل الأول الواقعة في بلدان منظمة التعاون الاقتصادي والتنمية. إلا أن هناك موجة جديدة الآن، لكنها



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# المستقبل النووي

يقول روبرت آدمز، في هذا المقال، إن الطاقة النووية ستلعب دوراً مستقبلياً كبيراً كمصدر للطاقة في الإمارات العربية المتحدة. ففي عام ٢٠١٧، سوف ينطلق أول مفاعل نووي في منطقة الخليج لصالح مؤسسة الإمارات للطاقة النووية، وستتبعه مفاعلات أخرى.

١٨٩,٨ مليون طن نفط مكافئ، بينما تحاول الصين اللحاق بالركب بسرعة مع تراجع دور الفحم.

## سيناريو جديد من وكالة الطاقة الدولية

حسب سيناريو «السياسات الجديدة» لوكالة الطاقة الدولية (الذي يعتقد أنه أكثر واقعية بعد نجاح الالتزامات الأساسية الذي تم إحرازه في مؤتمر المناخ رقم ٢١ في باريس خلال شهر ديسمبر/كانون الأول ٢٠١٥)، من المتوقع أن يرتفع توليد الطاقة النووية على النطاق العالمي من ٢٤٧٨ تيرا واط/ساعة [أي ما يقرب من ٥٦٠ مليون طن نفط مكافئ] في عام ٢٠١٣ ليصل إلى ٣١٨٦ تيرا واط/ساعة في عام ٢٠٢٠، يتبع ذلك قفزة كبيرة ليصل إلى ٤٦٠٦ تيرا واط/ساعة خلال ٢٠ عاماً فقط، حين تساهم المفاعلات النووية من الجيل الرابع في ذلك. بموجب سيناريو (٤٥٠) الطموح لوكالة سيصل إجمالي الإنتاج إلى ٦٢٤٠ تيرا واط/ساعة أو أكثر إذا ما ثبتت إمكانية تكرار العمر المحتمل الحالي الذي يبلغ ٦٠ عاماً في محطات الجيل الرابع.

غير أن هذا سيعصب تحقيقه نظراً لتنفيذ برنامج ضخّم لإغلاق المحطات (إضافة إلى إجراء تحسينات قوية فيما يتعلق بزيادة عُمر المحطة) في الدول الصناعية التي لديها تحفظات على استخدام

إجمالي الاستهلاك ٥٧٤ مليون طن نفط مكافئ (مقارنة بـ ٦٣٥ مليون طن نفط مكافئ في عام ٢٠٠٦) وذلك بسبب تخفيض توليد الطاقة في دول منظمة التعاون الاقتصادي والتنمية، حيث أصبح العديد من محطات التوليد من الجيل الأول منتهي الصلاحية.

وقد «استقر» الإمداد النووي مقارنة بسرعة نمو مصادر الطاقة المتجددة في جميع أنحاء العالم تقريباً، وفقاً لما ورد في تقرير توقعات الطاقة في العالم، الذي أجرته وكالة الطاقة الدولية (نوفمبر/تشرين الثاني ٢٠١٥). ويواجه توليد الكهرباء القائم على المفاعلات النووية، تحديات فيما يتعلق بالانتشار في بعض البلدان الصناعية، بينما يتلقى دعماً أقوى في بلدان أخرى، بما في ذلك اليابان حيث عاد مفاعل سينداي الأول والثاني للعمل مرة أخرى في نهاية أكتوبر/تشرين الأول. بينما يُتَظَر إعادة إطلاق العديد من المفاعلات وفقاً لبرنامج متسلسل.

أما الصين، فلديها خطط طموح لانتشار المحطات النووية من الجيل الأحدث. وتشمل هذه الخطط تشغيل محطات بقدرة ٥٨ جيجا واط بحلول عام ٢٠٢٠. وقد بلغ توليد الطاقة النووية في الصين عام ٢٠١٤ ما يصل إلى ٢٨,٦ مليون طن نفط مكافئ. أي أقل بكثير من الدول الأخرى. واستناداً إلى الإنتاج الضخم غير المرتبط بالإمدادات العابرة للحدود، بلغ الاستهلاك السنوي في الولايات المتحدة

تعتبر المحطة المبتكرة، الجاري إنشاؤها في موقع البركة بدولة الإمارات العربية المتحدة بقدرة ٥٦٠٠ ميجا واط، رائدة عالمياً في استخدام تصميم واسع النطاق يقوم على وحدات (أربعة مفاعلات من الجيل الثالث) في بلدان منظمة الدول المصدرة للبترو (أوبك). كما أن هناك سعياً حثيثاً نحو تنفيذ خطط أكثر طموحاً في المملكة العربية السعودية.

ومن المتوقع أن يبدأ أول إنتاج تجاري في أبو ظبي بحلول عام ٢٠١٧، على أن يتم الوصول سريعاً إلى ذروة الإنتاج بحلول عام ٢٠٢٠. إنه حقاً مشروعٌ ضخّم سيكون له مرونٌ واسعٌ. كما أن دولاً أخرى في منطقة الشرق الأوسط وشمال أفريقيا تبحث الخيارات المتوفرة في ضوء سيناريو أسعار النفط المنخفضة.

وبالتزامن مع إغلاق اليابان المستمر لمحطاتها النووية في أنحاء البلاد بعد كارثة فوكوشيما عام ٢٠١١، واتباعها الآن سياسة عكسية قائمة على تشغيل محطة بمحطة، ارتفع الإنتاج العالمي للكهرباء المولدة من الطاقة النووية بمعدل أعلى من المتوسط بـ ١,٨ في المائة عام ٢٠١٤.

كانت هذه «المرّة الأولى التي تشكل فيها الطاقة النووية حصة من السوق العالمية منذ عام ٢٠٠٩»، وفقاً لما ورد في أحدث المراجعات الإحصائية التي أجرتها شركة بريتيش بتروليوم (يونيو/حزيران ٢٠١٥) والتي تشمل جميع مصادر الطاقة. فقد بلغ



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- ٩-١١ ..... المعرض السعودي للطاقة ..... الرياض



قامت جنرال إلكتريك بشحن المعدات وبدأت العمل في مواقع المشروعات في العراق

## جنرال إلكتريك توقع مع العراق اتفاقية لإقامة مشروعات طاقة قبل دخول فصل الصيف

وقعت شركة جنرال إلكتريك «خطة لتوصيل الطاقة» مع وزارة الكهرباء العراقية لتنفيذ مشروعات توليد الكهرباء الضرورية والصيانة في جميع أنحاء العراق. ووفقاً لتقرير صادر عن رويترز، تبلغ القيمة الإجمالية للعقود الموقعة ١ مليار دولار أمريكي، مع توفر التمويل بالفعل لبدء المرحلة الأولى من المشروعات بمبلغ يعادل ٣٢٨ مليون دولار أمريكي. وتتألف الخطة من مجموعة من الحلول التكنولوجية، ومشروعات التحديث لضمان إضافة الطاقة الزائدة الأساسية ٧٠٠ ميغا واط إلى الشبكة القومية في الوقت المناسب لفترة الصيف.

وشرح مصعب المدرس، المتحدث باسم وزارة الكهرباء، قائلاً: «مجموعة الحلول التي تقدمها الوزارة تتضمن عمليات تحديث ومشروعات صيانة لتدعيم إنتاجية محطات الطاقة ومستويات كفاءتها. إن منهجنا المتكامل لتدعيم قدرة الشبكة القومية يهدف إلى دعم النمو الاقتصادي من خلال تقديم إمداد طاقة مضمون لتلبية احتياجات تطوير البنية التحتية، وكذلك الاستهلاك المحلي».

وأضاف عزيز محمد، رئيس خدمات الطاقة بشركة جنرال إلكتريك بالشرق الأوسط والرئيس التنفيذي، قائلاً: «مع دخول حل مسار الغاز المتطور (AGP) لدينا والأعمال ذات الصلة المتفق عليها لتوربينات الغاز قوية الأداء في محطات الطاقة، يمكننا رفع القدرة بصورة كبيرة، مع الحد في الوقت نفسه من زمن التعطل التشغيلي. سيساعد منهج جنرال إلكتريك الشامل لعمليات التحديث في تلبية الطلب على الكهرباء الذي يبلغ ذروته في فصل الصيف».

هذا وستقوم الوزارة بتزويد زيت الوقود الثقيل (HFO) للمواقع المثبت بها تقنية زيت الوقود الثقيل، وذلك لندرة موارد الغاز الطبيعي وللاستفادة من طاقة الوحدات الجديدة. وتشير التقديرات إلى أنه قد تم تركيب أكثر من ١٣٠ توربيناً من جنرال إلكتريك في جميع أنحاء الدولة. علماً بأن وجود شركة جنرال إلكتريك يمتد في العراق لما يصل إلى ٤٠ عاماً من خلال مكاتبها المنتشرة في بغداد وأربيل والبصرة.



## فولفو تستعد لإعادة هيكلة قطاع الشاحنات العالمي



مجموعة فولفو تتكون بالكامل من ١٠ وحدات أعمال من بينها شاحنات فولفو وفولفو بينتا

إعادة الهيكلة، وإجراءات اقتصادية في التكلفة تنتقل الآن إلى «تركيز أكثر كثافة على العميل وتركيز على النمو العضوي وتحسين الربحية». يجدر بالذكر أن مجموعة فولفو تتكون بالكامل من ١٠ وحدات أعمال هي: شاحنات فولفو وشاحنات UD Trucks وMack Trucks وRenault Trucks وValue Truck & JVs وشركة فولفو لمعدات التشييد وفولفو للحافلات وVolvo Penta والمبيعات الحكومية والخدمات المالية في فولفو.

أعمالها وتمييزها، ومع مسؤولية واضحة تجاه تحقيق الربحية والنمو العضوي». وقال: «سنحصل على مؤسسة أكثر بساطة، تُتخذ فيها القرارات بسرعة أكبر وبالتعاون الوثيق مع العميل، بينما سيتم تمثيل كل علامة تجارية للشاحنات في مجلس الإدارة التنفيذي للمجموعة من خلال مسؤولية مشتركة لتحسين النشاط الكلي لأعمال مجموعة فولفو». وصرحت مجموعة فولفو بأنها تدخل مرحلة جديدة، مع فترة من عمليات الاستحواذ وبرامج

أعلنت مجموعة فولفو عن إعادة تنظيمها لهيكل شركتها لتقديم مساءلة تجارية أكثر وضوحاً لكل من العلامات التجارية لشاحناتها بدءاً من ١ مارس/أذار ٢٠١٦. فسيتم إنشاء أربع وحدات أعمال منفصلة تتحمل كل منها مسؤوليتها الخاصة عن الأرباح والخسائر، وهي: فولفو للشاحنات وRenault Trucks، Mack Trucks، وUD Trucks. وسيتم تشكيل مجلس إدارة تنفيذي للمجموعة لكي يباشر أعمال الهيكل الجديد للمجموعة. وسيكون له ممثلون من كل وحدة من وحدات الأعمال الرئيسية لديه.

ويعتبر هذا أول تغيير رئيسي تقوم به مجموعة فولفو من المقرر أن يتولى قيادته الرئيس الجديد والرئيس التنفيذي مارتن لاندشتات. وقد صرح لاندشتات بأن الهيكل الجديد لمجموعة فولفو سيقود في النهاية نشاط أعمال أكثر ديناميكية. وأضاف: «هذا تغيير مهم في كيفية قيامنا بأعمال الشاحنات لدينا من خلال تمتعنا بتفويض موسع لمؤسسات المبيعات التابعة لنا. وذلك من أجل التحكم في

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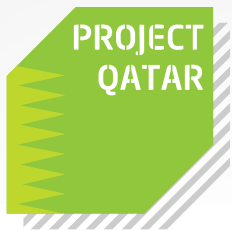
تسلمت شركة الخطوط السعودية الوطنية بالملكة العربية السعودية (الخطوط السعودية) طائرتين من طراز بوينج 787-9 دريملاينر وبوينج 777-300ER (النطاق الممتد). وتتنمي الطائرة بوينج 787 دريملاينر إلى عائلة الطائرات التجارية التي تجلب نطاقات وسرعة الطائرة النفاثة الكبيرة إلى قلب السوق. وقد تم تسليم طائرة دريملاينر ثالثة إلى المملكة العربية السعودية.

وكانت الخطوط السعودية قد طلبت ثمانين طائرات طراز 787-9 في عام ٢٠١٠. وقال صالح بن ناصر الجاسر، مدير عام الخطوط السعودية: «من خلال سمعتها المتمثلة في الموثوقية والكفاءة التشغيلية والراحة، نتطلع الآن إلى أن تصبح الطائرة بوينج 787 إضافة مكتملة لأسطول الخطوط السعودية حيث نواصل تحديث أسطولنا وتوسيعه كجزء من خطط النقل الخاصة بنا».

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الفنار سيكون أحد الأسماء التي ستلتمع في دورة ٢٠١٦ لمعرض الشرق الأوسط للكهرباء

## معرض الشرق الأوسط للكهرباء يتأهب لانطلاق أكبر فعالية حتى الآن

مجالات التركيز الأساسية للمعرض، فتشمل توليد الطاقة والنقل والتوزيع والإضاءة والطاقات المتجددة.

والى جانب مؤتمر الطاقة، سيلعب معرض الشرق الأوسط للكهرباء لعام ٢٠١٦، دور المضيف لمؤتمر خاص حول «جدول أعمال الطاقة الشمسية» وبرنامج ندوات فنية شامل سيعرض منتجات وخدمات لشركات رائدة في هذا القطاع.

وقالت أنيتا ماثيوس، مدير مجموعة إنفورما إنيرجي: «يساهم معرض الشرق الأوسط للكهرباء في الحفاظ على نموه بالرغم من تحديات ظروف السوق التي نواجهها جميعاً في الوقت الراهن. فقد ازداد عدد المعارض بنسبة ١٠ في المائة هذا العام، مقارنة بعام ٢٠١٥، ويزداد وجود المعارض من دول مثل ألمانيا وتركيا والصين والمملكة العربية السعودية».

وسيشترك معرض الشرق الأوسط للطاقة الشمسية في نفس الموقع مع معرض الشرق الأوسط للكهرباء. وهو عبارة عن تجمع موردي تقنية الطاقة الشمسية في المنطقة. وسيفتح المعرض أبوابه للمرة الرابعة هذا العام.

فعالية هذا المؤتمر المغلق في اليوم الأول من المعرض. وسيركز جدول الأعمال على تزويد الطاقة للمدن المصممة لغرض محدد، ودعم الابتكار في مجال الطاقة عبر المنطقة.

وسوف يتولى متحدثون بارزون؛ مثل سهيل المزروعى، وزير الطاقة بدولة الإمارات العربية المتحدة، والمهندسة جميلة مطر، مدير قسم الطاقة بجامعة الدول العربية؛ والدكتور فاروق سيفارم ودوجلاس ديلون فيلو من المجلس المعنى بالعلاقات الأجنبية، قيادة هذه المناقشات المعنية بتطوير الطاقة وإدارتها، ومناقشة كيف تلعب الطاقة دوراً رئيسياً في إعادة تعريف ما هو ممكن في التطويرات الحضرية عبر الشرق الأوسط.

علماً بأن نسبة خمسة وثمانين في المائة من الشركات، التي أكدت على مشاركتها في معرض ٢٠١٦، من الشركات العارضة سابقاً. وتشمل قائمة اللاعبين الأساسيين في هذا القطاع، ممن سيتواجدون في المعرض، كلا من شركة كيومنز/ستامفورد إيه في كيه، وشركة بيركنز، وشركة سكاير، وشركة الفنار، وشركة دوكاب، وإيه بي بي لأنظمة الطاقة والتحكم الآلي. أما

مع أرقام سجلات حضور فائقة، وزيادة قائمة المعارض والفعاليات الجديدة، يتأهب معرض الشرق الأوسط للكهرباء للعودة مجدداً. فعقب إقامة الدورة السنوية الأربعين من معرض الشرق الأوسط للكهرباء (MEE)، التي حققت نجاحاً ضخماً، سيعود المعرض للانطلاق في مركز دبي التجاري العالمي في الفترة ما بين ١-٣ مارس/آذار ٢٠١٦. وقد صرح القائمون على تنظيم هذه الفعالية بأن فعالية عام ٢٠١٦ مهيأة لتحطيم جميع أرقام سجلات الحضور. فهذه الدورة ستشهد تجمع بعض من شركات الطاقة الرائدة على مستوى العالم لعرض منتجاتها وخدماتها على مساحة عرض تبلغ ٦٥ ألف متر مربع تقريباً، بما يمثل زيادة مقدارها أربعة آلاف متر مربع عن دورة ٢٠١٥. ويمكن لزوار المعرض، الذي تستضيفه وزارة الطاقة بدولة الإمارات العربية المتحدة، ترقب رؤية عدد كبير من المنتجات الجديدة تقدمها ٣٥٠ شركة جديدة من جميع أنحاء العالم من المقرر حضورها دورة ٢٠١٦. وللمرة الأولى على الإطلاق سيستضيف معرض الشرق الأوسط للكهرباء مؤتمراً إقليمياً حول الطاقة. وستقام

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