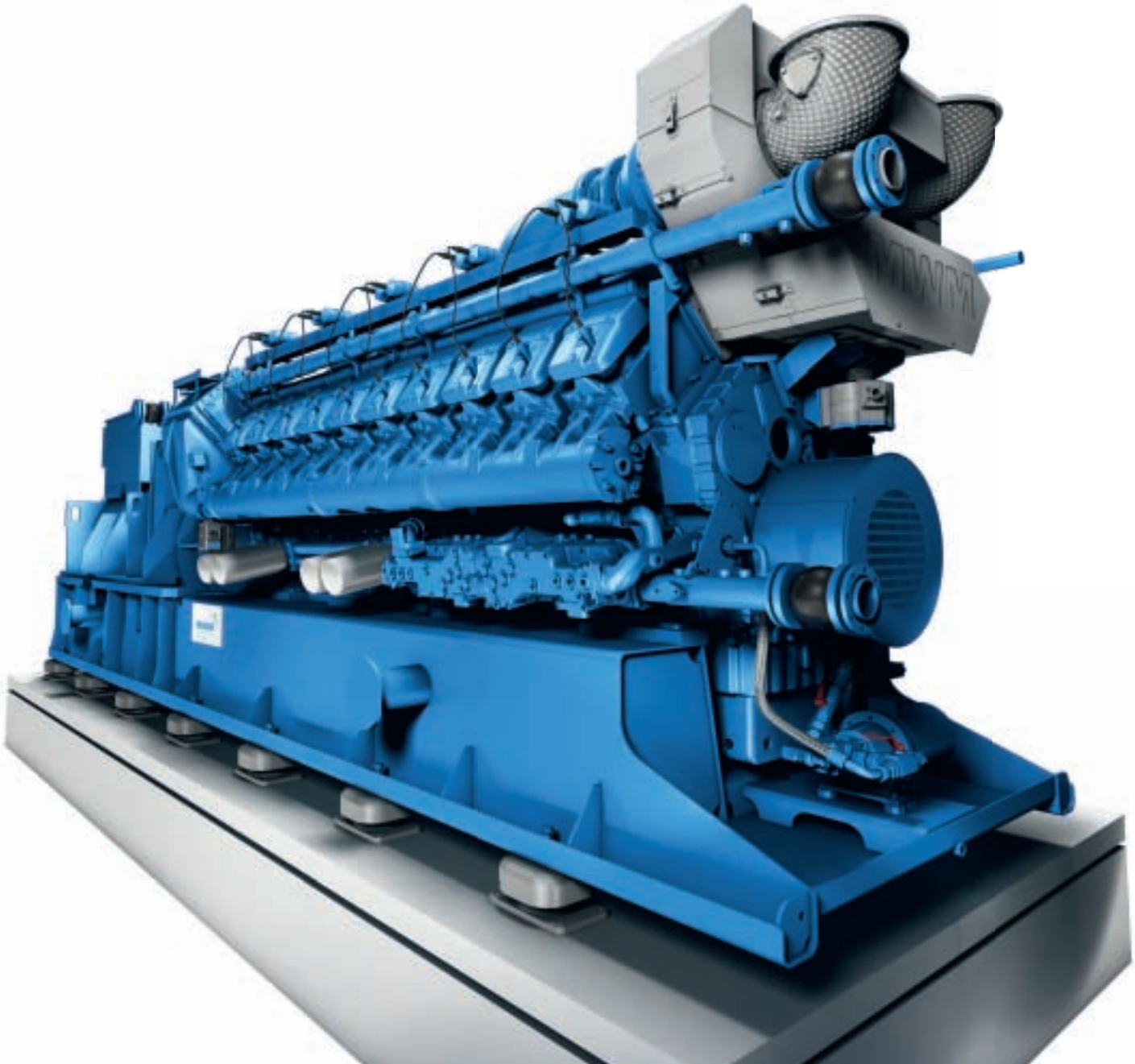
PROMOTING ON-SITE POWER AND COGENERATION

MEP
MIDDLE EAST POWER

JANUARY 2013

MWM: Top marks for ecology and economy.



www.gmp.uk.com/power

FG WILSON

www.FGWilson.com

Generating power throughout Egypt

Triangle Heavy Equipment, FG Wilson's only authorised distributor in Egypt, supply quality diesel and gas generator sets (5.5 – 2,500 kVA) to deliver reliable, fuel efficient power every time.

Through our customer care programme, maintenance services and the supply of FG Wilson Genuine Parts, we offer superior support to ensure your generator sets run at optimum performance.

Contact us today for a quote or visit us at **www.triangle-fgwilson.com.eg**

Tel: +202 2579 9711
+202 2579 9775

Fax: +202 2575 6338

Email: a.kamal@triangle.com.eg

TRIANGLE
Heavy Equipment Co.

...the power behind your business

Publisher:
Richard Teasdale
rteasdale@gmp.uk.com

Managing Editor:
Aidan Turnbull
powereditorial@gmp.uk.com

Sales Director:
Neb Saric
nsaric@gmp.uk.com

Journal Assistant:
Sally Jones
sjones@gmp.uk.com

Accounts Department:
Gretta Hay
accounts@gmp.uk.com

Far East Sales:
Christine Guan
Tel: 0086-10-65059168
cguan@public3.bta.net.cn
MSN: cguan019@hotmail.com
Mobile: 0086-13701009982

Russia Sales:
Sergey Stanovkin
stanovkin@dars.ru

US Sales & Subscriptions:
Alex Carter
acarter@gmp.uk.com

World Sales Manager in Digital & Print:
Leslie Zselyi
Tel: +44 (0)1403 220750

Sales Manager Germany & Sweden in Digital & Print:
Stevan Pancic
Tel: +44 (0)1403 220750

Contributors
Energy Writer - Laura Ravenhill
[Laura ravenhill@hotmail.com]
Wartsila, Cummins, GDF SUEZ, MWM, Foam Techniques, Himoinsa, MHI, Siemens, Samsung Engineering, FG Wilson.

Published by:
Global Media Publishing Ltd
Global House, 13 Market Square, Horsham, West Sussex, RH12 1EU, UK. Tel: +44 (0)1403 220750
Fax: +44 (0)1403 220751
Website: www.gmp.uk.com/power

(ISSN 2042-6828)
Distributed by UK Postings Ltd, Unit 18-19, Wornal Park, Menmarsh Road, Aylesbury, Bucks, UK.
Subscription price £180.00 per year. Periodicals Postage Paid at Middlesex, NJ. Postmaster: Please send address changes to Worldwide Independent Power, 544 Lincoln Blvd., Middlesex, NJ 0886-2439

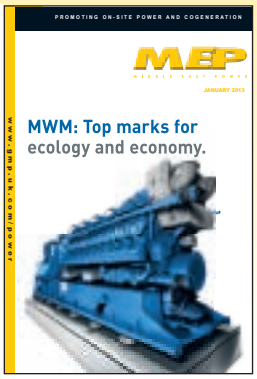
NEXT ISSUE: APRIL- MAY 2013
** Gas turbines * Gas turbines *Switchgear * Diesel Engines * Gen-sets * Maintenance * Loadbanks * Test equipment * Boilers * Remote Monitoring * Middle East Plant Profiles*

MEP
MIDDLE EAST POWER

GMP
Global Media Publishing Ltd

JANUARY 2013

CONTENTS



MWM: Top marks for ecology and economy

MWM GmbH is one of the world`s leading suppliers of eco-friendly systems for energy production based on gas and diesel engines. The main focus of the production is on gen-sets for the generation of electrical energy. MWM offers complete solutions, including consulting, designing and engineering, the total construction and commissioning of plant, as well as global aftersales service. See Page 10 for the article about MWM.

Kuwait's Al Zour North plant will cost US$8b & provide 12% of Kuwait's total power supply. See Page 16.

Samsung's 3,100 MW Yanbu power plant project being built in Al-Madinah Province. Page 29.

QUICK AND EASY
POWER SOLUTIONS

Energy in all we do

Turbomach gas turbine packages (from 1 to 22 Megawatts) offer unmatched advantages:
Easy installation and integration, maximum reliability, and maintenance convenience. Each package is functionally complete with all main and auxiliary systems fully assembled. The whole package is tested in our factory to guarantee outstanding quality, saving you time and money. All components of the package are proven and standardised to guarantee the highest possible availability.
www.turbomach.cat.com

Turbomach
A Caterpillar Company

WELCOME
A warm welcome to the Spring 2013 issue of *Middle East Power* - as always bringing you closer to the stories and issues affecting on-site power and cogeneration around the Middle East & associated nations.
For editorial comments, please do not hesitate to contact the editor.

BIENVENUE
Soyez le bienvenu à cette issue de *Middle East Power 2013*. Comme d'habitude, nous vous apportons toujours plus près des sujets qui affectent l'énergie et la co-generation sur place autour du monde.
N'hésitez pas contacter le rédacteur pour des commentaires éditoriaux.

WILLKOMMEN
Herzlich Willkommen zur Ausgabe dieses Monates von *Middle East Power 2013*. Wie immer bringen wir Sie näher heran an die Ereignisse und Geschichten der Stromerzeugungsindustrie rund um die Welt.
Für redaktionelle Kommentare und Anregungen wenden Sie sich bitte an den Autor.

BIENVENIDO
Bienvenido a esta edición de *Middle East Power 2013*. Como siempre, acercándolo a los temas que afectan a la energía y a la cogeneración in-situ. No dude en contactar con nuestro editor para cualquier cuestión editorial.

BENVENUTI
Benvenuti a questa edizione di *Middle East Power 2013*. Come sempre cercheremo di offrirvi storie e questioni riguardanti on-site power e cogeneration a livello globale. Per commenti editoriali, si prega di contattare l'editore.

Aidan Turnbull
- Editor

Renewables have a greater role for the GCC

As the world is embracing renewable energy, the Gulf Co-operative Council (GCC) is also undergoing a major change in the wake of economic diversification programmes, the global recession and the Arab Spring.

Economic analysts, Frost & Sullivan, forecasts the demand for power to double and reach 215 Gigawatts by 2020. Although the GCC possesses 22.5% of the world's proven natural gas reserves and 35% of the world's proven oil reserves, these conventional fuel sources are not expected to match the pace of escalating power demand in coming years. To combat this growing demand, the GCC is reconsidering its energy mix and looking to incorporate renewable energy as a significant contributor. As per current plans announced for renewable energy adoption, there is a 25GW potential for the same in the GCC up to 2020.

Frost & Sullivan as Industry Supporter for World Future Energy Summit 2013 has authored a relevant Whitepaper entitled *The Future for 'Green' in the GCC's Energy Sector*. The Whitepaper focuses on the strong potential of renewables and smart grids in the GCC and also emphasises on the need for a focused approach to create an environment that can nurture the growth of renewable energy and smart grids in the region.

Adoption of renewables is expected to yield multiple benefits for the GCC. Apart from industrial development, renewable energy will facilitate generating jobs for skilled personnel in this sector, and thereby reduce the high unemployment rate in the GCC. Currently, the GCC is burning up expensive oil and gas at highly subsidised rates to generate power. Renewable energy will help in potential export of these fuels at market rates, allowing for a windfall for the GCC countries.

Highlighting the significance of moving away from conventional energy sources, Abhay Bhargava, Head, Energy & Power Systems Practice, Frost & Sullivan , told MEP: "Using oil and gas alone, or diesel, has been an option to manage peak loads - however, it is not a long-term solution to meet energy demands. "The demand-supply gap and abundant availability of sunlight as a resource in the GCC has led to solar power being considered as a viable energy source to meet emerging needs. In order to cater to peak loads, the GCC Governments have proposed new projects to mitigate the ageing power infrastructure."

EUROPE **ASIA-PACIFIC** **MIDDLE EAST**

AFRICA **AMERICAS**

In brief...

Coal-fired power plants being developed in Iran

Iran - with the help of major investment from China - has unveiled an ambitious programme to develop a series of coal power generation plants. Construction will begin at the end of the government's Fifth Five-Year Economic Development Plan (2015).

Iran's Deputy Energy Minister for Electricity Mohammad Behzad said the power station in Tabas would be built at a cost of US$1bn and generate 650 MW of electricity in 2019.

US$2bn power plant for Abu Dhabi

Emirates Nuclear Energy has proposed a US$2bn finance deal to the UAE - it wants to construct a a nuclear power plant in Abu Dhabi.

Switzerland-based financial services firm Credit Suisse Group and Britain's HSBC Holdings are advising Emirates Nuclear Energy on the fundraising, with banks such as First Gulf Bank, National Bank of Abu Dhabi, Union National Bank, and Standard Chartered also likely to lend to Emirates Nuclear Energy, according to Energy Business Review.

The company has begun building the nuclear power plant in July 2012 at Barakah in Abu Dhabi's Western Region. The first of the four 1400 MW facilities will be operational by 2017.

US$104m contract with Jordan

Greek EPC contractor METKA has signed its second deal in Jordan with Samra Electric Power Co (SEPCO).

TMETKA will carry out the engineering, procurement, construction and commissioning of an Alstom GT13E2 gas turbine and related auxiliaries at SEPCO's Samra Fast Track Simple Cycle Project near Amman, to be completed by June 2013.

Tender for 1800MW solar plant in Qatar

A tender for the construction of an 1800MW solar power plant which will cost between US$10-20m will be issued by Qatar in early 2014, says a government announcement.

Fahad Bin Mohammed al-Attiya, chairman of the Qatari organisers of climate talks in Doha, has publicly commented: "We need to diversify our energy mix."

Qatar is the world's highest per capita greenhouse gas emitter and wants to mitigate this by increasing its current levels of renewable energy production.

Qatar is not short of energy sources. It is a significant producer of natural gas and its production has been increased since 2005.

Primary energy use in 2009 in Qatar was 277 TWh and 196 TWh per million persons.

From 2007 to 2010 energy export of Qatar have increased from 930 TWh to 1,748 TWh. In three years population growth was from 0.84 million to 1.76 million persons.

In 2009 Qatar was the third top carbon-dioxide emitter per capita in the world in 2009: 79.82 tonnes per capita.All emissions from building, gas & energy production and cement-making are local but the government has recently launched a 'green' initiative aimed at improvement to its record.

€250m Libya-Alstom contract

Alstom has signed a €250 million contract with the General Electricity Company of Libya (GECOL) to supply spare parts for 11 gas turbine units at five different power plant locations. The 11 GT13 turbines were originally provided by Alstom. The contract also includes a package of strategic spares for use across GECOL's installed base.

The delivery of parts for major inspections on six turbines is scheduled for 2013, whereas the remaining parts for the five turbines will be delivered in 2014.

The service part of the inspection works will be partially carried out by ALGEC GT Services, a joint venture (JV) company established by GECOL and Alstom in 2004. The JV employs more than 100 local employees to service and maintain gas turbines and combined cycle power plants in the country.

These contracts support GECOL's objectives to have all the company's gas power plants operational and re-connected to the Libyan electrical grid, in order to provide enough power to cover the peak summer and winter demands for 2013.

Alstom has a long standing relationship with GECOL and has delivered 24 gas turbines to the country, which represents more than 50 % of GECOL's operational capacity.

Commenting on the award, Hans-Peter Meer, Senior Vice President of Alstom Thermal Services said, "Alstom together with GECOL are committed to restore power back to Libya. Our services ensure that gas plants across the globe continue to operate with high efficiency and reliability."

New plant for Safaga

By 2020 the Egyptian Ministry of Electricity wants to build a 1950 MW coal-fired power plant at Safaga on the Red Sea. On the face of it, the choice of fuel seems inexplicable.

Egypt is an important non-OPEC energy producer. It has the sixth largest proved oil reserves in Africa. Over half of these reserves are in offshore reserves.

Egypt's Electricity and Energy Minister Mahmoud Balbaa had previously been reviewing oi-fired alternatives to fuel a prospective power station.

The Egyptian electric power system is almost entirely integrated, with thermal stations in Cairo and Alexandria and generators at Aswan. In 2006, electricity output was 115 TWh, of which 72% was from gas, 16% from oil and 11% from hydro (mostly from the Aswan High Dam). In 2002, consumption of electricity totaled 75.719 TWh. As of 2006, total installed capacity was estimated at 18 GW.

A US$239 million electricity network link with Jordan was completed in 1998. In late 2002 Egypt announced that it would coordinate a regional energy distribution center to co-ordinate energy distribution among the nations of the region: Egypt, Jordan, Syria, Lebanon, Iraq, Libya, Tunisia, Algeria, and Morocco.

Saudi Arabia to raise its capacity to 20GW

ABB, the leading power and automation technology group, has won orders worth around US$170 million to build substation projects for the Saudi Electricity Company (SEC), the country's national power transmission and distribution operator. ABB will design, supply, install and commission a substation to help meet the increased demand for electricity in and round the central pilgrimage area of Makkah. The substation, which deploys ABB's compact and robust gas-insulated switchgear (GIS) technology, will be housed in a multi-storied building located in a populous and congested area. GIS substations have a considerably smaller footprint and are said to be ideally suited for urban applications in space constrained locations.

Based on International Monetary Fund (IMF) estimates, the Saudi population is set to increase from around 28 million at present to approximately 37 million by 2020, with nearly 85% living in urban areas. Saudi Arabia has among the highest residential electricity consumption in the world with growing household, industrial and commercial demand driven by economic development. The country is executing an ambitious Ninth Development Plan (2010-2014) aimed at raising its installed power generation capacity by more than 20GW.

In brief...

Iraq deal for Cummins

Modern Iraq Company for Trading Agencies (MICTA), the authorised distributor for Cummins Power Generation in Iraq, has provided a prime power solution to a cement factory in Samawa, midway between the capital Baghdad and Basra in the south. Al-Douh Cement Factory needed 15 MW of self-generation capacity for its 5,000 m2 site.

MICTA supplied 16 Cummins Power Generation open generator sets, configured to work automatically and in parallel.

Major transformer contract from SEC

The Saudi Electricity Company (SEC) has awarded three contracts worth more than US$350mn in total for the construction of transformers in Madinah, Jeddah and Asir

The contracts were awarded to local companies who will implement the projects within a 29-month period.

Speaking about the projects to MEP, SEC CEO Engineer Ali Bin Saleh Al-Barak commented: "They will boost the grid's efficiency, reduce overload and improve standard of electricity services provided to customers."

The most expensive of the three contracts, worth US$126.2m, was signed for the construction of a 132/380 KV transformer in Bisha, Asir province.

A second contract for US$116.2mn was awarded to set up a 380 KV transformer in Madinah, while a third contract involved the establishment of a 13.8/110/380 KV central transformer in Jeddah and worth an estimated US$108.3mn.

All contracts form part of the SEC's plan to strengthen the grid in the west of Saudi Arabia.

In late 2012, SEC placed an order worth around $115 million to provide a FACTS (flexible alternating current transmission system) solution enhancing the reliability of the transmission grid which feeds major railway interconnections. ABB will now provide a wide range of power and automation technologies for modern urban, conventional and high-speed rail net.

New Saudi plan to develop sugar fuels in the Sudan

A Halifax renewable energy firm has signed a US$650 million deal with a Saudi Arabian company to develop a sugar cane biofuel project in Sudan. Nova Global Sustainable Energy Ltd. recently signed a joint venture agreement with Tala Investment Ltd in Doha, Qatar.

The project involves cultivating 3.6 million tonnes of sugar cane on a 63,000-hectare parcel of land in Sennar state, Sudan's sugar cane belt. The sugar cane will be processed into sugar for the local market and used to fuel a cogeneration facility as well as to make ethanol, energy pellets, animal feed, biological fertilizers and biodegradable packaging.

We are 50-50 partners on this project, and the agreement is that the Saudi Arabian partner Tala Investments is providing financing and our company is providing the management and technical services," George de Berdt Romilly, president of Nova Global Sustainable Energy, told MEP.

The deal, including industrial, agricultural and operational costs, is worth roughly US$650 million, with anticipated annual revenues of more than US$630 million a year, he said.

"It's a tremendous opportunity for our company," de Berdt Romilly said. "We'll have to ramp up hiring to actually manage this project."

De Berdt Romilly, who grew up in Kenya and Zimbabwe and whose business partners are from Egypt and Saudi Arabia, said the project also has a strong social component.

"The area in Sudan where the project is going to be developed is a very poor, remote area where they have no water or electricity," he said. "It will create jobs for them, we're going to train them, and we're also going to build a village for them, with schools and health clinics."

In all, the project is expected to support about 15,000 people in an impoverished area, he said. While the sugar cane waste will be fed to animals for food, de Berdt Romilly said the ethanol will help address a critical fuel shortage in Sudan. "The government is looking at biofuels because of the recent division of north and south Sudan, as 75% of the fuel reserves are in south Sudan."

In brief...

Acwapower in solar project bid for Saudi Arabia

Acwapower and EDF/Al Gihaz have bid for the first solar project in Saudi Arabia – the Makkah municipality PV scheme. Acwapower is ahead on the 100MW and 50MW bids while EDF/Al Gihaz is ahead on the 25MW bid, according to news reports.

Cogeneration expansion for Saudi Aramco

Work has begun on expanding energy apacity at three power plants in the Kingdom of Saudi Arabia. An agreement signed between Saudi Aramco and cogeneration supplier Tihama Power Generation Co, initiating a joint venture between International Power and Saudi Oger. Saudi Aramco currently generates power both through third-party companies which operate and produce electricity - and also through its own power assets.

Aramco wants to double its power generation capacity to 4GW by 2015 as it brings new projects on stream.

Aramco currently has cogeneration plants in Berri, Uthmaniyah, Qatif, Abqaiq, Riyadh, Yanbu, Jeddah, Shaybah, Juaymah, Shedgum, Ras Tanura.

Jizan & IGCC power

The proposed 2.4GW Jizan IGCC power plant which will be fired by refinery waste residue has found financial backing. Aramco issued an RFP to local banks suggesting they team up with one of eight global banks.

MHI supplies four 150MW turbines

Mitsubishi Heavy Industries (MHI) has fulfilled an order from Canada's SNC-Lavalin International for the supply of four sets of its natural gas-fired, 150MW M501F gas turbines and generators.

The gas turbines and generators now form the core of a new cogeneration facility for the Wasit gas plant project, a large-scale gas processing project by Saudi Aramco.

The gas turbines and generators are being installed at the Wasit gas plant, located in the eastern province of Saudi Arabia to process the gas produced from the Hasbah and Arabiyah non-associated gas fields.

MHI has supplied four M501F gas turbines and Mitsubishi Electric Corporation has provided the four generators.

There are currently 11 M501F gas turbines bought by Saudi Aramco, says MHI.

MHI currently provides a wide range of gas turbines, from 6MW class to 300MW class, to meet various requirements from customers all over the world. MHI has manufactured and delivered more than 320 gas turbines.

MHI is behind the world's most advanced G Series gas turbine with an inlet temperature of 1,500C°.[See page 20 for more]

D&D acquires Totus Energy

Dron & Dickson, a specialist in the design, supply and full maintenance of hazardous area electrical equipment, has announced the acquisition of Abu Dhabi-based Totus Energy as part of its ambitious international growth plans.

This follows the company's recent expansion into the Middle East market with the opening of a new base in Dubai. The acquisition of Totus Energy, an E& I contractor and provider of power services for the oil and gas, marine and industrial sectors, will allow Dron & Dickson to extend its operations in Abu Dhabi, Dubai and the surrounding areas.

Colin Maver, operations director at Dron & Dickson Group,told MEP: "The Middle East is an important area of growth for Dron & Dickson and this acquisition, along with the launch of our Dubai office, are key achievements for us. Our business plan, including strategic growth and international expansion, is on schedule and we expect to see further developments in the new year."

Stuart Bell, managing director of Dron & Dickson's Dubai office, will head up the Group's new division which will continue trading under the Totus Energy name.

Stuart Bell commented: "Totus Energy is an established name in Abu Dhabi and we are excited to continue building on this reputation. This is a strong platform for expansion in the region and allows us to offer localised, on-the-ground labour to our clients based in the Middle East. Supported by our proven and experienced team we will maximising these opportunities."

HHI in Jeddah deal

Hyundai Heavy Industries (HHI), the world's biggest shipbuilder and a leading industrial plant EPC contractor, has announced that the company has won a US$3.2 billion order to build Jeddah South Thermal Power Plant from Saudi Electricity Company (SEC) in Saudi Arabia.

Hyundai Heavy, as the sole EPC contractor, will carry out the construction of the 2,640 MW oil-fired thermal power project on a turnkey basis including engineering, procurement, construction, commissioning, testing, and transferring at Jeddah, Saudi Arabia. Hyundai Heavy will introduce the supercritical boiler technology for the first time.

Experience
the Power
of Dow Inside

DOW INSIDE

WHEN IT'S YOUR JOB TO KEEP THE POWER ON WHEN LIFE IS CRITICAL.

With lives on the line, hospitals have more to worry about than the reliability of their power supply. That's your job.

With the power of **DOW INSIDE** you can count on reliability and long cable life based on exceptional materials, dedicated R&D, deep industry knowledge, and close working relationships with cable manufacturers and utilities alike. And, with the **DOW ENDURANCE**™ family of products from Dow Electrical & Telecommunications for MV, HV and EHV cables, you can now specify cables that exceed industry performance standards and are built to last for decades of service.

That's the confidence you need when it's your job to keep the power on.

DOW

www.dowinside.com

Bilecik Power Plant gets TCG 2032 V16 gas generators

Tekno Energy has announced the successful commissioning of six brand-new MWM TCG 2032 V16 gas generators - totalling 26 MWe - for the new combined cycle power plant in Bilecik, Turkey, reports Pete Grossgart, Energy Consultant for MEP.

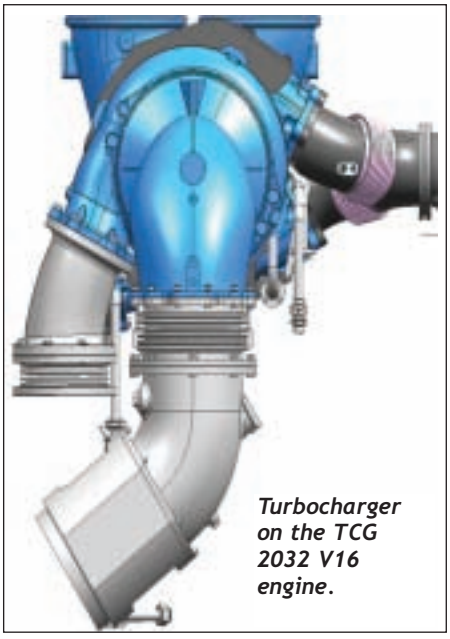
MWM GmbH, based in Mannhein, Germany, has supplied six TCG 2032 V16 gas generator sets to Tekno Energy's Bilecik Power Plant. This is located near Bilecik, a city in north-western Turkey.

Tekno Energy is an independent power producer (IPP) and provides electricity both to the grid operator through 'day-ahead and balancing markets' and to end users.

The power station based on the six TCG 2032 V16 engines operates as peak plant and assists the grid operators in balancing the electricity market.

The plant is highly flexible, reliable and has a relatively high cycle efficiency. It can be synchronized to the grid within 15 minutes and reaches full power output after 20 minutes from start button "pressing".

Reliable power plants on a short note demand are essential to ensure supply for buoyant economies like Turkey where power needs exceed installed local capacity.



Turbocharger on the TCG 2032 V16 engine.

While Tekno Energy's consulting engineering firm, Güncan Energy, designed the entire power plant, helped to choose the right equipment and co-ordinated the construction phase, ILTEKNO provided and installed the gas engines with all the necessary auxiliaries.

"MWM engines are flexible, durable and with ILTEKNO's local support they are an excellent choice for a peak IPP in Turkey." said Cigdem Güzel, project co-ordinator of ILTEKNO group.

The new version of the TCG 2032 was launched in January 2012. Optimized spark plugs and improved turbocharger technology have made electrical efficiency of up to 44.2% possible, with an output of 3,333 to 4,300 KWe.

The two exhaust turbochargers installed as a standard in the TCG 2032 were fitted with a new exhaust turbine.

Now, improved efficiency on the exhaust side automatically increases the boost pressure on the compressor side of the turbocharger.

The higher boost pressure has a particularly positive effect on the part load range when the load is adjusted. The most comprehensive change in the new version is the introduction of a new controller which combines and connects the previously separate controllers.

Thanks to the superb operational experience gained from the predecessor versions, the operating time before major overhaul has been significantly increased from 64,000 to 80,000 hours.

Aftersales services such as maintenance and repair are crucial for the operation of the plant, as downtimes are both lost income and sometimes additional cost burden as penalty issued for undelivered energy.

With these considerations in mind Tekno Energy has chosen to work with a competent local supplier. ILTEKNO has proven to be capable and punctual in the design, delivery and maintenance. The group offers an inventory of spare parts and a local maintenance team.

Tekno Energy is now expanding the plant up to 40 MWe and upgrading it into a combined cycle with additional steam turbine using the exhaust gas heat recovery and an ORC system for the cooling water heat recovery in order to increase the output and to achieve even higher efficiency.

MEP

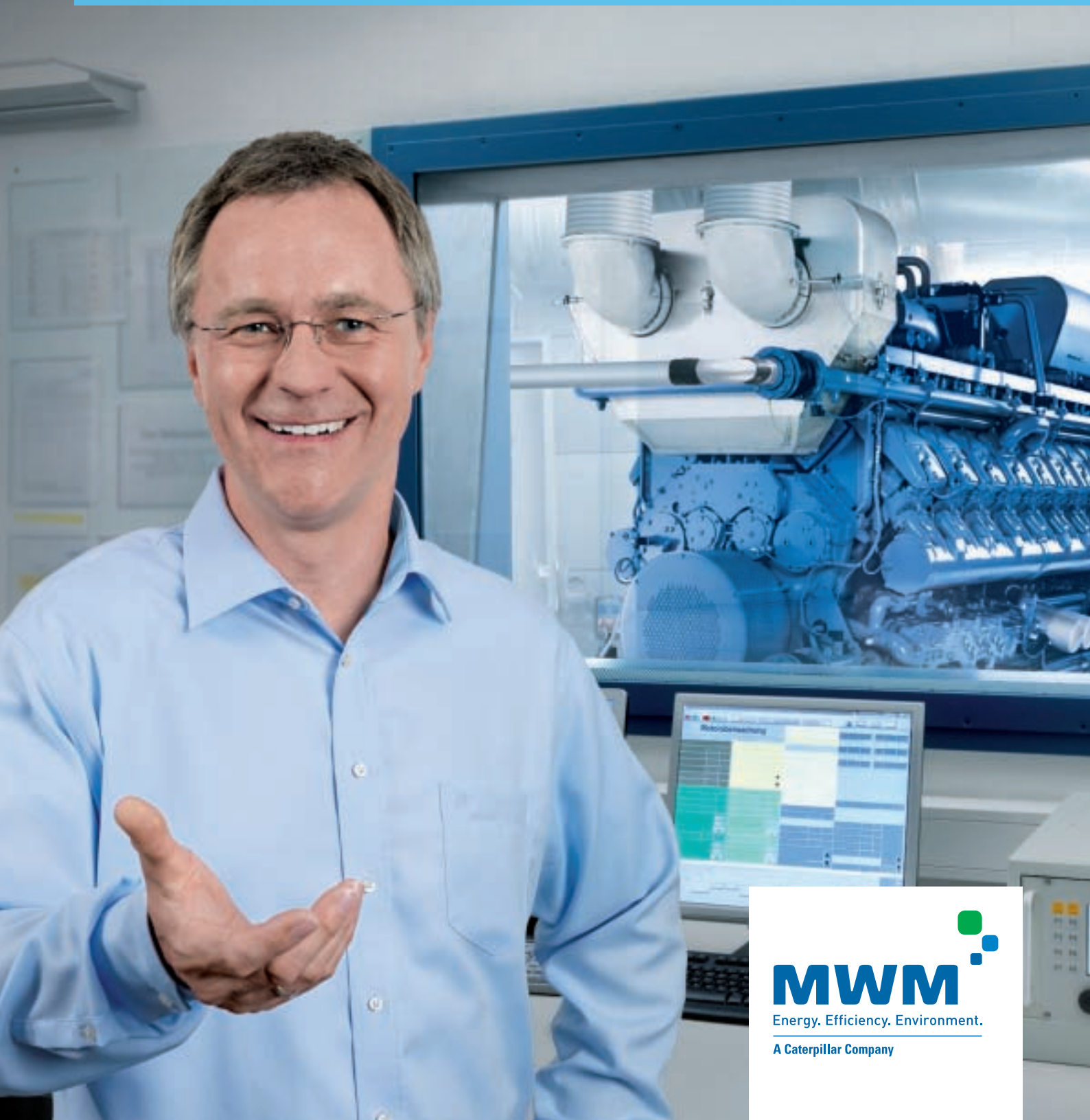
Internet link

www.mwm.net

Bench test your energy costs.

Cogeneration with MWM gas engines makes energy economical again.
We work hard, day in and day out, to improve the excellent efficiency and reliability of our gas engines and power generators. Because every bit of progress we make helps our customers cut their energy costs even faster.

www.mwm.net



MWM
Energy. Efficiency. Environment.
A Caterpillar Company

Acoustic Materials and Noise Control

An Engineering Guide and Approach

A leading specialist manufacturer and global supplier of bespoke sound insulation foams and allied materials is Foam Techniques Ltd. Here, the company explains some of the key issues behind the mitigation of noise in the gen-set and cogeneration arena, reports MEP.

Foam Techniques Ltd is the specialist manufacturer and global supplier of bespoke sound insulation foams and allied materials. Often tailor-made to meet demanding noise reduction levels and noise performance targets, its comprehensive material range is used with great success in many markets and, in particular, gen-sets & cogeneration.

Neil Blythe, Joint Managing Director, commented: " Successful noise control in a given application will inevitably involve a combination of several different types of mechanical and physical manipulations that culminate in the desired reduction of a noisy source or component.

"Making changes to operating conditions, the design of components and systems or by active noise cancellation and even masking, can serve to control aero-dynamic and mechanical aspects of a noise source," he said.

Neil Blythe, Joint Managing Director of Foam Techniques.

In the event that changes to the source or components cannot be made, or that noise reduction remains unsatisfactory, then the use of specialist acoustic materials, serve to contain and dissipate the noise energy, he says.

In many cases, specialist acoustic insulation foams alone - and also combined with barrier materials - provide a low-cost method of controlling noise and if correctly used can have a significant effect on reducing the overall noise level.

However, to achieve optimum sound absorption, it is vital that the acoustic foam sheets, liners or kits being recommended, exhibit a structure which is homogeneous and consistent.

Failure to achieve this will not result in consistent and reproducible sound reduction properties. Pre-determined acoustic test results dictate that specialist acoustic foams are to be manufactured from blocks in specified thickness and cut within tight tolerances to ensure consistency which is paramount for best results.

Inside the Foam Techniques factory.

From a physical point of view, noise can be broken down into two main categories, Air-borne and structure-borne sound.

Air-borne sound is sound which travels through the air in the form of compressional pressure variations which are picked up by the ear and interpreted as sound. Structure-borne sound is sound which travels through a solid material in the form of vibration which is later re-radiated as airborne sound at another location.

[article continues on page 14]

foam techniques Ltd

Acoustic Solutions & Sound Advice

Manufacturer of Performance Acoustic Insulation
Supplied with or without self adhesive in Sheets, Rolls, Acoustic Kits and more

"For the Quiet Life zzzzzzzzz"

Introducing 2 New Acoustic Foams "Whisper" & "Hush"

for details email as below

International Headquarters
39 Booth Drive
Park Farm South
Wellingborough
Northamptonshire
NN8 6GR
United Kingdom
Tel: +44 (0) 1933 400096
Fax: +44 (0) 1933 400095

Email: sales@foamtechniques.co.uk
Website: www.foamtechniques.co.uk

INVESTOR IN PEOPLE

Many types of acoustic materials may be used to control both structure-borne and airborne noise. These materials may be split into the following four categories.

* ***Sound Absorption***
* ***Sound Transmission Loss***
* ***Vibration Isolation***
* ***Vibration Damping***

Primarily, absorption and transmission loss (barrier) materials control air-borne noise while damping and isolation materials control structure-borne noise.

Absorbers

Materials that provide good absorption of airborne sound are typically called 'absorbers'. Absorbers are used to reduce the level of reverberant acoustic energy inside a given space and have an impact on the overall noise level both inside and outside this space.

Examples of traditional acoustic absorbers include: flexible homogeneous polyurethane foams and fibres, mineral wools, felts and textiles.

Air-borne noise is typically absorbed through visco-thermal interactions that take place when incident sound energy causes air to oscillate inside the material structure.

Generally, homogeneous, open cell and interconnecting foam materials that allow the sound pressure waves in and that have a complex porous structure are suitable for sound absorption over a much broader frequency range.

Closed cell materials generally do not provide good acoustic absorption but if lightweight and responsive enough, can provide some degree of frame resonance and visco elastic absorption, which takes place across a much narrower frequency band.

Transmission loss

Materials which prevent or reduce the transmission of sound are typically called 'Sound barriers'.

Materials with good sound transmission loss are used to contain noise within a given space preventing it from reaching an area where high noise levels are undesirable.

Vinay Relan, (Managing Director and Executive Chairman of Foam Techniques) with Neil Blythe, Joint Managing Director.

Vibration Isolation

Vibration is the oscillatory motion of a body or surface about a mean position and occurs to some degree in all industrial machinery. It may be characterised in terms of acceleration, velocity, displacement, surface stress or surface strain, amplitude and associated frequency.

Any structure can vibrate and will generally do so when it is excited mechanically (e.g. by forces generated by some mechanical equipment) or when excited acoustically (e.g. by the acoustic field of noisy machinery).

Any vibrating structure will have preferred modes in which it will vibrate and each mode of vibration will respond most strongly at its resonant frequency.

Vibration can be controlled in a number of ways, while the common methods include the following:

1. Modification to the vibration generating mechanism (e.g. tool design, control of peak impact events etc.)
2. Modification to the dynamic characteristics of the structure to reduce its ability to respond to the output energy. (e.g. by stiffness or mass changes to the structure, or modification to the radiating services, such as replacing it with a mesh instead of a flat sheet)
3. Isolating the source from the body of the noise radiating structure by means of a flexible decoupling material or mounts.
4. Applying vibration damping materials that dissipates vibrational energy in the structure and converts it to heat. This requires the use of visco-elastic damping layer.
5. Allying active vibrational control to modify the dynamic characteristics of a structure

Damping

The general principal of damping has been explained in the section *Vibration Isolation*.

Aside from its relevance in isolation systems, damping materials can be used to control vibration levels in structures and panels which are not adequately isolated from the excitation element. This is sometimes referred to as *Sound Deadening*.

To verify the uniform structure of Foam Technique's technical foam products please request a free-of-charge *Acoustic Solutions Brochure* containing useful samples.

This brochure has become the natural specifiers guide and bible to making the right choice of insulation for your particular noise problem, says the company.

For more information about FOAM TECHNIQUES LTD, please see the new video at *www.foamtechniques.co.uk* and for any enquiries please email the following address: *sales@foamtechniques.co.uk*

Internet link

www.foamtechniques.co.uk

Al Zour North combined cycle plant for Kuwait

A consortium of GDF SUEZ Energy International, the Sumitomo Corp, and Kuwaiti construction company Abdullah Hamad Al Sagar and Bros will build a joint gas-fired combined cycle power plant and desalination plant in Kuwait, reports MEP's Thomas Sharp.

The cost of the project in Al Zour North, 100km South of Kuwait city, is expected to be worth more than US$8 billion, and includes construction and operation of a power plant of at least 1,500MW and an affiliated desalination plant with a capacity of 464,000 - 486,000 cubic metres per day.

The new plant will provide 12% of Kuwait's total installed power generation capacity and around 23% of its installed desalination capacity.

The project will be jointly owned by the consortium and Kuwaiti public entities, and the Ministry of Electricity and Water will purchase the facility's output under a 40-year long-term energy conversion and water purchase agreement. The plant is expected to begin operations in 2015.

Construction on the site has already begun, reports a consortium of GDF SUEZ Energy International, Japanese trading house Sumitomo Corp, and Kuwaiti construction company Abdullah Hamad Al Sagar and Bros.

Together, they are pooling resournces and expertise to build this advanced joint gas-fired combined cycle power plant and desalination plant in Kuwait. Building will be complete within 24 months.

The plant will contribute around 12% of the installed generation capacity. Kuwait's long-delayed Al-Zour North power and water plant project is designed to produce 4,000 MW of electricity and 200,000 imperial gallons of water and its output will be sold to the Kuwaiti ministry of electricity and water under a 30-year agreement.

In all, Al-Zour North will boast four plants. The first two plants are due to each have a production capacity of 1.5GW of power and 102 million gallons a day (g/d) of desalinated water.

The third will produce up to 800MW of power and 51 million g/d of water, while a fourth plant will produce 1GW of power and 25 million g/d of desalinated water.

The first plant will be an independent water and power project, while the second will be an engineering, procurement and construction project.

Kuwait's population hit 3 million in 2010 and is expected to be 5.5 million by 2025, so the exptra power and water generated will certainly be a welcome boost to national supplies. The Kuwaiti government plans to implement US$1.8 billion worth of water projects this year, including construction of treatment plants and water pipelines and reservoirs.

MEP

Internet link

www.iprplc-gdfsuez.com

SDMO Dubai - SDMO Cairo

Wherever you are,

SDMO can supply electrical energy to meet your every need. SDMO's forty years of experience in the generating set industry have been dedicated to safety and reliability through innovation. From standard offers in our 1 to 3 000 kVA ranges, to specific products and installations, SDMO provide versatile, high-tech energy solutions which can be tailored to all situations: offshore platforms, telecommunications, construction and engineering, industry, hospitals, etc.
Powerful energy solutions, available in over 150 countries. SDMO, the source of energy for your comfort and safety. SDMO, providing the energy which connects people.

MIDDLE EAST ELECTRICITY
Exhibition & Conference
Visit us Booth :
S3C20

The energy which connects people

SDMO®

Energy Solutions Provider

www.sdmo.com

www.sdmo.com
SDMO Middle East - Dubaï Office - DIC - Al Thuraya Tower 2 - Office 1003
Tel +971 4 458 70 20 - Fax +971 4 458 69 85

Himoinsa - providing power & light for today's operators

Used in industrial projects in Qatar, Saudi Arabia, Oman, Bahrain and the UAE, Himoinsa's APOLO 4006 lighting towers work in extreme environments. The tower's elliptic lamps provide improved lighting projection and better illumination for the workplace, says the maker.

Projects where the APOLO 4006 lighting tower has been used have certainly proved the product's quality, says Himoinsa. Sites in Qatar, Saudi Arabia, Oman, Bahrain and the UAE - as well as work involving the current enlargement of the Panama Canal - have tested its extreme ruggedness, reports the manufacturer.

Each lighting unit includes a steel canopy to protect it from harsh weather. Its surface finish of epoxy-polyester protects it from corrosion. It features four galvanised stabilizers which steady the tower in irregular ground and against strong wind gusts.

Elliptic lamps allow a more direct lighting projection and create a better lighting workplace. Each lamp can be adjusted individually without using any tools. Moreover, the mast can be turn 360° permitting illumination adjustments.

The Linea 1 committee, consisting of the Spanish building firm FCC and the Brazilian company Odebrecht, chose HIMOINSA APOLO 4006 lighting towers to assist in the Panama underground building works, expected to be finished in 2014.

Manuel Sánchez Bada, Engineering Area Manager, comments: "One of the features of an APOLO 4006 lighting tower which deserves emphasis is its autonomy. It guarantees 60 hours of continuous operation, offering a high performance qualities."

The manufacturer, Himoinsa, can offer 30 years' experience in the energy market. In its capacity as a vertical manufacturer, the company has launched new generating sets to the market, such as the new 10-foot 500kW container [see pic right].

The main feature of this generator set is its size. The product was launched onto the market with a 50kW power source - it is easy to locate in reduced space projects, where a 20-foot container is notan option. There are even more advantages in this new product, for instance, the CSC certification - International Convention for Safe Containers - which allows two units to be transported by sea, instead of a single standard 20 feet.

Another new product in Himoinsa's Rental Range will be presented at the Middle East Electricity MEE Show, from February 17th - 19th, 2013. This is the DUAL FREQUENCY container HRTW 1300, [left] described as 'perfect for IPP applications' (Iterim Power Platforms), perfect for applications such as rental, mining, building, quarries and ports, etc.

With the dual frequency value, the same machine can work with 50Hz as well as 60Hz. This generator is said to satisfy the needs of the rental and building market and heavy duty applications.

For this reason, it offers several important advantages in comparison with other sorts of products operating in this segment. Among its elements, there is a variable speed fan to reduce the fuel consumption and sound emission, and an inside lighting system, to guarantee an easy cleaning and maintenance. MEP

Internet link

www.himoinsa.com

MHI's supercritical boilers are key to Jeddah South

Saudi Electricity Co has awarded contracts for South Korea's Hyundai and Japan's Mitsubishi to build and supply equipment for a large power plant in Jeddah. Mitsubishi Heavy Industries (MHI) will be supplying equipment for the oil-fired plant, reports MEP's Laura Ravenhill.

Hyundai Heavy Industries (HHI) has been contracted to build the US$3.12 billion 2.7-gigawatt power plant known as Jeddah South, however Mitsubishi Heavy Industries (MHI) will be supplying specialist equipment and turbines for the oil-fired plant.

The construction of the plant means Saudi Arabia, the world's largest crude exporter, has plans to continue to burn millions of barrels a week of oil for power generation - for years to come.

Upon completion, the power plant will be able to produce enough electricity for about 2m people or 5% of Saudi Arabia's entire power generation capacity.

Saudi Electricity Co (SEC) expects the more efficient plant, to burn much less fuel oil per unit of electricity produced.

"For the first time we will be using super critical boilers in the Kingdom which have a higher efficiency, reaching up to 40% efficiency in fuel consumption," SEC's chief executive Ali bin Saleh al-Barrak commented.

[Above] Supercritical technology at Jeddah South.

Supercritical technology is said to have mainly evolved over the past 30 years. Advancements in metallurgy and design concepts have made supercritical technology units extremely reliable and highly efficient. Modern supercritical technology is largely available in Japan and Europe for Boilers & Turbines ranging upto 1000 MW.

Supercritical steam conditions improve the turbine cycle heat rate significantly over subcritical steam conditions. The extent of improvement depends on the main steam and reheat steam temperature for the given supercritical pressure.

A typical supercritical cycle features a turbine throttle pressure of 242 bar with temperatures for main steam and reheat steam at 565°C and 593°C respectively; this is said to improve station heat rate by more than 5%. This results in fuel savings to the extent of 5%.

Overall, a supercritical power plant efficiency of 42% is said to be achievable with current supercritical parameters.

An improved heat rate results in 5% reduction in fuel consumption and hence 5% reduction in CO2 emissions per MWh energy output.

Typically, for 800 MW supercritical unit, the annual reduction in CO2 emission will be about 725,000 tonnes of CO2 with respect to baseline emissions established by the CEA.

Supercritical technology-based thermal power projects are regarded as potential candidates for benefits under the Clean Development Mechanism (CDM) established by United Nations Framework Convention on Climate Change (UNFCCC).

An oil-fired power plant at Shuqaiq - of approximately the same size as MHI's latest Jeddah South contract - will be built in late 2013, reports SEC's al-Barrak. Technical bids for the 2,600 MW Shuqaiq, a supercritical fuel oil plant fitted with sulphur-removing technology, are due in the first quarter of 2013.

The state-run company, SEC, also plans to spend around US$35 billion on high voltage power lines, with another US$25 billion spent on distribution networks over the next 10 years.

Internet link

www.mhi.co.jp

Plug in and relax.

THE ALL-NEW SCANIA GENSETS. REDEFINING RELIABILITY.

Whatever your challenge, the all-new Scania Gensets will deliver everything that the Scania brand stands for in terms of operating economy, fuel efficiency, uptime and proven reliability.

This is why the Scania Gensets are the given choice for demanding duties in remote mining districts. Just plug in and relax.

Meet us at Middle East Electricity 17-19 February 2013 at Stand: S3B40.

www.scania.com

SCANIA

Jordan is building the world's biggest tri-fuel power plant

A consortium headed by Wärtsilä has been awarded a turnkey contract to build a 573 MW tri-fuel power plant in Jordan. When completed, it will be the world's largest tri-fuel power plant capable of utilizing natural gas, heavy fuel oil and light fuel oil as its main fuels.

Initially, the plant will operate on heavy fuel oil, but the fuel flexibility of Wärtsilä's engine technology will enable a seamless transfer to environmentally sustainable natural gas operation once the infrastructure for a natural gas supply is in place.

When in operation, the Wärtsilä technology ensures that the plant's use of water will be close to zero, which adds to its environmental sustainability. The overall contract is valued at US$552 million, of which Wärtsilä's share is US$334 million.

Wärtsilä's consortium partner is South Korean based Lotte Engineering & Construction, a major player in the Asian construction industry.

The order has been placed by Amman Asia Electric Power, a special purpose independent power producer, in which Wärtsilä has a minority interest.

The other owners of the company are Korea Electric Power Corporation of South Korea (KEPCO) and Mitsubishi Corporation of Japan. The project company will supply electricity to the National Electric Power Company of Jordan (NEPCO) under a recently signed 25 year power purchase agreement. The electricity will be fed to the Jordanian national grid.

The plant will be powered by a total of 38 Wärtsilä 50DF multi-fuel engines, which in reference conditions produce 632 MW of electricity. Even in the most extreme ambient conditions in Jordan, the power plant will produce a firm constant capacity of 573 MW.

The plant will be fitted with a NOx (nitrogen oxide) control system for emissions abatement. This is in line with the Environmental, Health and Safety Guidelines set forth by the International Finance Corporation, the private sector lending arm of the World Bank Group, which have been adopted by Jordan's Ministry of the Environment.

Young Jin Bae, Chief Executive Officer of Amman Asia Electric Power Company comments: "KEPCO has worked together with Wärtsilä and Mitsubishi in an outstanding cooperation to ensure this project is a success."

Vesa Riihimäki, Group Vice President, Wärtsilä Power Plants, said: "The tri-fuel capability provides unmatched flexibility, and ensures that Jordan will have a safe, affordable and reliable energy supply. When the gas infrastructure is in place, the plant will switch to natural gas and its environmental footprint will be minimised. Our ability to deliver such a large power plant on a really fast-track schedule was yet another reason for choosing Wärtsilä."

The power plant is to be located in Al Manakher, some 30 km outside Amman. The complete power facility will be delivered in three phases.

The first phase is scheduled to be in commercial operation in February 2014, with the entire plant being operable by September 2014.

This will be the second power plant that Wärtsilä has delivered to Jordan. A 50 MW plant is already in use and is being operated and maintained by Wärtsilä personnel under an Operations & Maintenance agreement.

MEP

Internet link

www.wartsila.com

New Siemens gas turbines for Khormala, Iraq

Siemens will supply Khormala gas turbine power plant in northern Iraq with four SGT5-2000E gas turbines and four SGen5-100A generators along with the associated auxiliary and ancillary systems in a new deal worth more than €100 million, reports MEP.

The customer behind this major turbine deal for Iraq is the KAR Construction and Engineering Company Ltd., which is building the Khormala plant for the independent power producer KAR Group headquartered in the city of Erbil. Commissioning is scheduled for mid-2013.

The four-unit Khormala gas turbine power plant is located 25 kilometres south of Erbil, the region's capital, which falls under the administrative authority of the Kurdistan Regional Government (KRG).

With an installed electrical generating capacity of 640MW, this is the first major power plant project for the KAR Group, who will also operate the facility.

Plant output is enough to meet roughly one quarter of the region's power demand, delivering electricity to over four million people.

The SGT5-2000E is regarded as an extremely well-proven, robust engine for the 50Hz market used for simple or combined cycle processes with or without combined heat and power, and for all load ranges, particularly peak-load operation.

For Integrated Coal Gasification Combined Cycle (IGCC) applications Siemens offers its SGT5-2000E (LC) unit. Besides the application in power plants, the SGT5-2000E can also be used for

different applications in the oil and gas industry.

The compressor drive design, derived from proven standards, can be used - for example - for the production of Liquified Natural Gas (LNG) – either as a direct mechanical compressor drive or as an all-electric generator version.

The SGT5-2000E has a record for toughness and durability with more than 300 units in operation and over 6.4 million operating hours.

A spokesman for Siemens commented: "The 168-MW 50 Hz model, the SGT5-2000E, is a heavy-duty gas turbine designed for reliable, efficient, and flexible operation. Over 6.4 million operating hours of experience with 300 SGT5-2000E gas turbines have been accumulated, demonstrating their outstanding reliability under a wide range of operating conditions."

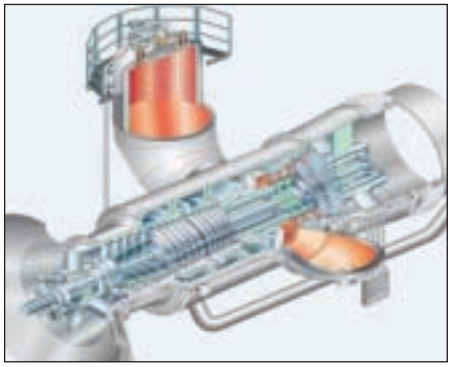
According to the company, the SGT5-2000E 'proves that it is possible to reconcile ambitious economic and environmental targets'.

Despite its high flexibility in terms of operation and fuels, the NOx and CO2 emissions of a SGT5- 2000E have been minimised.

The SGT-2000E series can be fired with a wide variety of fuels, from low- to high-calorific gaseous and/or liquid fuels, including treated heavy oils.

Off-board combustion is said to eliminate any direct flame radiation on the turbine blading, and the long dilution path allows for long service intervals and high availability of the hot gas casings.

Siemens gas turbine packages have been delivered to Iraq pre-assembled, including piping and wiring. The auxiliary systems are combined in groups and installed as prefabricated packages. This reduces installation and commissioning time and expenditure, says the company. MEP



Internet link

www.siemens.com

Rabigh 2 is Saudi Arabia's latest fuel-oil power plant

The Rabigh 2 project has absorbed US$2.5 billion in funding and has resulted in the development of a new power plant with a net capacity of around 1,204 MW in Rabigh, strategically-located about 130km north of Jeddah, Saudi Arabia, reports MEP.

The first phase of the project will start producing 604 MW in July 2013. SEC's President & CEO Ali S. Al-Barrak tells MEP: "We have long-term and short-term plans to meet future power demand as we have forecast for the next 20 years and confirmed demand for five years."

The Rabigh IPP is a flagship project launched by SEC in 2009 structured on a concession or utility outsourcing contract model financed using a limited recourse, project finance framework. The plant is scheduled for completion in late 2014.

This project, which was awarded to the consortium of ACWA Power International and the Korean Electric Power Company (KEPCO) who combined own an 80% share of the project and 20% owned by SEC.

This is the first step in SEC's plan to open up ownership and operations to the private sector to in turn support it to meet the rapidly increasing demand for power in Saudi Arabia between 2009 and 2020.

It is also the first project in the Middle East based on Chinese technology and implemented by a Chinese contractor, the consortium of Dong Fang Electric Corporation and SEPCO III.

Rabigh 2 is a green field heavy fuel oil power plant, the fourth project in SEC's IPP program. It is located 175 kilometres north of Jeddah on the west coast of the Kingdom.

Rabigh II - how it will look.

Samsung and Alstom are the selected engineering, procurement and construction contractors, while the electricity generated by the plant will be sold via a 25 year power purchase agreement to SEC.

TAQA, whose controlling shareholder is the Abu Dhabi government, also owns an interest in the 250 MW Jubail power plant in Saudi Arabia.

Yokogawa Saudi Arabia has also been selected as the process control system supplier for the Rabigh II project, in which Saudi Aramco and Sumitomo Chemical have also invested.

Yokogawa will supply its flagship products, the CENTUM VP production control system and the ProSafe-RS safety system for the complex. With phases I and II combined, this is the largest project for which Yokogawa has been selected in the Middle East.

By expanding the ethane cracker and building a new aromatics complex, the Rabigh II project will use an additional 30 million standard cubic feet per day of ethane and approximately three million tons per year of naphtha as feedstock to produce a variety of high value-added petrochemical products.

Rabigh II

Each plant will be brought on stream as it becomes available for operation, beginning the first half of 2016.

Rabigh is located on the east coast of the Red Sea between latitudes 22/23 north of the equator. It experiences extreme heat in the summer where studies record a maximum temperature in July and August and September of 36° - 38°C, often peaking at a maximum temperature degree of 45°C. The climate is characterised by high relative humidity, especially in the summer, which can adversely affect systems and equipment. MEP

Internet link

www.acwapower.com

Oman's Salalah IWPP power plant will energise the region

The completed Salalah IWPP plant is owned and operated by Sembcorp Salalah Power and Water Company, a joint venture between Sembcorp Industries' wholly-owned subsidiary Sembcorp Utilities & the Oman Investment Corporation and Bahrain-based Instrata Capital.

As the largest and most energy-efficient power and water plant in Dhofar in southern Oman, the Salalah IWPP is projected to play a major role in meeting the growing power and water demands of this region.

Peak power demand on the Salalah system has been forecast by OPWP to grow by 10% per year, rising from 348MW last year to 690MW in 2018. With demand likely to be so substantial, OPWP has retained the option to increase the electricity output at the new plant if required.

Acceptance tests for the US$1 billion Salalah Independent Water & Power Plant (IWPP) in Oman have been successfully completed.

The plant was built thanks to a joint venture between Sembcorp Industries's wholly-owned subsidiary Sembcorp Utilities, the Oman Investment Corporation and Bahrain-based Instrata Capital.

It will provide power and water under a 15-year power and water purchase agreement with the Oman Power & Water Procurement Company, which is wholly owned by the Oman government.

The IWPP consists of a 490 MW gas-fired power plant (based on 6FA gas turines) and a seawater desalination plant with a total water production capacity of 15 MIGD (69,000 m^3/d).

The first phase of the project was completed in July 2011, within a tight timeline of 19 months from the signing of the power and water purchase agreement. The second phase was subsequently completed in the first quarter of 2012. With the completion of this third and final phase, the plant has commenced full commercial operations.

Part of the Salalah is a 15 MIGD (69,000 m3/d) Seawater Reverse Osmosis (SWRO) plant. The CO2 system for the SWRO plant helps in re-mineralising the desalinated water produced. To make RO-treated water drinkable, it is carbonised so that minerals can be dissolved at the calcite filters.

6FA gas turbines used at the Salalah IWPP.

At Salalah, the required CO2 will be produced onsite by natural gas combustion. During this process, the released CO2 will be recovered and converted into food-grade quality by a Pentair Haffmans' CO2 recovery system.

"On-site production of CO2 is a superior solution over purchasing it from an external supplier as the nearest is in Muscat, which is more than 1,000kms from the Salalah plant," explained Roy Spee, Pentair Haffmans Product Manager CO2 Systems. "Producing CO2 on-site eliminates transportation costs and guarantees the availability of food-grade CO2."

The completion of the Salalah IWPP will augment Sembcorp's portfolio in the Middle East, where it has been operating since 2006. Within the region, Sembcorp also owns, operates and maintains the Fujairah 1 Independent Power and Water Plant - one of the world's largest operating hybrid desalination plants - in the United Arab Emirates.

Internet link

www.sembcorp.com

Saudi Aramco orders 128 gen-sets from FG Wilson

A large-scale project at one of the world's biggest oil reserves based at Shaybah, Saudi Arabia, has involved the supply of for the supply of 128 generator sets ranging from 13 – 750 kVA manufactured by FG Wilson (Engineering) Ltd, reports MEP.

Saudi Aramco, the government-owned Saudi Arabian Oil Company which produces, manufactures, markets and ships crude oil, natural gas and petroleum products to meet global demand, has invested in a US$2.76 billion project at Shaybah oil field.

The development required additional power to enable an increase in oil production to one million barrels a day and a 5 - 6% increase in gas extraction every year.

To achieve these production levels Saudi Aramco required a large-scale installation of generator sets on site to be tendered via the main contractor, Samsung Engineering Ltd.

The project was secured in May 2011 by the sole FG Wilson Dealer in Saudi Arabia, Tamgo, for the supply of 128 generator sets ranging from 13 - 750 kVA. Tamgo supplied the large volume of FG Wilson generator sets, which will be operating in extreme weather conditions, including ambient temperatures of 55°C and regular dust storms.

Some of the 128 FG Wilson gen-sets supplied by Tamgo to Saudi Aramco.

Gen-set from FG Wilson.

The FG Wilson generator sets are providing power to the compound for the residencies, offices and construction site for the extraction of natural gas. Samsung Engineering Ltd also delivered 11 new gas-turbine generators and 44 compressors which will now generate an additional 729 megawatts of power at Shaybah. This will power a new plant capable of processing 2.4 billion cubic feet of gas per day and 264,000 barrels of liquids destined for Saudi Arabia's growing petrochemicals sector.

Responsible for the supply, delivery and commissioning of the 128 generator sets, Tamgo travelled over 1,200 km to the operating site three to four times per month to co-ordinate the project and conduct ongoing maintenance and servicing with the generator sets operating in such harsh conditions.

Tamgo's expertise and high customer service levels has led to an ongoing contract with Saudi Aramco which recently increased its order to 140 generator sets in total.

Tamgo's outstanding commitment to support and maintain the installation of the generator sets since the project began in 2011 has led to a long-term relationship with Saudi Aramco. With more orders on the horizon, this project is due to be completed in 2016.

Islam Fathy, Product Manager at Tamgo, comments: "We are pleased to say we have designed, delivered and commissioned 140 generator sets onsite at present - all without a hitch. We are delighted to have forged a long term relationship with Samsung Engineering and Saudi Aramco which we hope will continue long into the future."

Edward Jung, Cost Engineer of Shaybah NGL Recovery & Utilities Project (Package #2) at Samsung Engineering, comments: "Saudi Aramco had a large project and needed a company that was capable to install a quality, cost effective solution in complex weather conditions.

"FG Wilson and Tamgo have proven expertise in delivering large scale projects with success, so we had no doubt they would be the perfect partners to deliver this project seamlessly." MEP

Internet link

www.fgwilson.com

> NEW LSA 42.3
ALTERNATOR

Leroy-Somer's EPG (Electric Power Generation) division, the world leader in Low and Medium Voltage alternators, has the most extensive range on the market, suitable for a wide variety of applications. Leroy-Somer EPG's expertise is recognized throughout the Power Generation business, as is its proven ability to meet customers' needs worldwide. Leroy-Somer EPG is proud to present the new LSA 42.3 alternator from 25 to 60 kVA, a significant advance in alternator design.

For more information on LSA 42.3 or the EPG Alternator range: www.lsa423.com

Visit us at Middle East Electricity 2013

Stand 4C20

MIDDLE EAST ELECTRICITY

LEROY SOMER®

EMERSON™
Industrial Automation

EMERSON. CONSIDER IT SOLVED™.

essential.

121 Years of Excellence

MarelliMotori®

1891-2012

www.marellimotori.com