

TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

Annual Power Review 2022

ANNUAL POWER REVIEW 2022

Analysis

Winds of change driving energy transition

Utilities Landscape

Towards sustainability

CHANGING DYNAMICS

MIDDLE EAST TAKES STRIDES IN GREEN ENERGY AMID CLIMATE CHANGE PRESSURES

Inside

Cables
Onsite Power
Smart Lighting
Instrumentation

INCLUDES ELECTRICAL EQUIPMENT
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EDITOR'S NOTE

GOVERNMENTS ACROSS THE Middle East are having to rethink their approach to power generation while facing up to mounting climate change concerns. The Annual Power Review on ps 18-20 takes a look at the broad trends in the approach to power generation, by both governments and the corporate sector in the region.

We also shed light on creative energy solutions by the region's industry leaders (see interview on p 22) and versatile onsite power solutions across the Middle East (p 28,29).

Read more on the developments across the global power and utilities landscape, in our review of the World Utilities Congress that took place in Abu Dhabi (p 34,35).

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



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TECHNICAL REVIEW

النشرة التقنية - الشرق الأوسط

MIDDLE EAST

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Briefly

Masdar City and DANA to develop beta site for innovative agritech pilot projects in the UAE

MASDAR CITY, THE regional home of technology innovation and R&D in Abu Dhabi, and DANA, the Abu Dhabi-based venture builder and investment platform, have signed a memorandum of understanding (MoU) to advance food security at the national level, contribute to agritech sustainability, and support the UAE in meeting key objectives in line with the National Food Security Strategy 2051.

Under the agreement, Masdar City and DANA, which supports women-led startups across the sectors of agritech, energy and water solutions, and circular economy, will build its first Abu Dhabi-based beta site in Masdar City. The beta site will test the feasibility of early stage agritech projects that can be developed and piloted in Abu Dhabi. The beta site will focus on local and regional startups with solutions between the 'pre-seed' and 'Series A' development phases upon completion.

The MoU was signed by Abdulla Balalaa, executive director, Masdar City, and Zada Haj, CEO of DANA, at an official ceremony in Abu Dhabi.

Balalaa said, "R&D has always been the catalyst for bringing innovative projects to life, driving essential reform, and delivering positive change across industries and society. As the only planned and approved R&D cluster in Abu Dhabi, Masdar City, will ensure these outcomes continue and play a central role in shaping the sustainable industries of tomorrow by welcoming startups, and supporting their projects."

The beta facility will promote local innovation and provide a next-generation platform for startups to showcase the potential of their homegrown agrifood solutions ahead of market entry.

Zada Haj, co-founder and CEO of DANA, said, "We witness the Abu Dhabi ecosystem's potential on a daily basis, however the option for hands-on testing of the tech solutions in the field is often missing. For the agritech sector, a pivot is more than just a new line of code, so the product needs to be tested for its feasibility, accessibility, and affordability as early as possible."

Construction of Saudi Arabia's Jubail 3B water project begins

IN THE PRESENCE of Khaled Z AlQureshi, CEO of SWPC, global energy company ENGIE, along with Nesma Company Limited and Ajlan & Bros holding group broke ground on the Jubail 3B Independent Water Project (IWP) plant located 65km north of Dammam airport in the Kingdom of Saudi Arabia.

Commissioned by Saudi Water Partnership Company (SWPC), the Jubail 3B plant will produce 570,000 m³/day of potable water using reverse osmosis technology. The plant will supply water to Riyadh and Qassim regions once commercially operational in 2024, under the terms of a 25-year Water Purchase Agreement. The consortium, led by ENGIE, was awarded the Jubail 3B project in June 2021 after submitting a bid with a tariff of SAR 1.591 per m³ of potable water to SWPC.

Developed under a public-private partnership structure (PPP), the plant will be financed by the consortium and operated and maintained by ENGIE. Once complete, the plant will have a 61MWp capacity solar facility – the largest in-house solar capability for a desalination plant in the Kingdom, helping to optimise electricity consumption and reduce grid reliance. Jubail 3B's use of solar energy speaks directly to Saudi Arabia's Vision 2030 and net zero objectives, which seek to reduce the country's reliance on fossil fuels and drive the shift to clean energy.

"As we look to increase the desalinated water supply across Saudi Arabia, we are delighted to see construction on the Jubail plant begin today. The provision of desalinated water is an essential strategy in our nation's objective to ensure secure water supplies across the Kingdom while meeting the goals of Vision 2030. The Jubail 3B IWP plant will not only use reverse osmosis, a more energy-



Photo Credit: ENGIE

The plant will be financed by the consortium and operated and maintained by ENGIE.

efficient process than traditional thermal desalination technologies but will also use renewable solar energy in place of traditional fossil fuels, helping to reduce its carbon footprint. Moreover, the plant will support the creation of local job opportunities," added AlQureshi.

Turki Al Shehri, CEO of ENGIE in Saudi Arabia, said, "The start of construction on the Jubail 3B IWP plant is yet another ENGIE Saudi Arabia milestone that works to support of the government's transition to low carbon, energy-efficient solutions in line with Vision 2030. For 30-years, we have been at the forefront of developing independent power and water projects across the Gulf."

"With rapid demographic and economic growth taking place across the Kingdom, the Jubail 3B IWP plant will be essential to providing a secure and sustainable source of water to local populations," added Philippe Lambert, CEO of Jubail 3B.

JDA signed to develop world-scale green hydrogen-based ammonia production facility in Oman

ACWA POWER, OQ, Oman's leading integrated energy group, and Air Products signed a joint development agreement (JDA) towards a multibillion-dollar investment in a world-scale green hydrogen-based ammonia production facility powered by renewable energy in Oman.

The JDA signing follows a memorandum of understanding signed in December 2021.

Envisioned for Oman's Salalah Free Zone, the joint venture project would include the innovative integration of renewable power from solar, wind and storage; production of hydrogen by electrolysis; production of nitrogen by air separation; and production of green ammonia.

ACWA Power Chairman Mohammad A Abunayyan said, "As a company that is driving



Photo Credit: ACWA Power

The project will be based on world-class technology.

the transition towards a greener future through utilising cutting-edge technologies, we are proud to support the government of Oman's ambition to pursue decarbonisation and advance the development of green hydrogen, considered to be the fuel of the future."



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Briefly

Al Masood becomes the official distributor of TCM heavy and medium forklifts in the UAE

AL MASAOOD COMMERCIAL Vehicles and Equipment (CV&E), part of Al Masaoood Group, Abu Dhabi's leading conglomerate, has announced that it is the authorised distributor for Toyo Carriers Manufacturing (TCM) in the UAE (Abu Dhabi, Al Ain, Western region, Dubai and the Northern Emirates).

TCM, a long-established global brand in the materials handling industry, offers a high-quality portfolio of forklift products designed and engineered to meet client requirements. Supplied from production facilities in Japan, China, Thailand, and Europe, TCM's value-for-money product range includes internal combustion engine forklifts, electric counterbalanced forklifts, reach trucks and skid steer loaders. The load capacity of small TCM forklifts ranges from 1.5 tonnes to 23 tonnes, with the brand's large size products able to support heavy tasks such as container handling operations in ports.

Mohamed El Zeftawi, general manager of Al Masaood CV&E, said, "As its authorised distributor, we at Al Masaood CV&E are tying our customer-centric sales and aftersales support to TCM's robust product range through this partnership, thereby providing an end-to-end service to our customers. To offer holistic solutions, we also provide flexible financing schemes and attractive leasing options. TCM is the latest in Al Masaood's growing network of partnerships with renowned global brands, best known for their quality and excellence. This partnership exemplifies our commitment to bringing to the UAE market top quality products to support the operations of relevant local sectors. TCM's line of forklifts is available at Al Masaood CV&E showrooms in Abu Dhabi, Al Ain, and Northern Emirates (Sharjah)."

Kosuke Matsuda, acting deputy manager – overseas sales and marketing headquarters, Mitsubishi Logisnext Co. Ltd., said, "At Mitsubishi Logisnext, we are proud of the enviable legacy of the TCM brand in the history of Japanese technology."

Daikin moves closer to environmental target with Yellow Door Energy

DAIKIN MIDDLE EAST and Africa FZE, a leading manufacturer of air conditioning, heating, ventilation and refrigerant solutions, moves closer to its Net Zero by 2050 target with the launch of a new solar plant at its headquarters in Dubai.

The project is made possible with a solar lease from Yellow Door Energy, a UAE-based sustainable energy provider for businesses.

Located in Jebel Ali Free Zone (JAFZA), Daikin's headquarters currently serves as the base of operations for more than 300 staff members from sales and operational functions to service the Middle Eastern and African markets. The facility is situated on 22,000 sqm of land, with the building and warehouse amounting to 7,500 sqm and combines the Training Academy, AHU Factory and a future flagship experience centre.

The installed solar plant at Daikin's facilities has a capacity of 515 kilowatt-peak and is expected to generate 826,000 kilowatt-hours of clean electricity in the first year of operation.

Rory McCarthy, chief commercial officer of Yellow Door Energy, said, "As a UAE-based solar developer, it is our humble privilege to contribute towards the UAE's Clean Energy Strategy and Net Zero by 2050 Strategic Initiative."

With the company's aim to reduce environmental impact through all business activities and contribute to alleviating climate change, Daikin's headquarters in JAFZA features the latest product solutions promoted across the region, including a chiller, smart VRV, AHU, FCU, and BMS systems. The entire HVAC system is highly efficient, ecologically friendly, energy-saving, and comes with comprehensive energy control capabilities. Daikin's partnership with Yellow Door



Photo Credit : Daikin

Installation of solar panels at Daikin MEA headquarters in JAFZA, UAE.

Energy is the next step towards achieving the company's regional sustainability goals.

Masaaki Miyatake, chairman and president of Daikin Middle East and Africa, said, "As a global leader in sustainable HVAC-R solutions, we at Daikin embed sustainability in all our business practices. We believe that it is our responsibility to promote efficient systems to save energy and provide high IAQ levels through our several products offerings and solutions. The solar plant at our Dubai facility will help support us in our sustainability journey by reducing carbon emissions by over 300 tonnes annually, which is in line with Dubai's Carbon Abatement Strategy 2030. Furthermore, with the solar lease from Yellow Door Energy, we aim to reduce our electricity costs and advance towards our target of becoming carbon neutral by 2050."

As the solar lease provider, Yellow Door Energy is responsible for financing, designing, building, commissioning, operating, and maintaining the solar plant during the lease term.

BlackBerry partners with Midis Group to drive growth in the Middle East

BLACKBERRY LIMITED HAS entered into a partnership with Midis Group to expand its go-to-market sales motion across Eastern Europe, the Middle East and Africa.

The Midis Group will focus on driving growth for BlackBerry's cybersecurity business unit. It will leverage its on-the-ground expertise, market knowledge, and regional infrastructure to establish BlackBerry-branded local offices focused on representing BlackBerry's comprehensive portfolio of unified endpoint management solutions and next-generation, AI-based Cylance cybersecurity products.

"BlackBerry has always stood for security, trust, and innovation," said John Chen, executive chairman and CEO of BlackBerry. "As a



Photo Credit : Adobe Stock

Midis Group will focus on driving growth for BlackBerry's cybersecurity business unit.

leading provider of cybersecurity products and solutions to governments, large enterprises, and small and medium businesses around the world, we are pleased to partner with Midis Group to further expand our business across Eastern Europe, the Middle East, and Africa."



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Briefly

Arloid AI's new partnerships to reduce energy consumption

ARLOID AI HAS announced its gain in traction in the Middle East region with new partnerships deployed to reduce energy consumption.

The company has formed three new partnerships across the Middle East – Intech Smart Buildings, Fixit Facilities Management, and Smart Energy Savings – in a bid to drive down energy consumption using artificial intelligence.

Intech Smart Buildings is a global technology company that provides sustainable technology solutions to the challenges its clients face. The company is known for innovation and the achievement of cost savings alongside enhanced service quality, and arloid.ai has proven the ideal partner for growth. Together, Intech and Arloid enable businesses in the Middle East to achieve better performance, safeguarding their sustainability in economic and environmental terms.

Arloid has also partnered with Fixit, a facilities management company helping businesses in the region harness cutting-edge technology to improve the way they maintain their properties. Premium property management solutions require the best optimisation technologies. Arloid said that it is paving the way for a decarbonised UAE and GCC future that drives real-world results, and this new partnership reflects these ambitions.

Finally, Arloid has partnered with Smart Energy Savings (SES). Providing temporary and medium-term power solutions to businesses across the Middle East, SES is focused on maximising performance and profitability, while minimising resource use. To this end, they have installed the first off-grid hybrid power plant in Saudi Arabia which is expected to reduce CO₂ emissions in the region.

Arloid AI works with building management systems to save energy. By harnessing the power of Deep Reinforcement Learning and highly accurate building models, Arloid is able to achieve peak HVAC performance faster than other utilities' optimisation technology. It is able to provide 30% cost and energy savings to clients.

Enova wins 'Top Brand PV Seal' award

ENOVA, AN ENERGY management and multi-technical services company, has earned the 'Top Brand PV Seal' MENA 2022 award by EUPD Research, a globally acknowledged research institute that conducts annual independent market analysis to identify the industry's top companies on local and regional levels, and Joint Forces for Solar Global, a leading solar business and knowledge network.

Based on an analysis conducted by EUPD Research, the award is the most recognised and prestigious certification in the international PV industry and stands for reliability and integrity. This year, Enova has won the 'Top Brand PV Seal' in the Solar Engineering, Procurement, and Construction (EPC) category, which covers companies that deliver end-to-end solar energy services.

Renaud Capris, CEO at Enova, said, "We are delighted to have received this recognition that showcases Enova's prominent role as a sustainability partner in delivering integrated energy and facilities management services. The "Top Brand PV Seal" award is a testament to our contribution towards the local and regional market development and confirms the trust our customers place in our team."

According to Enova, the company manages more than 35 solar EPC projects in the MENA region, including those in the UAE, Oman, KSA, Bahrain, Qatar, Egypt, and Lebanon, and recently launched two projects in Turkey. The first, a 1.1 MWP rooftop solar PV plant for Munzur Su water bottling company in Turkey's Tunceli, consists of 2,445 PV panels and covers an area of 6,000 sq m. Meeting 46% of the client's energy requirements, the project generates 1.4 GWh of energy from renewable resources and reduces CO₂ emissions by 700 tonnes per year.



Renaud Capris, CEO at Enova, receives the 'Top Brand PV Seal' MENA 2022 award from Parag Bhamre, partner at EUPD Research.

Photo Credit : Enova

The second, a 1.12 MWp rooftop Solar PV for Kalibre Aluminum located in Sakarya, consists of 2,489 photovoltaic panels and covers a total area of 5,410 sqm. Meeting 30% of the client's energy requirements, the project generates 1.5 GWh of energy from renewable resources per year and reduces CO₂ emissions by 750 tonnes per year.

Markus A W Hoehner, president and CEO of EUPD Research and Joint Forces for Solar, said, "Enova ranks amongst the top PV brands in MENA according to the results of our survey, and it is certified that the company has made an outstanding contribution to the local market development."

Enova specialises in integrated energy and multi-technical services, offering comprehensive and performance-based energy and facilities management solutions to its clients to help achieve their financial, operational, and environmental targets.

SOHAR announces investment project of cloud data centre

SOHAR PORT AND Freezone has announced the signing of an agreement with China's United Projects Achievement (FZC) LLC for the lease of 25,000 sqm of land at the Freezone, for the construction of a new cloud data centre including a multi-functional server room combined with artificial intelligence, big data, and cloud computing. Anticipated to be in operation towards the end of 2022, the data centre will be the first investment project of information technology at SOHAR Freezone.

"This agreement represents a major milestone for us in line with our plans to make SOHAR Freezone a frontrunner in innovation and a smart, technologically advanced ecosystem. It is the second Chinese land-lease investment project at the Freezone, as we



YU XIAO, CEO, United Projects Achievement and Omar Al Mahrizi, CEO of SOHAR Freezone at the signing ceremony.

Photo Credit : SOHAR Port and Freezone

continue to promote its enormous potential as a hub for Chinese investment," said Omar Al Mahrizi, chief executive officer of SOHAR Freezone.

SOHAR Freezone offers an abundance of land available for new construction as well as allowing investors to lease warehouses and commercial offices.

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MENA HSE FORUM 2022

AT THE SEVENTH edition of the MENA Healthy, Safety & Environment Forum, taking place at the Grosvenor House, Dubai from 6-7 September 2022, decision makers from key sectors such as oil and gas, construction, tourism; regulatory authority representatives and industry experts will convene to network and discuss the key issues apparent in the region.

Through a blend of panel sessions, presentations, workshops, interactive meeting opportunities, and more, attendees will receive insights on all the latest HSE trends and critical new technology, network with peers and industry partners, meet expert suppliers and industry bodies and lay the groundwork to achieve the fundamental HSE targets that matter most to the region.

ADNOC, Petrofac, AMAALA, Dubai Municipality, EGA, Saudi Aramco, Abu Dhabi Waste Management Centre – Tadweer and Dubai Holding among others, will deliver keynote presentations to more than 200 stakeholders from the HSE community in UAE, Saudi Arabia, Qatar, Oman and Bahrain.

Conference agenda

The conference agenda will comprise five sessions:

- Role of HSE leadership in crisis and business continuity management
- Future of digitalisation in the HSE sector
- Process safety and its framework
- Learning from the pandemic and other global transformations about occupational health and behavioural safety
- Sustainable value creation: how ESG moved from a cost centre to a value driver.

Two exclusive breakout workshops will cover the formulation of resilient safety cultures, and digital transformation – from strategy to execution.

Speakers set to present at the MENA HSE Forum 2022 include Tahir Azhibek, corporate HSE manager, ADNOC; Dr Naseem Mohammed Rafee, director of health and safety department, Dubai Municipality; Eng Raed Mohammed Al-Marzooqi, manager of studies and system section, health and safety department, Dubai



Photo Credit : Alain Charles Publishing

The HSE Forum will bring together key stakeholders from the region.

Municipality; Dr Eng Hani Hossni, EHS director, Abu Dhabi Waste Management Centre –Tadweer; Porchelvan Nandanam, corporate manager HSE, Arabian Industries Projects; Salman Abdulla, executive vice president, EHSQ & Sustainability, Emirates Global Aluminium; Dr Essam Hassan, senior environmental consultant, Egyptian Environmental Affairs Agency and KGESS; Saleh Ali Al Balushi, HSE director, Dubai Holding Asset Management; and Azam Soukar, director group HSE, Dubai Holding Entertainment.

Vinay T, Head of Business Development at Alain Charles Events, commented, “Our research with stakeholders from the oil & gas, construction and tourism sectors revealed that end-users are seeking disruptive technologies that will continue to cut LTI and optimise productivity.

“We identified a need to access latest safety solutions for workforce across the board which led us to create this exclusive platform for HSE companies to display and demonstrate their services and solutions to key players in the region. This is also a premier opportunity to build new relationships and network in-person with the MENA HSE fraternity.”

Please register for the HSE Forum at <https://www.hse-forum.com/mena/register>

Effective process safety management

SPEAKING IN ADVANCE of the MENA HSE Forum, Dr Eng Hani Hossni, EHS director, Abu Dhabi Waste Management Centre – Tadweer, discussed Tadweer’s approach to safety management.

“Complying with regulatory requirements is key for delivering a successful and effective process safety management programme,” Hossni said. “At Tadweer, we ensure we adhere to the highest local and international standards in health, safety, and environment management. During our operations, we ensure we are safeguarding the health, safety and welfare of

our employees and the public, and ensure that our operational activities are effectively controlled with regard to the protection of the environment.

“Tadweer’s Occupational Safety and Health (OSH) policy highlights the importance of putting preventive measures in place to avoid and mitigate occupational health and safety risks. It also outlines the company’s commitment to reviewing, monitoring, evaluating and improving our OSH performance.”

On the main challenges being faced in EHS management Hossni remarked, “Some challenges in EHS management



Dr Eng Hani Hossni, EHS director, Tadweer.

include pollution and excessive noise, improper handling of material, health issues, and

more. At Tadweer, we develop the required systems for managing waste including collection, transport, treatment, safe disposal and pest control services through the use of environmental service providers and technology, to preserve the environment.”

“We have also set a list of health and safety requirements for our contracts, to limit any potential risks caused by waste management. For example, the contractor and subcontractors are required to supply all workers with the personal protective equipment (PPE) needed to protect them from any potential risks.”

Photo Credit : Tadweer

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“ADNOC and Masdar’s deepened partnership with bp is a testament to the UAE and UK’s longstanding track record of bilateral partnership in sustainability as well as the UAE’s intent to play a leading role in the fast-growing clean hydrogen economy both domestically and internationally. To that end, we welcome the opportunity to collaborate with bp in both the UAE and UK, laying the groundwork for deeper commercial partnership in the area of new energies and clean technologies.”



Photo Credit : ADNOC

HE DR SULTAN AHMED AL JABER

Managing director and group CEO

ADNOC

(On the partnership between ADNOC, bp and Masdar to progress their strategic energy partnership through the development of clean hydrogen and technology hubs)

“As a 100% channel-focused organisation, we are fully dependent on the success of our partners in the GCC region. Data is the lifeblood of every business today – becoming more valuable than precious metals, oil, or gemstones for most corporations and individuals. In our digital world, the quantity and quality of data are ever-increasing, and so is our reliance on it; that is why Arcserve unified data resilience solutions are a cornerstone of every data protection strategy.”

FLORIAN MALECKI

Executive vice president, marketing

Arcserve

“With today’s signing ceremony, we are taking a major step towards Saudi Arabia’s goal of diversifying its economy by creating a new manufacturing hub to spearhead the future of mobility for the Middle East region. Attracting a global leader in electric vehicles such as Lucid to open its first international manufacturing plant in Saudi Arabia reflects our commitment to creating long-term economic value in a sustainable, enduring, and globally integrated way. This project demonstrates the confidence investors have in Saudi Arabia’s competitiveness, its ability to create opportunity, and serve global demand for highly complex products such as electric vehicles.”

HE ENG KHALID AL-FALIH

Minister of investment

Government of Saudi Arabia

(Speaking at the ceremonial signing of the agreements for the construction of Lucid Group’s production factory in Saudi Arabia)

“Our current energy crisis also adds to the evidence that the world can no longer rely on fossil fuels to meet its energy demand. Renewable power should become the norm across the globe.”

FRANCESCO LA CAMERA

Director-general

IRENA

“Humankind is in a race to change the way we use our resources and it’s a race we can’t afford to lose. This IFC loan will help us all by significantly accelerating our sustainable projects in Oman, Morocco and South Africa. It will allow Averda to reduce the waste sent to landfill while increasing the volumes composted, recycled and transformed into energy, progressing us towards a more circular economy.”

MALEK SUKKAR

CEO

Averda

(On IFC’s US\$30mn loan to build Averda’s resilience post-pandemic and enable it to continue its planned growth in Oman, Morocco and South Africa)

“Energy companies can have complete oversight of their own vulnerabilities and have all the right measures in place to manage the risk, but that won’t make a difference if there are undiscovered vulnerabilities in their supply chain. Our research identifies ‘remote access to OT systems’ among the top three methods for potential cyber-attacks on the energy industry. We would urge the sector to pay greater attention to assuring that equipment vendors and suppliers demonstrate compliance with security best practice from the earliest stages of procurement.”

JALAL BOUHDADA

Founder and CEO

Applied Risk

“As the digitalisation of the maritime industry increasingly propels forward, many offshore and maritime companies in the region are looking to digitalise themselves and therefore will benefit immensely from the solutions offered through this joint venture with MariApps.”



Photo Credit : Rawabi Energy

AHMED ALQADEEB

Managing director

Rawabi Energy



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SEPTEMBER 2022

20-25	IAA Commercial Vehicles	HANNOVER	www.iaa-transportation.com
27-29	WETEX & Dubai Solar Show	DUBAI	www.wetex.ae

OCTOBER 2022

24-30	bauma	MUNICH	www.bauma.de
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NOVEMBER 2022

14-17	Saudi Elenex	RIYADH	www.saudielenex.com
14-17	Saudi Build	RIYADH	www.saudi-build.com
15-16	The Mining Show	DUBAI	www.terrapinn.com

DECEMBER 2022

5-8	Big 5 Dubai	DUBAI	www.thebig5.ae
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Readers should verify dates and location with sponsoring organisations, as this information is sometimes subject to change.

The Big 5 and INDEX to return to Qatar in 2023

DMG EVENTS HAS signed a strategic partnership with Qatar based NeXTfairs to run The Big 5 Construct Qatar and INDEX Design Qatar in the Gulf state in Q3 2023.

Scheduled to take place from 25-27 September 2023, this represents the latest move in the dmg events regional portfolio expansion strategy. The return of these two internationally recognised dmg flagship events also marks the birth of a long term alliance with local event organiser NeXTfairs.

The co-located Big 5 Construct Qatar and INDEX Design Qatar shows will connect essential suppliers and trade buyers committed to Qatar's infrastructure development, and offer both a thought leadership knowledge platform and face-to-face business and networking opportunities.

"With the latest World Bank insights forecasting continued positive GDP growth of 4.9% in 2023 amid Qatar's ambitious ongoing Vision 2030 development plans, the time is right to accelerate opportunities for the regional construction and interiors industry by bringing back two of our most successful flagship brands to this dynamic market. Together with NeXTfairs, we are also paving the way for the launch of other industry-critical events

that will support Qatar's pro-business tourism proposition and economic growth strategy," said Matt Denton, President, dmg events.

Commenting on future event opportunities across a broad range of industry sectors, Rawad Sleem, co-founder and general manager of NeXTfairs, said, "Exhibitions represent a major growth opportunity for Qatar: driving national economic development, contributing to trade and investment, innovation, and more. Our combined decades of market expertise, and initial two-show offering, will provide a firm foundation on which to accelerate stakeholder engagement and strengthen Doha's appeal as a world-class events destination."

In its 2021 Qatar Construction Market – Growth, Trends, Covid-19 Impact & Forecast (2022-2027) report, Mordor Intelligence valued the market at US\$55 million in 2021 with a forecasted value of US\$76 billion by 2027, registering a CAGR of 10.54 per cent over the period. A total of US\$16.4 billion will be invested into infrastructure and real estate projects by 2025 under Qatar National Vision 2030. In addition, the pending ratification of a new law regulating public-private partnerships is set to further accelerate

sector opportunity.

The Big 5 events have been a platform for the global construction industry to secure new business across the Middle East, Africa, and South Asia.

dmg events organises more than 80 events across 25 countries, attracting over 425,000 attendees and delegates every year. The company's portfolio of products includes many industry leading events such as The Big 5 construction shows and energy events like ADIPEC and Gastech.

Taking place in Dubai since 1991 and welcoming thousands of trade visitors annually, INDEX Dubai is the largest and most significant international interior and fit-out trade show in the MENA region, connecting the world's leading brands and manufacturers with regional hospitality, residential, commercial, and retail buyers.

The Qatar-based organisation is made up of a progressive team of experienced event professionals dedicated to delivering excellence in sales, marketing, and large-scale operations; with a national mandate to position Qatar as the premium destination for business events. In addition, NeXTfairs seeks to provide value-added services that help businesses to grow exponentially and enhance their business processes.

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

De Nora partners with SWCC

DE NORA WATER Technologies and Saline Water Conversion Corporation (SWCC) expand their partnership with the signing of a memorandum of understanding (MOU) on brine mining and water electrolysis research.

The MOU also includes innovations to the vacuum-based capital controls chlorine dioxide generators used in desalination pre-treatment and disinfection.

<https://www.technicalreviewmiddleeast.com/business-a-management>



De Nora partners with SWCC on brine mining and electrolysis research.

Photo Credit : De Nora Water Technologies

Emerson compact controllers increase ROI for machine builders

EMERSON, A GLOBAL software, technology, and engineering leader, announced the release of its PACSystems™ RSTi-EP CPE 200 programmable automation controllers (PAC). This new family of compact PACs helps original equipment manufacturers (OEMs) successfully meet customer requirements by minimising the need for specialised software engineering talent. CPE 200 controllers will deliver large programmable logic controller (PLC) capability in a small, cost-effective, IIoT-ready form factor so machine manufacturers do not need to sacrifice performance for price.

<https://www.technicalreviewmiddleeast.com/manufacturing>

Cyberhawk and Shamal Technologies make use of visual intelligence in Saudi Arabia

CYBERHAWK HAS SIGNED an agreement with Shamal Technologies to digitally transform the way major construction projects are managed in Saudi Arabia

As part of the agreement, both parties will combine data acquisition and analytics expertise to launch a powerful visual intelligence solution for major capital projects in Saudi Arabia.

Shamal Online, the name given to the new data management and visualisation platform, will be powered by iHawk.

<https://www.technicalreviewmiddleeast.com/it>

SKF launches tool to help industry address carbon emissions

SKF HAS ANNOUNCED the launch of a new, freely available tool to help the industry. Available at www.skf.com/co2dashboard, users can access a dashboard where they can explore how CO₂ emissions related to the production and use phase of bearings are distributed.

<https://www.technicalreviewmiddleeast.com/it>



SKF unveils tool to help industry address carbon emissions.

Photo Credit : SKF



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Abu Dhabi to establish automotive marketplace

Spread over 3.3 sq km in KIZAD, the hub will be one of the largest in the region.

AD PORTS GROUP, the region's premier facilitator of logistics, industry, and trade, has partnered with UAE-based, multi-business conglomerate Ghassan Aboud Group to set up one of the region's largest automotive export and distribution hubs in KIZAD.

The Regional Auto Hub – Abu Dhabi will foster global trade partnerships bringing together buyers, sellers, logistics services providers, government enablers, facilitators, and financial service providers while offering access to integral sources and consumption markets through sector-specific infrastructure and multimodal connectivity by sea, land, and air.

Spread over 3.3 sq km in KIZAD, the Regional Auto Hub – Abu Dhabi will be one of the largest in the region. The project's ecosystem will feature dedicated areas for showrooms, storage, spare parts, workshops, test tracks, auction houses, social and office spaces in addition to logistics services, government support and commercial support services.

The hub is being designed to include free zone and domestic areas to facilitate international trade of all automotive products such as new and used passenger vehicles, commercial vehicles, electric vehicles, heavy equipment and machinery and spare parts connecting Europe and the Far East to the Middle East, Africa, CIS, the Indian subcontinent, and beyond.

The partnership between AD Ports Group and Ghassan Aboud Group is designed to support and accelerate the government's vision for economic diversification and industrial growth by enhancing automotive trade flow through the UAE.

Captain Mohamed Juma Al Shamisi, managing director and Group CEO, AD Ports Group, said, "AD Ports Group is continuously working to develop state-of-the-art industrial infrastructure across key sectors within our Economic Cities & Free Zones



Photo Credit: AD Ports

Partnership between AD Ports Group and Ghassan Aboud Group to establish a 3.3 sq km Regional Auto Hub in KIZAD serving the automotive industry.

Cluster as part of our commitment to driving national efforts towards the UAE's economic diversification goals and Operation 300bn strategy."

"By offering an efficient and integrated business environment that nurtures a highly skilled workforce and enhances operational productivity, we believe the Regional Auto Hub – Abu Dhabi will be a key driver in strengthening the UAE's position at the centre of the region's evolving global automotive and mobility supply chain," he added.

Ghassan Aboud, founder and chairman of the Ghassan Aboud Group, said, "The Regional Auto Hub – Abu Dhabi is master-planned to serve the automotive industry within the region and wider global markets. We trust that it will provide a competitive edge by offering advanced infrastructure, ease of doing business, conducive policies, and space availability."

"The Regional Auto Hub – Abu Dhabi builds on our partnership with AD Ports Group and our confidence toward the economic ecosystem in KIZAD. Earlier this year we have announced the Regional Food

Hub – Abu Dhabi in collaboration with Rungis. We are committed to bringing international expertise to the UAE and Abu Dhabi through our collaborations and to strengthen Abu Dhabi's position as a major economic hub. We are confident that these new initiatives and public-private investments mark a pioneering step in the UAE's position as an important axle for future growth," he said.

The Auto Hub will also leverage cutting-edge technology to offer a digital marketplace that will provide a range of services and cater to automotive trade and export needs, ensuring continuity while easing business by supporting key synergies between Abu Dhabi's government entities and trade enablers.

Located near Khalifa Port – one of the world's most advanced deep seaports with world-class infrastructure – KIZAD enables multimodal connectivity via sea, air, road and rail networks. KIZAD's world-class infrastructure provides the necessary internal transportation, as well as water and electrical power at a competitive rate. ■

Harnessing energy from high-rises

RESEARCHERS FROM THE International Institute for Applied Systems Analysis (IIASA), an international scientific institute that conducts research into the critical issues of global environmental, economic, technological, and social change have come up with a new energy storage concept that could turn tall buildings into batteries to improve the power quality in urban settings.

IIASA opines that, with the rapid reduction in the costs of renewable energy generation, such as wind and solar power, there is a growing need for energy storage technologies to make sure that electricity supply and demand are balanced properly.

According to the institute, the world's capacity to generate electricity from solar panels, wind turbines, and other renewable technologies has been steadily increasing over the last few years, and global renewable electricity capacity is expected to rise still further by more than 60% from 2020 levels by 2026. This is equivalent to the current total global power capacity of fossil fuels and nuclear combined.

According to the International Energy Agency, renewables are in fact set to account for nearly 95% of the increase in global power capacity through 2026, with solar PV alone providing more than half. Transitioning to a low or zero-carbon society, however, requires innovative solutions and a different way of storing and consuming energy than traditional energy systems.

In their study published in the journal Energy, IIASA researchers propose a novel gravitational-based storage solution that uses lifts and empty apartments in tall buildings to store energy. This original idea the authors call Lift Energy Storage Technology (LEST), stores energy by lifting wet sand containers or other high-density materials, which are transported remotely in and out of a lift with autonomous trailer devices. LEST is an interesting option, because lifts are already installed in high-rise buildings, which means there is no need for additional investment or space occupancy, but rather using what is already there in a different way to create additional value for the power grid and the building owner.

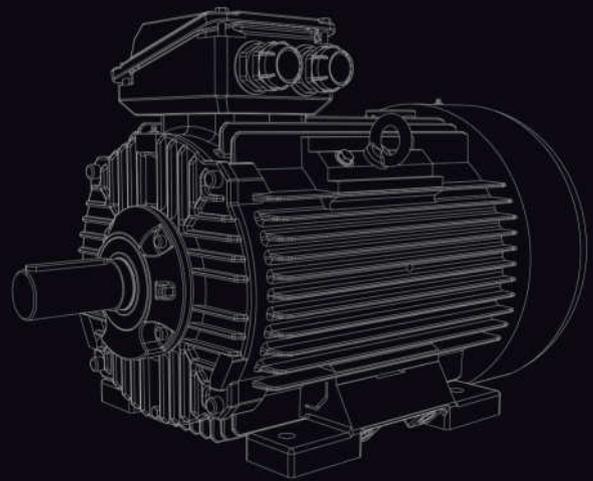
According to the authors, the main challenge in making a gravity energy storage solution viable is the power capacity cost. The most important benefit of LEST is that the power capacity is already installed in lifts with regenerative braking systems. There are more than 18 million lifts in operation globally, and many of these spend a significant amount of time sitting still. The idea is that when the lifts are not being used to transport people, they can be used to store or generate electricity.

As with any new system, there are still a few details that need to be further refined before the system can be deployed. This includes finding room to store the weights the system relies on at the top of the building when the system is fully charged, and at the bottom of the building when the system is discharged. Empty apartments or corridors could be viable options in this regard. Another consideration is the ceiling bearing capacity of existing buildings where the system is installed, that is, the total mass in kilograms per square metre that the ceiling can support without collapsing. Being able to store energy where electricity is mostly consumed, such as in cities, however, will greatly benefit the energy grid, and LEST can provide affordable and decentralised ancillary services, which could, in turn, improve the power quality in an urban setting.

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Governments across the region are taking significant steps to reduce their reliance on fossil fuels and promote renewable energy.



Photo Credit : Adobe Stock

Winds of change driving Middle East energy transition

The Middle East region is battling the dual challenges of building new capacity while grappling with mounting climate change concerns, as new renewable technologies start to squeeze out traditional thermal-based power units. Martin Clark reports.

THE OIL-RICH COUNTRIES of the Middle East region have long been used to cheap electricity, but the need to face up to the challenges of climate change means that governments are having to rethink their approach to power generation.

That is reflected in the inactivity on the ground, as companies and countries alike navigate the sometimes competing goals of raising generation capacity as quickly as possible while factoring in new environmental limitations.

Policy considerations are now changing as a result of climate change and environmental concerns.

These dual challenges, and others, are highlighted in the Energy & Utilities Middle East and Africa Outlook Report 2022 by Informa Markets.

Overall, power generation has increased significantly over recent years — but during that time, climate change worries have become ever more pressing.

Power generation across the Middle East and North Africa (MENA) has doubled in the past 15 years, from around 842TWh in 2005 to 1,635TWh by 2020, according to data compiled by BP. The largest producers tend to be either the most populous or the richest states in the region, such as Saudi Arabia, the UAE, Iran and Egypt.

Not all countries have fared so well, however. The World Bank estimates that access to electricity is around 89% in war-torn Syria and 73% in Yemen. The likes of Iraq and Lebanon also suffer frequent power cuts as demand frequently overwhelms the inadequate and fragile electricity generation and supply networks.

Climate concerns

Even for the oil-rich states, though, policy considerations are now changing as a result of climate change and environmental concerns. And there is good reason for the Gulf states to take this very seriously: in 2018, Qatar, Kuwait, UAE and Bahrain were the top CO₂ emitters in the world per capita.

While oil and natural gas remain the dominant fuels for power plants across the region, governments are taking significant steps to reduce their reliance on fossil fuels and promote renewable energy instead. This is already yielding positive results, with Abu Dhabi named the world headquarters for the International Renewable Energy Agency a decade ago.

While the direction of travel is clear, it will be some time before renewable power overtakes fossil fuel generation as the main source of electricity across the wider MENA region. According to the Informa Markets report, the amount of electricity generated from oil peaked at 372TWh in 2013 and has since fallen back to 358TWh by 2020. The infographic included from the report shows the factors having the biggest impact on the power sector.

The use of natural gas as a fuel for power plants is still growing, but at a far slower pace than both solar and wind energy. The amount of electricity generated from natural gas reached 836TWh in 2020, compared to 529TWh in 2010 — a rise of 58% over the decade.

In contrast, wind-powered electricity generation rose by 760% over the same timeframe to reach 1.9TWh in 2020, while solar-powered generation increased by more than 16,000% to 16.4TWh — albeit these are both starting from a very small base.

The need to change the emphasis of the electricity generating sector becomes even more vital given that other climate change-related initiatives, such as encouraging consumers to switch from petrol and diesel fuelled cars to electric vehicles, will increase overall demand for power from the region's electricity grids.

Corporate culture

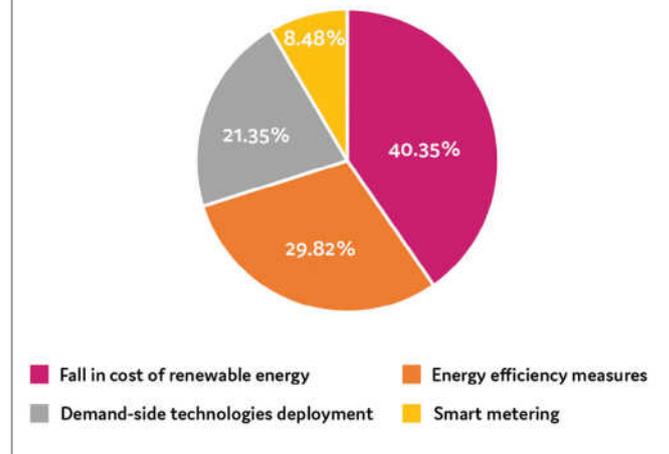
These broad trends are not hard to spot among the region's big power companies such as Saudi Arabia's ACWA Power. A leading developer, investor, and operator of power generation, water desalination and green hydrogen plants, it reported 'strong growth' in profits for the first three months of 2022.

Its chairman, Mohammad Abunayyan, alluded to the winds of change sweeping across the energy sector, and whole economies

We look forward to strengthening our portfolio in existing and potential markets and assist governments as they work towards diversifying their energy mix with sustainable options in power generation, water desalination and green hydrogen.

Mohammad Abunayyan, chairman, ACWA Power

Biggest impact on MENA power sector by 2035



even, with climate change fears and the unprecedented times of the past two years.

"We must acknowledge that we live in challenging and fluid times and must remain vigilant to global events that can adversely impact our business," he told investors when announcing the Q1 results.

"As 2022 unfolds, we look forward to strengthening our portfolio in existing and potential markets and assisting governments as they work towards diversifying their energy mix with sustainable options in power generation, water desalination and green hydrogen," he added.

During the first quarter, ACWA Power announced the conversion of operation of 2,400 MW at the Hassyen independent power project (IPP) in Dubai from clean coal to natural gas, reflecting the transition.

The switch means the project will avoid approximately 30 million tonnes of CO₂ emissions by 2030 and that the company has eliminated all coal-fired assets from its portfolio.

It also sold its entire shareholding in Shuqaiq Water and Electricity Company, an oil-fired asset, which will remove a further 1.6 million tonnes of CO₂ per year from ACWA Power's portfolio. Simultaneously, there have been moves into new areas such as the NEOM green hydrogen project, which has moved into the construction phase.

It will be the world's largest at-scale green hydrogen and ammonia project. In total, ACWA Power now has a total of 65 projects worth around US\$67bn in the operation, construction or advanced development stages across the globe, highlighting its strong and sustained investment into new capacity.

Public utilities

There is a similar trajectory among the large, public utilities of the Gulf as well, including Saudi Electric Corporation (SEC). SEC's acting chief executive officer Eng Khaled Al-Gnoon presented the group's 2021 full year results in March, focusing on some common themes.

He highlighted the financial, regulatory, and structural reforms that have positively impacted the sector's long-term financial sustainability and helped to shore up SEC's own finances. These improvements, he said, will enable the company "to invest more to enhance the reliability and efficiency of the electricity system, particularly enhancing the reliability of the electricity transmission grid with the aim of raising generation efficiency, and enabling the production of electricity from renewable energy sources."

These moves, he added, will facilitate further greenhouse gas emission reduction initiatives. Other SEC objectives include enhancing and automating the distribution grid, he added, as well as ramping up digitalisation initiatives.

“We are currently investing in network modernisation, digitisation, and automation, and we are moving forward with digital transformation and automation of services provided electronically, in addition to keeping up with the increasing demand for electrical service and the necessary network expansion.”

Other utilities are likewise managing the transition from traditional thermal power toward renewables and the deepening impact of digitalisation. In the UAE, Emirates Water and Electricity Company (EWEC) has just invited expressions of interest for the development of the 1,500 MW Al Ajban Solar PV IPP.

Located in the Ajban area, it will be the third large scale utility solar PV project developed by EWEC, and follows the successful closings of the Noor Abu Dhabi and Al Dhafra Solar PV projects.

Othman Al Ali, EWEC’s chief executive said, “It means the UAE will have the three largest, world-leading solar power plants, increasing the diversification of our energy production portfolio, and significantly advancing decarbonisation of the energy sector.”

Age of decarbonisation

In the industrial sector too, all companies in the Gulf are squaring up to similar challenges.

Emirates Global Aluminium (EGA), the largest industrial group in the UAE outside of the oil and gas sector is on a mission to decarbonise its activities, as part of the nation’s net-zero by 2050 strategic initiative. It has just signed an agreement with GE Gas Power to upgrade four existing GE 9F gas turbines at EGA’s Al Taweelah power plant in a bid to cut greenhouse gas emissions.

The upgrade will include hardware and software improvements to drive operational flexibility and increase output, efficiency and availability, it said in a statement.

GE will also implement its ‘Live Outage’ concept for the first time globally on its 9F fleet — a new digitised platform, that replaces a

The UAE will have the three largest, world-leading solar power plants, increasing the diversification of our energy production portfolio, and significantly advancing decarbonisation of the energy sector.

Othman Al Ali, EWEC’s chief executive

paper-based approach, designed to speed up the outage process. Once the work is complete, electricity output from the four turbines is expected to increase by up to 72 MW for the same amount of fuel consumed.

It means for the previous power output of 920 MW, greenhouse gas emissions will drop by up to 74,000 tonnes a year — the equivalent of removing more than 16,000 cars from the UAE’s roads.

It is an important move given that around 300 GE-built units currently support the generation of up to 40% of the UAE’s total power supply.

In Saudi Arabia, GE recently inaugurated its MENA Decarbonisation Centre of Excellence (COE) in support of the kingdom’s own net zero 2060 strategy.

The company has also signed various agreements with SEC and Saudi Aramco, the nation’s oil and gas champion, to work on joint energy decarbonisation projects. ■



Photo Credit - Adobe Stock

Companies in the Gulf look to square up to the decarbonisation challenge, inevitably forced upon by climate change issues.

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Mohammad Almutawa,
Group CEO, Ducab.

Beyond cables: Creative energy solutions

Mohammad Almutawa, Group CEO of Ducab, the UAE-based industrial pioneer for the energy sector, comments on the company's role as a global player.



Photo Credit : Ducab

“Ducab is committed to continued success as a global player in the energy industry.”

AS DUCAB EMBRACES a ‘solutions provider’ approach, it is poised for increasing growth and partnering within the energy sector.

“Ducab is committed to continued success as a global player in the energy industry,” said its chief executive, Mohammad Almutawa. He spoke to *Technical Review Middle East* during the Middle East Energy show in Dubai.

In October 2021, Ducab launched the new corporate strategy and vision for providing ‘Energy for Change’ that sets a clear direction focusing on sustainable energy, to drive further growth and international expansion and is designed to generate positive economic, social and environmental impact.

“The push for sustainability and the environment is a huge concern for Ducab,” confirmed Almutawa.

He highlighted a number of initiatives that the company has in place, for reducing the carbon footprint and enhancing green energy, including the launch of a new solar

park that contributes around 25% of the head office’s power requirement. The company has updated a lot of its machinery to optimise power consumption and reduce the overall power requirement as well as introduced a lot of automation.

“We have succeeded in increasing the share of renewable energy internally, to nearly 15% of the total requirement through measures such as the installation of rooftop solar panels,” said Almutawa.

“We also partner with suppliers who prioritise the conservation of the environment and help advance clean energy goals,” he added.

Ducab aims for continuous improvement, for new technology and investment and systemisation, drawing on elements of Industry 4.0.

Ducab’s strategic realignment ties in with the global emphasis on mitigating climate change through decarbonisation and increasing focus on renewable energy. The UAE’s Energy Strategy 2050 aims to increase the contribution of clean energy

sources within the total capacity mix to 50% by 2050.

Global player

Ducab is committed to researching and developing more efficient energy solutions for its customers around the world to help build a sustainable future.

The company is the driving force behind energy and infrastructure projects in the Middle East, Asia, Australia, the Americas, Africa and Europe.

"We are always looking for advancement and innovation that will keep us at the forefront of technology when it comes to cable supplies," continued Almutawa.

"In fact, we are the first company to have cables in operation with the certification of 60-years' life span," he added.

Ducab has always played an important

role in the UAE's industrial aspirations and is set to utilise its potential internationally.

"We increased our participation in turnkey projects, our presence in the market and secured many projects in the UAE and the wider region," said Almutawa.

Elaborating on Ducab's path from manufacturer to solutions provider, he quoted the example of the company's differentiating project in Iraq, in partnership with GE, where Ducab plays a role in the complete execution of the contract. The project complements Iraq's larger energy transition plan, moving the nation into a regional energy hub through smart and sustainable grid infrastructure.

"Providing a solution to the client rather than just supplying our product is the focal point of our new strategy," he explained.

"We want to service customers all over

the world through our global network of partners. We utilise our privilege of being situated in a strategic location such as the UAE, in order to serve our customers better.

Ducab is bullish about opportunities in the UAE as well as other economies in the Gulf region as countries increase spending on infrastructure projects.

"One of our mandates as an investment by one of the region's largest holding companies ADQ as well as the Investment Corporation of Dubai, is to provide the service of security, when it comes to the requirement of cables," said Almutawa.

In 2020, the group confirmed substantial gains across its business units, despite the challenging global conditions due to the pandemic. Ducab aims to increase its exports this year as economies recover from the pandemic and increase the spending on infrastructure projects.

"We have managed to continue our growth in 2020 and 2021. Ducab has always been good at capitalising opportunities provided by adversities. So, we hope to continue to increase our revenues in 2022," concluded Almutawa. ■

"We want to service customers all over the world through our global network of partners."

Soltec to expand its solar tracking technology with SFOne

SOLTEC, A MANUFACTURER of PV tracker equipment, is committed to innovation and has a presence in four countries of the MENA region – Morocco, Egypt, Israel and Jordan, as well as many other countries worldwide. It showcased its SFOne tracker at the Intersolar Europe Fair held in Munich, Germany.

The SFOne represents Soltec's latest effort to include the 1P-array technology in its product portfolio. This new multirow tracker designed for longer modules (72 and 78 cells), is equipped with the Dy-Wind system, which presents the most advanced technology in the design of wind-resistant structures; and the optimisation of the Diffuse Booster system, for low light conditions.

It has lower operational costs thanks to its dedicated self-powered module and the ease of installation.

Its TMS is incorporated for total control of the photovoltaic plant and achieves communication with the lowest latency in the market. Face-to-face positioning helps wash vehicles to cover twice the area, proportionally reducing wash time in hours per MW. In addition, SFOne has a lower height structure, which also helps reduce the visual impact of the plants.

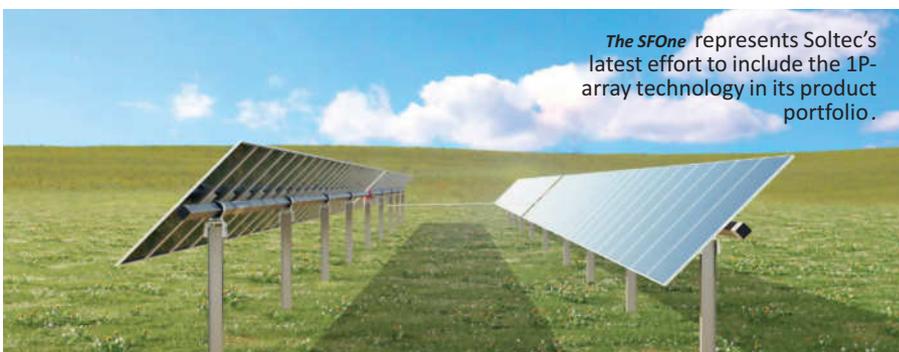


Photo Credit : Soltec

These advantages, together with its structure, make the SFOne one of the best trackers in terms of terrain and environment adaptability. Similarly, since it is powered by a dedicated module, SFOne has a better operational cost, with reductions of up to 75%. In 2009, Soltec already developed this type of technology to launch its SA Series. Now the company wants to upgrade this concept with SFOne, a tracker designed to satisfy increasing market needs.

Raúl Morales, CEO of Soltec, said, "At this year's Intersolar, we wanted to show our latest business line which is doing very well in the marketplace. This type of event, in

addition to being paramount to foster investment in research by sectoral firms, is a great opportunity to generate debate and promote a more disruptive understanding of where we are going as an industry."

Soltec, which has a history of more than 18 years in the sector, currently has a diversified geographical presence in 16 countries. SFOne offers the possibility of minimising the impact of imported components for the plants where the projects are carried out, thanks to the manufacture of components locally through the company's factories, thus reducing the carbon footprint and favouring the circular economy, in all the countries where the firm has a presence.



Photo Credit : MTEE

A 54S-61SD Mitsubishi Diesel Engine with a PRO185 C/4 Linz Electric Alternator.

Power-packed performance

Mitsubishi Turbocharger and Engine Europe BV have teamed up with Linz Electric to launch the PowerPackPlus product range.

MITSUBISHI TURBOCHARGER AND Engine Europe BV (MTEE) have launched the PowerPackPlus product range, involving the consolidated supply of a Mitsubishi diesel engine, radiator and Linz Electric alternator.

Launched as part of MTEE's strategy to support genset OEMs in the African region, the PowerPackPlus range helps simplify the management of their purchasing, logistics, customs clearance and aftersales support processes.

MTEE is committed to earning the trust of its customers in the EMEA region through excellent products and practical solutions that match their needs, by working closely with a broad network of advanced partners.

For the PowerPackPlus initiative, MTEE has partnered with Linz Electric for its high quality alternators and strong engineering support.

Developed under the 'Mitsubishi & Partners' initiative, MTEE has combined selected Linz Electric alternators with Mitsubishi diesel engines to provide a technically integrated, fully guaranteed and supported product that gives optimum performance.

PowerPackPlus range

Four variants of PowerPackPlus are currently available – 15 KVA 50 Hz Prime, 20

MTEE is committed to earning the trust of its customers in the EMEA region through excellent products and practical solutions that match their needs, by working closely with a broad network of advanced partners.

KVA 50 Hz Prime, 28 KVA 50 Hz Prime and 40 KVA 50 Hz Prime. In addition to the engine, radiator and alternator, the PowerPackPlus range includes intake, assembly and connection kits, which allow the OEM to tailor the specification to match their needs.

The union of Japanese and Italian technical and manufacturing expertise in the PowerPackPlus provides customers with a dependable, durable, efficient and cost-effective power production unit supported by the assurance of the manufacturers' warranties and the parts, service and engineering network of MTEE.

"Our products fit the market needs of reliable energy solutions that are easy to install and maintain. In the African region, the demand for generator sets includes the residential, commercial and small to medium scale manufacturing sectors. We are steadily expanding our dealer network in the region," explained Paul Kaliski – product manager, G-Drive Engines, MTEE.

"At MTEE, we are always looking for ways to add value to our products across their entire life cycle and this includes the supply chain of the product. To that effect, the PowerPackPlus takes the basic components of a genset that are not fabricated in-house, or easy to source locally by the African OEMs and packages them as a single product from a single supplier.

"This simplifies the various processes that surround these items, giving benefits in order processing, customs administration, transportation costs, stock management and delivery

In addition to the engine, radiator and alternator, the PowerPackPlus range includes intake, assembly and connection kits, which allow the OEM to tailor the specification to match their needs.

coordination. Regardless of sector or size, efficient supply chain management is vital for the success of any company.

"Moreover, with the PowerPackPlus, MTEE has undertaken some of the technical analysis work for the OEMs and streamline the aftersales support processes. All of which enhances our core business of providing powerful, reliable diesel engines that are easy to install and maintain," he added.

Mitsubishi & partners

MTEE is part of the Engine and Energy segment of Mitsubishi Heavy Industries (MHI) Group and specialises in producing innovative and integrated engine solutions in the power range of 5 kW to 15400 kW for a wide spectrum of applications, such as backup power solutions for data centres, auxiliary power supply for offshore wind farms, and marine propulsion.

On MTEE's partnership with Linz Electric, Kaliski explained, "Linz Electric's proximity within the EU and their adaptable vertically-integrated manufacturing philosophy helps make our own supply chain management

simple, allowing us to pass-on this simplicity further down the chain."

Focus on Linz Electric

"Linz Electric, part of the Pedrollo Group, specialises in the production of alternators and rotating welders, and is one of the leaders in the energy sector in Italy, with totally Made in Italy production.

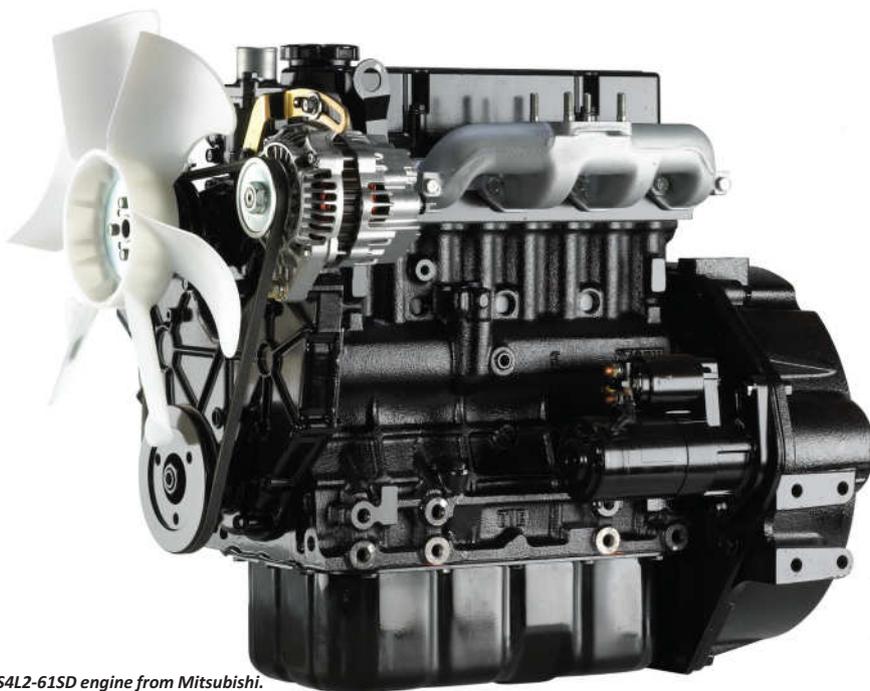
Since 2002, Linz Electric has continuously expanded by leveraging its passion for innovation and flexible production practices to build a customer portfolio of leading genset manufacturers, supplying to over 100 countries.

Linz Electric alternators main components including windings, pressure-cast components, shafts, electronic regulators and inverters, are entirely made onsite, giving Linz Electric both optimum control of its production resources and the ability to quickly adapt products to specific application requirements," stated Alberto Azzolini – sales manager, alternators at Linz Electric.

"Dealing with just one contact for both the engine and alternator leads to several advantages: being in contact with only one supplier will end up saving time and make the entire purchase process easier, not to mention the fact that both engines and alternators will be in stock together and ready to be delivered. Additionally, the PowerPackPlus will simplify all of the aftersales processes as a result of the Mitsubishi service network being able to provide aftermarket support for both engine and alternator," elaborated Azzolini.

"It is an honour to have been chosen by such a prestigious organisation as Mitsubishi for this initiative. This will play a crucial part in Linz Electric's strategy to strengthen its worldwide brand and to be a key player in the energy sector," he added. ■

To learn more, contact:
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Mob: +31 6 12 089 086



A S4L2-61SD engine from Mitsubishi.

Photo Credit: MTEE

Powering up the quality of life

Technical Review Middle East discussed Teksan's rental generator sets as well as its cogeneration-trigeneration technologies with Ridvan Öksüz, head of marketing, during the Middle East Energy 2022.

Technical Review Middle East (TRME):
What latest technologies does Teksan offer to provide more sustainability while delivering greater value to customers?

Ridvan Öksüz (RO): As a power solutions provider, Teksan is active in diverse areas from hybrid power systems to cogeneration-trigeneration and from biogas to energy production in order to deliver greater value to customers. Teksan believes in being future ready, through advanced technologies and green energy solutions that help reduce carbon emissions.

Teksan delivers high-performing cogeneration and trigeneration systems with energy efficiency up to 90%, which simultaneously meet electricity, heating and cooling requirements with increased efficiency, lower emissions and significant fuel saving. They provide additional competitiveness to the industrial and commercial sectors and affordable heat to the domestic sector.

Our microgrid solutions integrate various sources of power including battery energy storage systems for greater energy efficiency.

Our R & D team based in Turkey, is always looking for alternative solutions that can provide efficient, low-cost, clean energy including hybrid solutions that offer renewable and efficient energy options,

Teksan delivers high-performing cogeneration and trigeneration systems with energy efficiency up to 90%.

Ridvan Öksüz, head of marketing, Teksan.



Teksan team was at the Middle East Energy 2022 exhibition.

energy storage solutions and microgrid applications.

Teksan invests in the power of connected technology and smart solutions that enable predictive maintenance and monitoring as well as control capabilities compatible for different protocols.

TRME: How is Teksan planning to increase presence in the Middle East and Africa region?

RO: Teksan is present around the world through its large distribution network and overseas offices in the UK and the US. The company will be opening new offices outside Turkey.

The Middle East and Africa region is an

important market for Teksan, with a lot of scope for renewable energy.

TRME: What is the scope for the rental generator sets in the Middle East?

RO: Due to increasing construction and infrastructure projects as well as many events taking place in the Middle East region, rental generators are in high demand in the market.

Teksan rental generator sets offer reliable power and high performance regardless of the industry, with different power ranges. Teksan offers Stage V generators that have the lowest emissions, offering environmentally-friendly solutions for the rental market. ■

Photo Credit : Teksan



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*2020 Attendee Britton Lawson,
Veit and Company, Inc.*



Cummins C2000D5 diesel gensets at the Abdali Hospital in Central Amman, Jordan.

Photo Credit : Cummins

Versatile onsite power solutions

Onsite power solutions can be a vital resource across the Middle East in regions, locations and for critical applications where uninterrupted power supplies are essential. They can also be versatile in offering innovative, temporary solutions in some 'not-so-vital' scenarios. Tim Guest reports.

FROM HOSPITALS TO universities, oil storage facilities, mines and major construction projects, and even major sporting events, there are a great many situations, both in populated as well as remote locations, when an onsite power system is required to deliver a specific, regular and uninterrupted supply of electricity to critical systems and facilities, sometimes in regions where grid electricity is often unreliable.

With numerous specialist companies in the field delivering a range of onsite solutions, this article takes a look at just a handful of recent and ongoing regional projects.

Supercomputing power

In Q2 last year, Rolls Royce Power Systems was contracted to deliver 12 of its mtu Kinetic PowerPacks to the supercomputing facility at the private research King Abdullah University

for Science and Technology (KAUST) in Thuwal, Saudi Arabia. The onsite, power-generating systems, which a spokesperson for Roll Royce told *Technical Review Middle East*, were all delivered on time during the

The Rolls Royce mtu Kinetic PowerPacks operate under humid, ambient conditions and temperatures up to 50 degrees Celsius.

summer and were procured to provide the university's supercomputing facility and data centre with clean, conditioned, uninterruptible power supply upgrade to act as the facility's energy backbone.

Equipped with dynamically rotating kinetic energy accumulators, each of the Rolls Royce mtu Kinetic PowerPack type KP5s has a power output of 1.6 megawatts, operates in medium voltage at 13.8kV, 60Hz, and is powered by a mtu diesel engine type 16V 4000 G74S. Onsite in Thuwal, the power packs have been configured in two groups of six systems each, with one KP5 available as a backup in each group.

In the event of a power outage, the constantly rotating, heavy kinetic energy accumulator drives the generator and bridges the few seconds until the diesel engine, which has started in the meantime, takes over. The systems operate under

humid, ambient conditions and temperatures up to 50 degrees Celsius. The scope of supply also included medium-voltage switchgear, transformers and two control stations.

Commissioning the turnkey onsite power generation plant at the end of 2021 was the responsibility of the Rolls-Royce Power Systems team in the Middle East, which will also be on hand to provide full operational support until the end of 2022 and long-term service support throughout the lifetime of the installation, as required by the customer.

Bernard Hanssens, managing director of Rolls-Royce Solutions Middle East based in Dubai, said of the Thuwal project that the customer appreciated the value that the installation could offer in terms of its reduced footprint, its performance in very harsh, local, climatic conditions, and the ability the system has to handle large load fluctuations.

Green-powered greens

At the start of February, when Harold Varner III sank an incredible eagle on his final hole to take the Public Investment Fund (PIF) Saudi International golf title by one shot over Bubba Watson, he was, without doubt, oblivious to the onsite power solutions that supported the event, keeping his iced tea cold in the clubhouse and the air-conditioning on and cooling the changing rooms. That power solution was provided by Aggreko and was coordinated by the company's Events Services Division, AES.

Green and innovative, what Aggreko provided was a solar hybrid solution at the Royal Greens Golf & Country Club, Jeddah, using sustainable options of solar energy and biofuel in three areas for the tournament, helping the flagship event organisers significantly reduce CO2 emissions. Aggreko, itself, has recently announced its goal of cutting its use of fossil fuels by 50% by 2030, replacing diesel with hydro-treated vegetable oil (HVO) in its quest to reach net zero by 2050.

The onsite solution in Jeddah included a 60 kw solar gem, running in the event village as a back-feed into a synchronised package of 3 x 200 kVA generators, with a 90 kw powr2 solar unit powering two structures on the 16th hole; a similar system with a 45 kw powr2 unit operated on the 14th hole, backed up by a 60 kVA thermal generator. The company also installed standalone solar panels on the roof of the PIF structure on the 16th hole hospitality area to feed directly into the two powr2 units; this further reduced the generators' run times.



Aggreko provided a solar hybrid solution at the PIF Saudi International in Jeddah using sustainable solar and biofuel.

Photo Credit: Aggreko

Only days earlier, at the end of January, Aggreko supported the Ssync.io Dubai Desert Classic – the 33rd edition of the DP World Tour golf event – at the Emirates Golf Club, by delivering and operating a similar temporary onsite, green hybrid energy solution to power large areas of that event with a mix of 20% locally sourced biofuel and 80% solar power, the latter using a 100-metre solar panel on the 11th hole. Areas powered by the new energy mix included the players' lounge, the main hospitality pavilion, the 15th green hospitality area, as well as several other key tournament locales.

Onsite power systems are often required to deliver specific, regular and uninterrupted supplies of electricity to critical systems and facilities. The picture on the first page of the article shows three Cummins C2000D5 diesel gensets at the Abdali Hospital in central Amman, Jordan.

Powering a hospital, avoiding the crisis

In another recent onsite installation, this time in April, Volvo Penta Generators had two of its Volvo Penta TAD1641GE gensets chosen to power the Tripoli Governmental Hospital north of Beirut, Lebanon, replacing two existing gensets. Khonaysser Motors, the leading Volvo Penta importer in the country, which delivered the gensets and synchronised and fully commissioned the installation, will also provide maintenance and service support for at least the first year.

Talking to *Technical Review Middle East*, Elias Khonaysser, CEO at Khonaysser Motors, said that the deal had been concluded in December 2021, and since the installation and commissioning in mid-April, the gensets had been fully operational. He said that in Lebanon plagued by its ongoing energy problems, "The gensets are the main source of power taking into consideration

the current electrical crisis Lebanon is passing through. Due to the short supply from the main grid, the generators will be used as continuous power, generating 500 KVA PRIME, for approximately 20-22 hours per day". He added that the installation will 'definitely' help the hospital get through the country's current, serious power issues.

The Khonaysser Group was established by Elias Khonaysser's father in 1960, for servicing diesel engines and trucks, but today leads in the supply of diesel engines and generators for industrial and marine commercial/leisure applications.

Onsite installation maintenance changes hands in Jordan

Three years ago, the Abdali Hospital in central Amman, Jordan, in need of reliable backup power to protect the site from unsafe and costly power outages, took delivery of an integrated, turnkey Cummins power system, through Amman-based SETI Jordan, the country's sole and official Cummins distributor. The equipment, provided and commissioned by SETI, included three Cummins C2000D5 diesel gensets equipped with QSK60-G3 engines, as well as a Cummins PowerCommand DMC8000 master controller.

SETI also provided ongoing technical support under its maintenance agreement, including comprehensive servicing, inspections and regular tests to ensure the equipment has always been ready when needed. That service and maintenance responsibility, however, has recently passed to the hospital's own in-house maintenance staff, according to a Cummins spokesperson talking to *Technical Review Middle East*, that is 'unless the in-house staff have a problem that requires our service team's support, and that remains SETI Jordan.' ■

mtu gensets from Rolls-Royce approved for HVO fuel

ROLLS-ROYCE HAS TAKEN a significant step towards meeting its net zero goals, set out last year, with the approval of its mtu Series 4000 and Series 1600 diesel engines for use with sustainable fuels in power generation applications.

Following successful trials on the test bench and in the field, Rolls-Royce business unit Power Systems has approved its Series 1600 and Series 4000 generator sets for use with EN15940 synthetic diesel fuels. In addition to GtL (Gas to Liquid) and Ctl (Coal to Liquid), these fuels include also the sustainable fuels BtL (Biomass to Liquid), HVO (Hydrotreated Vegetable Oil) and PtL (Power to Liquid) such as e-diesel. They can all replace conventional diesel fuel, which is made from fossil petroleum. "There is already a lot of interest in HVO in particular from many customers in the energy industry and data center business who want to improve their carbon footprint," explained Tobias Ostermaier, President Stationary Power Solutions at Rolls-Royce Power Systems. "The results from pilot customers show a significant reduction in greenhouse gases, nitrogen oxide and particulate emissions by using HVO instead of fossil diesel in their gensets."

HVO use significantly reduces CO₂, nitrogen oxide and particulate emissions

Waste vegetable and animal fats and used cooking oils can be used as base materials for HVO, which are converted into hydrocarbons by means of a catalytic reaction with the addition of hydrogen. Through this process, the fats and vegetable oils are adapted in their properties to diesel fuel and can supplement it as an admixture or replace it completely. The advantages of



HVO are clean combustion with a reduction in particulate emissions of up to 80 percent, nitrogen oxide emissions by an average of 8% and (depending on the manufacturing process and feedstock) CO₂ emissions by up to 90% compared to fossil diesel. Because HVO fuel is produced from renewable raw materials, its production, transport, and combustion generate only about as many greenhouse gases as were absorbed by the plants during the growth of the biomass.

Convincing performance without engine and system modifications

The tests confirmed that mtu engines perform equally excellent when using HVO (as compared to diesel) in terms of maximum power, load acceptance and fuel consumption. HVO is a drop-in fuel, which means that there are no adaptations needed to the diesel plant infrastructure, hardware

or software for its use. In addition, the storage stability of this synthetic fuel is significantly better than that of biodiesel, making it even more attractive to emergency power system operators.

Target: 35% greenhouse gas savings by 2030 with new fuels and mtu technologies

As part of its sustainability program, Rolls-Royce announced in the middle 2021 that it would realign its product portfolio so that by 2030, new fuels and mtu technologies can save 35% greenhouse gas emissions compared to 2019 levels. The company is now already successfully operating an mtu fuel cell system, has established a clear roadmap for the introduction of hydrogen engines, and is now progressively releasing further engines in more applications to run on sustainable fuels.

Photo Credit : Rolls-Royce Power Systems

Renewable power sets another global record in 2022

NEW CAPACITY FOR generating electricity from solar, wind and other renewables has increased to a record level worldwide in 2021 and will grow further this year as governments increasingly seek to take advantage of renewables' energy security and climate benefits, according to the International Energy Agency.

The world added a record 295GW of new renewable power capacity in 2021, overcoming supply chain challenges, construction delays and high raw material prices, according to the IEA's latest Renewable Energy Market Update. Global capacity

additions are expected to rise this year to 320GW – equivalent to an amount that would come close to meeting the entire electricity demand of Germany or matching the European Union's total electricity generation from natural gas. Solar PV is on course to account for 60% of global renewable power growth in 2022, followed by wind and hydropower.

While energy markets face a wide range of uncertainties, the strengthened focus by governments on energy security and affordability – particularly in Europe – is building new momentum behind efforts to

accelerate the deployment of energy efficiency solutions and renewable energy technologies.

The current growth in renewable power capacity would be even faster without the current supply chain and logistical challenges. The cost of installing solar PV and wind plants is expected to remain higher than pre-pandemic levels throughout 2022 and 2023 because of elevated commodity and freight prices, reversing a decade of declining costs.

Global additions of solar PV capacity are on course to break new records in both this year and next, with the annual market reaching 200 GW in 2023.

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Smart lighting is helping to create smarter, safer and more comfortable spaces.

Lighting the world with smart technology

Photo Credit : Adobe Stock

Software AG is one of the companies utilising its suite of products and solutions to integrate smart technologies into lighting systems and solutions across the Middle East. *Technical Review Middle East* spoke to the company's CTO for Middle East and Turkey to hear more about the future benefits of integrated smart solutions.

AN AUTOMATED SMART building offers multiple benefits and is a fundamental element of any building automation system. For example, LED lighting systems reducing energy consumption, motion sensors that drive clever AI powered scheduling of lighting schemes as well as smart lighting creating safer, healthier, and more comfortable spaces.

Most Tier 1 cities globally are reaping the many benefits that smart lighting provides, such as setting lighting schedules, creating lighting controls systems, dimming options,

daylight harvesting, limited usage of lights near windows when the outside light level is high enough and much more.

However, larger organisational, citywide and nationwide adoption is vital for its stellar position in the creation of smart cities. Therefore, it is not surprising that smart lighting forms an integral part of smart building technologies across public places, commercial buildings as well as modern communities that are built keeping sustainability as the anchor.

Trends

New age smart lighting systems control comprise a smart sensor fitted within the light bulbs. The job of this sensor is to track motion, power usage, ambient light and temperature, and act as a data provider using the latest technologies such as IoT, AI and Bluetooth. These controlled lighting systems powered with motion sensing can provide many data references and usage information such as occupancy patterns, space utilisation, typical areas of mobility within the premises, scheduling the cleaning and maintenance based on usage patterns of objects, people tracking and more.

This data captured could be used for intelligent decision making. A classic example is cleaning and maintenance services scheduling, which could be

connected through multiple factors such as the lighting system, HR information systems (occupancy), a roster of the maintenance company using the lighting system as an aggregator of data for efficient use of cumulative resources of manpower, energy and time taken to carry out the activity.

Software AG's solutions

Software AG is lighting the path to a smarter future for lighting systems and software. Software AG Cumulocity IoT's comprehensive integration capabilities ensures that secure connectivity to any 'thing' can be achieved quickly and easily. Software AG aims to make cities and communities smarter, by facilitating:

- Reduction in cost of energy and maintenance
- Predictive maintenance
- Increased public safety from improved lighting
- Enabling safer traffic
- Ensuring measurable environmental impact due to reduced energy consumption

So for example, Software AG's Cumulocity IoT allows engineers to target streets and areas and identify the number of hours the bulbs have been lit and its lifetime figure. If for instance, the life expectancy of a bulb is 11,000 hours, upon reaching 10,925 hours, the IoT solution sends an alert message on the systems for engineers to time the bulb replacement, facilitating continued lighting in the area.

The opportunities with smart lighting that cities can capture go far and beyond value creation through energy (cost) and maintenance savings. ■



Photo Credit : Software AG

Vijay Jaswal is Software AG's CTO for Middle East and Turkey.

Level measurement in the IoT world with LoRa

The VEGAPULS Air Radar sensors offer 80 GHz measuring frequency, high dynamic range and remote access.

THE INTERNET OF Things (IoT) concept is spreading into every industry, indeed into every aspect of people's lives. The global IoT market size is valued at hundreds of billions of dollars, and expert consensus forecasts further rapid growth. The IoT's physical layer is represented by the devices that gather information about the real world – sensors. These sensors are connected to the Internet, and the data obtained becomes available for processing, opening up a multitude of applications.

In conventional instrumentation and automation the sensors are connected and operated by locally-controlled equipment. A number of technologies are available in the market to switch the connectivity to the IoT. One such technology is LoRa.

LoRa (from long range) is a low-power wide-area network (LPWAN) that allows connecting sensors to a single access gateway over a large distance – more than 10km range. Its support for low-power protocol allows these sensors to run on batteries for extended period of times – for years.

To help visualise, consider a WiFi network at home. The router is plugged into the electricity socket, and connected to the Internet. LoRa, acting as the gateway just like a router, is powered and connected to the Internet. The devices are wireless, battery-powered sensors that are equipped with appropriate LoRa radio module. Such devices within a few kilometres' range can connect to the LoRa and send the data online.

Instrumentation meets LoRa: 10 years of measurement on a battery
VEGA, the leading manufacturer of Radar level sensors from Germany, brings to the market the autarkic LoRa-ready Radar level sensor – VEGAPULS Air series. VEGA Radars encompass state-of-the-art technologies, such as 80 GHz measuring frequency, high dynamic range and smart electronics with remote access.

The VEGAPULS Air sensor is mounted above the measured media, for example, on



top of a tank, silo, waste bin, or above a water body – no cables or power supply are required. Once activated, the device spends most of its lifetime in sleep mode. At selected intervals the device wakes up, performs the measurement, transmits the data, and goes back to sleep. The data transmission intervals are from once-per-day to once-per-15-minutes. The corresponding battery life ranges from a couple years to over a decade. The IP 66/68 rating makes the device suitable for practically any location, indoors or outdoors, in wet or dusty environment.

The solutions are perfect for applications where gradual level changes are monitored, for instance, sea level during day or night cycles and throughout a year, the water level in a dam reservoir, lake or river, or the

height of dunes next to a controlled area.

VEGAPULS Air is especially suitable for inventory monitoring and logistics-related applications. Consider a diesel tank in a remote location that is refilled a couple of times a month. Perhaps distance is a factor and is lesser priority to lay cables, install a conventional level sensor and connect it to the local DCS. Yet, if it is not refilled on time, the impact is significant. The solution – install the LoRa-enabled Radar level sensor, and monitor the diesel level online at any time, and receive warning notifications once the level is low.

This holds true for any remote location that may need monitoring, such as a septic tank to know when to send the truck, a water cistern to know when to order a delivery, trash containers to ascertain which need collection the same day or could wait until the next day and stormwater canalisation – monitor wells that get blocked with sand and need a cleaning team.

Other IoT connectivity technologies such as NB-IoT SIM-cards, also supported by VEGAPULS Air devices, are available. Yet LoRa is the only one that works fully on user-owned private equipment and network. It needs no reliance on coverage by the service provider, instead, it has a unique gateway and sensors. Data can be retrieved from PCs or mobile devices. ■

The VEGAPULS Air sensor is perfect for applications where gradual level changes are monitored.



Photo Credit : World Utilities Congress

Worldwide stakeholders attended the event.

Uniting the world's utility landscape

The World Utilities Congress 2022 in Abu Dhabi brought together stakeholders from the global power and water industry.

HELD UNDER THE patronage of HH Sheikh Khaled bin Mohamed bin Zayed Al Nahyan, member of the Abu Dhabi Executive Council and chairman of Abu Dhabi Executive Office, the inaugural edition of the World Utilities Congress held in Abu Dhabi, hosted by TAQA and organised by dmg events, gathered more than 10,000 trade professionals and 120 exhibiting companies who sought to promote proactive measures to digitalise power and water systems, control emissions, and attract long-term capital investments.

The World Utilities Congress offered an unrivalled opportunity for the global power and water industry to converge and discuss trends and explore technologies and innovations influencing future power and water demand, hosted by Abu Dhabi National Energy Company (TAQA) and

The inaugural edition of the World Utilities Congress was a huge success, which speaks of the critical importance our sector plays in delivering a more sustainable future.

Jasim Husain Thabet,
TAQA's group CEO

organised by dmg events. The Congress brought together more than 200 industry expert speakers, over 1,000 conference delegates, and hosted more than 50 strategic and technical conference sessions, including a Nuclear Energy Leadership Forum.

Over the course of three days, leaders and industry experts from the region and around the world, tackled critical issues and explored solutions during the conference sessions, enabling the continued pursuit of a greener present and future. The sessions also shed light on the importance of embedding future-focused digital transformation strategies as a response to evolving market and customer needs.

On day three, topics such as 'Efficient integration of renewable energy into power grids', 'Entering the golden age of utility reinvention – how is digitalisation redefining

utility business models?', 'Integrated power and water strategies for smart cities development' and more were also discussed.

Jasim Husain Thabet, TAQA's group CEO and managing director, and host company of the inaugural event, stated, "The inaugural edition of the World Utilities Congress was a huge success, which speaks of the critical importance our sector plays in delivering a more sustainable future, and the unique position of Abu Dhabi in enabling this change. In partnership with dmg, we hosted more than 10,000 visitors, two ministerial sessions and strategic and technical discussions that are helping shape the future of the utilities industry. I would like to thank our partners, sponsors and peers who, through collaboration and a deep-seated commitment to knowledge-sharing, made this inaugural event a success."

Christopher Hudson, president, dmg events, the organisers of the World Utilities Congress, commented, "The success of the first World Utilities Congress in Abu Dhabi has been incredible to see. In organising this event, we have helped our peers from around the world to learn from each other and to work together for a sustainable future. The World Utilities Congress has been the perfect opportunity for the sector to showcase ideas, solutions and best practice in front of an audience that matters."

During his participation, Dr Afif Saif Al Yafei, CEO of TRANSCO, chairman of the World Utilities Congress technical committee and member of the executive committee, said, "Each renewable source comes with its own characteristics, making planning incredibly important. Comprehensive studies, modelling, and multi-stakeholder engagement must be well executed in order to allow for the seamless

Comprehensive studies, modelling, and multi-stakeholder engagement must be well executed in order to allow for seamless integration as well as to ensure the reliability and integrity of the grid.

Dr Afif Saif Al Yafei, CEO of TRANSCO, chairman of the World Utilities Congress

integration as well as to ensure the reliability and integrity of the grid. We are also witnessing how peak renewable power generation is coinciding with peak energy use in the UAE. This enables the utilisation of renewables for various purposes including electricity generation, and cooling – which is essential for the region."

Danilo Moresco, vice president and global industry manager, power and water, energy industries at ABB, said, "Our purpose at ABB is driven by our willingness to achieve a more productive, sustainable future, and we absolutely believe that sustainability and efficiency should be planned into all operations.

The role of digitalisation in this sector is instrumental to achieving our sustainability goals, and lowering carbon emissions and enabling decarbonisation requires smarter handling of the energy produced and supplied. With the most up-to-date digital technologies, utility companies can collect, contextualise and analyse data for full transparency and measurability. This capacity to take action will help them to optimise energy efficacy, accurately track greenhouse gas emissions and reporting across supply chains, as well as enable more effective monitoring of carbon offsets."

Conferences and technical programmes

With the aim to support the mandate to address the acceleration to a sustainable future for the world's power and water supply, the Strategic Conference programme has reflected the issues that CEOs and their leadership teams need to consider, as they modernise utilities to manage disruptive change and embed future-focused digital transformation strategies in response to evolving market and customer needs.

The Strategic Conference and Technical Conference witnessed discussions on innovation and technical solutions across the entire utilities value chain including power generation, transmission and distribution, water management, water sewage, district cooling and customer engagement, featuring several industry experts speaking at the sessions across the three days. The Technical Conference provided multiple opportunities for industry professionals to meet face-to-face with existing and new clients, gain insights on the latest technology trends and developments, and identify new market opportunities within the power and water industry.

The first day of World Utilities Congress also witnessed the kick off of the 'Nuclear Energy Leadership Forum', which convened global industry professionals for three days, to explore the deployment of safe, reliable nuclear energy generation, technological advancements in nuclear energy, and the latest in research and development of nuclear science and technology.

The first edition of the World Utilities Congress was held with the support of The Ministry of Energy and Infrastructure, The Abu Dhabi Department of Energy (DoE), the Department of Culture and Tourism – Abu Dhabi (DCT Abu Dhabi), and the Emirates Nuclear Energy Corporation (ENEC). The event's list of partners and sponsors included The National Central Cooling Company (Tabreed); Emirates Water and Electricity Company (EWEC); Baker Hughes; Frost & Sullivan; Boston Consulting Group; Endress + Hauser; Toshiba, Schneider Electric and Publicis Sapient. ■

In organising this event, we have helped our peers from around the world to learn from each other and to work together for a sustainable future. The World Utilities Congress has been the perfect opportunity for the sector to showcase ideas, solutions and best practice in front of an audience that matters.

Christopher Hudson, president, dmg events, organisers of the World Utilities Congress

Transforming the energy and resources sector

Photo Credit : Adobe Stock

The energy and resources sector will need to go through a period of unprecedented change in an increasingly decarbonised, decentralised, and digitalised world.

IN THEIR 2022 energy flagship report, 'Disruption Is Now,' management consulting firm Arthur D Little (ADL), draws attention to trends that are currently shaping the energy and resources industry as it transitions with great ambitions toward net zero.

Trends listed in the report

Decarbonisation will be the most important overarching trend for all sectors and the world in general. It is already having a fundamental impact on the strategic thinking and future investment decisions of companies in all sectors.

Decentralisation for a far more localised solution in favour of service delivery rather than a reliance on a much wider national or regional infrastructure. The mission then for energy grid firms is to create future-proof energy infrastructures that can accommodate technologies such as intermittent and decentralised generation.

Digitisation or the need to digitise operations to enhance efficiency, thereby reducing costs, increasing revenue stream by diversifying into new products and services as well as improving customer experience are increasingly important for energy players and fundamental to their transformation.

As part of the analysis, ADL has reviewed in detail the investments being made by traditional companies across many different sectors, including both upstream and

downstream oil and gas (O&G), power generation, networks and infrastructure, customer services and solutions, waste, water, and metals and mining.

Evidently the energy and resources sector will need to go through a period of unprecedented change if they are to be fit-for-purpose in an increasingly decarbonised, decentralised, and digitalised world.

The report brings to light key trends focused on effecting transformation to help companies start thinking differently and in a way that is often at odds with their traditional working methods.

Adnan Merhaba, partner, energy & utilities practice lead, Arthur D Little Middle East said, "No one-size strategy can fit all – for some energy players, the journey will mean thoroughly evaluating their global and regional assets to determine those that are at risk of being stranded, and then divesting accordingly. For others, the focus will be on diversification, building outward from their existing competencies by adding new capabilities, or creating risk-sharing partnerships that enable them to exploit new opportunities. For most, achieving greater operational efficiency by embracing digitization and significantly reducing its carbon footprint to meet increasing demands from investors and shareholders will be the only way forward to quickly adapt to changing market conditions."

One of the market segments touched upon

in the report is Hydrogen economy that is touted to become a US\$700bn economy by 2050, with green hydrogen expected to take a dominant share. Recently, the UAE has joined forces with the Netherlands to boost its research and efforts on hydrogen energy. Germany and KSA announced a strategic alliance on green hydrogen development to collaborate on the generation, processing, use, and transportation of clean hydrogen for the benefit of both countries.

"Hydrogen is decidedly playing a key role in the diversification of GCC economies and shows great promise for the region to become a hub of green energy as we accelerate into an energy transition in accordance with sustainable and development goals. The increasing number of advanced use cases makes clean hydrogen a key decarbonisation measure and contributor to the realisation of a circular economy at the benefit of all stakeholders involved in the value chain," commented Carlo Stella, Partner, Energy & Utilities Practice, Arthur D. Little Middle East.

Including insights from companies gathered over the last year, the report showcases ADL's own research into global energy practices. These together give a sense of what progress is being made toward a decarbonised future, which challenges still lie ahead, and the impacts on energy and utility players along the entire value chain. ■

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Empowering the connected industrial economy

The importance of contextualised as opposed to raw data, data sharing and empowering the connected worker were among the key themes highlighted at the AVEVA PI World conference held in Amsterdam from 16-19 May.

AT THE AVEVA PI World conference held in Amsterdam from 16-19 May, AVEVA, a global leader in industrial software, showed how information – contextualised industrial data – is fundamental to sustainable growth across the energy, manufacturing, and infrastructure sectors, while unveiling its product roadmap to industry leaders and partners at the event.

“Information-led innovation provides a proven and responsive pathway to industrial growth at a critical time when the business landscape has been reshaped by turbulence and risk. Industry is facing very complex challenges. Business leaders face increased sustainability compliance requirements, retiring workforces, and the ever-present demand for efficiency, agility and resilience. Raw data in itself is not immediately useful or even understandable but when you analyse and contextualise it into insightful information, that’s when you can help the industrial world to innovate at scale on the road to a net zero future,” said AVEVA CEO, Peter Herweck.

“When you talk about all this data, it is key to have the best visualisation available; that means giving the right information at the right time to the right person in the most reasonable way to generate action.”

“It’s not only about technology, but also about changing business processes, and your facilities and clients’ facilities, and helping people to utilise and get the best out of the technology,” he added.

It’s not only about technology, but also about changing business processes.

AVEVA CEO, Peter Herweck



Peter Herweck, CEO, AVEVA.

Photo Credit : AVEVA

Amish Sabharwal, AVEVA executive vice president for engineering, and Gregg Le Blanc, AVEVA senior vice president, information management, outlined the company’s integrated portfolio and elaborated on the product roadmap for 2022 and beyond.

Data sharing

Le Blanc highlighted the importance of data sharing and the connected industrial economy, through “being able to activate, transform that data into information and share it securely with others. Using the data in that way unlocks different capabilities that can drive new insights. Our software can help you have a transformational impact on how you use data, turn it into information and get those insights. And you can optimise your entire value chain around that.

“Approximately 68% of currently available enterprise data goes unused because it sits in organisational silos, yet

more data is being created than ever before. AVEVA software enables data to be aggregated, transformed and shared within companies and with external partners, unlocking innovation at scale for all players within a new and connected industrial economy,” Le Blanc said.

AVEVA Data Hub, a SaaS solution that was launched earlier this year on AVEVA Connect, the industrial cloud platform, provides data sharing capabilities enabling businesses to unlock operational efficiencies, increase sustainability, and drive digital transformation.

Sabharwal explained how the digital twin helps embed sustainability across industrial enterprises. “The digital twin recreates a physical asset in digital form by capturing, organising and contextualising data in a quantifiable form. When these models are used to forecast future scenarios, they can predict potential problems and improve asset reliability, reducing costs and resource

use, and minimise carbon emissions. AVEVA's digital twin is uniquely able to capture engineering, operations and maintenance data to provide a holistic, integrated view across multiple use cases," Sabharwal said.

AVEVA recently further strengthened its digital twin software with a host of new features that make visualising asset information with real-time data faster and easier than ever. With AVEVA Point Cloud Manager and AVEVA Asset Information Management, as well as new 3D wearable scanning and advanced document management, AVEVA customers can now experience a complete digital twin within just 60 days.

More than 1,500 delegates from around the world attended the four-day event in person, while an estimated 1,000 others interacted online. They were given an overview of new developments with industry-leading solutions including AVEVA Connect industrial cloud platform and AVEVA PI System operations information management. Learning labs offered hands-on technical practice in cloud and data environments.

Use cases

Throughout the event, customers and partners from more than 70 companies in 12 industry verticals shared their experience of the data-led digital transformation, and how it is helping them to tackle the complex challenges of the current industrial landscape.

In the energy sector, for example, the USA's Dominion Energy is leveraging data sharing to meet their ESG reporting requirements. By aggregating data from remote wind and other assets, and connecting their PI systems to AVEVA data hub, the company is able to share renewable energy data with their customers, showing them how their energy is being delivered, and demonstrating that the energy produced is from renewable sources.

Sergio Valencia, ROPI technical services manager at EDP Renewables, shared lessons from a Lighthouse Programme project where two million data streams from disparate wind farms were streamed to the cloud for centralised insights.

Jacky Wright, chief digital officer of Microsoft, talked about how data accelerates sustainability progress.

"A cloud-based, data-driven approach enabled us to assess, select and build new technologies, and reduce our scope 1, scope 2, and, ultimately, scope 3 emissions across our business," she said at the Digital Agility and Resilience Panel. She explained how data analytics has supported smart buildings, investment into renewable energy to power data centres, and driven strategic decisions to pay for the removal of 1.3mn metric tonnes of carbon dioxide from the atmosphere.

Michael Dean, global director – Power, Controls & Information System at Kellogg's shared how the company's platform investment has paid off in terms of scale, consistency, standardisation and collaboration. Installing AVEVA PI System helped Kellogg to leverage, analyse and manage energy data in its factories, creating a digital ecosystem that benchmarked usage and identified opportunities for savings. As a result, Kellogg saved US\$3.3mn in a single year and identified an additional US\$1.8mn in rebates, and optimised abatement measures. ■



Electrical Equipment and Materials Buyers' Guide

2022

The Middle East's annual where-to-buy guide

Section One: Listings by category

Section Two: Suppliers of electrical equipment and materials, page 41

Section Three: Contact details of Middle East agents & subsidiaries listed by country, page 44

Section One: Listings by category

AC Alternators

Mecc Alte UK Ltd.

AC Drives

Cantoni Motor S.A.

Mohammad Al-Ojaimi Contracting Est.

Air Compressors

Bauer Kompressoren GCC FZE

Rotair S.P.A

Air Conditioning / Chillers /Heat Exchangers

LG Electronics Gulf FZE

Air Purification & Cleaning Equipment

Bauer Kompressoren GCC FZE

Auto Recloser

Mohammad Al-Ojaimi Contracting Est.

Batteries

Mohammad Al-Ojaimi Contracting Est.

Boilers & Auxiliary Equipment

Reuter-Strokes, a Baker Hughes business

Cable - Conductor Products

HELUKABEL GmbH

Mohammad Al-Ojaimi Contracting Est.

Cable Fault Locator

Mohammad Al-Ojaimi Contracting Est.

Cable Handling Equipment

Eland Cables

Mohammad Al-Ojaimi Contracting Est.

Cable Jointing & Termination

Eland Cables

HELUKABEL GmbH

Mohammad Al-Ojaimi Contracting Est.

Mosdorfer GmbH

Cable Labeling

Brady Corporation

Mohammad Al-Ojaimi Contracting Est.

Cable Laying Equipment

Mohammad Al-Ojaimi Contracting Est.

Rotair S.P.A

Cable Protection & Support

HELUKABEL GmbH

Mohammad Al-Ojaimi Contracting Est.

Cable Testing Equipment

Eland Cables

Cable Trays

Eland Cables

Cables & Cable Accessories

Brady Corporation

Eland Cables

HELUKABEL GmbH

Cogeneration

Deep Sea Electronics LTD

KOHLER

Communication Equipment

Deep Sea Electronics LTD

Compressor and Turbine Blades

Bauer Kompressoren GCC FZE

Compressors

Byrne Equipment Rental LLC

MAN Energy Solutions SE

Rotair S.P.A

Conductors

A.N. Wallis & Co. Ltd.

Control Equipment/Systems

Deep Sea Electronics LTD

MOTORTECH GmbH

Reuter-Strokes, a Baker Hughes business

Control Safety, System Protection & Monitoring Equipment

Bauer Kompressoren GCC FZE

Reuter-Strokes, a Baker Hughes business

Control System - Industrial & Residential

Deep Sea Electronics LTD

Current Transformers

Altaaqa Alternative Solutions Projects

DWC

EFEN GmbH

Damper System

Mosdorfer GmbH

Data Logging

Nidec Leroy-Somer / Electric Power

Generation

Detectors

Reuter-Strokes, a Baker Hughes business

VEGA Technique

Diesel Engines

Baudouin

Cummins Middle East FZE

Deep Sea Electronics LTD

Jubaili Bros

KOHLER

MAN Energy Solutions SE

Perkins Engines Company Limited

Distribution Services / Equipment

EFEN GmbH

Downhole

Reuter-Strokes, a Baker Hughes business

Earthing / Lightning Equipment & Accessories

A.N. Wallis & Co. Ltd.

Cressall Resistors Ltd.

Education & Training

VEGA Technique

Electric Cabling & Substation Technology

Mohammad Al-Ojaimi Contracting Est.

Electric Drives

Cantoni Motor S.A.

Electric Generators - Turbo Generators & Hydro Generators

AJ Power Ltd.

Altaaqa Alternative Solutions Projects

DWC

Cummins Middle East FZE

Deep Sea Electronics LTD

Linz Electric S.p.A

Mecc Alte UK Ltd.

Nidec Leroy-Somer / Electric Power

Generation

Visa S.p.A.

Electric Motors / Repairs Equipment

Cantoni Motor S.A.

Electronics

LG Electronics Gulf FZE

Emergency Lighting

Visa S.p.A.

Enclosures

AP Lanka Pvt. Ltd.

EFEN GmbH

Jubaili Bros

Energy Management & Services

Lovato Electric S.p.A.

Energy Measurements

Lovato Electric S.p.A.

Engineering Services

AP Lanka Pvt. Ltd.

Jubaili Bros

Mosdorfer GmbH

MOTORTECH GmbH

Engines/Motors/Engine Parts

Cantoni Motor S.A.

Cummins Middle East FZE

KOHLER

Equipment for Power Transmission Lines

Cressall Resistors Ltd.

Mosdorfer GmbH

Explosion Proof Equipment /Lighting & Switchgear

Byrne Equipment Rental LLC

Fault Recorder/Event Recorder

Mohammad Al-Ojaimi Contracting Est.

Field Instrumentation / Process Control / Valves

MOTORTECH GmbH

VEGA Technique

Filters

Jubaili Bros

Firefighting Equipment & System

Bauer Kompressoren GCC FZE

Fire Safety Systems

Reuter-Strokes, a Baker Hughes business

Gas & Power Equipment

Altaaqa Alternative Solutions Projects

DWC

Byrne Equipment Rental LLC

KOHLER

MOTORTECH GmbH

Nidec Leroy-Somer / Electric Power

Generation

Gas Compressors / Detectors

Reuter-Strokes, a Baker Hughes business

Gas Engines

Baudouin

Cummins Middle East FZE

Deep Sea Electronics LTD

MAN Energy Solutions SE

Gas Turbines

MAN Energy Solutions SE

Reuter-Strokes, a Baker Hughes business

Generating Sets

ABZ Aggregate-Bau GmbH & Co. KG

AJ Power Ltd.

Altaaqa Alternative Solutions Projects

DWC

Deep Sea Electronics LTD

Jubaili Bros

KOHLER

Linz Electric S.p.A

Lovato Electric S.p.A.

MAN Energy Solutions SE

Mecc Alte UK Ltd.

SAB, Standard Aggregatebau Evers

GmbH & Co. KG

Visa S.p.A.

Generating Technologies

Altaaqa Alternative Solutions Projects

DWC

Deep Sea Electronics LTD

KOHLER

Visa S.p.A.

Generators

AJ Power Ltd.

Byrne Equipment Rental LLC

Cummins Middle East FZE

Deep Sea Electronics LTD

KOHLER

Linz Electric S.p.A

Mecc Alte UK Ltd.

Geothermal Power Engineering

Cummins Generator Technologies

High-Voltage Equipment of Distribution & Control

Cressall Resistors Ltd.

Independent Power ProducersAltaaqa Alternative Solutions Projects
DWC**Indicators/ Controllers**

VEGA Technique

Industrial & Power Automation

Lovato Electric S.p.A.

Industrial Power EngineeringAltaaqa Alternative Solutions Projects
DWC
AP Lanka Pvt. Ltd.
KOHLER**Instrumentation & Calibration**HELUKABEL GmbH
VEGA Technique**Irrigations Systems**

Visa S.p.A.

Junction Boxes

AP Lanka Pvt. Ltd.

Level Detection & Control

VEGA Technique

Lifting Equipment

Byrne Equipment Rental LLC

Lightning Protection

A.N. Wallis & Co. Ltd.

Limit Switches

VEGA Technique

Load Banks

Cressall Resistors Ltd.

Magnetic Cores

AEM Unicore Pty Ltd

Measure & Test**Equipment/Systems/Monitoring**Mohammad Al-Ojaimi Contracting Est.
Mosdorfer GmbH
Reuter-Strokes, a Baker Hughes business
VEGA Technique**Measurement, Control & Diagnostic Instrumentation, Diagnostic Equipment**Reuter-Strokes, a Baker Hughes business
VEGA Technique**Motors & Motor Winding Equipment**

Cantoni Motor S.A.

New & Renewable Energy

Visa S.p.A.

Nuclear Engineering

Reuter-Strokes, a Baker Hughes business

Package Transformer SubstationsAltaaqa Alternative Solutions Projects
DWC**Pipe Laying**

Rotair S.P.A

Plant Monitoring

Reuter-Strokes, a Baker Hughes business

Pneumatics

MOTORTECH GmbH

Power Control & Regulation Equip for Generators & MotorsDeep Sea Electronics LTD
Nidec Leroy-Somer / Electric Power
Generation**Power Factor Correction****Equip/Regulators**Nidec Leroy-Somer / Electric Power
Generation
ORTEA S.p.A.**Power Monitoring & Supplies**Deep Sea Electronics LTD
Reuter-Strokes, a Baker Hughes business
Soltec**Power Plant Design**KOHLER
MAN Energy Solutions SE
SAB, Standard Aggregatebau Evers
GmbH & Co. KG
Visa S.p.A.**Power Transformers**AEM Unicore Pty Ltd
Altaaqa Alternative Solutions Projects DWC
ORTEA S.p.A.**Private Power & Water Utilities**Altaaqa Alternative Solutions Projects
DWC**Process Control & Process Automation**

VEGA Technique

Process Control Equipment

VEGA Technique

Production Systems

Altaaqa Alternative Solutions Projects DWC

Public Power Utilities

Altaaqa Alternative Solutions Projects DWC

Pump Equipment and Services

Visa S.p.A.

Pumps, Compressors & Filters

Rotair S.P.A

SensorsReuter-Strokes, a Baker Hughes business
VEGA Technique**Solar Energy Equipment**Mohammad Al-Ojaimi Contracting Est.
Soltec**Solar Power Engineering**

Soltec

Stand-Alone Sources of EnergyABZ Aggregate-Bau GmbH & Co. KG
AJ Power Ltd.
Altaaqa Alternative Solutions Projects
DWC
SAB, Standard Aggregatebau Evers
GmbH & Co. KG
Visa S.p.A.**Steam Turbines, Electric-Power, Combined-Cycle & Gas-Turbine Units**

Deep Sea Electronics LTD

Switchboards & SwitchgearAP Lanka Pvt. Ltd.
SAB, Standard Aggregatebau Evers
GmbH & Co. KG**Switches**

EFEN GmbH

Switchgear Products, Low & Med VoltageA.N. Wallis & Co. Ltd.
AP Lanka Pvt. Ltd.
EFEN GmbH**Synchronizing Equipment**

Deep Sea Electronics LTD

Systems Operation & Control

Deep Sea Electronics LTD

Telecommunication EquipmentMecc Alte UK Ltd.
Visa S.p.A.**Testing & Inspection Services**

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TransformersAEM Unicore Pty Ltd
Altaaqa Alternative Solutions Projects
DWC
ORTEA S.p.A.**Transmission & Distribution**

AEM Unicore Pty Ltd

Turbines

Reuter-Strokes, a Baker Hughes business

Turnkey InstallationsAltaaqa Alternative Solutions Projects
DWC**Ultrasonic Systems**

VEGA Technique

Uninterruptible Power SystemsSAB, Standard Aggregatebau Evers
GmbH & Co. KG**Variable Speed Drives**

Baudouin

Voltage Stabilizers & Regulators

ORTEA S.p.A.

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Wiring Identification / Wire Markers

Brady Corporation

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Agents:

Lebanon - Cummins Generator Technologies (Middle East)

Cummins Middle East FZE

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Fax: +49 6123 7045 122
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Eland Cables

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E-mail: international@elandcables.com

Global supplier of power, data, instrumentation and control cables to demanding industries including mining, construction, petrochemical and infrastructure projects. Focused on quality, expert technical support, and customer service it makes us a key contributor to projects. ISO/IEC 17025 cable testing services also provided.

HELUKABEL GmbH

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E-mail: oilandgas@helukabel.de

Since its founding in 1978, HELUKABEL GmbH has developed into an internationally leading manufacturer and supplier of cables, wires and accessories. With 55 locations in 30 countries and 1,350 employees based all over the world, the company generates annual Group turnover of 590 million. Our product range includes instrumentation and thermocouple cables, as well as power & control cables for onshore and offshore applications.

Agents:

United Arab Emirates - HELUKABEL Middle East DWC LLC

Jubaili Bros

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E-mail: jbdubai@jubailibros.com

Jubaili Bros with over 40 years of experience, is a leading provider of Energy Solutions in the Middle East, Africa and Asia. Jubaili Bros serves its customers by offering high quality diesel generating sets through 10 countries with 3 manufacturing plants and 29 branches & service centers that are dedicated to customer satisfaction.

Agents:

Kuwait - Jubaili Bros (Kuwait)
Lebanon - Jubaili Bros (Lebanon)
Qatar - Jubaili Bros (Qatar)

KOHLER

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SDMO Industries is one of the world's leading generating sets manufacturers. A wide range of standard products from 1 kVA to several Megawatts through an efficient engineering department meets non-standard requirements. Present in over 150 countries through a dense network, SDMO Industries

devotes its energy to supporting you in the successful completion of each of your projects world wide.

Agents:

United Arab Emirates - KOHLER MIDDLE EAST

LG Electronics Gulf FZE

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Dubai, United Arab Emirates
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www.lg.com/ae_ar

LG Electronics Middle East & Africa is the regional headquarters for LG Electronics based in Dubai that oversees operations in 23 countries comprised of 12 subsidiaries, 11 branch offices & 3 manufacturing facilities. LG's world-leading products are an investment for the future that are made up of 4 forward-looking business units - Home Entertainment, Mobile Communications, Home Appliance & Air Solution & Vehicle Components. For more information about LG Electronics, please visit www.LGnewsroom.com.

Agents:

Bahrain - AJM Kooheji and Sons
Oman - Oman Gulf Enterprise
Qatar - LG Qatar Office
Qatar - Video Home
United Arab Emirates - Al Yousuf Electronics
United Arab Emirates - District Cooling Company
United Arab Emirates - Fortune International Trading LLC
United Arab Emirates - LG Electronics Gulf FZE



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Linz Electric S.p.A. specializes in the production of alternators from 1,7kVA to 1.500kVA and rotating welders up to 500amps. The reliability of Linz Electric results in excellent electrical performance, compactness and mechanical strength, with a wide range of customizations and exclusive design totally Made in Italy Linz Electric is part of Pedrollo Group.

Lovato Electric S.p.A.

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Lovato Electric, Italian solid tradition with almost 100 years of on-going activity, is the leader in industrial controls, diesel gen-set, energy management product manufacturing field for industry. The presence of Lovato Electric in the most important world markets is the result of the company's constant international strategy, which is now exporting its products in over 100 countries.

MAN Energy Solutions SE

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MAN Energy Solutions is a leading solution provider for the marine, energy and industrial sector. Power plants, ships and factories worldwide are equipped with MAN technology. Our mission is to support our customers in the transition towards a carbon neutral future. The industries we serve are crucial for the world economy. Most of them are also hard to decarbonize and we offer the solutions. This gives us the opportunity to have big impact on the global energy transition.

Agents:

United Arab Emirates - MAN Energy Solutions Middle East LLC

Mecc Alte UK Ltd.

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Mecc Alte design and build high performing alternator solutions for low, medium and high voltage power classes for standby and prime power applications, from 1-5,000kVA. With manufacturing in Italy, the UK, China and India, their network of factories is supported by wholly-owned subsidiaries across the globe who specialise locally in the sales, distribution and after-sales for all Mecc Alte products. Combining independent thinking with agile supply and committed service, it delivers next generation products with intelligent capabilities for OEMS looking for greater efficiency and reliability.



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Mosdorfer specializes in fittings and damping systems for high-voltage overhead transmission lines. More than 1,000 projects worldwide with numerous references in the Middle East are obvious sign of international competence as global supplier. The product portfolio includes string fittings, fittings for OPGW, OPPC, ADSS, damping systems, insulators, end fittings, fittings for high temperature conductors and GRIDPULSE, the Transmission Line Monitoring System for industry experts.

MOTORTECH GmbH

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MOTORTECH GmbH is an international developer and manufacturer of ignition components, gas regulation and engine management systems as well as other accessories for the worldwide energy generation industry with stationary gas engines.

Nidec Leroy-Somer / Electric Power Generation

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Nidec Leroy-Somer is the world leader in low, medium & high voltage alternators from 10 kVA to 35,000 kVA. We specialize in high-quality products combining long-lasting performance and reduced lifetime costs. With generator set manufacturers and electric power producers worldwide, we help the industry to provide reliable, efficient power solutions

Agents:

United Arab Emirates - Nidec ASI LLC

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Founded in 1969, Ortea is a leader in the design and manufacture of innovative products and customised solutions for power quality and energy efficiency. The process of renewal and continuous improvement strengthens Ortea Next's leadership as your ideal partner to meet the challenge of the global energy transition.

OTLM d.o.o.

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Gridpulse is the transmission line monitoring system developed by and for industry experts. Our integrated Gridpulse system enables TSO's to take faster and better decisions based on real-time data and predictions to optimize and secure the operation of their grid. The Gridpulse features are Line Temperature, Icing Detection, Voltage Measurement, Weather Prediction, OnBoard High-Resolution Camera, Sag & Clearance, Ampacity Prediction, Line Conditions and Motion Detection. Empowering grids and the people who run them.



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A world-leading supplier of off-highway diesel engines in the 4-2000 kW market, Perkins has over 90 years' experience of designing, building and servicing power solutions. Collaborating with over 800 equipment manufacturers in the electric power generation and industrial markets, we tailor our engines to meet their needs and exacting standards.

Agents:

United Arab Emirates - Power Systems Gulf LLC



Reuter-Stokes, a Baker Hughes business

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Reuter-Stokes, a Baker Hughes business, manufactures gamma and neutron detectors for nuclear instrumentation for power generation; radiation monitoring; and sensors for logging while drilling, measuring while drilling, and wireline logging for oil and gas. We also produce flame sensors for natural gas turbines and industrial and oil and gas applications.

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ROTAIR S.p.A is an Italian manufacturer of Portable Screw Air Compressors. The company has been manufacturing highly efficient and reliable compressors since 1961 with active presence in 70 plus countries. Product range: 25-900 CFM / 7-14 bar
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Engines: Perkins / Kubota / Honda / Deutz / JCB / Cummins
Version: Diesel / Petrol / Hydraulic



SAB, Standard Aggregatebau Evers GmbH & Co. KG

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Reputable German manufacturer of diesel-driven generating sets from 50 to 4000 kVA in

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Soltec

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Soltec is a company specializing in integrated solutions for photovoltaic solar energy whose main activity is the design and manufacture of solar tracking systems, as well as the construction, operation and maintenance of solar plants.



VEGA Technique

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VEGA is a German manufacturer of level and pressure instruments for all applications such as in the chemicals, oil & gas, energy, water & waste water, bulk solids, food, pharmaceutical...

VEGA develops innovative sensors that offers maximum safety and reliability:
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Visa S.p.A. is one of the world's leading gensets supplier, based in Italy, designing and manufacturing diesel generators, from 9 to 3000 kVA, in standard or customized versions to meet your every need in a large variety of applications (telecommunications, construction and engineering industry, hospitals, data centers, etc.). With its network currently present in more than 100 countries worldwide, it provides versatile, high-tech energy solutions guaranteeing a highly operational flexibility and qualitative standards for which it has become a leader in the market for more than 60 years.

Section Three: Agents/Subsidiaries

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Project Databank

Compiled by Data Media Systems

MAJOR POWER PROJECTS, MENA REGION

Project Name	City	Facility	Budget	Status
Rosatom - El Dabaa Nuclear Power Plant	El Dabaa, Egypt	Nuclear Power Plant	29,000,000,000	Engineering & Procurement
ACWA Power - Luxor Power Plant	Luxor, Egypt	IPP	2,300,000,000	Engineering & Procurement
KEPCO - Chabahar Power Plant	Chabahar, Iran	Power Plant	2,000,000,000	Construction
Mapna - Shamara Holding Company - Combined Cycle Power Plant	Rumaila, Iraq	Combined Cycle Power Plant	3,000,000,000	Rumaila Combined Construction
Harlow International - Al-Khayrat Thermal Power Station	Karbala, Iraq	Thermal Power Plant	2,850,000,000	Engineering & Procurement
Ministry of Electricity - Baiji Power Plants	Baghdad, Iraq	Gas-fired Power Plant	1,000,000,000	Engineering & Procurement
JAEC - Rosatom - Jordan Nuclear Power Station Procurement	Qusair Amra, Jordan	Nuclear Power Plant	50,000,000,000	Engineering &
Xlinks - Morocco-UK Submarine HDVC Transmission Cable	Various, Morocco	Sub Sea Cable	12,000,000,000	Feasibility Study
GCCIA - GCC Interconnection Grid - Oman - KSA Link	Various, Oman	Power Transmission Lines	1,500,000,000	Feasibility Study
SEC - Taiba 3.5 GW IPP	Taiba, Saudi Arabia	IPP	2,656,800,000	EPC ITB
QIC - Qiddiya Entertainment City - Utilities Package	Riyadh, Saudi Arabia	Utilities	2,000,000,000	EPC ITB
SEC - Qassim 3.5 GW IPP	Qassim, Saudi Arabia	IPP	4,000,000,000	Project Announced
SEC - Smart Meter Project	Various, Saudi Arabia	Operation & Maintenance	2,600,000,000	Construction
King Abdullah City for Atomic and Renewable Energy - SNAEP	Abha, Saudi Arabia	Nuclear Power Plant	20,000,000,000	PMC
King Abdullah City for Atomic and Renewable Energy - SNAEP	Riyadh, Saudi Arabia	Nuclear Power Plant	2,000,000,000	Feasibility Study
ENEC - Barakah Nuclear Power Plant	Barakah, UAE	Nuclear Power Plant	29,500,000,000	Commissioning
TAQA - Fujairah IPP (F3)	Fujairah, UAE	IPP	1,000,000,000	Construction
DEWA - Hassyran Clean Coal Fired Power Station - Phase 3 - 1200 MW	Dubai, UAE	Coal-fired Power Plant	1,500,000,000	Design
ADNOC - TAQA - HVDC Subsea Transmission System	Abu Dhabi, UAE	Power Transmission Lines	4,000,000,000	Construction
Terra Sola - Photovoltaic Power Project	Egypt	Power Plant, Solar	3,500,000,000	Feasibility Study
KAPP - Al-Dibdibah Power & Shagaya Renewable Energy Phase 3 Project	Shagaya, Kuwait	Solar - 2000 MW	3,600,000,000	Project Announced
OPWP - Solar 2024 IPP - Overview	Manah, Oman	Solar	1,000,000,000	EPC ITB
OPWP - Duqm 300 MW Wind Power Plant (Wind 2025)	Duqm, Oman	Power Plant	1,000,000,000	Feasibility Study
ACME Group - Scatec - Green Hydrogen Ammonia Plant	Duqm, Oman	Hydrogen	2,500,000,000	EPC ITB
PDO - Green Hydrogen Pilot Project	Muscat, Oman	Hydrogen		Feasibility Study
REPDO - National Renewable Energy Program (NREP) - Yanbu	Yanbu, Saudi Arabia	850 MW Wind IPP	1,000,000,000	Design
King Abdullah City for Atomic and Renewable Energy - SNAEP - Overview	Riyadh, Saudi Arabia	Nuclear Power Plant	7,000,000,000	PMC ITB
PIF - SoftBank - 200 GW Solar Venture (Program) - Sudair 1 GW Solar Plant	Sudair, Saudi Arabia	Solar	1,500,000,000	Engineering & Procurement
PIF - Saudi Arabian Investment Company (Sanabil) - Solar Panel Manufacturing Plant	Western Region, Saudi Arabia	Solar	6,400,000,000	Solar Panel Solar Feasibility Study
EWEC - Abjan Solar PV Project	Abu Dhabi, UAE	Solar	3,200,000,000	Project Announced
SEWA - Hamriyah 1.8 GW Combined Cycle IPP	Hamriyah, UAE	IPP	1,000,000,000	Construction
EWA - Al Dur IWPP - Phase 2 - Power Plant and Desalination Plant	Al Dur, Bahrain	IPWP	2,000,000,000	Construction
EWA - Al Dur IWPP - Overview	Al Dur, Bahrain	IWPP	6,000,000,000	Construction
MEW - Nuwaiseeb IWPP- Phase 1 - 3600 MW	Nuwaiseeb, Kuwait	Power Plant, Desalination	2,500,000,000	Feasibility Study
KAPP - Al Khiran IWPP	Kheiran, Kuwait	IWPP	4,100,000,000	Feasibility Study
KAPP - Al Zour North IWPP - Phase 2/3 (2700 MW)	Al Zour, Kuwait	IPWP	1,500,000,000	Feasibility Study
Kahramaa - IWPP Facility E	Al Shamal, Kuwait	IWPP	3,000,000,000	EPC ITB
Kahramaa - Facility A Power and Water	Qatar	Power Plant	1,000,000,000	Project Announced
SWPC - Jubail 3 Power and Desalination Plants - Overview	Jubail, Saudi Arabia	Desalination	4,000,000,000	Construction
The Ministry of Construction, Housing and Public Municipalities - Basra Seawater RO Desalination Facility - Overview	Basra, Iraq	Welded, RO Desalination	3,000,000,000	EPC ITB

Project Databank

Compiled by Data Media Systems

Project Focus

Compiled by Data Media Systems

ONEE - 350-MW Abdelmoumen Pumped-Storage Power Plant

Name of Client	ONEE- Office National de l'Electricite et de l'Eau Potable
Estimated Budget (US\$)	318,000,000
Award Date	2018-Q1
Main Contractor	Andritz Hydro, VINCI Construction Grands Projets
Facility Type	Hydro Electric Power Plant
Sector	Power
Status	Construction
Location	Taroudant, Morocco
Project Start	2003-Q4
End Date	2023-Q1

Background

The project calls for the construction and development of a 350 MW hydroelectric facility located in the Taroudant Province, close to the existing Abdelmoumen reservoir at the north-east of Agadir. The Abdelmoumen pumped-storage power plant is expected to generate 616 GWh of electricity per year. It will provide reliable and cost-efficient supply of electricity to the Sous Massa Draa region of Morocco. The project is part of Morocco's plan to reduce dependence on imported hydrocarbons. It is funded by the European Investment Bank (EIB).

Project Status

Date	Status
May 2022	Duktil Engineering is undertaking studies as part of the construction of an underground tunnel within the plant.
May 2022	The start-up of the project is scheduled for the first half of 2023.
Apr 2022	SOGAP Maroc has completed the prefabrication of VCAN forced pipes.
Mar 2022	Eurogrues Afrique is performing lifting works at the project site.
Jan 2022	LafargeHolcim is participating in the project with the supply of cement, concrete and innovative solutions to meet the plant's requirements of sustainability.
Jun 2018	Construction works have started.

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الأشد فقراً وضعفاً، لأننا تخاذلنا عن دعم الفئات الأشد احتياجاً. أما ولم يتبق سوى ثماني سنوات لتوفير طاقة مستدامة وميسورة التكلفة للجميع، فعلينا اتخاذ إجراءات جذرية للتعجيل بزيادة التدفقات المالية العامة الدولية وتوزيعها بطريقة أكثر إنصافاً، بحيث يتمكن الـ 733 مليون إنسان المحرومين من الطاقة حالياً من التمتع بمزايا الحصول على طاقة نظيفة».

التركيز على سياسات كفاءة الطاقة، لا سيما في خطط التعافي من كورونا. ومع ذلك، فلا بد من النهوض بسياسات كفاءة الطاقة واستثماراتها لتحقيق المقصد 7,3 من أهداف التنمية المستدامة.

قال السيد فاتح بيرو، المدير التنفيذي للوكالة الدولية للطاقة: «لا بد من الإسراع بضخ التمويل العام الدولي في مجال الطاقة المتجددة، لا سيما في البلدان

نسبة 4 في المائة خلال ما تبقى من هذا العقد، وذلك في حال أراد العالم التخلص من الانبعاثات الكربونية لقطاع الطاقة بحلول عام 2050، وفقاً لرؤية الوكالة الدولية للطاقة في سيناريو التخلص من الانبعاثات الكربونية بحلول عام 2050. وتشير توقعات عام 2021 إلى العودة إلى معدل تحسن بنسبة 1,9 في المائة، وهو متوسط المعدل المحقق خلال العقد المنصرم. ويرجع الفضل في ذلك إلى زيادة

جهود الإمارات للتخلص من الانبعاثات الكربونية

خطت الإمارات خطوات استباقية باستثمارها في الطاقة النظيفة المجرّبة. وفي غضون عقد من الزمان، نجحت الطاقة الشمسية والطاقة النووية السلمية في إحداث نقلة نوعية في قطاع الطاقة بها، بما يكفل لها تصدر مسيرة العمل على التخلص من الانبعاثات الكربونية بحلول عام 2050. وقد سلّط سعادة محمد إبراهيم الحمادي، العضو المنتدب والرئيس التنفيذي لمؤسسة الإمارات للطاقة النووية، الضوء على ذلك في الكلمة الرئيسية التي ألقاها خلال فعاليات اليوم الأول من افتتاح المؤتمر العالمي للمرافق 2022 بأبوظبي.



الطاقة النووية ساعدت في العمل على التخلص من الانبعاثات الكربونية

أصل الـ 10 دول الأكثر استدامة على مستوى العالم تستعين بالطاقة النووية بالفعل في إنتاج احتياجاتها من الطاقة. وفي الآونة الأخيرة، أعادت موجة من دول أوروبا والشرق الأوسط وآسيا وأمريكا التأكيد على التزامها بهذه الطاقة الخالية من الانبعاثات الكربونية.

وما أبسط السبب الكامن وراء هذا النمو، ذلك لأن «مصدر» يتمتع بقدرات عالية لتوليد الكهرباء النظيفة، كالطاقة النووية، يساهم في الارتقاء بأمن الطاقة المحلية، وتحقيق النمو الاقتصادي دون توقف، والتخلص من الانبعاثات الكربونية.

وأردف سعادة الحمادي قائلاً: (بما أننا من المساهمين في مسيرة التقدم، فقد أنشأنا قطاعاً يوظف الآلاف خلال عقد واحد فحسب، ونتمتع بالخبرة والمعرفة في قطاع الطاقة النووية المدنية وسلسلة توريد قطاع محلي للطاقة النووية بمليارات الدراهم. بيد أن «محطة براكه» ومآرها الاقتصادية المباشرة ليست سوى غيض من فيض. فهناك برنامج الطاقة النووية السلمية الإماراتي الأوسع، والذي ينص على ضرورة الاستثمار في التقنيات التي يمكن تعظيم الاستفادة منها لإعلاء القيمة وزيادة الفرصة، نحو طموحاتنا المتمثلة في التخلص من الانبعاثات الكربونية). كما أشار سعادته إلى أن 8 من

استعرض سعادته جملة من التحديات والفرص أمام قطاع المرافق والحلول المتاحة اليوم، ومن أمثلة هذه التحديات أن قطاع الطاقة عليه إمداد العالم بالطاقة في ظل إطار جديد وأكثر تعقيداً لأمن الطاقة، وعليه إنتاج هذه الطاقة بشكل يتصف بقدر أكبر من الاستدامة، مع الوفاء بالتزامات تغير المناخ والحفاظ على الموارد الطبيعية، ومواصلة تمكين النمو الاقتصادي والتقدم والازدهار لما فيه خير العالم.

وعلّق سعادة الحمادي قائلاً: (دخل ثاني مفاعلاتنا الأربعة في «محطة براكه» حيّز التشغيل التجاري في شهر مارس/ آذار من العام الجاري، وباتت تولد الآن 2,8 جيجاوات من الكهرباء، مما يجعلها أكبر مصدر للكهرباء النظيفة في البلاد. وستلبي الطاقة النووية عند تشغيل جميع المفاعلات الأربعة نسبة 25 في المائة من الطلب على الكهرباء في الإمارات. كما نجحت المحطة في التخلص من كميات هائلة من الكربون، وستجنبنا 22,4 مليون طن من انبعاثات الكربون سنوياً حين تعمل بكامل طاقتها).

كما توجد فوائد اقتصادية كبيرة. فقد كشفت ورقة بحثية نشرتها شركة «إس أند بي جلوبال» مؤخراً، أن «محطة براكه» ستقلل من استهلاك الغاز بنحو 1,000 مليون قدم مكعب يومياً أو 205,000 برميل من النفط يوماً. وهذا يوفر مبلغ 7,4 مليارات دولار أمريكي سنوياً من حيث براميل النفط. والأهم من ذلك أنها تحافظ على موارد الغاز الطبيعي الثمينة للسماح للإمارات بتسريع جهودها نحو تصدير الغاز الطبيعي المسال وعدم استيراده بحلول عام 2030.

مفكرة الفعاليات 2021

سبتمبر/أيلول

7 - 6 منتدى الشرق الأوسط وشمال أفريقيا للصحة والسلامة والبيئة دبي

أكتوبر/تشرين الأول

20 - 18 معرض ويتكس ومعرض دبي للطاقة الشمسية دبي

نوفمبر/تشرين الثاني

16 - 15 معرض التعدين دبي

ديسمبر/كانون الأول

8 - 5 معرض بيج فايف دبي



تزايد الوصول إلى الطاقة المتجددة يتطلب سياسة الدعم في جميع القطاعات

كورونا يبطئ عجلة التقدم نحو توفير الطاقة للجميع

كشفت نسخة العام 2022 من تقرير تعقب الهدف السابع من أهداف التنمية المستدامة: تقرير تقدم الطاقة، أن آثار الجائحة قد أثرت على وتيرة التقدم نحو تحقيق الهدف السابع من أهداف التنمية المستدامة الذي ينص على ضمان توفير طاقة حديثة ومستدامة ومنتظمة وميسورة التكلفة بحلول عام 2030. وقد تعرقل التقدم المحرز بشدة في أضعف البلدان وفي البلدان المتأخرة بالفعل في مجال توفير الطاقة.

بتعميم مصادر الطاقة المتجددة من أجل توفير خدمات الكهرباء وتلبية أغراض التدفئة والنقل. وعلى الرغم من عدم وجود مستهدفات كمية للمقصد 7,2 من أهداف التنمية المستدامة، تُجمع المؤسسات الراعية على ضرورة زيادة نسبة الطاقة المتجددة من إجمالي الاستهلاك النهائي للطاقة، مع أن استهلاك الطاقة المتجددة لم يتوقف عن النمو خلال جائحة كورونا، متجاوزاً تعطل النشاط الاقتصادي وسلاسل التوريد.

وسيتطلب زيادة توفير الطاقة المتجددة النهوض بدعم السياسات في القطاعات كافة والعمل بأدوات فعالة لزيادة جذب رأس المال الخاص، لا سيما في البلدان الأقل نمواً والبلدان الحبيسة النامية، والبلدان الجزرية الصغيرة النامية. كفاءة استخدام الطاقة: يسعى المقصد 7,3 من أهداف التنمية المستدامة إلى مضاعفة المعدل العالمي لتحسن السنوي في كثافة الطاقة الأولية - وهي كمية الطاقة المستخدمة لكل وحدة من إجمالي الثروة المحققة - ليلبلغ 2,6 في المائة خلال الفترة الممتدة بين عامي 2010 و2030 مقارنة بالفترة الممتدة بين عامي 1990 و2010. ولا بد أن يتجاوز متوسط المعدل السنوي لتحسن الآن

أبرز مقاصد الهدف السابع أهداف التنمية المستدامة

الحصول على الكهرباء: ارتفعت نسبة سكان العالم المستفيدين من الكهرباء من 83 في المائة خلال عام 2010 إلى 91 في المائة خلال عام 2020. وبذلك زاد عدد المستفيدين من الكهرباء بمقدار 1,3 مليار إنسان على مستوى العالم، وانخفض عدد المحرومين من الكهرباء من 1,2 مليار إنسان خلال عام 2010 إلى 733 مليون إنسان خلال عام 2020. بيد أن وتيرة التقدم في مجال توفير الكهرباء تباطأت خلال السنوات الأخيرة، وربما يرجع ذلك إلى تزايد التعقيد الذي يكتنف الوصول إلى سكان المناطق النائية الأشد فقراً والمحرومين من الخدمات، وإلى الآثار غير المسبوقة الناجمة عن جائحة كورونا. ويتطلب تحقيق المستهدف لعام 2030 زيادة عدد المستفيدين من الكهرباء بواقع 100 مليون مستفيد سنوياً. وفي ضوء المعدلات الراهنة للتقدم المحرز، لن يوفر العالم الكهرباء سوى لنسبة 92 في المائة من السكان بحلول عام 2030.

مصادر الطاقة المتجددة: توفير طاقة حديثة ومستدامة ومنتظمة وميسورة التكلفة للجميع ينطوي على الإسراع

خلص التقرير إلى أن الطاقة المتجددة كانت مصدر الطاقة الوحيد الذي شهد نمواً خلال الجائحة، وذلك بالرغم من العراقيل التي ما تزال تعترض سبيل النشاط الاقتصادي وسلاسل التوريد. إلا أن هذه الاتجاهات الإيجابية على المستويين العالمي والإقليمي في مجال الطاقة المتجددة، لم تطل عدة بلدان في أمس الحاجة إلى الكهرباء.

فقد جمع «حوار الأمم المتحدة رفيع المستوى بشأن الطاقة» بين الحكومات والأطراف المعنية في سبتمبر/أيلول 2021 لتسريع وتيرة العمل لتحقيق مستقبل عامر بالطاقة المستدامة لا يحرم أي دولة منها. وفي هذا السياق، وعند إصدار هذا التقرير، أهابت المؤسسات الراعية للهدف السابع من أهداف التنمية المستدامة - وهي الوكالة الدولية للطاقة، والوكالة الدولية للطاقة المتجددة، وشعبة الإحصاءات بالأمم المتحدة، والبنك الدولي، ومنظمة الصحة العالمية - بالمجتمع الدولي وصنّاع السياسات لحماية المكتسبات المحرزة في سبيل تحقيق الهدف السابع، والحرص على مواصلة العمل من أجل توفير طاقة حديثة ومستدامة ومنتظمة وميسورة التكلفة للجميع، والتركيز الاستراتيجي على البلدان الأولى بالدعم.



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الشرق الأوسط

كورونا يبطئ عجلة التقدم نحو توفير الطاقة للجميع

يقول تقرير تعقب الهدف السابع من أهداف التنمية
المستدامة إن الطاقة المتجددة كانت مصدر الطاقة
الوحيد الذي شهد نموا خلال الجائحة.

التقرير السنوي للطاقة 2022