THE 24TH WORLD ENERGY CONGRESS PREVIEW

August 2019 | Edition VII

WORLD ENERGY COUNCIL | 24th CONGRESS
ABU DHABI | 9 - 12 SEPTEMBER | 2019
ENERGY FOR PROSPERITY

Foreword by Federal Electricity and Water Authority's Director General

Dear World Energy Congress attendee,

How we source our energy is without doubt one of the most pressing issues currently affecting humankind. Energy production is fundamental to global society's progression and yet it is also one of its greatest threats. Fossil fuel emissions are the biggest cause of accelerating climate change, with the global scientific community unequivocal about how the world's delicate ecosystems will be impacted if these emissions remain unchecked. Their message is clear – we need to act now if we are to leave a healthy planet for our children.

What has become even more evident is that we need a new energy paradigm based on sustainability and renewables if we are to meet the Paris Agreement's long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels. With the world's population projected to climb from

today's 7.7 billion to 9.7 billion by 2050 and energy demands increasing concomitantly, there can be no doubt of the challenge that lies ahead.

Success in meeting the Paris Agreement's goal depends on every global region pulling out all the stops to create sustainable and renewable energy paradigms. The issue is one of particular concern for the Middle East, a region that is synonymous with fossil fuels. The export of oil since it was discovered in the Gulf in the early 1960s has propelled Gulf Cooperation Council countries' spectacular growth, which in turn has increased domestic demand for the carbon products they extract. International Energy Agency statistics for the period 1990 to 2008 reveal that the Middle East region had the most significant global increase of energy use, with its growth of 170%, outstripping China (146%), India (91%), Africa (70%), Latin America (66%) and the USA (20%).

From a national perspective, UAE energy consumption per capita is among the highest globally, with The World Factbook ranking the country at 32 out of 219 countries/regions for energy use. The country's elevated ranking is attributed to its high standard of living, its rapid economic growth and its heavy use of cooling. The UAE's continued growth, with its population expected to increase from its current figure of around 9.5 million to 11.5 million by 2025, will see the amount of energy the UAE consumes locally expected to rise by 9% annually.

The Federal Electricity and Water Authority (FEWA) is committed to being one of the region's most important change agents in the drive to create a new energy paradigm based on a move away from a dependency on oil, coal and gas. Established in 1999, FEWA is mandated to carry out duties and roles assigned by the UAE Ministry of Electricity and Water, with its overarching responsibility being catering to the electricity and potable water needs for the citizens residing in the Northern Emirates of Ajman, Fujairah, Ras al-Khaimah and Umm al-Quwain. In this role, FEWA strives to create a balance between the cost of energy production and the price of energy distribution to create optimum value for customers. It also works to unify existing variable pricing strategies and enhance revenue collection processes. As part of its commitment towards energy conservation, the department conducts studies on energy consumption behaviours to create awareness among customers about electricity and water wastage, thereby helping to conserve resources.

FEWA is also instrumental in developing the nation's human capital, providing training and education programmes that qualify UAE citizens to take up careers with the organisation and assisting the country's transition towards a knowledge economy underpinned by local talent and competencies.

FEWA is a key stakeholder in ensuring the delivery of 'Energy Strategy 2050,' launched in 2017 and the UAE's first unified energy strategy based on supply and demand. The strategy has set ambitious targets of increasing the contribution of clean energy in the total energy mix from 25 per cent to 50 per cent by 2050, reducing the carbon footprint of power generation by 70 percent and raising consumption efficiency by 40 per cent. By meeting these goals it aims both to save AED 700 billion over the next three decades and help meet global targets.

FEWA is playing a vital role in this strategy by acting as a lynchpin to direct and coordinate the role of the various stakeholders operating in the Northern Emirate's energy sector. The department aims to create synergy by promoting stakeholder collaboration towards a unified goal that is the Energy Strategy 2050. Among its key capacity drivers is the matching of the capacities and outputs of the various stakeholders so that they can develop a symbiotic relationship, in the process making goals easier to reach. It is through this approach, that encourages stakeholders to work in harmony, that FEWA has helped create a unified sector vision in the Northern Emirates and – in the process – become a leader in future energy and sustainability.

FEWA is delighted to be a supporter of the 24th edition of the World Energy Congress, which , in view of the challenges that lie ahead, must qualify as one of the most important ever held. My colleagues and I are looking forward to playing a significant role in the forum's programme of discussions, speeches, presentations and break-out sessions, many delivered by experts from the across the worlds' energy sector, including leading government officials, senior policy-makers and heads of global energy corporations.

We fully anticipate a highly productive forum that will help set a viable road map for the future – a future where we and future generations can enjoy a greener and more sustainable tomorrow.

H.E. Mohammed Mohammed Saleh
Director General of the Federal Electricity and Water Authority (FEWA)

الهيئة الاتحادية للكهرباء و الماء
Federal Electricity & Water Authority

Redefining energy through innovation

HUAWEI

Innovation is Redefining Energy

World Energy Congress 2019

September 9-12, 2019 | Abu Dhabi, United Arab Emirates

Building a Fully Connected, Intelligent World

Huawei, a leading global information and communications technology (ICT) solutions provider, operates in more than 170 countries and regions around the world, serving more than one third of the world's population. Huawei's enterprise business group, one of Huawei's three major businesses, works with partners to provide ubiquitous connectivity and intelligence for government and enterprise customers. By integrating new ICT technologies such as cloud computing, artificial intelligence (AI), Internet of Things (IoT), big data, converged communications, video, and geographic information system (GIS), Huawei's enterprise business group and partners jointly support customers' digital transformation, aiming to bring digital to every organization.

Huawei has been serving the energy industry for more than 20 years. By the end of 2018, more than 300 energy companies in over 100 countries around the global, including seven electric power companies among the top 10, and 14 oil & gas companies among the top 20, have chosen Huawei as their partner in digital transformation.

In the electric power industry, Huawei is committed to becoming a one-stop ICT solution provider and a preferred partner for smart grid construction. Huawei's smart grid solutions have been widely used in more than 190 electric power customers worldwide, such as Italian multinational energy company Enel, the Provincial Electricity Authority (PEA) of Thailand, and State Grid Corporation of China (SGCC).

In the oil & gas field, Huawei cooperates with industry partners to provide exploration cloud, oil & gas IoT, digital pipeline, intelligent refining, and other solutions. Huawei's cloud data center facilitates digital transformation of the largest oil & gas enterprise in North Africa. Huawei's high-performance computing (HPC) supports oil exploration in Mexico and Malaysia. Huawei's transmission network helps Russia and Northern Africa maintain secure and stable operations of oil pipelines. Through the adoption of AI, big data, edge computing, and other technologies in the oil & gas industry, Huawei helps many companies, such as China National Petroleum Corporation, improve their oil exploration efficiency.

Under the theme of 'Innovation Is Redefining Energy', Huawei will demonstrate the use of new ICT including AI, edge computing, and 5G in electric power, oil and gas, and mining scenarios. Huawei's booths (Nos. H8 to H140) at the Abu Dhabi National Exhibition Center, will allow visitors to experience Huawei's solutions in the energy sector. These include: remote AR maintenance, AI power transmission and transformation line inspection, power distribution automation AI, smart photovoltaics (PV) AI, smart campus AI, 5G unmanned cars, and full-stack smart computing. Together, we will discuss how innovative ICT is reshaping and will continue to reshape the energy industry now and in the future.

Join the discussion with Jerry Ji, General Manager of Huawei EBG, Global Energy Industry, Huawei Technologies Co.,Ltd. on Monday 9th September at the parallel session - The age of digitalisation: Reimagining energy systems from 17:15 - 18:30.

HUAWEI

If the Fourth Industrial Revolution has arrived, what is the source of energy?

Everywhere we turn these days, it seems, people are talking about the Fourth Industrial Revolution.

There is no doubt that developments in Artificial Intelligence, the Internet of Things, Big Data, and Bio-technology are revolutionary, but what exactly do we mean when we say this? The word "revolution," after all, is rather like "war" – overuse has watered down its meaning.

If we apply the term more strictly and ask 'What makes an industrial revolution revolutionary?', we can see that there is an important component missing in this Fourth Industrial Revolution. I wonder if it's not a revolution-in-waiting, rather like a brand-new racecar that hasn't been fueled up yet.

Here is the argument. The First Industrial Revolution transformed how we made things. People stopped making things by hand and horse-power and started making them instead by marvelous new machines that were powered by water and steam. The Second Industrial Revolution happened when electrification replaced steam and inventors developed even more marvelous new machines to make things.

What happened in both cases was that manufacturers were able to create products of a type and on a scale previously unthought of. The impact on the countries where they operated was transformative.

These two revolutions in a matter of decades began lifting human beings out of poverty on a scale that, with the rise of China and India, is now giving us a vision of a middle-class world. When I was born in Korea, my country was one of the poorest in the world. Now, as a Second Industrial Revolution powerhouse, it is one of the wealthiest. The changes wrought are so complete that it's not until there's a prolonged power failure, when the production lines stop, the traffic lights fail and the candles and blankets come out, that we remember where we came from. And it feels like 500 BC.

So, what factors lay behind these revolutions? From these first two cases, it is apparent that an industrial revolution that causes fundamental economic change involves the wedding of technology with a new system of energy.

That was how the writer Jeremy Rifkin put it in his 2011 book, The Third Industrial Revolution; How Lateral Power is Transforming Energy, the Economy, and the World. The new energy regime he had in mind was renewable energy.

But, hold on. When people talk about the Third Industrial Revolution, they are referring to the arrival of the computer. There is no new system of energy. Renewable energy is not all that it is cracked up to be. Not only has it not replaced those polluting fossil fuels, but alternative energy in fact creates a new range of problems, or, to be more accurate, a different version of the old problems. It, for example, requires storage because the sun doesn't always shine and the wind doesn't always blow. Storage is by batteries, which require lithium, which must be mined. And the batteries must be disposed of. And so on.

So, I would argue that this so-called third revolution is in technology only. It is a development – and a fantastic one, of course – but conceptually, it is a continuation of the revolution that was fueled by electric power, the Second Industrial Revolution.

Similarly, the changes coming with AI and robots – the Fourth Industrial Revolution – are also technological. There is no new form of energy.

The point I am making here is that the phenomenal technological changes of the computer era are still driven by the energy that characterized the Second Industrial Revolution. They have not been accompanied by new systems of energy. What we refer to as the Third and Fourth Industrial Revolutions are more actually a deepening and widening of previous revolutionary transformations.We are still in the Second Industrial Revolution, even if the technology we see now is completely different from that which we saw when it started.

Actually, the next form of energy to fuel the era of AI, is coming, but it is not renewable energy, for the reasons given. What we may expect is a new mode of energy that will provide power that is affordable, accessible and available to all. This could be in fusion or in hydrogen.

One of the most exciting and promising areas for the future of energy is the current research into microbial energy. The concept here is that instead of burning dead fossil material, we derive energy from live microbes. The research in this field is very promising.

Many experts are now working in this post-renewable energy field. If the energy sector gets really serious about innovation and brings about breakthrough technologies, then it will truly mean revolution in the style of the First and Second Industrial Revolutions. Those breakthroughs, wedded with biotech, AI and IoT, will characterize the next true Industrial Revolution.

Younghoon David Kim
Chairman and CEO in Korea of the Daesung Group

DAESUNG GROUP

Nuclear Energy: A Core Component of a Clean Energy Strategy

During the 24th World Energy Congress in Abu Dhabi, the Emirates Nuclear Energy Corporation (ENEC) will highlight the transformational potential of peaceful nuclear energy as a significant contributor to global energy diversification and decarbonization, electrification, sustainable development and long-term economic and social growth.

The UAE Peaceful Nuclear Energy Program has been widely recognized as a safe and successful model for the development of a nuclear new build project and a sustainable local nuclear energy industry, and ENEC looks forward to engaging with global energy experts and government representatives to share knowledge and experience and discuss solutions to the world's energy challenges.

As a safe, clean and reliable source of baseload energy that complements renewable energy technology, peaceful nuclear energy is poised to play an ever larger role within national energy diversification strategies that collectively aim to reduce the world's reliance on fossil fuels and curb rising greenhouse gas emissions.

As a host sponsor, ENEC also looks forward to sharing the latest updates on its development of the Barakah Nuclear Energy Plant, the first nuclear energy plant in the Arab World, located in the Al Dhafra region of Abu Dhabi Emirate. Steady progress continues in the development of the plant, with the start-up of the first of the plant's four units scheduled to commence in early 2020, pending regulatory approval.

مؤسسة الإمارات للطاقة النووية
Emirates Nuclear Energy Corporation

Abu Dhabi Energy Outlook 2050 to inform long-term strategies and investments

A significant transition is underway, and many aspects will shape Abu Dhabi's energy future

By H.E. Awaidha Al Marar, Chairman, Abu Dhabi Department of Energy

Dear World Energy Congress attendee,

There is no doubt that the world is standing at a critical junction with respect to energy production. The choices we make as a global community about how we power our continued development will have huge implications for the future of humanity.

If any incentive for action is needed, one only has to read the United Nation's sixth Global Economic Outlook report 'Healthy Planet, Healthy People' published in March this year. Time is running out to prevent the irreversible and dangerous impacts of climate change, the report says, and unless emissions are reduced radically the world remains on course for its pervasive effects, which include extreme weather conditions, global food shortages, increased illness and deaths from disease, slowdowns in economic growth and increased potentials for violent conflict.

The situation we find ourselves in makes this 24th edition of the World Energy Congress one of the most important to date. It is a forum that Abu Dhabi, through the patronage of His Highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE, is honoured to host.

Abu Dhabi is committed to the creation of a clean energy sector and this commitment is captured in the ongoing development of an Abu Dhabi Energy Outlook 2050, a projection of the emirate's potential energy futures to inform policy choices we need to carefully consider and the trade-offs we need to anticipate. Based on current global trends and calibrated with an Abu Dhabi-specific context through extensive cross-government stakeholder engagement, Energy Outlook 2050 will provide insight to support ongoing Abu Dhabi energy policy development and UAE commitments to the historic 2015 Paris Agreement.

Abu Dhabi Energy Outlook 2050 envisions total primary energy demand plateauing after 2035 as a result of growing electrification - in particular in transport and industry - coupled with committed building energy efficiency programmes offsetting key macro-drivers of energy demand through growing population and GDP. Clean energy comprising nuclear and renewables will make up more than half of the total electricity supply, profoundly reducing carbon emissions from the energy sector. Further out, ground-breaking technologies - such as hydrogen, digitalisation and the Internet of Things - will likely continue to disrupt the sector in an increasing fashion.

Energy Outlook 2050 is underpinned by a comprehensive analytics model and captures the Abu Dhabi reference case (business as usual) versus three comparative scenarios for the emirate based on current global energy trends to test a range of policy choices for government consideration. Each scenario is assessed against key objectives recognising that each one comes with both trade-offs and opportunities. The scenario

'Sustainable Future' is an accelerated energy transition scenario aimed at reducing CO2 emissions; 'Efficient Transformation' projects an energy and water system run to the highest levels of cost efficiency and 'Industrial Growth' envisions Abu Dhabi as an expanding industrial powerhouse backed by the enhanced development of both non-oil and gas-related industries.

An integral aspect of Energy Outlook 2050 is the role of Abu Dhabi's Department of Energy (DoE), which was established in March 2018 in recognition of the need for a fresh approach to energy policy development and subsequent regulation of an energy sector that is undergoing a paradigmatic shift. One of the department's most important functions relating to Energy Outlook 2050 is partnering with stakeholders and international agencies to input and analyse data from current trends into its energy model. At the DoE we are currently working towards collaboration and consensus across government to determine the policies and regulations needed to drive the sector towards a preferred scenario.

The department also strives to create an energy environment characterised by economic, social and environmental sustainability, with its initiatives in this area including adopting the latest technology, harnessing innovation and encouraging consumers to decrease their emissions by reducing energy consumption.

Energy Outlook 2050 is being formulated to offer an important perspective on the evolution of the Abu Dhabi energy system and support the development of a clear pathway towards meeting the UAE 2050 energy strategy. It represents DoE's central and unifying role in the power production and supply sector – a sector that is undergoing one of the most radical energy transformations the world has seen. The document aims to serve as a useful tool for policymakers through its balanced evaluation of what can be achieved and what policies need to be enacted to support our common goal – a global energy sector that functions to minimise adverse climate change and one that meets the demands of a world population expected to climb from today's 7.7 billion to 9.7 billion by 2050.

With this in mind, I am delighted to welcome you all to the 24th edition of the World Energy Congress. Featuring an array of key note speeches, presentations, seminars and discussion panels delivered by government ministers, energy sector policy makers and heads of major energy organisations. The world's largest and most influential energy event is the ideal forum to bring together experts and stakeholders to explore the directions needed to lead us to a bright and sustainable tomorrow.

دائـــرة الـطـاقـــة
DEPARTMENT OF ENERGY

WORLD ENERGY COUNCIL | 24th CONGRESS ABU DHABI | 9 - 12 SEPTEMBER | 2019

ENERGY FOR PROSPERITY

Global trade enabler DP World participates at the 24th World Energy Congress

Participating in the World Energy Congress for the first time, global trade enabler DP World will be showcasing its experience, capabilities and operations in energy logistics and sustainable mobility.

Under the theme 'Making Energy Flow', DP World will demonstrate the connectivity of energy-related cargo movement around the world. At the 2019 WEC, DP World will engage the international energy community on the logistics of the energy sector supply chain, with a focus on maritime logistics through its subsidiary P&O and the promise of sustainable transportation through Hyperloop and DP World CargoSpeed.

During the event, DP World will highlight its leadership in data-driven energy sector logistics through the deployment of next-generation technologies that optimise supply chains.

Maritime Services

As part of its expansion and diversification as a solutions provider in global logistics, DP World recently announced the acquisition of Topaz Energy and Marine Limited from Renaissance Services and Standard Chartered Private Equity/Affirma Capital for $1.1 billion.

Topaz is a leading provider of critical marine logistics and solutions to the global energy industry, operating a modern, versatile fleet of 118 vessels, predominantly in the Caspian, MENA, and West Africa regions. The deal positions DP World/P&O as a leading global operator in marine and logistics services through strategic investments in companies backed by high earnings visibility and strong customer networks. The acquisition complements the operations of P&O's maritime services business which maintains a fleet of more than 300 vessels, operating globally in 4 core service areas: Oil & Gas, Government, Port Marine and Cargo.

At WEC 2019, visitors can learn more about P&O's expansion into energy logistics, which has the company focusing on new segments of the energy industry through innovations that deliver safer, faster, and more efficient solutions. These solutions include the re-thinking of offshore logistics for oilfields as well as the construction and design of Module Carrying Vessels (MCVs) to transport modular units to Kazakhstan for installation at a megaproject in the Tengiz field – the sixth-largest oil field in the world.

Technology & Drydocks

P&O will also be showcasing its track record of more than three decades in providing services to maritime, oil, gas, and energy companies operating worldwide. As part of the range of services on offer to the sector, P&O provides technology and drydocks operations, featuring a leading ship repair, conversion and offshore fabrication yard.

Hyperloop

A strategic partnership between DP World and Virgin Hyperloop has developed the groundbreaking DP World CargoSpeed concept, with the potential to transform logistics for on-demand shipments through hyperloop-enabled systems that offer an ultra-fast, sustainable and efficient delivery of palletised cargo.

By enabling ultra-fast deliveries of high-priority goods, DP World CargoSpeed aims to revolutionise logistics and support the creation of thriving economic regions while delivering freight at the speed of flight but at a cost closer to that of standard trucking.

As a sustainability pioneer, DP World is developing a system which will be 100% electric and can be powered by renewable energy, creating a more sustainable solution for cargo transport.

DP WORLD

UAE State of Energy Report 2019 Released

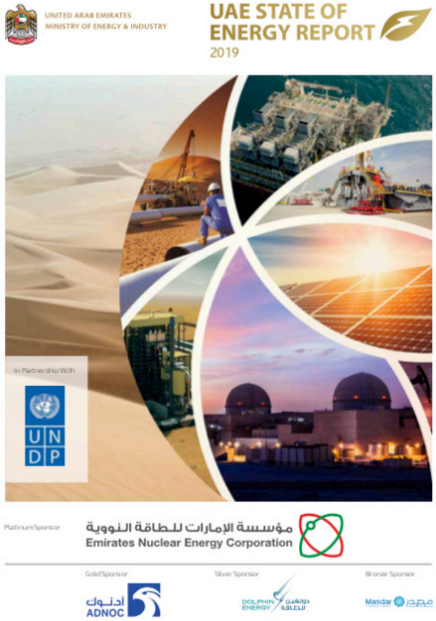
Energy has been one of the building blocks of the UAE's success, and as the global landscape shifts, the country is forging a new path. The UAE State of Energy Report (SOER) provides a deep dive into the past, present and future of the nation's energy sector.
One of the most integral parts to this transition has been the Energy Strategy 2050, setting the stage for a life after oil. The ambitious strategy, targeting a basket of energy solutions, was implemented in 2017. In 2012, the oil and gas industry made up nearly 40 percent of the UAE's GDP; however, hydrocarbon contributions are currently less than 20 percent.

"While the oil and gas industries will continue to be important for the country, our aim is to create a well-balanced ecosystem that relies on various industries to maintain the UAE's role as a world leader," said Eng. Suhail Al Mazrouei, UAE Energy Minister. "Each of the seven emirates are undergoing their own transformations, which is setting the stage for future growth."

This year's SOER explores the history of the country's hydrocarbon sector with insights from Abu Dhabi National Oil Company (ADNOC) and Dolphin Energy as well as other important energy players such as Abu Dhabi's Future Energy Company (Masdar) and Emirates Nuclear Energy Corporation (ENEC). SOER also looks at the ever-changing electricity sector from the impact of market liberalization, clean energy and energy efficiency measures. "As we introduce other sources to our energy mix – including renewable energy and nuclear energy – we are also implementing legislative and energy efficiency measures because there is no one size fits all solution," said Dr Matar Al Neyadi, Undersecretary for the UAE Ministry of Energy and Industry (MOEI). "The UAE's energy strategy is promoting flexibility and longevity."

While the UAE has made moves to liberalize the electricity markets, the country remains one of the highest electricity consumers per capita in the world. However, that has slowed in recent years compared to the spikes in 2014 and 2015.

This can be attributed to the demand side management (DSM) efforts that are underway including targets established by both Abu Dhabi and Dubai to cut consumption by 20 and 30 percent, respectively. One way that this has been carried out is through neighborhood campaigns in line with its DSM Strategy. In one area alone, electricity usage decreased by 714 megawatt hours as well as 13 million imperial gallons of water, saving the emirate a total of AED829,000.



Energy isn't just a domestic powerhouse, the sector plays a significant role in the country's soft power strategy. The pursuit of strategic international assets has grown in recent years, both in terms of their number and level of sophistication as part of the long-term strategy to extract maximum value from the country's position as a leading energy provider. UAE oil, gas and renewable companies have increased relationships with partners throughout Asia and have taken center stage for some of the world's largest industry forums including the World Future Energy Summit, the Atlantic Council's Global Energy Forum and the upcoming World Energy Congress.

"The energy sector will remain a powerhouse for UAE economic development, especially through employment as more than a third of the jobs in the country are directly or indirectly related to the sector," said Eng. Fatima Al Foora, MOEI Assistant Undersecretary for Electricity. "The industry is changing and remain focused on being ahead of the curve."

Download the UAE State of Energy Report 2019 - https://www.moei.gov.ae/en/open-data.aspx

UNITED ARAB EMIRATES
MINISTRY OF ENERGY & INDUSTRY

Free-to-attend side events

Register at www.wec24.org/visitor-registration

Start Up
Energy Transition

START UP ENERGY TRANSITION - 100

Feature on the exhibition area

Start Up Energy Transition (SET) is a leading international platform supporting innovation in energy transition, comprised of the annual SET Award and SET Tech Festival. Powered by the German energy agency (dena) in cooperation with the World Energy Council, the initiative connects start-ups, international venture capitalists, investors and partners in the public sector. SET will present top 100 international startups at the 24th World Energy Congress. Over 400 start-ups from around the globe competed to showcase their solutions to the challenges of climate change and the global energy transition at the SET Awards in Berlin earlier this year.

Innovation Hub:
Sponsored by Dubai Electricity and Water Authority, they will be located in an innovation hub dedicated to showing their products and services, and the business models behind them.

LAND ART
GENERATOR
RENEWABLE ENERGY CAN BE BEAUTIFUL

LAND ART GENERATOR INITIATIVE

Feature on the exhibition area

LAGI 2019 Abu Dhabi—Return to the Source—invited architects to design an iconic work of art for a landmark site within Masdar City, Abu Dhabi using renewable energy technology as a medium of creative expression to provide on-site energy production consistent with the master plan of the city.

Masdar is the Arabic word for “source.” As the name of Abu Dhabi’s multifaceted renewable energy company and most ambitious low-carbon development, it is a reference to the Sun, the source of energy that sustains life on Earth, drives the wind and waves, and that over millions of years powered the transfer of ancient carbon dioxide out of the atmosphere and into the ground, creating a climate habitable to humans.

This year’s special edition is in partnership with the 24th World Energy Congress, the largest and most influential global energy event, that has been a forum for innovation and dialogue on energy issues for 95 years. The 24th World Energy Congress will be the venue for the exhibition of 28 shortlisted projects designed for Masdar City.

Leadership Excellence
for Women Awards & Symposium
LEWAS

LEADERSHIP EXCELLENCE FOR WOMEN (LEWAS)

Feature on the exhibition area

The LEWAS Symposium was created when a group of women decided there needed to be a forum in the GCC that provided a place to: celebrate women's achievements, learn from well-respected women, have an opportunity to network, and improve upon knowledge. Over the years, LEWAS has managed to gather an unprecedented amount of talented, empowered and motivated women leaders to engage in discussions and panels to address the issue.

GBBC
Global Blockchain
Business Council

GLOBAL BLOCKCHAIN BUSINESS COUNCIL

9 September 2019

The energy industry is evolving into the digital age with a focus on decarbonization, distributed energy resources, and consumer empowerment. The Global Blockchain Business Council (GBBC), the leading global industry association for the blockchain technology ecosystem, will host a roundtable to discuss real-world blockchain use cases in the energy industry, and explore how blockchain technology could provide novel solutions to the frictions and challenges besetting the energy industry.

Global Energy

MISSION POSSIBLE: THE GLOBAL ENERGY PRIZE AS A DRIVER FOR SUSTAINABLE ENERGY FOR ALL

10 September 2019

The Global Energy Prize is an international award for outstanding scientific research and technological development in energy since 2003. During the session high-level panelists will outline key energy solutions working towards achieving sustainable reality, consider best Global Energy Prize laureates` innovations focusing on increased energy efficiency, use of renewable energy and clean technologies for traditional energy processing, present examples of global energy cooperation creating inclusive communities and resilience to environmental issues like climate change.

IHS Markit™

IHS MARKIT– CLEANTECH AND THE LOW CARBON FUTURE: SHAPE OF THINGS TO COME

10 September 2019

Despite the outstanding growth of renewable energy in the last few years, wind and solar photovoltaics renewables alone clearly won't still be enough to reach the climate and carbon targets. Many other technologies will be required to improve energy efficiency, electrify transportation, and decarbonize heat to reduce emissions across all end-use sectors. This event will explore what contribution clean technologies can make in the future and will discuss the key questions about the future of the energy industry.

Federal Ministry for Economic Affairs and Energy

UNITED ARAB EMIRATES MINISTRY OF ENERGY & INDUSTRY

MINISTRY OF ENERGY AND INDUSTRY OF UAE AND GERMAN FEDERAL MINISTRY OF ECONOMIC AFFAIRS AND ENERGY - INTERCONNECTED GRIDS AND POWER TRADE

10 September 2019

Development of locally, regionally and globally interconnected power grids holds tremendous promise for economically efficient and environmentally responsible power systems, a common priority for governments across the planet. Interconnected grids utilize geographically distant, but highest potential renewable energy resources in the cheapest manner through economies of scale; smooth out load patterns and renewable power generation; reduce curtailment of renewable power; maximize utilization of existing generation assets; provide better supply security and reliability; and overall improve access to and affordability of power. Additionally, energy commerce via interconnected grids promotes peace, regional economic growth, job creation and local industry.

EU-GCC Cleanergy.Net

EU GCC CLEAN ENERGY TECHNOLOGY NETWORK IN COLLABORATION WITH HYDROGEN EUROPE, THE CENTER FOR HYDROGEN SAFETY, THE INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY AND DII.

10 September 2019

Hydrogen: Bridging Sectors and Regions

The session will address new perspectives on ongoing low-carbon hydrogen initiatives, provide insights on cutting-edge technology developments, address systems aspects including safety and will inform the debate on hydrogen's future role in global energy markets. High-level international experts will present their work and will exchange views in interactive moderated panels.

GO15 RELIABLE AND SUSTAINABLE POWER GRIDS

RELIABLE & SUSTAINABLE POWER GRIDS (GO15) & INTERNATIONAL CONFEDERATION OF ENERGY REGULATORS (ICER) – JOINT ANNUAL WORKSHOP

11 September 2019

The Energy Regulators play a key role in providing a regulatory framework that enable the transition to the energy mix, while GO15 members bring a wealthy experience from 6 continents, in dealing with various economic environments and regulatory approaches.
This workshop will address the The Energy Transition' s key challenges and enablers and will focus on:

- The Renewables Revolution
- The Energy Transition - Grid Operators Perspective
- Regulatory Evolution to Support the Energy Transition

Atlantic Council
GLOBAL ENERGY CENTER

eurasia group politics first

ATLANTIC COUNCIL– SHIFTING GEARS: THE FUTURE OF TRANSPORTATION AND PEAK OIL DEMAND

11 September 2019

For the past year, the Atlantic Council has been exploring the impact that aggressive decarbonization policies and the transformation of the fuels market will have on global oil demand and geopolitics. At the conclusion of this effort, report authors RJ Johnston and Randy Bell will present their findings through a launch of the report 'Shifting Gears: The Future of Transportation and Peak Oil Demand', a study of the possible trajectories for oil demand in the energy transition and the effect these trajectories may have on markets, oil producers, energy trade, and global politics.

SUSTAINABLE ENERGY FOR ALL

SEFORALL SIDE EVENT:PATHWAYS TO INCREASING THE RATE OF ENERGY EFFICIENCY

11 September 2019

SEforALL' s session will focus on the policy reforms and financial innovations that will be needed to achieve the increasingly ambitious target of annually increasing the global rate of improvement in Energy Efficiency by 2030 to meet SDG7 targets. Governments and businesses need to embrace an Energy Efficiency First approach as a way to realize cost-effective emissions reductions and deliver environmental and social benefits.

Invitation-only side events

WORLD ENERGY COUNCIL ITALY

WORLD ENERGY COUNCIL ITALY - PATHWAYS TO REGIONAL ENERGY TRANSITION IN THE MEDITERRANEAN AREA

9 September 2019

Given its geographic position, the Mediterranean region is a hub between Europe and Africa and therefore can play a key role in the energy transition process of the area. In addition the rapid development of the South and East Mediterranean countries is leading to a significant increase in energy demand and is changing the economic and energy landscape of the region. Within the broader framework of the 24th World Energy Congress Abu Dhabi 2019, Observatoire Méditerranéen de l'Energie and the Italian Committee of the World Energy Council, will organize a seminar with the aim to deepen the energy transition process undergoing in the Mediterranean Area and to highlight the paths that needs to be embarked by countries in the region in order to launch a structured regional cooperation on a sustainable Mediterranean energy framework.

AMER8
The 8th
Asian Ministerial Energy Roundtable
An IEF Energy Dialogue Event

INTERNATIONAL ENERGY FORUM'S 8TH ASIAN MINISTERIAL ENERGY ROUNDTABLE

10 September 2019

Under the theme "Energy Security in the Age of Change: Empowering Responsible Growth in Asia and the World" the AMER8 will be held alongside the 24th World Energy Congress, building on the global energy dialogue and outcomes of the AMER7, the Katowice Climate Change Conference, the latest G20 Energy Ministers Meeting. The Ministerial will give a new impetus to the energy dialogue, calling for mutually supportive relationships between producers and consumers, optimal use of International Energy Forum's:
8th Asian Ministerial Energy Roundtable the neutral IEF platform to build a global consensus on reliable and realistic energy transformations, rational responses to the global energy challenges we face together and renewed collective action to achieve shared UN goals to combat climate change.

ENEC AND GIFEN AND EDF

10 September 2019

The E-FUSION initiative was launched in early 2019, endorsed by both the French and UAE nuclear leaders. Its aim is to bring together the French nuclear supply chain and the Emirati industries around projects for the UAE nuclear program at Barakah. This side-event aims at connecting an exclusive and pertinent selection of local industrial companies willing to develop their capabilities to support the Barakah project, with some French industrial partners among the nuclear supply chain around Engineering and O&M activities supporting ENEC and Nawah's needs.

WORLD ECONOMIC FORUM

GLOBAL ENERGY TRANSITION

10 September 2019

Accelerating energy transition requires faster progress on all fronts, including research on and deploying technology, large amounts of investment, formulating and implementing effective policy and ultimately the involvement of individual consumers.
This session is part of the Global Energy Transition Dialogue Series aiming to gather business, governments and other stakeholders to take stock of progress so far, explore where to redouble efforts based on successful case studies and to help countries overcome the barriers preventing an effective energy transition.

UNITED ARAB EMIRATES
MINISTRY OF ENERGY & INDUSTRY

المملكة العربية السعودية
وزارة الطاقة والصناعة والثروة المعدنية

CARBON CAPTURE, UTILIZATION & STORAGE
ACCELERATING CCUS TOGETHER
AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

ACCELERATING CCUS TOGETHER – FINANCING A KEY PIECE OF THE CLEAN ENERGY PUZZLE

10 September 2019

The Gulf Region has a strategic interest and technical experience in developing carbon capture, utilisation and storage (CCUS) technologies, as part of their strategies towards a sustainable energy future. This event will bring together the key stakeholders in the Gulf Region, including governments, industry and the financial sector. The event also intends to gather views from the financial sector in the region regarding their appetite to invest in CCUS. The financial sector should also deliver key messages to the governments regarding the expected and preferred policy approaches to make CCUS projects investable. The event is co-hosted by United Arab Emirates and Kingdom of Saudi Arabia.

ابيكورب
APICORP

ARAB PETROLEUM INVESTMENTS CORPORATION (APICORP)– ENERGY TRANSITION: RESHAPING INVESTMENTS AND STRATEGIES – FINANCIAL STRATEGIES FOR LONG TERM REWARDS

11 September 2019

Energy transition opens up new investment opportunities in new and fast-developing sectors on the supply side and the demand side such as battery technologies, storage, mobility. These changing dynamics are bringing new insights that are reshaping the energy sector, its structure and its business models.
This senior level meeting will address the critical theme of energy transition and will bring together a select group of top decision-makers and thought leaders from the various energy value chain sectors and the investment community.

CLEAN ENERGY MINISTERIAL
Advancing Clean Energy Together

CLEAN ENERGY MINISTERIAL (CEM)– ENERGY TRANSFORMATION AND REGIONAL INTEGRATION OF POWER SYSTEMS

11 September 2019

At the invitation of the UAE government, the Clean Energy Ministerial (CEM) Secretariat in collaboration with CEM work streams is organizing a side event to showcase six of its areas of work that focus on power systems transformation. CEM work streams will offer their perspectives on regional integration of power systems, each focusing on those aspects and angles that are central to their area of work. The UAE government is actively engaged in these CEM work streams and will offer its national and regional perspectives.

Multiple CEM members, including Canada, China, Denmark, Germany, Japan, India, Mexico, Norway, Saudi Arabia, Sweden, the UK and the USA lead the work of these six CEM work streams and will contribute to the event.
HE Matar El Neyado, the UAE's Under Secretary of Energy, and Christian Pilgaard Zinglersen, Head of the CEM Secretariat, will open the event, kicking off a wide range of discussions that will include Long-term planning and energy scenarios, Policies for regional interconnection; Regional integration and power system flexibility, Nuclear and renewable energy interplay; and CCUS and opportunities in the Gulf region.

IRENA
International Renewable Energy Agency

IRENA– CREATING AN ENABLING ENVIRONMENT TO ACCELERATE THE DEPLOYMENT OF RENEWABLES

11 September 2019

The discussion will kick off with renewable energy policies and financing mechanisms that address the mix of direct, enabling and integrating policies needed to transform the energy system, at the national and local level. This event will provide a renewable energy policy dialogue where public and private sectors representatives, as well as relevant international institutions, can share experiences and disseminate best practices in policy-making to ensure efficient deployment of renewable energy, and the maximisation of the benefits realised.

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مكتب تطوير مشاريع الطاقة المتجددة
Renewable Energy
Project Development Office

RENEWABLE ENERGY PROJECT DEVELOPMENT OFFICE (REPDO), SAUDI ARABIA– ROUND THREE OF SAUDI ARABIA'S NATIONAL RENEWABLE ENERGY PROGRAM

11 September 2019

The Kingdom aims to deploy 27.3GW of renewable energy projects by 2024 and 58.7GW by 2030. The Renewable Energy Project Development Office (REPDO) of Saudi Arabia's Ministry of Energy Industry and Mineral Resources, invites interested parties to learn more about Saudi Arabia's National Renewable Energy Program (NREP). Investment opportunities and localization incentives will be covered within the session and REPDO's technical development and tendering teams will give specific focus on the NREPs "Round Three" projects which will be publicly tendered in Q4 of 2019.

BCG

BOSTON CONSULTING GROUP ROUND TABLE ON WINNING THE '20S

12 September 2019

Powerful forces are transforming the energy industry—from disruptive technologies, electrification, and climate-change pressure to stiffening competition, geopolitical tensions, and market volatility. The most forward-thinking will make savvy use of leading-edge technologies and pull ahead of their toughest rivals in the next decade. Given the tremendous value at stake, will today's winners still be on top in tomorrow's energy market? This "by-invitation-only" event will bring together senior leaders from across the Middle East to discuss how energy companies can deploy next-generation technologies to not just survive the coming decade—but to also thrive in an environment reshaped by profound change.

ORGANISATION INTERNATIONALE DE la francophonie

INSTITUT DE LA FRANCOPHONIE POUR LE DÉVELOPPEMENT DURABLE IFDD

THE FRANCOPHONIE INSTITUTE FOR SUSTAINABLE DEVELOPMENT (IFDD)

12 September 2019

This lunch conference allows the Francophone community to discuss the theme of “Energy for prosperity in the Francophone countries”, to assess the role of sustainable energy for inclusive prosperity and contribute effectively to exchanges during the World Energy Congress.

CPLC CARBON PRICING LEADERSHIP COALITION

Clean Energy Business Council مجلس صناعات الطاقة النظيفة Middle East & North Africa

كربون دبي DUBAI CARBON

EEG مجموعة عمل الإمارات للبيئة EMIRATES ENVIRONMENTAL GROUP

ENGIE

SUSTAINABLE FINANCE AND CARBON MARKETS: NEW OPPORTUNITIES FOR THE GCC?

12 September 2019

The rapid development of renewable energies and the increasing efforts in energy efficiency and carbon reduction projects create opportunities for market players to obtain and trade in innovative forms of financing, including carbon credits and/or clean energy certificates. These new tools form part of a complementary suite of financing instruments to foster the energy transition and help address climate change. This event will explore the status of sustainable finance, carbon pricing and carbon market instruments in the region and will showcase examples of international institutions, countries and companies.

World Energy Council Events

WORLD ENERGY COUNCIL | World Energy Leaders' Summit

WORLD ENERGY LEADERS' SUMMIT (WELS)

CEO Roundtable: Tuesday, 10 September
Trilemma Ministerial Roundtable: Wednesday, 11 September 2019

The WELS are high-level exclusive events reserved for the global energy leaders' community to facilitate dialogue on critical issues affecting the energy sector

WORLD ENERGY COUNCIL | Future Energy Leaders

FUTURE ENERGY LEADERS PROGRAMME (FELS)

The Future Energy Leaders' Programme of the World Energy Council is designed to inspire, grow and develop the world's energy leaders of tomorrow. This exclusive network of exceptional individuals from across the globe includes a diversity of participants from across the energy spectrum. The FEL community builds on creative ideas and the innovative potential of the next generation to challenge conventional thinking and explore new strategies for the future of our energy systems. It offers young professionals a unique opportunity for learning and development with exposure to critical issues in the energy debate.

Be in the Official Daily Newspaper

The triennial World Energy Congress is the World Energy Council's global flagship event and offers a unique platform for global energy leaders to explore new energy futures, critical innovation areas and new strategies.

Hosted by the United Arab Emirates, the 24th edition of the World Energy Congress will be held from 9-12 September 2019 at the Abu Dhabi National Exhibition Centre.

The Congress aims to bring together international energy stakeholders, including governments, private and state corporations, academia and media.

Upstream & Recharge, both leading Energy publishers, will publish the Official daily news each day of the congress and include a wrap-up edition at the end.

The Official show daily is the only daily news to be distributed at the Official hotels in Abu Dhabi and to all delegates, exhibitors and visitors at the show. Maximize your presence and get your message effectively to this influential audience, by advertising your brand, your expertise or simply your booth.

There will be 4 printed editions (9-12 September) + 1 digital summary edition (15 September) that will be emailed to all participants right after the event.

There are many advertising options to choose from,but the most popular ones are:

	Rate	Width x height in mm/inches
Full page, full colour:	$9,438	246x374mm/9.7x14.7inches
A4, full colour:	$6,040	196x291mm/7.7x11.5inches
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US junior, full colour:	$3,398	146x218mm/5.7x8.6inches
Half page, full colour:	$4,719	246x181mm/9.6x7.1inches
Half US junior, full colour:	$1,699	146x107mm/5.7x4.2inches

Frequency discount of 10% applies if advertising in all 5 show editions! For information on the Official show daily or to reserve space, please send an email to: simin.bevis@upstreamonline.com

upstream
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RECHARGE
Global news and intelligence for the Energy Transition

24th World Energy Congress: Harnessing Youth's Energy

Under the theme 'Harnessing Youth's Energy', the youth program will bring together global and local young professionals, to engage in a series of high-level interactive sessions and workshops designed to stimulate discussion and create a meaningful dialogue focusing on all sources of energy, skill development, and leadership.

The 24th edition of the World Energy Congress will leave behind a legacy of a dedicated youth zone sponsored by ENEC aimed at bringing together some of the brightest young minds from across the globe to network with leading energy industry figures.

Highlights of the multi-faceted program include: Ignite Talks, a series of inspiring discussions with ministers and industry leaders from around the world, the launch of the UAE's National Future Energy Leaders program, interactive sessions with global Future Energy Leaders, and Energy Toastmaster.

The World Energy Council's Future Energy Leaders (FEL 100) programme will also bring selected young professionals and exceptional individuals to the Congress and involve them in national, regional and international activities that inspire them to become the next generation of energy leaders.

The Youth programme is free to attend. Register now at www.wec24.org

UNDER THE PATRONAGE OF H.H. SHEIKH KHALIFA BIN ZAYED AL NAHYAN, PRESIDENT OF THE UNITED ARAB EMIRATES

9 - 12 SEPTEMBER 2019 | ABU DHABI NATIONAL EXHIBITION CENTRE

24th WORLD ENERGY CONGRESS

WORLD ENERGY COUNCIL | 24th CONGRESS
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