WORLD ENERGY COUNCIL
CONSEIL MONDIAL DE L'ÉNERGIE
For sustainable energy.

WORLD ENERGY FOCUS

monthly insights from the Council's global leadership community

#20 • FEBRUARY 2016

INSIDE THIS ISSUE

The big question in the energy sector today is whether the world will move to a zero-carbon policy in which fossil fuels, including natural gas, have no place, or a world in which natural gas is part of the solution, says Robert Johnston, CEO of the prestigious US-based research and consulting firm Eurasia Group, in an interview with World Energy Focus. Johnston advises oil and gas companies to "take a seat at the policy table and advocate for gas" to counter "growing demands to exclude natural gas".

As CEO and head of the Energy Practice of the Eurasia Group, one of the world's leading political risk advisory and consulting firms, Robert ("RJ") Johnston talks to business leaders and investors on a daily basis. And he has seen a "significant change" over the past twelve months when it comes to climate risks. "The debate around the carbon bubble, the risk of stranded assets, has moved from background noise to something that is increasingly paid attention to", he says.

People in the energy sector have taken notice of the fate of the coal companies, Johnston notes. "The decarbonisation folks have been pretty effective in dealing with the coal companies. They have waged influential campaigns among investors. The economic outlook for coal companies is now quite negative."

According to Johnston, it is likely that these same activists groups will increasingly target unconventional oil and gas. "They will try to repeat what they did with coal and the Keystone pipeline for the Alberta oil sands and US shale gas."

SIGNIFICANT SIGNPOST

But the risk of stranded assets is also part of the wider policy context in which energy companies operate. And it is not clear yet in which direction that will move. "The most significant signpost where we go on climate after Paris will be the US presidential election", says Johnston.

If Hillary Clinton wins the election, we will likely see a continuation of present US climate and energy policies, says Johnston. "This will be focused on international agreements such as the accord with China and domestic policies along the lines of Obama's Clean Power Plan."

If however the Republicans win, then "we could have a significant changing of the trajectory at the US level and a lot less interest in playing a global leadership role in climate talks."

In the first case, a Clinton win, two scenarios are possible, says Johnston. "Will we see momentum for a zero-emissions type of energy policy where there is no role for fossil fuels, even natural gas? With a strong focus on much more renewables, energy storage, energy efficiency? Or will we move to a world where oil and gas companies will have a seat at the table, where gas is seen as part of the solution, not the problem? A world where we may actually see a new golden age of gas driven by coal-to-gas switching in Asia and growing gas demand to back up the growing shares of renewables."

GROWING RISK

Johnston adds that although the Eurasia Group is "policy-neutral", "our clients who argue that gas will be needed as bridge fuel for the next 20-30 years are probably right, because it will be difficult to achieve such an aggressive ramp-up renewables as we have seen proposed in some of the 1.5 degrees scenarios post-Paris."

Johnston, then, believes "gas will most likely be around for a while", but he does see "growing political risk in increasing demands to exclude natural gas". The best policy for oil and gas companies who > see page 2

want to counter this risk is to actively engage with policymakers and the public: "Interestingly, at Paris European oil and gas companies took a strategic decision to be involved in the process, to face their critics and advocate for gas. Whereas US companies were less active. They are still uncertain about how they want to participate in the climate talks and what policy they want to see for the US market. They are also not unified and coherent as a group."

According to Johnston, the US companies "need to figure out whether they want to follow the example of European companies" or whether climate policy is something "they want to push back within the US political system". "Being a champion for natural gas seems to me the best strategy", he adds.

ALTERNATIVES

Given the drive towards a low-carbon economy, are oil and gas companies also considering investing in renewable energy or alternatives like hydrogen, biofuels or electric cars? "Publicly, no", says Johnston. "But privately, yes."

"There is no question", he says, "that the business model of high-risk-focused, upstream-focused, high-growth focused projects, such as ultradeepwater, oil sands, and mega-LNG projects, is being reviewed."

In the current economic conditions, companies are already much more cautious in investing in these projects. The problem is that "at a time when they are massively slashing budgets, it's going to be difficult for them to find money to invest in areas like solar power that are not their core outlooks and face their own economic and political uncertainties".

Still Johnston knows that some – not all – oil and gas companies are seriously looking at alternatives. "Over three to five years they will be looking at this more and more." There is precedence for this, he notes. "In the early 2000s, BP rebranded itself as Beyond Petroleum, in reaction to the idea of peak oil. And in the 1970s and 1980s oil companies became active in coal, nuclear and solar power, because they were worried about access to reserves."

Whether some of the alternatives can be profitable will partly depend on how high carbon prices will become, says Johnston. "This is where political leadership comes in." To the Eurasia Group CEO it "probably makes more sense for companies to invest in the transportation side. There seems to be more synergy between their downstream business and things like biofuels, electric charging, and hydrogen. They have not done that well in solar and wind."

BREAKTHROUGH

Eurasia Group sees an oil price recovery in 2017, "but not back to the $100 figures we saw before. Around $60 seems more likely. The deep cuts in investment, the need to replace depleting resources and some demand growth should take care of the current surplus in the market."

Johnston does not believe Saudi Arabia will cut back production any time soon. "If they cut production now, it would help Iran and Russia most of all and that's what they don't want. I am not saying this is their main motivation – their primary drivers are their own economic security and fighting competing supply sources like in the US – but it does enter into it. They can hold out for a couple more years."

> "The decarbonisation folks have been pretty effective in dealing with the coal companies"

This will continue to put international oil companies in a difficult spot. "They are cutting spending, derisking portfolios, reducing headcounts, deferring investment decisions. But such measures do not really give them a breakthrough. They are looking for answers right now but have not found them yet."

One trend that Johnston sees emerging is that US companies in particular focus more on putting their efforts into their domestic business and shunning overseas political risks. "They focus on trying to make shale plays work at $30-40 a barrel. There is a lot of pressure on the technology side to make these plays work at these lower prices. That's where they put their best people, rather than in letting them get oil out of the ground in places like Libya and Kurdistan."

For energy companies, it is important "to stay the course in North American oil and gas sector in the short term", says Johnston. "Geopolitics will come back in a few years."

For the longer term, "politics around climate will impact fossil fuels most of all, in terms of market demand, support for alternatives and impact on investor behaviour. That's the new politics companies need to keep their eye on." ●

WHO IS ROBERT JOHNSTON?

Robert ("RJ") Johnston has been Chief Executive Officer of Eurasia Group since 2013, after seven years as founder and leader of the company's Global Energy and Natural Resources Strategy Group. Prior to joining Eurasia Group, he served as managing director of equity research at Medley Global Advisors, where he was responsible for providing political and strategic insights to clients in the institutional investment community and served as the lead analyst for global energy equities. A native of Canada, he holds a PhD in International Relations from the American University in Washington, DC.

Europe's energy investment crisis:

Causes, remedies, lessons for the rest of the world

European Parliament. Photo Europe by Satellite

Europe's electricity market, which has some of the highest renewable energy shares in the world, is suffering from a profound investment crisis. World Energy Focus spoke with top experts from government, business and academia about the causes, possible solutions and what lessons can be learnt for other regions. They agree that "a complete makeover" of Europe's market design is needed. Interestingly, Latin America, with its long-term investment markets, may offer some pointers for the Europeans.

The European electricity market today is not fit for purpose. "All the EU's liberalisation packages concentrated on opening up markets," says Philip Lowe, Vice Chair of the Energy Trilemma study at the World Energy Council. Few people know more about European energy market rules than Lowe, for many years a top official at the European Commission. His assessment of the EU's legislation is remarkably critical. "They didn't build into that market design the two other components of our energy policies, which are security of supply and low-carbon. The need to move to a low-carbon economy has changed the parameters of the [energy] challenge."

Europe's climate goals require a substantial share of variable solar and wind power, even if nuclear power and carbon capture and storage (CCS) were to grow significantly. The problem is that the market is not well suited to integrate this growing share of (subsidised) renewables.

"Electricity markets are designed to reflect and optimise the cost structures of conventional technologies we are familiar with from 20th century electricity systems," says Malcolm Keay of the prestigious Oxford Institute for Energy Studies (OIES) in the UK.

European electricity markets are "broken", he argues in a paper published in January *[http://bit.ly/1UQ6v3h]*. "They are not suited to the systems we are developing to meet 21st century needs and circumstances, and they do not give effective signals in situations where, as at present, one set of technologies is receiving support from outside the market, while other technologies are expected to remunerate themselves from the market – yet both sets of technologies are operating in the same market."

He warns that this problem is structural. "Even if the cost of wind or other renewable sources attains 'grid parity', and even if there is a significant carbon price, the current energy market will not provide a secure basis for remunerating investment in intermittent renewables." This is because solar and wind produce power at near-zero marginal cost and as they both tend to generate the most electricity in the middle of the day, they flatten the intraday price curve, wiping out profit margins for all types of generation. This creates a profound investment crisis for renewable as much as for fossil fuel-generators. The flattening of the price curve has the additional effect of discouraging flexible demand from consumers – just when such demand response is becoming more viable through smart grid technologies.

INVESTMENT MARKETS

The investment crisis in the European utility sector has led to an intensive debate on how the "broken" market should be "redesigned". So far, this debate has focused mainly on capacity mechanisms, which some countries have set up (or are considering setting up) to ensure that supply will not fail. They are not a new idea.

"Until EU policies were put in place, the electricity system was based on energy components as well as capacity components," explains Marco Margheri, Senior Vice President for Public and EU affairs at Edison, Vice Chair of World Energy Council Italy and leader of the Council's Market Design Task Force for the Europe region. This group will feed the European Commission with ideas from March onwards, to help shape legislative proposals on market design which the European Commission in Brussels is expected to announce by the end of the year.

What is already clear is that capacity markets are part of the discussion, but cannot be the whole solution. "We at the World Energy Council believe there is a broader scenario to be taken care of," says Margheri. "For instance, in the long run carbon pricing will be paramount to get the economics of climate policies straight. And technology will evolve at a faster pace than we have experienced so far." Keay believes that in the longer term, EU Member States are headed for what are called 'investment markets', which focus not on competition in the wholesale market, but competition to stimulate investment before power is even delivered to the market.

This is also one of Lowe's recommendations for market redesign: "Public support should be concentrated not on subsidising production, but on the pre-competitive phase." He sees two roles for subsidies: one, to encourage the development and roll-out of new technologies and two, to stimulate large investments that are too risky for private capital. He also believes policymakers need to create a market for security of supply.

> see page 4

For him, this comes down to a forced restructuring of the energy industry: "You have to ask companies to bid to provide energy 100% of the time. The implication is that the price they offer will include the costs of ensuring there is adequate capacity." These bids should underpin long-term contracts that give investors a return on investment security.

THE BRAZILIAN ROUTE

Interestingly, such long-term contracts are already the norm in Latin America. This continent has a "fundamentally different" approach to electricity markets, explains Carlo Zorzoli, Head of Latin America for Enel Green Power. "It's more a competition on investment than competition in the real-time market," he says. "In Europe, you compete every minute, 15 minutes or hour to sell a certain volume. Here, you compete to deliver 20 years of energy at a defined price. The real-time market is mainly used to settle deviations between expected demand and supply."

Countries like Brazil have gone down this route because of large quantities of low-marginal cost hydropower (85% share in the Brazilian energy mix), which are incompatible with the marginal cost pricing model that rules in Europe. "Nobody would build large hydro projects without the security of getting revenues and the same applies to other low marginal cost renewables," Zorzoli says. He denies the suggestion that long-term contracts somehow impinge on competition: "You have fierce competition. Actually you have much more competition because you also compete with power plants that do not yet exist." He adds: "I think this is what Europe will need for decarbonising the economy."

But Europe has been "rather resistant" to long-term energy contracts, remarks Keay. In a 2015 paper *[http://bit.ly/1UQ6BYP]* prepared by its Economic and Financial Affairs department, the European Commission talks about the possibility of "an EU-wide market for long-term contracts based on average cost pricing". This would entail a dramatic shift away from its current marginal pricing model. But is this compatible with EU competition law? "It should be made compatible," says Lowe, who was Director-General at the Directorate-General of Competition in Brussels before he got the same job at the Directorate-General of Energy. Long-term contracts could pose a problem only if for example bidding consortia had huge market shares (e.g. more than 50-60%) or if they were very long indeed (e.g. more than 10-15 years), he believes.

> The Ubers of electricity may emerge very soon

For Keay, the problem lies elsewhere. "They are not ultimately compatible with full competition because however you organise them, someone centrally is making all the decisions. [It should be] individual consumers who do this." His preferred option is a two-market approach with an "as available" price (low price, available when plenty of supply) and an "on demand" price (more expensive, always there). Leave it to the customer to decide what degree of reliability they want (and are prepared to pay for). In contrast, says Keay, the conditions for long-term contracts are ultimately set by governments, who define the energy mix they want, and bid for by utilities, with the information and capacity to deliver.

TINKERING AROUND THE EDGES

In Latin America, the aggregation of small consumers to buy long-term is "rare", admits Zorzoli. But "I don't think there are many small European users that have a supply contract directly with a big generator [either]", he says. The entire demand-side remains – with the exception of large energy consumers – underdeveloped the world over. The possibility for demand side management is lower in Latin America than in Europe because of the cost and technological sophistication required to make the grid smarter, Zorzoli suggests.

Margheri is convinced that demand will eventually be put on a par with supply. The demand side is growing strongly, he notes. In Italy, there were 1,000 production units connected to the high-voltage grid at the beginning of the last decade; last year, it was over 650,000. Moreover, the boundaries between supply and demand are becoming blurred. Battery technologies are making consumer storage a major component of system balancing, while demand response, also through aggregation, will offer customers the opportunity to reap benefits from their flexibility potential and more control over their consumption. The digital revolution promises further transformation because it creates "the possibility to decentralise intelligence to customer homes", says Margheri. "The Ubers of electricity may emerge very soon."

In Europe the risk going forward is that the European Commission does too little. Keay fears a tinkering around the edges that amounts to "software patches on a fundamentally flawed operating system". Lowe, Keay and Margheri all agree that a key priority must be carbon pricing. It is climate policy that will shape the energy market and indeed must define the parameters of long-term contracts, Lowe says. He believes the EU should also set standards for genuine security of supply and update state aid guidelines for energy subsidies. And it needs to do more to integrate the demand side.

In short, the European energy market needs a makeover, not touching up at the edges. Keay sums it up nicely: "If you intervene in part of the system without thinking about effects on the whole, you get a mess. And that's what we've been doing until now, lurching from one intervention to the next until the whole system falls apart." Other parts of the world would do well to take notice. ●

ABOUT
WORLD ENERGY FOCUS

The **World Energy Focus** magazine is published monthly by Energy Post Productions.

For more information please contact us at info@worldenergyfocus.org

Publishers
Karel Beckman and
Matthew James
publisher@worldenergyfocus.org
Editor
Karel Beckman
editor@worldenergyfocus.org
World Energy Council
Kristina Acker
acker@worldenergy.org
Contributors
Sonja van Renssen
Clare Taylor

Advertising and Sponsorship:
sales@worldenergyfocus.org

Subscribe for free:
www.worldenergyfocus.org/sign-up

Corporate subscriptions:
subs@worldenergyfocus.org

Back issues:
www.worldenergyfocus.org

Design & DTP
Ron Wolak at Stap2.nu
www.stap2.nu

Sub-Saharan Africa growing as investment destination for energy projects

South Africa has rapidly become a world player in renewable energy and is well on its way to achieving its government's goal of 30% clean energy by 2025, according to a recent report from the South African Department of Energy. The South African renewables sector, through its Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) has attracted R192.6 billion ($12 billion) investment, of which 28% much needed foreign investment.

And opportunities for projects using both renewable and thermal technologies are expanding, both in South Africa and across the region. "South Africa's Department of Energy's Renewable Energy Power Producer's Procurement Programme launched in 2011 has resulted in an IPP development boom in the region; now there is investment across the region in various technologies," explains Scott Brodsky, Partner at international law firm Macfarlanes.

Soweto with painted cooling towers from a coal-fired power plant. Photo Lynn D Rosenstrater

South Africa has a high level of renewable energy potential and presently has in place a target of 10,000 GWh of renewable energy. The Minister of Energy has determined that 3725 megawatts (MW) to be generated from renewable energy sources are required to ensure the continued uninterrupted supply of electricity in the country. The country's IPP Procurement Programme has also been designed to contribute towards socio-economic and environmentally sustainable growth and to stimulate the renewable industry in South Africa.

"The renewables programme in SA (REIPPP) continues apace", says Brodsky. "We are awaiting the results of the first bid window in the coal IPP programme and we are eagerly awaiting the launch of the gas-to-power programme in 2016. Outside of South Africa there are IPP developments in numerous countries in the region, including Zambia, Namibia, Uganda, Nigeria, Kenya and Mozambique."

For energy intensive users like big mining groups renewables are also attractive as backup supply, plagued as they are by load-shedding and stop-starts in their operations.

Interest among foreign investors to invest in Africa's energy sector is growing. In December French President Hollande said that his government would double investments in renewable energy generation, ranging from wind farms to solar power and hydroelectric projects, to €2bn between 2016 and 2020. China's President Xi Jinping has pledged $60 billion for development in Africa at the China Africa Summit recently held in South Africa. Germany and Canada have also made pronouncements of large investment into African energy projects, and Obama's Power Africa initiative, which assists the private sector in partnerships that can increase electricity access, is well underway.

Many investors and decision-makers will meet on 16-17 February at the 8th annual Africa Energy Indaba *[www.africaenergyindaba.com]*, the premier African energy event (including various conferences and exhibitions) associated with the World Energy Council. Among many other themes, some of the latest thinking on energy storage and shale gas will be discussed at the Indaba. ●

Egypt embarks on large wind energy programme

The New and Renewable Energy Authority (NREA) in Egypt has announced that it is at the final stage of negotiations to raise €180 million for a large-scale wind energy program. The project will have a final installed capacity of 2 GW and will be set up by German company Siemens.

Siemens is expected to commission the entire capacity by 2022, supplying around 600 turbines, and investing €100 million to develop a manufacturing facility to product equipment for turbines worth 340 MW capacity every year, reports the website CleanTechnica based on Egyptian media.

The NREA is in talks with several financial institutions and banks including the National Bank of Egypt (NBE), the Commercial International Bank (CIB), Banque Misr, Audi, Emirates NBD, International Finance Corporation (IFC), the European Bank for Reconstruction and Development (EBRD), the German Development Bank (KfW), and the African Development Bank (AfDB).

Egypt's 2 GW wind energy programme is part of a 4.3 GW renewable energy programme which is planned until 2022. The country is also investing in conventional generation through an IPP scheme as part of its National Energy Strategy 2035. ●

Indonesia to set up renewable energy utility

The Indonesian Government is considering setting up a renewable energy utility to procure electricity from renewables projects. According to media reports, the country's main power utility, Perusahaan Listrik Negara (PLN), is reluctant to buying power from renewable energy producers. The new utility would be set up similar to the Energy Corporation of India (SECI) which conducts competitive auctions for solar power projects and then re-sells the electricity to end-users.

Indonesia has a target of 25% for renewable energy by 2025, up from about 5% now. Geothermal energy is expected to be central to this effort. The country, which has pledged to cut its greenhouse gas emission by 29% by 2030, has a geothermal energy potential of 29 GW — equivalent to about 40% of world's total geothermal reserves. ●

World Energy Council: Action needed to realise full potential of gas market

Industry leaders across the world are convinced that natural gas has the potential to play a critical role in the energy transition. Yet the global gas market faces a challenging outlook in the short term, and great uncertainty in the long term, notes a new Perspectives Paper to be published by the World Energy Council. With the market in turmoil, "decisive intervention from consumers, industry, and policymakers will be required to establish the future role of natural gas in the global energy mix", notes the report.

The latest gas study from the World Energy Council focuses in particular on how unconventional gas is structurally changing global gas markets. The effects of the unconventional gas revolution are profound, permanent and spreading across the world, the report notes.

In particular three trends are emerging:

- Interconnected markets: With excess supplies in the market, there have been price normalisation and other structural shifts towards a more global and transparent market across the three main regional hubs: Asia, Europe, and North America.
- International growth of unconventional gas: operators, including national oil companies, have made progress in growing unconventional gas supplies outside of North America, for example in in Australia, China, and Argentina.
- Shifting portfolio allocations: In times of uncertainty, industry tends to shift capital to flexible, shorter-cycle investments and this positions US shale gas competitively in the market moving forward.

The spread of unconventional gas around the world makes gas more affordable to consumers and reduces concerns about security of supply, notes the World Energy Council. However, it adds that "the reality remains that uncertainty around market

Plant for production of liquid gases built by Bilfinger in Ohio

dynamics places future supplies of conventional and unconventional natural gas at risk. Swift intervention is needed by key market actors to protect long-term supplies".

The report has three main recommendations to offer:

- **Industry:** Bring a higher degree of focus to portfolio allocation, risk management, and efficiency and continue to seek new and innovative investment partnerships to deliver projects.
- **Policymakers:** Establish policies that promote a liquid market and competition needed for security of supply and the formation of clear price signals.
- **Consumers:** Evaluate the economic and environmental benefits of diversifying energy assets with natural gas in power, industry, transportation, and chemicals and consider innovative investment partnerships to secure supplies.

If these key actors take the necessary measures, the golden age of (unconventional) gas may yet come true, notes the report *[soon available on www.worldenergy.org]*, as unconventional gas has the potential to increase competition, transparency and affordability. This in turn "will enable the confidence for investors to develop the infrastructure required for the reliable and safe use of natural gas as a fuel source for the long run." ●

APEC cuts tariffs to boost renewables

The 21 countries of APEC (Asia-Pacific Economic Cooperation) have cut tariffs on 54 environmentally friendly goods, "boosting trade and improving access to tools needed to fight climate change".

APEC's "first multilateral tariff-cutting arrangement in 20 years" will "help to lower the cost of environmental goods such as solar panels, wind turbines and air pollution control equipment. The reductions will better position the region to meet its target of doubling of renewable energy by 2030. APEC includes countries like the US, Australia, Canada, Chile, China, Indonesia, Japan, Korea, Mexico and Russia. ●

US study: nationwide grid key to energy transition

A new study *[http://bit.ly/1Tk2A06]* from researchers at the prestigious National Oceanic and Atmospheric Administration (NOAA) in the US concludes that the US can cut greenhouse gas emissions from the electricity sector by 80 per cent while keeping prices at or below current levels. The key to achieving this is to build a nationwide, modernised grid that will allow large-scale systems integration of renewable energies.

The plan would require big investments in high-voltage direct-current transmission lines. Currently, there are three separate grids in the United States, and most transmission lines are based on alternating current. ●

NEWS IN BRIEF

RWE GOES FOR SOLAR IN UAE

Chinese solar panel manufacturer JinkoSolar has teamed up with German utility RWE to bid for the third phase of United Arab Emirates' (UAE) Mohammed bin Rashid Al Maktoum Solar Park. The new phase of this iconic solar power park will see an additional 800 MW capacity. Once the third phase capacity is commissioned the solar power park will cross 1 GW in installed capacity.

NICARAGUA VOWS 90% RENEWABLES

Nicaraguan officials have set goals of 75 percent renewable energy by 2017 and 90 percent by 2020, local media have reported. An International Renewable Energy Agency (IRENA) report *[http://bit.ly/1NTTFeC]* from January 2015 found that "Nicaragua's renewable energy sector has a bright future, both for utility-scale and small-scale projects, due to the country's largely untapped renewable resources."

VIETNAM TO MOVE AWAY FROM COAL

Vietnam Prime Minister Nguyen Tan Dung on 19 January announced his government's intention to "review development plans of all new coal plants and halt any new coal power development." In addition, the Premier stated that Vietnam needs to "responsibly implement all international commitments in cutting down greenhouse gas emissions; and to accelerate investment in renewable energy." Vietnam has one of the largest pipelines of new coal plants in the world. Some 60 GW of new coal-fired power are currently under development.

How UAE is building a sustainable energy economy

Masdar city of the future. Photo Abu Dhabi

Blessed with one of the most abundant reserves of hydrocarbons in the world, the United Arab Emirates (UAE) is nevertheless aiming for a 'holistic' sustainable energy future. The country is diversifying the energy mix with ground-breaking developments in nuclear and renewable energy, carrying out fundamental market reforms and building smart cities – all to ensure that it will continue to lead sustainable development in the region.

The UAE relies on natural gas for virtually all of its needs in producing electricity and desalinising seawater. But diversification of the energy mix is well underway with large-scale nuclear and renewable energy projects in development. "Modernisation of the energy sector is key to our continued prosperity", explains H.E. Eng. Fatima Al Foora Al Shamsi, Assistant Undersecretary for Electricity, Clean Energy and Desalinated Water Affairs at the UAE Ministry of Energy. "It will provide us with a sustainable and diversified economy and affordable energy."

The UAE's recently published State of the Energy Report "Vision 2021" assigns national targets for all sectors, and aims at an overall target of 24% share of renewable energy by 2021. Demand side management is another main pillar of this strategy, with a 30% demand reduction goal by 2030.

The UAE's ambition to set the gold standard for the development of a nuclear energy programme is quickly becoming a reality. Some 300 kilometres from Abu Dhabi, construction of Barakah unit 1 is in its final stages and is expected to come on stream in 2017. The three other units currently under construction will follow at one-year intervals. Each unit will have a gross electric output of 1,400 MW.

SOLAR BOOM

Solar is also set to become a game-changer in the region. During the first half of 2015, the tendering process for a new 200 MW solar photovoltaic plant at the Mohammed bin Rashid al Maktoum solar park in Dubai achieved a tariff of $0.0584 per kWh, later reduced to $0.054 per kWh, one of the lowest tariffs in the world.

Saudi Arabian power and water company Acwa Power will partner with Dubai Electricity and Water Authority (DEWA) to build the plant. This is the first Independent Power Producer (IPP) project from DEWA. According to H.E. Eng. Fatima Al Foora Al Shamsi, who is also Secretary of the World Energy Council UAE National Member Committee, "the record price in UAE has resulted in a solar boom. It is important to mobilise our utilities to release more tenders for solar projects. The number of tenders should be substantially increased."

A HUB FOR RENEWABLES

The UAE also has an extensive overseas clean energy investment portfolio, including a $350 million concessional loan facility for renewable energy projects in developing countries in partnership with the International Renewable Energy Agency (IRENA) and a $50 million grant through the UAE-Pacific Partnership Fund for renewable energy projects in Pacific island countries.

Significantly, IRENA has chosen to establish its headquarters in Abu Dhabi's Masdar city, a sustainable urban development that demonstrates how to accommodate growing populations with less energy, water and waste. Smart city initiatives have gained momentum in recent years, with six greenfield cities in Saudi Arabia, three projects in Qatar and two projects in the UAE.

The Masdar Institute is proving to be a catalyst for the expansion of renewables throughout the region. In 2013, Masdar launched the Sheikh Zayed Solar power plant in Mauritania, its first, which meets 10% of the country's electricity needs. Additional projects in the Middle East, Afghanistan and the South Pacific are delivering electrification to communities.

Along with solar, wind power is emerging as an investment opportunity. Later this year, the Tafila wind farm, in which Masdar has invested, will begin producing power in Jordan. This 117 MW wind farm will reduce the need for diesel while adding 3% to the country's power-generating capacity. Meanwhile, in Oman's Dhofar region, a 50 MW farm delivered by Masdar will be the first utility-scale wind park within the GCC.

MANAGING DEMAND

Measures aimed at achieving the 30% demand reduction target by 2030 include pricing reforms, performance codes, and efficiency investments.

In August 2015, fuel subsidies for vehicles were removed, which increased costs by 25 percent. The price signal is intended to incentivise investment in more innovative energy efficient technologies, along with fuel-efficient cars, including hybrids and electric vehicles. H.E. Eng. Fatima Al Foora Al Shamsi explains, "Through the right communication the decision to remove subsidies and follow global price levels was implemented smoothly and accepted by the public."

In 2013, the Dubai Supreme Council of Energy and DEWA set up Etihad ESCO as the main entity entitled to help drive lower electricity and water consumption in Dubai's buildings. Its initial focus was retrofitting DEWA facilities. For an initial investment of AED 37 million ($10 million), overall energy savings were estimated to be 68% for lighting and 31% for buildings, with payback in 3-6 years. These first projects are contributing to the development of a nascent energy services industry.

Despite all that has been done, the UAE's quest for a sustainable energy future has hardly begun. "Innovation in the energy sector is accelerating and opening up big opportunities in the region", notes H.E. Eng. Fatima Al Foora Al Shamsi. "Renewable energies and energy efficiency technologies are the leading areas, with research also focused on minimizing the energy wasted during transmission and distribution. Leading fast track innovations are taking place in the transport sector in particular, and many pilot projects in industry and residential applications are underway." ●

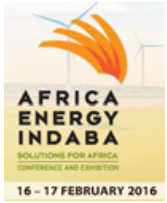
REGIONAL EVENT

Africa Energy Indaba

Johannesburg, South Africa
16-17 February 2016

The Africa Energy Indaba (AEI) is the foremost African energy event for energy professionals from across the globe. The event gathers international and African experts to share their insights and solutions to Africa's energy crisis, while exploring the vast energy development and investment opportunities in Africa. The AEI has been designated the World Energy Council's African regional event and is presented by the South African National Energy Association (SANEA), the Council's national committee. It is supported by the African Union Commission and the NEPAD Planning and Coordinating Agency.

www.africaenergyindaba.com



With only 9 months remaining until the 23rd World Energy Congress kicks off in Istanbul under the theme "Embracing New Frontiers",147 top level energy leaders from over 56 countries, including 21 energy ministers, have confirmed to speak.

As the world's premier energy gathering, the Congress is the most influential place in 2016 to assess the future trends and business implications for the energy sector and to engage with policymakers from around the world.

Companies interested in sponsoring the Congress are welcome to contact the appointed marketing consultants from ITE Group plc, vivian.linecar@ite-events.com. They will be able to benefit from numerous high level marketing opportunities. The sponsor program is designed to give high profile visibility and exposure to your corporate brand and business, drive attendees to your stand and leave a lasting impression on delegates and visitors.

For more information not only on sponsorship, but also on the Congress, the call for papers, and registration visit **the official congress website** *http://www.wec2016istanbul.org.tr/*
Follow the Congress on **Twitter**: *https://twitter.com/WECongress*

MEMBER COMMITTEE EVENTS

The Imminent Radical Change in the Electricity Supply Industry

Johannesburg, South Africa
19 February 2016

What will the future sources and ownership of generation in South Africa be? What will the implications be for Transmission and Distribution systems? How will suppliers, consumers and government organisations gear up to take full advantage? These are only some of the questions delegates and experts will explore in this open dialogue organised by the World Energy Council South Africa Member committee.
Contact: Sarita Cronjé
E-mail: saritac@mweb.co.za
Website: http://bit.ly/1nJbCHC

Asia-Pacific Energy Leaders' Summit

Wellington, New Zealand
16-17 March 2016

The Leaders' summit will explore how the Asia-Pacific energy system can build resilience and prepare for the new normal. Providing a unique platform to challenge ideas and look to future-proof the energy systems of the Asia-Pacific region, participants will seek to develop a shared understanding of the growing resiliency risks and challenges presented by climate change, emerging technologies, extreme weather events, cyber security, and the energy water-food nexus. The summit, preceded by a Future Energy Leaders event and an Asian Regional Meeting on the 15th of March, will give Asia-Pacific energy leaders an opportunity to discuss existing and emerging solutions and/or mitigate these risks and challenges.

Contact: John Carnegie
E-mail: jcarnegie@businessnz.org.nz
Website: http://www.bec.org.nz/summit

Natural Resources Management: Current Challenges

Rennes, France
24-25 March 2016

The main objective of this workshop is to analyse the impact of climate change as well as of conflicts and terrorism on natural resources. The French Member committee of the World Energy Council partnered for this with the French Association of Environmental and Resource Economists (FAERE) to ensure that they both benefit from the insights. Participants will also evaluate the relationship between poverty, inequality and natural resources as well as the commoditisation of energy markets and price volatility. The event will be conducted in French and English.
Contact: Marie-Hélène Hubert
E-mail: mariehelenehubert@univ-rennes1.fr
Website: http://bit.ly/1P8NHL3

SEE MORE COUNCIL EVENTS AT www.worldenergy.org/events/future

ABOUT THE COUNCIL

The World Energy Council has been at the forefront of the energy debate for nearly a century, guiding thinking and driving action around the world to achieve sustainable and affordable energy for all. It is the UN-accredited energy body and principal impartial network, representing more than 3,000 organisations – public and private – in almost 100 countries.

Independent and inclusive, the Council's work covers all nations and the complete energy spectrum – from fossil fuels to renewable energy sources.

JOIN OUR NETWORK

Join the debate and help influence the energy agenda to promote affordable, stable and environmentally sensitive energy for all.
As the world's most influential energy network, the World Energy Council offers you and your organisation the opportunity to participate in the global energy leaders' dialogue.

Find out how you can:

- join a Member Committee;
- become a Project Partner, Patron or Global Partner;
- take part in annual industry surveys, study groups and knowledge networks;

by visiting our website and contacting our team on: http://www.worldenergy.org/wec-network

CONTACT US

WORLD ENERGY COUNCIL
CONSEIL MONDIAL DE L'ÉNERGIE
For sustainable energy.

World Energy Council
62–64 Cornhill,
London EC3V 3NH
United Kingdom
Tel: +44 20 7734 5996 Fax: +44 20 7734 5926
www.worldenergy.org
@WECouncil