energy HQ

energy HQ.world
January 2023
Vol. I
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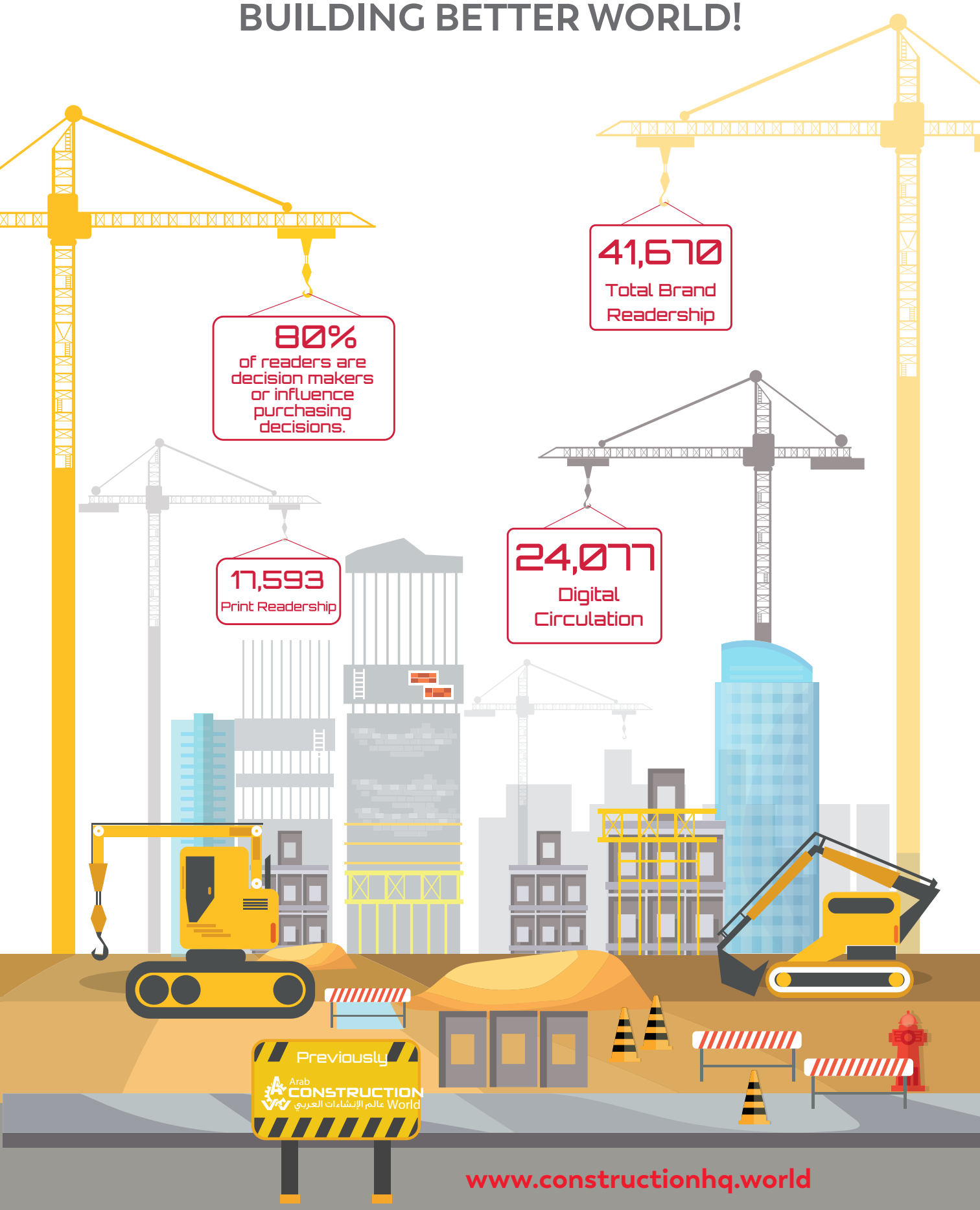

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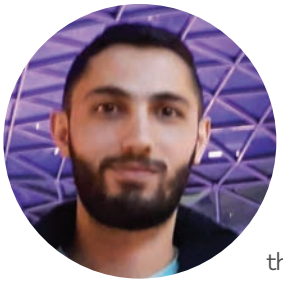

Dear Reader,

It is an absolute pleasure to welcome you to the first issue of energyHQ magazine as we start our first year of publication. A new year that brings the chance to start afresh and look at exciting new possibilities. We decided to launch this brand due to the ever-increasing importance of the energy industry, worldwide, and how it is affecting everyone from world governments to multi-national corporations and finally ordinary citizens. We hope we will be able to provide you with the most recent developments and events in the energy industry.

To kick things off for the year, in this issue, we will be looking at the top energy trends that we can expect to see in 2023, as well as some exciting developments to keep an eye on. Nuclear Fusion Energy has emerged as a key topic in this issue, in addition to many more interesting articles and reports about the renewable energy, oil & gas, and nuclear power.

One challenge the industry is facing, is the growing global energy consumption, amid a slowing economy and high energy prices that the industry continues to grapple with, along with the rise of household energy debt, prompting the need for new, consumer-centric approaches to energy affordability and alleviating financial hardship.

The unprecedented global energy crisis, triggered by the ongoing war in Ukraine and economic fallout of the pandemic, has meant that 2022 has not been a smooth ride for energy suppliers and consumers alike.

In the backdrop of the volatile energy market, organizations are thinking ahead and developing more environmentally conscious practices for 2023. Many are investing sustainable business measures with the goal of acting more responsibly and helping their respective governments to meet net zero targets.

A high priority on this sustainable agenda is decarbonization – the measures taken by a government or organization to reduce its carbon footprint.

At the forefront – and deemed the obvious solution to current challenges – is renewable energy. A major theme at this year's global climate conference, COP27, was the need to phase out fossil fuels and transition to renewable sources of energy.

Many intergovernmental organizations have set targets for the take-up of renewables, to ultimately encourage the most efficient use of our energy systems.

There is no doubt the evolution to renewables is very much underway.

In the energy transition space, solar, wind and geothermal are emerging as the primary sources of renewable and clean power. According to Bloomberg Intelligence, solar demand is set to soar by 20-30% globally in 2023, as the fastest growing energy source.

With an increased reliance on fossil fuel alternative energy sources - comes the question of how this energy will be stored efficiently. One fossil fuel alternative, solar, is predicted to become cheaper to install as manufacturing expands, and production becomes more efficient.

As this happens, all renewable energy storage solutions will become vital in ensuring that energy demand never outweighs production – ultimately creating a balanced energy system.

In This Issue!

energyHQ's January 2023 issue covers the most recent developments and events pertaining to the energy industry, as well as including valuable insights, details and spec sheets / peer reviews related to latest technologies, innovations, products, services, and projects of relevance to the industry and its audience. The article on page 7 talks about the Turbines, The article on page 10 sheds the light on the Jack-Up Rigs, and The article on page 16 focuses on the Nuclear Fusion Energy. Additional content is also available covering the latest activities of manufacturers, importers, and exporters – worldwide!

We hope you benefit from this issue's content and find it useful for your business, and welcome receiving your comments, suggestions, or feedback. Please send them to h.mourtada@1world.xyz.

Best Wishes!

Hassan Mourtada
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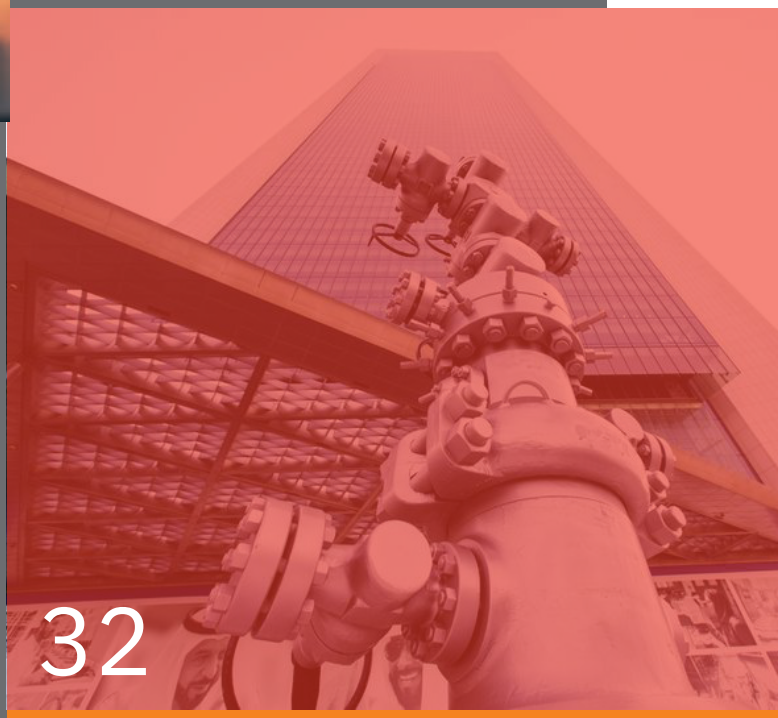

Industry News

Info

Electricity Generated by Burning Native Australian Timber No Longer Classified As Renewable Energy

Electricity generated by burning native forest wood waste will no longer be allowed to be classified as renewable energy under a regulatory change adopted by the Albanese government.

The decision, which Labor had promised to consider after it was recommended by a Senate committee in September, reverses a 2015 Abbott government move which allowed burning native forest timber to be counted alongside solar and wind energy towards the national renewable energy target.

The right to burn wood left over from logging to create renewable energy certificates – which provide a subsidy for clean energy generation – was not often used, but conservation groups said it could be an incentive to keep felling native forests. They expressed concern that some power plant owners had plans to start using native forest timber as a supplement to coal-fired generation.

The climate change and energy minister, Chris Bowen, said the change was in step with "strong and longstanding community views" raised in a consultation process that received more than 2,900 submissions. He said the government had put in place "transitional arrangements" for one Western Australian facility that had registered to use timber as an energy source.

Conservationists welcomed the announcement. Christine Milne, a former Greens leader and now patron of the Bob Brown Foundation, said it restored a decision that she, Brown and the Greens had first secured as part of a deal with the Gillard government a decade ago on a clean energy package.

Rises on Demand Optimism as China Borders Reopen

Oil prices climbed on Monday as the borders reopened in China, the world's top crude importer, boosting the outlook for fuel demand growth and offsetting global recession concerns.

Brent crude futures were up $1.49, or 1.9%, at $80.06 a barrel as of 0745 GMT, while U.S. West Texas Intermediate crude rose $1.43, or 1.9%, to $75.20.

Hopes for less-aggressive U.S. interest rate rises are buoying financial markets and depressing the dollar. A weaker U.S. currency makes dollar-denominated commodities more affordable for investors holding other currencies.

Both Brent and WTI tumbled more than 8% last week, their biggest weekly declines at the start of a year since 2016.

As part of a "new phase" in the fight against COVID-19, China opened its borders over the weekend for the first time in three years. Domestically, some 2 billion trips are expected during the Lunar New Year season, nearly double last year's movement and recovering to 70% of 2019 levels, Beijing says.

Over the last week, airlines have boosted their January international seat capacity to and from China by 9.5% as they ramp up flights after its border opening, according to aviation data provider Cirium.

Energy futures for crude oil, refined products and natural gas have plummeted in the New Year as traders have reconsidered near-term worries over cold weather and fears of supply shortages and dumped contracts.

Egypt's Oil and Gas Sector Is Growing Despite an Economic Crisis

Egypt has been in a seemingly endless financial crisis over the past decade, first due to political turmoil following the 2010 Arab Spring and then due to economic mismanagement. The recent events between Russian and Ukraine has further exacerbated the complicated economic situation. However, Egypt recently signed a deal with the International Monetary Fund (IMF) to improve its economic outlook. And despite its financial woes, Egypt has continued to be a major international player in energy, with several exploration projects awarded in 2022, and new auctions now going ahead.

In November 2022, BP won two oil exploration blocks offshore the Nile Delta, in the Mediterranean Sea. The Northwest Abu Qir Offshore Area and Bellatrix-Seti East block were awarded to BP by the state-owned Egyptian Natural Gas Holding Company. BP owns an 82.75 percent stake in Northwest Abu Qir Offshore Area, with the rest belonging to Wintershall-Dea, and a 50 percent stake in the 3440km² Bellatrix-Seti East block, with 50 percent owned by Eni. BP was also awarded the North El Fayrouz offshore area, King Mariout Offshore Area, and the North El Tabya area extension in 2022.

The Egyptian government established a plan in August to decrease gas and electricity consumption at the national level to be able to boost its exports to Europe, with a significantly increased level of demand for Egyptian gas due to a shift away from Russian gas.

Aramco And Total Energies to Build $11 Bln Saudi Petrochemicals Plant

Saudi Arabian Oil Company (Aramco) and TotalEnergies (TTEF.PA) will join forces to build a new petrochemicals complex in Saudi Arabia, the French energy group said on Thursday.

The project involves investment of about $11 billion, of which $4 billion will be funded through equity by Aramco (62.5%) and TotalEnergies (37.5%), the statement said. The investment decision is subject to closing conditions and approvals, with construction scheduled to begin in the first quarter of 2023 and commercial operation targeted for 2027.

The planned Amiral complex, integrated with the existing Saudi Arabia Total Refining and Petrochemical (SATORP) refinery located in Jubail on Saudi Arabia's eastern coast, will be owned and operated by Aramco and TotalEnergies.
The overall complex, including adjacent facilities, is expected to create 7,000 jobs locally.

The petrochemicals facility will enable SATORP to convert its refinery off-gases and naphtha, as well as ethane and natural gasoline supplied by Aramco, into higher-value chemicals.

The complex will eventually provide feedstock to other petrochemicals and speciality chemical plants in the Jubail industrial area, requiring an estimated $4 billion of additional investment.

Help with Energy Bills on The Way for Millions Homes Across Great Britain & Northern Ireland

Government confirms details of a single £600 payment to help households in Northern Ireland with energy bills and £200 payment for Great Britain households that use alternative fuels like heating oil.

Support with winter energy bills is on the way for millions more households across the United Kingdom, as the government today confirms details of a single £600 payment to help households in Northern Ireland with their heating and electricity bills, as well as details of how those using alternative fuels and households without a direct relationship to an energy supplier will receive help with their energy costs.

These schemes augment the cost-of-living package of assistance the government has in place to help reduce energy bills for households across the United Kingdom. This includes the Energy Price Guarantee which saves a typical household in Great Britain around £900 this winter and an equivalent level of support in Northern Ireland.

Existing support for energy bills this winter
As well as discounts provided through the EBSS and Alternative Fuel Payments, the government's Energy Price Guarantee (EPG) will save a typical household in Great Britain around £900 this winter, based on what energy prices would have been under the current price cap – reducing bills by roughly a third.

Here's Why the U.S. Electric Grid Isn't Running On 100% Renewable Energy Yet

Generating electricity to power homes and businesses is a significant contributor to climate change. In the United States, one quarter of greenhouse gas emissions come from electricity production, according to the Environmental Protection Agency.

Solar panels and wind farms can generate electricity without releasing any greenhouse gas emissions. Nuclear power plants can too, although today's plants generate long-lasting radioactive waste, which has no permanent storage repository.

But the U.S. electrical sector is still dependent on fossil fuels. In 2021, 61 percent of electricity generation came from burning coal, natural gas, or petroleum. Only 20 percent of the electricity in the U.S. came from renewables, mostly wind energy, hydropower and solar energy, according to the U.S. Energy Information Administration. Another 19 percent came from nuclear power.

The contribution from renewables has been increasing steadily since the 1990s, and the rate of increase has accelerated. For example, wind power provided only 2.8 billion kilowatt-hours of electricity in 1990, doubling to 5.6 billion in 2000. But from there, it skyrocketed, growing to 94.6 billion in 2010 and 379.8 billion in 2021.

That's progress, but it's not happening fast enough to eliminate the worst effects of climate change for our descendants.

RENEWABLE ENERGY

07 Turbines

New -18MW Model Takes Over as World's Largest Offshore Wind Turbine

The rotor hub and nacelle of a new 18-MW offshore wind turbine from a subsidiary of China State Shipbuilding Corp. is shown at its factory. Source: CSSC Haizhuang

The new turbine is larger than designs from China Three Gorges, Goldwind, and MingYang—other Chinese companies—and also more powerful than current offerings from Siemens Gamesa, Vestas, and General Electric.

CSSC Haizhuang in its news release said the components of the H260-18.0 turbine "demonstrated that [the manufacturer] has mastered the core technologies of high-rating offshore wind turbines and key components, leading the global offshore wind power industry to reach a new milestone."

The company, based in Chongqing in southwest China, said its design is "aspirant to the [offshore wind] turbine crown," and is the latest evolution of its prior 16-MW turbine. The group said the turbine is "of far-reaching significance for promoting the Chinese energy transition and accelerating the reach of '30/60' target," referring to China's plan to be net-zero by 2030, and carbon-neutral by 2060.

Massive Blades

CSSC Haizhuang in describing the new turbine said the H260-18.0 has a 128-meter SuperBlade+ blades. The blades feature load-reducing pitch control, and have a sweep of 53,000m2, which it said it "equal to the area of seven football pitches."

The group it designed the turbine to feature a power train "with requirements of balanced load, flexible matching of generator system and common blade model." The group said the equipment is engineered with a "holographic sensing system" for overall load-reduction, and control technology for variable pitch and torque, and is supported by multi-source online monitoring" to curb blade flutter, or the amount of aeroelastic instability caused by the combination of vibration and pressure distributions on the blades by 10%. The design also is expected to minimize vibrations in the turbine's tower and foundations by as much as 50%, according to CSSC Haizhuang.

"The adaptive power increasing control technology improves the power generation capacity by 3% for every turbine," CSSC Haizhuang said. The group said each turbine would be capable of producing 74,000 MWh of electricity annually.

CSSC Haizhuang in its release said, "In 2022, China's offshore wind market entered into the new era of grid parity. Under this situation, the wind industry focuses on how to achieve LCOE reduction and improving power generation. And there is no doubt that large-scale and high-reliability of wind turbine is an inevitable requirement for the scale-up development of wind power and cost reduction."

The company said the new model was developed with "independent IP [intellectual property] rights, which improved the nationalization rate of [the] turbine" with 80% of the design's components, including blade, gearbox, generator being delivered by its subsidiary companies.

"This will ultimately improve the manufacturing level of Chinese wind equipment industry, leading [to] the industrial upgrading [and] bringing significant social and economic benefits and embracing a broad prospect of industrialization [in the country]", the company said.

Darrell Proctor
Senior Associate Editor
www.powermag.com/

OIL & GAS

10 Jackup Rigs

healthHQ

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Vitamins and minerals make up essential parts of your diet

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Two New Rigs to Join 'One of The Largest Operating Jack-Up Fleets in The World'

As part of its accelerated production growth strategy and rig fleet expansion programme, the UAE-based ADNOC Drilling has inked a deal to purchase two additional premium jack-up rigs, consolidating its position as the owner of "one of the largest operating offshore jack-up fleets in the world." The UAE giant also hinted at further acquisitions in the pipeline.

ADNOC Drilling disclosed on Monday that it has signed a sale and purchase agreement (SPA) to acquire two additional premium offshore jack-up drilling rigs. According to the UAE player, this acquisition, underpinning its accelerated fleet expansion and "enterprising growth," is the fourth one, which has been confirmed in recent months. Earlier this year, sale and purchase agreements were signed on 30 May for two rigs, 10 June for one rig and 24 August for another rig.

Abdulrahman Abdullah Al Seiari, Chief Executive Officer of ADNOC Drilling, commented: "ADNOC Drilling takes another exciting step in executing our accelerated growth strategy as a key enabler of ADNOC's production capacity. The acquisition of these new jack-up rigs consolidates our position as the owner of one of the largest operating jack-up fleets in the world and will significantly boost company revenues, cash flow and shareholder returns over the coming years."

The UAE-based firm explained that the two new rigs have a combined cost of $140 million and will join the company's fleet to start operations by the end of 2022. Following the listing on the Abu Dhabi Securities Exchange in October 2021, ADNOC Drilling has "rapidly expanded" its fleet from 96 to 105 owned rigs, as of 31 July 2022. With the addition of these two premium jack-up rigs, the UAE giant underscored that it will own "one of the largest operating fleets of offshore jack-up rigs in the world," with 32 rigs. The firm also underlined that it has plans for further fleet growth.

Furthermore, the company delivered revenue of $1.27 billion in the first half of 2022, a 13 per cent increase year-on-year, with $379 million in net income – a 34 per cent increase.

When it comes to ADNOC Drilling's most recent deals, it is worth noting that the UAE giant won two contracts totalling more than $3.4 billion in August 2022 for eight jack-up rigs.

Melisa Cavcic

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NUCLEAR

12 Electrical Generator

Amazon And Microsoft Are Backing This Battery-Powered Generator Startup

Moxion startup aims to replace diesel generators with zero-emission electric batteries.

Diesel generators are staples at construction sites, movie sets, or anywhere portable power is needed. But they are dirty, emitting carbon dioxide as any other fuel-burning engine does.

While big legacy companies like Generac and Caterpillar are beginning to offer small battery-powered units in addition to their larger diesel generator lines, California-based startup Moxion Power is focused entirely on this new power frontier. It is building high-powered, mobile energy storage technology that can be used pretty much anywhere. "We design, engineer and manufacture all of the core technologies that we use. So we're not buying someone else's battery module. We are actually manufacturing battery modules in house," said Paul Huelskamp, CEO of Moxion.

Huelskamp says diesel generators are notoriously difficult and expensive to maintain and burn diesel fuel very inefficiently.

"And so that's extremely wasteful and terrible for the environment," he added.

Under Moxion's model, clients can either buy the units or rent them. For rentals, Moxion uses technology that alerts them when the batteries are running out, so they can replace them with no lapse. They claim to know exactly what the state of charge is.

For companies looking to buy, the generators are competitive in price, and may in fact end up cheaper because they are less expensive to maintain than diesel models, says Huelskamp.

Amazon is both investing in the company and currently leasing Moxion units for two video productions, a movie and a series. The generators will power cameras, base camps, lighting, hair and makeup trailers, and other production equipment.

"One of the beauties of Moxion's unit is it is dead quiet, and zero-emission," said Nick Ellis, principal at the Amazon Climate Pledge Fund.

Roughly half of the carbon emissions from the average movie come from the fuel used to power generators and transportation.

"It can be moved indoors for unique shots indoors that previously we couldn't do, and they really allow our team to think about new ways of filming productions than they used to," said Ellis.

"The other real benefit here is because you can hook up these units really close to the set; you eliminate a lot of the cabling that's a trip and danger for your production teams. And so suddenly, these units are sitting right there quietly operating with zero emissions and taking up a very small footprint on the production set."

In addition to the Amazon Climate Pledge fund, Moxion's backers include the Microsoft

Climate Innovation Fund, Enterprise Holdings, Energy Impact Partners, Tamarack Global and Sunbelt Rentals. Total funding so far: $110 million.

Diana Olick
Journalist - CNBC Senior Climate and Real Estate Correspondent
https://www.cnbc.com/

ELECTRIC

14 Uninterruptible Power System (UPS)

Delta Opens German Power Center Towards Solid Growth

UPS Technology Data Center

Delta has opened a Customer Experience Centre for its Data Centre and Uninterruptible Power Supply (UPS) technology in Soest, Germany.

The 500m² center supports multiple megawatt power and testing to meet the test and qualification requirements from enterprise data centers to megawatt colocation data centers.

Field application tests (FAT) can be conducted up to 2.4 MW, while all tests are compliant with DIN EN 62040 to ensure the highest standard of safety. Power can be scaled up to 3.6 MW to create high power applications under real working conditions such as a megawatt level colocation data center.

The design, construction, and operation of the Customer Experience Centre is compliant with international safety standards, while tests are fully automated and controlled to reach the highest level of reliability.

"According to certain market research data, the data center market in Europe is expected to grow at a CAGR of 5.53% during 2022-2027 by investments," said Rakesh Mukhija, Head of Mission Critical Infrastructure Solutions (MCIS) at Delta EMEA.

"The need for data centers, ranging from enterprise level to colocation level, is rapidly increasing. We support our customers in building customized, reliable, flexible, manageable, and energy-efficient data centers with Power Usage Effectiveness (PUE) aiming at lower than 1.5 by offering our data center infrastructure solutions. The new Customer Experience Centre serves as the perfect showcase for our solution with Delta's technical leadership and competency, and we are excited to unveil this new facility."

Systems available in the center include AC UPSs ranging from 1kVA single phase to 1000kVA three phase with single/parallel systems, batteries, Busway system, IT racks and its accessories, single rack data center solutions, distribution cabinets and lithium-ion batteries.

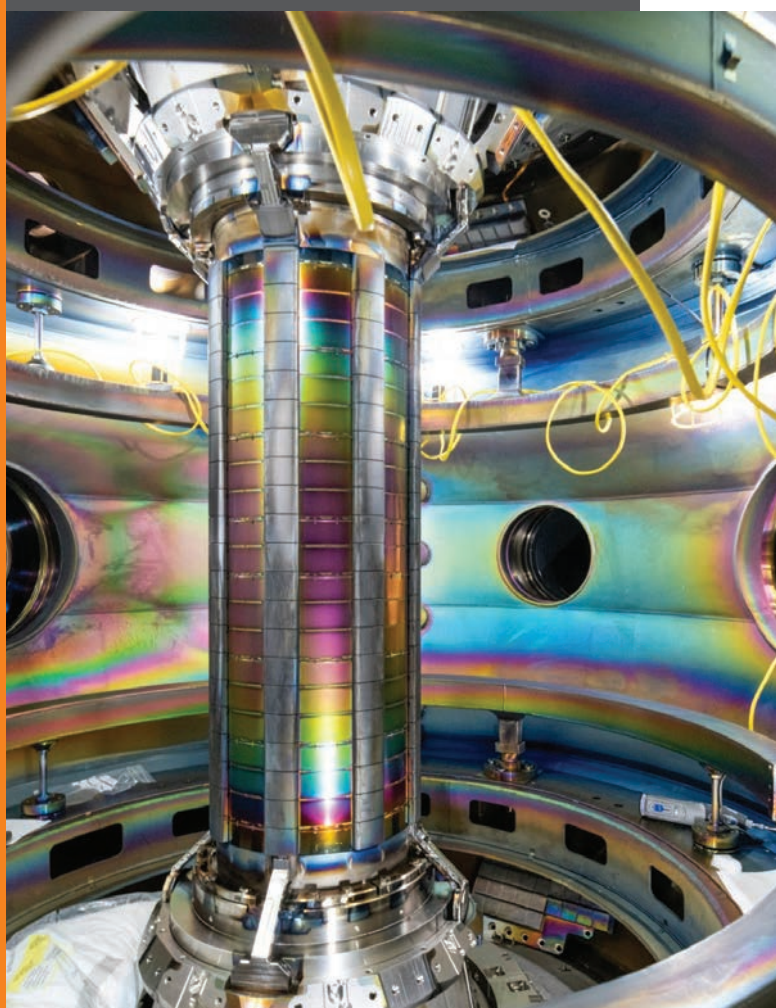
The facility offers training and certification for its own staff as well as partners. With the on-site facilities, it can create extreme scenarios as a proof point of the efficiency, reliability and durability of its UPS solutions. For customers new to Delta's solutions, demonstrations help to build trust in the capabilities of its solutions and increase the level of awareness for its data center and UPS solutions.

Christian Ferber, Data Centre Architect, Mission Critical Infrastructure Solutions at Delta EMEA, added, "Unique to the industry, the Customer Experience Centre acts as a proof point of our solutions' performance, reliability, and suitability for a wide range of our customers' data center requirements. It validates Delta's position as a leader in the EMEA for sales and customer support, while demonstrating that Delta is a reliable and competent partner for their data center business and operation.

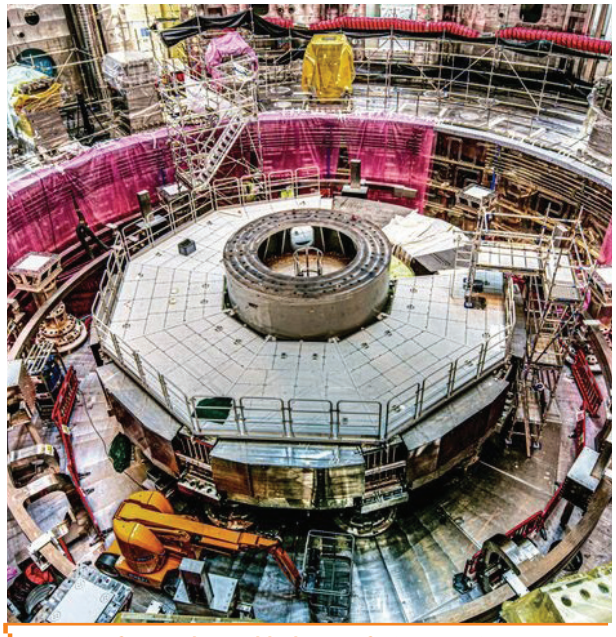
"The fully functional Experience Centre provides customers and partners with a central location equipped with cutting-edge equipment, technologies, and expertise to help meet data centers' rapidly evolving power and infrastructure requirements."

Nick Flaherty
Editor In Chief – eeNews Europe
https://www.eenewseurope.com/

COVER STORY



U.S. Government Scientists Confirm Major Breakthrough In Nuclear Fusion Energy



A view of ITER, the world›s largest fusion experiment, currently under construction in France.

Since the 1950s, scientists around the world have sought to replicate the reaction that fuels the sun in search of a clean energy "holy grail," a technology capable of providing nonstop electricity without planet-heating emissions or radioactive waste.

U.S. government researchers just got closer than anyone has before, briefly generating more energy from a fusion reaction than it took to set off, achieving what's known as "ignition."

Blasting hydrogen plasma with the world's biggest laser had already yielded a "Wright brothers moment" in August 2021 when, for a brief 100 trillionths of a second, scientists at the Lawrence Livermore National Laboratory in California registered a historic burst of fusion energy. But the 1.3 megajoules generated was only about 70% of the energy fired from the laser.

"Last week for the first time they designed the experiment so the fusion fuel stayed hot enough, dense enough and round enough for long enough that it ignited and it produced more energies than the lasers had deposited," Marvin Adams, the National Nuclear Safety Administration's deputy administrator for defense programs, said Tuesday morning at a White House press conference announcing the discovery. "About 2 megajoules in, about 3 megajoules out."

It's a major new milestone — the first proof that humanity can harness the cosmic energy released when two lighter atoms fuse into one heavier element, less than a century after the awesome power of splitting atoms debuted as mushroom clouds.

"We are in a moment of history, really," said Arthur Turrell, a plasma physicist whose book "The Star Builders" tracks the growing momentum in nuclear fusion. "No doubt it's one of the greatest technological challenges humanity has ever undertaken, but here we are. They've done it. They've proven it can happen."

Conventional nuclear energy is the result of fission, the energy released when the nucleus of an unstable atom divides into two. The first controlled fission experiment took place at the University of Chicago in December 1942. The first commercial nuclear reactor came online in England in August 1956.

Experts say it'll take a lot more than 14 years to commercialize fusion energy.

For starters, the $3.5 billion National Ignition Facility was built to test atomic weapons, and its array of 192 high-energy lasers is, at this point, outdated and ill-equipped to scale fusion energy experiments.

And inertial confinement fusion — sometimes referred to as laser fusion since it relies on powerful rays to jumpstart the reaction — has long been a secondary priority in the field.

Of the roughly $700 million the federal government spends on nuclear fusion research every year, most goes to paying the U.S. share of the International Thermonuclear Experimental Reactor, or ITER. The world's largest fusion experiment — currently under construction in France with funding from the European Union, China, India, South Korea and Japan — isn't expected to come online until 2027. But its doughnut-shaped "tokamak" reactor is designed for magnetic confinement fusion, which holds fuel in place with giant magnets while the atoms' nuclei heat up.

National Nuclear Security Administration Deputy Administrator for Defense Programs Dr. Marvin Adams holds up a cylinder he says is similar to one used by the Lawrence Livermore National Laboratories for a breakthrough in fusion research during a news conference at the Department of Energy headquarters on Dec. 13 in Washington, D.C

That tokamak design and magnetic process have yielded record volumes of energy for seconds at time, but has yet to come anywhere close to so-called "net energy gain."

If magnetic fusion energy is even possible, its commercial use is at least a century away, said Daniel Jassby, a retired research physicist who spent years at the Princeton Plasma Physics Laboratory.

The latest news from Lawrence Livermore, he said, was in line with his expectations when he published an essay in the journal Inference earlier this year warning that fusion remained "a distant prospect" despite the recent hype.

A nascent industry of a little over two dozen startups has raised over $4.8 billion from private investors, including $2.8 billion in the 12 months ending in June, according to a survey by the Fusion Industry Association. Nearly twice as many companies reported focusing on magnetic fusion as inertial.

But firms like Focused Energy, a German-Texan startup with at least one former Lawrence Livermore researcher on staff, are looking to build a much more efficient laser that could advance what the National Ignition Facility has performed.

"When they designed NIF, it was quite a while ago and the technology has come a long way in that period," said Debbie Callahan, the former Lawrence Livermore physicist who now serves as Focused Energy's senior scientist.

Focused Energy, which has raised $15 million so far in venture capital, hopes to complete a pilot plant with its own laser reactors by the end of the next decade, she said.

"All fusion startups claim that they're going to put fusion electricity on the grid in the early 2030s," Jassby said, speaking generally about the industry. "They have no justification for saying that, there's no way that's going to happen with inertial confinement or any other scheme whatsoever."

Indeed, nuclear fusion startups have for years blown deadlines and moved back the dates at which they claimed they'd build pilot projects, as the news website Grid previously reported.

The nonstop, zero-carbon electricity fission reactors produce has huge advantages over fossil fuels, which destroy the planet's ecosystems, and renewables, which need huge amounts of space and fluctuate with the weather.

But regulations put in place since the Three Mile Island and Chernobyl accidents virtually ended construction of new reactors in the Western world, and — as a generation of engineers, welders and nuclear scientists retired — the workforce capable of building these complex machines evaporated. The only two new reactors being built in the U.S. are at Georgia's Plant Vogtle, and the project is years delayed and more than $15 billion over budget.

About half a dozen companies are now competing to license the first small modular reactor, commercializing the type of fission machine used to power naval ships for electricity production instead. By manufacturing the reactors at scale in a factory, the thinking is that these firms can build new, safer reactors much faster than traditional nuclear plants.

Alexander C. Kaufman
Senior Reporter, HuffPost
www.huffpost.com/

PRODUCTS

19 Jet Fuel

New Indian Sustainable Jet Fuel Technology Could Cut Aviation Emissions By %80

:Jet Fuel Sustainability

The world was up in flames just last month after delegates chose to use private jets as their preferred mode of transport to attend the COP27, ironically the world's most prominent climate conference. Nearly 400 planes allegedly landed in Egypt during the first week of November — an act that could produce six times more emissions than travel via commercial airplanes.

Despite the lousy rep flying gets for generating excessive greenhouse emissions, it is necessary for development. Let's face it, unless we develop some Aquaman-like powers to ship containers over the ocean, development will start bottlenecking worldwide. However, there is a solution to this, too: Sustainable Aviation Fuels (SAF).

SAF are biofuels made from waste materials and other sustainable feedstock. These helps cut emissions by as much as 80% compared to traditional jet fuels — and this is just the beginning! SAF technology has also been evolving at breakneck speeds over the past few years. Most recently, researchers from the Worcester Polytechnic Institute have developed a unique type of SAF that will literally pull CO2 out of the air to add wind under the plane's wings.

This fuel uses magnesium hydride, whose main minerals are much easier to source due to its abundance on Earth. In addition, this SAF enables long-range flights — something most SAF struggle with.

The SAF revolution has begun in India as well. Honeywell, a company with significant Indian presence, has managed to invent an ethanol-to-jet fuel processing technology that converts corn-based, cellulosic, or sugar-based ethanol into SAFs. The company claims this fuel will reduce greenhouse gas emissions by 80%, and its modular property can enable rapid installation to speed up the transition process even more.

However, only about 0.01% of global jet fuel use has been replaced by SAF so far, which forms a significant energy transition bottleneck. India has taken many steps in this regard towards accelerating this transformation. For example, the International Air Transport Association — representing more than 83% of total air traffic — has estimated that SAF could account for up to 65% of total emission reductions by 2050.

Considering aviation accounts for about 2.5% of global greenhouse emissions (and growing), according to the International Council on Clean Transportation (ICCT), this is, no doubt, the right time to turn over a greener wing.

Ankush Banerjee
Author / Editor – Business Insider India
https://www.businessinsider.in/

The first wind turbine in the history built by Charles F. Brush. Wind turbines have currently been installed throughout the world, both onshore and offshore, thanks to Charles F. Brush (1849-1929), an American scientist who, in 1887, built what is said to be the first automatic wind turbine to generate electricity.


edp
renewables

SERVICES

23 Energy Storage

The Future of Hydrogen as An Energy Storage Solution

Hydrogen as An Energy Storage`

There is no single route to reaching net zero, writes Professor Emmanouil Kakaras, who argues that decarbonizing our energy supply will need a range of solutions, including energy storage, which has grown in importance in recent years, alongside the increasing use of renewable energy and the expansion of localized electricity grids.

And yet we still need more storage. In order to keep the world on track to meet the UN Sustainable Development Goals (SDGs) on energy, the sector needs to see double-digit growth, according to the International Energy Agency (IEA), because of its ability to level out the intermittent nature of renewable sources and respond rapidly to fluctuating demand.

Hydrogen is being considered as an option for energy storage, as an alternative to lithium-ion batteries. So, the question that ponders on our mind is whether hydrogen will be the next viable solution for long term storage?

The relationship between hydrogen and renewables – the potential for energy storage

An almost symbiotic relationship is emerging between hydrogen and renewables. As wind turbines and solar PV panels become cheaper, so does the cost of producing green hydrogen from renewables through electrolysis.

Hydrogen offers the potential for energy storage — it complements battery solutions to provide flexibility to the grid, delivering energy on a much larger scale. Hydrogen can harness surplus renewable energy and store it for long durations, to help smooth out intermittency issues, seasonal power supply imbalances and avoid extended periods of wind or solar curtailment.

As mentioned, this is a particular advantage when there are large seasonal variations in the level of electricity generated by renewables and can help capture energy that might otherwise be wasted. For example, hydrogen storage could be used to capture the excess electricity generated by offshore windfarms during the North Sea's fierce winter winds.

As renewable energy is generated on a use-it-or-lose-it basis, surplus energy is currently either wasted or curtailed by switching off wind turbines, for example. Hydrogen provides a unique storage solution that can utilize this surplus, which produces no CO_2 emissions when combusted.

Once excess supply of clean energy is converted into green hydrogen, it can power gas turbines and generate electricity as and when required.

This sustainable alternative to natural gas and other fossil fuels can be used to generate baseload backup power during periods of peak energy grid demand. It is also suitable for ironing out short- or long-duration intermittency imbalances

associated with renewables when there is too little wind or sun to generate sufficient supply.
Renewable energy can be converted to hydrogen, stored until it is needed, and then reverted to electricity on demand. One of hydrogen's advantages is its scalability, particularly as an enabler of long-term seasonal storage.

In the western US, for instance, there is often a large renewable energy surplus in the spring, when a combination of strong winds, sunlight and cool temperatures can lead to an excess equal to hundreds of thousands of megawatt hours.
As nodded to previously, it's a similar situation in the North Sea, where vast offshore wind farms often generate excess energy. There are already a number of projects in development to harness that energy, including the Hamburg Green Hydrogen Hub in Germany, which will produce hydrogen from wind and solar power.
The Hydrogen Council, a global partnership launched at the World Economic Forum Annual Meeting in 2017, says that hydrogen could enable the deployment of renewables by converting and storing more than 500 TWh of electricity.
Crucially, hydrogen also can also help to deliver carbon-free electricity when renewable energy systems (RES) are not producing. This serves to increase security of supply and can help regions such as Europe gain more energy independence in light of geopolitical tensions and uncertainty.
Hydrogen will also bridge regions with high RES potential around the world with industrial centers of energy demand — again, Europe comes to mind.
In order to achieve this, we will have to build a global hydrogen supply infrastructure, in which hydrogen carriers such as ammonia will play an important role by enabling the energy to be transmitted efficiently and safely across long distances.
The Advanced Clean Energy Storage Project
Mitsubishi Power in partnership with Magnum Renewable Development, is building the world's largest renewable energy storage project, called Advanced Clean Energy Storage Project in Utah in the United States.
Renewable hydrogen will be produced from excess renewable energy and stored in a series of underground salt caverns. One cavern at the Advanced Clean Energy Storage project will store enough renewable hydrogen to provide 150,000 MWh of clean energy storage. The location of the project is important for two reasons.
First, it sits on salt caverns that can be used for compressed hydrogen and compressed air energy storage. Second, it's being built next to the Intermountain Power Plant, a 1.8GW coal-fired power plant that supplies one-fifth of Los Angeles' electricity and is due for retirement in 2025.
This location means the project will be able to easily connect with the existing electricity transmission infrastructure. It also potentially removes the need for long-distance hydrogen pipelines, as the Intermountain Power Renewal Project will be adjacent to the Advanced Renewable Energy Storage project.
Large-capacity, long-term energy storage and usage needs are growing as renewables spread. Accelerating decarbonization is required even in industries that face challenges electrifying.
Hydrogen and other clean fuels offer solutions. Creating enough future storage capacity for clean alternative fuels, like green hydrogen, is a crucial step in achieving net zero emissions. Hydrogen can store surplus renewable energy, which can then be used as a clean fuel source to help decarbonize power generation or hard-to-abate sectors like transportation and heavy industry.
Hydrogen can help strengthen security of supply, which goes hand in hand with increased energy independence, particularly in the case of Europe. It will connect those regions with the highest potential for solar and wind with demand centers elsewhere, increasing overall efficiency.
Hydrogen alongside other options will be a key element of decarbonising the energy system as a whole – both as a storage medium for renewable energy as well as a fuel to decarbonise those sectors that cannot be simply electrified.
Professor Emmanouil Kakaras is Director of the Laboratory of Steam Boilers and Thermal Plants at the National Technical University of Athens, and Executive Vice-President of NEXT Energy Business at Mitsubishi Heavy Industries EMEA.

Mitsubishi Heavy Industries EMEA
https://www.powerengineeringint.com/

TECHNOLOGY

26 Wind Turbine Generators

Korea's Largest Capacity Offshore Wind Turbine Now Type-Certified

DS205-8MW at the test site

Doosan Inerrability has obtained a type certification for its 8 MW offshore wind turbine, DS205-8MW, from DEWI-OCC, the Germany-based international certification body. While DS205-8MW is not among the top world's largest turbines, either size- or capacity-wise, it is the largest capacity model in Korea to date.

The DS205-8MW offshore wind turbine was designed for the Southwest Sea conditions, which include lower wind speeds when compared to Europe, according to Doosan.

With the rotor diameter of 205 meters and 100-metre-long blades, the wind turbine can be used even when the average wind speed is 6.5m/s and make it possible to achieve a utilization rate over 30 per cent, the company says.

The 8 MW offshore wind turbine has been under development since 2018.

In January, a prototype was installed in Yeonggwang of South Jeolla Province for a demonstration run, which led to the securing of the international certification, for which all the applicable criteria in the areas of design evaluation, manufacturing evaluation, and type testing needed to be fulfilled.

Doosan has developed the DS205-8MW model with the support of the Korea Institute of Energy Technology Evaluation and Planning (KETEP), which is under the Ministry of Trade, Industry and Energy.

The company is one of five parties selected from the industry, academia and research sector to carry out the state project and has been responsible for directing the design, manufacturing and demonstration of the 8 MW turbine.

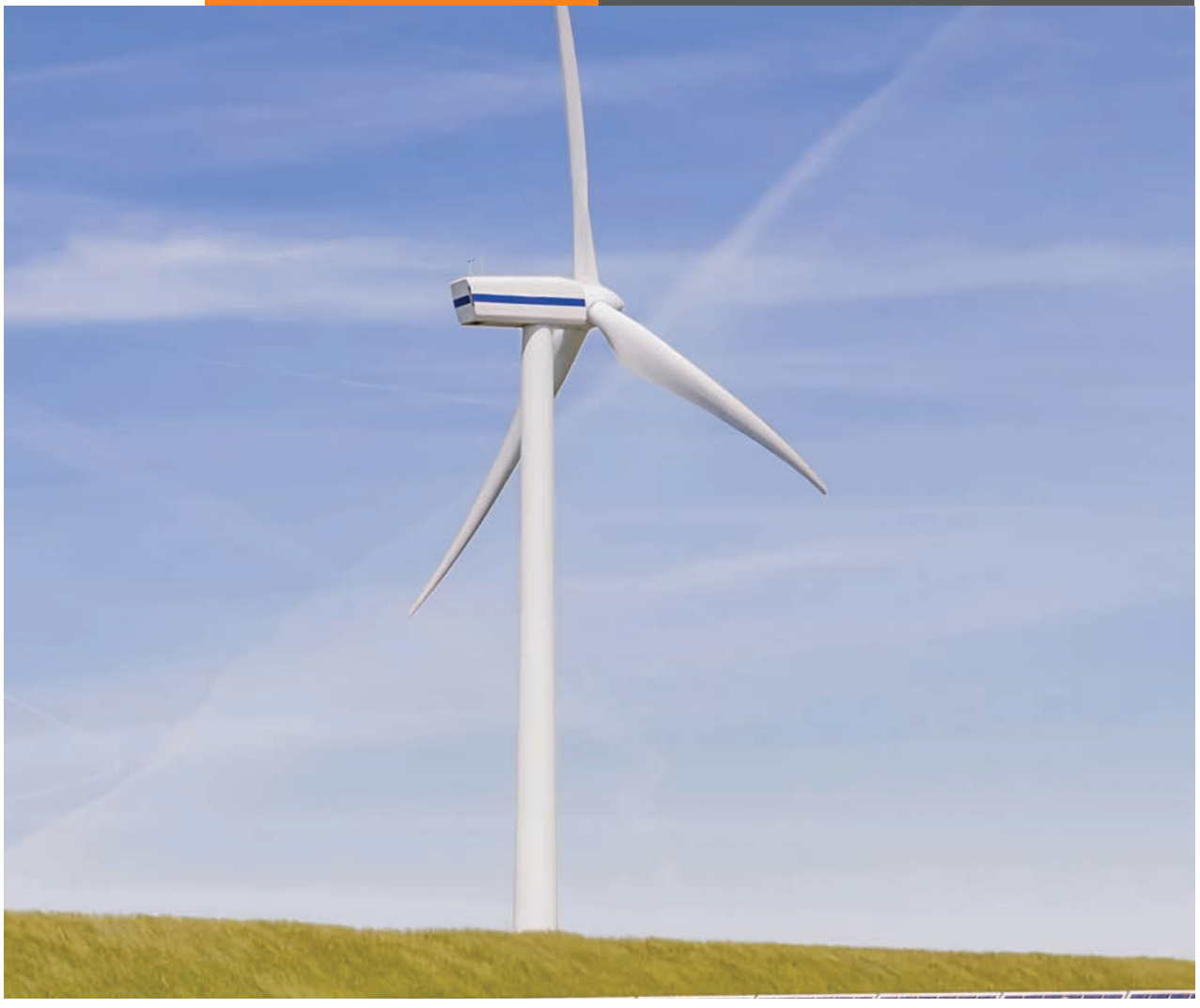
The blade was developed in cooperation with the Korea Institute of Materials Science (KIMS) and the blade manufacturer Human Composites and tested at the Buan Wind Power Testing Facility. Seil Engineering Co. was responsible for substructure design, transportation and installation, while Seoul National University was in charge of the noise reduction for turbine blades.

"We are seeking to expand the market by introducing the 8MW offshore wind turbine, which was developed jointly by the local industry, academia and research sectors, to the Korean offshore wind power market which has been the stage of competition for global wind power companies", said Hongook Park, CEO of Doosan Enerbility's Power Services Business Group.

"We aim to increase the local manufacturing of parts, which is currently over 70% to an ever-higher rate, and to apply our local technology and manpower to the area of turbine maintenance services, which has largely been dependent on overseas companies until now. This will ultimately help to contribute to promoting the domestic offshore wind power ecosystem".

Adrijana Buljan
Editor – Offshore Wind Industry
https://www.offshorewind.biz/

COUNTRY REPORTS



Bahrain›s Nogaholding Appoints BCG To Prepare New Energy Strategy

Oil industry well pumps crude oil up from the ground on an oil field in the desert. Bahrain, Middle East.

The National Energy Strategy and the Operating Strategy will facilitate and drive the transition of the nogaholding Group of companies from a traditional oil and gas only focus into a more progressive and responsible group of energy companies.

Bahrain's Oil and Gas Holding Company (nogaholding) has appointed the Boston Consulting Group (BCG), one of the world's leading management consulting firms, to assist in the development of a National Energy Strategy for the kingdom and build a supporting Operating Strategy for nogaholding and its portfolio companies.

This announcement comes as nogaholding undergoes a strategic transformation in line with the vision of His Majesty King Hamad bin Isa Al Khalifa and His Royal Highness Shaikh Salman bin Hamad Al Khalifa, Crown Prince and Prime Minister, for the sector, said a statement.

The National Energy Strategy and the Operating Strategy will facilitate and drive the transition of the nogaholding Group of companies from a traditional oil and gas only focus into a more progressive and responsible group of energy companies, it said.

The strategy will also pave the way and prepare the oil and gas sector for the journey towards delivering a more sustainable, long-term approach aligned with the Bahrain Economic Vision 2030 and the kingdom's net-zero goals outlined by HRH the Crown Prince and Prime Minister at COP26.

To develop the National Energy Strategy, a steering committee will be appointed, and it will include senior officials from various ministries and other key stakeholders.

Group Chief Executive Officer of nogaholding, Mark Thomas, commented: "nogaholding is committed to transitioning its operations and aligning them with the aspirations of the Government of Bahrain and His Highness Shaikh Nasser bin Hamad Al Khalifa, His Majesty's Representative for Humanitarian Works and Youth Affairs and Chairman of nogaholding. By working closely with BCG, we aim to deliver energy security, maximize the value of Bahrain's natural resources, while also decarbonizing and moving to alternative energy sources over the next decade."

BCG, established in 1963, has and continues to work closely with both the public and private sectors globally to develop strategies that help accelerate business transformations and deliver tangible benefits supporting the set business, social, economic and climate targets.

Staff Writer
Trade Arabia
https://www.zawya.com/

Excelerate Energy›s LNG plant in Argentina could be completed by 2025, says executive

The Expedient, a floating storage regasification unit (FSRU) that belongs to Excelerate Energy, is seen in Escobar, on the outskirts of Buenos Aires, Argentina November 29, 2022

Excelerate Energy (EE. N), a U.S. company that provides storage and regasification services for liquefied natural gas globally, could complete its planned gas liquefaction plant in Argentina by 2025, according to an executive.

The project, which would be Excelerate's first liquefaction plant, is planned in conjunction with Transportadora de Gas del Sur (TGS). It aims to take advantage of the resources of the vast Vaca Muerta shale formation, the world's second largest shale gas reserve.

"We believe that Argentina has high potential," Gabriela Aguilar, Excelerate's Argentine general manager, and vice-president for Latin America, said during a visit to the Expedient regasification ship in Escobar, 55 kilometers (34 miles) from Buenos Aires.

"We think of it not as a pure liquefaction project, but as a project that benefits producers, so that they can have stable gas sales throughout the year," said Aguilar.

The plant was originally planned with a capacity of 4 million cubic meters per day, but it is now being evaluated to start with a capacity of between 6 million and 8 million cubic meters per day, said Aguilar.

Delays in obtaining equipment could mean plant construction will take 30 months from the time an investment decision is made, said Aguilar.

Marcelo Mindlin, president of Pampa Energia, co-controller of Transportadora de Gas del Sur, said earlier this month that a final decision is expected to be made by the first quarter of 2023.

In a few years, the development of Vaca Muerta, an area the size of Belgium located in the Patagonian province of Neuquen, could help the country reverse a $5 billion energy deficit and become a net energy exporter, private estimates have shown.

Eliana Raszewski
Author – Thomson Reuters
https://www.reuters.com/

All-Ireland Green Targets Can Cut Energy Bills, Study Indicates

All-Ireland renewable energy targets could help cut electricity bills, experts say

Shared renewable energy aims can benefit North and South as can proposed energy interconnector, new research shows

The move to align targets for renewable energy north and south of the Border will support lower energy system costs across the island, according to a new report by the Economic and Social Research Institute (ESRI), produced in partnership with the Shared Island unit in the Department of the Taoiseach.

The study looked at the cost of operating and investing in the electricity system if each jurisdiction had different targets for renewable energy and compared that with targets that are aligned. Both jurisdictions have decided to target producing 80 per cent of their electricity from renewable energy sources by 2030.

This shared target "can lead to lower costs across the island", the research found. But it also argues that increased renewable generation will require more storage to help level off peaks and troughs in wind- and solar-produced electricity.

It said there would be a slight fall in the profitability of renewable energy generation, but this comes about because lower prices across the market would deliver a net gain for consumers.

The report, published on Monday, found that the aligned targets for renewable energy generation would lead to higher deployment of renewable energy generation in Northern Ireland and higher investment in energy storage in Ireland.

The study also looked at the impact with the proposed North-South electricity interconnector, which will be able to transmit electricity across the Border, and without it.

It found that the interconnector will facilitate greater energy transmission between the two jurisdictions when it is up and running, which will reduce the amount that will have to be invested in energy storage. The interconnector would also save on the number of network upgrades that would be required.

"To date, consumers in the integrated single electricity market on the island of Ireland have benefited from the alignment of renewable energy policy in each jurisdiction. Our research shows that continued alignment will continue to benefit consumers, while the construction of the North-South interconnector will facilitate these benefits," said ESRI senior research officer Niall Farrell, an author of the report.

His co-writer, senior research officer Muireann Lynch, argues that it is for "policymakers and regulators" to ensure that the market and rules facilitate co-operation to realise the full benefit of renewable energy for consumers.

Barry O›Halloran
Senior Reporter on The Irish Times
https://www.irishtimes.com/

INDUSTRY NEWS

Adnoc Buys %25 Stake in Austrian Energy Company OMV

An oil pipeline control head outside the entrance to the Adnoc headquarters in Abu Dhabi

The state-owned energy company will also increase its shareholding in Borealis

Adnoc is acquiring a 24.9 per cent stake in Austrian energy company OMV from Mubadala Investment Company, it said on Wednesday.

The financial terms were not disclosed.

Through this investment in OMV, which holds a 75 per cent stake in Austrian plastics maker Borealis, Adnoc will increase its stakes in both Borealis and Borouge.

"As we continue to meet the growing global demand for lower carbon energy, we are fast-tracking the delivery of our growth strategy and expanding our footprint across key strategic markets and sectors," said Dr Sultan Al Jaber, Minister of Industry and Advanced Technology, and Adnoc managing director and group chief executive.

"This milestone transaction, alongside our 25 per cent shareholding in Borealis, is testament to our focused investment in building an integrated chemicals platform to accelerate our ambitious growth strategy that will unlock significant growth opportunities across our broader chemicals portfolio, with a particular focus on creating distinctive value for Borouge and its shareholders."

Borouge's revenue in the first nine months of 2022 rose by about 14 per cent from the same period a year earlier on higher sales volumes of a key petrochemical.

The company's $2 billion listing in June was the biggest share sale on the Abu Dhabi securities exchange (ADX). The IPO, which was about 42 times oversubscribed, was the largest in the emirate since Adnoc Drilling's $1.1 billion offering.

After its listing, Borouge was included in the FTSE Global Equity Index Series, which is used by investors globally to guide asset-allocation decisions and support portfolio construction.

OMV, which reported a revenue of €36 billion ($38.27 billion) in 2021, is among Europe's largest energy companies and is currently looking to diversify its gas supplies amid falling Russian exports of the commodity.

In October, the Austrian company signed a preliminary agreement with Adnoc, with the aim of purchasing a liquefied natural gas cargo for next year's winter.

"This transaction is reflective of our strategy to monetise assets at the right valuation and at the right time," said Khaldoon Al Mubarak, managing director and group chief executive of Mubadala.

"2022 has been a year of increased activity and strategic investment across Mubadala, in sectors and geographies all over the world. We will continue to partner with best-in-class entities as we diversify our investment base and expand our growth trajectory."

The International Energy Agency has warned that 2023 may present a "sterner test" for EU countries as Russian gas exports dwindle and Chinese demand for LNG rises.

The EU could fall short by about 27 billion cubic metres (bcm) of gas next year if Russian gas deliveries drop to zero and China's LNG imports rebound to 2021 levels, the agency said in a report this month.

"Even if the Russian supplies should stop, we can supply 100 per cent of our customers in Austria with non-Russian gas ... we are already looking to next winter," Alfred Stern, chief executive of OMV, told The National in October.

OMV, which has a long-term LNG contract with Qatar, is "also looking at the US and other sources of supply", said Mr Stern.

The company produces and markets fuels as well as feedstock for the chemical industry and operates three refineries in Europe. OMV operates around 1,800 filling stations in ten European countries.

Borealis, which is majority owned by OMV, reported a net profit of about €1.4 billion on a revenue of €10.2 billion in 2021.

Last month, Adnoc approved Dh550 billion ($150 billion) budget for the next five years as the company prepares to set up its gas subsidiary and list its shares on the ADX next year.

The company's board also endorsed plans to bring forward Adnoc's five million barrels per day oil production capacity expansion to 2027, from the previous target of 2030, as part of an accelerated growth strategy.

John Benny
Author – The National News
https://www.thenationalnews.com/

Tesla Set to Announce Electric Vehicle Assembly Plant in Mexico Next Week

Tesla Model 3 vehicles at the car maker›s factory in Shanghai, China

The factory is part of a push to expand the company's global manufacturing

Tesla is finalising plans to build an electric vehicle assembly plant in an industrial area of northeastern Mexico and may announce the factory as early as next week.

The plant is to be located in Santa Catarina in Monterrey city, the capital of Nuevo Leon state, sources said.

Final details are being worked out, and the talks with the company have involved both the state government and Mexico's foreign relations ministry, one said.

Chief executive Elon Musk visited Nuevo Leon in October and met officials, and the company's relationship with the state's government has earned it an exclusive customs lane for parts crossing the border into Texas.

The factory would be Tesla's first south of the US border with Mexico and part of a push to expand global manufacturing that has included new plants in Austin, Texas, and Berlin, as well as a factory in Shanghai.

Tesla has long mulled building a third factory in North America, with Mr Musk telling shareholders in August that a decision might be made before the end of the year.

The announcement would come just days after Mexico and Canada won a trade dispute with the US over cars shipped across regional borders, a development that gives car makers more incentive to manufacture in those nations.

A Mexican-made electric vehicle would be likely to qualify for subsidies under US legislation signed in August designed to spur adoption of EVs, as long as it met battery content requirements.

It is unclear which models Tesla will produce in its Mexican factory or when it would begin production. Those details could be announced in the coming days, the sources said.

Tesla would be locating in an automotive corridor of Nuevo Leon that is home to factories for General Motors and Kia Motors, a unit of South Korea's Hyundai Kia Automotive Group.

Ford Motor also builds its electric Mustang Mach-E in Cuautitlan, near Mexico City.

Mr Musk has set a goal of selling 20 million electric vehicles a year by 2030, which would make Tesla twice the size of any rival and account for 20 per cent of global auto output.

Bloomberg

https://www.thenationalnews.com/

Porsche Begins Production Of 'E-Fuel' That Could Provide Gas Alternative Amid EV Push

Key points

• Porsche said Tuesday that a pilot plant in Chile started production of the alternative fuel, as it aims to produce millions of gallons by mid-decade.

• Officials say e-fuels can act like gasoline, allowing vehicle owners a more environmentally friendly way to drive.

• Porsche officials celebrated the beginning of e-fuel production with the filling of a Porsche 911 with the first synthetic fuel produced at the site.

Porsche and several partners have started production of a climate neutral "e-fuel" aimed at replacing gasoline in vehicles with traditional internal combustion engines.

The German automaker, owned by Volkswagen , said Tuesday that a pilot plant in Chile started commercial production of the alternative fuel. By mid-decade, Porsche is planning to produce millions of gallons of the e-fuel.

Porsche expects to initially use the fuel in motor sports and at its performance experience centers, followed by other uses in the years to come. Ultimately, the plan is for the fuel to be sold to oil companies and others for distribution to consumers.

E-fuels are a type of synthetic methanol produced by a complex process using water, hydrogen, and carbon dioxide. Companies say they enable the nearly CO2-neutral operation of gas-powered engines. Vehicles would still need to use oil to lubricate the engine.

In the pilot phase, Porsche expects to produce around 130,000 liters (34,342 U.S. gallons) of the e-fuel. Plans are to expand that to about 55 million liters (14.5 million U.S. gallons) by mid-decade, and around 550 million liters (145.3 million U.S. gallons) roughly two years later.

The Chilean plant was initially announced with Porsche in late 2020, when the automaker said it would invest $24 million in the development of the plant and e-fuels. Partners include Chilean operating company Highly Innovative Fuels, Siemens' renewable energy unit and others.

Company officials say e-fuels can act like gasoline, allowing vehicle owners a more environmentally friendly way to drive. They could also use the same fueling infrastructure as gas, compared with the billions of dollars in investments needed to build a network of charging stations for electric vehicles.

But entirely replacing traditional fossil fuels with e-fuels would be difficult and extremely costly. In 2021, about 134.83 billion gallons of finished motor gasoline were consumed in the U.S., an average of about 369 million gallons per day, according to the U.S. Energy Information Administration.

Still, production of such a fuel would allow Porsche and others a way to continue producing vehicles such as Porsche's iconic 911 sports car with a traditional engine alongside, or rather than, a new electric model. While electric vehicles can offer outstanding performance, their driving dynamics differ from traditional engines.

Porsche officials celebrated the beginning of the e-fuel production with the filling of a Porsche 911 with the first synthetic fuel produced at the site.

"The potential of eFuels is huge. There are currently more than 1.3 billion vehicles with combustion engines worldwide. Many of these will be on the roads for decades to come, and eFuels offer the owners of existing cars a nearly carbon-neutral alternative," Michael Steiner, Porsche's director of research and development, said in a release.

Steiner and others reiterated Tuesday that the development of the fuel does not change the company's plans to have 80% of its lineup consist of EVs by 2030.

Michael Wayland
Auto Reporter – CNBC Digital Team

SERVICES

CAREER CENTER

AECOM

Position Title:	: Principal Civil Engineer – Renewable Energy
Application Deadline:	N/A
Location:	London, United Kingdom
Requirements:	• Previous experience of working on National Grid, SSE or other UK utility projects would be advantageous. • deally you will have a background in civil infrastructure and the energy sector and in particular renewable energy systems. • The role is a technical role, and you will be expected to demonstrate a high degree of technical competency in the design of civil and structural elements. • BEng (Hons) degree in Civil Engineering Chartered status or actively working towards chartership with either the Institution of Civil or Structural Engineers. https://www.energyjobline.com/

Holaluz

Position Title:	Head of Energy Management
Application Deadline:	N/A
Location:	Barcelona, Spain
Requirements:	• Bachelor's degree required, MBA or advanced degree strongly preferred. • At least 7 years of experience in a Portfolio analysis position or alike. • Deep understanding of the energy sector. • Extensive knowledge of hedging financial derivatives. • Outstanding critical thinking, analytical and quantitative abilities. https://www.euroclimatejobs.com/

MET Group

Position Title:	Renewables Project Manager
Application Deadline:	N/A
Location:	Milan, Italy
Requirements:	• At least 3 years of project management experience in solar PV project development and construction management in Italy. • Deep knowledge of the renewables permitting and regulatory background in Italy is a must. • Fluent in Italian (native) and English. • Engineering degree. • Excellent stakeholder management, interpersonal and project management skills. https://www.euroclimatejobs.com/

Qair

Position Title:	Wind and PV Project Manager
Application Deadline:	N/A
Location:	Constanta or Bucharest, Romania
Requirements:	• He/she has a -5/4year degree (Engineer/Master Environment, Economics), with 3 to 6 years of experience in the development of large infrastructure projects in rural areas, ideally in development and/or construction of renewable energy. • He/she has good interpersonal and writing skills. He/she has a solid knowledge of renewable energy and administrative authorization procedures. • He/she is comfortable with standard computer tools and planning software. • In addition, he/she is rigorous, methodical and likes to work in a team, but can work with a large autonomy. • English or French is required. https://www.euroclimatejobs.com/

TENDERS

TenderID	58373283
Tender Brief	Tenders Are Invited for Construction, Placement and Exploitation Of Two Wind Turbines On Business Zone De PrijkelsICB/NCB
Competition Type	ICB/NCB
Funded By	Self-Funded
Country	Belgium-
Tender Value	-
Tender Value In USD	-
Last Date of Bid Submission	09 May 2023

TenderID	58033693
Tender Brief	Tenders Are Invited for Dla Desc1903 Fuel Pier Construction Mcas Iwakuni, Japan
Competition Type	ICB/NCB
Funded By	Self-Funded
Country	United States
Tender Value	-
Tender Value In USD	-
Last Date of Bid Submission	09 May 2023

TenderID	22730780
Tender Brief	Tenders Are Invited for Services Related to The Oil And Gas Industry
Competition Type	ICB/NCB
Funded By	Self-Funded
Country	France
Tender Value	-
Tender Value In USD	-
Last Date of Bid Submission	09 Sep 2023

TenderID	59100621
Tender Brief	Tenders Are Invited for Construction Of Fuel Supply Facilities
Competition Type	ICB/NCB
Funded By	Self-Funded
Country	Cameroon
Tender Value	-
Tender Value In USD	-
Last Date of Bid Submission	09 May 2023

COMING EVENTS

Renewable Energy Expo – Chennai
Chennai Trade Centre, Chennai, India
20 - 20 January 2023
https://10times.com/
«The Largest & Premium International Renewable Energy Event of The Year» Renewable Energy Expo - Chennai›s scope is to stimulate the growth of renewable in the region through the collaboration of technology and product sharing. This event will be bringing together businesses, sustainable energy industry trade associations, government agencies, and energy policy research organizations to showcase the status and potential of the cross-section of the renewable energy industry. The expo is proclaimed at the right time when there is a paradigm shift in the global trend towards massive deployment of solar power and another renewable along with investments worth billions of dollars in technology & green energy.

World Future Energy Summit
Abu Dhabi National Exhibition Centre - ADNEC, Abu Dhabi, UAE
16 - 18 January 2023
https://10times.com/

«The World›s Leading Business Event for Future Energy and Sustainability»
The World Future Energy Summit is the leading international event accelerating sustainability and the global transition to clean energy. The exhibition, technology showcase, investment incubator, and business forum all rolled into one event, the summit convenes leaders, innovators, and global thinkers to share ideas that are creating the blueprints for a sustainable future.

Power Egypt Expo
Cairo International Convention Centre, Cairo, Egypt
08 - 10 January 2023
https://10times.com/

Power Egypt Expo presents Equipment, Technologies, Products & Know-how for the solar PV, solar thermal, energy storage, HVAC, smart buildings & electric vehicles industries. Attendees will experience a truly professional, cost-effective, and business-friendly environment where they can get the best deals, access innovation, obtain informational credits, scout representations, and more. Attendees will experience a truly professional, cost-effective, and business-friendly environment where they can get the best deals, access innovation, obtain informational credits, scout representations, and more.

Solar Africa
Millennium Hall, Addis Ababa, Ethiopia
23 - 25 January 2023
https://10times.com/

Solar Africa 2022 event will display products like Solar Technology & Manufacturing, Solar Panels, Project Installations, Storage and Batteries, Accessories, Street, Traffic, Billboard, Rural Power Generation, Emergency Lighting, Compact Systems for Residential, Commercial & Industrial Purposes, Solar Consumer Products, etc.

International Conference on Renewable Mobility «Fuels of the Future»
CityCube Berlin, Berlin, Germany
23 - 24 January 2023
https://10times.com/
The 20th International Conference on Renewable Mobility «Fuels of the Future» will take place in Berlin. The motto of the conference is: «Fuels of the Future - Navigator for sustainable Mobility!» As usual, the event will be bilingual (German English). Fuels of the future welcomes national and international participants including representatives from the raw material collecting and processing industry, the biofuel, mineral oil and automotive industry, the chemical industry, the transport and logistics sector, certification systems as well as from politics, science and research.

Solar Energy Expo
Warsaw Expo, Pruszków, Poland
17 - 19 January 2023

«International trade fair for the renewable energy industry»
Solar Energy Expo is an international trade fair for the renewable energy industry. It is a two-day event attended by exhibitors from Poland and abroad to present innovative solutions for the industry. The fair is an excellent opportunity to meet specialists and establish business contacts, as well as enable the promotion and sale of equipment in the field of solar, wind, water, geothermal and biomass energy. In addition, among our exhibitors there are investment companies that are interested in cooperation and development on the Polish renewable energy market.

Solar Power Africa
CTICC (Cape Town International Convention Centre), Cape Town, South Africa
08 - 10 February 2023
https://10times.com/

Solar Power Africa focuses solely on creating an environment that fosters the exchange of ideas, knowledge, and expertise for furthering solar power and renewable energy development in Africa. The leading solar & energy storage event in Africa. The event will offer superior networking, visibility, and value to any company active in the renewable energy market by creating an energetic and engaging marketplace to connect buyers and suppliers.

Solar Prague
PVA EXPO PRAHA, Prague, Czech Republic
09 - 11 February 2023
https://10times.com/

International Conference on Sustainable Water Management (ICSWM) will be held in Genoa, Italy as the Conference of ICSWM. ICSWM is sponsored by ConferenceFora. It aims to be one of the leading International conferences for presenting novel and fundamental advances in the fields of Water Management and Environmental Science.

Agent

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energyHQ magazine, established since 1977, is published monthly by **CPH World Media** - a **One World (1W) Division**

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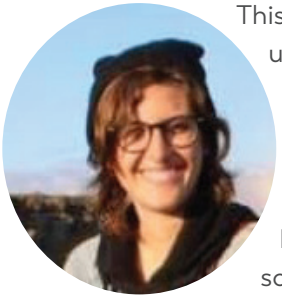
Printed by Chamas Printing & Publishing

The Road To Decarbonization: Ammonia-Powered Trucks Take the Lead



This week, the world's first ammonia-powered, zero-emissions semi truck was unveiled, potentially signaling the dawn of a new era for the shipping and transportation industry. Like Tesla's semi truck, Brooklyn company Amogy's ammonia-powered truck holds about 900 kWh of energy. Unlike the Tesla semi, it takes just about eight minutes to refuel. And, according to Amogy, their new model has five times the system-level energy density of batteries.

For some time now, hydrogen fuel cells have been touted as the future power source of the shipping industry, but ammonia has several benefits in comparison to hydrogen. For one thing, it exists as a liquid at room temperatures, making shipping and storage a whole lot easier for ammonia than hydrogen. "Hydrogen either needs to be heavily compressed to around 700 bar, or else kept cryogenically cooled as a liquid, to just 20.28 K (–252.87 °C; –423.17 °F)," a recent report by New Atlas explained, before adding that, "both of these are energy-intensive processes."

Like hydrogen, ammonia is only as clean as the energy that's used to make it. But green ammonia holds great promise for helping to decarbonize some of the most fuel-intensive and high emissions industries that our economy is built on. At present, transportation is the single highest emitting sector in the United States, representing 27% of overall greenhouse gas emissions according to figures from the Environmental Protection Agency (EPA). And over a quarter of transportation emissions come from medium- and heavy-duty trucks.

Avoiding the worst impacts of climate change will require that the United States, the country with the second-most greenhouse gas emissions in the world after China, makes good on its climate pledges. That will require a major transformation of the transportation industry on a pretty short timeline. The EPA has been wrestling with how to do this.

At the beginning of last year, the EPA proposed two different pathways to drastically decreasing nitrous oxide [N2O] emissions in the trucking industry: "a two-step process with standards getting progressively tighter in model years (MY) 2027 and 2031, or a one-step standard in 2027 that would be less aggressive in cutting emissions." N2O is a greenhouse gas that accounts for just 7% of emissions, but which stays in the atmosphere for over 100 years and has a warming impact 300 times stronger than carbon dioxide. The new EPA standards are more than 80% stronger than the 2021 iteration, and the EPA says that they will increase the lifespan of governed vehicles by 1.5 to 2.5 times, and yield emissions warranties that are from 2.8 to 4.5 times longer than current standards.

This new ruling has caused significant unease in the trucking industry, according to transportation and shipping news outlet Freight Waves. The Truck and Engine Manufacturers Association (EMA) President Jed Mandel says that the EPA's new ruling "is very stringent and will be challenging to implement" and that "ultimately, the success or failure of this rule hinges on the willingness and ability of trucking fleets to invest in purchasing the new technology to replace their older, higher-emitting vehicles."

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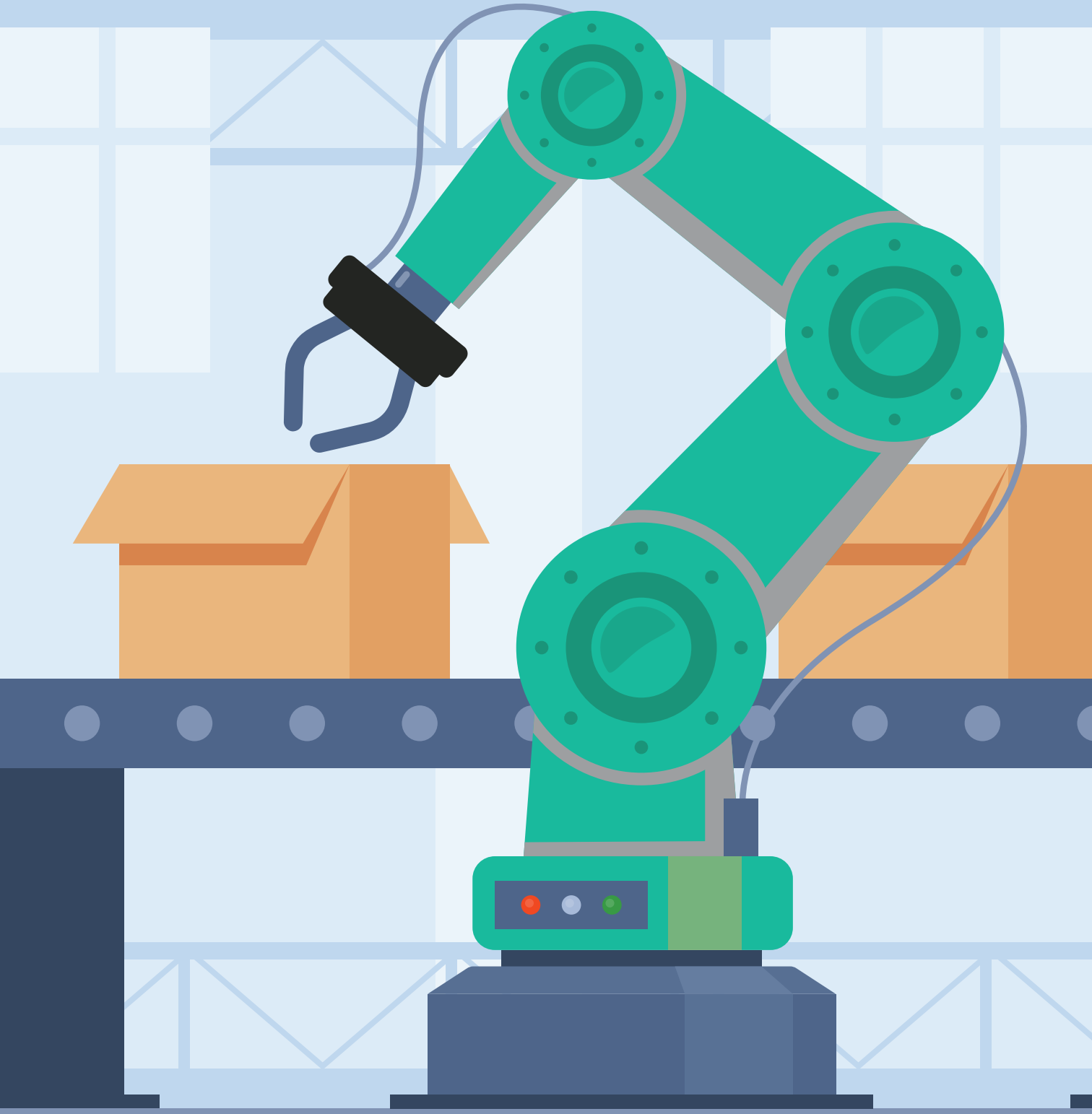

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