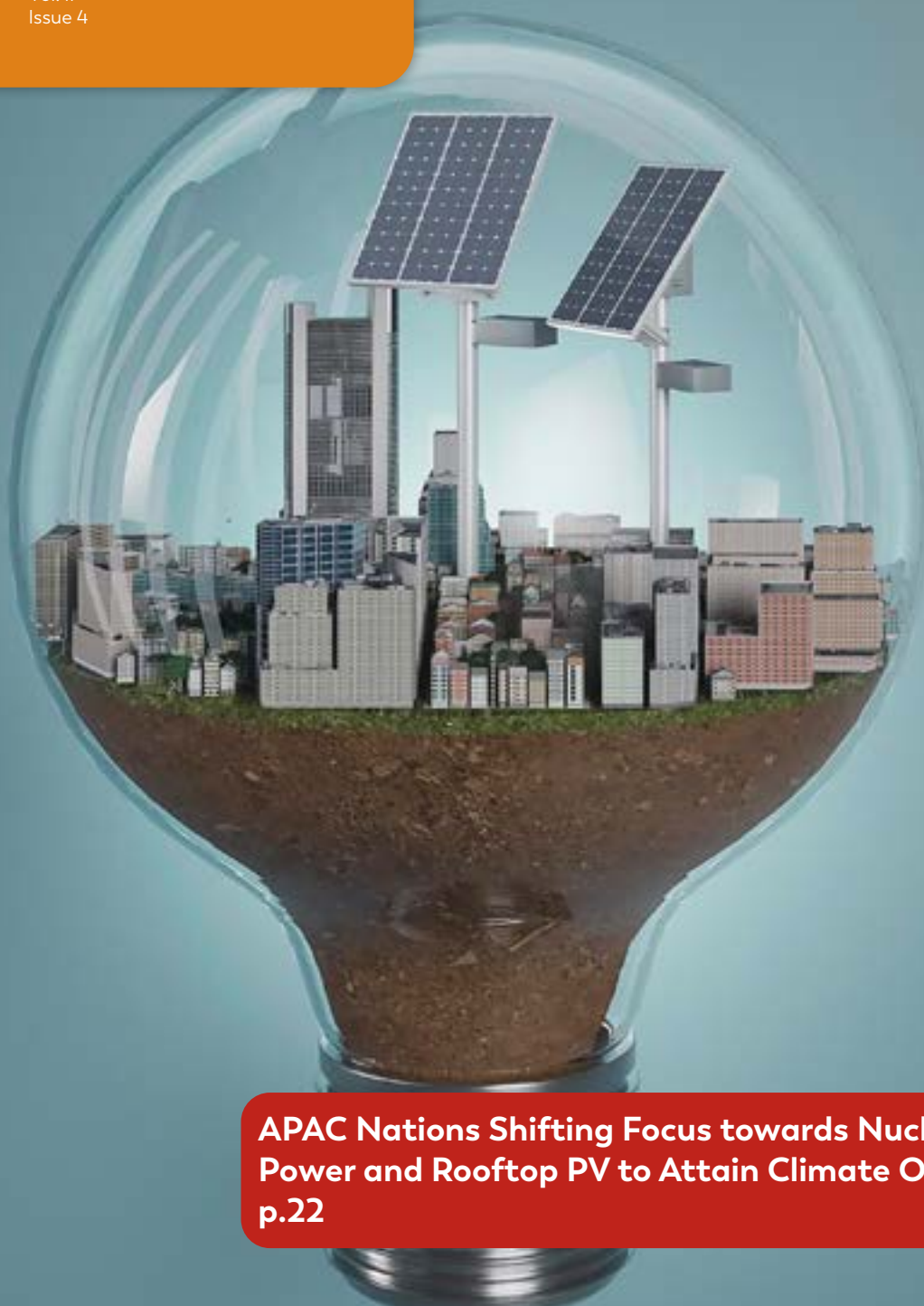


# energy

HQ

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April 2024  
Vol. II  
Issue 4



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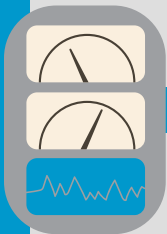
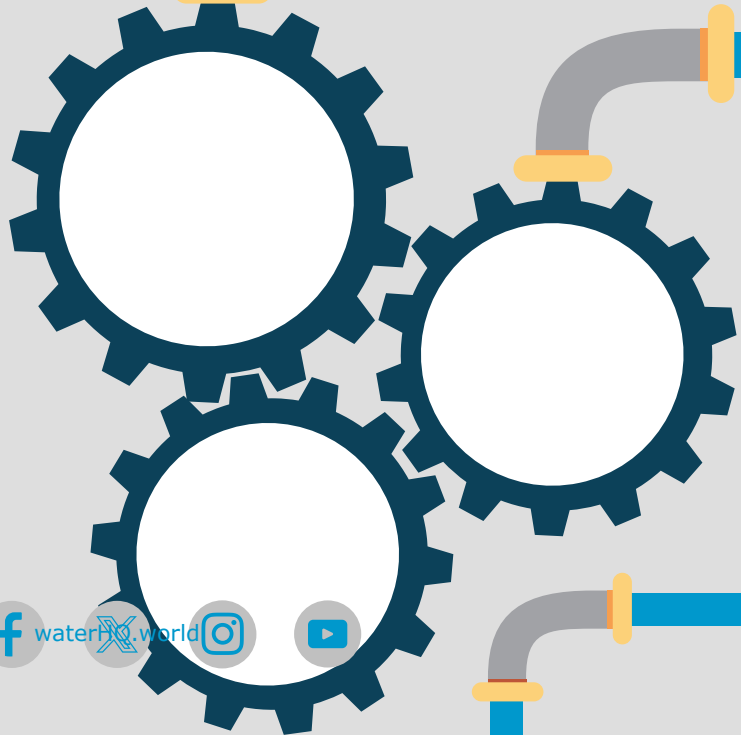
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# waterHQ

**Quenching World Thirst!**

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**waterHQ** was established in 1977 as a specialized B2B magazine called "Arab Water World" before evolving to become a full-fledged 360° industry platform comprised of various media channels (available in print, digital and online formats) which are a Magazine, a Website, Events, Reports, Services, Newsletters, Email & Social. Serving the desalination, measuring & leveling, pipes & valves, storage, and water & wastewater treatment sectors.

## Hydrogen on the Rise



Driven by the pursuit of net-zero emissions, hydrogen is experiencing a surge in interest as a clean energy carrier within the industrial sector. Unlike fossil fuels, hydrogen itself doesn't release greenhouse gases upon combustion, making it a promising alternative for applications where electrification remains challenging.

Governments around the world are actively supporting the development of a hydrogen economy. The European Union, for instance, has launched its ambitious "Hydrogen Strategy" aiming to produce up to 10 million tonnes of clean hydrogen annually by 2030. Similarly, Japan's "Basic Hydrogen Strategy" outlines a roadmap for widespread hydrogen adoption across various industries.

This governmental push is coupled with concrete initiatives. In 2021, Germany unveiled its "National Hydrogen Strategy" which includes funding for research and development of green hydrogen production (derived from renewable electricity) and its utilization in steel manufacturing, a notoriously hard-to-decarbonize sector.

Companies are also embracing hydrogen's potential. Steel giant ArcelorMittal has partnered with energy companies to develop a large-scale hydrogen-based steel production plant in France. Additionally, chemical corporations like BASF are exploring hydrogen's role in their operations, aiming to reduce their reliance on fossil fuels.

While currently used primarily in traditional industrial applications like refining, hydrogen's potential extends far beyond. As production costs decrease and infrastructure expands, we can expect a wider adoption of hydrogen across various industries, playing a crucial role in achieving a sustainable future.

### In This Issue!

energyHQ's April 2024 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.

- Article on page 7 talks about Hydropower Modernization
- Article on page 15 focuses on Nuclear Power & Climate Change
- Article on page 22 sheds the light on APAC Green Push

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 & actionable for your business. For any comments, suggestions, or feedback please don't hesitate to contact me.

Best wishes,  
Hassan Mourtada  
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# Energy World Digest



## Oman

### Oman's Oil and Gas Industry in Transition

Oman's oil and gas industry has been the main driver of the country's economic development since commercial production began in 1967. The nation is now the largest producer of hydrocarbons in the Middle East outside of OPEC members. Traditionally around 70% the Omani state's budget is fuelled by revenues from taxation and operations of its oil and gas production, and the sector accounts for around 30% of Oman's GDP.

The country is stressing diversification of its economic foundations using the oil and gas sector as a base under its Vision 2040 programme. The initiative looks to see non-oil activities take up 90% of the nation's GDP. Government approvals and policy are dictated by the Ministry of Energy and Minerals, with NOC Petroleum Development Oman being the largest operator with the largest oil reserves in the country.

The state-run entity is followed in size and scope by American E&P company Occidental Petroleum, which has the largest presence of any foreign company in the country. The government has also created other state-run players that have lesser stakes in upstream, midstream and downstream operations.

Most of Oman's oil and gas resources are traditional, with limited unconventional and zero shale plays. EOR techniques have allowed the country to continue producing from its maturing assets. While local oil production meets demand for domestic energy consumption, the country is active in transitioning away from oil and gas towards reliance on solar and wind facilities in its power generation sector.

## KSA

### Energy Transition in Saudi Arabia

Renewable energy sources are forecast to account for 31% of the total electricity generation capacity in Saudi Arabia by 2035, compared with 2% in 2023, according to GlobalData's power capacity and generation database. GlobalData uses proprietary data and analytics to provide a complete picture of Saudi Arabia's renewable energy market in its Saudi Arabia Power Market Outlook to 2035 report.

Of all renewable energy sources, the share of solar PV power generation capacity is forecasted to change from 1% in 2023 to 27% in 2035.

The share of wind power is expected to reach 4.1% in 2035, compared with a 0.42% share in 2023. Solar thermal is forecast to account for 0.43% share of Saudi Arabia's total electricity generation capacity in 2035, as against 0.1% share in 2023.

In terms of capacity additions, the total renewable energy capacity is expected to see 45944.71 MW of additions in Saudi Arabia during the forecast period while the non-renewable energy segment is likely to see 6735.7 MW of additions.

### CAGR growth of key renewables in Saudi Arabia

Renewable generation capacity in Saudi Arabia is expected to reach 47GW in 2035 at a CAGR of 33% during 2023-2035.

Solar PV power is expected to record highest growth rate of 35.94% by 2035, followed by wind with 25%. Other renewable energy sources such as biopower and solar thermal are estimated to have growth rates of 20% and 18% respectively.



## Iraq

### Addressing Human Resource and Development Concerns in Iraq's Oil and Gas Sector

Many of the necessary reforms start with placing the institution in a competitive position internationally and allowing for decisions that maximize financial returns for the good of the Iraqi people, not individuals hoping to promote their own interests.

Since 2003, several major capital projects in Iraq's energy sector have not been reaping the returns that would allow the state to improve the economy. Why, then, are the few oil and gas plans that Iraq does have failing, while other similar projects in the Gulf region have succeeded?

Iraq's oil sector has been suffering since 2003 from the inevitable consequences of erratic decisions stemming from the way in which Iraq's oil and gas sector has been managed in the previous periods. The current structure of Iraq's political system has meant that this management has not yet been fairly forced to be held accountable for its failures, nor has it been able to prevent unproductive intervention from politicians, business people, or corruption.

Over a decade ago, the future envisioned for Iraq's energy sector was very different; In 2012, Iraq cooperated with the World Bank in preparing the Integrated National Energy Strategy INES (2013-2030) and with the International Energy Agency (IEA) in preparing a special report on energy prospects in Iraq.

## Spain



### The Renewable Energy Landscape in Spain

Spain stands at the forefront of renewable energy within Europe, utilizing its abundant natural resources to pave the way for a sustainable energy future. The country's varied geography, with its plentiful sunshine, robust winds, and diverse landscapes, creates a perfect environment for the development of solar photovoltaic (PV), wind, and hydroelectric power installations.

These renewable sources are a vital component of Spain's energy strategy, significantly contributing to the nation's energy requirements and exemplifying best practices in sustainable energy on a global stage.

### Expansion and Integration of Renewable Energy in Spain

The expansion of Spain's renewable energy sector is attributed to forward-thinking government policies, advancements in technology, and a surge in investments. The sector has seen substantial growth, particularly in solar PV, wind energy, and hydroelectric power, capitalizing on the nation's topographical advantages. Spain has also prioritized the integration of these renewable sources into the national power grid, employing advanced energy management systems to maintain a reliable energy supply, despite the intermittent nature of solar and wind energy.



## Hungary

### Hungary Is Ready to Double Geothermal Energy Use By 2030

Hungary aims to double its domestic geothermal energy utilisation by 2030, outlined in the National Geothermal Strategy, with measures to strengthen energy sovereignty, increase emission-free energy production, and keep energy prices affordable. The strategy includes government support of approximately 165 billion Hungarian forints (418 million euros) to create a predictable financing environment and reduce financial risks.

Hungary has been among the top five countries in Europe for the use of geothermal energy for many years. However, based on the available potential, the utilisation of locally available resources can be further intensified, according to the Ministry of Energy of Hungary.

The measures outlined in the National Geothermal Strategy, which is open for public consultation, could make geothermal energy a leading sector in Hungary's green economy. Hungary has favorable conditions for the versatile utilisation of geothermal energy.

The objective of Hungary's National Geothermal Strategy is to increase the current 6.4 petajoules of domestic energy consumption to one-fifth by 2026 (to 8 PJ) and double this figure to 12-13 PJ by the beginning of the next decade. Over the strategy's timeframe, the share of geothermal energy in total heat production could increase from 6.5 per cent to 25-30 per cent. The goal is to replace 1-1.2 billion cubic metres of natural gas by 2035, significantly reducing Hungary's import dependency.

## France



### Marine Renewables: Atlantic France Leads the Industry's Momentum

Atlantic France is the leading French region in the marine renewable energy sector. The latest report from the Observatoire des Énergies de la Mer (the French Observatory of Marine Energies) shows that the sector is at a strategic stage in its development and that Atlantic France remains at the forefront.

The very first French offshore wind farm has been operational in Saint-Nazaire (Atlantic France) since the end of 2022. The 480 MW farm can produce 20% of the electricity needed by the Loire-Atlantique, the region's most populated department, with over 1.4 million inhabitants.

This achievement is the first major milestone in the development of marine energy in France, where the country has great ambitions, aiming to reach 45GW of energy production by 2050.

The latest report of the Observatoire des Énergies de la Mer, created by the Cluster Maritime Français, shows that the industry's turnover is increasing every year and reached almost €2 billion in 2022, of which €540 million came from exports (28%).

Collectively the 4 regions of Atlantic France, Brittany, Normandy, and Île-de-France generate around 90% of total sales. Furthermore, 60% of jobs in the sector are in Atlantic France (2256) or Normandy (2232).

## Renwable Energy

### *07 Hydropower Modernization*





# Modernizing Hydropower: A Sustainable Approach to Energy Production



Hydropower has long been recognized as a valuable source of renewable energy, harnessing the kinetic energy of flowing water to generate electricity. However, as the world faces increasing energy demands and growing concerns about environmental sustainability, the need to modernize existing hydropower facilities has become increasingly urgent. Through advancements in technology and engineering, hydropower modernization offers a pathway to greater efficiency, reduced environmental impact, and enhanced grid stability.

## Smarter Equipment for Optimal Performance

One of the fundamental aspects of hydropower modernization lies in the implementation of smarter equipment, encompassing digital dashboards, advanced controls, and real-time monitoring systems. These upgrades revolutionize the management of hydropower plants, allowing operators to finely tune turbine operations based on factors such as water flow, reservoir levels, and energy demand. By leveraging sophisticated algorithms and predictive analytics, modern hydropower

plants can optimize power generation, maximizing output while minimizing environmental impact.

Imagine a scenario where a hydropower plant integrates advanced sensors and automated control systems to dynamically adjust turbine operations in response to changing water conditions. During periods of high flow, the system ramps up power generation, capitalizing on the abundance of water resources. Conversely, during low-flow periods or times of reduced energy demand, the plant throttles back its output, ensuring efficient utilization of water resources and minimizing disruptions to downstream ecosystems.

## Better Efficiency through Upgrades

In addition to intelligent control systems, hydropower modernization involves upgrading the mechanical components of power generation, particularly turbines and generators. These upgrades aim to enhance the overall efficiency of the hydropower plant, enabling more electricity to be produced from the same amount of water flow. Through advancements in turbine design, materials

science, and manufacturing techniques, modern turbines boast higher efficiencies and improved performance characteristics compared to their predecessors.

Take, for example, the Grand Coulee Dam in Washington State, one of the largest hydropower facilities in the world. As part of a comprehensive modernization effort, the dam is undergoing a turbine overhaul, replacing aging equipment with state-of-the-art designs. These new turbines leverage advanced blade geometries, optimized runner configurations, and cutting-edge materials to achieve higher conversion efficiencies and greater power output. The result? An additional 200 megawatts of clean energy capacity, equivalent to powering over 150,000 homes, all while utilizing the same water resources more effectively.

#### Environmental Considerations: Fish-Friendly Designs

Hydropower modernization is not just about maximizing power output; it's also about minimizing environmental impact and promoting ecological sustainability. Historically, hydropower dams have posed significant challenges to aquatic ecosystems, particularly in terms of fish migration and habitat fragmentation. However, modernization efforts now prioritize the development and implementation of fish-friendly turbine designs aimed at mitigating these impacts.

At the Lower Francis Case Dam in South Carolina, for instance, engineers are deploying innovative turbine designs specifically tailored to minimize harm to fish populations. These turbines feature carefully engineered blade profiles, reduced blade tip speeds, and enhanced passage routes to facilitate safe fish passage through the dam. By reducing injury and mortality rates among migrating fish, these advancements not only protect valuable aquatic species but also contribute to the overall health and resilience of river ecosystems.

#### Pumped Storage Power Boost

Pumped storage facilities represent another critical component of modern hydropower infrastructure, serving as giant "energy batteries" that store excess electricity during periods of low demand and release it when needed. As renewable energy sources like wind and solar become increasingly prevalent,

pumped storage plants play a crucial role in stabilizing the grid and balancing supply and demand.

In Michigan, the Ludington Pumped Storage Plant is undergoing a technological makeover to enhance its responsiveness and efficiency. By integrating advanced computer controls and variable-speed pump technologies, the plant can rapidly adjust its operations to match fluctuations in energy demand. This flexibility not only improves grid stability but also enhances the integration of renewable energy sources, smoothing out variability and ensuring reliable electricity supply.

#### Benefits of Hydropower Modernization

The modernization of hydropower infrastructure offers a myriad of benefits, spanning environmental, economic, and social dimensions:

- 1. Increased Efficiency and Power Output:** Upgrades to turbines, controls, and infrastructure enable hydropower plants to generate more electricity from the same water resources, maximizing energy production capacity.
- 2. Environmental Stewardship:** By implementing fish-friendly designs and minimizing ecosystem disruptions, modern hydropower facilities can coexist harmoniously with aquatic environments, preserving biodiversity and ecosystem health.
- 3. Grid Stability and Integration:** Pumped storage facilities enhance grid stability by providing on-demand energy storage and balancing services, facilitating the integration of intermittent renewable energy sources into the grid.
- 4. Economic Viability:** Modernizing existing hydropower infrastructure often represents a cost-effective alternative to building new facilities, leveraging existing assets while minimizing environmental impact.
- 5. Sustainable Energy Future:** By harnessing the power of flowing water in a responsible and efficient manner, hydropower modernization contributes to a more sustainable and resilient energy future, meeting growing energy demands while safeguarding the environment for future generations.

## Sustainability & Decarbonization

### *10 Circular Economy in the Energy Sector*



CO<sub>2</sub>

# Advancing Sustainability: The Role of Circular Economy in Energy



The traditional linear model of production and consumption has long been the norm in our economies, characterized by the extraction of resources, manufacturing, and eventual disposal, leading to significant waste and resource depletion. However, a paradigm shift towards a circular economy is gaining momentum, offering a promising alternative that prioritizes sustainability and resource efficiency.

A circular economy is grounded in the principles of maximizing the use of resources and minimizing waste through strategies such as repair, refurbishment, remanufacturing, and recycling. This approach holds immense potential for transforming the energy sector, addressing both environmental concerns and economic imperatives.

At the heart of a circular energy economy lies the design of products for durability and ease of repair or reuse. By extending the lifespan of energy infrastructure components such as wind turbine blades and solar panels, valuable resources can be conserved, reducing the need for virgin materials and mitigating environmental impact.

Renewable energy sources play a pivotal role in the circular energy economy, offering sustainable alternatives to fossil fuels. Prioritizing sources like solar and wind power aligns with the circular principles of

resource regeneration and minimal waste production. Additionally, maximizing energy efficiency throughout the energy chain, from generation to distribution, further enhances the sustainability of the energy system.

Real-world examples illustrate the tangible benefits of implementing circular practices in the energy sector. Companies like Renault are refurbishing electric vehicle batteries for second-life applications, prolonging their usefulness and reducing the demand for new batteries. Similarly, partnerships between wind turbine manufacturers such as Siemens Gamesa and waste management companies like Veolia are pioneering processes for recycling decommissioned turbine blades, addressing the challenge of waste disposal in renewable energy infrastructure.

Waste-to-energy plants exemplify another facet of the circular energy economy, repurposing landfill waste to generate usable energy while diverting waste from landfills. This not only reduces reliance on fossil fuels but also contributes to the circular goal of resource recovery and reuse.

Despite the promising prospects of a circular energy economy, several challenges remain. Technological limitations hinder the efficient recycling of materials such as solar panels and wind turbine blades, necessitating further innovation and investment in recycling

infrastructure. Additionally, the degradation of materials during remanufacturing processes and the lack of infrastructure for rare earth element recovery pose significant hurdles to achieving a fully circular energy system.

In navigating these challenges, collaboration between industry stakeholders, policymakers, and research institutions is essential. By fostering innovation, incentivizing sustainable practices, and investing in infrastructure development, we can accelerate the transition towards a circular energy economy, unlocking its full potential to drive sustainable development and combat climate change.

The shift towards a circular energy economy represents not only a necessity but also an opportunity to redefine our relationship with resources and energy. By embracing circular principles, we can build a more resilient and sustainable energy system for future generations.

In addition to technological and regulatory challenges, fostering a circular energy economy requires a fundamental shift in mindset and behavior. Encouraging consumers to embrace principles of durability, repairability, and reuse is essential for reducing the demand for new energy products and extending the lifespan of existing ones. Education and awareness campaigns can empower individuals to make informed choices and participate actively in the circular economy.

Furthermore, the circular energy economy offers significant economic opportunities, ranging from job creation to new business models and revenue streams. Investments in renewable energy infrastructure, recycling facilities, and circular supply chains can stimulate economic growth while promoting environmental sustainability. By harnessing the potential of circularity, countries can enhance their competitiveness in the global green economy and position themselves as leaders in sustainable development.

Local governments play a crucial role in driving the transition to a circular energy economy through policy interventions and incentives. Measures such as extended producer responsibility (EPR), product stewardship programs, and eco-design standards can encourage manufacturers to adopt circular practices and minimize the environmental impact of their products. Additionally, financial incentives such as tax credits, subsidies, and

grants can stimulate investment in renewable energy projects and circular infrastructure.

The circular energy economy also offers opportunities for decentralized energy generation and community empowerment. Distributed energy systems, such as microgrids and peer-to-peer energy trading platforms, enable communities to generate, store, and share renewable energy locally, reducing reliance on centralized power grids and enhancing energy resilience. Community-owned renewable energy projects empower local stakeholders to participate in the energy transition and reap the benefits of clean, affordable energy.

Moreover, the circular energy economy fosters innovation and collaboration across sectors, driving cross-disciplinary research and development efforts. Interdisciplinary partnerships between academia, industry, and government can catalyze breakthroughs in renewable energy technologies, materials science, and circular business models. Open-source platforms and collaborative networks facilitate knowledge sharing and accelerate the diffusion of innovative solutions.

International cooperation is vital for addressing global energy challenges and advancing the circular energy agenda on a global scale. Multilateral initiatives, such as the Paris Agreement and the Sustainable Development Goals (SDGs), provide frameworks for collective action and collaboration on climate change mitigation and sustainable development. By aligning their policies and strategies, countries can amplify their impact and accelerate progress towards a circular energy future.

In conclusion, the transition to a circular energy economy represents a paradigm shift with profound implications for sustainability, economic prosperity, and social equity. By embracing circular principles in energy production, consumption, and management, we can create a more resilient, inclusive, and sustainable energy system for the benefit of present and future generations. Through collaboration, innovation, and concerted action, we can harness the full potential of the circular energy economy to address pressing global challenges and build a brighter, greener future for all.

## Oil & Gas

### *13 The Shale Revolution & Its Impact*



# Shale Oil Industry Update: Mergers, Plateaus, and Opportunities



The landscape of the shale oil industry continues to evolve rapidly, marked by mergers and acquisitions (M&A) activity, projections of production plateaus, and emerging opportunities both in the United States and abroad. As 2024 progresses, stakeholders are navigating a complex terrain influenced by technological advancements, market dynamics, and environmental considerations.

## Continued Upstream M&A Activity

Since last October, the upstream exploration and production (E&P) sector has witnessed a flurry of merger activity, indicating a trend towards consolidation. Notable mergers include Chord Energy's acquisition of Enerplus and the merger of equals between Chesapeake Energy and Southwestern Energy. Most recently, EQT Corp announced its intention to acquire Equitrans, underscoring the feverish pace of consolidation within the industry.

These mergers reflect a strategic response to market conditions and a drive for efficiency amid projections of production plateaus in the near future.

## Projection of Production Plateaus

Industry leaders and analysts alike are forecasting a plateau in U.S. shale oil production later this decade. ConocoPhillips CEO, Ryan Lance, predicts that production will reach around 14 million barrels per day (BOPD) before plateauing, highlighting the impact of drilling technologies in sustaining production growth despite declining rig counts.

However, concerns loom over the "Red Queen effect," where diminishing returns from existing wells may outpace new production. Reports suggest that the decline curve in shale wells is steepening, posing challenges to sustaining

production growth in the long term.

## Emerging Opportunities in the UK

While the U.S. shale industry grapples with plateauing production, attention is turning to emerging opportunities in the United Kingdom. With estimated gas reserves in the Bowland Basin and Total's commitment to explore shale gas, the UK presents a promising frontier for shale development.

Investors and industry experts are eyeing the UK's potential for rapid growth in shale-related supply chains. Companies like Clear Solutions, Remsol, and Ground Gas Solutions are positioning themselves to capitalize on the nascent shale industry, focusing on environmentally sustainable practices to navigate public concerns over fracking's environmental impact.

## Lessons from the U.S. and Potential Challenges

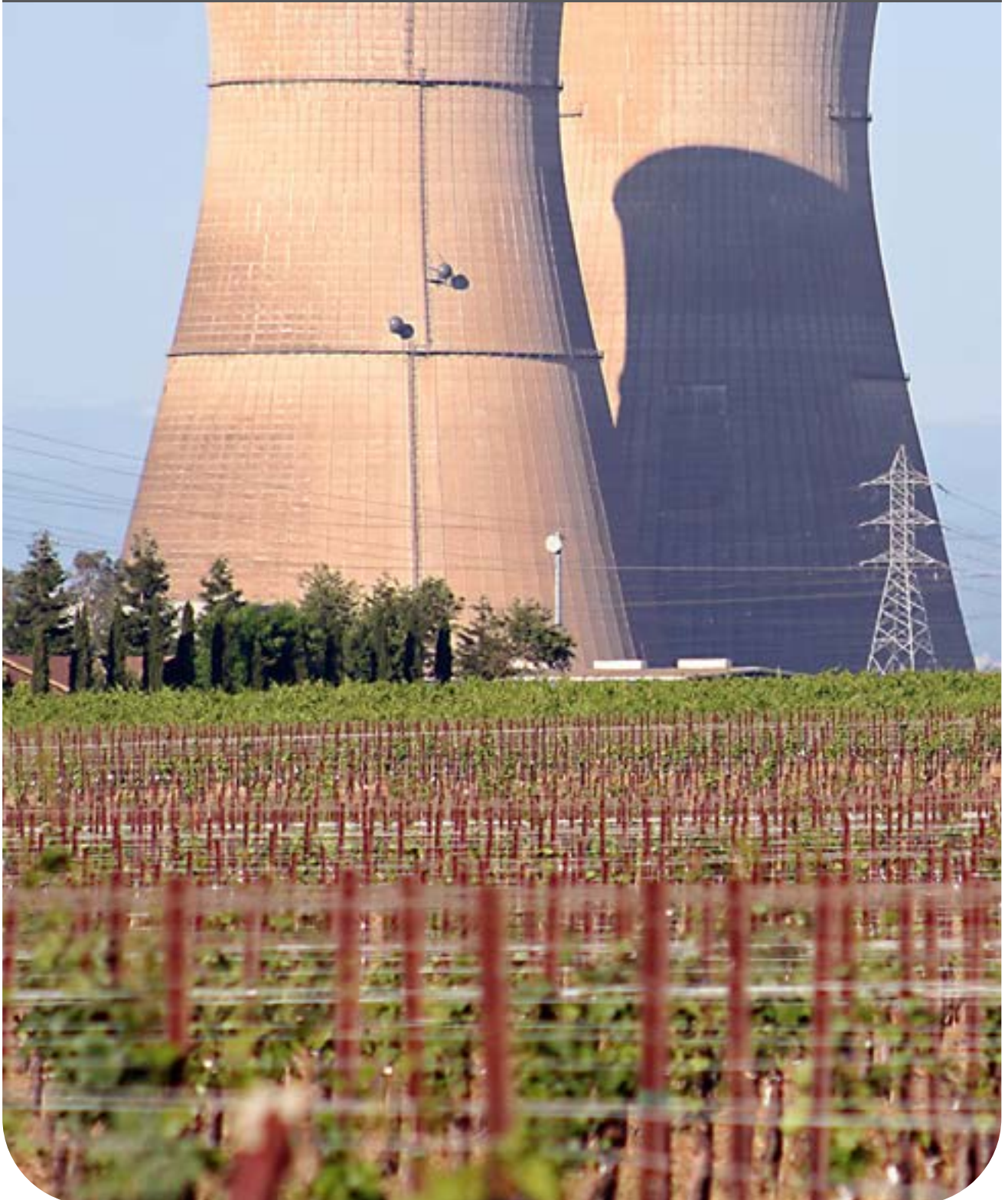
Drawing lessons from the U.S. shale boom, businesses are gearing up to support the burgeoning industry in the UK. Logistics, drilling equipment, and environmental monitoring are identified as key areas for investment and innovation. However, challenges remain, particularly regarding public opposition to fracking and the need for regulatory clarity.

## Aberdeen and the Future of UK Shale

The question of where the UK's shale industry will thrive remains open. While Aberdeen boasts technical expertise and infrastructure from its offshore oil operations, emerging shale hubs in Yorkshire and Lancashire present compelling alternatives. The choice of location will hinge on factors such as cost-effectiveness and access to skilled labor.

# Nuclear

## 15 Nuclear Power & Climate Change





# Nuclear's EU comeback on show at Brussels summit



In Brussels, the promotion of nuclear power, once considered taboo, has undergone a significant transformation. A high-profile international summit held on Thursday unequivocally conveyed the message that atomic energy, now championed as a crucial tool in combating climate change, has reclaimed its prominence.

The era where Berlin's anti-nuclear stance dictated policy is a thing of the past. Over the last two years, France, a pioneer in nuclear energy, has taken the lead in advocating for nuclear power as a vital source of carbon-free energy within the European Union (EU).

Organized by the International Atomic Energy Agency (IAEA), the Brussels summit served as a follow-up to last year's COP28 climate talks. During COP28, 22 nations endorsed a call to triple the world's nuclear energy capacity by 2050.

Rafael Grossi, the Director-General of the IAEA, emphasized the necessity of utilizing all available dispatchable, CO<sub>2</sub>-free energy sources in the fight against climate change. More than 30 countries, including European nations, the United States, China, and Brazil, participated in the summit, highlighting the global significance of nuclear energy.

In a joint declaration, participating states committed to “fully unlock the potential of nuclear energy,” pledging to mobilize both public and private finance to meet the sector’s substantial investment requirements.

Within the European Union, a “nuclear alliance” comprising a dozen countries, led by France, has emerged as a potent force in shaping policy decisions. This alliance, established last year, has already achieved notable successes.

Christophe Grudler, an EU lawmaker from Emmanuel Macron’s centrist Renew Europe party, emphasized the alliance’s efforts over the past four years, which have culminated in tangible outcomes.

The European Commission, under Ursula von der Leyen’s leadership, made headlines in 2021 by advocating for nuclear energy as a “stable source” of energy. Subsequently, Brussels categorized nuclear power among its list of “sustainable” investments.

Paris successfully lobbied for a revision to EU renewable energy rules, recognizing nuclear power as a means to produce low-carbon hydrogen. Additionally, EU states and lawmakers reached agreements on public aid for investment in existing nuclear power plants and streamlined regulations for nuclear as a “net-zero” emission technology.

Brussels has incorporated nuclear energy into its roadmap to achieve its 2040 climate goals. Moreover, it launched an industrial alliance in February to accelerate the development of small modular reactors (SMRs).

Nuclear power currently accounts for approximately a quarter of electricity production in the EU, with almost half of its carbon-free power coming from nuclear sources. Plans for around 60 reactors are in various stages of planning or construction, with a significant portion in Poland.

The French-led alliance is advocating for a comprehensive European framework for nuclear development, including financing mechanisms. Its members are pushing for nuclear and renewables to be treated equally without discrimination in the EU’s goal of achieving carbon neutrality by 2050.

Despite the EU’s evolving stance, the debate between nuclear and renewables continues to create tension between Paris and Brussels. France, having missed EU-set renewable targets in 2020, refuses to accept penalties, citing its low carbon footprint due to nuclear energy.

However, environmental activists and EU countries such as Spain and Germany, part

of a “Friends of Renewables” alliance, oppose France’s approach. They advocate for clear targets for renewables, highlighting concerns about nuclear energy’s lengthy construction timelines, high costs, and hazardous waste generation.

While nuclear power plants emit minimal greenhouse gases, critics argue that renewables offer a more competitive and sustainable alternative. Sven Giegold, a German state secretary for the economy, emphasizes the theoretical nature of nuclear promises, advocating for the prioritization of competitive renewables.

In contrast, Grudler remains optimistic about the future of nuclear energy, citing the potential of SMRs and new generation EPR reactors. He underscores the importance of establishing frameworks and financing plans to support their development.

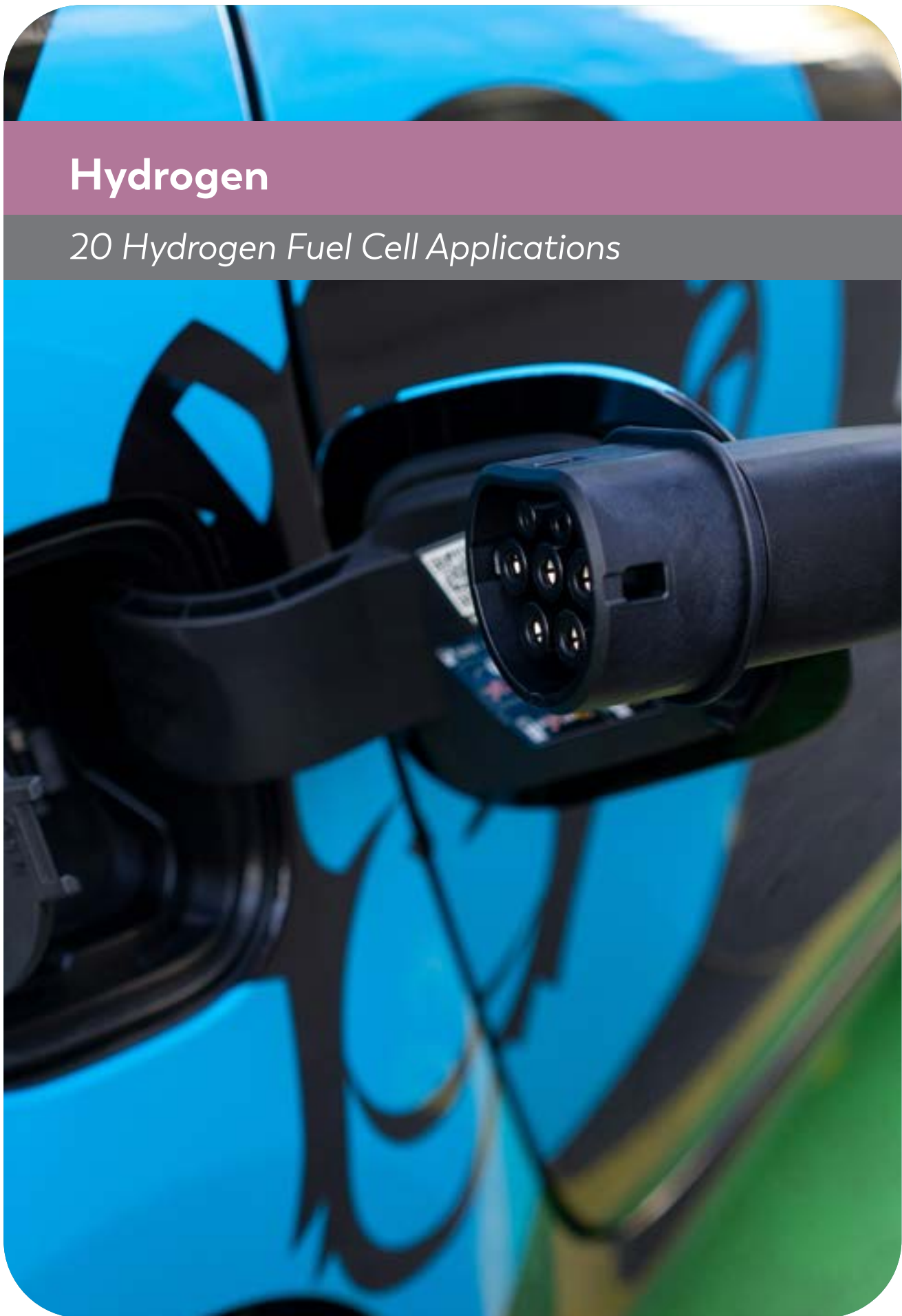
The resurgence of nuclear power in European energy policy signifies a paradigm shift in addressing climate change. While challenges and debates persist, nuclear energy’s role as a vital component of a low-carbon future is increasingly acknowledged and supported on both regional and global platforms.

The resurgence of nuclear power in European energy policy not only marks a significant shift in combating climate change but also prompts discussions on the broader geopolitical landscape. As the EU navigates its energy transition, the renewed emphasis on nuclear power underscores the continent’s quest for energy security and autonomy. With geopolitical tensions rising and energy independence becoming a strategic priority, nuclear energy offers a dependable and domestically produced source of electricity.

Furthermore, the development of small modular reactors (SMRs) presents an opportunity for European countries to revitalize their nuclear industries, fostering innovation and job creation while reducing reliance on fossil fuel imports. By embracing nuclear power alongside renewables, the EU can diversify its energy mix and strengthen its position in the global energy landscape, ultimately contributing to a more sustainable and resilient future. This strategic shift also highlights the need for robust international cooperation and partnerships to ensure the safe and secure deployment of nuclear technologies while addressing proliferation concerns and fostering peaceful uses of atomic energy.

# Hydrogen

*20 Hydrogen Fuel Cell Applications*



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In 1898, at the L Street Station of the Boston Electric Light Company, the first circuit breaker featured an oil tank and upward-breaking contacts manually activated. The oil was used to dampen the heat generated from the arc forming between the two open contacts.



# energy

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# Hydrogen Fuel Cells Take Center Stage with Hyflex Solution



Partners including the Port of Gothenburg, Skanska, PowerCell Group, Hitachi Energy, Linde Gas, Volvo Group, and Skagerak Energy have joined forces to showcase the groundbreaking potential of hydrogen fuel cell technology through their collaborative field test of the containerized Hyflex solution.

Hyflex represents a revolutionary approach to power generation, leveraging a 100kW hydrogen fuel cell from PowerCell combined with batteries to produce emission-free power independently of the grid. From March 4 to 17, this innovative solution was put to the test at the Port of Gothenburg, demonstrating its viability to replace traditional fossil fuel-based alternatives in real-world operational settings.

While the trial initially targeted off-grid power needs for construction sites and vehicles, its implications extend far beyond these applications. With its versatility and sustainability credentials, Hyflex holds tremendous promise for port operations, particularly in the realm of marine shore power connections, or cold ironing.

Richard Berkling, CEO of PowerCell Group, emphasized the transformative potential of Hyflex, noting its capacity to supplant diesel generators across various platforms while addressing evolving power generation demands. While the initial focus may have been on construction sites, the partners

recognize the broader scope of its applications, particularly in the realm of marine and port electrification.

The timing of the Hyflex demonstration aligns strategically with evolving regulatory landscapes. With the European Union's stringent regulations, such as FuelEU Maritime, mandating the adoption of shore power supplies for ships in major ports by 2030, Hyflex emerges as a timely and compelling solution to meet these requirements while advancing sustainability goals.

In parallel, PowerCell's involvement in groundbreaking fuel cell ferry projects underscores the wider adoption of hydrogen technology in maritime transportation. For instance, Torghatten Nord's initiative to deploy hydrogen ferries on Norway's demanding Lofoten to Bodø route exemplifies the industry's shift towards cleaner and more efficient energy solutions.

Overall, the Hyflex demonstration and associated fuel cell ferry developments mark significant milestones in the journey towards a hydrogen-powered future, underscoring the critical role of collaboration and innovation in driving sustainable energy transitions across industries.

By Sam Chambers  
<https://splash247.com/>

# Cover Story

*22 APAC Green Push*



# APAC Nations Shifting Focus towards Nuclear Power and Rooftop PV to Attain Climate Objectives



In recent years, the global energy market has experienced a surge in energy prices, prompting several governments across the Asia-Pacific (APAC) region to reassess their climate targets. In response, governments in the region are exploring alternative strategies to meet these goals. Rooftop PV initiatives have emerged as a focal point on government agendas, offering a solution to the challenge of securing vast land areas for utility-scale solar projects. Additionally, there is a renewed interest in nuclear power, as noted by GlobalData, a prominent data and analytics company.

GlobalData's most recent report, titled «Asia Pacific Renewable Energy Policy Handbook 2024,» highlights the impact of the Russian invasion of Ukraine, which led to heightened energy prices in Japan. This development

compelled Japan to reconsider its nuclear policy, which had been hesitant to restart nuclear power plants following the Fukushima disaster. The Japanese government recognized the importance of ensuring a stable energy supply while maintaining its commitment to achieving a decarbonized society.

Attaurrahman Ojindaram Saibasan, a Power Analyst at GlobalData, notes, «In February 2023, the Japanese government unveiled the New Basic Energy Plan until 2030, signaling significant revisions to its previous nuclear policy and indicating its intent to reactivate suspended nuclear power plants.» Similarly, South Korea has placed considerable emphasis on nuclear power in its tenth basic plan for 2024-2038, aiming to elevate the share of nuclear power in its energy mix to 32.4%.

Despite reduced incentivized support for



renewables, China has managed to increase its renewable capacity, particularly through solar installations. In 2021, the National Energy Administration (NEA) of China mandated the use of solar PV on residential and commercial rooftops. This directive stipulated that by the end of 2023, 20% of residential rooftops, 30% of commercial rooftops, 40% of non-government public buildings, and 50% of government buildings must be covered with solar PV modules.

India has also swiftly embraced the trend of expanding rooftop solar installations. In January 2024, the Indian government launched the Pradhan Mantri Suryodaya Yojana (PMSY) scheme, which aims to provide rooftop solar (RTS) power systems to ten million households.

Saibasan concludes, «Following lackluster progress in renewable energy in India, the introduction of the PMSY scheme is anticipated to stimulate rooftop solar PV installations. With robust implementation, India can replicate China's success. The PMSY scheme seeks to assist households across various income groups by providing 300 units of free monthly solar electricity, thereby incentivizing the rapid adoption of rooftop solar PV systems, particularly in light of rising electricity prices.»

As governments in the Asia-Pacific (APAC) region intensify their efforts to address climate change and transition towards sustainable energy sources, various initiatives and policies are being implemented to achieve these objectives.

One significant aspect of this transition is the increasing adoption of renewable energy technologies, particularly solar power. Rooftop photovoltaic (PV) installations have emerged as a key strategy for expanding renewable energy capacity without the need for large land areas. By leveraging existing infrastructure, such as rooftops of residential and commercial buildings, countries in the APAC region can harness solar energy to reduce reliance on fossil fuels and mitigate greenhouse gas emissions.

In addition to rooftop PV, nuclear power is experiencing renewed interest as a reliable source of low-carbon energy. Despite concerns about safety and nuclear waste management, advancements in nuclear technology and stringent safety regulations have led some governments to reconsider nuclear power as

part of their energy mix. Japan, in particular, has revisited its nuclear policy following the Fukushima disaster, aiming to balance energy security with environmental sustainability.

Furthermore, the geopolitical landscape, such as the Russian invasion of Ukraine, has highlighted the importance of energy security and diversification. Countries like Japan, which heavily rely on energy imports, are seeking to enhance their energy resilience by promoting domestic sources of power generation, including nuclear and renewable energy.

China, the world's largest energy consumer, has been aggressively expanding its renewable energy capacity in recent years. Despite scaling back incentivized support for renewables, China has continued to invest in solar and wind power, recognizing the economic and environmental benefits of clean energy. The government's mandate for solar PV installations on residential and commercial rooftops reflects its commitment to accelerating the transition to a low-carbon economy.

India, with its rapidly growing population and energy demand, faces unique challenges in achieving its climate goals. However, initiatives like the Pradhan Mantri Suryodaya Yojana (PMSY) scheme demonstrate India's commitment to promoting renewable energy access and affordability. By providing free solar electricity to households, the PMSY scheme not only reduces reliance on traditional energy sources but also empowers communities to participate in the clean energy transition.

Looking ahead, collaboration among APAC countries will be crucial in advancing renewable energy deployment and achieving regional climate objectives. Opportunities for cross-border energy trade and technology transfer can facilitate the exchange of expertise and resources, driving innovation and cost reductions in renewable energy development.

In conclusion, the APAC region is at a pivotal moment in its energy transition journey. By embracing a diverse portfolio of energy sources, including rooftop PV and nuclear power, countries can accelerate their transition towards a sustainable and resilient energy future while contributing to global efforts to combat climate change.

**Edited By Hassan Mourtada**  
[www.energyHQ.world](http://www.energyHQ.world)

# Energy Storage & Grids

*25 Distributed Energy Storage & Microgrids*



# Electric Cooperatives Secure DOE Funding to Build Microgrids for Grid Resilience and Community Support

Seven electric cooperatives are set to participate in a nearly \$58 million cost-share initiative with the Department of Energy aimed at constructing a variety of microgrids. These microgrids will enhance grid resilience and reliability for remote and economically disadvantaged communities nationwide.

The DOE disclosed on February 27th its intention to allocate \$45.2 million in funding to the cooperatives through the Office of Clean Energy Demonstrations' Energy Improvements in Rural or Remote Areas (ERA) Program, a component of the bipartisan infrastructure legislation. The cooperatives will contribute an additional \$12.6 million. The final budget for the five-year program will be determined following the completion of award negotiations later this year.

NRECA spearheaded a consortium of seven cooperatives in applying for funding for the Microgrids for Community Affordability, Resilience, and Energy Decarbonization (CARED) project. The project will incorporate technologies such as solar photovoltaic (PV) and battery energy storage systems alongside distribution upgrades.

Tolu Omotoso, NRECA's Director of Energy Solutions and principal investigator/program manager for the project, stated, «These electric co-ops will build microgrids so vulnerable communities can mitigate extreme weather risk and end-of-the-line connectivity issues and support essential and emergency services. Without this investment by DOE, these critical projects would not happen.»

## The seven cooperatives forming the microgrid consortium are:

- Anza Electric Cooperative in Anza, California.
- Blue Ridge Energy in Lenoir, North Carolina.
- Flathead Electric Cooperative Inc. in Kalispell, Montana.
- Minnesota Valley Electric Cooperative in Jordan, Minnesota.
- Missoula Electric Cooperative in Missoula, Montana.
- Trico Electric Cooperative in Marana, Arizona.
- Volunteer Electric Cooperative in Decatur, Tennessee.

In addition to enhancing grid resiliency and



reliability in underserved areas, CARED aims to facilitate information sharing and generate new job opportunities to support the local economies served by the participating cooperatives.

For instance, the project team estimates that Volunteer Electric's microgrid could yield annual electricity savings of \$400,000 for Decatur, while Flathead Electric's microgrid in Cooke City could potentially reduce power outages by 70%.

DOE also selected United Power, based in Brighton, Colorado, for \$6 million in funding from the ERA program. United Power will utilize the funding to construct a microgrid with PV and battery storage, replacing an aging diesel generator at a water treatment plant serving the city of Fort Lupton. The microgrid will ensure reliable clean water for the community, with a 20-year agreement ensuring affordability through United Power's ownership of the microgrid and the city's funding of its upgrades.

NRECA CEO Jim Matheson remarked, «This funding is an important step as electric co-ops work to improve access to affordable and reliable energy in rural America. By deploying microgrids in communities across the country, co-ops are exploring new ways to keep the lights on and meet tomorrow's energy needs.»

**By Cathy Cash**

<https://www.electric.coop/>

# Country Reports

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## UAE's Leading Role in Green Investments Shapes Central Asia's Energy



The wind turbines near the village of Nura in the Almaty region, Kazakhstan

Amidst the evolving dynamics of global energy markets, the United Arab Emirates (UAE) emerges as a key player in spearheading green investments across Central Asia. As nations in the region seek to diversify their economies and transition towards sustainable energy sources, the UAE, through entities like Masdar and ADNOC, is playing a pivotal role in driving this transformation.

Masdar, the UAE's renowned renewables developer, stands at the forefront of the country's efforts to promote clean energy initiatives in Central Asia. With ambitious plans to expand its renewables capacity

to 100 gigawatts by 2030, Masdar is leveraging the UAE's political influence and financial resources to propel the region towards a greener future. The company's strategic partnerships and investments in countries like Uzbekistan, Kyrgyzstan, and Kazakhstan underscore its commitment to advancing renewable energy projects across Central Asia.

Under the visionary leadership of Sultan Ahmed Al Jaber, who also serves as the CEO of ADNOC, the UAE is making significant strides towards achieving its net-zero emissions goals. ADNOC's ambitious targets to reduce Scope 1 and

Scope 2 emissions align with the UAE's broader vision of transitioning towards a sustainable and low-carbon economy. The company's investments in projects like the Absheron gas field in Azerbaijan not only contribute to the diversification of the UAE's energy portfolio but also facilitate partnerships that promote regional energy security and stability.

Beyond renewables, the UAE's engagement in Central Asia extends to the traditional oil and gas sector, further solidifying its presence in the region. Through strategic partnerships with entities like SOCAR in Azerbaijan and Turkmen Oil in Turkmenistan, the UAE is expanding its footprint and exploring new avenues for collaboration in the energy sector. These initiatives not only support the UAE's long-term energy objectives but also contribute to the socio-economic development of Central Asian nations.

The UAE's proactive approach to green investments in Central Asia is driven by a combination of economic, diplomatic, and environmental imperatives. By positioning itself as a leader in sustainable development and clean energy technologies, the UAE seeks to enhance its global reputation and influence while addressing pressing environmental challenges. Moreover, by investing in Central Asia's energy transition, the UAE aims to strengthen bilateral ties, promote economic diversification, and foster greater regional cooperation.

As the world transitions towards a more sustainable energy future, the UAE's leadership in green investments serves as a beacon of hope for Central Asia and beyond. By harnessing the power of renewable energy and embracing innovative technologies, the UAE is not only shaping the region's energy landscape but also paving the way for a more resilient and prosperous future for generations to come. In this endeavor, the UAE's commitment to sustainability and partnership remains unwavering, reinforcing its status as a global leader in the transition towards a greener world.

Furthermore, the UAE's engagement

in Central Asia goes beyond energy investments, encompassing broader economic cooperation and infrastructure development. With initiatives like the Belt and Road Initiative gaining momentum, the UAE sees Central Asia as a strategic hub for trade and investment, leveraging its geographical proximity and historical ties to foster economic growth and connectivity in the region.

One of the key drivers behind the UAE's growing presence in Central Asia is its recognition of the region's immense potential as a gateway to emerging markets in Europe and beyond. By investing in infrastructure projects like ports, railways, and logistics hubs, the UAE aims to position itself as a key player in facilitating trade and commerce between East and West.

Moreover, the UAE's focus on innovation and technology transfer presents opportunities for Central Asian countries to leapfrog traditional development pathways and embrace the digital economy. Through initiatives like the UAE's Global Green Growth Institute, which promotes sustainable development and climate resilience, the UAE is supporting Central Asian nations in their quest for inclusive and sustainable growth.

The UAE's leading role in green investments is reshaping Central Asia's energy landscape and driving economic transformation in the region. By leveraging its expertise, resources, and strategic partnerships, the UAE is not only advancing its own interests but also contributing to the prosperity and well-being of Central Asian nations. As the world looks towards a more sustainable future, the UAE stands ready to continue its leadership in promoting clean energy and sustainable development across Central Asia and beyond.

**Dania Saadi**  
<https://agsiw.org/>

## Bahrain Launches Second-Largest Solar Project



Bahrain has taken a significant leap toward embracing clean and sustainable energy solutions with the launch of its second-largest solar power project situated at Dragon City. This move underscores Bahrain's commitment to slashing its carbon footprint and embracing eco-friendly practices for the next quarter-century.

Led by Vitol Bahrain, the completion of this project within just 18 months reflects a concentrated push to bolster Bahrain's renewable energy infrastructure. Kieran Gallagher, Managing Director of Vitol Bahrain, underscored the company's enduring presence in Bahrain spanning over four decades and its unwavering dedication to curbing carbon emissions. Gallagher emphasized Vitol's proactive engagement in tendering processes for additional projects not only in Bahrain but also across the wider region, illustrating a proactive stance towards sustainable energy initiatives.

The inauguration ceremony, graced by the presence of Dr. Mohammed bin Mubarak Bin Daina, Minister of Oil and Environment and Special Envoy for Climate Affairs, underscores the government's support for renewable energy ventures. Dr. Bin Daina lauded the collaborative efforts of Vitol Bahrain and its partners, recognizing the significant role of such endeavors in furthering Bahrain's sustainability objectives.

The solar plant at Dragon City boasts a capacity of 5.7 MW, making it the largest solar carport plant in Bahrain and the Kingdom's second-largest solar undertaking. Over the ensuing 25 years, it is projected to generate a staggering 9,000,000 kWh of clean renewable energy annually, thereby substantially curtailing the nation's carbon footprint.

Eng. Ahmed Ali Alammadi, CEO of Diyar Al Muharraq and a board member of Dragon City, stressed the project's alignment with the company's pledge to nurture environmentally conscious practices.

The collaboration among Vitol Bahrain, Diyar Al Muharraq, and Dragon City serves as a testament to the effectiveness of public-private partnerships in propelling sustainable development initiatives. Kieran Gallagher expressed optimism for forthcoming collaborations aimed at propelling Bahrain's energy landscape forward and championing environmental stewardship.

The Dragon City solar project marks a pivotal milestone in Bahrain's quest for renewable energy adoption, spotlighting the nation's unwavering commitment to environmental sustainability and energy sector innovation.

**By Pooja Chandak**  
<https://solarquarter.com/>

## Germany's Ambitious Renewable Energy Goals

Germany's journey towards renewable energy has been marked by significant strides and ambitious targets, with the government aiming to source 80 percent of its electricity from renewables by 2030. Economy Minister Robert Habeck has expressed confidence in the achievability of this goal, citing positive trends and the country's technical capabilities. Speaking at a conference on structural economic change in former coal regions, Habeck emphasized the importance of societal unity and determination in driving this transition forward.

The momentum towards renewable energy expansion in Germany is palpable. In 2023, the country reached a milestone by generating over half of its electricity from clean sources such as wind and solar power. This achievement reflects years of concerted efforts to invest in renewable infrastructure and streamline bureaucratic processes. Habeck highlighted the need to build upon this progress and accelerate the deployment of more efficient renewable technologies to meet the 2030 targets.

An essential aspect of Germany's energy transition is the expansion and modernization of its grid infrastructure. Habeck emphasized the critical role of efficient grid expansion in supporting the integration of renewable energy sources into the electricity grid. He proposed potential cost-saving measures, such as prioritizing the deployment of underground transmission cables. However, he cautioned against delays in implementation, urging stakeholders to collaborate effectively to revise grid expansion plans.

Despite progress in renewable energy adoption, Germany continues to face economic challenges exacerbated by external factors such as the COVID-19 pandemic and geopolitical tensions. While these factors have contributed to a decline in coal-fired power production and greenhouse gas emissions, they have also underscored the importance of decarbonization technologies in revitalizing economic growth and ensuring energy security.

Addressing concerns from coal-dependent regions, Habeck reaffirmed the government's commitment to providing compensation and support for affected industries. Discussions with the European Commission regarding state aid rules and compensation packages are ongoing, with Habeck pledging to expedite the process to ensure a fair transition away from coal.

Recognizing the importance of engaging diverse stakeholders in the transition, Habeck met with representatives from the German Farmer Association to address concerns and streamline support for farmers. He emphasized the need to find solutions to economic challenges in regions



Wind turbines in Brandenburg

like Lusatia to counteract the influence of anti-democratic voices exploiting discontent.

Despite these efforts, far-right groups such as the Alternative for Germany (AfD) continue to exploit grievances over energy and climate policies to advance their political agenda. The surge of far-right sentiment, particularly in eastern states, poses a significant challenge to democratic parties ahead of upcoming elections.

Lusatia serves as a microcosm of the broader transition towards a decarbonized energy system, highlighting the importance of a 'just transition.' This concept emphasizes the need to mitigate social and economic hardships associated with the shift away from fossil fuels. While significant investments have been earmarked for Lusatia's economic revitalization, challenges remain, including demographic decline and insufficient infrastructure.

Policymakers, including Social Democrat construction minister Klara Geywitz and government commissioners for the eastern states, are actively engaged in addressing transition challenges and promoting sustainable development. However, concerted efforts are needed to improve infrastructure and connectivity to unleash Lusatia's potential as a modern energy hub.

In conclusion, Germany's ambitious renewable energy goals are within reach, driven by a combination of technological advancements and political determination. However, overcoming challenges posed by economic restructuring and far-right opposition will require sustained commitment and collaboration across society. Lusatia's experience underscores the importance of a just transition to ensure a sustainable and inclusive future for all.

By Benjamin Wehrmann  
<https://www.cleanenergywire.org/>



# Industry News

32 Events



## Media Partner Writeup 300-500 words



Middle East Energy, the region's most comprehensive energy exhibition, is all set to be an action-packed event, offering a wide range of activities and opportunities for professionals in the energy sector.

Continuing its legacy of 45+ years, Middle East Energy 2024 now in its 49th edition, is a groundbreaking event featuring a host of innovative features that will shape the future of the energy sector.

The event will be home to the Middle East Energy Leadership Summit where professionals can engage with renowned industry experts, thought leaders, and visionaries through a series of insightful sessions.

This mega event will explore five major product sectors that will showcase cutting-edge technologies, trends, and solutions gain valuable insights into the future of energy and explore the possibilities within each sector.

Alongside the leadership summit, Middle East Energy will also host Technical Seminar-A dedicated space to experience live demonstrations of the most cutting-edge technologies, prototypes, and breakthrough

innovations.

Another highlight of Middle East Energy 2024 will be the Intersolar & ees Middle East Conference, a partnership with Intersolar and Electric Energy Storage, which will be an extensive exhibition floor featuring renowned companies and leading industry players and become a part of the conversation.

The exclusive initiative called the VIP Programme for Trading will connect with over 30,000 professionals, decision-makers, and potential collaborators from around the globe. Engage in meaningful conversations, exchange ideas, and explore potential partnerships.

The Middle East Energy 2024 will be an extensive exhibition with over 1,300 exhibitors from 90 countries, which will be the epicentre of the latest technologies, products, and services in the energy sector.

Middle East Energy 2024 runs from April 16th – 18th at Dubai World Trade Centre. To secure your spot for free, please visit:

<https://middleeast-energy.me/3TYUgc4>

# Services

*34 Coming Events*



## Coming Events

### RE+

Anaheim, California, USA  
09 – 12 September 2024  
<https://www.re-plus.com/>

With 40,000 attendees from over 125 countries, 8,400 of which are C-suite executives, RE+ is one of the US's most influential renewable energy events. During the four-day event, 1350 exhibitors and over 370 sessions cover a wide range of topics pertinent to renewables space.

### Solar & Storage Live UK 2024

Birmingham, UK  
01 – 02 May 2024  
<https://www.terrapinn.com/exhibition/solar-storage-live/index.stm>

Solar & Storage Live is the largest exhibition for renewable energy in the UK. With over 30,000 attendees and 250 speakers spanning over three days, the event provides a platform to discuss pressing topics in the renewables space, such as energy security, storage, and geopolitics, while networking with peers.

### All-Energy 2024

Glasgow, Scotland  
15 – 16 May 2024  
<https://www.all-energy.co.uk/en-gb.html>

As the UK's largest low-carbon energy and full supply chain renewables event, All-Energy has been running since 2001 and brings together professionals from the full breadth of the renewable sector. Featuring exhibitors and speakers from around the world representing a diverse range of...

### Solar & Storage Live Australia 2024

Brisbane, Australia  
01 – 02 May 2024  
<https://www.terrapinn.com/exhibition/solar-storage-live-aus/>

Solar & Storage Live is the world's largest series of solar & storage trade shows organised globally by Terrapinn Limited in the UK, the US, South Africa, Egypt, Saudi Arabia, Philippines, Thailand, Vietnam... and now it's coming to Brisbane, Australia in May 2024!

### SNEC International PV Power Generation and Smart Energy Conference & Exhibition

Shanghai, China  
19 – 15 June 2024  
<https://saudi-sg.com/>

The National Convention and Exhibition Center will host the 17th edition of the SNEC International Solar Photovoltaic and Smart Energy Conference and Exhibition in Shanghai (otherwise known as the SNEC Photovoltaic Conference). The SNEC Photovoltaic Conference is one of the most influential events in Asia and worldwide.

### Enlit Asia

Kuala Lumpur, Malaysia  
08 – 10 October 2024  
<https://www.enlit-asia.com/>

Enlit Asia is an annual conference and exhibition comprising two events in the energy sector: POWERGEN Asia and Asian Utility Week. It attracts 12,000 attendees and 300 exhibitors worldwide to showcase their products, services, and solutions to help accelerate the green transition across Asia.

### Intersolar Europe

Munich, Germany  
19 – 21 June 2024  
<https://www.intersolar.de/home>

Intersolar Europe is one of the world's leading exhibitions in the solar industry, and it has been running for over 30 years. The event's tagline is "Connecting Solar Business," as it brings together solar manufacturers, service providers, project developers, start-ups, planners, suppliers...

### ASEAN Clean Energy Week

Manila, Philippines  
21 – 22 November 2024  
<https://www.aseanenergyweek.com/>

In November the SMX Convention Center Manila will host the 7th edition of ASEAN Clean Energy Week. 5000 attendees, of which 1,500 are C-suite executives will come together to discuss how to expedite the green transition in Southeast Asia, which includes some of the world's fastest-growing economies.

## General Queries & Contact Info

Launched in 2023, **energyHQ** has rapidly transformed from a B2B publication into a dynamic energy industry platform. Our comprehensive multimedia outlets—magazine, website, services, events, reports, newsletters, and online presence—cater to a global audience. Actively participating in key energy events worldwide, we offer partners unmatched exposure at exhibitions, tradeshow, and conferences. Join energyHQ as we illuminate the path forward in the evolving energy landscape!

<b>Media Kit 2024</b> Everything about energyHQ ~ Here! <a href="https://www.energyhq.world/energyHQ_Media%20Kit_2023.pdf">https://www.energyhq.world/energyHQ_Media%20Kit_2023.pdf</a>	<b>Holistic Promotional Packages (HPP)</b> From Bronze to Platinum Package ~One GPO To Rule Them All! <a href="https://www.energyhq.world/GPO%20-%20Copy.html">https://www.energyhq.world/GPO%20-%20Copy.html</a>
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## What's Next for Offshore Wind



As the global energy landscape continues to evolve, recent developments highlight both geopolitical maneuvers and technological advancements shaping the future of energy production and emissions monitoring. Reflecting on the foresight of Frank Herbert's «Dune» in understanding the significance of energy geopolitics, we examine the recent decision by OPEC+ to extend production cuts and the deployment of MethaneSAT, a groundbreaking satellite for methane emissions monitoring.

### OPEC+ Extends Production Cuts

The decision by several OPEC+ countries to prolong their production cuts through the second quarter of 2024 underscores the enduring influence of Middle Eastern oil-producing nations. While the dynamics of energy production have shifted over the decades, with the US experiencing a resurgence as a major producer, core OPEC countries like Saudi Arabia continue to wield significant control over global oil markets. The extension of production cuts is expected to impact short-term oil market dynamics, driving a drawdown in global oil stocks and potentially influencing oil prices in the coming months.

### MethaneSAT Revolutionizes Emissions Monitoring

Simultaneously, a significant leap in emissions monitoring technology comes with the successful deployment of MethaneSAT. Developed by the Environmental Defense Fund (EDF) and supported by various stakeholders, including governments and environmental organizations, MethaneSAT promises to revolutionize the detection and measurement of methane emissions. Unlike previous satellite systems, MethaneSAT offers a unique combination of high sensitivity and wide coverage, enabling the identification of facility-scale emissions across 80% of the world's oil and gas-producing regions. This advancement is poised to provide unprecedented transparency in addressing methane emissions within the oil and gas industry.

### Implications for the Energy Industry

The extension of OPEC+ production cuts emphasizes the ongoing significance of geopolitical factors in shaping global energy markets, particularly in the Middle East. Meanwhile, the advent of MethaneSAT heralds a new era of emissions monitoring, offering valuable data to inform emissions reduction efforts and regulatory initiatives. For the energy industry, these developments underscore the importance of navigating both geopolitical shifts and technological innovations to adapt to evolving market dynamics and environmental imperatives.

### Solar Industry Boom and Regulatory Changes

Beyond the realm of oil and gas, the US solar industry witnessed significant growth in 2023, with installations reaching record levels. Solar energy's increasing prominence in the US energy mix underscores the ongoing transition towards renewable sources. Additionally, the US Securities and Exchange Commission's adoption of new regulations on climate-related disclosures reflects a growing recognition of climate risks among investors and regulators, further shaping corporate strategies and disclosures.

As the energy landscape continues to undergo profound transformations, recent events highlight the intertwined nature of geopolitics, technology, and environmental concerns. From OPEC's strategic decisions to advancements in emissions monitoring technology, stakeholders across the energy sector must navigate a complex landscape defined by shifting market dynamics and evolving regulatory frameworks. Looking ahead, adaptation and innovation will be essential for addressing both the challenges and opportunities presented by these ongoing developments.

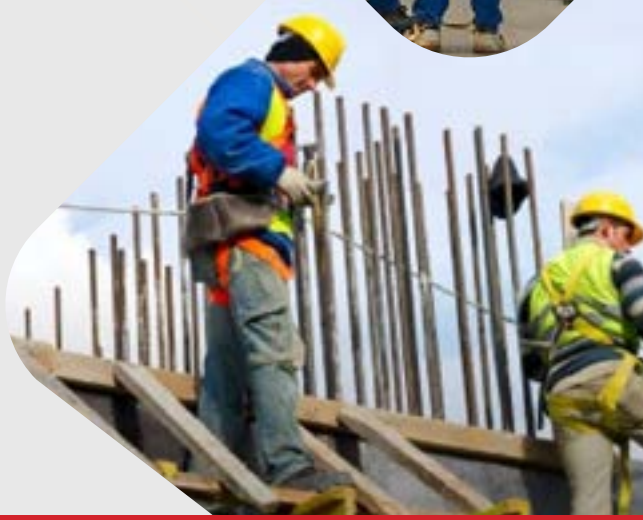
By Casey Crownhart  
[technologyreview.com](https://technologyreview.com)



constructionHQ

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