Moving Into the Future: UK Renewable Energy Report

April 2024

Gallagher

Insurance | Risk Management | Consulting

The UK aims for net-zero emissions by

2050,

fuelling the renewable energy boom.

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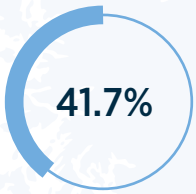

Renewables account for 41.7% of UK power, with wind taking centre stage.

2

Government policies drive investment in solar, hydrogen, battery energy storage, and other technologies.

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Floating wind farms and green hydrogen usher in a new era of innovation.

4

Lack of data, workforce shortages, and supply chain issues pose challenges.

5

Early engagement with a renewable energy insurance specialist is paramount to a project's success.

6

The UK stands at an energy crossroads, driven by environmental urgency, geopolitical uncertainty, and a clear aim: net-zero emissions by 2050. This ambitious target is propelling the nation towards a future powered by renewable energy sources.

However, there are inherent risks involved. Unfamiliar technologies, volatile markets, and complex supply chains introduce uncertainties that could derail even the most well-planned projects. Navigating these challenges necessitates a robust safety net and early planning.

This report delves into the current state of the UK's renewable energy sector, exploring its potential, intrinsic risk factors, and the crucial role insurance plays in securing a sustainable future.

The Renewable Energy Challenge

Current landscape

Driven by the net-zero and energy security goal, the sector is certainly dynamic. There are both opportunities and hurdles.

"The renewable energy sector is not without its challenges in terms of, for instance, skill sets and supply of materials. However, particular to this sector, in terms of what businesses want to deploy; what is best suited for their business, and how do they start decarbonising their organisation to get on that green journey."

Carl Gurney
Renewable Energy Director, Gallagher

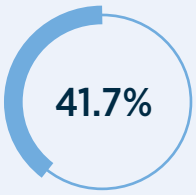
Power paradigm shift

The UK government has mandated the complete closure of coal-fired power plants by 2025, adhering to the global consensus on transitioning away from fossil fuels. The contribution of coal to the UK's electricity generation has plummeted from 40% in 2010 to around 2% in 2020.[1] Furthermore, the government has announced that coal will no longer be used to generate electricity from 1 October 2024.

The recent global energy crisis caused by the Russia-Ukraine war has exposed both the vulnerabilities of relying on imported fossil fuels and the importance of seeking energy independence. Conflicts in the Middle East are also causing disruptions in the supply chain. Avoiding wholesale pricing volatility has become urgent.

Exponential growth on the horizon

For the UK to transition to 100% renewable energy and deliver net-zero CO_2 emissions by 2050, a full range of renewable and clean energy technologies will be required.



In 2022, **renewable sources contributed 41.7%** of the total power generated in the UK.[2]

This is a massive increase considering that just over 10 years before this, in 2011, the figure had yet to reach 10%.[3]

Wind is the dominant contributor, with offshore and onshore wind farms producing 80,000 GWh and providing nearly 60% of all renewable power generation. Biomass power is the second most significant component, providing 6.9%, while solar offer 4.3% of the UK's electricity needs.[4]

While there is a relatively small contribution from other renewable technologies like anaerobic digestion, hydro and tidal plants, and waste-to-energy generation, these technologies continue to grow. They look set to contribute much more in the coming years.

Policies for change

Grid infrastructure changes have been limited in the last 30 years, primarily due to a lack of funding. However, the government is now bringing in policies, such as cap and floor support mechanisms, for long-duration energy storage projects.

Policies such as the Climate Change Act, the Net Zero Strategy, and upcoming Energy Security reviews are acting as catalysts, providing financial incentives and regulatory frameworks to accelerate the development and adoption of renewable energy sources. The power bioenergy with carbon capture and storage (BECCS) business models are seeking to ensure negative emissions by 2030.

The government allocated more than GBP2 billion to 125 mW of winning projects under the First Hydrogen Allocation Round (HAR1) in a Contracts for Difference (CfD) scheme.[5] A Second Hydrogen Allocation Round (HAR2) for up to 875 mW has also been announced with the aim of achieving 1 GW of electrolytic hydrogen production by 2025.

The leading trade body for the sector REA, believe that the UK government should now reform the Smart Export Guarantee (SEG) and provide interest-free loans to lower the energy bills for businesses and households that install on-site renewables and clean tech.

Future outlook

Technological advancements

The UK is pushing the boundaries in renewable energy generation. With such a unique geography, the country has the potential to produce renewable energy from different sources.

Floating wind farms are no longer a futuristic dream, and the UK is leading the way on this front. The Kincardine wind farm in Scotland, the world's largest floating wind farm, has been operational since 2021 and is generating enough electricity to power 50,000 households.[6]

Hydrogen, a clean and versatile energy source, could revolutionise transportation, heating, and industry. Green hydrogen, produced from renewable energy such as wind farms and solar, holds immense promise, and the UK is a pioneer in leveraging this technology. The world's first commercial-scale green hydrogen electrolyser in Teesside, UK, may bring about the potential to decarbonise hard-to-electrify sectors.[7]

Anaerobic digestion is another growing source of renewable energy. The Department of Environment, Food, and Rural Affairs (DEFRA) has made anaerobic digestion its preferred food waste treatment, instead of landfill or incineration. The process can produce gas and electricity and provide fertiliser as a byproduct.

"Long duration energy storage systems and EV charging stations need to be developed to meet demand, but these are huge infrastructure changes that require government impetus. Loss control for projects needs to be included in the build because retrofitting down the line is not only costly, the downtime causes business interruption."

Chris Noah
Renewable Energy Managing Director, Gallagher

Insuring the future: Navigating risks in the UK's renewable energy boom

While promising a bright future, the UK renewable energy sector presents a complex risk landscape for insurers. From lack of historical data, emerging technologies, and inadequate workforce to evolving regulations, understanding and mitigating these risks is crucial for companies seeking to invest, develop, or be proactive partners in this dynamic field.

Technological risks

The renewable energy sector is complex and constantly evolving. While solar installations, both ground and roof mounted, and batteries, to a certain extent, are now familiar to insurers, emerging technologies like offshore wind farms and hydrogen plants still carry inherent uncertainties regarding performance, reliability, and long-term durability.

Volatility in pricing and a lack of historical data make it harder to underwrite these risks and gauge the appropriate price. The sector requires long-term stability, and a crucial factor in achieving this is through the right insurance coverage. However, forecasting where premiums might be from year to year in this sector is complicated, and significant loss events can shock the entire industry.

The contractor conundrum

The UK's surging renewable energy sector faces a critical bottleneck: the need for experienced engineering, procurement, and construction (EPC) contractors. Developers are turning to European firms to meet ambitious project deadlines, presenting new insurance challenges.

Many overseas contractors operate in territories unfamiliar to UK insurers, creating challenges in assessing their experience, track record, and risk evaluation. Less experienced players might enter the market in a rapidly growing sector, requiring more skills or resources to manage complex projects effectively.

Supply chain mayhem

Securing essential materials for battery storage, specialised wind turbine blades to solar panel components and rare earth minerals, is becoming increasingly difficult. Budgeting is arduous amid global trade tensions, logistical bottlenecks, and fluctuating costs.

Procuring specific spare parts can be a time-consuming ordeal. Finding the necessary parts and skilled labour simultaneously can pose huge difficulties. Even when everything is lined up, complex manufacturing processes and the limited availability of specialised technicians can lead to extended and unforeseen downtime. This significantly impacts project economics and makes accurate risk evaluation challenging for insurers.

"A lack of historical data regarding the performance of renewable energy technologies has caused insurers difficulty in terms of pricing and risk profiling. With new technologies now entering the sector, such as LDES and hydrogen; coupled with larger more complex sites being developed, expertise and knowledge sharing is paramount to ensure long-term insurance security. Business continuity plans, contractual relationships with OEMs and system resilience will all compliment a robust insurance programme. This will in turn help mitigate supply chain constraints and ultimately protect your investment."

Thorfinn Stout
Account Executive, Renewable Energy, Gallagher

How Gallagher Helps

The renewable energy sector in the UK is as volatile as it is exciting. There is tremendous innovation. And it is clear that insurance plays a vital role in helping the sector adapt to volatility, assisting businesses to reach the net-zero target.

Early engagement is critical. This cannot be emphasised enough. This allows projects to be fully assessed in terms of risks, and mitigation of these concerns, to prevent costly downtime or investment in projects that are effectively uninsurable due to the risk factors involved. Gallagher has a local team with extensive experience serving clients in the renewable energy industry. Our global network of experts has in-depth knowledge of the sector's intricacies, including emerging technologies, regulatory landscapes, and risk profiles.

Gallagher has access to various insurance markets and can secure optimal coverage for diverse project risks, but not limited to property damage, supply chain disruption, business interruption, emerging technology-specific risks, and cyber risks. Our commitment to research and development keeps us at the forefront of this industry's trends and emerging technologies.

"We love to get involved with clients as early as possible. Help them build the necessary plans and loss controls into their designs. This ensures the projects are insurable and as such bankable and in addition, we can then provide long-term insurance stability. This coupled with fostering industry and client knowledge along with partnering clients with the right cultural approach to risk makes projects attractive to a wider pool of insurers."

Carl Gurney
Renewable Energy Director, Gallagher

"This report is a positive summary of the current state of play of renewables with the huge potential opportunities on offer in the sector. Ensuring adequate insurance cover is essential for a growing, sustainable renewable energy and clean technology sector in the UK".

Frank Gordon
Director of Policy, Renewable Energy Association

Citations

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[6]Durakovic, Adnan "World's Largest Floating Offshore Wind Farm Fully Operational", OffshoreWind.biz, 19 Oct. 2021
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