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EXTRACTING THE RISKS FROM THE TRANSITION TO RENEWABLE ENERGY



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Member of **Legalign Global**

The need to transition from fossil fuels to renewable energy as part of wider climate action cannot be exaggerated. For that to happen, the transition will be on a scale not previously seen, which will give rise to numerous risks, some well-known, others less so. Businesses and insurers should be identifying risks associated with the materials and infrastructure required for the rapid growth in renewable energy projects, particularly with increased investment expected in the coming years.

In the UK, manifesto promises to make the country a clean energy superpower by the new government have heralded the lifting of effective bans on new onshore wind developments and expected announcements of infrastructure to support renewable energy supplies. The Supreme Court ruling in *Finch v Surrey County Council* also perhaps limits the options for new UK fossil fuel projects, finding that consent must only be granted by authorities in full knowledge of the environmental cost, which includes 'downstream' and 'indirect' emissions.

Similar steps are underway in European nations such as Germany. Christina Eckes, partner at Legalign Global alliance firm BLD Bach Langheid Dallmayr, notes that the German government is also progressing transition measures: "The need for a renewable energy system is the driving force for important investment decisions, grid expansion, the promotion of hydrogen projects and the construction of wind energy and photovoltaic plants."

These are all positive steps but consideration must be given to whether the transition to renewable energy is as 'green' as it should be, and the potential impact of that for businesses and insurers.

Toby Vallance, partner and renewables lead at DAC Beachcroft in London explains:

"Although the sources of renewable energy such as wind and solar are in effect limitless, the materials needed to harness them are not. Insurers and businesses involved in the renewables supply chain, from the mining and extraction of rare earth materials through to the disposal of disconnected materials, need to be mindful of their risk and possible corporate obligations."



Mining and extraction

Wind and solar energy can be harnessed through specific equipment and infrastructure that must be created using raw materials. Aluminium, copper and steel are necessary for most renewable infrastructure, with other rare earth materials essential for solar photovoltaic panels and for wind turbines. Similarly, with battery energy storage systems (known as BESS), lithium-ion battery technology is increasingly being used as a way to manage power produced by renewable energy sources, with demand exceeding current supply levels.

From a pure resource assessment, the MIT Technology Review asserts that “in the most ambitious scenarios, the world has enough [raw] materials to power the grid globally with renewables”. So far, so good.

However, the supply chains needed for these critical materials, specifically their mining, extraction and integration, are not without risk. Broadly, there are various geopolitical issues and tensions involved in the exploitation of rare earth materials, such as longstanding concerns around China’s position as both a leading producer and user of these raw materials, with other significant reserves residing in unstable nations or geographically remote locations.

How rare and critical minerals are obtained has been an increasing focus for businesses, governments and supranational organisations. In 2020, the EU Commission acknowledged the “main global producers and suppliers of critical and some non-critical raw materials are highly concentrated in a few countries and in some cases with a poor level of governance.” The EU subsequently passed the Critical Raw Materials Act, coming into force in May 2024, aimed at securing a diversified supply of these materials into the EU. The previous UK Government published a Critical Minerals Strategy highlighting similar dependency risks in the UK. It remains to be seen what steps the new government will take.

Despite these efforts to diversify the sourcing of rare earth materials for renewables, there is a largely unacknowledged issue running contrary to the ‘green’ credentials of these energy sources. The mining and extraction of rare earth materials is not carbon-neutral and may itself generate significant carbon emissions and create various additional risks.

Scope for claims

Taking a broad view of supply chains, private companies involved in mining and use of rare earth materials for renewable infrastructure will need to consider relevant laws and regulation, widening the scope for claims and litigation. In Europe, regulations introduced by the Corporate Sustainability Reporting Directive (CSRD) and Corporate Sustainability Due Diligence Directive (CSDDD) are of importance to those companies in scope, including UK companies with EU subsidiaries within scope. National laws, such as the French duty of vigilance, will also need to be considered by companies.

Litigation or allegations relating to breaches of sustainability or due diligence regulations could generate financial losses for companies. These losses may not only be direct, but also as a consequence of reputational harm. Those financial losses could generate claims from shareholders who have been adversely affected, leading to claims under directors and officers policies.

Climate activists are also pursuing actions against private companies based on supply chain concerns. In France, activists in *Envol Vert v Casino* have alleged that the supermarket chain Casino is responsible for various environmental harms and human rights violations in Brazil and Colombia through activities in the cattle industry, which has induced deforestation activities.

These activities, according to the action, are subject to the French duty of vigilance and a comprehensive plan should be in place, as well as seeking damages for Indigenous groups affected. It does not take much to foresee similar actions being brought against companies in relation to the supply chains associated with the rare earth materials required for renewable energy.

It is also clear that worker protection and corporate governance should represent a significant concern for businesses and insurers involved in mining and extraction projects relevant to renewables. Health and safety and governance standards vary widely across jurisdictions, posing a risk to workers and local residents, as well as the potential for further environmental damage. Although unrelated to renewable energy, the Mariana dam disaster in Brazil resulted from failure at a mining complex and has led to the largest ever group action in British legal history.

For insurers, mining and extraction processes are a challenging risk to underwrite, with potentially significant losses to property and machinery and associated business interruption claims. Furthermore, these processes may involve dangerous working conditions for those employed by the organisations responsible, and also raise questions around the human rights of inhabitants of these locations.

A just transition, just not in my back yard?

The UK Foreign Affairs Committee report on critical minerals dependency emphasised that the energy transition must support the needs of developing countries, with the United Nations also launching a Panel on Critical Energy Transition Minerals. Offering remarks at the launch of the panel, the UN Secretary-General, Antonio Guterres, commented that “the lights are going out on the fossil fuel era”. However, though the renewable transition offers opportunities for mineral-rich countries, those countries must not be reduced to simply being suppliers of these raw materials to the cost and detriment of the local environment and people. Inevitably, there will be conflicts between commercial interests, the need for rare earth materials and inhabitants in certain locations, with the potential to generate litigation.

The public face and profile of the umbrella term ‘climate litigation’ has come from well-publicised actions such as the European human rights action in *Verein KlimaSeniorinnen v Switzerland* and the unsuccessful action brought by climate activists against directors in *ClientEarth v Shell*.

However, a small but increasing number of actions are focused on the issue of a ‘just transition’. Actions will occur for a variety of reasons, against both the authorities responsible for authorising specific activity and private companies undertaking those activities. These actions could be said to have parallel interests to those seen in *Finch*, albeit focusing on renewable energy sources.

In Chile, a nation rich in lithium, the Regional Government of Atacama has sued the national Ministry of Mining for awarding licences for lithium production without public participation or assessing the impact on the local environment. A number of actions have already been issued in the US, including challenges to lithium extraction projects in Arizona and California, citing Indigenous and wider concerns about water usage.

Although these challenges involve decisions by national or state authorities, private companies and insurers involved in these lithium extraction projects will also need to be mindful of associated risk, such as potential environmental damage and possible litigation.

Fossil fuel extraction projects have resulted in environmental damage, leading to various pieces of litigation in the UK. Claims such as *Okpabi v Royal Dutch Shell* have generated considerations around parent-company liability for subsidiary companies (piercing the corporate veil) and will potentially have an impact if similar environmental damage is caused by rare earth material mining.

Beyond mining and extraction, litigation relating to the placement of renewable energy infrastructure is also likely to increase in coming years. However, the basis for these complaints may vary. In Portugal, a local community has issued an action in relation to the building of a solar farm by a private company, alleging that that project will cause water shortages, biodiversity loss and added health risks.

These issues will not be limited to developments outside the UK. Toby Vallance advises: “The development of new power grids to transmit energy from green energy sources is likely to generate complaints from rural communities here. Increasingly conspicuous infrastructure will be needed. The new government has already been warned by the Resolution Foundation that the NIMBY (not in my back yard) factor will represent a significant challenge to net-zero targets as local challenges to new renewable infrastructure slows or prevents decarbonisation.”

For companies, the failure of planned investments or developments involving renewable infrastructure as a result of local challenges could result in litigation from shareholders affected by a company’s loss of value. Whether such litigation will be successful remains to be seen, but insurers must be mindful of such possibilities.

Looking beyond the risk of litigation associated with the installation of renewable infrastructure, what are the risks associated with the maintenance and disposal of renewable energy infrastructure?

Recycling and disposal

Is it right to assume that decommissioned wind turbines and solar panels are reusable and in keeping with their green credentials? According to Toby Vallance:

“The push for renewable energy arguably walks hand-in-hand with efforts to promote the ‘circular economy’, which aims to use resources more efficiently through repairing, refurbishing and reusing existing products. However, there could be said to be a disconnection between the push for renewables and the circular economy, at least as matters currently stand.”

Renewable energy infrastructure requires regular maintenance, and for older wind turbines or materials in remote areas, the costs will be higher. For early renewables projects, some equipment will be reaching end-of-life. However, the recycling of components, especially for complex systems such as wind turbines, is technically challenging and can be expensive. Not all materials can be recycled economically, leading to additional disposal costs.

Christina Eckes confirms that:

“Dealing with the challenges associated with the disposal and recycling of plant components is an important aspect of minimising long-term environmental risks and increasing resource efficiency.”



Recycling technology in this area is predicted to develop at an advanced rate to follow expectations of increased renewable energy reliance and the circular economy. A 2020 report on wind turbine blade circularity by WindEurope highlighted that 85% to 90% of a turbine’s total mass can be recycled.

However, the composite nature of the wind turbine blades makes them more challenging to recycle. Although recycling technology exists for composite materials, current low volumes of composite blade waste make recycling this stream of waste challenging from a financial and business perspective.

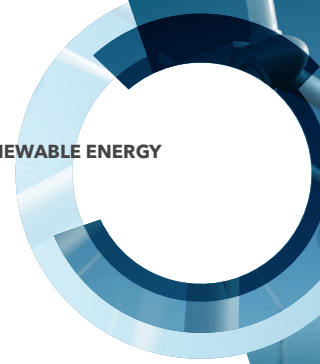
Similarly, although a significant percentage of the materials used for solar panels can be recycled, composite materials again pose a specific challenge. Eckes notes that “There is a growing risk that disposal costs will increase in the future as the amount of end-of-life equipment increases and regulations for environmentally sound disposal become stricter.”

For those organisations in the supply chain for renewable infrastructure, these disposal measures will be an additional risk to consider.

In the event that the mismanagement of waste disposal leads to environmental contamination, claims against companies involved in the recycling process will inevitably follow. Businesses will need to ensure that they have adequate risk management practices in place.

Furthermore, in expectation of increasing recycling capacity, insurers will need to ensure that businesses have adequate processes in place to manage the fundamental issue of hazards arising when undertaking the recycling processes and waste management. The processes needed to recycle photovoltaic cells and turbine blades, such as pyrometallurgy (using heat) and hydrometallurgy (using solvents) could create fire and chemical hazards on sites where such recycling is being undertaken. Eckes comments: “Additional unexpected environmental impacts may occur during disassembly, such as spills of lubricants or other chemical substances that could contaminate soil and water.”

Insurers of organisations involved in waste disposal or recycling of these products need to be aware of the increased risk to property, the environment and the associated workforce.



A seismic shift

There is no debate that the transition to renewable energy is fundamental to mitigating climate change. As with any other seismic shift in the risk landscape, careful consideration needs to be given by all stakeholders in the insurance ecosystem to identify and manage new risk exposures as they develop. With the move away from reliance on fossil fuels, we can expect to see a change in focus around the entire supply chain for renewable projects. Given the output from renewable energy is green, the expectation will be that the same is true for every aspect of renewables. Managing that expectation, and the risks which may arise where that expectation is perceived as not being met, should form part for the ambit of risk manager, broker and insurer discussions, as the transition to net zero forges ahead.

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