

THE SUSTAINABLE INVESTOR

DUSFS MARKET REPORT: EDITION 1



DUSFS 2024/25

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NOTES FROM HEAD OF ESG RESEARCH

Jonah Vos

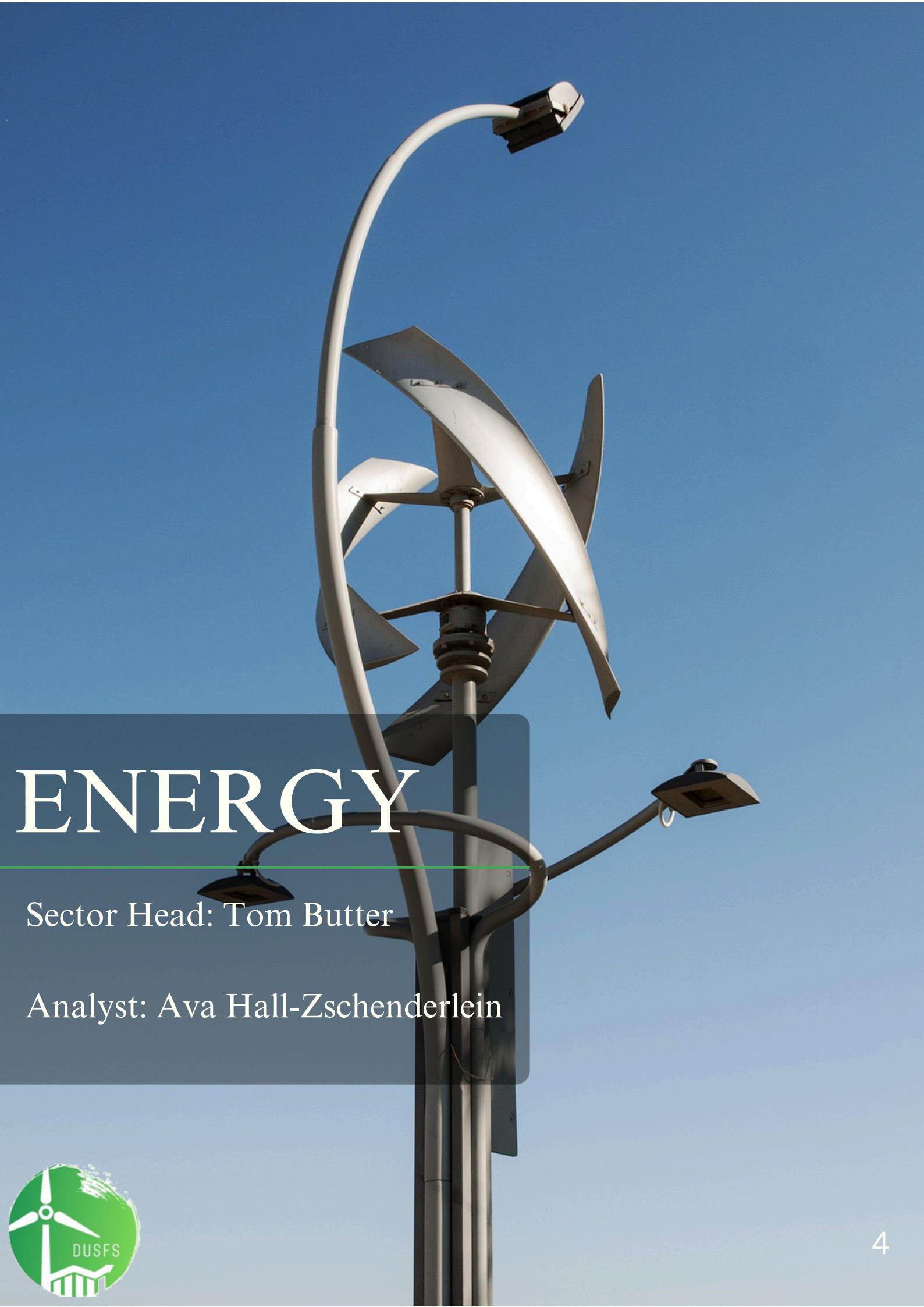
Welcome to the first edition of the 2024/25 *Sustainable Investor*.

This issue explores transformative ideas across energy, policy, technology, healthcare, and commodities, equipping you with essential insights for navigating the sustainable investment landscape. Our articles cover the strategic role of Long Duration Energy Storage (LDES) in bolstering energy security, delve into the EU Deforestation Regulation and its complex impact on global trade, and highlight sustainable practices in healthcare through the SusQI framework.

We also examine how geoengineering and climate risk insurance are reshaping approaches to climate resilience. Each piece reflects our commitment to delivering in-depth, forward-thinking perspectives as we strive toward a more sustainable future.

We hope you enjoy the journey!





ENERGY

Sector Head: Tom Butter

Analyst: Ava Hall-Zschenderlein



HEAD OF SECTOR

Tom Butter

The global energy sector is rapidly transforming, with investment in renewable energy reaching a record \$1.3 trillion in 2022 and expected to grow by 12% annually. Solar and wind energy continue to lead the charge, together accounting for over 80% of new capacity additions globally, while green hydrogen and advanced battery storage are set to drive the next wave of growth. Solar alone is projected to surpass coal as the world's largest source of power by 2027. In parallel, the sector is seeing strong policy support, with countries like the U.S. committing \$370 billion to clean energy through the Inflation Reduction Act and the EU pushing its Repower EU plan to reduce dependency on fossil fuels. However, with an election right around the corner this could all be about to change. Furthermore, conflicts and natural hazards continue to put pressure on global energy markets. Energy is also increasingly becoming a catalyst for conflicts, as resources dwindle, geopolitical stability may increasingly depend on nations to achieve energy self-sufficiency. For investors, the sector's shift toward renewables, bolstered by these commitments, signals robust opportunities in climate-aligned energy projects and the broader green economy.

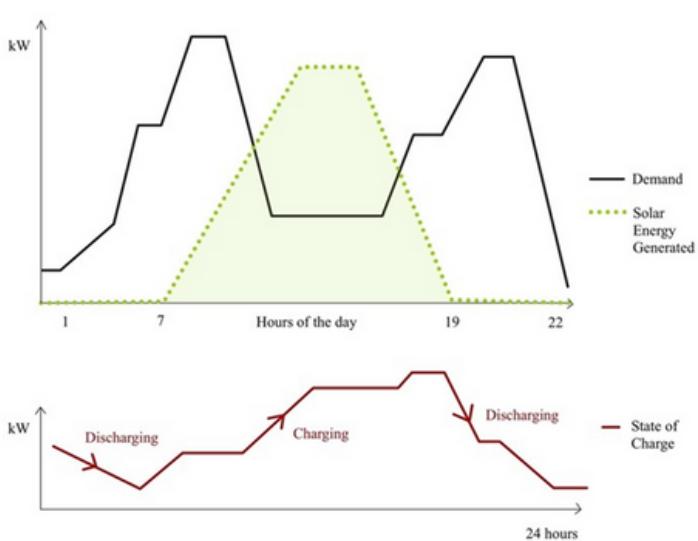


The Long Game in Energy

Strengthening National energy Security through Public-Private Partnerships in Long Duration Energy Storage (LDES)

Ensuring the reliability and resilience of renewable energy sources is essential for a successful energy transition. At the same time, achieving energy independence has become increasingly important for geopolitical strategy and economic stability. Here, Long Duration Energy Storage (LDES) plays a vital role in providing a steady supply of energy for intermittent renewable sources, such as wind and solar. However, high upfront costs and long payback periods have presented significant barriers to private sector investment in these technologies for the last 40 years. In response, the UK Government's recent scheme, as of October 2024, proposes a cap-and-floor investment support scheme, utilising public-private partnerships (PPPs) to attract private capital. This demonstrates the importance of PPPs in effectively financing energy storage infrastructure to facilitate decarbonisation and strengthen national energy security.

Role of Energy Storage in Meeting Demand



The unique dynamics of supply and demand in the energy sector have led to a continued reliance on fossil fuels. Where renewable energy sources do not always align with peak demand periods, fossil fuel plants are used for backup power and grid stability. Here, LDES technologies present an innovative solution by storing excess renewable energy generated during peak production to be released during

periods of high demand (see illustration). These include hydro storage, flow batteries, and compressed air storage, which act as large-scale energy reserves. This is not only important for energy security, by increasing grid stability and flexibility, but can also protect against the price volatility of the gas market.

The Long Game in Energy

Strengthening National energy Security through Public-Private Partnerships in Long Duration Energy Storage (LDES)

The UK's cap-and-floor scheme is a prime example of a PPP designed to stimulate private investment in energy storage infrastructure, by setting a minimum (floor) and maximum (cap) revenue threshold. If revenue falls below the floor, the scheme provides payments to developers to cover the shortfall, which boosts investor confidence by significantly reducing financial risk. This safety net is especially important in early stages of development. When projects are yet to generate sufficient revenue to sustain operations, they can fall victim to the 'Valley of Death', which is a critical phase where projects may be abandoned if they fail to commercialise. However, if revenue exceeds the cap, developers share profits with consumers, allowing the benefits of high performing projects to be realised by the public. Here, the UK's energy regulator, Ofgem, ensures fairness and transparency in the profit-sharing process. This demonstrates how aligning public resources with private expertise in PPPs can facilitate emerging sustainable technologies, such as LDES.

Financing LDES through PPPs can have significant implications for the UK's energy independence by reducing reliance on imported fossil fuels, which are vulnerable to global price fluctuations and supply chain issues – as highlighted by the price surges of the global energy crisis in February 2022, induced by Russia's invasion of Ukraine. Thus, in an era where energy has geopolitical significance, the UK's investment in LDES strengthens its position as a secure nation, whilst also making progress towards the green energy transition. Energy Minister, Michael Shanks emphasised the impact of this investment in boosting energy security and protecting household bills in a "mission to make Britain a clean energy superpower".

Overall, the UK's cap-and-floor scheme showcases the potential of public-private partnerships to enhance energy independence and contribute to a sustainable future. By supporting Long Duration Energy Storage through a revenue sharing model, the UK offers a blueprint for other countries to strengthen national security and sustainability efforts through government and industry collaboration.



POLICY

Sector Head: Robin Guthe

Analyst: Imogen Burton



HEAD OF SECTOR

Robin Guthe



The UK government's recent Budget introduces several measures toward net-zero goals, but a lack of a comprehensive policy framework may hinder progress and increase fiscal risks. Chancellor Rachel Reeves emphasized the importance of adhering to the Office of Budget Responsibility's (OBR) advice, yet the OBR's September 2024 report warns that delayed climate action could decrease the UK's real GDP by 5% if global temperatures rise more than three degrees. Without clear policies and timelines, the UK risks further economic setbacks.

The Budget raises the energy profits levy rate, proposes legislation in the 2023-25 Finance Bill, and allocates £3.9 billion for carbon capture and storage (CCUS) projects in 2025-26, alongside £20 billion pledged for CCUS development. Although these are positive steps, gaps remain in implementing the International Sustainability Standards Board's recommendations on sustainability reporting and mandating transition plans—policies crucial for business alignment with net-zero goals.

Renewable energy expansion features strongly, with the recent lifting of the onshore wind ban, approval of four major solar projects, and a record 131 clean energy projects supported through the 'contracts for difference' auction. Furthermore, £2.7 billion has been allocated for the Sizewell C nuclear project, with an investment decision due in 2025. Additionally, £125 million has been committed to launching GB Energy in Aberdeen. However, to drive substantial business investment, more detailed guidance and urgent policy actions are needed, particularly for regulatory and sustainability frameworks

The EU Deforestation Regulation: Why the Delay?



Last Wednesday, in a move that sparked mixed reactions, European Union ambassadors announced a delay in the implementation of the EU Deforestation Regulation (EUDR), with a new enforcement date set for December 2025. Initially agreed upon in June 2023, the EUDR aims to address one of the most pressing contributors to climate change: deforestation. As the second largest source of greenhouse gas emissions after fossil fuels, deforestation has a profound impact on global carbon levels. The regulation mandates that companies importing high emission products like beef, coffee, palm oil, and timber must verify that their supply chains do not contribute to deforestation. Companies failing to comply will face substantial fines, underscoring the EU's commitment to using regulatory levers to drive global environmental responsibility.

Under the revised timeline, large companies must comply by December 2025, with smaller firms given until June 2026. Products are deemed "deforestation-free" if they originate from land that has not been deforested after 31st December 2020. The postponement is a response to pressure from major agricultural exporters such as Brazil and Malaysia, allowing businesses more time to restructure supply chains to meet the EUDR's stringent requirements.

The delay has received mixed reactions. Supporters argue that it gives companies, especially in agriculture-dependent nations, time to adjust without excessive economic strain. For countries like Brazil and Malaysia, which heavily rely on EU markets, the law could act as a trade barrier, impacting small-scale producers who may struggle to meet compliance requirements.

The European Commission reasoned that the delay will "give legal certainty, predictability and sufficient time for a smooth and effective implementation of the rules, including fully establishing due diligence systems covering all relevant commodities and products". The word "inevitable" has been used by the Agricultural Industries Confederation (AIC) to describe the news, on account of the "concerning lack of clarity over the policy". Critics, however, view the delay as a setback for -

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The EU Deforestation Regulation: Why the Delay?

urgent climate action. Environmental advocates argue that each year of inaction worsens deforestation, which directly undermines the EU's climate commitments. Technological solutions for compliance, such as satellite monitoring and supply chain audits, already exist, raising questions about the necessity of further delay.

"The EUDR was agreed in December 2022, and it's inexcusable that the Commission took so long to issue the supporting documents for the implementation of the law" says Greenpeace EU Forest policy director.

The EUDR reflects a trend in holding companies accountable for the environmental impacts of their supply chains. By setting high standards for imported goods, the EU could influence other global markets, pushing them toward sustainable practices regardless of local regulations. This aligns with the EU's role as a global environmental policy leader.

However, it also raises monetary issues for the major companies who export to the EU whilst relying heavily on deforested land for their production, of which there are many. Developing countries may struggle to comply with stringent standards without financial or technical assistance, highlighting the need for international cooperation to support sustainable development. Wealthier nations could play a crucial role in assisting these countries, helping them balance economic growth with environmental protection.

While the delay offers businesses a clearer path to compliance, it also places responsibility on the EU to ensure that the regulation is enforced robustly once it takes effect. The EUDR represents a significant step towards the reduction of global deforestation, albeit delayed but still essential for preserving forests and combatting climate change. Ultimately, the postponed EUDR implementation underscores a crucial message: the EU remains committed to environmental preservation, even if the policy now takes effect a year later than planned.

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HEALTHCARE

Sector Head: Ryan Jones

Analyst: Max Wynn



HEAD OF SECTOR

Ryan Jones

The World Health Organisation (WHO) defines a Sustainable Healthcare System as ‘a system that improves, maintains or restores health, while minimising negative impacts on the environment and leveraging opportunities to restore and improve it, to the benefit of the health and well-being of current and future generations’. Healthcare networks around the world vary widely in structure and funding, yet they all contribute significantly to global emissions. For example, the NHS contributes to 5% of the UK’s annual carbon emissions, underscoring the importance of extended sustainability commitment and rapid developments in low-emission hospitals, technology and treatments. In the wake of the Labour government’s Autumn Budget allocation of an additional £22 billion to health and social care, investment in efficient, net-zero infrastructure is imperative.

Private sector innovation, especially within pharmaceuticals and life sciences, will also be pivotal, as advancements in medical technology and operational efficiency have the potential to reduce environmental impacts substantially. Looking to the future, coordinated efforts and sustained innovation must be applied internationally across healthcare systems to ensure a truly sustainable and global transformation that aligns with ambitious commitments like the NHS’s 2045 net-zero goal.

The Sustainability in Quality Improvement

Integrating Sustainable actions into Healthcare practices

The SusQI Academy is a service provided by the Centre for Sustainable Healthcare (CSH), offering continuous professional development (CPD) training to embed sustainability into healthcare practices. It functions as an external support program with the goal of achieving sustainable patient care. In the UK, we focus on how these values are implemented within the NHS; however, organisations worldwide adopt various approaches based on departmental needs and the scope for reducing waste and carbon footprints.

According to the SusQI website, the academy develops outcomes that assess environmental, social, and economic impacts to determine sustainable value. SusQI advocates for the CSH's four principles of clinical practice:

Prevention is the first principle, emphasising the importance of helping individuals maintain their health and stay independent of healthcare for as long as possible. This approach reduces the demand on hospitals and general practitioners, as fewer resources are required due to lower patient inflow. In 2018, the Department of Health & Social Care released a strategy to address the UK's major health issues such as rising levels of obesity, mental illness, age-related conditions like dementia, and long-term diseases like diabetes and asthma—which place an extreme strain on the NHS. According to the NHS website, which receives an estimated 2.1 million visits daily, the government is pushing for advancements in data and technology to empower citizens in managing their health and prevent problems proactively. Prevention is particularly relevant in low-income countries where malnutrition and obesity are surging, and healthcare resources are severely limited, often preventing access to medical assistance altogether. The Personalised Prevention team's newly appointed Government Champion has outlined a digital National Prevention Scheme to support this vision.

Patient Empowerment and Self-Care is the second principle and works closely with prevention. Encouraging people to take responsibility for their health empowers them to protect their well-being, benefiting the NHS, which recorded around 600 million patient contacts across its organisation in the 2023-24 year alone.

Max Wynn

The Sustainability in Quality Improvement

Integrating Sustainable actions into Healthcare practices

The third principle is Lean Systems, which aim to maximise output while minimising input, reducing unnecessary waste. In healthcare, this could involve redesigning patient rooms to include electronic record-keeping systems, enabling healthcare providers to spend more time with patients. Lean systems focus on eliminating processes that do not contribute to patient satisfaction or service quality, a particularly challenging task in healthcare where life-saving measures are often necessary. Redesigning labour-intensive processes and innovating in single-use tools, such as gloves and needles, are essential to reduce the significant waste produced by healthcare systems.

Finally, Low-Carbon Alternatives address the need to reduce the carbon footprint of healthcare without compromising treatment quality. This includes options like reusable PPE and surgical instruments. Despite the availability of reusable solutions and modern sterilisation methods, the NHS alone generates approximately 156,000 tonnes of clinical waste annually, according to the Department of Health and Social Care as of October 2024. Implementing low-carbon alternatives across the board can meaningfully decrease the environmental impact of healthcare.

The SusQI principles can be applied across all healthcare systems, including in lower-middle-income countries, which, according to the National Library of Medicine, have a higher CO₂ intensity per capita than wealthier nations. Integrating the SusQI framework into these regions could significantly reduce the environmental toll of healthcare practices, especially in resource-limited settings.

If initiatives like SusQI continue to gain support and more healthcare professionals and patients understand the importance of health management, it could lead to a substantial reduction in the healthcare sector's environmental impact. Paired with government backing and technological advances, the UK healthcare system is on a promising path toward reducing its carbon footprint without compromising its mission to provide essential care.

Max Wynn



COMMODITIES

Sector Head: Katie Elmakahleh

Analyst: Steve Postolachi



HEAD OF SECTOR

Katie Elmakahleh



Global commodity markets are very dynamic with constant interplays occurring. A plethora of factors trigger influences on prices and supply chains. Recently, there has been increasing focus on sustainable sourcing and production practices across commodities, with companies investing in greener practices and technologies to satiate regulatory pressures and meet consumer demand. However, worldwide economic uncertainties are affecting commodity flows, causing supply chain issues with ongoing disruptions from trade policies producing logistics challenges.

Consequently, certain subsector markets have experienced volatility due to geopolitical tensions and weather pattern fluctuations. In energy markets, Middle Eastern oil prices are in flux from OPEC supply forecasts delaying output. Natural gas prices in Europe are also fluctuating from storage levels issues and abysmal weather conditions. Concerns over agricultural commodities have heightened with crop yield deterioration being caused by droughts across the United States and tumultuous weather in Europe. In metal markets, demand has spiked for precious metals like gold and silver as investors seek reliability amid economic insecurity. However, base metals growth, including copper and aluminium, has stagnated from Chinese manufacturing demand decline.

Therefore, global commodity markets currently reflect the unpredictable, erratic political and economic world of today with recent focus on sustainability and geopolitical embargos.

Lithium: Powering the Transition to a Sustainable Future

The global shift towards renewable energy and electric vehicles has intensified demand for lithium – a core component of rechargeable batteries. Lithium can only be mined from rocks or extracted from brines and minerals. Thus, as demand surges for lithium, commodity extraction struggles to keep up due to various geological, economic, and environmental constraints. Therefore, lithium shortages have emerged as result, threatening the pace of the renewable energy transition. Environmental impacts of mining operations raise important questions about balancing lithium production with ecological conservation, creating a complex challenge for sustainable development. Addressing these shortages requires both innovative approaches to resource extraction and investments in alternative technologies, such as battery recycling and new energy storage materials.

Estimated global trajectories of lithium shortages show lithium demand will soon exceed the supply in 2028 causing major shortages. This trend is expected to continue and progressively exacerbate by 2040 with a shortage of almost 1800 thousands of tonnes of lithium. The potential impact of these shortages on sustainability is profound. Without a reliable lithium supply, renewable energy storage and electric vehicle production will face setbacks, complicating global efforts to reach net zero carbon emission goals. According to experts, the delayed planning procedures, high energy costs, and shortage of skilled labour are present obstacles to lithium industry growth. However, Green Alliance argued government investment is essential in such competitive global markets. Great Britain currently has no commercial-scale sized lithium mines, however in bid to speed up the energy transition, the Advanced Propulsion centre claims Britain is expected to produce around 56,000 tonnes by 2030.

Globally, there has been an influx of substantial investment being approved with long-term likelihood of flows into lithium mining and supply solutions. Recently, the U.S. Department of Energy finalised a \$2.26 billion loan for Lithium Americas to build Nevada's Thacker Pass lithium mine. This strategic push to boost critical -

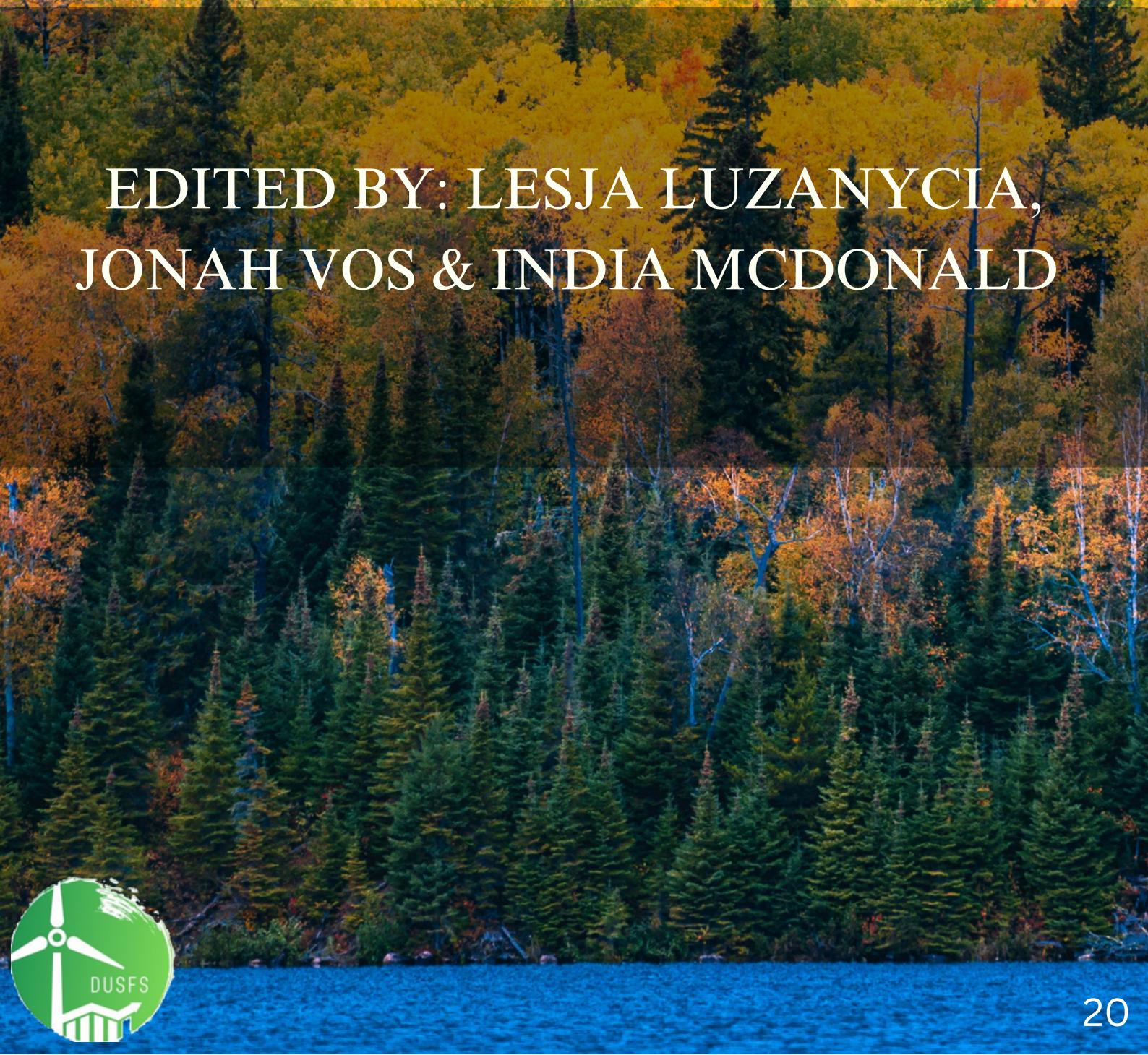
Steve Postolachi

Lithium: Powering the Transition to a Sustainable Future

minerals production in one of Washington's largest mining industries, moves to reduce lithium supply shortages, lessen dependence on foreign sources and help secure a stable lithium supply. Shifts towards United States' lithium production strengthens the United States' position in global mineral supply chains, promoting energy security and sustainability. Elon Musk, CEO of the EV manufacturer Tesla, has described lithium as "the new oil", illuminating the light metallic element now forms a vital link in the automotive industry and supply chain, suggesting investments are likely to propagate.

The global race to secure lithium resources highlights the complexities of transitioning to a sustainable energy future. While recent US investments signify a growing commitment to stabilising lithium supply chains, achieving a balance between demand, environmental preservation, and geopolitical security remains a formidable challenge. The looming supply deficits projected for 2028 and beyond, emphasise the urgency for both innovation in extraction methods and advancements in alternative technologies such as battery recycling. As lithium cements its role as the "new oil" in the energy landscape, a varied approach that includes policy support, sustainable practices, and diversified supply sources will be essential to meet the demands of a greener, more resilient global economy.

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