

RESPONSIBLE INVESTMENT

# Lifecycle of Renewable Energy

Infrastructure Assets Engagement



*Across Quilter we have identified three thematic engagement priorities. This is part of our climate change theme.*

Climate Change is the defining issue of our time and we are at a defining moment. From shifting weather patterns that threaten food production, to rising sea levels that increase the risk of catastrophic flooding, the impacts of climate change are global in scope and unprecedented in scale. Without drastic action today, adapting to these impacts in the future will be more difficult and costly\*.

## SDG Alignment



“ As yet, the wind is an untamed, and unharnessed force; and quite possibly one of the greatest discoveries hereafter to be made, will be the taming, and harnessing of it.”

Abraham Lincoln

Renewable energy infrastructure is often perceived to be automatically sustainable given its contribution to net zero ambitions, but there (as always) are many factors to consider and an important one is the end-of-life plan for these assets. In addition to this, the sourcing of infrastructure assets or raw materials is also important, ensuring thought is given to ethical and sustainability considerations early in the asset lifecycle too.

## Renewable waste

Today, wind turbines from the industry's early days are reaching end of life and only c.90% of a turbine is currently recyclable in a scalable / economical way. This is a growing issue as 52 thousand tonnes of blade waste are forecast to exist by 2050 in Europe, and more than two million tonnes in the USA.

Similarly, the International Renewable Energy Agency forecasts global solar panel waste reaching 78 million tons by 2050. Whilst many components can be easily recycled, some parts including the silicon solar cell (c.10%) cannot.

## Engagement

The purpose of our engagement was to focus on sustainability considerations across the lifecycle of their infrastructure assets, with a particular focus on supply-chain management and the approach to disposing assets at the end of their life. We were keen to look under the bonnet and better understand these companies' approach to certain sustainability challenges. This included delving deeper into their supply-chain policies and understanding their use of data and 'Key Performance Indicators'.

It was important for us to determine which trusts had a strong approach to mitigating risk in their supply chain – including ensuring solar panels are not built in regions associated with human rights abuses, or wind turbines built using conflict minerals. We also sought to understand whether trusts had a robust approach to defining sustainable end-of-life plans for their assets, focusing on minimising the proportion of solar panels or wind turbines that may be sent to landfill. In many ways, this is an evolving theme and one we expect to receive increased focus in the coming years as a significant wave of renewable energy assets reach the end of their useful life. It is also likely that we will see additional technological advancement that enables the complete recyclability of these assets in a commercially viable way, something that isn't currently the case.

## Lifecycle of renewable energy infrastructure – target companies / trusts

 Vestas

 GREENCOAT  
UK WIND

 Foresight  
SOLAR FUND LIMITED

 TRIG  
The Renewables  
Infrastructure Group

 octopus renewables

 Aquila European  
Renewables Income Fund

 VICTORY HILL  
VH Global Sustainable Energy Opportunities plc

We engaged with Vestas as the company is regarded as being at the forefront of innovation and advancements in the recycling of wind turbines to further our understanding of probable best practice and industry maturity in relation to wind turbine disposal.

## Key Findings

On **supply chain management**, all trusts outlined their approach to ensuring they only work with suppliers clearly aligned with their views. Due diligence was taken seriously across the board, and it was pleasing to see that sustainability values and considerations were an important component of such assessments.

When it came to **end-of-life asset considerations**, it was understandable that not all trusts had a formal process in place for defining a sustainable plan for assets. Some would not need to decommission any assets for another decade or more, at which stage technological capability and capacity for recycling assets is likely to have greatly evolved. Instead of only considering formal process, we often focused on management's engagement with the topic, as well as their plans and ideas for building out their framework and reporting in the future.

It was encouraging to see a **strong correlation** between our pre-existing view of the strength of management overall and our view of management's approach to these specific sustainability topics. This both reinforced that the detailed research undertaken by the fund analyst in relation to the quality of management was likely accurate and reiterated the value that ESG factor and sustainability related analysis can have when assessing the quality of a company or trust.

Unfortunately, not all the meetings went as we had hoped and for one trust, while it was able to demonstrate it had the bones of a framework in place, it was clear that the manager did not take the sustainability themes as seriously as we would expect. We plan to **escalate this matter** with the trust's board in conjunction with a separate Quilter Cheviot thematic engagement project on investment trusts (focused on the board and responsible investment activity and disclosure) in the coming months.

Holding	Type	Supply chain	Sustainability comments
Greencoat UK Wind (UKW)	Wind	Complete extensive due diligence of the asset's supply chain in sourcing materials, to ensure the process is in accordance with its own internal policy.	As blade recycling is a complex issue, with limited technology, the board is looking to support relevant research groups that are focused on finding solutions to it. At present, the trust has allocated c.£250,000 to universities for blade research and the ideas generated will contribute to the approach taken towards blade recycling.
Foresight Solar (FSFL)	Solar	FSFL uses a third-party platform to screen current and potential suppliers. The platform flags certain aspects such as fines and violations of local policy which FSFL then investigates further. It also uses third-party firms to undertake on-the-ground audits, when possible.	The recycling market is an evolving space. FSFL has been approached by several companies offering recycling services - some of them free of charge. However, FSFL wants to make sure that the recycling companies are correctly vetted before committing to anything. FSFL has already committed to making sure that none of these assets end up in a landfill.
The Renewables Infrastructure Group (TRIG)	Solar Wind	During the pre-investment stage of a new asset, TRIG will use negative screening to assess the sustainability of a project's supply chain process. This ensures that it will only establish partnerships where there are shared values. After the initial negative screening assessment, TRIG will then complete detailed due diligence of supply chains to verify the origin of assets and ensure they have been responsibly sourced.	As part of TRIG's due diligence, it assesses the percentage of assets that can be recycled, and the quality of land being used for the renewable projects. Planned further improvements to the process include the implementation of a circular economy policy to ensure appropriate waste management plans are set out at the project level.
Octopus Renewables Energy Trust (ORIT)	Solar Wind	ORIT's supply chain policy has been set up by Octopus Energy - who is responsible for completing all due diligence and scrutiny of suppliers, along with a third-party consultant. This due diligence process includes an ESG scoring mechanism which assesses all material issues in the supply chain such as health and safety management. There is also a questionnaire (DDQ) to assess supplier policies, compliance with standards such as modern slavery and codes of conduct. When working with suppliers from Chinese markets, there is enhanced due diligence, recognising that this is a high-risk area.	ORIT has a relatively young portfolio made up of solar and wind assets. These wind assets still have an average useful life of 30 years; therefore, the treatment of the assets at the end of their useful is not yet a priority and a policy on this has not been established. ORIT is however, committed to recycling and has demonstrated this with panel replacements as old parts are given to panel recycling outfits and local contractors to maximise recycling potential.
Aquila European Renewables Income Fund (AERIF)	Solar Wind	As part of the pre-investment stage onboarding process a new supplier will complete an extensive sustainability questionnaire. This will be followed by a materiality assessment, which includes 50-60 sub risk categories. The materiality assessment is reviewed and updated annually, to ensure the most relevant risks are being assessed. After this review, there will be a request for policies and management systems to ensure the suppliers code of conduct are in line with AERIF's values.	AERIF is focused on buying assets at a very early stage and acquiring maturing assets is not part of its the business model. These assets tend to be bought during the permitting stage or when ready-to-build. However, Aquila has been looking at the topic of end of useful life and is completing lifecycle assessment studies.

Holding	Type	Supply chain	Sustainability comments
VH Global Sustainable Energy Opportunities (GSEO)	Solar	There are two layers for assessing the eligibility of suppliers: asset level work during the due diligence phase of a new investment and partnering with a third-party auditor to assess sustainability. The asset level work will assess the legal, environmental, and cultural heritage elements of a project. The second layer is the partnership with Aardvark. GSEO has partnered with Aardvark to look at the carbon lifecycle of the energy generation assets. This process involves using a third-party data provider to assess the inventory of emissions on various manufacturing processes as well as any red flags and alignment to the GSEO's core UN Sustainable Development goals.	The projects that GSEO is invested in are at an early stage with a useful life that tends to range between 20-25 years. As a result of this, no official recycling targets have been set. However, all operating partners are expected to have an end-of-life plan so there is clarity on the extent of recyclability. GSEO will also encourage proactive strategies and will continually review all current opportunities on recycling.



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