



# **MODEL PORTFOLIO REVIEW 2024**

**Positive Outcome Report**





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With a number of issues passing, we are now more optimistic on many stocks within our investment universe.

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The transition across different sectors, from energy to transport, will consume vast amounts of materials making recycling critical.

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# INTRODUCTION

Last time we produced our annual report for model portfolios, we were coming off a tough period for investors. The sharp rise in interest rates was one headwind to contend with, alongside sticky inflation and global supply chain issues. Other idiosyncratic problems emerged, such as the change in policy around residential solar in one key US state. On top of this, many sectors screened from portfolios, such as oil & gas or defence, continued to climb as geopolitical tensions remained elevated.

As we write this, the outlook for many of the stocks in our investment universe is brighter, albeit with certain headwinds still present, such as geopolitics and the cost of capital at multiyear highs. The global economy is yet to show any major signs of cracking, but as the global economy begins to cool and inflation continues to trend lower, the policy environment will be more supportive for risk assets, including infrastructure and property.

Our MPS review this year focusses on a number of pertinent factors that are important on the global stage but particularly important for our clients given the focus of portfolios. We touch on some of the major issues in areas such as energy, power grids and transition resources, whilst providing updates on progress in these areas.

As many of our clients will know, the United Nation's (UN) Sustainable Development Goals (SDGs) provided an agenda for sustainable development across the globe with the aim of reaching prosperity for people and the planet. The target date to work towards the goals is 2030, and with this deadline now only six years away, it has been outlined that we are falling short on meeting most goals. In their latest update

report, the UN highlighted that more than 30% of the targets have experienced no progress, or even in some cases, regression below the 2015 baseline.

Nonetheless, progress has been made. Renewables are showing a good pace of adoption, now powering 30% of energy consumption in the electricity sector, but challenges remain around heating and transport. More people than ever have access to electricity, but the pace is lagging for the least developed countries. In terms of healthcare, progress has been made on child mortality rates, HIV treatment and tropical disease elimination, but global healthcare coverage is still inadequate.

The goals provided a framework to assist capital to flow towards development in various critical areas. Whilst we report holistically on portfolios exposure to areas that align to the SDGs, this report will provide specific company examples who are having a meaningful contribution to positive environmental or social outcomes.

Since we began investing in 2002 to align portfolios to clients' own values, we have faced various challenges. However, what we have faced in recent years has been unprecedented, but we remain committed to ensuring portfolios still align to clients' values. Where we have a mandate to avoid certain sectors, we will continue to do so, at the same time aligning portfolios to companies supporting a more sustainable world.

We would like to thank all our clients for their ongoing support and we hope you enjoy reading this year's MPS report.



# CLEAN ENERGY

Scientists have recently confirmed that 2023 was the warmest calendar year ever recorded in global temperature records, dating back to 1850. It brought an average global temperature of 14.98°C, 2023 was 0.17°C higher than the previous highest annual value in 2016, and 1.48°C warmer than the 1850-1900 pre-industrial baseline scientists use, alarmingly close to the 1.5°C limit settled at the Paris Agreement. [1]

This has devastating environmental effects for the globe. Highlighting polar ice caps in particular, the Antarctic Sea ice reached record lows for the corresponding times in a staggering 8 months of the year, reaching an all-time low in February 2023. [2] In a similar ilk, the social impacts from global warming are worsening. Contrasting the typical British weather (the wettest 18 months since records began in 1836) [3], the rest of the globe has seen low winter rainfall and snowfall, causing severe droughts. According to the UNCCD, 1.84 billion people are drought stricken, out of which 4.7% are exposed to severe or extreme drought.

The social implications of these droughts are damaging, as persistent scarcity and heatwaves adversely affected crops, with the Baltic Sea, Scandinavia, the UK, Ireland, Spain, and Germany grappling with a severe meteorological drought that compromised crop yields in some regions. The continued strength of the naturally occurring phenomenon 'El Niño', which heated the Pacific Ocean surface and exacerbated global warming caused by greenhouse gases. El Niño only made matters worse - causing warm and dry conditions in Northern US and Canada, whilst the Gulf Coast and Southeast US experienced increased flooding, directly impacting crop systems. Elsewhere in the headlines, droughts have been reducing transits through the Panama Canal, falling from 40 transits to just 24. Canal administrators have estimated that dipping water levels could cost them between \$500 million and \$700 million in 2024, compared to previous

>510GW

of renewables  
installed last  
year



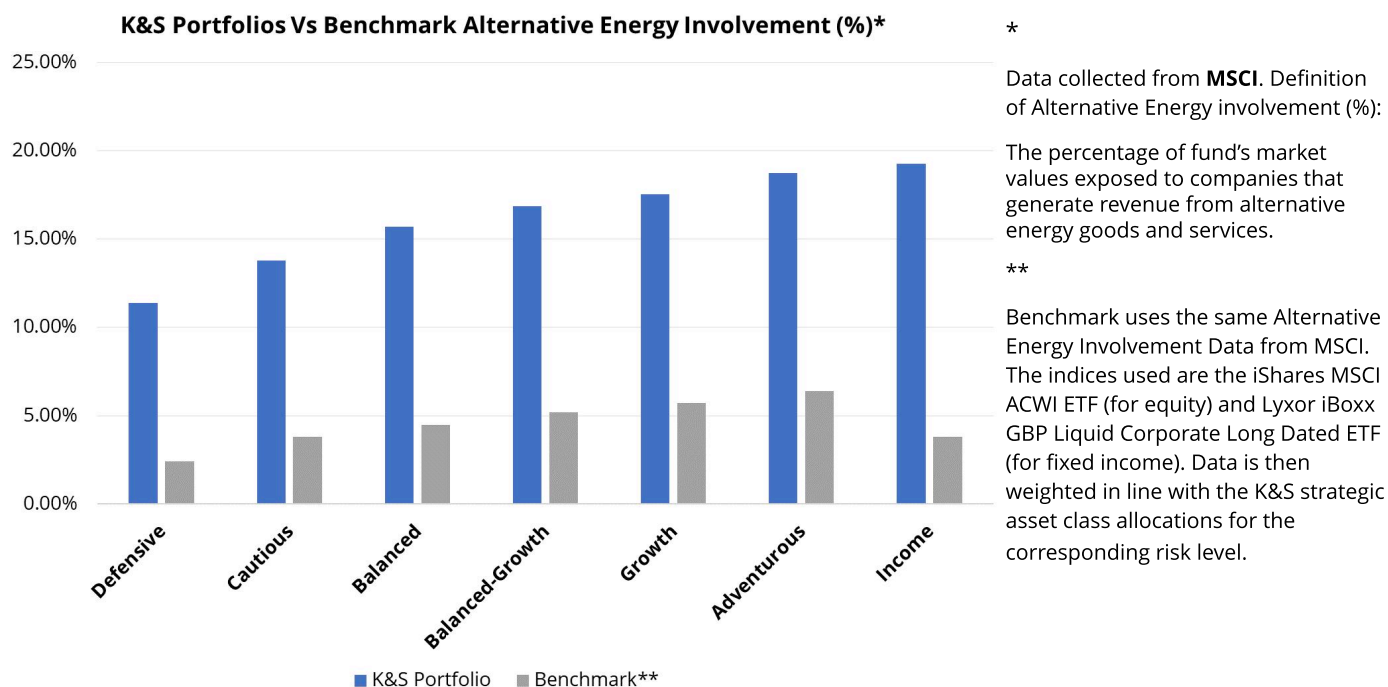
estimates of \$200 million, spurring further cuts and hurting supply chains. [4]

Cuts in Russian gas deliveries to Europe due to the Russian invasion of Ukraine spurred higher investment in alternative sources of supply. Whilst the trend was already in place, 2023 saw the disparity between total global investments in clean energy and fossil fuels reach another all-time high; clean energy investments totalled \$1.74 billion USD, whilst fossil fuels reached \$1.05 billion USD. The world's new renewable power capacity grew by 50% in 2023, and is poised to keep beating records this decade on the back of a surge in cheaper solar panels, particularly in China.

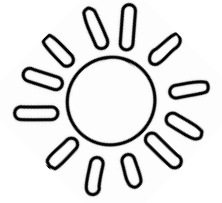
According to Fatih Birol, the Executive Director of the International Energy Agency (IEA), the global renewable capacity is set to grow by 2.5 times by 2030, given the existing policies and market dynamics. Although this progress falls short of achieving the COP28 objective of tripling renewables, the gap is closing, and governments possess the necessary tool to bridge the remaining distance.

The IEA expanded on the promising future of renewables, reporting onshore wind and solar PV are cheaper today than new fossil fuel plants almost everywhere and cheaper than existing fossil fuel plants in most countries. In addition, renewables are set to overtake coal in early-2025, to become the largest energy source for generating electricity.

Through the model portfolios, clients will have exposure to a range of companies exposed to clean energy. This includes the obvious manufacturers of equipment, such as solar panels or wind turbines, as well as operators of this equipment. There will also be exposure to companies providing goods or services which allow some of the above companies to operate or to improve their efficiency, such as battery storage or micro-inverters for solar panels. We have previously spoken of the benefits of the energy transition, not just from an environmental perspective, but also the social and health benefits. Portfolios exposure to alternative energy can be broken down as follows, whilst we have provided some stock specific examples following:



# FIRST SOLAR



First Solar is a leading American solar technology company and global provider of responsibly produced eco-efficient solar modules advancing the fight against climate change. First Solar's advanced thin film photovoltaic (PV) modules represent the next generation of solar technologies, providing a competitive, high-performance, lower-carbon alternative to conventional panels.

First Solar does not only operate in developed nations such as the United States and Germany, but also have presence into less developed nations such as Chile, India, Malaysia, Samoa and Vietnam, where playing a crucial role in advancing the energy transition holds even greater significance, given the relatively limited prevalence of technological advancement in those regions.

Focusing on India in particular, India's coal production rose to 893 million tons during the financial year ending March 2023, jumping nearly 15% from a year earlier. There are no signs of a slowdown, say the IEA, with 75% of India's power sourced from coal-fired plants, and the country is planning to add 80GW of coal-based thermal capacity over the next 8 years. In order to reach the ambitious target of meeting 50% of its electricity demand from renewables by 2030, it is imperative companies like First Solar can assist with the transition where possible. [5]

First Solar has recently announced that it has entered into a 15-year captive Power Purchase Agreement (PPA) with Cleantech Solar, a leading provider of renewable energy solutions in India. They will supply 150MW of PV solar and 16.8MW of wind-generating assets to First Solar's new 3.3GW vertically integrated solar manufacturing facility located in Tamil Nadu, India. Once fully commissioned, it is expected to displace 7,000 kilotons of CO<sub>2</sub> emissions over the duration of the PPA (15 years). The new Indian facility is also expected to be the world's first net-zero water withdrawal solar facility. It has been designed to minimise its impact on local water resources by relying upon tertiary treated reverse osmosis water from the city's sewage treatment plant, with zero wastewater discharge. First Solar are pioneers of high value solar recycling and this facility will be India's first solar recycling plant. [6]

According to their 2023 Sustainability Report, First Solar displace 83 million Metric Tons of CO<sub>2</sub>eq each year. This is made up of 50GW (from sales between 2002-2022) plus 77.8GW (backlog of orders) plus their 30-year average product life. For context, 83 million Metric Tons of CO<sub>2</sub>eq is the equivalent to powering 66 million average homes, saving 225 billion litres of water, and planting 1.4 billion trees, every year.



# First Solar Highlights

- First Solar have the lowest environmental footprint in the industry.
- Resource-efficient and RE100-committed operations (source 100% renewable electricity for its global operations by 2050, with an interim goal of 50% by 2025).
- Industry leading high-value PV recycling services.
- 2023 annual volume sold reached 7.4GW with an additional 23.6GW in bookings, as of 30th September.
- One Kilogram of First Solar's semiconductor material can be recycled 41 times over, which translates into a use time of more than 1,200 years.





# TRANSITION RESOURCES

Between now and 2050, the energy transition could require the production of 6.5 billion tonnes of end use materials, 95% of which being steel, copper and aluminium. The remainder will be made up of smaller quantities of critical minerals such as lithium, cobalt, graphite or other rare earths. The Chair of the Energy Transitions Commission highlights that while there are enough resources and minerals in the world required for a successful energy transition, the challenge lies in scaling up production of essential minerals, particularly lithium and copper, in order to meet the rapidly rising demand due within the next decade. [7]

Given the extended timeline required for opening new mines, typically spanning 15 to 20 years, it is integral for capital investments into key energy transition materials to rapidly increase. Currently standing at \$45 billion per annum, this funding needs to reach an estimated \$70 billion per annum by 2030. European governments are looking to expand supply closer to home amid geopolitical risk and foreign dominance, with 50 mines expected to open across Europe by 2030. [8]

The Energy Transition Commission have also expressed the need for sources to become more diverse and secure. Currently, 70% of cobalt production is from the Democratic Republic of Congo (DRC), an area of concern in particular, where 200,000 artisanal or 'informal' miners, often children, work in small areas, earning less than \$10 a day. China controls the majority



of the cobalt mines in DRC, strengthening Beijing's position in the global supply chain. [9]

Further controversy lies in China through forced labour in the Xinjiang region, where mass detention against the predominantly Muslim Uyghurs has taken place according to a report published by the US Department of State. A large proportion of China's lithium processing and product manufacturing facilities are located in the Xinjiang region. [10]

The region is also responsible for a large proportion of cheap Chinese solar PVs that are flooding the global market and tainting the clean energy transition. Underpinning their cost is cheap labour sourced from Uyghurs coming out of two or three years of unlawful detention across the Xinjiang





Uyghur Autonomous Region, a remote, sparsely populated area of northwestern China that's around seven times the size of the UK. [11]

Due to the controversial processes, companies have recently been sourcing their critical minerals elsewhere. For example, BYD has begun construction of its new production facility to process lithium and iron phosphate for the international market in Brazil, alongside their first electric-car plant outside Asia. The project will cost around £500 million and create 5000 jobs in the state of Bahia, Brazil. [12]

We have seen a number of measures introduced from the US and Europe in order to cut their exposure to these controversial processes, including the US ban on imported products containing

minerals critical to electric vehicle batteries mined through child labour and other abusive conditions in the DRC, and the European Commission launch of the European Raw Materials Alliance (ERMA) to address challenges in the critical raw materials supply. [13]

Relieving pressure on the primary supply by accelerating technology development and increasing recycling could reduce cumulative demand by 20-60% by 2050. Recycling is expected to play a profound and critical role from 2040, as the stock of clean energy technologies deployed begins to reach end-of-life. Our portfolios address this issue with exposure to Befesa. Befesa close resource loops by collecting hazardous waste and residues, recycling them and reintroducing valuable materials into the production process. For more information, please find the stock example on the following page.

In recent news, Vestas Wind Systems A/S, the world's largest turbine maker, is partnering with ArcelorMittal SA to use recycled steel to build the towers that blades spin on. They are expected to reach the market next year and will curb emissions created along the supply chain by around 66% when compared with the traditional models. [14]

## DID YOU KNOW?

All the copper ever produced would fit into a cube measuring roughly **430m** a side!





## Befesa Highlights

In their latest ESG report, Befesa reported the following annual figures:

- ❑ Produced 1.9 million tonnes of global crude steel
- ❑ Collected 1.2 million tonnes of steel dust
- ❑ Collected 320,000 tonnes of salt slags and SP5
- ❑ Managed and recycled 1.8 million tonnes of residues
- ❑ Produced 13.5 million tonnes of global zinc
- ❑ Produced 90 million tonnes of global aluminium



## Portfolio Holding Case Study:

# BEFESA

Befesa is a global leader in the circular economy, providing sustainable solutions to the steel and aluminium industries through servicing and recycling hazardous residues generated in the value chains of secondary steel and aluminium producers. Befesa focuses its core efforts on recycling hazardous residues: crude steel dust, salt slags and spent pot lining (SPL), and has been a part of the circular economy for more than three decades.

Before late 2022, Befesa predominantly operated in Europe, namely in Spain and Germany. However, it has recently expanded into the US, acquiring Zinc refining facilities, and throughout 2023 has been ramping up its Chinese operations.

The high efficiency of turning hazardous waste into valuable materials results in minimal potential risk of contamination and environmental degradation through disposal or landfilling. Befesa recycles residue as a commercial service and converts it into new products. Only a very small portion of the hazardous waste recycled remains after it is processed into new materials. This residue is properly managed and in total Befesa reduces hazardous waste by almost 100%.

As mentioned before, Befesa recently acquired a Zinc Refining plant from AZR, in the US. The facility is the only one of its kind in the world, producing green

zinc from 100% recycled raw materials. As a result, Befesa is the only producer in the world of special high-grade zinc using solely recycled materials, which is used as a key ingredient in many green technologies, such as solar panel fixtures, offshore wind turbines, and battery technology. The zinc is used to protect these structures from corrosion, inherently extending their lifetime.

Another way Befesa is contributing to the transition, is through production of secondary aluminium. It was recently found that the greenhouse gas emissions released from production of a tonne of secondary aluminium is 95% lower than those released from production of a primary aluminium. As aluminium is one third lighter than steel, automakers are set to ramp up the level of aluminium in their electric vehicles (EVs), in order to counteract the heavy batteries integral to these vehicles. EV demand is also expected to grow considerably by 2030, multiplying the demand for aluminium. [15]

### DID YOU KNOW?

It can take just 60 days for a recycled aluminium can to return back to the store shelf. [16]



# HEALTHCARE

In the 2023 Universal Health Coverage Global Monitoring Report, the World Health Organisation (WHO) revealed more than half of the world's population is still not covered by essential health services. This stagnation is alarming in the progression towards providing people everywhere with quality, affordable and accessible healthcare.

As individuals age, they often experience a higher level of chronic conditions and complex health issues, necessitating a more comprehensive and long-term approach to healthcare. As healthcare technology develops, the population live longer and longer, leading to further health issues that need solving. The demand for healthcare will continue to rise considering the US senior population is expected to grow from ~55 million to ~ 83 million by 2050, while in the UK, 1-in-6 of the UK population is currently aged 65 and over, by 2050 1-in-4 will be.

The WHO report also highlights the financial issues surrounding the sector. 2023 saw the cost of medical care reach a global historic high, surging from a 7.4% increase in 2022, up to a record 10.7% increase in 2023. Additionally, more than 2 billion people face severe financial hardship when paying out-of-pocket for the health products and services they require. In 2023, 1.3 billion individuals were pushed or further pushed into poverty by such payments.

Out-of-pocket health expenditures cause individuals to forgo crucial healthcare, impacting the timing of preventive care. This potentially determines whether a preventable illness is addressed early or allowed to progress to a more severe stage, leading to significant health consequences, and in some cases, mortality. Addressing

this problem requires progressive health financing policies that exempt those with limited ability to pay for health services. [17]

The COVID-19 pandemic has exerted profound strain on global healthcare resources, presenting unprecedented challenges to healthcare systems. The surge in patients globally overwhelmed hospitals, leading to shortages in critical resources such as intensive care unit (ICU) beds, ventilators, and personal protective equipment (PPE). The redirection of resources towards pandemic response disrupted routine healthcare services and elective procedures, exacerbating challenges, and creating a back-log for most hospitals.

Financial stress on healthcare systems, coupled with the imperative need for rapid adaptation and innovation, underscored the vulnerabilities of global health infrastructure and emphasized the need for enhanced preparedness for future public health crises.

Due to the level of resources needed for the pandemic, the referral to treatment waiting times have significantly increased. Looking at the NHS in particular, as of November 2023, the proportion of patients receiving treatment within 18 weeks fell to 58.3% throughout all areas of England, considerably below the NHS operational standard of 92%. Furthermore, there were 7,600,000 patients waiting to start treatment, considerably higher than the pre-pandemic level of 4,600,000 in February 2020. [18]

The Willis Towers Watson 2024 Global Medical Trends Survey forecasts a slight decrease in the growth rate in the global average medical cost to 9.9%. Factors contributing to the fall in the growth rate include the spike in elective procedures, consultations and other medical care resulting from a delayed or postponed





care, due to the pandemic, is starting to ease. In terms of demand, 2023 has seen a strong recovery in utilisation as more and more healthcare systems globally work through the post-Covid backlog of patients looking to access care. Importantly, that positive momentum is expected to continue for the next 2-3 years.

2023 proved to be the breakthrough year for obesity drugs, as they dominated news headlines throughout the year. Danish company Novo-Nordisk released a weight-loss drug called Wegovy, a pre-filled pen containing solution for injecting once a week, used in adults who are 'overweight' or 'obese'. The drug contains an active substance semaglutide, emulating the GLP-1 hormone in the body, which regulates people's appetite by increasing their feeling of fullness. It must be used together with diet and physical activity. Studies have shown Wegovy can help a patient lose around 10-20% more body fat after 68 weeks compared with a 2% loss of weight in people who had placebo. The significance of this breakthrough should not be understated - obesity is a public health

epidemic. 75% of American adults are either overweight or obese, and according to the World Obesity Federation, more than a billion people around the world will be obese by 2030 – double the number there were in 2010. Novo Nordisk currently forms a significant proportion of the Model portfolios, ranging from 0.42% in the Defensive portfolio, up to 0.78% in the Balanced, to 0.96% in the Adventurous. [19] [20]

In the last quarter of 2023, we introduced a specific healthcare fund into portfolios. Whilst we are able to gain exposure to the sector through general sustainable and impact funds, the investment case had grown rather compelling. It is a sector where returns can diverge dramatically between the 'winners and losers', more so than any other sector. Having an understanding of the underlying science and companies is critical in delivering outperformance, hence our desire to introduce a dedicated fund. This provides exposure to a range of healthcare subsectors, from biotech to equipment and supplies. Please see the following example holding.

## Portfolio Holding Case Study:

# INTUITIVE SURGICAL

Intuitive surgical is an innovative American medical technology company, pioneering in robotic-assisted, minimally invasive surgery. Through 2022 its flagship product, the da Vinci system, was responsible for over 12 million procedures worldwide, with a procedure using the da Vinci system starting every 16.8 seconds.

Intuitive Surgical are geographically diverse, operating in the United States, Canada, Japan, and Europe, as well as exposure to emerging markets, including India, China, Mexico and Korea.

The da Vinci system is a robotic-assisted healthcare tool, allowing the surgeon to control the surgery from a remote console. The da Vinci system delivers a high definition and 3-D views, giving the surgeon a crystal-clear view that is magnified 10 times to what the human eye sees. It also boasts built-in tremor-filtration technology, helping the surgeon move each instrument with smooth precision. [21]

Since becoming the first robotic surgical platform to be approved by the FDA and commercialised in 2000, there are now more than 1,700 da Vinci systems installed in hospitals worldwide, and more than 775,000 patients that have undergone surgery using the robot. The

da Vinci surgical system can be used in a wide range of conditions and procedures including cardiac, urological, gynaecologic, paediatric and general surgery. [22]

Various challenges hit Intuitive Surgical throughout 2023, including Ion catheter supply chain issues, environmental uncertainty in China, and the GLP-1 impact on bariatric surgery growth, however Intuitive were able to grow their procedures by 22%, to over 2.2 million, with recurring revenue growing to 83% from 79% of total revenue. Material shortages have also been problematic with 71% of global companies citing raw material costs as their number one supply chain threat this year (Aluminium and titanium are commonly used in MedTech manufacturing are sourced primarily from Russia and China).

Despite this, 2023 was an exciting year for the MedTech sector, as the Food and Drug Administration (FDA) authorised a record 124 new medical devices. Excluding emergency activity, it was the highest number of new devices authorised in the 40-year history of the FDA's Centre for Devices and Radiological Health (CDRH). [23]





## DID YOU KNOW?

Roughly 3 out of 4 prostate cancer surgeries in the US are performed using the da Vinci surgical system. [22]



# POWER GRIDS

Grids have been delivering power to households, businesses and industry for over 100 years, and form the backbone of today's electricity systems. With the global power grid consisting of over 2.6 million miles of transmission lines, and over 43 million miles of distribution lines, grids are an integral part of the clean energy transition.

The IEA highlight the lack of attention grids currently receive. Clean energy transitions are driving the transformation of energy systems and intensifying the role of electricity across economies. As a result, countries' transitions to net zero emissions need to be underpinned by bigger, stronger and smarter grids.

Reaching national climate goals means adding or refurbishing a total of 50 million miles of grids by 2040 (double the current global total). Global grid investment averaged \$300bn from 2018-22, growing slowly at an average 2% per year. Following this period of stagnation, investment needs to double to over \$600bn a year by 2030. The IEA go on to stress that grids are at risk at becoming the bottleneck of the transition. There is currently 3,000 GW of renewable power projects that are awaiting grid connection, equating to five times the amount of solar and wind capacity added in 2022.

In addition to a required increase in the mileage of transmission and distribution



line, flexibility also needs to rise. When the electricity grid was first designed, it was based on the steady, constant power generation of fossil fuel power stations. This is not the case with variable renewable sources such as wind or solar PVs, as their energy output depend on wind and sun levels respectively. Furthermore, it was not designed to handle large surges in power demand that may experience on a day-to-day basis; through millions of heat pumps being fired up on the same day if it's cold, or electric vehicles being charged overnight for a morning commute.

Localized power grids, AKA microgrids, can help to combat the flexibility issue, and have been gaining traction due to their





potential for increased energy efficiency and resilience. Microgrids are able to operate independently, or in conjunction with the area's main power grid. Localized grids can be more energy efficient as power is generated close to where it is used, whereas traditional power grids lose a significant proportion of energy during transmission from plants to homes/businesses.

For areas prone to natural disasters or power outages, microgrids offer more resilience as they can disconnect and continue to provide power to the local area if there is an issue with the main grid. Furthermore, traditional grid expansion can cost up to £17,500 per

kilometre for transmission, [24] a prevalent issue, especially in rural areas and lower-income countries.

In 2023, global power grid capital investment jumped 5% to \$310 billion, with the US leading the pack at \$87bn investing predominantly into distribution grids (64%), and partly into grid resilience to storm threats by burying power lines. China followed closely with \$79bn, conversely targeting inter-regional transmission capabilities and large renewable energy cluster integration. Europe's investment reached \$60bn, with the focus on digitalisation and upgrading high voltage transmission networks. [25]



## Portfolio Holding Case Study:

# PRYSMIAN

Prysmian are a global leader in the cable industry, fore-running the digital transformation and enabling the energy transition. It provides solutions to 4 categories; transmission, power grid, electrification and digital solutions, specializing in underground and submarine cable links in some of the world's most challenging environments, such as links for large offshore wind farm hubs. Prysmian's operations span over 50 countries, 108 plants and 25 R&D centres, allowing it to service emerging markets and communities across the globe with ease.

Prysmian's product portfolio includes both aerial and underground high, medium and low-voltage cable systems connecting the primary distribution network to residential or industrial buildings, as well as providing network components, value added engineering, and asset monitoring solutions & services. The company has an emphasis on renewable energy generation solutions, with its cables forming the backbone of the next-generation power grids. [26]

Through their commitment to research & development, Prysmian have developed the world's first eco-sustainable cable for electrical grids, that's 100% recyclable. 'P-Laser' reduces CO2 emissions by 50%. Over 500kg of high-quality plastics can be recovered per kilometre of cable, all while not compromising on

performance, as it can operate at 20% higher temperatures than typical grid cabling. Furthermore, the production line is streamlined as it is fully integrated, offering delivery with uninterrupted, single line production with no need for degassing, thus reducing CO2 emissions by around 1 tonne for every kilometre. [27]

Prysmian Group has seen the total value of the projects it is working on rise about fourfold over the past five years to almost €23 billion, with the number of projects increasing to about 70 from 40-50 amid global efforts to invest in large-scale renewable energy and electrification infrastructure. The size of the average project has also grown significantly, with more than 20 projects each worth over EUR 500m, compared to 2 it had five years ago. [28]

Prysmian's 2023 project highlights include the Viking Link submarine cable connection between the UK and Denmark, which is set to be the world's largest ever land and submarine power inter-connector and is nearing completion. Prysmian is also working on the production of cables for the deepest submarine power link ever: the Tyrrhenian Link in the Mediterranean which will support power exchange between Sardinia, Sicily and the Italian peninsula. More details on the Vineyard Wind offshore wind farm project can be found overleaf. [29]



# Vineyard Wind Project

Prysmian's offshore wind project off the coast of Massachusetts;

- ❑ Consisting of 134 km of submarine power cables
- ❑ Capable of powering 400,000 homes
- ❑ Provides mainland US power grid with clean energy
- ❑ Reduce carbon emissions by 1.6 million tonnes per year





## Alfen in 2023:

- ❑ Avoided over 6.2 million tonnes of CO2 emissions
- ❑ provided over 374,00 households with renewable energy





## Portfolio Holding Case Study:

# ALFEN BEHEER

Alfen Beheer offer a range of products targeting the electricity grid of the future. Its three main business areas are Smart Grids, providing solutions in the field of high & medium voltage grids, EV Charging Solutions, consisting of an assortment of charging capabilities such as charging stations for home, work and public domain use, and finally, Energy Storage Systems that tackle the need for a more sustainable and decentralised energy network, especially since the increasing dependence on variable energy sources such as wind and solar. [30]

Alfen are headquartered in the Netherlands and are a presence throughout the European market, operating in Austria, Belgium, Finland, France, Germany, Italy, Norway, Poland, Spain, Sweden, Switzerland and the UK. Alfen have over 5 decades of substation experience, over 15 years of EV charging expertise, and over 12 years of battery energy storage expertise, helping them deliver over 50,000 transformer substations, 667,000 EV charge points, and over 888 MWh of power capacity.

In 2023, Alfen released its 4th generation mobile energy storage system, 'TheBattery Mobile X'. It offers up to 70% more energy as the last generation, while keeping the form factor constant (a mobile 10-foot container). It delivers fast, emission-free power to a variety of applications such as events, festivals, construction sites or EV charging hubs. It also supports small grid connections, enabling users to increase the capacity of their local connection or provide

a solution for weak grid connections or grid balancing services.

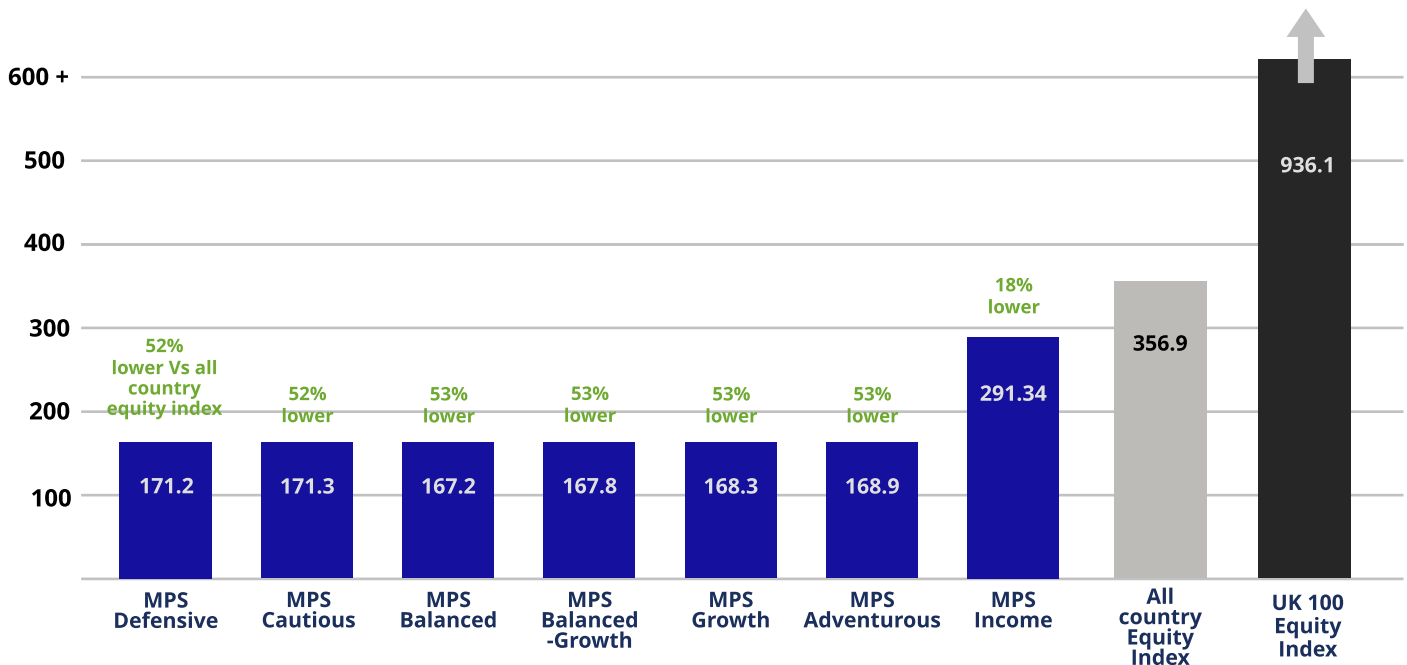
Alfen recently partnered with Vasa Wind, marking its first battery energy storage system co-located at a Swedish wind farm that provides power for 300,000 households, equating to more than 6% of Sweden's total wind power production. Alfen will provide the wind farm with a 20MW 'TheBattery Elements' energy storage system by the end of 2024, directly tackling the intermittent supply issue present with variable renewable sources. [31]

Alfen and Stedin have recently collaborated to drive sustainable energy infrastructure in the Netherlands. Alfen is contracted to provide Stedin with its Pacto compact substations and walk-in substations. Stedin play a key role in driving the transition, offering a sustainable and reliable supply of electricity and gas. The stations will serve as essential hubs in the Dutch energy network, facilitating the integration of solar panels, EV charging stations and heat pumps. Alfen's Pacto stations have achieved widespread adoption among Dutch grid operators. Enexis and Liander were among the first to adopt Pacto compact stations.

Now, with the recent agreement reached with Stedin, the three biggest regional grid operators in the Netherlands are users of the Pacto compact stations, that serve as a centralised point for distributing electricity in a compact and efficient manner. [32]

# PORTFOLIO CARBON EMISSIONS

Carbon emissions data for the equity allocation proportion of the model portfolios:



When investing in the world equity index over a King & Shaxson Balanced portfolio, you emit 189.7 more metric tonnes of CO<sub>2</sub> per \$1 million invested. This equates to:



**Annual emissions of 45 gas-powered passenger cars**



**Annual electricity consumption of 37 households**



**Emissions from charging 12,500,000 smartphones**

*\* Data provided by the U.S. Environmental Protection Agency [33].*



An aerial photograph of a vast, dense forest of tall, thin evergreen trees. The forest stretches across the landscape towards a distant horizon under a sky filled with soft, white and grey clouds. The lighting suggests a bright day, with sunlight filtering through the canopy.

# CARBON DATA METHODOLOGY

Our methodology consists of sourcing carbon emissions data from MSCI, representing a normalized measure of each fund's contribution to climate change (a composition of the scope 1,2 & 3 emissions).

Scope 1 covers the greenhouse gas emissions that the company makes directly, for example – running its boilers and vehicles. Scope 2 emissions covers the emissions the company makes indirectly, for example – the emissions released when producing the electricity or energy for heating and cooling buildings. Scope 3 emissions cover all the emissions associated, not with the company itself, but what the company is indirectly responsible for, for example – emissions from buying products from its suppliers, and from its products when customers use them.

These figures measure the total annual scope 1,2 & 3 carbon emissions (reported or estimated) associated with USD \$1 million invested in the fund. It is calculated as the sum of companies' Scope 1+2+3 carbon emissions weighted by the most recently available enterprise value, including cash (EVIC), and by the weight of companies in the fund. We sum the total emissions by the weight of each respective fund in the portfolio and we achieve our final representative figure.

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