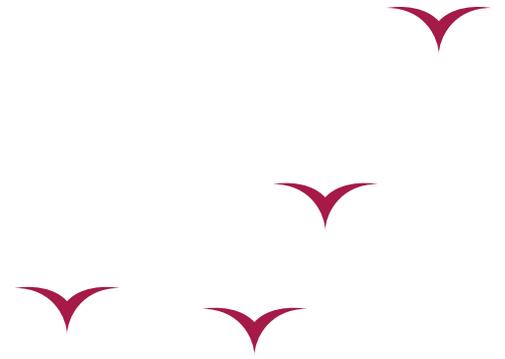




Sustainability Discussion Guide



Environmental

Social

Governance



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Foreword by Dr Ben Caldecott

Sustainable finance is a structural change in both the demand and provision of financial products and services with wide ranging implications. It is also mission critical for tackling the profound environmental and social challenges facing humanity.

Asset owners, be they large institutional or individual retail investors, increasingly want to align their investments with environmental and social sustainability. This includes portfolio alignment with net zero carbon emissions, tackling the destruction of habitats and ecosystems, and contributing to the wider societal objectives captured by the UN Sustainable Development Goals.

Simultaneously, risks related to physical climate change impacts and societal responses to climate change, as well as other environment-related factors, are increasingly stranding assets and disrupting sectors of the global economy. Asset stranding affects the solvency and performance of investee companies, and as central banks and financial supervisors increasingly recognise, also has implications for financial stability.

The corollary and mirror image of stranded assets are the unprecedented opportunities created by the transition to global environmental sustainability. We have entered the most capital-intensive period of human history, as

the technologies and infrastructure required have large upfront capital costs but much lower operational costs.

The scale of the investment required creates opportunities for the owners and organisers of capital. In the energy sector alone, meeting the well-below 2°C objective of the Paris Agreement could require US\$1.5 trillion of additional investment per year from now until 2050 (McCollum et al., 2018). This is a story replicated in other sectors.

The sustainability transition underway is also unleashing new technologies and business models, helping to drive innovation and productivity improvements in companies around the world, whether public or private. Finding these companies and helping them grow is essential for the transition and also creates unprecedented investment opportunities.

The multiple, concurrent, and interconnected drivers of sustainable finance aren't going away. Financial institutions will need to get much better at measuring these risks and opportunities using new data sets, analytical approaches, and growing experience to do so meaningfully. Portfolios will need to capture client preferences to make a positive difference and turn that into reality by understanding what alignment means and executing it, including through new investment strategies and

effective engagement with investee companies.

New approaches will also be needed to efficiently finance infrastructure and business models at the scale required to deliver net zero emissions and a circular economy globally. These are just some of the key challenges financial institutions will need to grapple with quickly over the coming years to be successful and help accelerate the positive changes already underway.

The 2021 UN climate change conference (referred to as COP26) in Glasgow is a key moment where governments, companies, and financial institutions will make bold commitments to tackle climate change. Financial firms representing tens of trillions of dollars of assets will be committing to align with Paris and shift their portfolios accordingly. These and related developments will further accelerate existing trends in sustainability.

Your Financial Adviser also has a critical role to play in helping you understand these trends and navigate the complexity and ensure that the asset managers they recommend are properly measuring and managing both climate and nature-related risks and impacts. This is hugely important as it will help ensure capital is channelled efficiently and productively to support the vital transition to global environmental sustainability.





Dr Ben Caldecott is the founding Director of the Oxford Sustainable Finance Group at the University of Oxford Smith School of Enterprise and the Environment. There, he is the inaugural Lombard Odier Associate Professor and Senior Research Fellow of Sustainable Finance, the first ever endowed professorship of sustainable finance, and a Supernumerary Fellow at Oriel College.

He is also the founding Director and Principal Investigator of the UK Centre for Greening Finance & Investment (CGFI), established by UK Research and Innovation in 2021 as the national centre to accelerate the adoption and use of climate and environmental data and analytics by financial institutions internationally. Since 2019, he has been seconded to the UK Cabinet Office as the COP26 Strategy Adviser for Finance.



Introduction

While 2020/21 will always be remembered for the Covid-19 pandemic, it should also be heralded for when sustainable investing moved into the mainstream, attracting record levels of inflows globally. Whether it's a case of 'revolution' or a natural 'evolution', the influencing of capital flows into sustainable businesses because of environmental, societal and governance factors is vitally important if the needed transition to a more sustainable world is to be made.

Up until now, we have been living in a linear economy, epitomised by a 'take, make, waste' model of production that is inherently unsustainable and has caused so much environmental damage. Yet the transition is already underway to a new model – what is described as a 'circular economy' – where there is more focus on activities that 'reduce, reuse, and recycle'.

Consumer preferences around how we can live our lives more sustainably is rapidly accelerating. And with estimates of over £5 trillion of wealth in the UK being passed down generations by the middle of the century, now more than ever we have the opportunity and responsibility to make investment sustainable. Not only does this make sense in continuing to build wealth, but also to deliver positive changes for the benefit of future generations.

There are some very practical steps we can all take in achieving this, without necessarily needing significant lifestyle changes. Making sustainable investment decisions with your pension and other investment funds could be one of the most effective ways of contributing to tackling climate change.



This guide will take you through...

1

What is meant by sustainable investment, from the perspective of the environment, but also society and how business can be better aligned for the common good

2

Key sustainability risks facing us, their impact and what are the investment opportunities to bring about change

3

The challenges laid squarely at financial markets and an explanation of markets' vital role, alongside actions being taken by regulators

4

How psychological factors can influence your preferences around sustainable investments

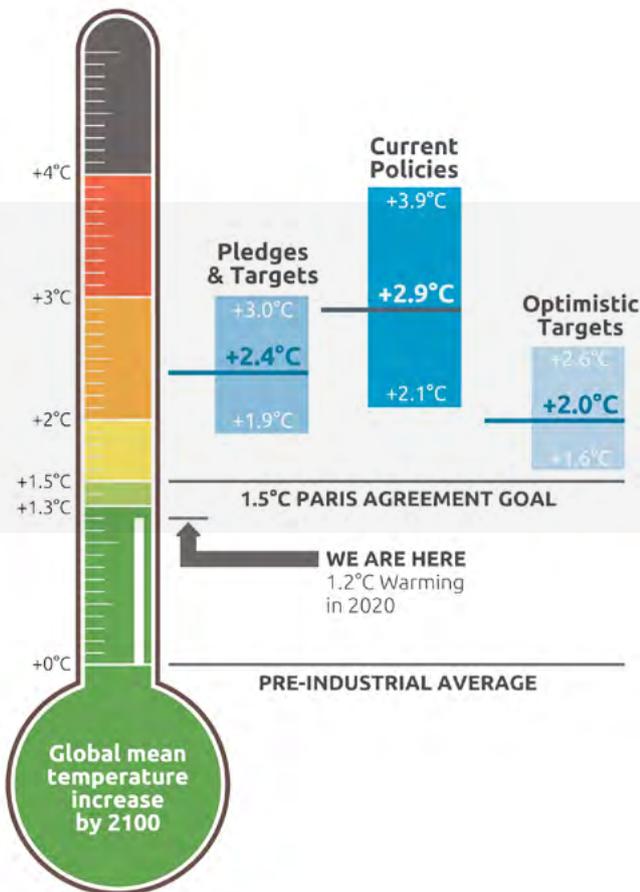
5

An overview of investment solutions that can be aligned to your sustainability preferences



Environmental sustainability

For many, the environment is the most emotive issue associated with sustainability. Understandably so, when you consider the trends, the risks they create and their impact, as well as the investment opportunities to help deliver change. Here, we consider climate change, the natural world, and pollution and waste.



The Landmark International Agreement

The Paris Agreement was successfully negotiated in 2015 and has been adopted by nearly every nation. Its central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C.

To maintain average global temperatures at any given level, whether 1.5°C, 2°C, or 3°C, net zero GHG emissions have to be reached. This is when GHG going into the atmosphere are balanced by removal out of the atmosphere. To achieve the Paris goals, it is widely accepted that we need to achieve net zero by 2050 and begin a rapid process of decarbonisation

CAT warming projections by Climate Action Tracker, Global temperature increase by 2100, May 2021 update



Climate change

Geological records show that fluctuations in the Earth's climate have been caused by many natural factors over the millennia, including changes in solar activity, volcanic eruptions, variations in the Earth's orbit, impact of asteroids and levels of CO2 in the atmosphere.

However, there is now irrefutable evidence that our use of fossil fuels since the beginning of the Industrial Revolution, in the 18th century and conversion of land from forests to agricultural use has accelerated the rate of climate change to unprecedented levels.

Burning coal, oil and gas produces CO₂, nitrous oxide and other gases that prevent the Earth's heat energy from escaping into space. This is known as the 'greenhouse effect' and keeps our planet habitable. However, as greenhouse gas (GHG) emission levels increase, this is making the Earth heat up too much since the Sun's heat energy becomes trapped in the atmosphere. Over time, the likelihood of catastrophic climate-related risks thereby increases.

This essentially means reducing emissions to zero in most sectors of the global economy and where emissions are impossible or very hard to eliminate, these will need to be captured and stored using available technological capability or absorbed naturally by the Earth's ecosystem.

Few countries today have made good on the promises they made in the Paris Agreement and the aim of the 2021 UN Climate Change Conference in Glasgow is to bring parties together to accelerate action towards the goals of the Paris. Countries are being asked to come forward with ambitious 2030 emissions targets that align with reaching net zero by the middle of the century, alongside protecting and restoring ecosystems, building defences, warning systems and resilient infrastructure and agriculture.

Without more ambitious targets and credible actions to back them up, estimates based on the current

Paris Agreement pledges and targets would put the world on track for being within the range of 1.9°C to 3°C global warming by the end of the century and all the serious implications that will come from such an outcome.



Nearly 60% of oil and fossil methane gas, and almost 90% of coal must remain in the ground by 2050 to keep global warming below 1.5°C, according to latest research



Climate-related physical risks

There are enormous human and financial costs associated with the physical risks of climate change.

These involve damage to infrastructure and private property, negatively affecting health, decreasing productivity, and destroying wealth. Acute physical risks are those which are event-driven, including increased severity of extreme weather events, such as cyclones, hurricanes or floods – while chronic physical risks refer to longer-term shifts in climate patterns (e.g. sustained higher temperatures) that may cause sea level rise or chronic heat waves.



A 2020 report revealed a 68% drop in wildlife population sizes from 1970 - 2016

Climate-related transitions risks

Some business sectors could face bigger shifts in asset values or higher costs than others when moving towards a greener economy. The speed of transition and how this affects certain sectors may have a direct bearing on their financial stability.

Take energy companies. According to latest research studies by University College London, nearly 60% of both oil and fossil methane gas and almost 90% of coal must remain in the ground by 2050 to keep global warming below 1.5°C. A significant number of regions have therefore already reached peak fossil fuel production, and any increase in production from one region must be offset by a greater production decline elsewhere. This in turn would lead to major changes in the value of investments held by banks, insurance companies and asset managers across coal, oil and gas companies.

The move towards a greener economy could also impact companies in the transport and industrial manufacturing sectors, or those involved in highly intensive energy usage such as steel and cement production.



Impact

According to World Bank estimates, climate change, if unchecked, will push 132 million people into poverty over the next 10 years and the wider disruption triggered could cost households and businesses at least \$390 billion a year. Insured losses have already risen five-fold in the past three decades.

Around a quarter of the land in the Northern Hemisphere has **permafrost** underneath it. As temperatures rise, permafrost thaw acts as a 'positive feedback loop' that further accelerates the warming of the Earth, by releasing methane back into the environment.

Communities and infrastructure are already experiencing the increasing costs of coastal flooding and erosion damage as sea levels and temperatures rise. According to research from the OECD, sea-level rise could be one metre (or more) by the end of this century, multiplying flood and erosion risks, and potentially permanently inundating some areas. Without adaptation, the cost of flood damage under higher-end sea level estimates would be equivalent to 4% of world GDP annually.

The increasing frequency and intensity of extreme weather conditions is having a disproportionately devastating impact on **food security** and livelihoods. It is the least developed countries (LDCs) and low and middle-income countries (LMICs) which are bearing the brunt of these disasters.

Extreme heat events also **incentivizes migration** by increasing

income differentials, with agricultural workers likely to be most affected. Many developing countries that host refugees are themselves experiencing long-term economic, social, political and environmental disruption given their own limited provision of water, food, housing and medical services.

Livestock accounts for nearly 60% of overall food sourced greenhouse gas emissions. Roughly half of this can be attributed to cattle and sheep grazing, together with clearing land for grazing and for growing feed crops.

Opportunities

To meet these global warming target limits requires the most capital-intensive transformation of how energy is produced, transported and used globally. Latest estimates from the Energy Transitions Commission* (ETC) suggest that \$1 trillion - \$2 trillion of investment (equivalent to 1-1.5% of global gross domestic product) is needed each year from now onwards.

* The ETC is a global coalition of 40 energy producers, industrial companies and financial institutions

According to a recent report from the International Energy Agency (IEA), most of the global reductions in carbon dioxide (CO₂) emissions between now and 2030 in the net zero pathway will come from technologies readily available today. But in 2050, almost half the reductions will come from technologies that are currently only at the demonstration or prototype

phase. This therefore demands that governments quickly increase and reprioritise their spending on research and development and the deployment of clean energy technologies at the core of energy and climate policy.

By 2050, the IEA forecasts that almost 90% of electricity generation will come from renewable sources, with wind and solar together accounting for almost 70%, with most of the remainder generated by nuclear power. Fossil fuel dependency will fall from almost four-fifths of total energy supply today to slightly over one-fifth. Those fossil fuels that remain in use will only be used in goods where the carbon is embodied in the product such as plastics, in facilities fitted with carbon capture capability, and in sectors where low-emissions technology options are scarce.

Many businesses already have serious commitments in place across their operations and supply chains to increase the use of **renewable energy**.

Below, examples of key 'clean tech' advances to enable a quicker transition to a greener economy



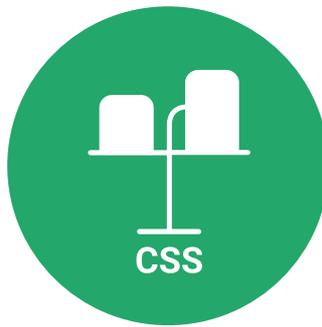




Hydrogen technology

By 2030, hydrogen could play an important role in decarbonising those polluting, energy-intensive industries like chemicals, oil refining, power and heavy transport as well as significant new jobs creation. Hydrogen fuel cell technology is still developing, and the cost of production has dropped significantly over recent years but is currently still very energy intensive and expensive, as is storing it. Recent UK government analysis however suggests that 20-35% of the UK's energy consumption by 2050 could be hydrogen-based. This new energy source would be critical to meeting our net zero emissions targets, if production is powered from renewable energy sources, which is a view shared by the UK's independent Climate Change Committee.

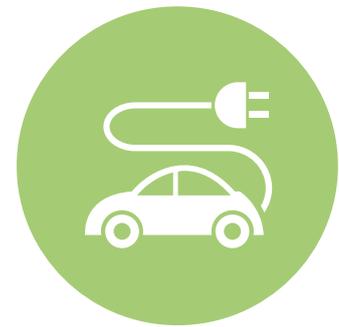
The aviation industry is a major carbon emitter. For example, flying round-trip from New York to London currently produces around the same amount of carbon emissions as the average household produces when heating their home for an entire year. Switching from jet fuel to liquid hydrogen could become a viable option for many airline businesses in the near future.



Carbon capture & storage (CCS)

Carbon capture and storage (CCS) is the process of capturing and storing CO₂ before it is released into the atmosphere. The technology can capture up to 90% of CO₂ released by burning fossil fuels in electricity generation and industrial processes such as cement production. Once the CO₂ has been captured, it is compressed into a liquid state and can then be pumped underground into depleted oil and gas reservoirs, coal beds or deep aquifers, where the geology is suitable.

In addition, direct air carbon capture is a new technological advance that uses chemical reactions to capture CO₂ from the atmosphere. When air moves over these chemicals, they selectively react with and remove CO₂, allowing the other components of air to pass through. Overall, the carbon capture processes remain expensive, but research and development efforts have already contributed to a significant cost reduction.



Electric vehicles (EVs)

The large-scale transformation from fossil fuel combustion engines to EVs is a key requirement. However, they will also need to be charged using clean energy, and the materials and components used in their manufacture need to be managed in a circular way. This means extending the use life of EVs, as well as their constituent components and materials, to conserve energy and resources, and thereby avoid energy intensive extraction and processing of raw materials. Efforts to go green are accelerating faster than the mining industry can sustainably produce battery quality nickel, lithium and more. Therefore, a major part of the technological opportunity is the significant scaling up of the recycling of the rarer and more valuable metal components of EV batteries.





Bioenergy

Bioenergy is a form of renewable energy that is derived from recently living organic materials known as biomass. Bioenergy technologies can convert renewable biomass fuels into heat and electricity using processes that involve burning, bacterial decay or conversion to a gas or liquid fuel. In the latter case the two most common types of biofuels are ethanol and biodiesel.

Biomass also serves as a renewable alternative to fossil fuels in the manufacturing of certain plastics, lubricants, industrial chemicals, and many other products.



Alternative proteins

Fundamental changes in global food systems are necessary if net zero emissions are to be achieved, since they account for around one-third of greenhouse gas emissions when pre- and post-production activities are included (source: IPCC 2019). The most impactful way in which emissions could be reduced is by decreasing protein in our diets derived from animals, in favour of alternative protein sources, since meat and dairy are responsible for around 60% of agricultural greenhouse gas emissions.

Increasing consumer awareness and rising demand for both meat and dairy substitutes has supported innovation in plant-based and cell-based technologies offering better taste and texture. Given the \$1.4 trillion size of the annual global meat market, the alternative proteins market represents a tremendous growth opportunity. While this evolving technology still requires scaling up for mass production at a competitive price, it has the potential to fundamentally change the way meat is produced to become a more humane, less environmentally damaging and drug-free alternative.



Green building

These techniques can reduce or eliminate negative impacts on the environment by using less water and improving energy efficiency such as using underfloor heating systems and environmentally friendly insulation technology. They can also have a positive impact on the environment by generating their own energy or increasing biodiversity. Such technology typically covers everything from geothermal heating to the use of energy-efficient insulation and appliances.



The vulnerability of the natural world

Economic value generated by the natural world is often described as 'natural capital'. We simply could not live without its abundance. Healthy ecosystems clean our water, purify our air, maintain our soil, regulate the climate, recycle nutrients, and provide us with food, raw materials and resources for medicines and other purposes.

There are two types of natural resources: renewables, with unlimited availability, like solar, wind or tidal power; and non-renewables, with regeneration taking millions of years, like minerals and fossil fuels.

Risks

The World Economic Forum's research showed that \$44trillion of economic value generation (more than half of the world's total GDP) is moderately or highly dependent on the natural world and is therefore significantly exposed to nature loss risk.

Biodiversity is the key indicator of the health of the global ecosystem and measures the number of different species of plants, animals and micro-organisms on the Earth. However, increasing pressure from climate change and overexploitation of natural resources is causing significant **biodiversity loss**. Therefore, causing real risk to business and financial stability. The WWF Living Planet Report 2020 reveals a 68% drop in wildlife population sizes tracked over 46 years (1970-2016).

Healthy **seas and oceans** play a vital role in regulating the planet's temperature. But we are undermining their ability to do this by turning them more acidic because of increased CO2 emissions.

Incidence of **water stress** events occur when the demand for water exceeds the available amount during a certain period or when poor quality restricts its use. Water stress causes deterioration of freshwater resources both in terms of quantity

(such as aquifer over-exploitation, rivers running dry), and its quality (for example due to pollutants from inefficient farming, inadequate sanitation and saltwater intrusion).

A particularly important cause is **deforestation**, due to land clearance for agricultural use, since trees both absorb and store CO2. If forests are cleared, or even disturbed, they release CO2 and other greenhouse gases. Forest loss and damage is the cause of around 10% of global warming.



Impact

Reduced biodiversity means we will face a future where food supplies are more vulnerable to pests and disease, and where fresh water supply is unreliable.

Falling biodiversity levels contribute to **loss of medicines** and **ecosystem imbalance**. For example, many pollinator species are in decline linked to the use of certain pesticides, drought, habitat destruction, air pollution and global warming. This can seriously impact the food supplies and levels of vegetation generally.

The human population has more than doubled in the last 50 years, so demand for water has inevitably increased. The agricultural industry, which accounts for 70% of freshwater usage, is regarded as the largest contributor to water scarcity since approximately two-thirds are being lost due to leakages, inefficient infrastructure, and poor planting practices. **Water scarcity** also has an impact on businesses due to higher operating costs. The need to stay competitive can mean water access is considered a competitive advantage and businesses may need to relocate to ensure greater certainty of supplies. Approximately 50% of the global population will be living under high water-stress by 2030.

Opportunities

Here are some examples of opportunities for 'nature-positive' business which could create millions of new jobs and several trillions in value of future economic growth potential.



\$44 trillion of economic value (more than half of the world's total GDP) is moderately or highly dependent on the natural world, according to research

Clean tech: Businesses in the clean technology sector can mitigate the environmental impacts of traditionally 'harmful' industries. Those focused on the Energy sector aim to store and use power in an environmentally friendly, cost-efficient manner. Some examples of activities include 'clean' coal (using carbon capture tech), smart-grid and metering technologies, energy efficiency and storage solutions, as well as waste-to-energy conversion opportunities.

For the Transport sector, developing technology to make cleaner vehicles (hybrid, plug-in hybrid, and electric), fuel cells and battery innovation are the main areas of focus.

Agricultural tech: Involving indoor farming practices where plants are grown in multiple vertically stacked layers, meaning that significant quantities of crops can be produced from an area of relatively small size. All vertical farming uses one of three

soil-free techniques – aeroponic, aquaponic or hydroponic – and they enable crops to be grown 365 days a year without the need for sunlight, soil and with significantly reduced water irrigation.

The UK's recently launched **Environmental Land Management Scheme** also includes an initiative whereby farmers are paid to manage their land in an environmentally sustainable way. The pilot scheme is made up from a wide range of standards, based on features such as promoting hedgerows or grassland to provide habitats for wildlife, farmland woodland protection as well as activities to reduce soil nutrient losses and emissions.

Desalination is another high impact opportunity for technological advance, to efficiently remove salt from sea water for consumption. However, existing processes are energy intensive, costly and rely on the use of fossil fuels. The next step away from the current water evaporation process could be 'reverse osmosis', using special, semi-permeable membranes to filter salt particles which would pave the way for the incorporation of the latest desalination technology that can also create and store energy in the process.

Water purification involves processes to remove undesired chemical compounds, organic and inorganic materials, and biological contaminants from water. These enable water to be reused, helping save on consumption and the number of plastic bottles that would otherwise be used for bottled water sources.



Pollution and waste

Environmental pollution is triggered by releasing into the atmosphere harmful material, like gaseous pollutants, toxic metals, particulate matter, sewage, industrial effluents, agricultural run-offs and electronic wastes into water bodies, alongside activities like mining.

Risks

Some of the environmental problems associated with pollution are soil erosion, leading to floods, salt deserts and sea recedes, desertification, landslides, depletion of natural resources and waste accumulation, as well as increasing pressure on vulnerable ecosystems and biodiversity loss.

Waste disposal processes have huge environmental impacts. Some waste will eventually decompose, but not all, and in the process generates methane gas, which is explosive and contributes to the greenhouse effect. Methane gas is 84 times more potent a greenhouse gas than CO₂ (source: edf.org).

Impact

Toxic air emissions are major contributory factors in human diseases such as damage to the immune system, as well as

neurological, reproductive, respiratory and other health problems. Other emissions such as particulate pollutions, particles of variable but very small diameter, penetrate the respiratory system via inhalation and can cause respiratory and cardiovascular diseases.

Packaging and waste materials including plastic, paper, tin and glass take hundreds of years to decompose, if at all. A large proportion is not disposed of responsibly and often ends up clogging up our oceans and rivers. While approximately 70% of UK packaging waste is recycled, it's still a process which contributes to fossil fuel usage and greenhouse gas emissions.

Plastics are most associated with their use in packaging as they are cost-effective and are versatile but take a long time to degrade. Also, the burning of plastics releases chemicals such as phosgene and dioxides that are a hazard to the ecosystem since the toxic material released enters the food chain and water bodies in the form of microplastics and can lead to serious health consequences. Currently, it is estimated that there are 100 million tons of plastic in oceans around the world. (Source: UNESCO)

E-waste is one of the fastest growing sources of global waste. Each year, approximately 50 million tonnes of electronic and electrical waste (e-waste) is produced, and only 20% is recycled. If nothing is done, the amount of waste will more than

double by 2050. (Source: The World Economic Forum)

Once e-waste is put into a landfill it can take one to two million years for glass components and one million years for plastic components to decompose, so it might still be around approximately 40,000 generations from now. It contains hundreds of different materials and toxic substances which if simply dumped into landfill, can over time leach into groundwater, posing serious risks to environmental and human health.

Discarded electronic items are often exported overseas to countries like China, India and Nigeria where workers at unregulated recycling operations use crude techniques to extract valuable metals and components. What's left is then incinerated, thereby creating significant harm to the environment and also hazardous working conditions with low pay.



By 2050, almost half the reductions in CO₂ emissions will come from technologies currently only at the demonstration or prototype phase, according to a report



Opportunities

Pollution prevention: Is an essential component of sustainable manufacturing practices, and can be encouraged by first reducing or eliminating the use of toxic chemicals and the creation of chemical waste by material substitutions and process modifications. For example, by shifting to bio-based, or using non-toxic solvents rather than oil-based ones.

Packaging & waste reduction: Procedures are centred around ‘reduce, reuse and recycle’ strategies by improving design and harnessing new materials and technology to eliminate as much waste and pollution at outset, as opposed to dealing with the disposal consequences afterwards. For example, there is a growing focus on ‘Eco packaging’. This involves:

1. Reusable/returnable types that can be cleaned and re-used, such as glass and plastic bottles
2. Recyclable packaging made of materials that can be re-used, usually in the form of corrugated cardboard
3. Biodegradable packaging that will easily break down in the soil or the atmosphere

Cutting food waste can be achieved, for example, by using natural ingredient alternatives, such as bio-cultures, to preserve food more sustainably. There is a growing number of profitable and innovative companies that have developed effective means of addressing these challenges. Edible coatings made from plant-based materials can

be applied to the surface of fresh fruit and vegetables to slow down spoilage and extend shelf life. As well as reducing food waste, it also means that harvesting can be optimised so fruits and vegetables can ripen further, and we can enjoy better tasting produce.



Approximately 50 million tonnes of e-waste are currently produced annually. But only 20% is recycled. At that rate, e-waste is set to more than double by 2050

E-waste recycling represents a huge opportunity with the material value alone worth more than the GDP of many countries. It produces substantially less CO2 emissions, is less energy intensive and is more economically viable than directly extracting new sources of metal ores from the ground. Working electronic goods and components are worth more than the materials they contain, so extending the life of products and re-using components brings an even larger benefit.

Green cement minimizes the carbon

footprint of cement production and the majority now available are based on technological advances that include energy-efficient, low carbon production methods and new cement formulations. Its major raw materials include industrial waste materials such as blast furnace slag and ash that otherwise would be discarded.

Garment recycling: Less than 1% of all garments are recycled to a high quality, with the rest being downcycled, incinerated or simply landfilled, translating into an estimated loss of USD 100billion worth of material annually. Around 2.5% of the world’s arable land is cultivated with cotton for clothing, but growing cotton accounts for around one quarter of the world’s annual demand for insecticides, which are particularly harmful to the biodiversity of the global ecosystem.

One key contributor to the low rate of garment recycling is the high cost associated with its disassembly, due to complicated and durable garment design and which is predominantly a manual process. New types of thread are however being developed that makes the disassembly process easier.



Social sustainability

Social sustainability is often overlooked compared to environmental issues. From a business perspective, social sustainability is about understanding the impacts of companies on people and society. It addresses issues around human rights, fair labour practices, living conditions, health, safety, wellness, diversity, a fairer society, philanthropy and more. Though such issues are not easily measurable, like those impacting the environment, they are easier to identify.

Human capital

Human capital is a measure of the skills, education and capacity of the labour force which influences their productive capacity, earning potential and ultimately economic performance.

When risks around human capital are properly managed, it becomes easier for a business to recruit new workers, improve productivity and morale within its workforce, while also helping reduce employee turnover. A culture of strong safety standards can reduce costly accidents and health care costs.

Social opportunities

Businesses are increasingly launching empowerment programmes aimed at improving local communities, and access to education and health care, while fostering a culture of entrepreneurship and innovation.



If unchecked, climate change will push 132 million people into poverty over the next 10 years, according to estimates



The human population has more than doubled in the last 50 years



Governance sustainability

There is increasing scrutiny over companies' conduct today. In particular, what steps they take to improve relationships with their customers, suppliers and employees, as well as how they manage their impact on the environment and society. The benefit for a business in improving its governance sustainability is enhancing its long-term prospects.

Business ethics

High standards of business ethics can contribute to profitability by reducing the cost of business transactions, building a foundation of trust with stakeholders, as well as bolstering a company's image and helping build its brand. Being a socially responsible company goes hand-in-hand with good business ethics.

Corporate governance

Corporate governance is a system of policies, processes and regulatory rules that direct and control a business's behaviour. Such a framework defines the relationship between shareholders, management, the company board and other key stakeholders.

Good governance means that a business is well managed and that the interests of management are aligned with its other stakeholders. These qualities can often be viewed as a competitive advantage by asset managers who invest in them.

A company's board plays a vital role in the development of corporate governance policies. It needs to engage with management of the business to provide clarity of strategic purpose and then implement it effectively to contribute to its success. Asset managers can play an important role in corporate governance as they need to ensure the right directors are appointed to the board.



It is estimated that up to \$2 trillion investment (up to 1.5% of global GDP) is needed each year to meet global warming targets





**Flying round-trip
from New York to
London produces
approximately
the same carbon
emissions currently
as the average
household produces
heating a home for
one year**



What is the role of financial markets?

How can we satisfy present needs without compromising future generations' ability to meet theirs? Financial institutions like banks, insurance companies and asset managers play a pivotal role, alongside government and regulation, if we are to be successful in sustainably combining often-competing interests. These challenges can be described as the three P's, 'people, planet and profit'.

The fundamental role of financial markets is to efficiently channel resources to the most financially viable companies, not just today, but more critically, in the future. In a perfectly efficient market, those companies which are considered good or taking steps to improve their sustainability are rewarded by access to financial markets to fund their development at a lower cost compared to those that are not.

Global commitments to respond to the threat of climate change, as outlined in the Paris Agreement of 2015, have placed the asset management industry at the forefront of delivering the improvements in

corporate citizenship needed if we are to stand any chance of meeting them.

For asset managers, this process involves the careful assessment of environmental, social and governance (ESG) risk factors when making investment decisions about which stocks or bonds to buy/sell. ESG risk factors matter because they can have significant impacts on a company's competitive position and its long-term financial performance, as well as delivering positive outcomes for the environment and society. Many of these risks have yet to be fully understood and priced into the value of assets by the financial markets, thereby presenting both significant challenges as well as opportunities for investors.

Measuring ESG risk

A wide variety of ESG risk measures can be used to assess the performance of a company and are calculated by many different independent research providers. Given the inherent complexity of this process, considerable care needs to be taken since there is no defined set of agreed measures or research methodologies, hence research opinions will inevitably differ. There is also a significant amount of ESG data self-reported by companies themselves, which can lead to meaningful gaps in data, as well as

issues around its consistency and reliability.

While fossil fuel-related issues are one of the most common environmental considerations, other risk measures here can include usage levels of water and renewable energy as well as the existence of a specific environmental policy. Equally, social and governance considerations are closely scrutinized.

Once the appropriate ESG risk factors have been identified for a specific company, investors need to determine how best to measure them in relative terms against their peers across the same or similar industry sectors.

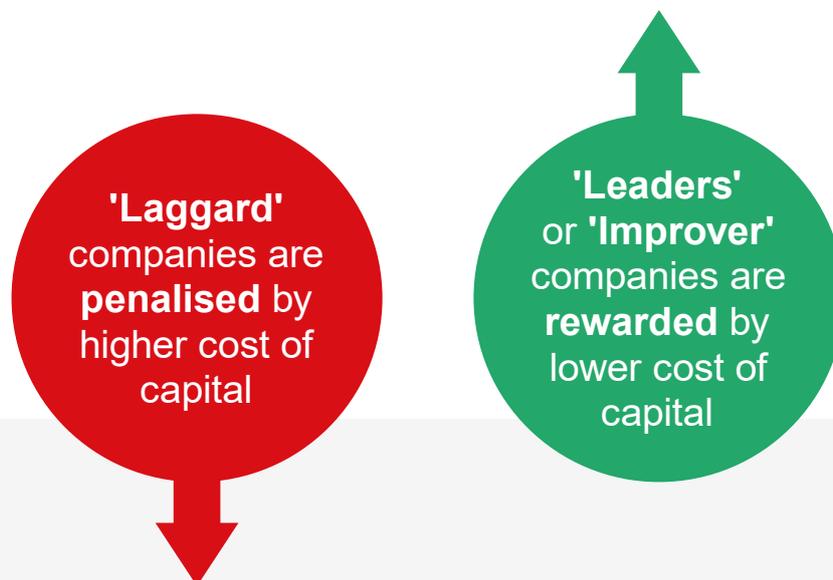
Science-based measures and targets should aim to be comparable over time to enable users of these disclosures to understand the firm's direction of travel and ambition. Some sectors, such as energy, are prone to low overall ESG scores, while others, such as technology, may have higher overall scores due to the nature of the underlying business models.

Different cultural biases and levels of transparency can also present significant barriers, often depending upon where the company is located.



Managing ESG risk

Asset managers clearly want to reduce their risk of being left invested in companies that own potentially 'stranded' assets. This means assets that are at greater risk of losing their value ahead of their anticipated useful life. For example, because of the impact of extreme weather events, new disruptive technologies, evolving regulation, or societal pressures to cease activities no longer deemed acceptable. For some asset managers, demonstrating responsible investor principles is an important consideration in meeting the preferences of their own investor base and to bolster their corporate reputations.





Measuring positive impact

Increasingly, asset managers are adopting the United Nation’s 17 Sustainable Development Goals (SDG’s) as an investment framework to measure their positive ESG impact alongside traditional financial performance.

The 17 SDGs are broken down currently into 169 targets and 232 indicators and provide a universally recognised roadmap to collectively address the global challenges of poverty, inequality, climate change, environmental degradation, peace and justice by 2030. Some have dubbed this as ‘the closest thing the Earth has to a strategy.’

As the demand for greater transparency around positive impact grows, asset managers are required to improve disclosure standards around their business activities, and many use these SDG definitions as

an industry-wide standard framework to measure them.

According to the OECD, for the economic recovery from the Covid-19 crisis to be durable and resilient, a return to a ‘business-as-usual’ mindset and environmentally destructive activities must be avoided, and economic recovery packages should be designed to ‘build back better’.

This includes alignment with the SDG’s long-term emission reduction goals, factoring in resilience to climate change, slowing biodiversity loss and the adoption of circular business models.

You can watch the global broadcast ‘Nations United’ on the 75th anniversary of the United Nations and the fifth anniversary of the adoption of the SDG’s.



WATCH: Urgent Solutions for Urgent Times



Active investing

For some asset managers, responsible investment principles extend to their 'stewardship' duties across all portfolios being managed, when exercising their shareholder voting rights, if it is deemed in the best long-term interests of their investors. Active ownership includes proxy voting, engagement, filing shareholder resolutions, and exerting other forms of influence given they are financial stakeholders in investee companies.

**£10
billion**

In September 2021, the UK Government raised £10 billion for green projects through the sale of the first green gilt, the largest inaugural green bond issuance by any sovereign government so far

- ▶ Proxy voting can be used to support environmental and social measures proposed by other shareholders. It can also be used as an escalation strategy where engagements, or dialogue, do not progress satisfactorily, triggering votes against strategically chosen management resolutions.
- ▶ Some investors actively engage with senior management or at board level of investee companies. This activity is typically conducted in private and asset managers may be reluctant to share the full details of discussions if the relationship is ongoing. However, disclosure of progress made from this activity is improving and asset manager reporting is becoming more structured.
- ▶ Asset managers can also gain greater influence with their active ownership by collaborating with other investors. There are a number of industry-driven initiatives, including the recently launched Glasgow Financial Alliance for Net Zero (GFANZ). Chaired by Mark Carney, UN Special Envoy on Climate Action and Finance, it brings together over 160 firms (together responsible for managing assets in excess of \$70 trillion) from the leading net zero initiatives across the global financial system to accelerate the transition to net zero emissions by 2050 at the latest.



The role of bond markets

Alongside equity markets, bond markets also play a pivotal role in raising the immense level of capital needed to make the required level of transition to a greener economy.

A type of bond, referred to as green, is issued by governments and companies to raise finance for climate change adaptation, investment in renewables and other environment-friendly projects. Their unique characteristic, compared to conventional bonds, is the requirement that the proceeds raised by the issuance be invested in projects that generate specific environmental benefits.

The very first green bond was issued in 2007 with the AAA-rated issuance from the multilateral institutions European Investment Bank (EIB) and World Bank. The green bond market has seen exponential growth and reached its most substantial milestone yet, with \$1 trillion in cumulative issuance since market inception in early December 2020.

While the financial risk and return characteristics of green bonds are the same as for conventional bonds, the main benefits to the companies and government entities that issue them is to enhance their reputation for sustainability and innovation. In addition, they can facilitate the

establishment of ‘public-private’ partnerships that might accelerate the pace of sustainable investment and facilitate the adoption of new technologies.

In the case of green bonds issued by governments, there are already 16 countries that issue them and recently the UK government announced the issuance of its first UK green gilt in 2021.

For investors, the lack of consensus regarding what actually constitutes a green bond is a source of uncertainty, since transparency and reporting by issuers is on a voluntary basis and of variable quality. Global regulatory bodies are however increasingly demanding improved definitions of green activities and pressing for full transparency on how the bond proceeds are put to use through external vetting procedures and improved reporting standards. As the market continues to grow, this transparency will be essential if the market is to function efficiently.

What is a bond?

In its simplest form, a bond issuer will raise a fixed amount of capital, repaying the capital (principal) and accrued interest (coupon) over a set period of time. The issuer, which can be a listed company, government agency or financial institution, will need to generate sufficient cash flows to repay interest and capital.



The role of financial regulation

Climate change is a global problem, requiring global solutions, in which the whole financial sector has a role to play. However, prime responsibility for the setting of climate policy and regulation continues to sit with national governments.

Central banks and supervisory bodies, representing five continents and half of the global greenhouse gas emissions, joined forces in 2017 to create a coalition called the **Network for Greening the Financial System (NGFS)** to bring about the reorienting of capital flows towards a more sustainable, low-carbon global economy in an orderly and co-ordinated manner.

Without reliable, climate-related financial information, financial markets cannot assess risks to avoid a ‘Minsky moment’ – the term sometimes used to refer to a sudden collapse in asset prices. This otherwise could potentially result in a disorderly transition to a low-carbon economy, which would create significant destabilizing costs to crucial industries that must rapidly adjust to the new landscape.

The Financial Stability Board is an internationally recognised body that monitors the functioning of the global financial system. It created the **Task Force on Climate-related Financial Disclosures (TCFD)**

in 2015 to improve and increase reporting of climate-related financial information by companies to investors. While these are a voluntary set of recommendations, they are widely accepted as a consistent, comparable and comprehensive climate-related disclosure framework.

Across Europe, the EU’s **Action Plan for Sustainable Growth** has also made great strides in clarifying asset manager and financial advice firms’ duties regarding sustainability. Its foundation was the creation of a classification system for sustainable business activities (referred to as **The Taxonomy Regulation**) by which large financial and non-financial companies are mandated to disclose their share of business, investments or lending activities aligned with the EU Taxonomy.

- ▶ Non-financial companies have to disclose the share of their turnover, capital and operational expenditure associated with environmentally sustainable economic activities as defined in the Taxonomy Regulation.
- ▶ Financial companies, mainly large banks, insurance companies and asset managers, now have to disclose the share of environmentally sustainable economic activities in the total assets they finance or invest in.

Alongside strengthened sustainability disclosure of business activities, the EU’s **Sustainable Financial Disclosure Regime (SFDR)** came into effect in March 2021, aiming to

provide greater transparency around financial products across Europe ‘promoting ESG characteristics’ or ‘investing in sustainable investments’.

These now must disclose such characteristics or investment objectives and how they have been attained on a regular basis to end investors. It means that financial companies can no longer just say they are managing their funds sustainably, when they are not to any meaningful degree. This issue is often referred to as **‘green washing’**. Effectively, the onus is now on companies to prove and demonstrate that their investment decision-making process, risk management and product disclosures are all fully aligned towards sustainability.

Post-Brexit, the UK Government has stated its aim to ‘match the ambitions’ of SFDR, while also publicising its commitment to align itself with the TCFD standards.

The UK Government has recently laid out its roadmap towards **‘Greening Finance: A Roadmap to Sustainable Investing’** which aims to better inform investors with the introduction of new Sustainability Disclosure Requirements (SDR). This will apply across UK listed businesses, including the financial services sector, as well as investment products.

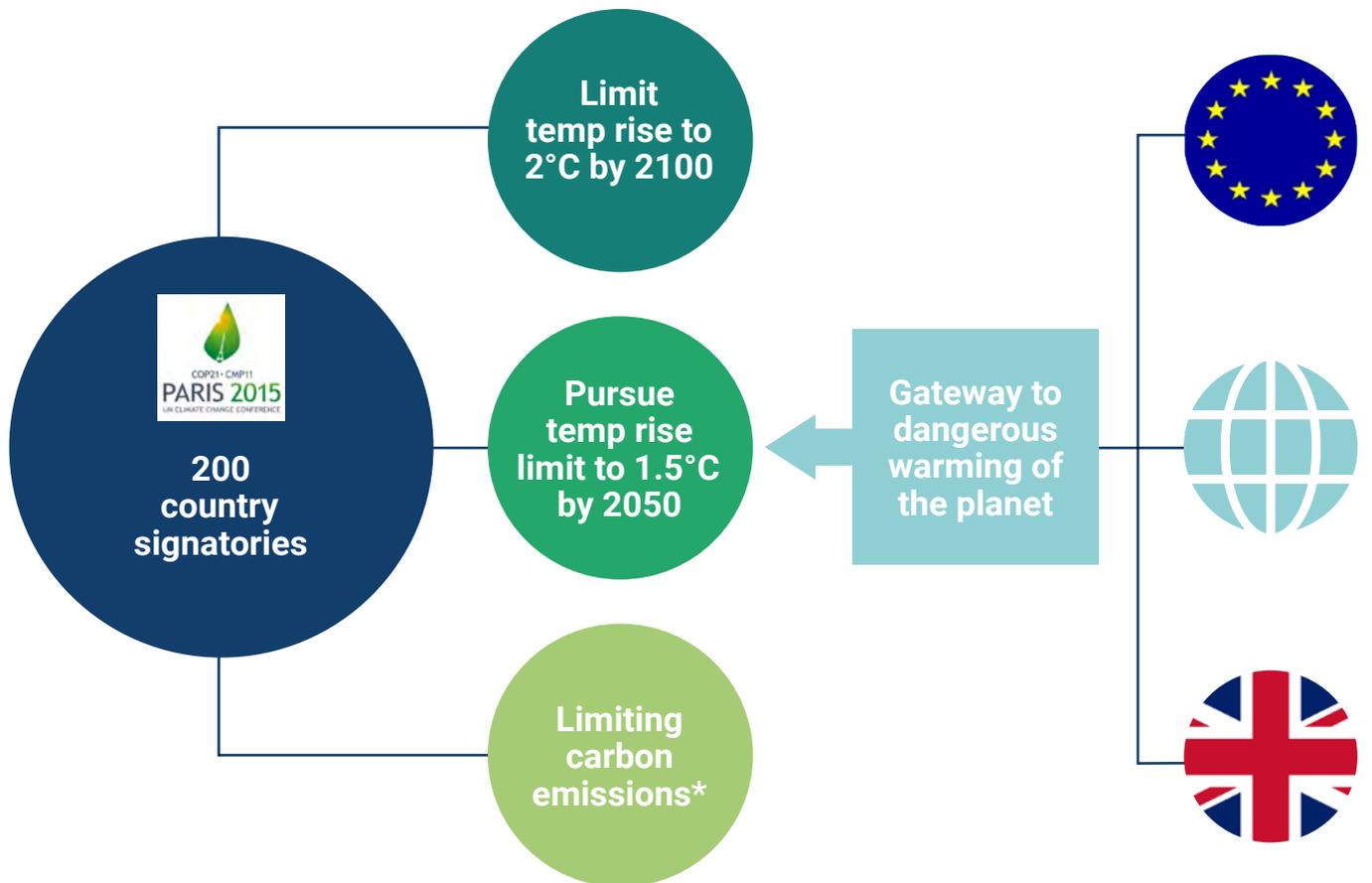


SDR will use a consistent framework and set of data metrics across the economy, using a UK Green Taxonomy of business activities, which is now being developed. The intention is to build on the work of the TCFD and to integrate with global standards to better support international compatibility. A new sustainable investment product labelling scheme is also being proposed, which will make it easier for retail investors to navigate the range of investment products available to them.



**READ
UK Roadmap**

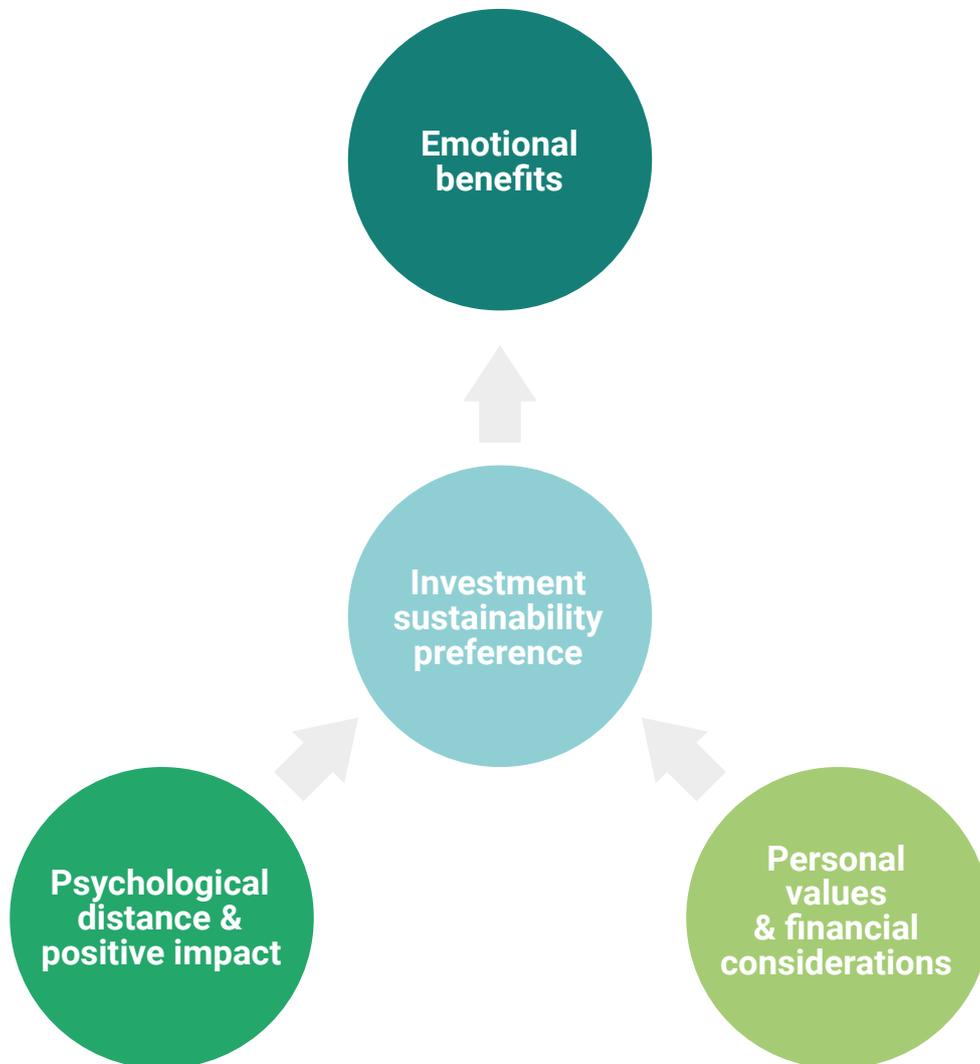
Building on the success of the TCFD, the G7 has also endorsed the launch of the new **Taskforce on Nature-related Financial Disclosures (TNFD)**. Its purpose is to shift global financial flows away from 'nature-negative' outcomes and push towards 'nature-positive' outcomes, by supporting financial institutions and businesses in assessing their nature-related risks and opportunities. The plan is to create and deliver a framework by 2023 for organisations to report and act on the evolving nature-related risks.



* Net zero' pathway by 2050 to limit climate change by 1.5°C



How can I match my sustainability preferences with suitable investments?



Understanding your sustainability preferences

In a perfect world, everything we use and own would be 100% sustainable. In reality, difficult choices must be taken when it comes to making sustainable investment decisions. No 'perfect' company exists.

In addition, we each have personal preferences and motivations that should be properly understood and acted upon. These can include psychological drivers and personal values as well as more traditional financial motives.

The personality traits that drive such sustainability preferences can be brought to light by using specially designed psychometric questionnaires. The results can then form the basis of more structured discussions with your Financial Adviser so that your preferences are properly understood and the implications of investment recommendations are made clear to you at the outset.

Some investors benefit **emotionally** when demonstrating that they have acted responsibly through their investment decisions and can feel compensated by this when accepting that they may receive lower returns.

Emotions are important in relation to making financial decisions, where those in positive emotional states are more risk seeking and decisions towards sustainable investments can be further influenced by giving rise to positive emotions. It is therefore important to understand investors' positive or negative emotions towards how companies manage their sustainability risks.

A measure of **psychological distance** explores how an investor perceives the impact of sustainable investing on the present and future, as well as themselves and others. Individuals are more likely to take greater risks with regards to decisions that are further away in time. If we consider the example of climate change, acting now may be unattractive to some, given that the promise of rewards may be distant in time as well as uncertain.

Some individuals express a desire to do good, where their investments have a **positive impact** on the environmental and wider society, and this is of high importance to them.

Although investors may show a preference for solutions that consider sustainability, there are trade-offs to be made that can restrict the number of potential investments and the ability to diversify a portfolio. It is therefore important to understand these **financial considerations** in relation to sustainability preferences.

The sole desire of maximising wealth at any cost does not identify

with those individuals who seek investments that are consistent with their **personal values**. They are therefore willing to accept potentially different risk/reward outcomes compared to other investment choices and may seek to express their values and beliefs to others through the companies they invest in. These altruistic benefits can provide psychological motivation for certain types of investors as they seek to achieve the self-expressive benefits associated with sustainable investing.



Latest results from Dynamic Planner's Sustainability Questionnaire suggest that around 70% of respondents have some degree of interest in investing sustainably



Types of sustainable investment solutions

When it comes to making investment decisions, be it your pension, ISA or another type of account, a number of important considerations are needed to ensure they both remain suitable for your future goals and also reflect your preferences around sustainability.



There are an estimated 100 million tons of plastic in oceans around the planet

Making investment decisions based on **personal values** can be traced back to their Quaker roots, such as the Religious Society of Friends. Religious institutions were at the forefront of 'socially responsible' investing and developed the concept of using money to avoid causing harm to your neighbour. Involvement in activities such as those associated with guns, alcohol, the slave trade, tobacco and even industries like tanning and chemical production were considered 'sinful'.

Many of the original **'ethical'** funds of the modern day adopt screening approaches to exclude certain companies from investment based on a set of defined ethical exclusion policies, with the intention of 'doing no harm'. Over time, their propositions have developed to incorporate various interpretations of what activities should be excluded. The concept of 'positive' solutions screening that apply 'doing good' criteria to balance the 'negatives' has evolved from this initial foundation and is often referred to as **'socially responsible'** investing.

The main area of activity more recently has been around **ESG themed** solutions, which are also

often badged as 'sustainable' or 'responsible'. They actively consider risks and opportunities associated with ESG and fully integrate these factors into their investment decision-making. The distinction between the social conscious of ethical funds can however be blurred as some ESG funds also have exclusion policies around fossil fuels, tobacco, and controversial weapons. To broaden the range of investment opportunities, some will adopt a selection screen that only considers companies rated 'best-in-class' on various sustainability measures compared to their respective peers, including amongst industry sectors that may not themselves necessarily be judged as sustainable. Others may decide to adopt a 'positive tilt' by favouring companies that score highly on ESG measures compared to the wider market (or benchmark index). Some can even include energy and mining sectors if there are clear targets in place for these companies to transition to cleaner and more sustainable activities.

Positive impact solutions are relative newcomers and are differentiated from those approaches that consider ESG risks solely as inputs to the investment decision-making, to those with a direct focus on the sustainability outcomes of their investment decisions. Their objective is to generate positive, measurable social and environmental impact alongside a financial return. The goals are often based on the United



Nation's Sustainable Development Goals and are often referred to as being 'Norms-based'. However, it is important to understand the target financial return of the underlying investments might be 'below' the wider market rate.

There has also been substantial growth in the number of more specialist **sustainability themed** solutions to fit more closely to defined investor preferences than more broadly themed options. These typically are badged as Environmental, Green, Clean Energy/ Renewables, Food/Water/Waste Management. From a suitability perspective, the more specialist the focus, the narrower the range of investment opportunities the asset manager can consider. Hence, a

more concentrated portfolio with lower diversification benefits.

This inevitably leads to differing risk/reward outcomes compared to conventional or broader ESG themed solutions.

It is also important to understand what sustainable investment approaches are being adopted by the asset manager across their other client portfolios, since they can have wider influence with greater assets held across a broader range of companies than would otherwise be the case with a more focused solution.



ESG

**In the UK,
Responsible
Investment funds
under management
reach £85billion**

[Source: The Investment Association, Aug 2021]

Type	Approach	Suitability considerations
Ethical	<ul style="list-style-type: none"> ▶ Exclusions of traditional 'sin' stocks based on personal values ▶ No perfect company exists 	<ul style="list-style-type: none"> ▶ Alignment with personal value is most important consideration ▶ Revenue limits apply across certain business activities
ESG	<ul style="list-style-type: none"> ▶ Also often described as 'sustainable' or 'responsible' ▶ Considers risk & opportunities ▶ ESG integration into investment decisions 	<ul style="list-style-type: none"> ▶ Some have exclusion policy around fossil fuels, tobacco, controversial weapons ▶ Stock selection can be 'best-in-class' or 'positive tilt' vs. wider market (index)
Positive Impact	<ul style="list-style-type: none"> ▶ The intention to generate positive, measurable social & environmental impact alongside a financial return ▶ Often based on the UN's Sustainable Development Goals - 'Norms-based' 	<ul style="list-style-type: none"> ▶ The target financial return might be 'below' market rate
Specialist Thematics	<ul style="list-style-type: none"> ▶ Growing range of solutions, typically Environmental, Green, Clean Energy/ Renewables, Water/Waste M'gmt 	<ul style="list-style-type: none"> ▶ Narrowing range of solutions the more specialist the mandate



Next steps

We hope you have found this discussion guide helpful in explaining the importance of sustainability, both the risks as well as the exciting investment opportunities that will play a vital role if we are to achieve the needed transition to a cleaner and fairer world.

With the choice of sustainable investing solutions growing so rapidly, it's important that your investment portfolio remains suitable from a risk perspective and aligned to your personal preferences.

Once you complete a psychometric based Sustainability Questionnaire, your Financial Adviser will be able to share the findings that define your unique personal preferences and ensure that your portfolio fully reflects them both now and in the future.



About Dynamic Planner

At Dynamic Planner, we are committed to closely supporting UK financial advice firms through our award-winning technology and software. Our user community currently reaches approximately one-third of UK advice firms.

But what do we actually do? Founded in 2003, Dynamic Planner is what is termed in financial services as a financial planning system, or software. It enables advice firms to accurately match people, like you, with suitable investment portfolios. Why? So, fundamentally, you can invest your money at a level of risk that is right for you and ultimately, fund the things in life most important to you.

We aim to help advice firms help their clients. In the context of this guide, by capturing their preferences concerning sustainable investing and matching them with investments which accurately reflect them in their portfolio.

In March 2021, we launched the UK's first psychometric questionnaire, to capture an investor's sustainable investing preferences, one month after expanding our partnership with American firm MSCI [Morgan Stanley Capital International], enabling UK advice businesses to access its sustainable investing fund research in Dynamic Planner. MSCI is a global pioneer with the deepest history in this area.

The work with our sustainability questionnaire was praised by judges

at the industry Money Marketing Awards 2021, where we were named 'Adviser Technology Provider of the Year' praising our 'integration of environmental, social and governance factors into the [client] fact-find process'.

Alongside all of that, we are committed to ensuring Dynamic Planner stands on its own as a sustainable business. In 2020, we sharpened our environmental focus by becoming a Carbon Footprint assessed organisation and today, by offsetting emissions and sponsoring environmental and humanitarian projects, we are carbon neutral. But it doesn't stop, or begin, there and one day, it is our ambition to become a fully zero carbon business.

Additionally in 2020, we received the Payroll Giving Platinum Award, for 'employers succeeding in generating sustainable income sources for UK charities through payroll giving'. In 2021, we were 'Highly Commended' in the Employer of the Year [Small Firm] category at the prestigious FTAdviser Diversity In Finance Awards. At the time of our entry, 40% of the Dynamic Planner team were women, while 12 different nationalities were represented.

Taking a step back, in 2016, we partnered with Scottish conservation charity Trees for Life, pledging each quarter – as an incentive, providing we met company targets – to donate enough money to plant a tree for everyone who worked for us. We have done this ever since and have

extended the idea to match the number of delegates who attend industry events we host. To date, Trees for Life has planted more than 1,500 trees on our behalf.

Like everything, it is a work in progress, but, like your pensions and investments, we are in this for the long term. We're glad you are too.



IMPORTANT INFORMATION: PAST PERFORMANCE IS NOT A GUIDE TO FUTURE PERFORMANCE. THE VALUE OF INVESTMENTS, AND THE INCOME FROM THEM CAN FALL AS WELL AS RISE.

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