GLOBAL SUSTAINABLE OUTCOMES

COLUMBIA THREADNEEDLE INVESTMENTS

News & Views Q1 2022

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Just as the Covid-19 pandemic shifted to a more manageable endemic phase, the world faced a fresh challenge: war in Europe. Russia's invasion of Ukraine – both countries that are resource rich – has intensified energy and commodity supply shocks across the world, whilst renewed lockdowns across China have further exacerbated supply chain dislocations.

This led both inflation and bond yields to march ever higher over the quarter, creating a perfect storm for sustainable funds. Rising commodity prices and interest rates triggered more aggressive rotation into shorter duration sectors including energy and basic materials, which are structural underweights for sustainable funds. However, longer duration sectors relatively underperform in rising rate environments given more of their value lies in the future. These include information technology and clean energy, both of which tend to be structurally overweight in sustainable funds. In this challenging environment, our Threadneedle Sustainable Outcomes Global Equities strategy dropped 10.8%, versus the MSCI ACWI which was down 5.3%.

Energy prices, already rising, also spiked higher in Q1 on concerns of a fall in Russian energy production and supply.

Figure 1: sector contribution to EU gas consumption and carbon emissions

	% of EU gas consumption	% of EU GHG emissions
Buildings	40%	36%
Industry	35%	32%
Power generation	25%	25%

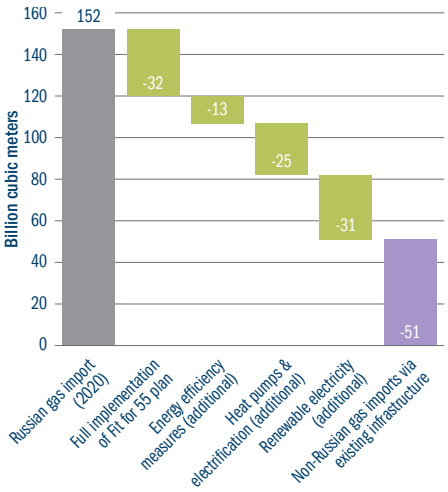
Source: Bloomberg, April 2022.

Pipe dream? Europe aims to reduce its gas dependency on Russia by two thirds by the end of 2022, and to zero by 2030. Source: iStock.

Europe is at particular risk given its heavy reliance on Russia for its energy needs: it buys roughly 25% of its oil, 50% of its coal and 45% of its natural gas from Russia.[1] The region faces a dilemma: pay for Russian energy and fund the very war it is desperate to stop, or halt purchases and deliver a severe blow to the European economy and society. There is also the real risk that Europe's biggest energy supplier simply withdraws supplies. With Europe finding itself in a full-blown energy crisis and consumers facing soaring energy prices, the EU has quickly had to reformulate its energy plans – in March it released a new energy policy, REPowerEU. Given that Europe's biggest gas consumers are also its biggest carbon emitters (Figure 1), RePowerEU targets both energy security and decarbonisation by cutting natural gas consumption.

Although the policy seeks to replace 100% of Russian gas before 2030 through the use of different sources, it leans more heavily on shifting to renewable energy and electrifying the economy. Thus, it remains aligned with the EU's "Fit for 55" decarbonisation policy which targets a 55% reduction in carbon emissions by 2030. There is however a big difference compared with this previous decarbonisation plan – this is more urgent and requires a faster reshaping of Europe's energy supply and consumption well before 2030 (Figure 2).

Figure 2: EU Russian gas import (BCM) reduction options by 2025



Source: Bellona, E3G, Ember and RAP, and EU Commission model-based projections supporting the Fit for 55 policy initiatives, 2022.

Key to this policy will be increasing the percentage of renewable energy within Europe's total energy generation to 45% by 2030. This requires increasing annual renewable capacity deployment to 4X for solar and 3X for wind versus Fit for 55's initial target to double existing deployment. In fact, it is estimated that from 2026 Europe could reach peak renewable additions of more than 150 gigawatts per annum versus the current 30 GW per annum.[2]

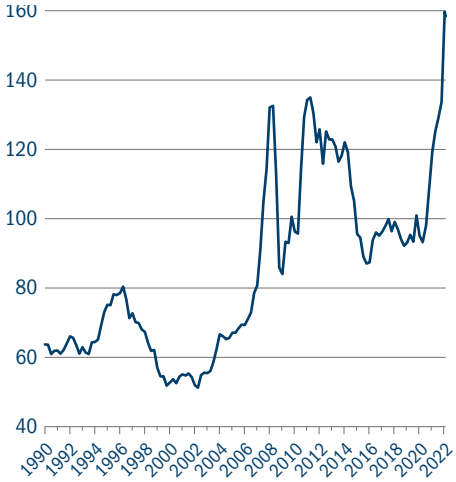
To-date, a key stumbling block to renewable deployment has been long permitting times. RePowerEU recommends that member states reduce this approval time to less than a year versus current approval times of between four years (solar) and nine years (wind).

Heavy industry such as cement and steel are large gas consumers and carbon emitters – but are also tough to electrify. Green hydrogen is Europe's long-term solution to decarbonise these sectors and RepowerEU upgrades the Fit for 55 target for GH investment by 3.6X versus the original plan of more than €500 billion in investment by 2030. In addition, with the surge in natural gas prices the relative economics of green hydrogen (produced using renewable energy) against grey hydrogen (produced using natural gas) are increasingly attractive. We expect these investments to provide a strong long-term tailwind to growth for Europe's large scale renewable developers.

The shift away from Russian gas consumption isn't just about shifting energy supply, however, it is also about changing the way we consume energy. Europe is looking to cut the consumption of natural gas across buildings and industry by doubling the rate of installations of electric heat pumps and investing in energy efficiency measures. With buildings being the biggest consumer of natural gas in Europe, the EU is looking to roughly double current building renovation rates.[3]

Sadly, the conflict in Russia and Ukraine has not just intensified the energy crisis but also food price inflation that was already running at decade-long highs before the invasion (Figure 3). This is leading to concerns of an emerging global humanitarian food crisis. Ukraine and Russia are referred to as the "food basket" of Europe with the two countries accounting for almost 30% of global wheat, 20% of corn and more than 80% of sunflower oil produced,[4] but the war means crops are unlikely to be sowed or harvested.

Figure 3: a new high in world food prices (1990-2022)



Source: Bloomberg, April 2022.

We are also seeing a surge in fertiliser prices due to both the jump in gas prices (a key input) and supply shortages as Russia accounts for 25% of global fertilizer supply.[5] Lower fertiliser application in response to this price surge is further impacting crop yields, while climate change is having an impact on yields in North and South America.

Rising food and energy prices sadly have a disproportionate impact on lower income demographics. We believe governments around the world will respond with social policies for greater consumer protection.

Within the Threadneedle Sustainable Outcomes Global Equities strategy sustainable farming is a key investment theme, with our holdings Deere and Trimble developing innovative precision agriculture technology solutions. These digital solutions can help farmers tackle some of their biggest challenges: to improve yields while reducing the use of water, fertiliser and pesticides; to automate farm tasks to help deal with labour shortage challenges; and, through the use of data and AI, to better navigate the world's changing weather patterns.

Although the Ukrainian war has dominated headlines over the quarter, it doesn't mean that climate challenges have diminished. In fact, the IPCC released a refresh of their climate report,[6] and it makes for alarming reading:

- Climate change will affect all regions with impacts more far-reaching than previously thought, and some impacts already irreversible. No financial sector will be unaffected by climate change.
- Extreme heat is now killing people globally, while 12 million people are being displaced by floods and droughts each year. More than 40% of the world's population is now highly vulnerable to changing climate.[7]
- Climate change has already caused substantial damage to the earth's biodiversity and ecosystems, with losses in many cases irreversible. Temperature rises will increase the rate of extinction. Effective ecosystem-based Adaptation (EbA) can reduce climate change risks to people, biodiversity and ecosystems.
- The risks associated with lower levels of warming are now greater than previously believed with the world entering an age of "climate calamities". Risk mitigation and risk sharing across all institutions, from public to private sectors, are key to adaptation and resilience.

The IPCC's conclusion is that the world has a "brief and rapidly closing" window to adapt to climate change or else face becoming unliveable. They believe reducing emissions should remain the world's top priority with a focus on implementing and delivering ambitious 2030 greenhouse gas emissions targets.

Sadly, with the world now increasingly divided along geopolitical lines, the global co-ordinated effort needed to achieve net zero is challenged. In addition, the surge in natural gas prices has seen the dirtiest energy source, coal, become cheaper by comparison, tempting countries and companies to burn more. As a result there is a global slowdown in older coal-fired power stations being taken out of service, and an increase in output at existing coal plants. Fortunately, this is being offset by countries also accelerating their renewable ambitions.

We believe that the current environmental, social and economic challenges facing the world only strengthen our secular sustainable themes as they increasingly become a vital part of the solution.

[1] https://ec.europa.eu/commission/presscorner/detail/en/qanda_22_1512
[2] ENTSO-E Statistical Factsheet, 2022.
[3] European Commission: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2022%3A230%3AFIN&qid=1653033742483
[4] Bloomberg, April 2022.
[5] Bloomberg, April 2022.
[6] https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/ February 2022.
[7] https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/ February 2022.

Company Q122 engagement highlights

We met with several of our holdings' management teams this quarter. Here we feature an interesting engagement:

Company	
CRODA Innovation you can build on™	Croda manufactures a diverse range of chemicals, 69% of which use organic raw materials from bio-based sources. What was clear from our site visit is that innovation and sustainability are evident throughout its divisions and at all levels of operation and management. This is a business in which sustainability is core to its goals. In fact, the pace of innovation at Croda is accelerating, which in turn is fuelling faster sales growth. Within its consumer (ingredients for the personal care industry) and agriculture segments this is in response to increased customer demand for more sustainable ingredients to help support their own decarbonisation and environmental ambitions. In its healthcare segment, meanwhile, growing complexity within healthcare industries is fuelling demand for more innovative solutions. Advances in technology such as artificial intelligence are allowing Croda to deliver this faster pace of product innovation for its customers. Croda's healthcare division is a major driver of both growth and change for the company. Its adjuvants (a chemical that helps increase the efficacy of drugs) and lipid nanoparticle (LNP) systems (a chemical that enables the targeted release of the mRNA vaccine) are a key focus, and it was Croda's LNP solution that helped the rapid clinical development of the Pfizer-BioNtech Covid-19 vaccine. Croda, ultimately, is a business based around molecules. These molecules have many application niches due to the millions of potential combinations. Croda's research and development is about playing with these combinations to obtain chemical and physical results to meet consumer needs – and doing so in the most sustainable way. As such, management believe the runway of future product innovation and growth is long.

Company Q122 new stock additions

Company	Sustainable Category	
Infineon technologies	Leader MSCI AA Energy & Climate Transition	Infineon is a global leader in semiconductors that help vehicles, factories and electronics run more efficiently. It focusses on providing tech solutions that promote energy efficiency, including chips for electric vehicles (EVs) and renewable power sources; vehicle safety; and digital security. It is a key beneficiary of digitilisation and energy efficiency trends – as more devices become digital, it is vital that they are as energy efficient as possible. Infineon's growth is leveraged to the shift to EVs with their power semi $ content roughly doubling in the transition from traditional cars to EVs.
ADS™ Our reason is water.™	Leader MSCI AA Energy & Climate Transition Sustainable Resource Management & Transformation	Advanced Drainage Systems is a pure play water company with a dominant position in plastic stormwater pipes and onsite septic wastewater solutions. More than 80% of its sales are from sustainable water products. Due to climate change, the risks of flooding are rising in the United States, ADS's key market, which will require upgrades to stormwater infrastructure. Growth is further supported by share gains from less efficient and costly concrete solutions. In addition, two thirds of its products are produced using recycled plastic, making ADS the second biggest plastic recycling company in North America.
Lilly	Leader MSCI A Health, Wellbeing & Food Security	Eli Lilly and Company is a leading pharmaceutical firm that is helping to tackle some of world's biggest healthcare challenges: diabetes, cancer, Alzheimer's and obesity. It has a premier R&D engine developing medicines for diabetes, oncology, immunology and neuroscience. It has a strong drug portfolio with its diabetes and oncology franchises, as well as new blockbuster drug launches: Tirzepatide for diabetes and obesity treatment, and Donanemab for Alzheimer's. In addition, Lilly scores well in access to healthcare relative to peers.
CROWDSTRIKE	Leader MSCI BBB Inclusive Work & Economic Development	Crowdstrike sells cloud-delivered cybersecurity solutions that are crucial to protect the operations of enterprises and vital government infrastructure in the face of cyber threats. Such threats are growing exponentially, not only from criminals but rogue states like Russia. Crowdstrike has industry leading product innovation with its sales reinvested into product R&D to support the launch of new cyber solutions. As CEO George Kurtz says,[1] "Cybersecurity is not just a job. It's a necessity... protecting [our customers] means protecting the integrity and securing the infrastructure of businesses around the globe."

[1] https://www.crowdstrike.com/about/corporate-responsibility/

Threadneedle Global Sustainable Equity Composite

GIPS Report: Columbia Threadneedle Investments EMEA APAC

Reporting Currency: USD

Statement of Performance Results

Calendar Year	Gross-of-fees Return (%)	Net-of-fees Return (%)	Index Return (%)	Composite 3-Yr St Dev (%)	Index 3-Yr St Dev (%)	Internal Dispersion (%)	Number of Portfolios	Total Composite Assets (mil.)	Total Firm Assets (bil.)
2021	19.21	18.45	19.04	14.52	16.83	N.A.	≤ 5	177.7	161.3
2020	28.12	27.30	16.82	N.A.	N.A.	N.A.	≤ 5	1.5	149.8
2019	33.17	32.32	27.30	N.A.	N.A.	N.A.	≤ 5	1.2	140.5

Inception Date: 12/31/2018

1. Columbia Threadneedle Investments EMEA APAC 'the Firm' claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS Standards. Columbia Threadneedle Investments EMEA APAC has been independently verified by Ernst & Young LLP for the periods 1st January 2000 to 31st December 2020. The verification reports are available upon request. A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. Verification does not provide assurance on the accuracy of any specific performance report. GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein.
2. The 'Firm' is defined as all portfolios managed by Columbia Threadneedle Investments EMEA APAC (prior to 1 January 2021, the firm was known as Threadneedle Asset Management) which includes Threadneedle Asset Management Limited, (TAML), Threadneedle International Limited, (TINTL), Threadneedle Investments Singapore (Pte.) Limited, (TIS), and Threadneedle Management Luxembourg S.A. (TMLSA), excluding directly invested property portfolios. The firm definition was expanded in 2015 to include portfolios managed by then newly established affiliates of Threadneedle Asset Management in Singapore. TAML & TINTL are authorised and regulated in the UK by the Financial Conduct Authority (FCA). TINTL is also registered as an investment adviser with the U.S. Securities and Exchange Commission and as a Commodities Trading Advisor with the U.S. Commodity Futures Trading Commission. TIS is regulated in Singapore by the Monetary Authority of Singapore. TMLSA is authorised and regulated in Luxembourg by the Commission de Surveillance du Secteur Financier (CSSF). On 1 July 2020, Threadneedle Asset Management Malaysia Sdn. Bhd (TAMM) was removed from the firm. Columbia Threadneedle Investments is the global brand name of the Columbia and Threadneedle group of companies. Beginning 30 March 2015, the Columbia and Threadneedle group of companies, which includes multiple separate and distinct GIPS-compliant firms, began using the global offering brand Columbia Threadneedle Investments.
3. A concentrated global equity strategy with a focus on high quality companies that seeks to deliver both positive sustainable outcomes, in accordance with the UN Sustainable Development Goals (SDGs), and superior financial returns. Derivatives are not allowed. The composite was created November 30, 2018.
4. The portfolio returns used in composites are calculated using daily authorised global close valuations with cash flows at start of the day. Composite returns are calculated by using underlying portfolio beginning of period weights and monthly returns. Periodic returns are geometrically linked to produce longer period returns. Gross of fee returns are presented before management and custodian fees but after the deduction of trading expenses. Returns are gross of withholding tax. Net of fee returns are calculated by deducting the representative fee from the monthly gross return. Policies for valuing investments, calculating performance, and preparing GIPS Reports, as well as the list of composite descriptions, list of pooled fund descriptions for limited distribution pooled funds, and the list of broad distribution pooled funds are available upon request.
5. The dispersion of annual returns is measured by the equal weighted standard deviation of portfolio returns represented within the composite for the full year. Dispersion is only shown in instances where there are six or more portfolios throughout the entire reporting period. The Standard Deviation will not be presented unless there is 36 months of monthly return data available.
6. The three year annualised ex-post standard deviation measures the variability of the gross-of-fees composite and benchmark returns over the preceding 36 month period.
7. The following fee schedule represents the current representative fee schedule for institutional clients seeking investment management services in the designated strategy: 0.65% on the first £50m; 0.6% on the next £100m; 0.55% on the next £350m; 0.5% thereafter. Gross of fee performance information does not reflect the deduction of management fees. The following statement demonstrates, with a hypothetical example, the compound effect fees have on investment return: If a portfolio's annual rate of return is 10% for 5 years and the annual management fee is 65 basis points, the gross total 5-year return would be 61.1% and the 5-year return net of fees would be 55.9%.
8. The benchmark for this strategy is the MSCI AC World Index. The MSCI AC World Index is designed to provide a broad measure of equity-market performance throughout the world and is comprised of stocks from 23 developed countries and 24 emerging markets Index returns reflect the reinvestment of dividends and other earnings and are not covered by the report of the independent verifiers.
9. Past performance is no guarantee of future results and there is the possibility of loss of value. There can be no assurance that an investment objective will be met or that return expectations will be achieved. Care should be used when comparing these results to those published by other investment advisers, other investment vehicles and unmanaged indices due to possible differences in calculation methods.
10. The percentage of non-fee-paying assets in the composite as of the end of 2020 and 2019 were 100% and 100% respectively.

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