

Impact @ Impax 2022

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Introduction

As we prepare this report following the summer of 2022, the physical impacts of climate change are again abundantly clear. Temperatures have shattered records in Europe, widely exceeding 40°C at times – even in the UK – as Antarctic sea ice coverage receded to a record July low.¹

The true value of water has meanwhile come into focus amid increasingly unpredictable rainfall patterns. As Europe faces an acute drought that has forced water rationing and substantially reduced agricultural output, the US West Coast continues to endure its driest decades for more than a millennium.² Devastating floods have covered as much as one-third of Pakistan, putting millions of people in need of humanitarian aid and destroying homes and infrastructure.

Russia’s invasion of Ukraine, which has contributed significantly to energy price inflation, particularly in gas-dependent Europe, has sharpened minds on the energy security provided by clean and affordable renewable electricity generation.

In this, our eighth annual Impact @ Impax report, we again look to quantify the environmental benefits delivered by the companies in our investment portfolios.

We continue to develop our impact reporting. For the first time, we have extended our reporting beyond equities and private markets strategies and this year also report on one of Impax’s fixed income portfolios. In another first, this reporting goes beyond environmental impact metrics to capture metrics for social impact. Two additional listed equities strategies, US Environmental Leaders and Active Sustainable Infrastructure, are now included too.³

We have also evolved our approach to reporting the impact of Impax’s investment strategies, compared to previous years. As we continue to broaden our reporting to include more Impax strategies, we concluded that it would be more useful to provide summaries of strategy-level impact in this report. Detailed strategy-level analysis is now incorporated within our regular product-level client reporting.

At Impax, the investment strategies we manage are designed to intentionally allocate clients’ capital towards those companies we expect to benefit as the global economy transitions to a more sustainable model. This impact report demonstrates how this intention has been translated into action.

¹ National Oceanic and Atmospheric Administration, August 2022. ² Williams, A.P., Cook, B.I. & Smerdon, J.E., 2022: Rapid intensification of the emerging southwestern North American megadrought in 2020–2021. ³ Reporting for the Active Sustainable Infrastructure strategy is based on model portfolio holdings, in advance of its launch in Autumn 2022.

Our impact reporting shows the environmental and social benefits contributed by Impax’s portfolio companies.

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The journey to net zero

Scientific consensus paints an ominous picture for the impact of climate change on human and natural systems. In its 2022 report, the Intergovernmental Panel on Climate Change (IPCC) highlighted the “widespread, pervasive impacts to ecosystems, people, settlements and infrastructure [that] have resulted from observed increases in the frequency and intensity of climate and weather extremes”.⁴

Addressing the drivers of climate change is essential to mitigate the risks it poses to the health and prosperity of global society. If global temperature rises are to be limited to 1.5°C in line with the Paris goals, global carbon dioxide (CO₂) emissions need to be brought down to net zero by 2050, approximately halving this decade.

We believe that the asset management sector can best contribute to meeting the Paris goals through the accurate pricing of climate risk in investment decisions and by investing in climate solutions. Impax is considered a specialist in the latter given our conviction that considerable investment opportunities will be created as society looks to mitigate and adapt to the consequences of climate change.

In this context, measuring the net CO₂ impact of the companies within Impax portfolios helps us demonstrate their contribution to the transition to a lower-carbon economy.

Our carbon reporting

We believe that investors benefit from understanding metrics aggregated at the portfolio level. In Figure 1, we summarise the CO₂ impact per US\$10 million (mn) invested in Impax strategies for one year, where the data has been calculated. This captures CO₂ emission and avoidance reporting for investment strategies that account for approximately 90% of Impax’s assets under management, as of 31 December 2021.

As in previous years’ reporting, these are CO₂ equivalent figures that capture greenhouse gas (GHG) emissions in the form of methane and nitrous oxide, as well as CO₂, where data is available. We have again benefited from third party assurance of these figures (see page 38).

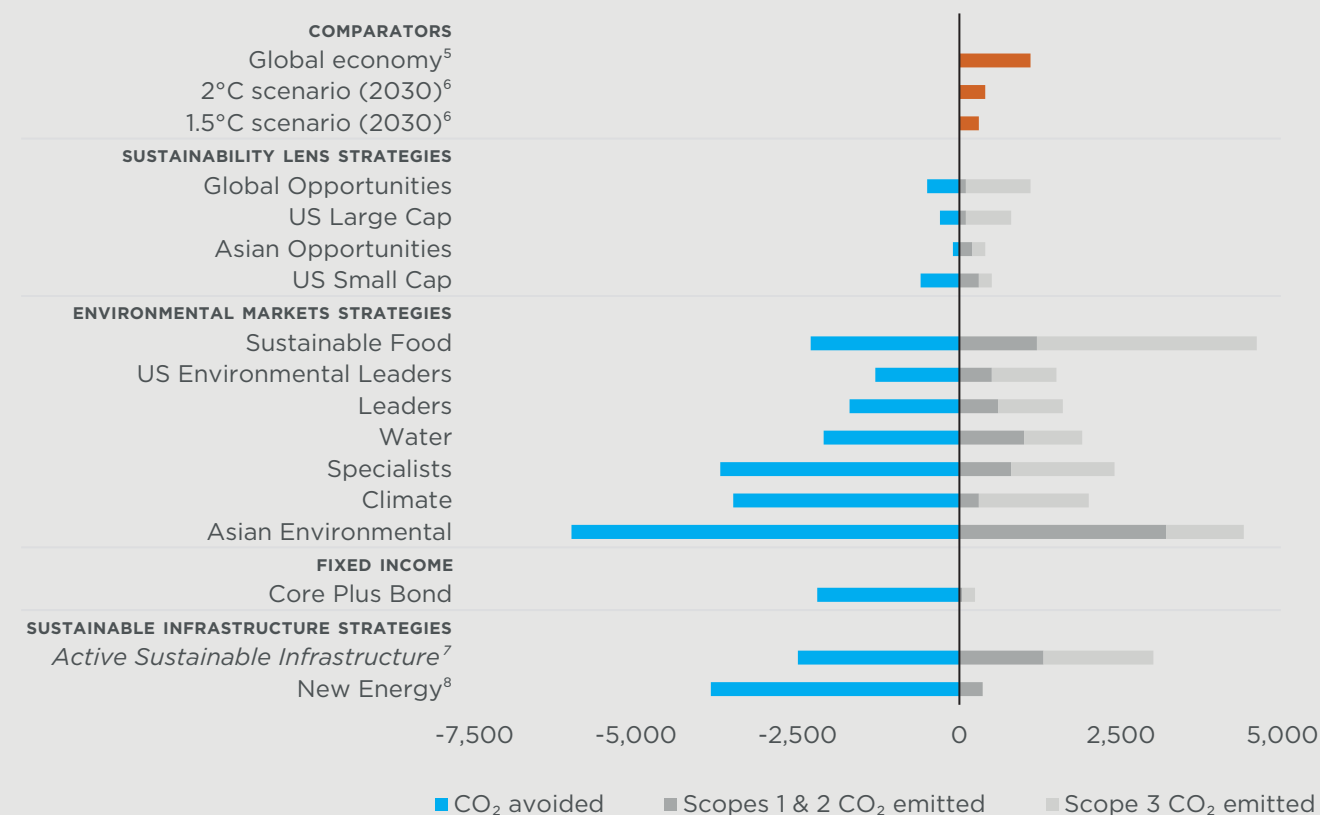
To calculate the net CO₂ impact by strategy, we subtract emissions avoided over one year’s use of portfolio companies’ products and services from emissions by portfolio companies and in their supply chains. Building on our reporting in 2021, we have separated each strategy’s emissions into Scopes 1 and 2 – which include direct and indirect emissions from energy produced and consumed by portfolio companies – and Scope 3 – which includes indirect emissions from portfolio companies’ supply chains and products in use.

Addressing the drivers of climate change is essential to mitigate the risks it poses to the health and prosperity of global society.

4 IPCC, 2022: Climate Change 2022: Impacts, Adaptation and Vulnerability – Summary for Policymakers.



Figure 1: CO₂ impact per US\$10mn invested by strategy for one year (tCO₂)



These figures refer to the past. Past performance is not a reliable indicator of future results. Impax impact calculations are based on strategy AUM and portfolio holdings as at 31 December 2021. Please refer to our Methodology (page 28) for details.

5 Source: Impax calculations based on estimated global assets under management in 2020 (Source: Financial Stability Board, 2021: Global Monitoring Report on Non-Bank Financial Intermediation 2021) and estimated global GHG emissions in 2018 (Sources: Our World in Data, 2020: CO₂ and Greenhouse Gas Emissions, & Emissions Database for Global Atmospheric Research, 2021: GHG emissions of all world countries). The GHG emissions figure used is an average of both sources, adjusted to an estimated 2021 figure using the average growth rate in CO₂ emissions from energy combustion and industrial processes between 2018 and 2021 (Source: IEA, 2022). The emissions intensity figure is derived by dividing the adjusted global GHG emissions figure by the global AUM figure.

6 Source: Impax calculations based on estimated global assets under management (AUM) in 2030 and estimated global GHG emissions in 2030 compatible with the 1.5°C and 2°C alignment scenarios. The 2030 global AUM figure is calculated by extrapolating the 2020 global AUM figure (Source: Financial Stability Board (FSB), 2021: Global Monitoring Report on Non-Bank Financial Intermediation 2021) using the compound annual growth rate in global AUM between 2002 and 2020 (Source: FSB). The 1.5°C-aligned and 2°C-aligned global GHG emissions figures are calculated by reducing 2010 global emissions (an average of two sources: Our World in Data, 2020: CO₂ and Greenhouse Gas Emissions, & Emissions Database for Global Atmospheric Research, 2021: GHG emissions of all world countries) by 45% (1.5°C) and 25% (2°C) respectively. The 45% and 25% reduction needed by 2030 are internationally accepted figures (IPCC, 2018: Global Warming of 1.5°C Summary for Policymakers). The emissions intensity figure is derived by dividing the estimated global GHG emissions figure by the estimated global AUM figure.

7 Reporting for the Active Sustainable Infrastructure strategy is based on model portfolio holdings, in advance of its launch in Autumn 2022. Data represents indicative underlying holdings of proposed strategy. Actual holdings and therefore impact data may vary and should not be relied upon.

8 Reporting for the New Energy considers the lifecycle emissions of its investments which covers Scope 1, 2 and 3 emissions. The source for solar and wind emissions factors is Annex II: Metrics & Methodology, in “Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change”. For hydropower, we use hydroelectric emissions factors published by the Norwegian Water Resources and Energy Directorate (NVE).



Impax's impact reporting continues to reflect the following principles:

- Holistic reporting that captures emissions across value chains and avoidance from the use of products and services provides a more accurate picture of companies' real-world impact
- Investing in carbon abatement solutions results in emissions that are best understood in the context of future avoidance they will enable
- Although carbon offsets can certainly play a part in abating emissions, we do not include them in our methodology. We believe it is more meaningful to focus on the positive impacts arising from a company's own products and services

We believe comparison with a real-world comparator can provide helpful context and challenge. As in previous years, we include a 'global economy' GHG intensity figure in Figure 1 that represents estimated emissions from US\$10mn of investment in the today's global economy overall. This has been calculated by dividing estimated total global emissions in 2021 by the value of total global financial assets.⁹

Clients and regulators are increasingly calling for evidence of investment portfolio alignment with the

transition to a lower-carbon economy. For additional context, we therefore also include estimates of the GHG emissions intensity of the global economy under scenarios compatible with limiting temperature rise to 1.5°C and 2°C, respectively. These comparisons demonstrate the scale of the challenge ahead.

The 1.5°C bar is based on the IPCC target of reducing global emissions by 45% from 2010 levels by 2030, to limit global warming to 1.5°C, and the 2°C bar indicates emissions reduction of 25% by 2030, to limit global warming to below 2°C.

The global financial asset values for 2030 are based on data by the Financial Stability Board. We note that the growth of global financial assets has been relatively steady over the long-term, even during years of financial or economic downturn. As a result, the carbon intensity of financial assets will need to be reduced by even more than 45% to account for the expected continued growth of financial assets over time.

Additionally, the global economy comparisons represent more challenging comparators than in previous years, for a combination of reasons:

- A rebound in global economic activity, following COVID-19 lockdowns in 2020, meant that global GHG emissions were higher in 2021¹⁰

⁹ Global emissions – Impax calculations based on Our World in Data, 2020 and Emissions Database for Global Atmospheric Research, 2021; global financial assets – Financial Stability Board, 2021.
¹⁰ Global energy-related CO2 emissions rose by 6% in 2021 to their highest ever level (Source: IEA, 2022).



- The trend of rising asset values continued in 2021
- Changes to our own methodology this year, including an improved source for global financial assets data

Measuring the net carbon impact of our investee companies

Impax has been measuring the positive impact of our investee companies' products and services since 2015, including their net CO₂ impact. This year is no exception and we have calculated the magnitude of impact from the investee companies' products and services supported by our investments, including the net CO₂ impact per US\$10mn investment, relative to real-world comparators.

Advances in Scope 3 reporting, as companies gain more clarity regarding the environmental data over more of their value chains, continue to lead to higher Scope 3 emissions reported for our portfolio companies year-on-year. Ongoing progress in Scope 3 data availability and improvements in reporting have led to lower net CO₂ impact reported compared with last year. See page 36 for a year-on-year comparison by strategy.

Renewables' rising contribution to the global energy mix means the equivalent positive impact of certain portfolio holdings, in terms of GHG emissions avoided, is lower than in previous years

when electricity grids were more carbon intensive. While this is very positive from an environmental perspective, of course, a greener grid makes a more challenging baseline for companies to demonstrate as large a net CO₂ impact.

The Impax Sustainability Lens is designed to highlight sub-industries within global equities that are expected to benefit from tailwinds or face lower levels of disruption risk in the transition to a more sustainable economy. By fully integrating analysis of sustainability risks and opportunities, these strategies typically seek to prioritise investments in less carbon-intensive sectors.

Impax Environmental Markets strategies target investments in companies that provide solutions to environmental challenges, whether through accelerating the clean energy transition or advancing resource efficiency. Through their products and services, many portfolio companies contribute to the avoidance and abatement of CO₂ emissions.

The outlier is the Sustainable Food strategy, where investments are skewed towards agriculture, an industry that generates particularly high Scope 3 emissions. Additionally, reported emissions at the strategy level are more likely to include double counting, as the strategy invests across the food and agricultural value chain. Such double counting is inherently difficult to calculate and eliminate.

Clients and regulators are increasingly calling for evidence of investment portfolio alignment with the transition to a lower-carbon economy.



The Impax New Energy strategy develops, constructs, operates and sells wind, solar, small-scale hydropower, and adjacent renewable energy infrastructure projects, predominately in Europe. Rather than simply purchasing operating assets, an investment in the New Energy strategy helps to take assets into and through construction, bringing new renewable energy capacity into the grid. This enables investors to displace fossil fuel energy and deliver positive environmental impact through their investment in the strategy.

Collaborating to accelerate progress towards net zero

Impax is a member of several organisations where we work collaboratively, in many cases with peers in the investment management industry, to contribute to meeting the goals of the Paris climate agreement.

Ahead of the COP26 climate summit in November 2021, Impax joined both the Net Zero Asset Managers (NZAM) initiative and the Glasgow Financial Alliance on Net Zero (GFANZ), a coalition of financial institutions committed to accelerating the decarbonisation of the global economy.

NZAM reflects the commitment by asset manager signatories to support the goal of net-zero GHG emissions by 2050 or sooner, in line with global efforts to limit warming to 1.5°C. We believe NZAM's objectives are well aligned with our investment philosophy and our experience as a specialist investor in climate solutions for more than two decades.

In addition to decarbonising local energy grids, investments in renewable energy can also help enhance energy security. This is particularly pertinent in the current European context, where Russian restrictions on gas exports to European countries in 2022 have revealed the geopolitical vulnerabilities of import dependency. In the long term, expanding renewable capacity can improve the security – and reduce the marginal cost – of European electricity supplies.

Complementary to NZAM, GFANZ is supporting efforts to translate net-zero pledges into action and help the financial sector converge around frameworks and methodologies to effectively align activities to 1.5°C pathways. Impax has been an active member of a GFANZ workstream which is developing guidance on Financial Sector Net-Zero Transition Plans, due to be published at COP27 in November 2022. Impax is also contributing to a second workstream that advocates for the public policy needed to help build a net-zero economy.

Impax is currently finalising its net-zero implementation plan for publication ahead of COP27. The Impax net-zero plan is aimed at ensuring positive impacts in the real economy with a particular focus on investing in climate solutions.



Innovations in impact reporting

The measurement of impact is an evolving discipline. At Impax, we continue to develop our approach through our own research and in response to feedback from our stakeholders.

For each investment strategy, we consider its specific investment objectives when identifying the most relevant impact metrics to measure and report.

Our reporting expands again this year to include another of our Environmental Markets strategies, US Environmental Leaders, which was launched in 2019. We also include impact reporting for our actively managed Sustainable Infrastructure strategy based on model portfolio holdings, in advance of its launch in Autumn 2022.

We are also delighted to have reported, for the first time, on the impact linked to one of Impax's fixed income portfolios, Core Plus Bond. In another first, this reporting includes two metrics for the portfolio's positive social impact alongside environmental metrics.

Of course, the impact data we can report is largely a function of what is reported by our portfolio companies, although we can estimate key performance indicators where there is robust industry data. While corporate measurement and disclosure is improving, it remains patchy and inconsistent, especially beyond carbon reporting. We continue to make the case for stronger reporting through our company engagements. In turn, we expect this will enable us to continue improving the breadth and depth of our impact reporting to clients over time.

Fixed income: Expanding the scope of our reporting

The transition to a more sustainable economy is creating new risks and opportunities in fixed income markets. This is resulting in growing opportunities for investors to finance positive social and environmental outcomes through bond investments. Unlike investments in equities, which are inherently tied to general corporate activities, investments can be made in specific issuances of fixed income securities where the proceeds are directed towards a pre-defined use.

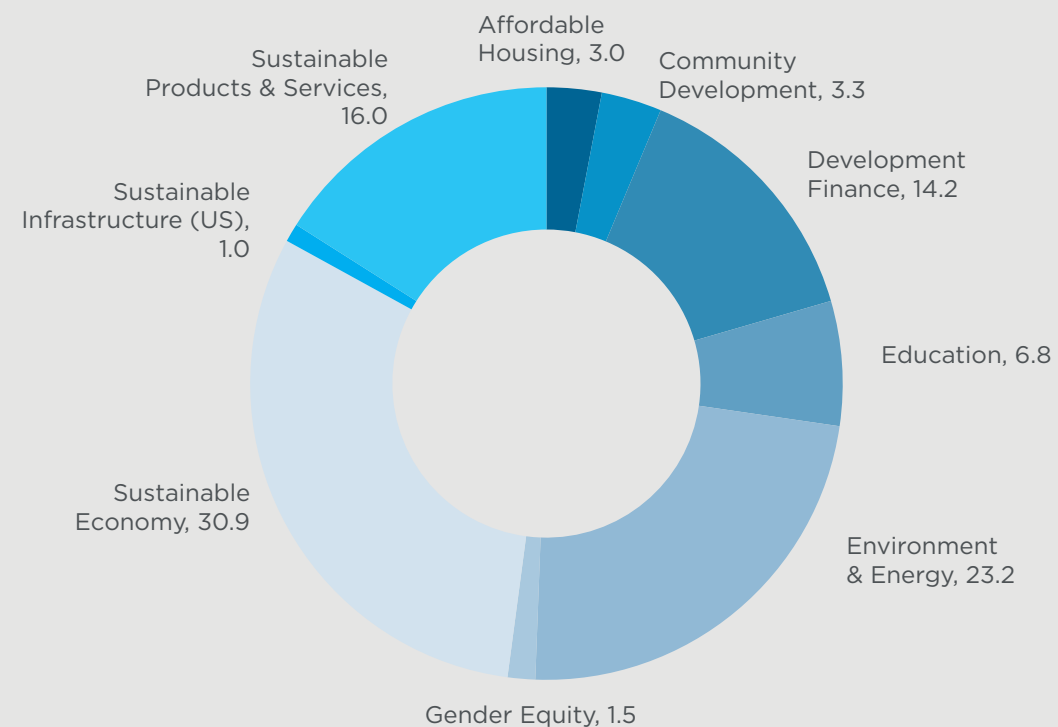
Issuers have been increasingly tapping fixed income markets to raise capital for projects that support the planet (green bonds) or its people (social bonds). According to the Climate Bonds Initiative, a combined US\$940 billion worth of green, social and sustainability-labelled bonds (a combination of environmentally and socially focused bonds) were issued in 2021 – up 48% from the previous high of 2020.¹¹ Alongside corporates, leading issuers include supranational bodies and government-backed entities like local municipalities and state-owned companies.

In addition to labelled bonds with assurance of the use of proceeds there is a breadth of fixed income securities, including asset-backed and mortgage-backed securities, that are linked to various environmental and social impact themes (see case studies below). Our expertise in assessing the authenticity of these instruments in delivering environmental and social benefit materially widens the opportunity set from bonds with third party assurance.

At Impax we manage a Core Plus Bond portfolio which seeks to finance affordable housing, community development, development finance, education, environment and energy projects, gender equality, sustainable infrastructure and sustainable



Figure 2: Impax Core Plus Bond portfolio exposure (%)



Source: FactSet. Data as of 30 June 2022. Figures are based on Impax internal data. Data represents underlying holdings of representative portfolio.

products and services. We believe that quantifying the positive environmental and social impact of the portfolio demonstrates the importance of bond issuance as a source of capital driving sustainable finance. It can also reassure investors that the intention behind a bond issuance is being followed through.

In order to quantify the environmental impact, we have applied the same metrics as in our listed equity portfolios net CO₂ emissions avoided; renewable energy generated; water provided, saved, or treated; and materials recovered or waste treated.

Eligible bonds range from issuances that finance or refinance renewable electricity assets, like wind farms, to those that finance improvements in the energy and water efficiency of buildings. Asset-backed securities (ABS) that pool residential, consumer or commercial loans also form a large part of the opportunity set.

¹¹ Climate Bonds Initiative, 2022.



Almost one-third (29%) of the Core Plus Bond portfolio targets positive social outcomes.¹² Eligible social bonds include issuances for development finance, issued by the likes of the European Investment Bank and the World Bank, as well as for advancing educational opportunities, typically through student finance. Social bonds are issued under specific sustainable bond frameworks that govern use of proceeds, project evaluation and selection, management of proceeds, and reporting.

We have calculated two social impact metrics for the portfolio, the first of which is the number of educational and graduate loans financed annually. Asset-backed securities consisting of the collateral of private student loans have been issued by US

lenders like CommonBond and SoFi, who have respectively offered more affordable loans to refinance existing student loans and alternatives for graduate students to fund further education. In 2021, US\$10mn invested in the portfolio financed 11 educational or graduate loans.

The second metric is the number of affordable housing units financed by the strategy. In the US, primary issuers include government-sponsored lenders Fannie Mae and Freddie Mac, who have a mandate to enable greater access to affordable home and rental housing finance (see case study below). In 2021, US\$10mn invested in the portfolio financed two affordable housing units.

Environmental impact: Mosaic Solar Loan Trust ABS

Impax has made investments in the relatively new, but fast-growing asset class of solar asset-backed securities (ABS). Securities issued by the Mosaic Solar Loan Trust pool loans to finance the purchase and installation of residential photovoltaic (PV) solar power generation systems and related items or services. Repayments by homeowners form the cashflows used to pay coupons to solar ABS investors.

We believe that solar ABS deliver an environmental benefit by catalysing adoption of solar power generation. By widening access to finance for residential PV systems, these securities ultimately enable households to generate renewable electricity on their rooftops, reducing their dependence on polluting alternatives and improving energy security.

The typical solar ABS in the US finances around 6,500 loans to households. Based on the average size of a residential PV system in the US, we have estimated that each security results in about 33 MW of renewable energy capacity.¹³

Case studies are provided for illustrative purposes only.

¹² 31 December 2021

¹³ Impax calculations based on the average size of a residential PV system - 5kW, according to the Solar Energy Industries Association (2021) - and data from solar ABS issuers.



Our methodology for attributing quantified impacts for fixed income investments is necessarily different from our process for listed equities.

The key difference is the time lag between investing in a bond and being able to report an impact outcome. This is because funds raised through a bond issue will take some time to be deployed and deliver any social or environmental benefit. Generally, we therefore only consider bonds which have been held for over one year in our fixed income reporting. In contrast, secondary market equity investing provides immediate exposure to the activities of a listed company, albeit with less claim to additionality than new bond issuance.

Another difference is in the approach to attributing impact. For listed equities we derive impact per US\$10mn invested based on a strategy's percentage ownership of each portfolio company's equity, measured as a percentage of shares outstanding owned. For fixed income investments, we base our calculations on the enterprise value - not equity value - of respective issuers to reflect the entire capital structure (both debt and equity). There are exceptions, though. For certain government-related issuers, enterprise value was substituted with total assets in our calculations. For labelled bonds, such as social and green bonds, the impact attributable to a strategy is based on the percentage ownership of that issuance.

Social impact: Fannie Mae MBS

In January 2021, Impax invested in the first social mortgage-backed securities (MBS) issued by Fannie Mae (the Federal National Mortgage Association). These fixed income securities are comprised of mortgage loans, purchased and pooled by Fannie Mae, that are secured by US residential properties.

The social MBS is collateralised by loans that meet the social component of the sustainable impact criteria established in Fannie Mae's Sustainable Bond Framework, which is evaluated by independent third party Sustainalytics.¹⁴ It supports loans backed by multi-family properties qualifying as either Restricted Affordable Housing - rent-restricted housing subsidised by US government programmes - or Manufactured Housing Communities (MHCs), comprised of factory-built homes. MHCs are a crucial component of the unsubsidised affordable housing inventory in the US.

In 2021, Fannie's Mae's social bonds financed a total of 85,300 mortgages for multi-family affordable housing and over 48,200 MHC pads, which are the spaces where tenant-owned homes sit.¹⁵

Case studies are provided for illustrative purposes only.

¹⁴ Fannie Mae, 2022: Sustainable Bond Framework.

¹⁵ Fannie Mae, 2022: Impact from Fannie Mae Green and Social Bonds.



Water: Pushing for clearer disclosure

Too often water is overlooked in sustainability and risk assessments, and water data reporting is well behind carbon reporting in terms of both quantity and quality.

This largely reflects a general lack of understanding that water is relevant to all sectors of the economy, and not just those that have water-based or directly relevant products. To some extent, patchy corporate reporting reflects a historic lack of pressure from investors to accurately understand water metrics. Reporting is also hampered by the complex and location-specific nature of water. Yet the availability and quality of water present systemic and unpriced risks to companies around the world.

Since water is perceived as a cheap and abundant resource, many companies do not report it as a material risk. Water prices typically do not reflect the dynamics of supply and demand: some of the lowest prices are found in water-stressed areas. When no monetary value is ascribed to natural resources, they are often over-consumed.

The European drought of 2022 – generally understood to be the most severe in at least five centuries – is yet another demonstration that water-related risks are material even in normally saturated regions.

Impax is a founding signatory of the investor-led Ceres Valuing Water Initiative, launched in August 2022. It aims to encourage some of the world’s largest corporate water users and polluters to value water, treat it as a financial risk and better protect water systems. We believe this is an important step towards more responsible stewardship of water resources and we will continue to engage on water-related risks and disclosures with portfolio companies.

We believe that how water impacts companies, and how they impact water, is vital for investors’ understanding of water-related risks and opportunities. We believe that this ‘double materiality’ should be reflected in the International Sustainability Standards Board (ISSB) framework that is currently under consultation. At the time of writing, the impact of companies on water

is overlooked in the draft reporting framework, however. We believe this is a missed opportunity for higher standards on water-related corporate disclosures.

Challenges in capturing negative water impacts

We are constantly looking to improve our understanding of both the positive aspects of water impact, in the form of water savings, provision or treatment, and the potentially negative aspects through water withdrawal.

Consideration of ‘net water impact’ reporting has led us to conclude that it is inherently less relevant as a metric than net CO₂ impact. Unlike CO₂ emitted into the atmosphere – a ‘global common’ – the negative impact of corporate water withdrawal can only be understood in its local context.

High levels of water withdrawal are naturally more problematic in areas of water stress, such as the US West, than in areas of relative abundance. The

nature of water withdrawal matters too in the local context. Water quality can often also be more critical than water availability, highlighting the importance of water treatment as an important solution.

Although many companies report high-level withdrawal data, it typically will not include the granularity needed to capture material local water impacts. Two comparable companies may withdraw the same volume of water, for example, but one may source its water sustainably – with a minimal negative environmental impact – while its peer may extract water unsustainably by depleting aquifers. Location-based water reporting remains very complex and rare, and therefore difficult for us to reliably estimate.

For this reason, water withdrawal figures do not currently lend themselves well to either aggregation or comparison against a company’s positive water impacts to create ‘net’ water impact’ figures.

We believe that being able to measure how water impacts companies, and how they impact water at the local level, is vital for investors’ understanding of water-related risks and opportunities.





Looking beyond carbon emissions

The climate emergency may be the most alarming environmental challenge facing global society, given its grave and complex implications for natural and human environments, but it is by no means alone.

Impax Environmental Markets strategies invest in companies that deliver environmental solutions beyond curtailing GHG emissions. To varying extents, the products and services of their portfolio companies deliver materially positive water and waste impacts that we quantify in our reporting.

In Figure 3, we report on the water treated, saved or provided, and the materials recovered and waste treated, per US\$10mn invested for one year in each Impax Environmental Markets strategy. Apart from the Water strategy, which specifically invests in companies addressing water scarcity and water quality and ageing infrastructure, positive water impact is typically delivered by portfolio holdings in water utilities and water technology companies. Recycling and waste management companies are typically major contributors to portfolios' materials recovered and waste treated impact figures.

We also report the total renewable electricity generated by these companies – as well as the Impax New Energy strategy – as an indicator of their contribution to the clean energy transition. By generating renewable electricity, companies can help reduce demand for fossil fuel-fired generating capacity. This can contribute, in turn, to lower CO₂ emissions and deliver progress towards national and global net-zero targets.

To provide context, Figure 3 includes real-world equivalencies for each of these three environmental impact metrics. These figures have been subjected to third party assurance (see page 38). Our calculations are based on data for UK households, except for the Asian Environmental and US Environmental Leaders strategies which are based on local equivalencies. See page 34 for a year-on-year comparison by strategy.

Local context is highly material to understanding the environmental impact of renewable generation. In Asia, where coal-fired generation continues to play a more dominant role in the energy mix, the positive impact of displacing existing generation capacity is greater.

We therefore report separately on the coal displaced in Asian cities per US\$10mn invested in the Impax Asian Environmental strategy. In 2021, this figure was **1,160 tonnes of coal** – equivalent, in terms of health outcomes, to 10 people smoking 20 cigarettes a day for a year.¹⁶

¹⁶ Berkeley Earth, 2015: Air Pollution and Cigarette Equivalence.



Generating clean alternative energy: Xinyi Solar



Xinyi Solar is the world's largest solar photovoltaic (PV) glass maker, supplying approximately one-third of global demand for PV modules. The Chinese company specialises in the research, development, manufacturing and service of solar PV glass, and also provides solar power installation investment, construction, and operation services. Based on the solar PV capacity installed in 2021, the renewable electricity generated from Xinyi's PV glass helped avoid approximately 24 million tCO₂.

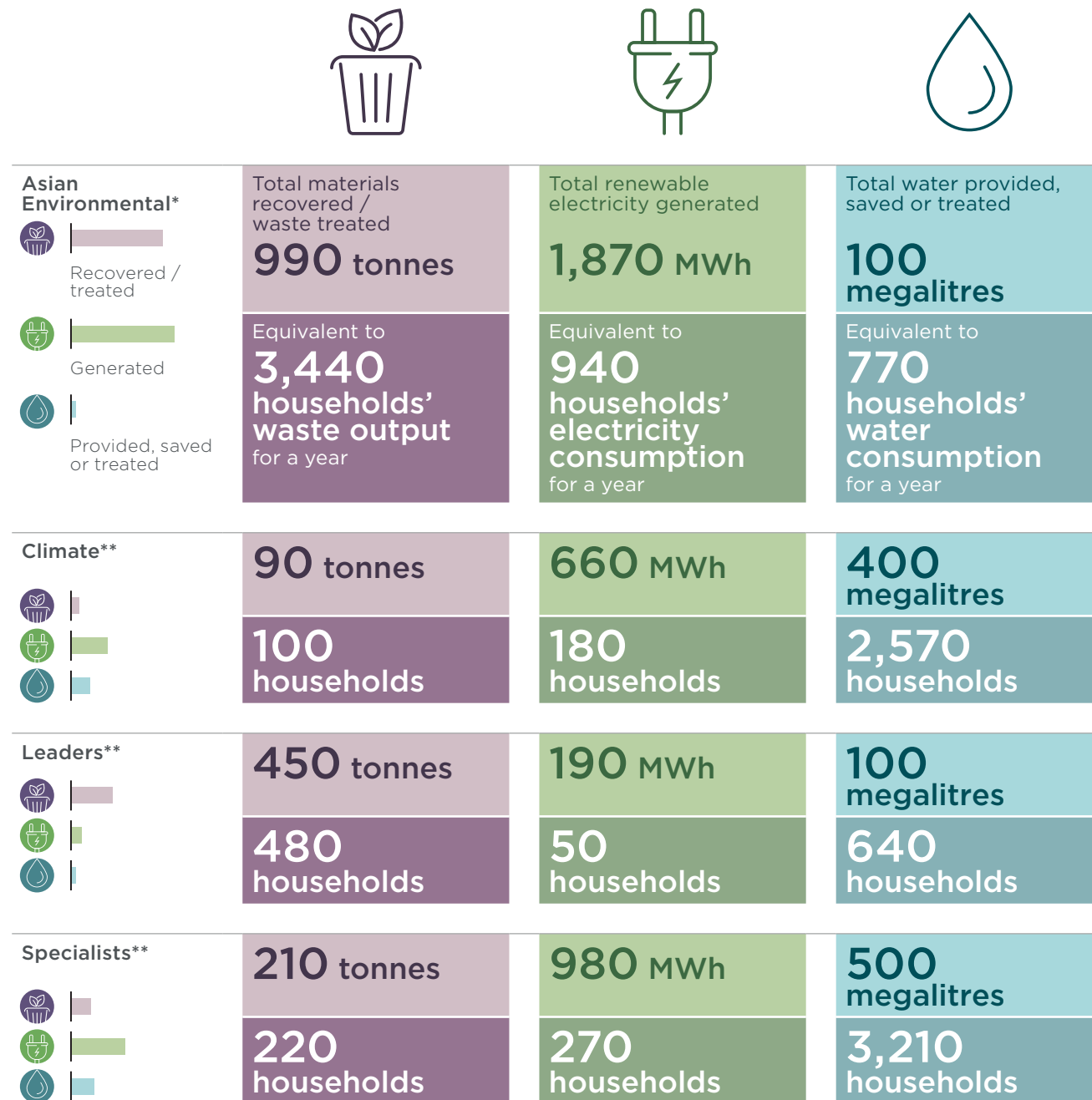
The company's own solar-powered energy plants also generated 2.8 million MWh of renewable electricity in 2021. This contributes to displacing fossil fuel-powered generation in China where 63% of electricity came from burning coal.¹⁷

Case studies are provided for illustrative purposes only.

¹⁷ BP, 2022: Statistical Review of World Energy.



Figure 3: Environmental impact per US\$10mn invested by strategy in 2021

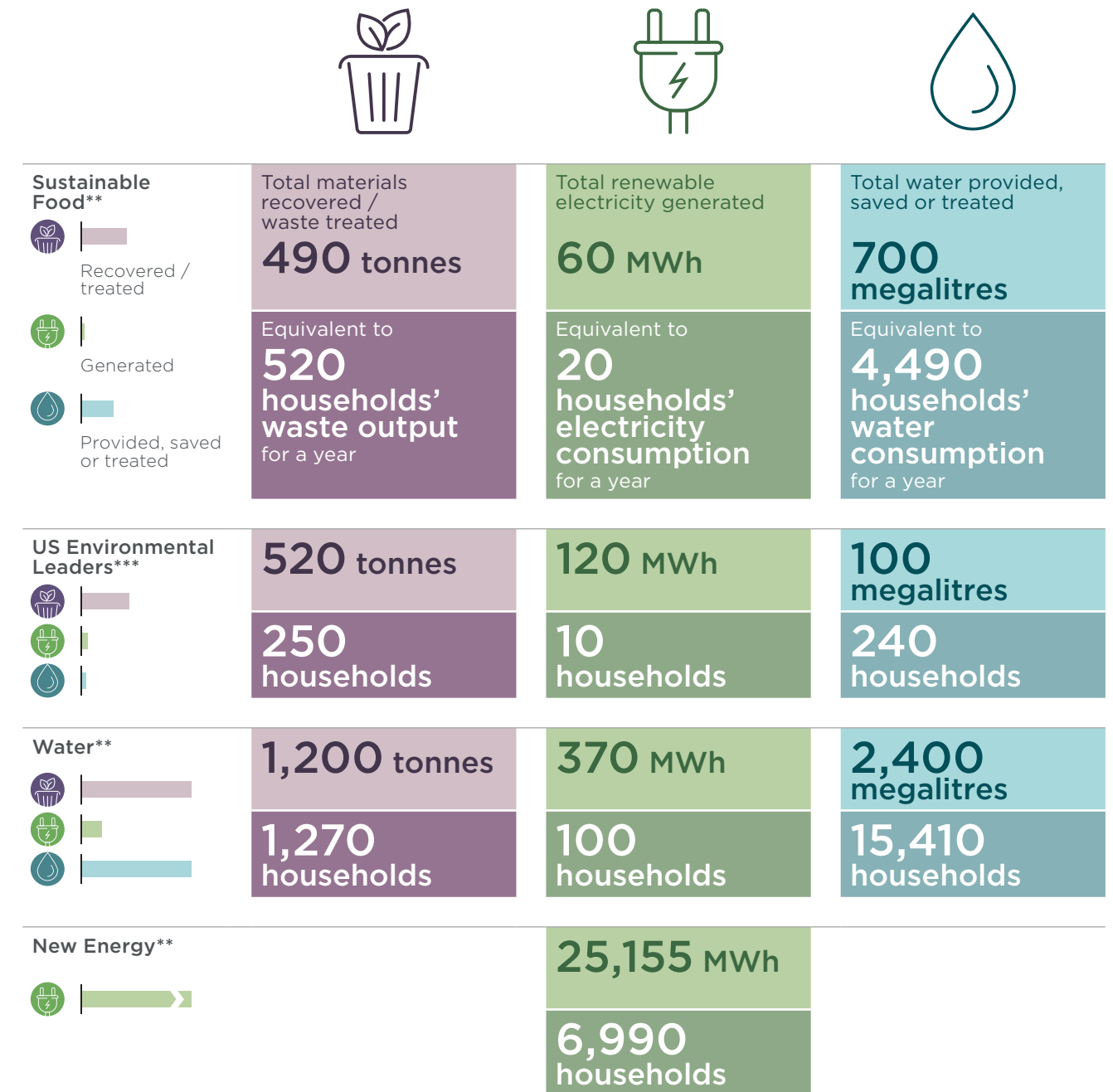


* Asian household equivalencies (refer to page 31 for details).
** UK household equivalencies (refer to page 31 for details).
*** US household equivalencies (refer to page 31 for details).

These figures refer to the past. Past performance is not a reliable indicator of future results.

Impax impact calculations are based on strategy AUM and portfolio holdings as at 31 December 2021. Please refer to our Methodology (pages 28 to 29) for details including sources for the household equivalencies data used in our calculations.

Figure 3: Environmental impact per US\$10mn invested by strategy in 2021 (continued)



* Asian household equivalencies (refer to page 31 for details).
** UK household equivalencies (refer to page 31 for details).
*** US household equivalencies (refer to page 31 for details).

These figures refer to the past. Past performance is not a reliable indicator of future results.

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Reducing water in agriculture: Valmont



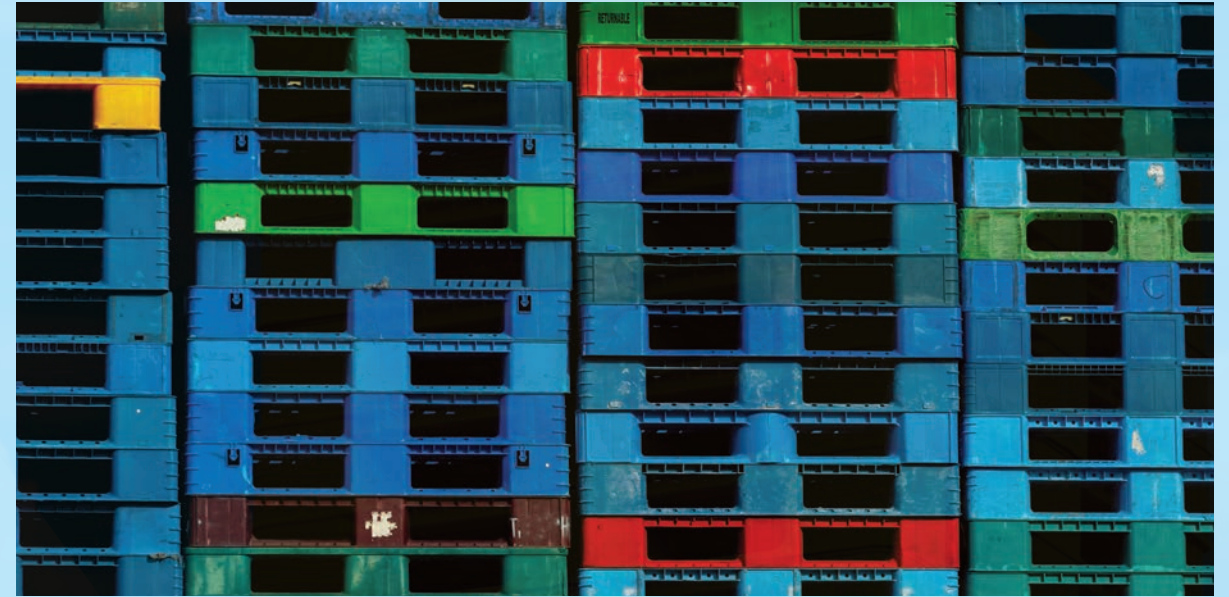
Valmont is a US engineering company whose agricultural sprinkler systems are used to irrigate approximately 30 million acres of farmland worldwide. By optimising flow rates and water application efficiency, its centre pivots save 3.9 trillion gallons (14.8 million megalitres) of water each year compared with traditional irrigation methods.

Additionally, Valmont's cloud-based crop management platform leverages equipment, environmental and agronomic data to deliver further efficiencies for farmers. The company estimates that its predictive scheduling tool, which makes recommendations based on data including weather conditions and soil moisture, saved a further 280 billion gallons (1.3 million megalitres) of water in 2021.¹⁸

Case studies are provided for illustrative purposes only.

¹⁸ Valmont, 2022: Valmont Sustainability Report 2022.

Preventing waste through circular logistics: Brambles



Brambles is an Australian logistics solutions company at the centre of global supply chains. The company is a leader in the share and re-use of pallets and containers, primarily serving the consumer goods, fresh food and beverage markets.

The company's pallets are collected, cleaned, repaired and reused in a circular model, reducing waste that would be created through pallet disposal. In 2020, Brambles estimates that 1.4 million tonnes of materials and waste were prevented from going to landfills through its operations.¹⁹

Case studies are provided for illustrative purposes only.

¹⁹ Brambles, 2022: Sustainability Review 2021



UN Sustainable Development Goal alignment

The UN Sustainable Development Goals (SDGs or Goals) comprise a series of 17 sets of targets to be met by the world's economies by 2030.²⁰ These Goals are increasingly used by investors as a tool for evaluating funds' relative impact outcomes.

The nature of Impax's investment philosophy results in some meaningful exposure to the SDGs as a by-product of the investment process. According to our calculations, each of our Environmental Markets strategies has more than 50% portfolio company revenue alignment with the SDGs.

Impax's investment process does not analyse alignment with SDGs as an investment objective or component of portfolio construction. Instead, we use the SDG framework to understand which portfolio companies are involved in activities that contribute towards addressing these critical global challenges, as a post-investment mapping and reporting exercise.

We map Impax strategies to the SDGs to indicate their level of alignment with the framework. Our approach is based on identifying the proportion of portfolio companies' revenues that relate to the targets and indicators within each of the SDGs. Over time, portfolios' exposure to SDGs will vary with the composition of individual portfolios across sectors and with the condition of the broader economy.

We have summarised portfolio company revenue alignment to the UN SDGs, as at the end of 2021, in Figure 4 (on pages 22 and 23) To arrive at these figures, we mapped more than 50 categories of business activities linked to 12 of the 17 SDGs and their underlying targets and indicators (see mapping on page 21).

We focus on those SDGs where the underlying targets of the Goal are relevant to private sector investment opportunities, rather than public funding or policy action. For example, our portfolios – even the Climate strategy – have very limited exposure to SDG 13, Climate Action. While this may seem counterintuitive given our focus on the transition to a more sustainable economy, we consider most of the Goal's sub-targets to be aimed at, and implemented by, governments.

The mapping of revenues is mostly done on a global basis and does not differentiate between regions. Exceptions to this are financial services, technology and telecommunications companies where their business activities are relevant to SDG 8 (decent work and economic growth) and SDG 9 (industry, innovation and infrastructure). For these, mainly emerging market-related revenues are included, taking into account the importance of technology transfer from developed to developing countries, as a principle in the SDG framework.

²⁰ Please refer to the UN SDGs for additional information.

We continue to refine our impact reporting alongside emerging industry reporting frameworks, such as the SDGs, to assist clients in better understanding the outcomes of their investment choices.



Impax mapping of company revenues to SDG sub-targets



- Sustainable agricultural inputs
- Growers & operators
- Sustainable agricultural products
- Natural food ingredients
- Agricultural machinery & equipment
- Healthy/nutritious foods
- Distribution



- Prevention of disease (diagnostics, testing, vaccines)
- Bio-pharmaceuticals
- Medical technology



- Access to quality education
- Provision of technical or vocational training
- Services facilitating inter cultural exchange



- Water infrastructure
- Water treatment equipment
- Water utilities
- Diversified water infrastructure & technology



- Wind power generation equipment
- Solar energy generation equipment
- Other renewables equipment
- Renewable energy developers & IPPs
- Biofuels
- Diversified renewable energy



- SME lending, revenues from LDC & EM regions only
- Insurance revenues from LDC & EM regions only
- SME insurance revenues (globally)
- Payment infrastructure and technology, revenues from LDC and EM regions only



- Power network efficiency
- Industrial energy efficiency
- Buildings energy efficiency
- Transport energy efficiency
- Consumer energy efficiency
- Diversified energy efficiency
- Supply chain logistics
- Activities directly linked to industrial energy efficiency (globally), mainly semiconductor & cloud services
- Activities linked to R&D (to capture the innovation enabling further efficiency gains through technology)
- Activities directly linked to digital infrastructure or operations relating to telecoms in LDC & EM regions only



- Environmental consultancies
- Diversified environmental
- Pollution control solutions
- Environmental testing & gas sensing
- Public transportation
- Waste technology equipment
- Recycling & value added waste processing
- Hazardous waste management
- General waste management
- Safe and affordable housing



- Sustainable & efficient agriculture
- Logistics, food safety & packaging
- Food processing equipment
- Sustainable packaging
- Safe food & water



- New energy financing services



- Growers & operators

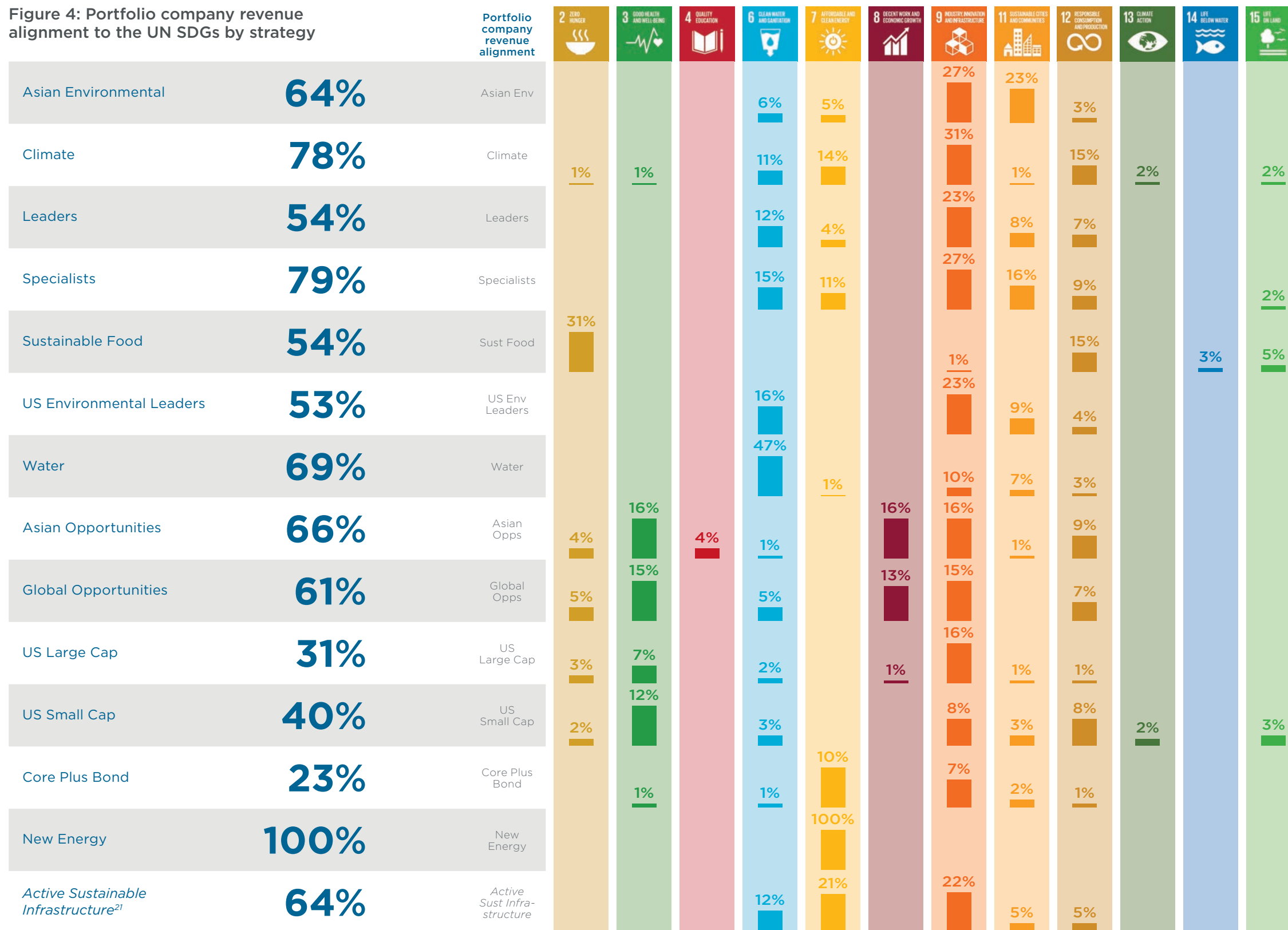


- Sustainable forestry
- Sustainable land management



For business activities relevant to other SDGs, the focus described by the SDG framework is predominantly global. As such, Impax's methodology for measuring SDG-related revenue does not differentiate between geographic regions as the natural environment is regarded as a 'global common'.

Figure 4: Portfolio company revenue alignment to the UN SDGs by strategy



21 Data represents underlying holdings of proposed strategy. Actual holdings and therefore impact data may vary and should not be relied upon.

These figures refer to the past. Past performance is not a reliable indicator of future results. Please note that individual revenue alignment numbers may not add up to strategies' respective total SDG revenue alignment numbers due to rounding.

Impax impact calculations are based on strategy AUM and portfolio holdings as at 31 December 2021. Figures are based on Impax internal data.



The challenge of reporting nature-related impact

The sheer complexity of measuring nature complicates the identification and reporting of companies' impacts on biodiversity and natural capital.

Unlike climate change, for which net emissions are a measurable indicator of a company's net impact, biodiversity has no simple global metrics. Impacts are also typically local and habitat dependent.

This complexity contributes to a lack of understanding of nature-related impacts which results in scarce reporting. If investors are to understand the risks associated with a biodiversity crisis that risks undermining health and prosperity, we believe we must address this head-on. More than half of global economic value generation depends significantly on nature.²² Impax is part of emerging efforts, including the Task Force for Nature-Related

Financial Disclosure (TNFD) and the Natural Capital Investment Alliance, to create useful, verifiable metrics for measuring biodiversity impacts. For now, however, the TNFD's framework focuses on biodiversity risk metrics rather than positive impact or opportunities.

Developing a clear understanding of the biodiversity-related impacts of our portfolio companies is a complex long-term project. We are working to map the activities of companies in our Environmental Markets strategies that help halt five key drivers of biodiversity and ecosystem loss as identified by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES): changes in land and water use (especially deforestation), the direct exploitation of nature (especially overfishing), climate change, pollution and invasive species.

Avoiding deforestation: Smurfit Kappa

Packaging companies whose products advance the circularity of materials work toward reducing the unnecessary use of virgin materials and avoiding deforestation. Ireland-listed Smurfit Kappa recovered 7.4 million tonnes of post-consumer paper fibres in 2021 for re-use in its paper mills. Recycled inputs provide 76% of the raw material for its corrugated boxes, with the remaining share coming from sustainably managed forests.²³



Case studies are provided for illustrative purposes only.

Substituting animal proteins: Beyond Meat

Sustainable agriculture is an area where we believe solutions to biodiversity loss could be particularly impactful, given the negative impacts that resource-intensive food production and consumption habits have on the natural world. Innovations in plant-based alternatives to animal proteins can help substitute resource-intensive livestock farming, for example. US company Beyond Meat's plant-based burger requires 99% less water and 93% less land to produce than beef alternatives.²⁴

Controlling pollution: Eurofins Scientific

When managing the release of pollutants, testing is the critical first step. French-listed Eurofins is a leader among environmental testing services. It examines soil and waste, monitors dioxin levels in the air and detects heavy metals and PFAS 'forever chemicals' in water. The company combines microfiltration and microscopy photography techniques to analyse watercourses and marine matter for microplastics which, in high concentrations, jeopardise the health of marine ecosystems including coral.

Preventing the spread of invasive species: Alfa Laval

Invasive non-native species threaten local biodiversity around the world and cause at least US\$23 billion in economic losses each year.²⁵ Through the release of ballast water, the global shipping industry inadvertently transports non-native aquatic life from port to port. Providers of water ballast treatment, such as Alfa Laval, can play a critical role in preventing the spread of invasive marine species. The Swedish company's chemical-free ballast water treatment technology uses UV filters to ensure no microorganisms are released from ships' tanks.²⁶



The three case studies on this page are provided for illustrative purposes only.

²² World Economic Forum, 2020. The Future of Nature and Business.
²³ Smurfit Kappa, 2022: Sustainable Development Highlights 2021.

²⁴ University of Michigan Center for Sustainable Systems, 2018: Beyond Meat's Beyond Burger Life Cycle Assessment
²⁵ Cuthbert, R. N., Pattison, Z., Taylor, N. G., Verbrugge, L., Diagne, C., Ahmed, D. A., Leroy, B., Angulo, E., Briski, E., Capinha, C., Catford, J. A., Dalu, T., Essl, F., Gozlan, R. E., Haubrock, P. J., Kourantidou, M., Kramer, A. M., Renault, D., Wasserman, R. J., & Courchamp, F., 2021. Global economic costs of aquatic invasive alien species.
²⁶ Alfa Laval, 2022



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Impax impact methodology

The relevant environmental and social metrics for all portfolio companies and issuers were measured where data was available or could be estimated. The analysis included all companies and issuers in which the strategies were invested as at 31 December 2021.

At the time of preparing the report, we aimed to obtain the most recently available and commonly collected environmental data from our investee companies and issuers. For approximately 80% of companies this was from 2021 reported information and for the remainder of companies this was from previously reported information.

For the calculation of impact attribution for the listed companies we invest in, Impax's methodology is based on equity value. Under this approach, we use the percentage of the equity owned in each underlying company by Impax (based on its proportion to total outstanding shares) to measure the environmental benefit attributable to each relevant strategy.

For our private market infrastructure investments, we base our impact calculations on the percentage of each project owned by Impax. Our CO₂ avoided calculation is based on carbon avoided relative to country-specific grid electricity generation. For realised 'exited' assets, annual carbon avoided is calculated using the P50 annual electricity production values based on our most recent yield studies. Data is as at 31 December 2021 using the IEA emission factors database.

For the calculation of impact attribution for the fixed income issuers we invest in, equity value would be unsuitable. The impact attributed to each relevant strategy is instead based on the percentage owned in each underlying issuer, calculated by dividing the value of the bonds by the company's enterprise value (the sum of its equity value and net debt). For certain government-related issuers, enterprise value was substituted with total assets in our calculations. For labelled bonds, such as social and green bonds, the impact attributable to a strategy is based on the percentage ownership of that issuance.

We started by identifying the metrics against which we would measure the impact of the listed companies and issuers. These included:

- GHG emissions, Scope 1, 2 and 3 (tonnes of CO₂ equivalent)
- GHG avoidance (tonnes of CO₂ equivalent)
- Net CO₂ impact, from GHG emitted less GHG avoided (tonnes of CO₂ equivalent)
- Renewable electricity generated (MWh)
- Water treated, saved or provided (megalitres)
- Materials recovered/waste treated (tonnes)
- Coal displaced in Asian cities (tonnes), (Asian Environmental strategy only)
- Affordable housing units financed (Core Plus Bond portfolio only)
- Education loans financed (Core Plus Bond portfolio only)

We also assessed the relevance of each metric for each company based on their business activities:

- We created a heat map (see illustration example on page 29) which provided a qualitative indication for the positive impact of each company
- We collected relevant data from company and issuer disclosures, including sources such as annual reports, CDP and sustainability reports. Where information was not available, we contacted companies to request additional disclosure, which in some cases produced additional relevant data
- However, some companies and issuers could not/did not provide information on several metrics. We therefore created estimates, where robust data was obtained for these metrics:
 - For missing Scope 1 and 2 GHG emissions data, we utilised a Bloomberg methodology that estimated emissions based on a precise peer grouping of companies

Impact impact methodology (continued)

- For missing environmental impact data, industry or academic data was sought to set robust assumptions, including baselines relating to environmental performance and impact. In cases where robust data could not be found, zero impact was reported for a company or issuer

Impax strives to be conservative with estimates in an effort to ensure that the positive impact is not overstated, or, in the case of CO₂ emissions, the net emissions avoided are not overstated.

The table on pages 34 and 35 summarises the proportion of data that was available and estimated. Note that the impact reported will always depend on the mix of underlying holdings and so is subject to change. The information contained in this report is therefore specific to the reporting date.

Figure 5: Illustrative indication of companies (from our environmental strategies) with their relevant impact metrics

Company	1	2	3	4	5	6	7	8	9	10
Materials recovered / waste treated (tonnes)	+				+	+				
Water treated, saved or provided (megalitres)	+			+	+	+		+		+
Renewable electricity generated (MWh)		+			+	+				+
CO ₂ avoided (tonnes)	+	+			+	+		+	+	+
CO ₂ emitted (tonnes)	×	×	×	×	×	×	×	×	×	×

Please note that this is an illustrative example of portfolio company impact metrics.





Exclusions and limitations

Although we have made investments in companies providing pollution control solutions, including air pollution mitigation technologies (for example, the avoidance of sulphur dioxide and nitrogen oxides), we have so far been unable to meaningfully quantify their environmental outcome. This also applies to some energy efficiency investments and solutions related to food waste avoidance. These are all important environmental solutions in our investments, however the quantification of them as impact metrics remains difficult.

Direct GHG emissions (Scope 1) and indirect GHG emissions (Scope 2) were included in our analysis.

Scope 2 emissions included in analysis are market-based where this information is available. Other indirect (Scope 3, for example, air travel and waste) emissions were also included where available. GHG emissions were measured in CO₂ equivalents, which includes GHG emissions from methane and nitrous oxide, or CO₂ depending on data availability.

We found that several companies (particularly in the water sector) reported that the positive impact of their products largely depends on the way in which end-users utilise them and therefore we could not quantify their impact information.

Household equivalencies data used in Figure 3

Sources: UK household equivalencies

Average annual UK household electricity usage of 3.6 MWh. Source: Department for Business, Energy & Industrial Strategy, 2022

Average annual UK household water usage of 155,760 litres. Source: Impax calculations, based on water usage data from South West Water (2022) and average household size data from the Office for National Statistics (2022)

Average annual UK household waste of 942kg. Source: Impax calculations based on data from the Department for Environment, Food & Rural Affairs (2021) and average household size data from the Office for National Statistics (2022)

Sources: Asian household equivalencies

Average annual China household electricity usage of 1.96 MWh. Source: Impax calculations, based on electricity usage per capita data from BNEF (2021) and average household size data from ArcGIS (2021)

Average annual China household water usage of 162,936 litres. Source: Impax calculations, based on water usage per capita data from Statista (2022) and average household size data from ArcGIS (2021)

Average annual China household waste of 236kg. Source: Impax calculations based on UK equivalencies, due to a lack of data, and adjusted using a GDP per capita ratio

Sources: US household equivalencies

Average annual US household electricity usage of 10.7 MWh. Source: US Energy Information Agency, 2022

Average annual US household water usage of 414,500 litres. Source: Impax calculations, based on water usage data from the US Environmental Protection Agency (2022), the US Geological Survey (2022) and The World Counts (2022)

Average annual US household waste of 2,116kg. Source: Impax calculations based on data from the US Environmental Protection Agency (2019) and average household size data from the US Census Bureau (2021)



Summary of Impax strategies

Environmental Markets strategies

- The **Impax Asian Environmental strategy** seeks to invest in companies providing solutions to resource scarcity and environmental pollution within the Asia-Pacific region. Investee companies must generate at least 20% of their revenues from sales of environmental products or services in the energy efficiency, renewable energy, water, waste or sustainable food markets.
- The **Impax Climate strategy** seeks to invest globally in companies providing solutions to resource scarcity and environmental pollution. Investee companies must be 'pure plays' generating at least 50% of their revenues from products and services related to climate mitigation or adaptation.
- The **Impax Leaders strategy** seeks to invest globally in companies providing solutions to resource scarcity and environmental pollution. Investee companies must generate at least 20% of their revenues from sales of environmental products or services in the energy efficiency, renewable energy, water, waste or sustainable food markets.
- The **Impax Specialists strategy** seeks to invest globally in companies providing solutions to resource scarcity and environmental pollution. Investee companies must be 'pure plays' generating at least 50% of their revenues from

sales of environmental products or services in the energy efficiency, renewable energy, water, waste or sustainable food markets.

- The **Impax Sustainable Food strategy** seeks to invest in companies helping to address the sustainability challenges facing the food sector. Investments are made in companies that generate more than 20% of their revenues from sustainable food activities.
- The **Impax US Environmental Leaders strategy** seeks to invest in US-listed companies that are developing innovative solutions to resource challenges. Investee companies must generate at least 20% of their revenues from sales of environmental products or services in environmental markets.
- The **Impax Water strategy** seeks to invest in a universe of companies addressing increasing water scarcity and ageing infrastructure issues across the globe. Eligible companies must generate at least 20% of their revenues from sales of water infrastructure solutions, water treatment products or water utilities.

Sustainability Lens strategies

- The **Impax Asian Opportunities strategy** seeks to invest regionally in Asia-Pacific companies possessing sustainable competitive advantages, across listed equities markets and sectors.
- The **Impax Global Opportunities strategy** seeks to invest globally in companies possessing sustainable competitive advantages, across listed equities markets and sectors.
- The **Impax US Large Cap strategy** is an equities strategy that fully integrates analysis of sustainability risks and opportunities and invests in a portfolio of US listed companies that we believe have strong prospects and attractive valuations.
- The **Impax US Small Cap strategy** is an equities strategy that fully integrates analysis of sustainability risks and opportunities and invests in a portfolio of smaller US listed companies that we believe have strong prospects and attractive valuations.

Sustainable Infrastructure strategies

- The **Impax New Energy strategy** develops, constructs, operates and sells wind, solar and small-scale hydro electricity generation projects in Europe. As such these projects displace fossil fuel-fired generating capacity, contributing to the reduction of CO₂ emissions of the local power network.
- The **Impax Active Sustainable Infrastructure strategy** is a proposed strategy, as at 31 August 2022. The strategy seeks to invest globally in companies that provide the resource, economic and social infrastructure essential for the transition to a more sustainable economy. Eligible companies must generate at least 20% of their revenues from providing access to vital resources or societal well-being.

Fixed Income strategies

- The **Impax Core Plus Bond portfolio** seeks to deliver current income and strong risk-adjusted total returns with a focus on capital preservation by investing in a diversified portfolio of fixed income holdings that are well-positioned to both minimise risks and benefit from opportunities arising from the transition to a more sustainable global economy.

Impax has been measuring the positive impact of its investee companies' products and services since 2015, including their net CO₂ impact.





Strategy data availability by impact metric

KPI's estimated/disclosed by portfolio company as at 31 December 2021	Companies for which the KPI is relevant	Companies for which the KPI was available	Companies for which the KPI was estimated	KPI was not available and could not be estimated
ENVIRONMENTAL MARKETS STRATEGIES				
Asian Environmental				
CO ₂ emitted	43	36	7	0
CO ₂ avoided	30	15	4	11
Renewable electricity generated (from which 'coal displaced' metrics calculated)	9	9	0	0
Water treated, saved or provided	7	6	1	0
Materials recovered/waste treated	6	5	1	0
Climate				
CO ₂ emitted	55	51	4	0
CO ₂ avoided	47	29	7	11
Renewable electricity generated	15	10	0	5
Water treated, saved or provided	19	17	0	2
Leaders				
CO ₂ emitted	47	47	0	0
CO ₂ avoided	41	24	7	10
Renewable electricity generated	14	10	0	4
Water treated, saved or provided	16	14	1	1
Materials recovered/waste treated	14	9	0	5
Specialists				
CO ₂ emitted	61	53	8	0
CO ₂ avoided	56	33	12	11
Renewable electricity generated	15	11	0	4
Water treated, saved or provided	22	18	0	4
Materials recovered/waste treated	14	8	0	6
Sustainable Food				
CO ₂ emitted	50	43	7	0
CO ₂ avoided	44	24	12	8
Renewable electricity generated	13	11	0	2
Water treated, saved or provided	11	10	0	1
Materials recovered/waste treated	12	11	0	1
US Environmental Leaders				
CO ₂ emitted	33	32	1	0
CO ₂ avoided	28	12	7	9
Renewable electricity generated	9	5	0	4
Water treated, saved or provided	11	10	0	1
Materials recovered/waste treated	13	7	0	6

KPI's estimated/disclosed by portfolio company as at 31 December 2021	Companies for which the KPI is relevant	Companies for which the KPI was available	Companies for which the KPI was estimated	KPI was not available and could not be estimated
ENVIRONMENTAL MARKETS STRATEGIES, CONTINUED				
Water				
CO ₂ emitted	51	45	6	0
CO ₂ avoided	38	23	7	8
Water Provided	19	10	0	9
Water saved	38	25	2	11
Water treated	33	16	0	17
SUSTAINABILITY LENS STRATEGIES				
Asian Opportunities				
CO ₂ emitted	38	28	10	0
CO ₂ avoided	15	5	1	9
Global Opportunities				
CO ₂ emitted	39	38	1	0
CO ₂ avoided	24	14	7	3
US Large Cap				
CO ₂ emitted	48	47	1	0
CO ₂ avoided	29	12	6	11
US Small Cap				
CO ₂ emitted	57	26	31	0
CO ₂ avoided	16	5	3	8
SUSTAINABLE INFRASTRUCTURE STRATEGIES				
New Energy				
CO ₂ avoided	64	64	0	0
Renewable electricity generated	64	64	0	0
Active Sustainable Infrastructure²⁷				
CO ₂ emitted	39	38	1	0
CO ₂ avoided	36	29	3	4
FIXED INCOME STRATEGIES				
Core Plus Bond				
CO ₂ emitted	182	93	15	74
CO ₂ avoided	129	68	0	61
Affordable housing units financed	9	6	0	3
Educational/graduate loans financed ²⁸	15	15	0	0

These figures refer to the past. Past performance is not a reliable indicator of future results. Impax data as at 31 December 2021.

²⁷ Reporting for the *Active Sustainable Infrastructure* strategy is based on model portfolio holdings, in advance of its launch in Autumn 2022. Data represents indicative underlying holdings of proposed strategy. Actual holdings may vary.

²⁸ Educational/graduate loans financed data for the *Core Plus Bond* strategy was not included in third party assurance.



Environmental Markets strategies summary 2021 vs 2020

Impact of US\$10mn invested in each strategy for one year

2020	Asian Environmental	Climate	Leaders	Specialists	Sustainable Food	Water
Net CO ₂ emissions (tCO ₂)	-2,400	-2,600	-800	-1,000	2,700	-1,000
Total water treated, saved, or provided (megalitres)	500	400	500	500	1,100	2,800
Total renewable electricity generated (MWh)	—	680	230	790	—	—
Total materials recovered/waste treated (tonnes)	1,390	50	750	210	370	—
Coal displaced in Asian cities (tonnes)	2,770	—	—	—	—	—
Total water provided (megalitres)	—	—	—	—	—	470
Total water saved (megalitres)	—	—	—	—	1,090	900
Total water treated (megalitres)	—	—	—	—	—	1,410

2021	Asian Environmental	Climate	Leaders	Specialists	Sustainable Food	Water
Net CO ₂ emissions (tCO ₂)	-1,600	-1,600	0	-1,300	2,300	-200
Total water treated, saved, or provided (megalitres)	100	400	100	500	700	2,400
Total renewable electricity generated (MWh)	—	660	190	980	60	370
Total materials recovered/waste treated (tonnes)	990	90	450	210	490	1,200
Coal displaced in Asian cities (tonnes)	1,160	—	—	—	—	—
Total water provided (megalitres)	—	—	—	—	—	340
Total water saved (megalitres)	—	—	—	—	680	620
Total water treated (megalitres)	—	—	—	—	—	1,430

These figures refer to the past. Past performance is not a reliable indicator of future results. Impax impact calculations are based on strategy AUM and portfolio holdings as at 31 December 2021. Figures are based on Impax internal data.



New Energy strategy summary 2021 vs 2020

Impact of US\$10mn invested in each strategy for one year

2020	New Energy
Net CO ₂ emissions (tCO ₂)	-4,080
Total renewable electricity generated (MWh)	24,560

2021	New Energy
Net CO ₂ emissions (tCO ₂)	-3,747
Total renewable electricity generated (MWh)	25,155

Sustainability Lens strategies summary 2021 vs 2020

Impact of US\$10mn invested in each strategy for one year

2020	Asian Opportunities	Global Opportunities	US Large Cap	US Small Cap
Net CO ₂ emissions (tCO ₂)	100	100	1,000	400

2021	Asian Opportunities	Global Opportunities	US Large Cap	US Small Cap
Net CO ₂ emissions (tCO ₂)	200	600	500	-100

Comparators

2021	Net CO ₂ emissions per US\$10mn invested (tCO ₂)
Global economy ²⁹	1,100
2° C scenario (2030) ³⁰	400
1.5° C scenario (2030) ³⁰	300

²⁹ Source: Impax calculations based on estimated global assets under management in 2020 (Source: Financial Stability Board, 2021: Global Monitoring Report on Non-Bank Financial Intermediation 2021) and estimated global GHG emissions in 2018 (Sources: Our World in Data, 2020: CO₂ and Greenhouse Gas Emissions, & Emissions Database for Global Atmospheric Research, 2021: GHG emissions of all world countries). The GHG emissions figure used is an average of both sources, adjusted to an estimated 2021 figure using the average growth rate in CO₂ emissions from energy combustion and industrial processes between 2018 and 2021 (Source: IEA, 2022). The emissions intensity figure is derived by dividing the adjusted global GHG emissions figure by the global AUM figure.

³⁰ Source: Impax calculations based on estimated global assets under management (AUM) in 2030 and estimated global GHG emissions in 2030 compatible with the 1.5°C and 2°C alignment scenarios. The 2030 global AUM figure is calculated by extrapolating the 2020 global AUM figure (Source: Financial Stability Board (FSB), 2021: Global Monitoring Report on Non-Bank Financial Intermediation 2021) using the compound annual growth rate in global AUM between 2002 and 2020 (Source: FSB). The 1.5°C-aligned and 2°C-aligned global GHG emissions figures are calculated by reducing 2010 global emissions (an average of two sources: Our World in Data, 2020: CO₂ and Greenhouse Gas Emissions, & Emissions Database for Global Atmospheric Research, 2021: GHG emissions of all world countries) by 45% (1.5°C) and 25% (2°C) respectively. The 45% and 25% reduction needed by 2030 are internationally accepted figures (IPCC, 2018: Global Warming of 1.5°C Summary for Policymakers). The emissions intensity figure is derived by dividing the estimated global GHG emissions figure by the estimated global AUM figure.

These figures refer to the past. Past performance is not a reliable indicator of future results. Impax impact calculations are based on strategy AUM and portfolio holdings as at 31 December 2021. Figures are based on Impax internal data.



Third party review of impact data

Independent Assurance Statement to Impax Asset Management Group plc

ERM Certification and Verification Services Limited ('ERM CVS') was engaged by Impax Asset Management Group plc ('Impax') to provide limited assurance in relation to selected 2021 impact data in the Impact @ Impax 2022 Report (the 'Report') as set out below.

Engagement summary		
Scope of our assurance engagement	Whether the selected 2021 impact data disclosed for the following strategies in the Report are fairly presented, in all material respects, in accordance with the reporting criteria: Impax Asian Environmental, Climate, Leaders, Specialist, US Environmental Leaders, Sustainable Food and Water Strategies: <ul style="list-style-type: none"> Net CO₂ impact (tCO₂e per US\$10 million invested) Total water treated, saved, or provided (megalitres per US\$10 million invested) Total renewable electricity generated (MWh per US\$10 million invested) Total materials recovered / waste treated (tonnes per US\$10 million invested) Impax Active Sustainable Infrastructure, Asian Opportunities, Global Opportunities, US Large Cap and US Small Cap Strategies: <ul style="list-style-type: none"> Net CO₂ impact (tCO₂e per US\$10 million invested) Impax Asian Environmental Strategy: <ul style="list-style-type: none"> Coal displaced in Asian cities (tonnes per US\$10 million invested) Impax Fixed Income Core Plus Bond Strategy: <ul style="list-style-type: none"> Net CO₂ impact (tCO₂e per US\$10 million invested) Units of affordable housing financed (# of units per US\$10 million invested) Impax New Energy Sustainable Infrastructure Strategy: <ul style="list-style-type: none"> Net CO₂ emissions avoided (tCO₂e per US\$10 million invested) 	
	Reporting period	1 January 2021 – 31 December 2021
	Reporting criteria	Impax's Impact Methodology and footnotes as described in the Report.
	Assurance standard	International Standard on Assurance Engagements ISAE 3000 (Revised).
	Assurance level	Limited assurance.
Respective responsibilities	Impax is responsible for preparing the Report and for the collection and presentation of the information within it. ERM CVS' responsibility is to provide conclusions on the agreed scope based on the assurance activities performed and exercising our professional judgement.	

Our conclusions

Based on our assurance activities, nothing has come to our attention to indicate that the 2021 impact data for the selected strategies listed above, are not fairly presented in the Report, in all material respects, with the reporting criteria.

Our assurance activities

Our objective was to assess whether the reporting of the impact data is in accordance with the principles of completeness (inclusion of material holdings and the boundary applied), consistency (application of reporting criteria) and accuracy (supporting information reported by individual holdings and collation and aggregation of data). We planned and performed our work to obtain all the information and explanations that we believe were necessary to provide a basis for our assurance conclusion.

A multi-disciplinary team of sustainability and assurance specialists performed the following activities:

- Interviewing relevant staff to understand the methodology, collection, reporting, internal QA/QC and calculation of the selected data;
- Reviewing documentation related to the methodology, including sources of information and the application of any factors and/or assumptions used to report the selected data;
- Identifying and testing a sample of material data points (and associated data processes and systems) for accuracy and completeness;
- Testing the accuracy of the overall consolidation and aggregation of the reported data; and
- Reviewing the presentation of information in the Report to ensure consistency with our findings.

The limitations of our engagement

Our assurance activities did not include any financial information relating to the value of Impax investments or individual holdings. The reliability of the assured data is subject to inherent uncertainties, given both the available methods for determining, calculating or estimating the underlying information and the dependence on individual companies within Impax investment holdings to provide relevant and accurate performance information. It is important to understand our assurance conclusions in this context.

Our independence

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Gareth Manning
Partner, Corporate Assurance
London, UK
17 October 2022

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