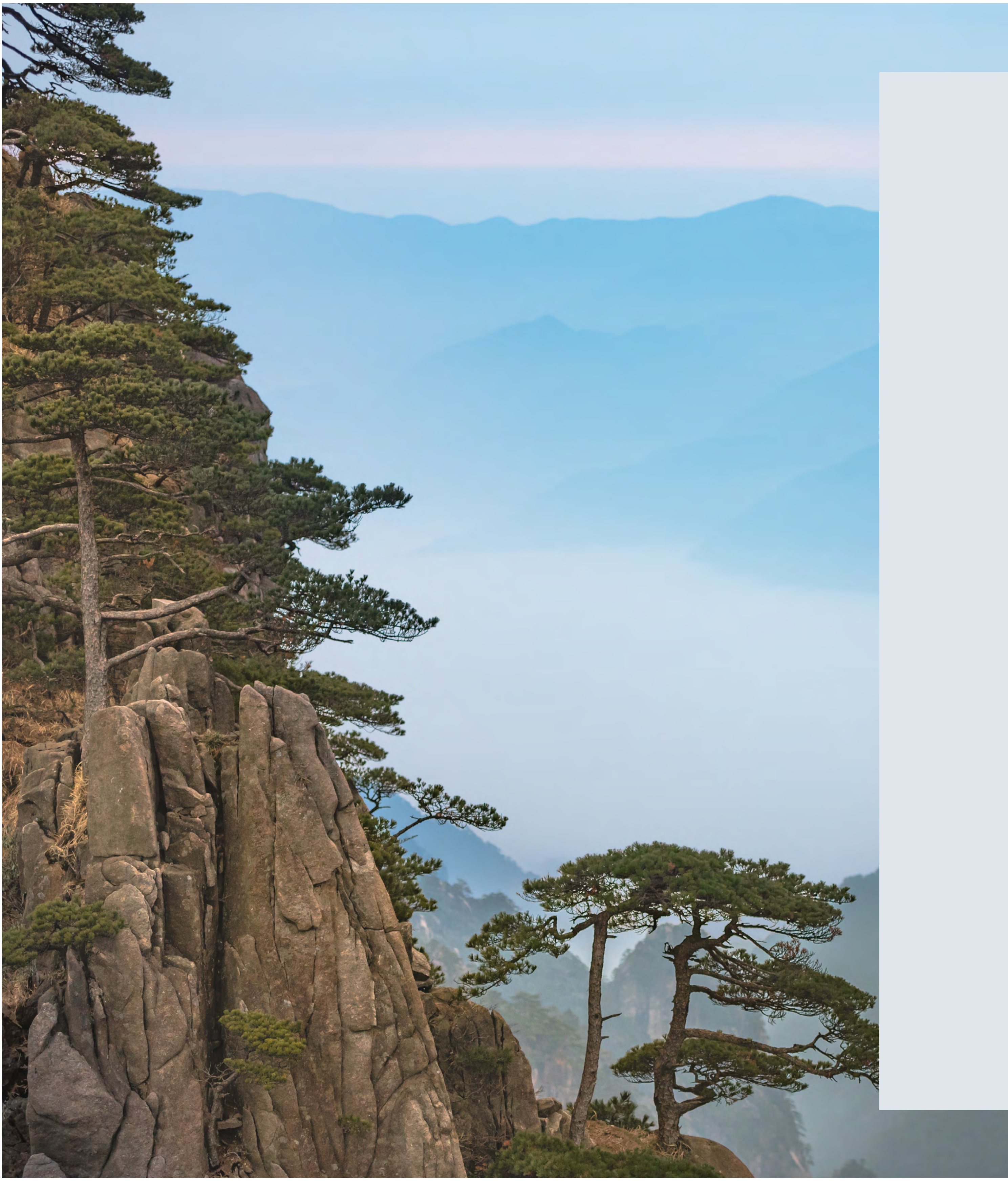
Allianz Impact Investment Fund

Annual Impact Report 2021

Private equity and debt investments are highly illiquid and designed for professional investors pursuing a long-term investment strategy only.

Allianz Global Investors



Content

Impact investing at AllianzGI

How have impact investments developed over the last year?

The Covid-19 pandemic has tested us all in the past few years – whilst the world is now adjusting to a new normal, the pandemic has highlighted profound social inequalities that have been further exacerbated over the past months and years. At the same time, the rising frequency of major environmental events from floods to wildfires, the war in Ukraine, and social movements from #MeToo to Black Lives Matter means that investors have become increasingly aware of the role their capital can play in addressing these challenges.

We've seen impact investing as a field growing steadily over the past decade. In 2011, the Global Impact Investing Network's (GIIN) annual survey had around 50 respondents who expected to invest an aggregate of around USD 4 billion the following year[1]; in 2020, the GIIN's report was based on feedback from close to 300 investors, 69% of whom regarded the market as growing steadily and who expected to invest USD 48 billion in 2021.[2] The total market size is now estimated at more than USD 1.1 trillion according to GIIN.[3]

We see investing for impact as a long-term trend, as private impact investment capital continues and increasingly plays a critical role in funding the United Nation's Sustainable Development Goals (SDGs), for which there is an estimated annual funding gap of USD 3.7 trillion.[4] It is clear that there is still a lot of room for impact funds, large and small, to address this gap.

What does private markets impact investing mean at AllianzGI?

Our Private Markets Impact teams are committed to contributing to real-world impact through direct and indirect private equity and debt investments, as well as blended-finance vehicles.

AllianzGI was one of the first large asset managers to facilitate blended finance.[5] Most recently it launched the Emerging Markets Climate Action Fund (EMCAF), an innovative blended finance fund initiated jointly by the European Investment Bank (EIB) and AllianzGI to finance climate mitigation and adaptation as well as environmental projects in Africa, Asia, Latin America, and the Middle East.

In 2021 we strengthened our OECD markets-focused impact offering by making our first investments in the Allianz Impact Investment Fund, targeting investment opportunities that sit at the intersection between impact and traditional commercial returns.

We also introduced the AllianzGI impact framework in 2021, which helps to ensure that investments made as part of our impact strategies are aligned with the generation of material and measurable net positive impact for our clients. This approach is in line with recognised industry frameworks and standards, such as the SDGs, the Impact Management Project (IMP) and Global Impact Investing Network's Impact Reporting and Investment Standards (GIIN's IRIS+).

What are your expectations going forward?

We will be continuing to develop further private market impact strategies over the coming years. In the future, we will be looking to invest in global private equity and venture capital funds with impact strategies aiming to create social and/or environmental impact in OECD countries (focus) and emerging markets (satellite), alongside opportunistic co-investments. This landscape has seen increasingly developed impact approaches in recent years, providing potential opportunities to invest in positive impact alongside attractive returns and enhanced diversification, a necessity in these ongoing volatile times.

Other offerings will look to provide tailormade debt to private-sector companies in OECD countries which are applying innovative solutions to pressing societal challenges. Leveraging AllianzGI's private debt experience and underwriting standards, this financing aims to incentivise a positive rate of change across four major themes: sustainability; physical and social infrastructure; food security; and financial inclusion. We anticipate continued development of blended finance offerings, such as the Allianz Climate Solutions Emerging Market debt strategy.

Matt Christensen
Global Head of Sustainable and Impact Investing, Allianz Global Investors

A message from the impact team

Dear investor,

We are pleased to present to you the first Annual Impact Report for the Allianz Impact Investment Fund. With the initial investments of the Fund being completed in 2021 and the expectation to be fully committed by the end of 2022, we are positive that we will be able to achieve our joint targets of delivering positive returns, alongside proven and measurable impact with our investments. Especially in such challenging times – with the increased urgency of climate change, the effects of the pandemic on population health and on health inequalities, and now with the war in Ukraine – impact investments that contribute to solutions towards the myriad of societal challenges we face are needed more than ever.

Considering that this report covers the period until December 2021 and therefore only covers the impact of our first investments, we are proud of the impact already generated. With a growing portfolio, we expect and look forward to delivering even greater impact with our investments over time.

We are proud of the developments we have made on the Fund's impact measurement and management aspects over the past year, which we share with you in this report. We look forward to the continued learning from the implementation of our impact approach, and to sharing our progress with you.

Thank you for your support and engagement,

The Impact Investing Team

AIIF overview

We launched the Allianz Impact Investing Fund ('AIIF' or the 'Fund') to address the substantial opportunity in impact investments.

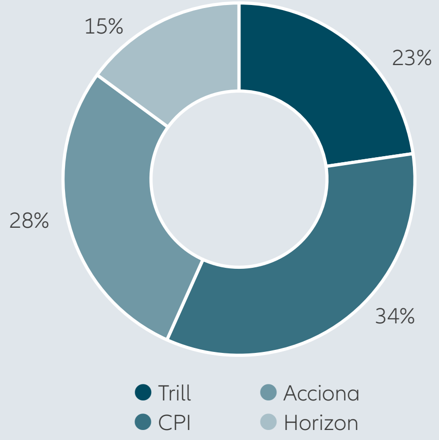
AIIF is an SFDR Article 9 fund that actively pursues direct and indirect investments that generate positive environmental and social outcomes, and that provide a measurable contribution to at least one United Nations Sustainable Development Goal (SDG).

Through the lens of our chosen impact themes: Inclusive Capitalism, Climate Change and Planetary Boundaries, the Fund's objectives are underpinned by delivering impact and commercial grade returns to investors.

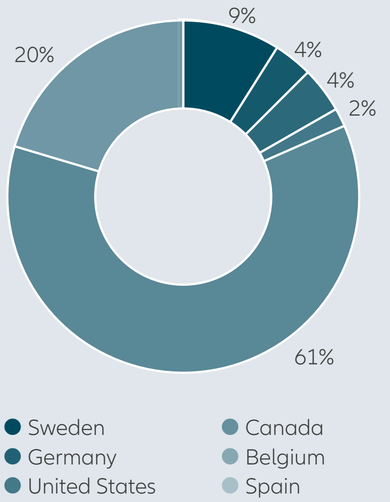
We work with fund managers and portfolio companies to identify core impact Key Performance Indicators (KPIs), in alignment with the SDGs, to measure and report. We actively engage with investees on impact topics, for example as part of the Limited Partners Advisory Committee (LPAC) or the Impact Advisory Council for fund investments, or in direct discussions with our debt portfolio companies, with the aim of supporting investees' impact delivery and reporting.

The committed capital of the Fund is EUR 88m as at end-of-year 2021. In 2022, the Fund reached its final close with a size of EUR 130m.

Total capital committed by asset in 2021



Proportional capital invested by geography in 2021



2022 Final Close Fund Size:

EUR 130,000,000

2 direct portfolio companies via debt investment and **10 indirect portfolio company investments** via PE fund investments

Source: Allianz Global Investors as at December 2021. Allianz Impact Investment Fund has been classified as an Article 9 under SFDR: EU Sustainable Finance Disclosure Regulation. Information accurate at time of publishing. Investors should take into account all the characteristics and/ or objectives of the fund as described in its legal Fund documentation.

AIIF portfolio company impact

86,270

metric tonnes of CO_2 emissions avoided or sequestered[6]

Equivalent to:

18,589

gasoline-powered passenger vehicles taken off the road for one year[7]

849

hectares of ecosystems restored[8]

3,740,000

learning needs addressed[9]

204

Individuals treated/ provided with long-term care[10]

68,455

Underserved individuals/ households with new access to products or services[11]

In progress

Number of Individuals educated or upskilled

Volume of water saved (cubic meters)

Non-hazardous and hazardous waste avoided (metric tonnes)

In alignment with:

SUSTAINABLE DEVELOPMENT GOALS

IRIS+

Three core impact themes

Impact theme

How we live equitably in a resource-constrained world

"Inclusion" will become the next big wave after climate change and require innovative thinking and solutions that meet the demands of younger generations.

Impact theme

The future temperature in which we will live

Climate change is one of our planet's most pressing challenges. AIIF plays an active role in financing some of the climate solutions required.

Impact theme

How we sustain ourselves in a future higher temperature

Beyond climate change, we need solutions that help regulate the stability and resilience of the planet we live on.

Areas of focus

Education & workforce development

Health & wellbeing

Areas of focus

Clean & efficient energy

Sustainable transport

Areas of focus

Resource efficiency & circularity

Sustainable food & agriculture

Ecosystem services & water

Distribution of AIIF investments across indirect private equity & direct debt investments by impact theme

	Underlying companies of indirect PE funds	Direct debt investments
Inclusive Capitalism	32%	75%
Climate Change	51%	25%
Planetary Boundaries	17%	0%

Source: Allianz Global Investors as at December 2021.

Overview of our partners

Private Equity Funds

Partner	Date	Impact Themes	Portfolio*
Trill Impact	Jan 2021		• ILT Education • Nordomatic • Mesalvo • Allurity
Horizon Environment & Climate Solutions I	Nov 2021		• Northvolt • Water Utility Roll-Up • Mitigation Investment Holdings • Hydrostor • Phononic • Metiri
Circularity European Growth Fund	Mar 2022		• REBIKE • Lendis • Bike Club
Generation SSF IV	Apr 2022		• Gloat

H1 2022 investments

Direct Debt

Partner	Date	Impact Themes
Care Property Invest	Jun 2021	
Acciona	Dec 2021	

KEY

Inclusive capitalism

Climate change

Planetary boundaries

Source: Allianz Global Investors as at December 2021 unless otherwise stated. 1.14 EURUSD conversion rate applied to Horizon and Generation commitments.

Underlying company investments

Company	Description	Themes	SDGs
Acciona	Financing **construction of Line 6 of the São Paulo Metro in Brazil**, anticipated to **increase access** (including to neighbourhoods where some of São Paulo's main universities are based) and **help mitigate CO_2 emissions via traffic reduction**		9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
Allurity	Group of **tech-enabled cybersecurity service providers**, comprised of best-in-class experts with a common mission to enable a safe digital world. Allurity companies include ID North, Arctic Group and Aiuken		16 PEACE, JUSTICE AND STRONG INSTITUTIONS; 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE; 4 QUALITY EDUCATION
Care Property Invest	Real estate healthcare company specialised in **senior citizens housing and assisted living real estate**		3 GOOD HEALTH AND WELL-BEING; 10 REDUCED INEQUALITIES; 11 SUSTAINABLE CITIES AND COMMUNITIES
Hydrostor	Provider of **long-duration energy storage technology** and developer of utility-scale energy storage projects		7 AFFORDABLE AND CLEAN ENERGY; 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
ILT Education	Market leading supplier of **digital learning solutions for children and students with dyslexia**, other cognitive needs or with multi-lingual backgrounds		4 QUALITY EDUCATION; 10 REDUCED INEQUALITIES
Mesalvo	Clinical software provider with focus on **medication management, nursing documentation and emergency room workflows**		3 GOOD HEALTH AND WELL-BEING; 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
Metiri	Build-up providing **testing, inspection, certification, and compliance services** to **environmental and food/agriculture end markets**		3 GOOD HEALTH AND WELL-BEING; 6 CLEAN WATER AND SANITATION
Mitigation Investment Holdings	Platform providing **environmental mitigation banking** to developers of infrastructure projects in the United States		14 LIFE BELOW WATER; 15 LIFE ON LAND
Nordomatic	Leading independent partner for Nordic property owners in building automation, focused on **"smart buildings"** and energy efficiency		7 AFFORDABLE AND CLEAN ENERGY; 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE; 13 CLIMATE ACTION
Northvolt	**Lithium ion cell and battery manufacturing**, with a vertically integrated model and 150+ GWh of production capacity across Europe		7 AFFORDABLE AND CLEAN ENERGY; 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
Phononic	**Energy efficient solid state cooling solutions** technology platform		7 AFFORDABLE AND CLEAN ENERGY; 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
Water Utility Roll-Up	Water utility focused on the **consolidation and improvement of small-scale, environmentally deficient water systems**		6 CLEAN WATER AND SANITATION; 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

KEY Climate change | Planetary boundaries | Inclusive capitalism

AllianzGI supports Sustainable Development Goals (SDGs).

Impact framework

In 2021, we introduced the **AllianzGI impact framework** to facilitate the due diligence and selection of investments that contribute to material and positive impact. The approach supports rigorous measurement and management of impact over the lifecycle of the investment to ensure that impact is being delivered.

Key elements of the AllianzGI impact framework

Our approach to managing and measuring impact aligns with the industry's leading principles and standards and is integrated across our investments' lifecycles. The framework has four main elements:

1. We establish **impact objectives** that target key societal challenges in line with the United Nations Sustainable Development Goals (SDGs).
2. We **assess the impact materiality and additionality** of potential investments by applying our **impact scoring system**, which is aligned with the five dimensions of impact as defined by the Impact Management Project[12]. In order to inform our impact decision making, we have integrated this impact scoring assessment into our investment committee's investment selection process. This has the potential to contribute significantly towards targeted impact objectives.
3. We identify core impact **key performance indicators to measure and report** against, aligned with the SDGs and the Global Impact Investing Network's IRIS+[13]. Our intention is to demonstrate impact delivery, as well as to communicate our active engagement with investees in ways that generate greater impact where feasible.
4. We are committed to **continuous testing, learning, and market-building** to strengthen our approach to impact generation. For example, we are participating on the UK CFA Institute's Impact and Investing Panel to develop a pioneering impact investing qualification. As we continue to implement our impact framework across our strategies, we are learning from our experience and advancing our process and methodology on behalf of our investors.

Source: Allianz Global Investors.

Impact scoring system

Principles of the AllianzGI impact scoring system

1. **Consistency of the impact assessment process, incorporating the flexibility to adapt to different private market asset classes and strategies**

   We consistently assess impact contribution across two key components:

   a) **Enterprise impact:** An enterprise or project's social and/or environmental impact. This focuses on whether the enterprise/project's core business model makes a positive, material, and measurable difference – either by meeting a proven need in society or by delivering a clear environmental benefit.

   b) **Investor contribution:** The ways in which investors contribute to the impact generated by their investments differ across asset classes and strategies. For this reason, we tailor our impact scoring system to provide different incentives for us as an investor to contribute to impact generation.

2. **Considering both potential positive and negative impacts**

   It is important to identify both positive and negative impact pathways, and to appropriately account for potential material negative impacts in our impact assessments. Consider a skills training programme that improves employability and, ultimately, wage levels for its students, but strains them financially due to its expense. We would apply a lower impact scoring relative to an affordable yet high quality skills training solution. Alongside implementing our impact approach, we also assess and manage Environmental, Social and Governance (ESG) risks as part of our risk assessment, and we continue to monitor these after investing (see page 14 for further detail).

3. **Application of data and evidence to increase our confidence around impact generation**

   Depending on the quality of the product or service being offered by a potential portfolio company and the implementation context (eg, focus geography, target population), investments within the same thematic area can have highly differentiated impact. That is why we go beyond selecting purely promising thematic areas (eg, education), towards applying investment-specific data and evidence where possible to assess impact potential (eg, is there evidence to indicate that this education product can deliver better outcomes for students?).

4. **Enabling comparisons of impact materiality and additionality across investments**

   We want to understand not just whether an investment has potential to generate net positive impact, but also the impact's materiality and how additional that impact is to society. To assess the level of materiality, we quantify where possible the degree of potential impact using best available data and evidence. We also consider impact additionality by assessing the level of competition in the market for similar products or services, and the degree of market maturity and penetration. This analysis equips us to compare investment opportunities to see how we can generate the most impact, alongside targeted financial returns.

Components of the impact scoring system

Enterprise impact

This is the impact generated by the enterprise/project that AllianzGI invests in – through the products and services they provide.

Our assessment of enterprise impact is based on Impact Management Project's **five dimensions of impact**:

- Who
- What
- How much
- Contribution
- Likelihood

Investor contribution

This is the impact value we generate as an investor, alongside our partners, through:

- **Non-financial contribution** in supporting investee's impact generation; and
- **Financial contribution** by enabling eg, increased investments in undersupplied financial markets/ sectors, or underrepresented impact entrepreneurs or fund managers

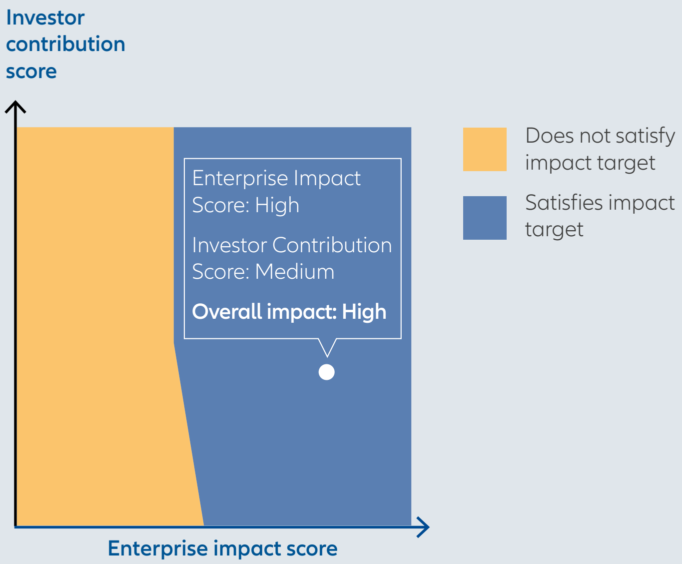
Using the impact scoring system, we identify investments with net positive impact that is:

- Material
- Additional
- Measurable

Investor contribution

Enterprise Impact

Overall impact contribution score



Source: Allianz Global Investors

ESG integration

ESG considerations are integrated throughout the investment process, to ensure that alongside positive impact generation, any potential negative risks are mitigated.

1. Sourcing and initial screening

AllianzGI believes in truly embedded ESG integration – as such, the process of analysing and assessing ESG risks both in the investment process and asset management stage are the responsibility of the investment teams. Investment professionals ensure implementation at the individual deal level through deep ESG integration across all processes.

Once an investment opportunity has been identified, the investment team conducts an initial screening to check that it is not violating any minimum ESG standards applicable for the Fund. Investment opportunities are required to comply with the Allianz ESG integration framework[14] and are required to not be in violation of the AllianzGI ESG Exclusion Policy.[15] Where minimum ESG standards are not met, the opportunity will not be pursued.

2. ESG due diligence

Once an investment opportunity has been identified following the initial screening process, the investment team conducts due diligence on potential ESG risks using information provided by the investee, alongside independent research to identify and assess the relevant ESG risks.

In the case where material ESG risks are identified, but where a mitigating action is viable (eg, first time fund managers without a robust ESG framework in place, but who are willing to address this gap), the team will agree with the investee the appropriate mitigating action and the timeframe for completing this. In the case where a material ESG risk is identified, but where mitigating actions have not been identified and agreed on with the investee to address a material ESG risk, the opportunity will not be pursued. Where relevant, the investment team draws on support from the sustainability teams, who are able to provide specific expertise on investment research, methodology and regulation implementation to ensure high levels of ESG standards.

As part of the due diligence process, the investment team collects data for direct investments in accordance with Principle Adverse Impact (PAI) indicators, as introduced by the EU Sustainable Finance Disclosure Regulation (SFDR), and uses this data to undertake a Do No Significant Harm (DNSH) assessment. For indirect (fund) investments, the investment team assesses the fund manager's ability and commitment to screening and assessing for adverse impacts.

3. Deal execution

ESG risks identified are documented in the investment memo and presented to the Fund's investment committee. Depending on the risks identified, the investment team may negotiate to include certain ESG-related representations, undertakings and opt-out clauses where appropriate. The final investment decision is carried out by the investment committee. ESG risks identified as having material impact on performance and which are not sufficiently mitigated will impact the investment decision.

4. Ongoing monitoring

Post investment, the investment team monitors investees' ESG performance on an ongoing basis via quarterly investor reports, annual ESG/sustainability & DNSH reporting, membership on LP advisory committees, update calls and discussions with fund managers and portfolio companies.

The investment team reviews the ESG performance information provided relative to investees' ESG policies, and track any changes in ESG risks over the life of the investment. Where applicable, the investment team will engage with managers and portfolio companies to promote ESG best practices.

Industry initiatives and partnerships

Signatory and cooperation – impact and sustainability initiatives

Signatory of
PRI | Principles for Responsible Investment
The Net Zero Asset Managers Initiative

Membership / industry initiatives
CFA Society United Kindom AllianzGI employee member of CFA UK Impact and Investing panel
CFLI | Climate Finance Leadership Initiative Founding member
Climate Action 100+ One planet Asset Manager Initiative – Member of the Steering Committee
Council of Institutional Investors | The voice of corporate governance Member of Corporate Governance Advisory Council
EFAMA European Fund and Asset Management Association Member of the Stewardship, Marketing Integrity, and ESG Investment Standing Committee
GIIN | Global Impact Investing Network
GRESB | Global Real Estate Sustainability Benchmark AllianzGI employee participation on GRESB Foundation Board
ICGN | International Corporate Governance Networt
IIGCC | The Institutional investors Group on Climate Change Member of IIGCC and the Net Zero Stewardship Working Group, and long-time member of Paris Aligned Investment Initiative
SASB Alliance Member of IFRS Sustainability Alliance and SASB Investor Advisory Group
The Green Bond Principles Member Green Bond Principles; Advisory Council to Executive Committee
The Investment Association Member of IA Stewardship and SRI committee

Theme: education and workforce development

Inclusive capitalism

"Inclusion" will become the next big wave of change after the climate crisis and require innovative thinking and solutions meeting the education and health demands of current and future generations.

1. Education and workforce development

Challenges

- In the EU, 20% of students have been underachieving in reading, mathematics and science, further accelerated by the pandemic. In the US, only 34% of students are maths proficient by the 8th grade, unchanged since 2017.[16] Unequal access to resources, along with unmet socio-emotional or special education needs exacerbate learning gaps.
- Substantial tuition costs, lengthy time requirements and high dropout rates mean a significant proportion of the population does not end up getting a college degree; "college-for-all" systems without high-quality, affordable, non-stigmatised alternatives lead to limited quality career opportunities particularly for disadvantaged groups.
- Technological advances are shortening the shelf life of skills and knowledge, with millions of existing under- and un-employed workers who do not have the skills to fill millions of open jobs, a dynamic which will only be exacerbated. Estimates indicate that by 2030, over 50% of the one billion global knowledge workers are projected to need upskilling or retraining to avoid being pushed into under- or unemployment.[17]

Solutions

- Affordable online learning solutions enabling adaptive teaching methodologies targeted towards personalised learning, designed to enable students to progress at their own pace and prevent struggling students being left behind.
- Digital tools tailoring learning content and support for traditionally underserved populations, for example students with special learning or mental health needs.
- Solutions providing education and skills that are better aligned with industry needs, eg, through partnerships between higher ed institutions providers and employers, or vocational training targeted at specific industry skills that are in demand, with a focus on enabling students to enter high quality jobs.
- Solutions enabling increased accessibility to higher education (eg, online higher education offerings, affordable credit for underserved individuals), as well as solutions facilitating better engagement to increase retention.
- Solutions based on gathering workforce intelligence and helping companies upskill and reskill individuals, either in-house (for example by using AI to match jobs with employees with relevant skills) or in partnership with external providers, filling skills gaps and facilitating the hiring of talent from diverse backgrounds.

Underlying investments

ILT Education	Karriere Tutor *(H1 2022 investment)*	Gloat *(H1 2022 investment)*

Impact spotlight: ILT Education

4 QUALITY EDUCATION
10 REDUCED INEQUALITIES

Digital learning solutions for equitable education

In Q4 2021 ILT Education conducted their first extensive teacher impact survey across their products. Some of their results from the survey are outlined below.[18]

Polyglutt software has had a recognisable improvement among

82%

of children in language development

Polylino skola software has generated improvement in interest in reading among

90%

of students and improvement in reading development among

77% of students

In total,

14,000

audio and digital book titles available

Begreppa has generated improvement in language & understanding among

91%

of 2nd language children

The challenge:

Fairness and inequality has widened over the course of the pandemic. This is particularly concerning for underserved populations, for example students with specific learning needs, such as dyslexic and immigrant students.

Solution:

ILT Education offers digital educational tools for students in schools and pre-schools. The company focuses on audio and visual-assisted learning solutions for children and students with dyslexia, other cognitive needs, as well as those from multilingual backgrounds.

Impact KPI:

3,740,000

learning needs of children and students addressed by ILT Education solutions

This is no recommendation or solicitation to buy or sell any particular security.

Theme: health and wellbeing
Inclusive capitalism

2. Health and wellbeing

Challenges

- Population aging is a global phenomenon. Between 2015 and 2050, the proportion of the world's population over 60 years will nearly double from 12% to 22%. All countries face major challenges to ensure that their health and social systems are ready to make the most of this demographic shift.[19]
- Sustained health management challenges worldwide, exacerbated by the pandemic, but also due to longer term trends around the ageing population and increasing mortality from many non-communicable diseases (NCDs), eg, cardiovascular disease, cancer, chronic respiratory diseases, or diabetes.[20,21]
- Digitisation of healthcare systems represents a major challenge for many countries. Germany for example, lags behind in digital health[22], which contributes to the lack of continuity and coordination of care. Patient safety is put at risk, with a high number of avoidable adverse events and deaths occurring every year.
- Healthcare worker supply in skilled nursing facilities continues to remain limited while homecare is an under-utilised solution for looking after people, despite costs averaging approximately 80% less than care in skilled nursing facilities.

Solutions

- Investing to ensure that the healthcare system and infrastructure is adequate for meeting the needs of an ageing population, eg, affordable healthcare housing provision for the elderly that helps ensure equal access.
- Treatments and technologies that improve access to quality preventative care provision, eg, platforms that enable more efficient and higher quality provision of primary care.
- Platforms designed to drive the modernisation of digitally underserved healthcare systems and populations, offering integrated system solutions including electronic medical records and patient/emergency room workflows/medication management.
- Modern home health software and telecare offerings that enable the coordination and delivery of better home care, enabling the generation of improved patient outcomes.

Underlying investments

Care Property Invest	Mesalvo

Impact spotlight: Care Property Invest

Accessible and sustainable healthcare real estate

130
sites, with a total surface area of
479,934 sqm[23]

5,853
current beds across Belgium, Netherlands and Spain; additional
560
beds in development

63%
of company's portfolio operated by local governments and non-profit organisations

80%
of senior housing portfolio planned to be covered by an energy monitoring system in 2023

The challenge:

Europe's population is ageing rapidly – with this growth, an increasing share of the population will require long-term daily healthcare. In addition, c.10% of the EU population aged 15 and over have difficulties performing personal care activities.[24] There is a significant demand for the expansion of healthcare housing to meet these needs.

Solution:

Care Property Invest focuses on providing equal access to healthcare housing for elderly people and people with mental and/or physical disabilities, whilst committing to continuously improve the environmental performance of its real estate portfolio.

Impact KPI:

204
Individuals treated / provided with care across the four Eligible Assets[25] directly linked to the financing from AIIF

ESG KPI:

Total energy efficient buildings of

c.13,000sqm

with EPC B or A or better (depending on the geographic region) across the four Eligible Assets linked directly to the financing from AIIF

This is no recommendation or solicitation to buy or sell any particular security.

Theme: clean and efficient energy
Climate change

Climate change is one of our planet's most pressing challenges. AIIF plays an active role in financing some of the solutions needed to address climate change.

1. Clean and efficient energy

Challenges

- Annual renewable energy investments need to triple at a minimum to keep warming on a 1.5^{0}C trajectory by 2050[26]. Renewables made up ~29% of total electricity generation in 2020 – in the International Energy Agency's (IEA) roadmap to net zero by 2050 for the global energy sector, this will have to increase to ~61% and to ~88% by 2030 and 2050 respectively.[27] Annual clean energy investment in emerging and development economies will in particular need to increase by more than seven times to put the world on track to reach net-zero emissions by 2050.[28]
- As the share of variable renewable energy (VRE) in power systems increases, power system flexibility components (eg, smart grids, storage technologies, demand side management) will be critical to advance VRE integration in the grid.
- A major push to increase energy efficiency will be a key pillar towards net zero by 2050 – without efficiency gains, electricity demand growth would make it much harder for renewables to displace fossil fuels in electricity generation.[29]
- Whilst electricity and heat production drives 25% of global greenhouse gas emissions, transformations are similarly required in sectors such as industry and buildings to lower demand, as these sectors respectively make up 21% and 6% of global emissions.[30]

Solutions

- Technological solutions that enhance the performance of renewable energy sources, for example energy management for smart grids, robotics to improve renewable energy asset performance (eg, to automate inspections, diagnostics and maintenance of wind turbines). Providers expanding renewable energy access to underserved geographies and populations.
- Electricity storage solutions will be critical for addressing the intermittency of solar and power. Emerging technologies for long-duration energy storage, including for example compressed air energy storage and other mechanical storage technologies, as well as thermal, electrochemical and chemical storage technologies.[31]
- Enhance energy efficiency by reducing demand through greening roofs, improving insulation, using high performance glass, smart thermostats and building energy management-as-a-service designed for optimising energy use.
- Technological innovations to improve energy efficiency of energy-intensive industries, eg, thermoelectric cooling and heating technologies that reduces power consumption in cold shipping operations, commercial beverage refrigeration etc.

Underlying investments

Nordomatic	Phononic	Hydrostor

Impact spotlight: Nordomatic

Improving energy efficiency in buildings

Enables buildings owners to achieve energy and cost reductions of up to

40%

using Nordomatic's systems

19%

increase in CO_2 emissions avoided by customers of Nordomatic from 2020 to 2021

402,000

Smart connected assets installed base

4.2%[32]

annual CO_2 reduction f company operations to be executed in-line with Paris Agreement

The challenge:

Buildings represent 40% of the energy use and 36% of GHG emissions in the EU. Solutions are needed to advance building energy efficiency to meet EU climate and energy goals with approximately 75% of current EU building stock deemed inefficient.

Solution:

Nordomatic offers smart applications and smart assets providing an overview & control of a property or a portfolio of properties, helping to efficiently monitor building emissions while suggesting improvements of how to manage technical sub-systems.

Impact KPI:

83,000

CO_2 emissions avoided (metric tonnes)

ESG KPI:

523

CO_2 emissions reduction (metric tonnes)

This is no recommendation or solicitation to buy or sell any particular security.

Theme: sustainable transport
Climate change

2. Sustainable transport

Challenges

- Transportation is responsible for 14% of current greenhouse gas (GHG) emission sources. Road transportation represents 10% while aviation & shipping make up the remaining 4%.[33]
- The transition and scaling of Electric Vehicles (EVs) will increase demand for battery cell production and the renewables-generated power required for direct electrification.
- Utilities will need to manage the impact of increasing charging load of EVs on the grid. The growth of the EV market will also require a supply of raw materials such as lithium, cobalt and nickel, which have often been sourced in an unsustainable manner. In addition, the volume of battery packs reaching end-of-life will grow rapidly and add to waste disposal challenges, unless solutions are put in place.
- Harder-to-abate sectors such as aviation and shipping will need to be addressed in the next zero transition – though aviation represents 3% of global emissions today, that could rise to 22% by 2050, as more people fly and other sectors decarbonise more quickly.[34]
- There is also a related challenge to ensure that sustainable transport solutions create more equitable mobility, such that cities and communities are provided with accessible and safe transport options, that at the same time enhances the stability of our climate.

Solutions

- Innovations in battery cell production, which improves performance and which reduces carbon footprint in the battery manufacturing process.
- Build out of EV infrastructure and software solutions to optimise power usage during peaks, efficiently managing charging infrastructure.
- Technologies and practices that make the aviation and shipping industries more energy efficient (including digital solutions that optimise routing) and that enable the expansion of sustainable fuel use[35] will contribute to the decarbonisation of these sectors.
- Car pooling, bicycle & electric bicycle offerings and infrastructure that help promote abundant and safe bicycle use, along with high speed rail and walkable cities, are examples of transportation solutions that can help reduce demand-side GHG emissions. Adopting a car sharing business model, for example, could decrease the number of cars by c.75%[36] and it is estimated that e-bike use in place of conventional modes of transport could reduce carbon dioxide emissions of up to 1.14 gigatons between 2020 – 2050.[37]

Underlying investments

Northvolt	Acciona	REBIKE *(H1 2022 investment)*	Bike Club *(H1 2022 investment)*

Theme: resource efficiency and circularity
Planetary boundaries

Beyond climate change, we need solutions that help regulate the stability and resilience of the planet we live on.

1. Resource efficiency and circularity

Challenges

- The world is expected to generate 3.4 billion tonnes of waste annually by 2050, increasing by c.70% from today's 2.01 billion tonnes.[38]
- The world produces around 400 million tonnes of plastic waste every year, which is forecasted to reach 1,100 million tonnes by 2050.[39] Over 90% of plastics produced are derived from virgin fossil feedstocks, representing about 6% of global oil consumption.[40]
- The fashion industry is responsible for 10% of annual global carbon emissions, more than all international flights and maritime shipping combined. At this pace, the fashion industry's greenhouse gas emissions will surge more than 50% by 2030.[41] Around 73% of all clothing produced ends up in landfills or is incinerated.[42]
- In addition, 57 million tonnes of electronic waste (e-waste) is generated per year[43], of which just 17.4% gets collected and recycled.[44] This waste becomes hazardous for human health and for biodiversity when it is mismanaged.

Solutions

- Circular economy solutions that preserve or extend asset life (eg, up-cycling of structurally sound furnishings, or provision of circular solutions to the e-bike industry) and those that enable materials/products to be used over multiple cycles (eg, up-cycling waste materials into higher value products).
- Innovative lease/hire models (eg, bikes, electronic equipment) that improves asset productivity.
- Circular design solutions for the packaging industry, using compostable and/or recyclable materials in place of fossil-fuel single-use packaging, or solutions for the fashion industry that uses recycled textiles to replace virgin cotton or synthetic polymers.
- Companies that alleviate the environmental costs of e-waste by specialising in IT hardware refurbishment, or by creating an online market place for buying, re-selling or servicing refurbished electronic devices, as well as designing specialised coatings to protect devices from liquid ingress damage, avoiding waste of rare materials.

Underlying investments

TemperPack *(H1 2022 investment)*	**Recover** *(H1 2022 investment)*	**Lendis** *(H1 2022 investment)*

Theme: sustainable food and agriculture
Planetary boundaries

2. Sustainable food and agriculture

Challenges

- One third of all food produced goes uneaten, and is responsible for 10% of global greenhouse gas emissions. The direct economic loss associated with food loss and waste is USD 1.25tn.[45] In the food service industry alone, USD 100 billion is lost annually due to inadequate monitoring and management of waste.
- The world will need to produce approximately 70% more food by 2050 to feed an estimated 9.5 billion people. However half of the world's habitable land is already used for agriculture, with the food sector contributing to around a third of global GHG emissions[46] and 70% of freshwater used.
- The intensive use of fertilisers and pesticides have significant environmental consequences. Not only is chemical nitrogen energy intensive to produce, but once fertiliser is applied to crops, the emissions footprint from nitrous oxide is 300 times more potent than carbon dioxide. 40-60% of the in-field fertiliser seeps into the surrounding environment, contaminating water sources. In addition, there are issues around ecosystem degradation and pesticide resistance with increasing levels of fertiliser and pesticide use.
- Global livestock represents around 14.5% of global GHG emissions[47]. Cattle represent about 65% of the livestock sector's emissions. According to a study by the United Nations Food and Agriculture Organization (UN FAO) and the OECD, global beef consumption will potentially increase by 8% in the period 2018 to 2027[48], driven in particular by increased meat demand from emerging markets.

Solutions

- Solutions reducing food waste through innovations improving the shelf-life of food products, and investments in food infrastructure and equipment to improve food storage practices and processing. For every USD 1 a company invests in reducing food waste, they could save an estimated USD 14 in operating costs.[49]
- Enabling technologies that improve data collection & monitoring to identify areas for food waste reduction in the foodservice industry.
- Technological solutions for promoting regenerative agriculture including using sensors, Internet of Things (IoT) and Artificial Intelligence (AI) for predictive modelling to enrich crops and reduce tillage. As data availability increases, technology can help improve yields, crop biology and soil health. In addition, innovative irrigation technologies can help improve precision and water efficiency.
- Fertilisers and pesticides derived from naturally occurring substances (eg, soil microbes that work symbiotically with crops to provide the optimal level of nitrogen in the plant growth cycle, or RNA-based biopesticides[50]) are less energy intensive and enable the reduction of chemical residues that otherwise cause damage to the environment and human health.
- Current forecasts suggest alternative proteins could account for 11% of total protein consumption by 2035 or 97 million tonnes – a five-fold increase.[51] Developing high value ingredients that unlock plant-based product adoption, such as texture and enhanced flavour, enables the scaling of this market

Theme: ecosystem services and water

Planetary boundaries

3. Ecosystem services and water

Challenges

- More than 50% of the world's habitable land has been converted into cropland, animal pasture or urban areas[52]. Restoring converted land in priority areas could sequester c.300 Gt of CO_2.
- Wetlands are currently reducing at a faster rate than they are restored.[53] Wetlands now cover approx. 4% of the U.S. (excl. Alaska) down from c.8% historically.
- Whilst tropical rainforests hold more than 230 Gt of carbon in total, around 17% of the forest in the Amazon has been lost in the last 50 years, mostly due to forest conversion for cattle ranching.[54] Preventing deforestation could mitigate 3 Gt of CO_2 emissions per year.[55]
- Water scarcity will become an increasingly material problem. The OECD predicts that 40% of the global population will live in water-stressed regions by 2050[56] with freshwater use expected to increase by 55%.
- Annually, more than 1.2 trillion gallons of untreated sewage, stormwater, and industrial waste flow into United States rivers because of overburdened treatment systems.[57] Not surprisingly, global sewage pollution models predict widespread contamination of surface water.[58]

Solutions

- Market approaches incentivising the restoration of natural habitats (eg, via credits), enabled by companies specialised in the design and implementation of quality restoration projects.
- Technology platforms leveraging, satellite and other data to monitor land conservation/ecological restoration projects and to inform land management decisions.
- Investments in rural water utilities to acquire and upgrade water systems not compliant with local regulations, in addition to investments in environmental testing services, helping to minimise pollutants in discharged wastewater and provide communities with safe drinking water.
- New technologies for treating biomass and wastewater, enabling the reduction of environmental pollution & health risks, with potential to recirculate critical nutrients and/or produce useful side products such as renewable energy.

Underlying investments

Water Utility Roll-Up	Mitigation Investment Holdings	Metiri

Conversing with impacters

The AllianzGI impact investing team sat down with Jamie Butterworth, founding partner of **Circularity Capital**, to discuss the role of private capital in building the circular economy.

◂ Jamie Butterworth

What do you see as the key characteristics that underpin the circular economy business?

Jamie Butterworth ('JB'): The way we create value today relies on a very wasteful linear 'take-make-dispose' model of production and consumption. This is heavily reliant on virgin resource input and has a range of environmental 'externalities' including climate change, biodiversity loss and risks to human health. The circular economy is a framework for an economy that is restorative by design and in which products are designed to flow through multiple users or become food for living systems. A number of papers including a study by the Ellen MacArthur Foundation, which highlight the benefits of circular business models in terms of financial value creation and economic resilience.[59]

Why do you think bigger corporations oriented towards the circular economy are having difficulty to innovate and transform?

JB: Big corporations have a huge amount of inertia based on the structure, systems, processes, even manufacturing facilities that they've already invested in. It's very difficult for an existing linear product sales company to flip into a mode where they're providing a subscription service for the outcome of a product. The key characteristics for successful businesses that change the 'take-make-dispose' are models that either move away from selling things to selling performance; innovating new types of materials that can displace so-called linear materials or; software solutions that assist in accelerating this transition.

How do you think about business models with a high level of impact, vis-à-vis those that are doing more "business-as-usual" in the context of the circular economy? How easy or not is it to quantify this differential in impact?

JB: With an increasingly broad view of what constitutes 'impact' this is an important question. At the heart of our investment process is an assessment of 'impact versus business-as-usual (BAU)'. When looking at a business we want to really understand what's happening today in their market sector and then assess how a prospective investee's business model differs – this allows us to not only target businesses which are accelerating the circular economy but also those companies with a breakout growth opportunity.

As an example, we would typically observe low impact versus business-as-usual in a replacement capital investment in a traditional Northern European recycling business – where multiple similar businesses exist and growth will primarily come from financial engineering or taking competitor's market share. Contrast this with an

investment in a circular business with a innovative, market leading solution, with a breakout growth opportunity requiring primary growth-equity to facilitate its international expansion.

How do businesses benefit from Circularity Capital as an investor?

JB: The key focus of our approach is that we are a specialist. We only invest in a subset of business models and that allows us to look at lots of similar businesses and get really good at working out what works and what doesn't but also the common challenges that they face and the core capabilities management teams need to develop to unlock growth. From establishing Circularity in 2015 we have always sought to combine a traditional growth equity skill set with specialist circular economy expertise to enable us to do this.

What do you think the role of regulation is in promoting circular economy businesses?

JB: Regulation is likely to further expand the number of investment opportunities where we can deliver premium financial returns alongside a measurable positive environmental impact. An example here is single-use packaging making its way into the ocean – this is a hard problem to solve given the low value of assets that are getting broadly distributed. However, the EU's Circular Economy Action Plan is an example of regulation driving change – particularly with corporates looking for new, innovative solutions in packaging and the regulation ultimately enabling the scale-up of earlier stage solutions, which then broadens the investment universe for firms like ours.

And finally, looking across the impact investing market broadly, what do you see the challenges are in terms of scaling impact investing?

JB: Data integrity and consistency in measuring impact are a key challenge – impact is just not as easy to measure as financial metrics, there are more components to it. The good news is that work is being done by a range of industry associations to improve data consistency. A large risk to the industry is "greenwashing", with actors overstating their impact. Ways to solve this include increased use of assurance, and firms being more transparent about the assumptions they are using to report impact against.

Conversing with impacters

The AllianzGI impact investing team sat down with Pia Irell (Impact Partner at **Trill Impact**) and Hetal Demani (Head of Impact & ESG Analysis, **Nordea Asset Management**), to discuss opportunities and challenges in impact investing and analysis.

◂ Pia Irell and Hetal Demani ▸

Can you tell us about your impact assessment and management approach, and how this has evolved over time?

Pia Irell/Hetal Demani ('PI/HD'): Our impact assessment approach[60] is aligned with the Impact Management Project's five dimensions of impact (What, Who, How Much, Contribution, Risk), which we have been applying as part of our investment due diligence process to better understand the current and the potential impact contribution of companies. The main evolution in our approach is that we have become much more granular in the way we assess the impact of a company – in particular breaking down company revenues into specific revenue lines, assessing the impact thesis underlying each of these, and taking into account the anticipated growth across revenue lines (i.e. are more impactful revenue streams growing more strongly than others?). In addition, we've distilled our initial impact screening criteria to make it more streamlined, so that impact analysis and investment teams can efficiently and consistently assess for impact at the early stages of the investment process.

A core part of our onboarding process with portfolio companies involves mapping out value creating impact objectives and the associated priority activities for the company. Where there are opportunities to leverage third-party experts and research to support the development of a more impactful offering by the company, we have supported our portfolio company to do so. For ILT Education, two of the company's products, Polylino and Begreppa, were certified and received valuable input on improvement areas for further enhancements in learning experience by Education Alliance Finland, who are globally recognised experts evaluating EdTech products from a pedagogical perspective. We have also developed an Impact Champion programme, where chosen representatives from our portfolio companies participate in structured trainings and discussion sessions provided by Trill Impact – for example, how to gain deeper impact understanding from stakeholder dialogues, or how to develop an impact plan & associated Key Performance Indicators (KPIs) – so that these champions can help support and enhance the company's impact delivery.

You have been leading the development of an impact carry model – could you share more about how it works and some of the key considerations?

PI/HD: The impact carry model we have developed links 10% of the carried interest pool eligible to carry holders to impact and ESG progress.

The majority of the impact carry is linked to performance on impact KPIs – Trill Impact sets these KPIs together with the management of underlying portfolio companies, which could be KPIs that measure impact "scale" or impact "depth". The remaining part of the impact carry is linked to ESG KPIs that are relevant to all companies, namely annual greenhouse gas reductions aligned with the Science Based Targets methodology (which is validated by Normative), gender diversity, as well as governance and business ethics.

In some sectors, such as in the building sector where we have both existing and pipeline investments, ESG indicators such as gender diversity is particularly pertinent given the male-dominated nature of the sector.

What are the opportunities and challenges you see in the impact investing market more broadly?

PI/HD: The Sustainable Finance Disclosure Regulation offers both opportunities and challenges. On the one hand, it can help accelerate capital allocation flows towards sustainable investments. On the other hand, given the design of the regulation has been more focused on public markets and less so on private markets, and as there is uncertainty around some of the regulatory expectations, fund managers (and the wider market) will have to navigate carefully to ensure that their products meet regulatory requirements to qualify for example, as an Article 9 fund.

More broadly, the industry still faces a number of challenges when it comes to measuring real world outcomes data. Many companies do not yet track this information, and part of Trill Impact's role is to work with underlying portfolio companies such that there is sufficient investment of time and effort to enable the generation and reporting of reliable impact data. We believe measuring is critical to enabling an operational focus on improving and accelerating positive impact on society.

Conversing with impacters

The AllianzGI impact investing team sat down with Madeleine Evans, of **Generation Investment Management**, to discuss the evolution of sustainability and impact measurement and management practices.

◂ Madeleine Evans

Can you tell us about Generation's 'system positive' approach?

Madeleine Evans ('ME'): Generation is one of the oldest pureplay sustainable investment firms, founded in 2004 – to intentionally allocate capital in ways that drive towards a sustainable future for all. 'System positive' is our shorthand for mission-driven companies that we believe are driving the transition towards a sustainable economy. The Growth Equity team uses the system positive approach to select from among the best companies whose products and services drive changes we need to see in economic and social systems. In doing so, we fully integrate sustainability – including assessing the potential impact of the company's product or service on end users and environmental resource, the company's operational impacts and exposure to environmental and social risks, and the quality of governance. We do this as part of a dedicated 'system positive assessment' and as part of our assessment of the quality of the business and management itself.

For a growth-stage company, what are the benefits of having a pure play sustainable investor such as Generation on board?

ME: We believe sustainability will be the organising construct of the world's economy, and that we can use our insight and network as a pure play sustainable investment firm to help companies prepare for and accelerate that transition.

One of our top priorities is to help companies think through who are the right people to have on their teams, who are fit for purpose and who will help them fulfill their goals. At the board level, for example, we can use our deep networks to make introductions to individuals who bring values alignment, diverse perspectives and appropriate credentials for their roles. We also leverage our connections and convening power to help companies build their potential customer networks. Our experience in the sustainability space and relationships with chief sustainability officers (and other relevant roles) helps us introduce and position new brands, e.g. via roundtables or summits.

In tandem to this, we leverage our impact measurement and sustainability expertise to support companies when they think through public listing readiness, helping them prepare for aspects such as sustainability disclosures. Along the way, we systematically help our companies improve their impact in ways that are aligned to drivers of value over the long term. This could for example, include working together to bring sustainability clearly into product positioning or to develop Science-based Targets.

How do you define meaningful KPIs to track, to ensure that companies continue to be 'system positive'?

ME: As sustainable investors, we separate out the KPIs we track into the 'what' and the 'how'. The 'what' is the environmental and/or social impact generated by the

business' core product or service. The KPIs in relation to this are what we'd call our impact KPIs. The 'how' is in relation to the effect of the company's business operations on environment and society. The KPIs in relation to this are what we'd call our ESG performance measures.

For example, for each of our investments in companies contributing to sustainability goals related to People Health, we measure an impact KPI relating to a company's impact on either end-user health outcomes, access for underserved groups, or in a reduction of cost whilst maintaining quality of care. At the same time, we are tracking ESG performance measures such as the business' carbon footprint and whether they have a Science-based Target. The definition of our impact KPIs flows from our sustainable investment thesis and due diligence process, in which we lay out how we believe the business is driving toward a more sustainable society and what KPIs we will measure in order to track or validate that theory of change.

What do you think are the main opportunities and challenges in impact measurement?

ME: Our approach to impact measurement depends on the measure itself, and the type of company we are working with. As an example, for businesses contributing to outcomes within the category of Planetary Health, we typically use a Lifecycle Assessment (LCA) to assess the total environmental impacts of a company's core product or service over the course of its lifecycle. For businesses contributing to social outcomes, i.e. within our categories of Financial Inclusion or People Health, we capture the impact of the product or service on the end user through beneficiary surveys. As an example, we sometimes structure our questions to help us understand how the use of the product may help healthcare providers do something better, which then has impacts on the end users; other times, we target the survey at end users themselves.

When we think of opportunities in this space, the fact that we have a growing number of products that are either fully-digital or have a digital customer interface means that we are now more able to get in front of end users to understand their experience. This is incredibly exciting. In terms of challenges, while the availability of providers to support more complex calculations such as LCAs is increasing, we still see significant variability in calculation methodology. This means comparing impact across investments is still challenging for us, which is something we are working on trying to solve.

Core impact KPI performance

Overview of core impact KPIs – 2021 figures

Core impact KPI[a]	KPI aggregated across portfolio companies	Pro-rata KPI based on % fund ownership[b]
Greenhouse Gas emissions avoided (metric tonnes)	84,168	1,335
Greenhouse Gas emissions sequestered (metric tonnes)	2,102	19.6
Ecosystems restored (hectares)	849	8.0
Underserved individuals/ households with new access to products or services	68,455 For example, households (primarily in rural geographies) with access to water systems brought into compliance	280
Individuals with improved health/ wellbeing	204 individuals provided with long-term care	N/A – Debt Investment

Other core impact KPIs

- Non-hazardous and hazardous waste avoided (metric tonnes)
- Water savings (cubic metres)
- Individuals educated or upskilled

In progress – we will report on these KPIs when data becomes available in future reports

Methodological note:

(a) A more detailed description of the Core Impact KPIs is provided on page 34.

(b) We have included the pro-rata adjustment of the KPIs for equity investments – which is the portfolio company level KPI, multiplied by i) the share of AIIF's investment as a proportion of total fund size and by ii) the share of the fund's ownership of the underlying portfolio company at the end of 2021 – to illustrate the impact "attributed" to the AIIF Fund. In reality, attribution is a challenging exercise, as minority investors in a company can still play an outsized role in a company's ability to grow their impact. Therefore, rather than seeing the pro-rata figures as a definitive portrayal of AIIF's impact, they can be seen as an additional lens via which to view impact performance.

Additional impact KPIs

Selected additional impact KPIs reported by portfolio companies – 2021 figures

Additional impact KPI	Portfolio company level KPI	Pro-rata KPI based on % fund ownership(c)	Underlying Company	Description
Learning needs addressed[61]	3,740,000	74,717	• ILT Education	A number of students served by ILT Education have access to several ILT products through their schools. ILT Education counts learning needs addressed (eg, reading and writing difficulties), calculated based on contractual outreach. Number of learning needs therefore does not equate to number of unique individuals served by ILT Education's products.
Number of jobs supported in Emerging Markets[62]	3,282	N/A - Debt investment	• Acciona	Acciona supports jobs in Emerging Markets as a result of construction projects, in this case, the São Paulo Metro Line 6 project in Brazil.

Other additional impact KPIs reported to investors

- Treated wastewater (cubic metres)
- Pollutants removed from wastewater (metric tonnes)
- Stream restored (linear ft)

Methodological note:

(c) We have included the pro-rata adjustment of the KPIs for equity investments – which is the portfolio company level KPI, multiplied by i) the share of AIIF's investment as a proportion of total fund size and by ii) the share of the fund's ownership of the underlying portfolio company at the end of 2021 – to illustrate the impact "attributed" to the AIIF Fund. In reality, attribution is a challenging exercise, as minority investors in a company can still play an outsized role in a company's ability to grow their impact. Therefore, rather than seeing the pro-rata figures as a definitive portrayal of AIIF's impact, they can be seen as an additional lens via which to view impact performance.

Description of core impact KPIs

We have included below the description of the core impact KPIs reported, along with the most relevant IRIS+ metrics from the Global Impact Investing Network (GIIN)'s IRIS+ system, an industry recognised system for measuring and managing impact. Where feasible, we encourage investees to adopt the metric definitions from GIIN IRIS+, which facilitate aggregation of impact KPIs across the portfolio, with the understanding that there will also be impact metrics specific to the underlying portfolio companies that our investees would report to provide further context for the impact generated.

AIIF Core Impact KPIs	Description	Relevant GIIN IRIS+ Metric ID and other metric sources
Greenhouse gas emissions avoided (metric tonnes)	Amount of greenhouse gas (GHG) emissions avoided or reduced by the organisation during the reporting period	IRIS+ Metric IDs: OI9839, PI2764
Greenhouse gas emissions sequestered (metric tonnes)	Amount of greenhouse gas (GHG) emissions sequestered by the organisation during the reporting period	IRIS+ Metric IDs: OI9839, PI9878
Ecosystems restored, enhanced or preserved (hectares)	Hectares of ecosystems restored, enhanced or preserved during the reporting period	UNEP DTU Partnership[63] Related IRIS+ metric ID: PI9556[64]
Underserved individuals/ households with new access to products or services	Number of clients / households who were underserved in relation to the target outcome – who were active clients of the organisation and who gained new access to products or services. Depending on the context, underserved clients may include low-income demographics, minority populations with specific needs that are underserved, and other groups	Related IRIS+ metric IDs: PI9996, PD5752[65]
Individuals with improved health/wellbeing	Number of unique individuals who were active clients of the organisation – and received healthcare services enabling health/wellbeing improvement – as of the end of the reporting period	Related IRIS+ metric ID: PI9327[66]
Amount of non-hazardous and hazardous waste avoided (metric tonnes)	Amount of non-hazardous & hazardous waste disposal avoided through refurbishing, reusing and recycling as part of delivering or developing the organisation's products and services during the reporting period	IRIS+ metric IDs: PI8177, PI2073
Water savings (cubic metres)	Volume of water savings over the lifetime of all products sold during the organisation's reporting period	IRIS+ ID: PD5786
Individuals educated or upskilled	Number of unique individuals who are active clients of the organisation – and received education or upskilling – as at the end of the reporting period	Related IRIS+ metric IDs: PI9327, PI2389, PI2998[67]

Looking ahead H1 2022

Looking ahead

Investment activity

- The AIIF team successfully closed the investment in two further impact private equity funds in H1 2022:
  - **Circularity European Growth Fund II**, which targets European growth-stage investments with inherently circular business models. Circularity's experienced team have successfully established and deployed its first fund with a strong track record. The Firm's positioning as an expert investment boutique and its close connectivity within the circular economy ecosystem facilitates opportunities for the team to unlock transaction situations as well as providing a clear specialist competitive advantage. Circularity's investments will be made across a range of end markets in Europe, typically with a sizeable minority stake and where another external investor would find it difficult to gain majority control. We subscribed to the fund in March 2022 at final close. We expect returns in the region of 12% to 15% internal rate of return (IRR) over the lifetime of the fund.
  - **Generation Investment Management Sustainable Solutions Fund IV**, which follows a global growth-stage equity strategy. The investment objective is to pursue market leading returns and global impact for sustainable solutions by investing in growth equity businesses with well-established technology and commercial traction across a wide range of sub sectors. The focus is on three areas: (i) Planetary health, (ii) People health, and (iii) Financial inclusion. The fund will invest globally with a focus on North America and a smaller focus on Europe whilst seeking active minority positions. Generation's return targets on its investments are expected in the region of a 15% IRR over the lifetime of the fund.
- With the closing of the above investments, the Fund has capital left for one last investment, which is expected to close in Q4 2022.
- Existing fund investments (Trill and Horizon) have made strong progress on portfolio growth in H1 2022. Trill closed an investment into KarierreTutor (German digital educational business) and Horizon made investments in GridPoint (provider of energy management technology), TemperPack Technologies (producer of sustainable cold chain materials for food and life science products), SkySpecs (leading provider of wind blade inspections in North America and Europe) and Recover (manufacturer of mechanically recycled cotton fiber). In addition, Circularity and Generation have already started to deploy, with Circularity's investment in Lendis (product-as-a-service provider of furniture and electronic assets), REBIKE (circular solutions for e-bike industry), Bike Club (children's bike subscription model), and Generation's investment in Gloat (AI-powered workforce intelligence platform and talent marketplace). Some of these investments are highlighted in the Impact Spotlights on pages 37 and 38.

Impact measurement and management

- We will be building on this first annual impact report for the Fund and continue to work with fund managers and portfolio companies around impact measurement and management. Impact reporting for the Fund is still at an early stage, as there is a time lag from investment into an underlying portfolio company and working with management to identify impact KPIs, to companies developing the systems and processes required to measure and collect this impact data. We are having ongoing conversations with investees on topics such as best practices around pre-investment impact assessments, impact KPI definition and measurement, and fund managers' work with underlying portfolio companies around impact management and value creation.
- In addition, we are in the process of commissioning an impact data management platform to enable more streamlined collection, aggregation, analysis and reporting of impact data going forward. This will support our impact measurement and management activities especially with the continued expansion of underlying portfolio investments. As more impact data becomes available from our underlying investments, we will report on impact KPI progression (current impact relative to historical and forecasted impact, where available), to provide further context on the impact performance of underlying investments.

H1 2022 impact spotlight: Karriere Tutor & Gloat

4 QUALITY EDUCATION
8 DECENT WORK AND ECONOMIC GROWTH

KARRIERE TUTOR

Digital vocational training provider

The challenge:

Germany faces a significant skills gap challenge, with c.5 million skilled employees missing by 2030.[68] Changes in occupational profiles means that there is a shortage of advanced skills in "Industry 4.0", digitisation and the green economy.

Solution:

Karriere Tutor is a digital provider of government-subsidised advanced vocational training for unemployed and people at risk of unemployment.

The blended delivery model offers an online learning platform, instructor-led online courses and personalised & digitally supervised support.

Early highlights:

– Course portfolio comprises **c.800** certified modular, fully-online-based training sessions.

– Graduation rates of **>95%**.

– Reintegration back into work rates of **c.80%** within 12 months after finishing vocational training.

4 QUALITY EDUCATION
8 DECENT WORK AND ECONOMIC GROWTH

GLOAT

AI powered workforce intelligence platform and talent marketplace

The challenge:

Structural pressures on workforces and workers are likely to deepen in the coming years, while a labour shortage is making hiring exceptionally difficult. Traditional practices of human capital management are not keeping up with demands of organisations or workers: Organisations require productivity and agility in a changing environment, while workers are calling for new experiences, upskilling and reskilling and multiple chapters to their careers.

Solution:

Gloat provides a platform combining an AI-powered talent marketplace with workforce intelligence – helping to break down organisational silos, analyse employees' skills at scale and providing crucial insights for strategic talent decision-making. This empowers people to steer their own careers and organisations around the world to achieve workforce agility.

Early highlights:

– Mastercard used Gloat to connect **24,000** employees to internal job recommendations, upskilling opportunities etc., driving **USD 21 million** in value for the business in less than a year.

– During the pandemic, Seagate launched a talent marketplace to effectively redeploy talent to areas of critical need. **88%** of employees registered in four months, and the company redeployed an average of two people per day.

This is no recommendation or solicitation to buy or sell any particular security.

H1 2022 impact spotlight: REBIKE & Lendis

REBIKE

Refurbishment, rental and sale of e-bikes

The challenge:

Current transport systems are not accessible to all and contribute significant carbon pollution to the atmosphere. As highlighted in the World Resource Institute's recent report, travel shifting to or remaining as active modes (including walking and cycling) will be a key shift required to transform the global transportation system.[69] At the same time, a growing e-bike market presents challenges around the emissions and waste generated from bike production and disposal.

Solution:

REBIKE has established the first large-scale European e-bike refurbishment facility and operations, serving the rapidly developing European market with a particular focus on DACH, helping extend the life cycle of individual e-bikes. REBIKE's subscription offering additionally contributes to enabling a circular e-bike industry. More broadly, the company plays a role in supporting the electrification of transportation and in the provision of alternative methods for commuting.

Early highlights:

- The company operates a digitised and semi-automated process in its refurbishment facility which has the capacity to refurbish **17,000** e-bikes throughout the year
- The company is in the process of developing an impact metric focused on quantifying the number of supplier circular design improvements made, driven by subscription and refurbishment data

LENDIS

Subscription based office equipment platform

The challenge:

Total annual EU28 furniture waste is estimated to equate to 10.78 million tonnes. The use of linear cheap and unsustainable furniture means that 80-90% of furniture waste is incinerated or sent to landfill.[70]

Solution:

Lendis uses a Platform-as-a-Service model to provide furniture and electronic assets to businesses through an end-to-end operating system for B2B clients. The workplace management tool optimises the utilisation of office equipment and reducing waste and under-utilised products. This enables the company to prolong the average lifetime of products while engaging with suppliers to create more sustainable products..

Early highlights:

- The company has developed an impressive B2B customer base, including customers such as BCG, Volkswagen, N26 and WWF
- It is in the process of developing GHG reductions metrics for the whole life of new assets acquired in the year, as well as an additional impact metric to quantify the number of supplier circular design improvements driven by Lendis data

This is no recommendation or solicitation to buy or sell any particular security.

Footnotes:

1. https://thegiin.org/research/publication/insight-into-the-impact-investment-market/ – Survey administration and data collection were overseen by the GIIN, which also ensured that all data was presented with the names of respondents and investments removed to preserve anonymity in data analysis.)
2. GIIN Annual Investor Survey 2020. https://thegiin.org/assets/GIIN%20Annual%20Impact%20Investor%20Survey%202020.pdf
3. https://thegiin.org/assets/2022-Market%20Sizing%20Report-Final.pdf
4. OECD (2020) Global Outlook on Financing for Sustainable Development 2021: A New Way to Invest for People and Planet
5. https://uk.allianzgi.com/en-gb/our-firm/press-centre/press-releases/20221102-allianz-gi-accelerates-its-drive-in-blended-finance and Member Spotlight with Nadia Nikolova from AllianzGI - Blog - Convergence News | Convergence
6. Data on CO_2 emissions avoided provided by Private Equity Funds Partners.
7. EPA Greenhouse Gas Equivalences Calculator.
8. Data on CO_2 emissions avoided provided by Private Equity Funds Partners.
9. Data on number of learning needs provided by ILT Education and Trill Impact. As a number of students in Sweden have access to several products (provided by ILT Education) through their schools, ILT Education counts learning needs addressed, calculated based on contractual outreach. Number of learning needs therefore would not equate to the number of unique individuals served by ILT Education's products.
10. CPI reporting of number of patients treated/provided with care on December 31, 2021 across the four eligible assets financed by the loan agreement.
11. Data on CO_2 emissions avoided provided by Private Equity Funds Partners.
12. Impact Management Project. Five Dimensions of Impact.
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18. The data outlined is an example from Sweden covering four products. Teachers are asked if they have "recognised an improvement or a significant improvement among the children/students after using (the product)".
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24. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Disability_statistics_-_need_for_assistance
25. CPI reporting of number of patients treated/provided with care on December 31, 2021 across four Eligible Assets. Eligible Assets means means the Eligible Assets as defined in the Care Property Invest Sustainable Finance Framework available on the website of the Issuer at www.carepropertyinvest.be, which are essentially assets and investments that contribute to Care Property Invest's social purpose and environmental objectives.
26. Global Landscape of Climate Finance 2021 – CPI (climatepolicyinitiative.org) – p.21 of the full report.
27. Net Zero by 2050 – A Roadmap for the Global Energy Sector (windows.net) p.198.
28. https://www.iea.org/news/it-s-time-to-make-clean-energy-investment-in-emerging-and-developing-economies-a-top-global-priority
29. Net Zero by 2050 – A Roadmap for the Global Energy Sector (windows.net) p.44.
30. https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data
31. Net-zero-power-Long-duration-energy-storage-for-a-renewable-grid (mckinsey.com) p.viii.
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62. 3,229 jobs categorised as TA-09 (Construction Jobs - Temporary Construction) and 53 jobs categorised as TA-08 (Direct Jobs Supported - Operations and Maintenance) under the HIPSO definitions: https://indicators.ifipartnership.org/indicators/joint-impact-indicators-jii/jobs-jii/.
63. UNEP DTU Partnership's Adaptation metrics: Perspectives on measuring, aggregating and comparing adaptation results; metric on "number of hectares of ecosystems restored".
64. IRIS+ metric PI9556 (Ecological Restoration Management Area), defined as "Area of land under management for ecological restoration during the reporting period, whether directly or indirectly controlled by the organisation".
65. IRIS+ metric PI9996 (Provided new access) describes the type of prior access in a market available to an organisation's clients, or disaggregates another metric in terms of type of prior access available in a market. In the case of Water Utility Roll-Up for example, the company provides households with access to water systems brought into compliance, which were previously non-compliant. Where data is available, we will report on IRIS+ metric PD5752 (Target stakeholder demographic) to provide more context on the underserved demographic in question.
66. IRIS+ metric PI9327 (Client Individuals: Active), counts the number of unique individuals who were active clients of the organisation as at the end of the reporting period.
67. IRIS+ metric PI9327 (Client Individuals: Active), counts the number of unique individuals who were active clients of the organisation as at the end of the reporting period. IRIS+ metric PI2389 (School Enrollment: Total), counts the number of students enrolled as of the end of the reporting period, both full- and part-time, with each discrete student counted once regardless of their number of courses. IRIS+ metric PI2998 (Individuals Trained: Total) counts the number of individuals who received training offered by the organisation during the reporting period.
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Glossary of terms

Term	Description
Article 9 Funds	In the context of **SFDR** (SFDR: EU Sustainable Finance Disclosure Regulation), each fund has to be self-classified by asset managers into one of three categories: Article 6, 8 or 9 – Article 9 funds have sustainable investment as its objective ("dark green" products)
Carbon Footprint	Carbon footprint is the sum of greenhouse gas emissions, measured in CO_2 equivalents, for a specified entity, eg, a company, the life cycle or partial life cycle of a product, or a service. A lower carbon footprint can be achieved through the use of renewable energy and efficient use of resources. A carbon footprint of zero is said to be carbon neutral which implies either there are no greenhouse gas emissions, or any carbon causing activities are offset by environmental activities to counter tackle carbon emissions, eg, reforestation activities.
DNSH	Do No Significant Harm, The Regulation establishing the Recovery and Resilience Facility provides that no measure (i.e. no reform and no investment) included in a EU Member State's Recovery and Resilience Plan should lead to significant harm to any of the six environmental objectives (climate change mitigation, climate change adaptation, sustainable use & protection of water & marine resources, circular economy, pollution prevention & control, protection and restoration of biodiversity & ecosystems) within the meaning of Article 17 of the Taxonomy Regulation.
ESG	Environmental, Social and (Corporate) Governance (ESG) describes extra-financial factors, issues and criteria that are considered in the investment process and may have a material impact on the financial performance of portfolios. Synonym: extra-financial factors.
GIIN	Global Impact Investing Network, dedicated to increasing the scale and effectiveness of impact investing around the world by reducing barriers to impact investments
IMP	Impact Management Project, which brought together a range of different organisations to build and further global consensus on how to measure, assess and report impacts on people and the environment
Impact Investing	Impact investing is an investment strategy that seeks to generate positive, measurable environmental and/or social impact alongside a financial return. Impact investing is defined by the core characteristics below: – Intentionality: intent to contribute to material and measurable social and/or environmental benefit is clearly expressed and the investor identifies outcomes that will be pursued – Evidence-based: impact investing needs to use evidence and data where available to drive intelligent investment design, such that there is increased confidence that the investment would contribute to material social and environmental benefits – Measurement and management: impact measurement and management framework in place to enable assessment of the level of expected impact prior to investment, and to support the measurement, management and reporting of impact goals over the life of the investment

Term	Description
IRIS+	Generally accepted system for impact investors to measure, manage and optimise their impact by streamlining data and increasing data clarity & comparability
OECD	Organization for Economic Co-operation and Development, an intergovernmental organisation with 38 member countries that collaborate on key global issues at national, regional and local levels.
PAI	Principle Adverse Impact, Impacts of investment decisions that result in negative effects on sustainability factors, eg, environmental, social and employee matters, respect for human rights, anti-corruption and anti-bribery matters (as defined in the **SFDR**).
Scopes 1,2,3	There are generally three key "scopes" for categorising carbon emissions: **Scope 1**: Direct emissions generated on site, for example at company facilities or via company vehicles. **Scope 2**: Indirect emissions generated from electricity purchased or used by an organisation **Scope 3**: All other emissions that are related to an organisation's activities, but not under its direct control – for example because they are generated by suppliers, or because they are associated with the use of a company's products.
SDG	The United Nation's Sustainable Development Goals (SDGs) are 17 goals that were adopted by all United Nations Member States in 2015. The UN SDGs address a range of social needs, including education, health, social protection and job opportunities, while tackling climate change and environmental protection. They serve as a framework to promote prosperity while protecting the planet to achieve a better and more sustainable future for all
SFDR	The Sustainable Finance Disclosure Regulation (SFDR) is a European regulation that makes it mandatory for financial companies to communicate extra-financial information on each of their products and to classify them according to the following typology: – Article 6 (only) funds do not integrate any kind of sustainability into the investment process ("non-sustainable" products) – Article 8 funds promote environmental or social characteristics ("light green" products) – Article 9 funds have sustainable investment as its objective ("dark green" products) The SFDR became applicable on 10th March 2021 (Level 1). The SFDR requires a detailed Regulatory Technical Standard (RTS) – Level 2, to be published before market participants have a complete picture of how the legislation is intended to be applied. Level 2 disclosure requirements (which also include **Taxonomy**-related disclosures) will apply from 1 January 2023
Taxonomy (EU)	The taxonomy is a European regulation that builds a common European classification system for environmentally sustainable activities. The taxonomy tries to answer the question: What can be considered an environmentally sustainable activity? The taxonomy defines six environmental objectives: (1) Climate change mitigation, (2) Climate change adaptation, (3) The sustainable use and protection of water and marine resources, (4) The transition to a circular economy, (5) Pollution prevention and control, and (6) The protection and restoration of biodiversity and ecosystems. To qualify as sustainable and align with the Taxonomy, an activity must make a substantial contribution to one of the six environmental objectives, do no significant harm (DNSH) to the other environmental objectives, and comply with minimum safeguards. Besides the European taxonomy, other regions and jurisdictions have also developed or are in the process of developing taxonomies.

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