

# AIM US\$ Liquid Impact Fund LLC

2019 Impact Report

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# Management Commitment to Impact

## Message from Affirmative Investment Management (AIM)

AIM is proud to release the second annual Impact Report produced for AIM US\$ Liquid Impact Fund. We believe our Impact Reports are among the most comprehensive impact records available in the marketplace for a debt product. In our view, the report again demonstrates how a pure play focus to investing, founded on deep analysis and engagement, can be beneficial to both investors and society.

The report is a culmination of extensive engagement with the underlying issuers invested in during 2019. Every investment within the Fund underwent rigorous verification, and over 99% of 2019 holdings have been included in this report. We are delighted with this coverage outcome, given the increased challenges of collating data and information from underlying issuers, due to the Covid-19 pandemic.

AIM US\$ Liquid Impact Fund invested in 25 different bond frameworks in 2019, which resulted in disbursements in over 100 countries to finance over 700 eligible projects. The fund is not only global in terms of underlying investment exposures, but also in impact on the world.

Each year we endeavour to break new ground to advance the growing impact bond market. To this end, our Impact Reports will continue to be both progressive and pioneering in their depth and quality of reporting. For the 2019 report we include, for the first time, comprehensive portfolio TCFD carbon metrics and physical risk assessment.

Finally, AIM continues to be recognised in the marketplace for our pre-eminent role through the winning of multiple industry awards. Environmental Finance awarded AIM the 2020 'Best sustainability reporting by an asset manager, medium (fixed income.)' These awards, we believe, are in recognition of the leading work and transparency contained in this year's Impact Report.

• AIM wins 'Best ESG Investment Fund: Green Bonds' and runner up for 'Most Innovative ESG Initiative' at the ESG Investing Awards (2020)



• AIM's proprietary SPECTRUM Bond® process wins Environmental Finance Award for 'Best Fixed Income Firm Initiative for ESG Investment Process' (2019)



# AIM US\$ Liquid Impact Fund by Numbers

**25**

Impact bond frameworks

**754**

Projects/initiatives partially or fully supported by impact bonds held in the portfolio

**104**

Countries receiving impact bond commitments and disbursements<sup>1</sup>

**16/17**

Sustainable Development Goals supported

**5**

Environmental sectors supported

**5**

Social sectors supported

**99%**

of the 2019 portfolio in impact bonds

**99%**

of the portfolio by average 2019 weights is covered in this report

**40%**

of the portfolio subject to TCFD-aligned physical risk scenario testing

**>56%**

of the portfolio covered in GHG analysis

**2.49%**

Portfolio absolute 12-month net return as at end-2019

**\$37m**

Assets under management as at end-2019



# AIM US\$ Liquid Impact Fund Impact Highlights

In 2019, the AIM US\$ Liquid Impact Fund invested in 25 impact bond frameworks. AIM collected data, engaged and conservatively estimated the impact highlights from the funded activities below, adjusted for 2019 AIM US\$ Liquid Impact Fund holdings. These figures only begin to tell the story around the Fund's impact, as issuers were not always able to provide complete data on all their funded assets but they give some indication as to the types of positive impacts we supported.



**4,415**

Tonnes of GHG avoided per year<sup>1</sup>

Equivalent to charging 563m smartphones for use for a day – more than the combined population of the European Union<sup>2</sup>



**72%**

of GHG savings

Compared with a business-as-usual baseline



**3.07**

Weighted Average Carbon Intensity (tonnes of GHG/USD m Revenue)

TCFD recommended carbon metric based on issuer Scope 1 and 2 GHG emissions



**177**

Clean energy projects

Across 37 countries



**17,142**

Estimated<sup>3</sup> MWh clean energy generated

Enough electricity to power over 4,750 UK homes for a year<sup>4</sup>



**1,227**

Daily passenger capacity for low carbon transport

At nearly 450,000 annually, almost the population of Lisbon



**103,170**

m<sup>3</sup> of water treated daily  
Equivalent to 41 Olympic-size swimming pools daily



**312**

Green buildings projects

Across 5 countries



**36**

Education projects

Educational facilities for a wide range of age groups.



**8,127**

Children immunised

Across 70 developing countries, contributing to prevention of over 1.7m future deaths in 2018<sup>5</sup>



**1,389**

Jobs retained/created

Across 8 countries



**341**

Microfinance and SME loans

Across 19 countries

<sup>1</sup> Impact bond issuers may report on bond proceeds' commitments and/or disbursements. A project may receive a total commitment from an impact bond in 2019 which was/is disbursed over multiple time periods. Source: AIM

<sup>1</sup>Estimated by following the Carbon Yield® methodology, which was co-developed by AIM, ISS ESG and Lion's Head Global Partners, with funding from the Rockefeller Foundation.  
<sup>2</sup>According to the US Department of Energy, the 24-hour energy consumed by a common smartphone battery is 14.17 watt-hours, 2019. UN Population Division, World Population Prospects 2019, 2019.  
<sup>3</sup>Estimate based on portfolio-weighted clean energy installed capacity using IRENA Renewable

Energy Capacity Factors, IRENA, Renewable Power Costs 2019, 2020.  
<sup>4</sup>BEIS and DEFRA, Annual Domestic Energy Price Statistics, 2019. On average a UK household consumes 3,600 kWh of electricity per year.  
<sup>5</sup>The Vaccine Alliance (GAVI), Progress Report, 2018.

# Portfolio Sustainable Development Goals Alignment

## AIM US\$ Liquid Impact Fund supported 16 out of 17 Sustainable Development Goals, which aim to eradicate poverty, fight inequality and tackle climate change.

The portfolio-weighted impact bond commitments were most aligned with Goal 7: Affordable and Clean Energy; Goal 9: Industry, Innovation and Infrastructure; Goal 13: Climate Action; and Goal 11: Sustainable Cities and Communities.

AIM is conservative in SDG mapping and we only map projects by their underlying SDG targets. As a climate bond fund, the heaviest concentrations fall, unsurprisingly, within sustainable infrastructure and clean energy but, as many projects often have multiple benefits, the portfolio supports 16 SDGs.

Projects frequently support more than one goal and are equally weighted per goal—for example, a green building project such as the KBN's Ullerud Health Centre, the largest health and care centre in Norway constructed from mass timber, employing only

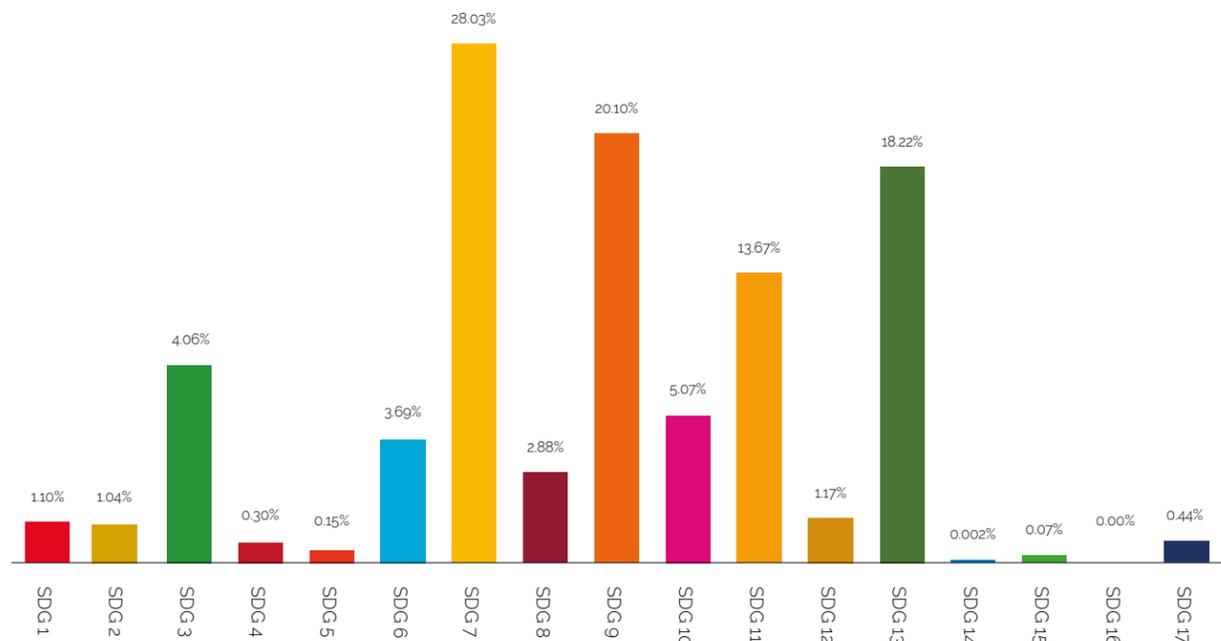
environmentally certified materials (SDG 11). The building, which houses a nursing home and day centre for the elderly (SDG 3), is also heated from geothermal sources and waste heat (SDG 7).

The SDG project case studies (page 24) provide more examples of how projects often support more than one SDG, and illustrate some of the types of projects funded.

Although not included in the chart below, which accounts only for impact bond funded activities, AIM's investment ethos and company DNA is aligned to Goal 17, which includes private sector engagement in sustainable development, particularly in developing countries.



AIM US\$ Liquid Impact Fund 2019 SDG Alignment (Portfolio-weighted, USD equivalents)<sup>1</sup>



# Impact Bond Verification Overview

- S** **Sustainable**  
Aligned with our purpose to support the UN SDGs and Paris Agreement on climate change
- P** **Positive Externalities**  
Positive environmental and/or social externalities associated with the issuance
- E** **Ethics & Issuer Conduct**  
Issuers must have appropriate governance, policies and operational conduct
- C** **Credit**  
Issuers must have a strong financial structure
- T** **Transparent**  
Issuers with clear and transparent reporting and disclosure
- R** **Responsible Issuer**  
Issuers with strong integrity and environmental and social standards, as well as a clear commitment to a sustainable model
- U** **Use of Proceeds**  
Ability to determine use of proceeds to assure funded activities meet our criteria
- M** **Material & Measurable**  
Issuers with reporting on material and measurable environmental and social impact

## AIM US\$ Liquid Impact Fund

The AIM US\$ Liquid Impact Fund was launched in May 2018 and seeks to provide capital preservation with high liquidity through investing in quality, short-dated bonds and cash instruments, denominated in US dollars, targeting a yield above cash deposits and generating a positive environmental and/or social impact.

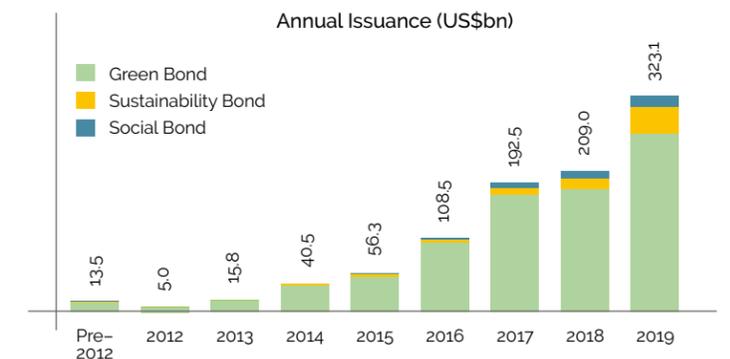
The Fund is a diversified investment grade portfolio investing for the medium to long term. Its investable universe consists only of issuers and issues that meet strict environmental, social and governance, and impact criteria.

## About AIM

At AIM, our vision is to mobilise mainstream capital to address the major challenges the world faces. We manage fixed income portfolios that generate positive environmental and social impact, without compromising financial returns. We invest for impact, with all investments supporting the Paris Agreement and/or the UN Sustainable Development Goals.

We designed our proprietary SPECTRUM Bond® analysis framework to independently verify impact bonds, which include issuer self-labelled, use-of-proceeds green, social and sustainability bonds, and unlabelled pure play bonds. In 2020, we updated our SPECTRUM criteria to expand our issuer environmental, social and governance (ESG) analysis.

Within SPECTRUM we combine three types of analysis: Impact, ESG and Credit, assessing both impact bond frameworks and issuers.



In 2019, the impact bond market continued to expand, reaching record levels with over US\$300bn in issuance. This far surpassed the preceding two years' totals, with substantial new and repeat issuance.

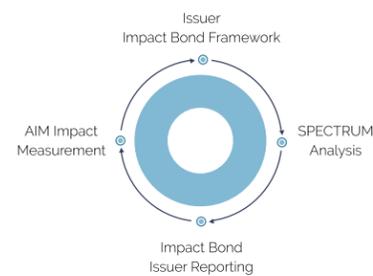
The range of issuance also increased, in terms of country, sector, currency and size, with more smaller-sized issues throughout the year. We saw issuance in consumer-related businesses—a new sector for the impact bond market—and a variety of currencies, although the euro does remain the preeminent currency of issuance. Green bonds still dominate the market, but in 2019 we saw continued growth of both social and sustainability bond issuance. In 2020, not covered in this report, we saw the emergence of COVID-19 response bonds, as the market reacted to the coronavirus pandemic.

# Engaging for Impact

## Issuer Engagements

AIM's engagement covered approximately 80% of issuers held in the reporting period—engagement is critical in our SPECTRUM analysis and impact reporting.

We actively engage with potential and current impact bond issuers to promote the development and maintenance of positive impact and environmental, social and governance (ESG) standards—to encourage a high level of transparency, clear ongoing commitment and harmonised impact reporting.

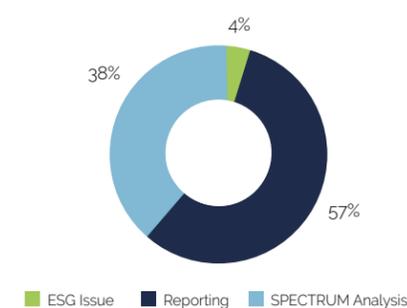


Engagement occurs throughout our investment cycle, from pre-issuance, roadshows, issuer updates on impact bonds and as an integral part of our annual impact reporting.

As a result of our consistent engagement, we were able to collect data representing a high level of portfolio coverage, despite operating in a challenging global environment following the outbreak of the coronavirus pandemic in early 2020.

AIM conducted over 200 engagements throughout 2019 to the first half of 2020, the engagement period covered for this report.

2019 Holdings Engagement by Theme<sup>1</sup>



## Engaging on ESG Issues

AIM undertakes rigorous due diligence with issuers' green, social and sustainability frameworks. We also seek to give constructive feedback when concerns or issues arise.

One example is that of a leading supranational and regular impact bond issuer. Our SPECTRUM Bond® analysis includes in-depth scrutiny of environmental, social and governance (ESG) performance and, while this issuer has strong accountability, operational mechanisms and ESG protocols, we remained concerned about some high profile environmental and social controversies with respect to its projects in developing countries.

Over the past year, we have had continual dialogue with the issuer relating to these projects and have provided feedback, including receiving confirmation from the issuer that the controversial projects were under review and not funded through impact bonds.

Since then, the issuer has made significant changes to how the organisation manages environmental and social issues. Specifically, it has integrated its ESG department into operations to afford greater ownership of environmental and social issues. A new environment and social risk and policy department has also been created to serve as custodian of its ESG policies and standards, oversee high risk projects, facilitate stakeholder grievance response by project teams and to mobilise a rapid response team when needed. We welcome these developments and will be monitoring them closely with open communication.

This is just one illustration of successful engagement with issuers, and how constructive feedback on impact bond frameworks can deliver positive outcomes both for the issuer and for the investor.

## Policy and Industry Engagements

### Policy

- Consultation on EU Taxonomy for Sustainable Finance.
- EU Finance and Biodiversity Platform.

### Industry groups:

- Principles for Responsible Investment (PRI).
- PRI Working Group on Deforestation in Cattle and Soybean Supply Chains.
- Green Bond Principles Impact Reporting Seminar.
- Responsible Investment Association Australasia (RIAA) Responsible Investment Benchmark Report.
- Climate Bonds Initiative Agriculture Working Group.
- Climate Bonds Initiative Shipping Working Group.
- Climate Bonds Initiative Investor Survey.

### Collaborations:

- Assessing Physical Risk of Green Bonds Case Study with South Pole.
- Intergovernmental Panel on Climate Change (IPCC) Summary for Financial Decision Makers consultation and paper review.
- Creation of the Green Bond Transparency Platform (GBTP)—an innovative digital tool to facilitate greater transparency within the Latin America and Caribbean green bond markets—with the Inter-American Development Bank (IDB).
- Green Bonds Symposium, hosted by Environmental Finance, Treasurer of the State of California and Milken Institute.

# Partnerships for Impact

Since inception, AIM has collaborated with other industry leaders to promote the impact bond market. In order to fulfil our vision to mobilise capital at scale, to meaningfully address the major challenges the world faces, we cannot go it alone.

Some of our key partnerships are:

Carbon Yield® and ISS ESG



In 2016, we co-developed the Carbon Yield® metric and methodology with ISS ESG and Lion's Head Global Partners, with funding from Rockefeller Foundation. The Carbon Yield® quantifies the climate change mitigation impact of green bonds. We apply the Carbon Yield® methodology to our strategies as part of our annual impact reporting commitment and, in 2018, published a case study in collaboration with ISS ESG on our experience of applying the methodology.

Climate Bonds Initiative 

Since 2015, we have been a partner of the Climate Bonds Initiative (CBI). CBI is an international organisation working solely to mobilise the largest capital market of all, the \$100 trillion bond market, for climate change solutions.

Colonial First State (CFS) 

Since 2018, we have partnered with CFS, one of Australia's leading wealth managers, which has helped over 1 million Australians with their superannuation, investment and retirement needs, from 1988. The product of this alliance is the Affirmative Global Bond Fund—a vehicle that seeks to engage investors to deliver funding for real solutions to global environmental and social problems.

FAIRR Initiative 

Since 2019, we have been members of the FAIRR network. FAIRR's mission is to build a global collective of investors who are focused and engaged on the risks linked to intensive animal production within the broader food system. FAIRR helps investors to exercise their influence as responsible stewards of capital to engage and safeguard the long-term value of their investment portfolios.

Green Finance Initiative (GFI) 

Since its inception in 2016, we have been an active member of the GFI. An initiative launched by the City of London, in partnership with the UK Government, it provides public and market leadership and advocacy on green finance.

ICMA Green Bond Principles, Social Bond Principles, Sustainability Bond Principles



Since 2015, we have been a member of the ICMA principles, starting with the Green Bond Principles, which were the first to emerge. The principles are voluntary process guidelines that recommend transparency and disclosure, and promote integrity in the development of the impact bond market.

Impact Management Project 

Since 2017, we have been a member of the Practitioner Community of the Impact Management Project, an initiative to build consensus on how we talk about, measure and manage impact, bridging the perspectives of investment, grantmaking, business, non-profits, social science, evaluation, wealth management, policy, standards bodies and accounting.

Lombard Odier Investment Managers 

Since 2017, we have partnered with Lombard Odier Investment Managers. The LO Funds – Global Climate Bond is a result of this partnership. Lombard Odier Investment Managers is the asset management business of the Lombard Odier Group, which has been wholly owned and funded by its partners since its establishment in 1796.

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### Principles for Responsible Investment (PRI)



Since 2016, we have been a signatory of the PRI. The PRI is an independent organisation and is the world's leading proponent of responsible investment. It works to understand the investment implications of environmental, social and governance (ESG) factors, and to support its international network of investor signatories in incorporating these factors into their investment and ownership decisions.

### South Pole

Since 2017, we have been a partner with South Pole, a leading provider of global sustainability financing solutions and services. We collaborated with South Pole to review a TCFD-aligned physical risk assessment tool and applied it across all our portfolios. The tool is forward-looking and examines three forms of green bond issuers' exposure to physical climate risks under four warming scenarios, 1 to 4°C.

### Stockholm Declaration

Since 2017, we have been a signatory of the Stockholm Declaration. Co-led by GRI and UN Global Compact, and supported by the PRI, our allegiance to this document reaffirms our commitment to investing for sustainable development, sustainable impact and towards the 2030 Sustainable Development Goals.

### UN CC:e-Learn

In 2019, we reviewed and supported the development of a UN CC:e-Learn practice-oriented course on the basics of sustainable finance to promote impact bond issuance. The course was produced by a GIZ-SEB strategic alliance (focused on Green Bond Market Development in G20 Emerging Economies) and the Partnership for Action on Green Economy (PAGE)—a One UN initiative bringing together UN Environment, ILO, UNDP, UNIDO and UNITAR, and reviewed by CICERO, AIM and UNDP.

### UNDP SDG Impact Standards for SDG Bonds

In 2020, AIM joined the reference group for SDG Impact Standards for SDG Bonds. These are practice assurance standards developed by UNDP SDG Impact as a transparent, competitively neutral public good. They aim to bridge the gap in the developing impact management toolkit between high level principles of practice and impact performance reporting and benchmarking.

### US SIF: The Forum for Sustainable and Responsible Investment

Since 2017, we have been a member of US SIF, a leading voice in the advancement of sustainable, responsible and impact investing across all asset classes. US SIF's mission is to rapidly shift investment practices towards sustainability, focusing on long-term investment and the generation of positive social and environmental impacts. Members of US SIF collectively represent more than \$3 trillion in assets under management.



# Portfolio

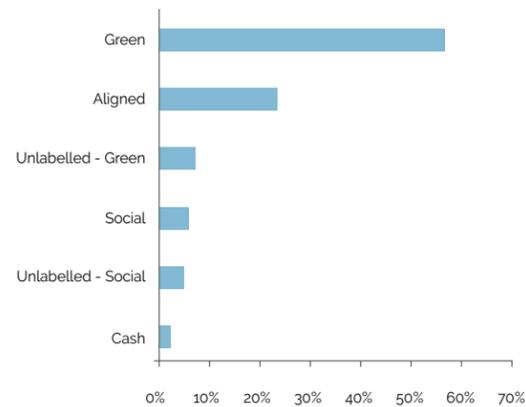
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## Deep dive

# 2019 Portfolio Composition

In line with our corporate mission for all investments to support the Paris Agreement and Sustainable Development Goals, the AIM US\$ Liquid Impact Fund was 99% invested in impact bonds in 2019.

AIM US\$ Liquid Impact Fund 2019 Holdings by Bond Type



Green	labelled use-of-proceeds bonds permitting investment in environmental sectors
Social	labelled use-of-proceeds bonds permitting investment in social sectors
Sustainability	labelled use-of-proceeds bonds permitting investment in environmental and social sectors
Unlabelled	bonds from issuers with approximately 95% of revenues aligned to the AIM environmental and social taxonomy (see Annex 1)
Aligned	bonds from responsible issuers with over 50% of revenues aligned to the AIM environmental and social taxonomy

**99%** For this report, we were able to collect use-of-proceeds data for 75% of the 2019 portfolio, and summarise the funded activities of SPECTRUM-aligned holdings (24%) on page 31.

**of 2019 Portfolio** Reflecting its heavy concentration in green bonds (57%), the 2019 portfolio largely supported climate change mitigation-focused activities (76% of portfolio-weighted proceeds).

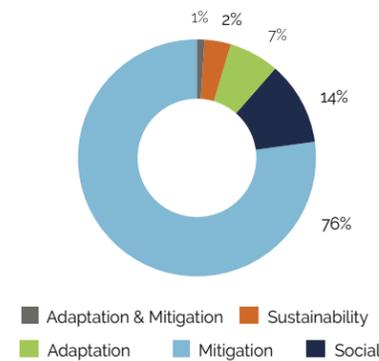
AIM actively seeks investments in both climate change mitigation and adaptation, as a combination of the two strategies is necessary to respond to climate threats—however, historically, adaptation-related activities have not been as well represented in the green bond, or in the wider green finance market.

Climate change mitigation and adaptation are both core to the landmark 2015 Paris Agreement, however, to:

"...strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to increase the ability of countries to deal with the impacts of climate change, and at making finance flows consistent with a low GHG emissions and climate-resilient pathway."<sup>2</sup>

In addition to supporting climate-related projects, approximately 8% of portfolio-weighted proceeds were allocated to social and sustainable activities.

AIM US\$ Liquid Impact Fund 2019 Impact Focus (portfolio-weighted, USD equivalent)<sup>1</sup>



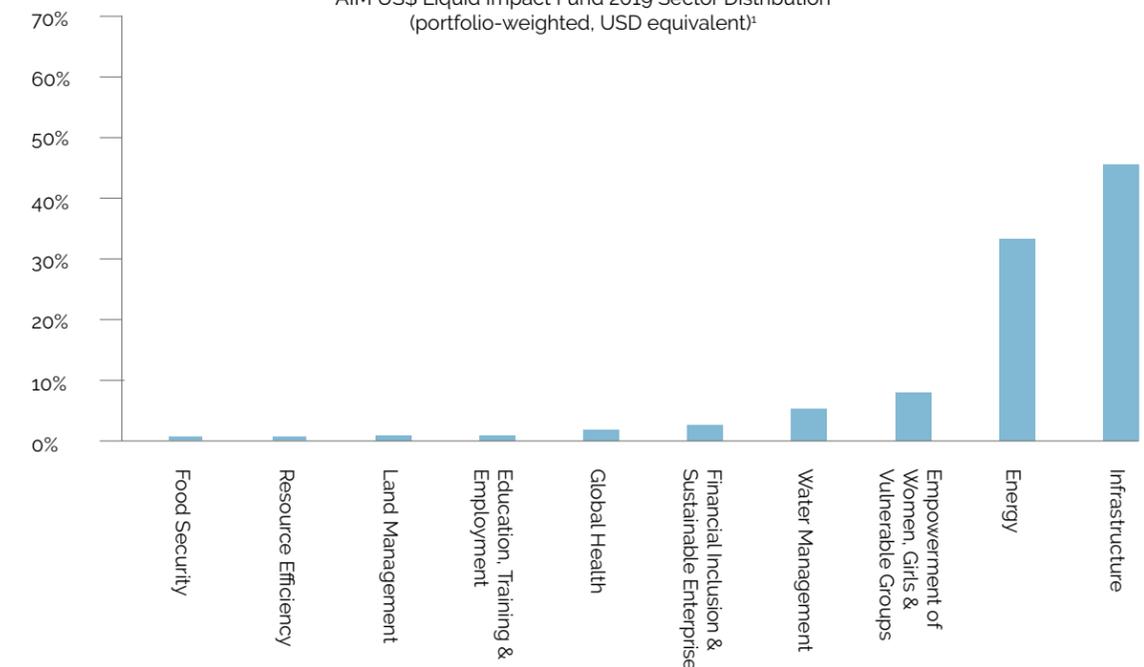
# Portfolio Sector Distribution

AIM US\$ Liquid Impact Fund invests in a range of environmental and social sectors that support the Paris Agreement, climate resilience and the SDGs. (See Annex 1 for examples of AIM-eligible sectors.)

In 2019, the top three sectors that impact bond proceeds in the AIM US\$ Liquid Impact Fund were allocated to were:

<b>46% in Infrastructure</b>	Hard and soft infrastructure promoting inclusive, climate-resilient, low carbon built environment. For example, clean transport networks, green buildings, resilience measures, information and communication technology.	<b>Over 447,730</b> annual passenger capacity supported in low carbon transport.  <b>Almost 823 m<sup>2</sup></b> of buildings (by floor area) constructed/refurbished to higher energy efficiency standards.
<b>32% in Energy</b>	Renewable energy generation, modern energy access, energy storage and energy efficiency technologies.	<b>177</b> clean energy projects supported across 37 countries.
<b>8% in Empowerment of Women, Girls and Vulnerable Groups</b>	Projects providing social and economic support for women, girls and vulnerable groups, such as refugees.	<b>341 SMEs</b> provided with loans, including women-owned enterprises in emerging markets.

AIM US\$ Liquid Impact Fund 2019 Sector Distribution (portfolio-weighted, USD equivalent)<sup>1</sup>



# 2019 Geographic Distribution

## AIM US\$ Liquid Impact Fund invested in impact bonds supporting activities in 104 countries.

The portfolio has an international footprint, a reflection of our mission to support global sustainable development.

Over 58% of portfolio-weighted impact bond commitments were made within developed markets and 32% within emerging markets. The global category refers to projects/activities across developed and emerging markets combined.

41% of 2019 portfolio-weighted supported projects were in developed Europe, followed by over 20% in East Asia and 8% in Sub-Saharan Africa.

The top three countries, however, by portfolio-weighted use of proceeds were Germany, China and Canada.

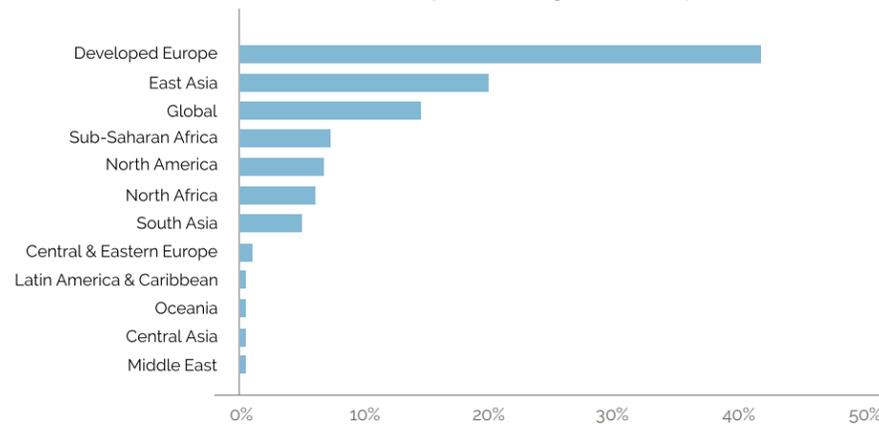
**Kommuninvest Green Bond**  
Sweden

- Large-scale wind farm
- 247 MW renewable energy installed capacity

**African Development Bank Green Bond**  
Senegal

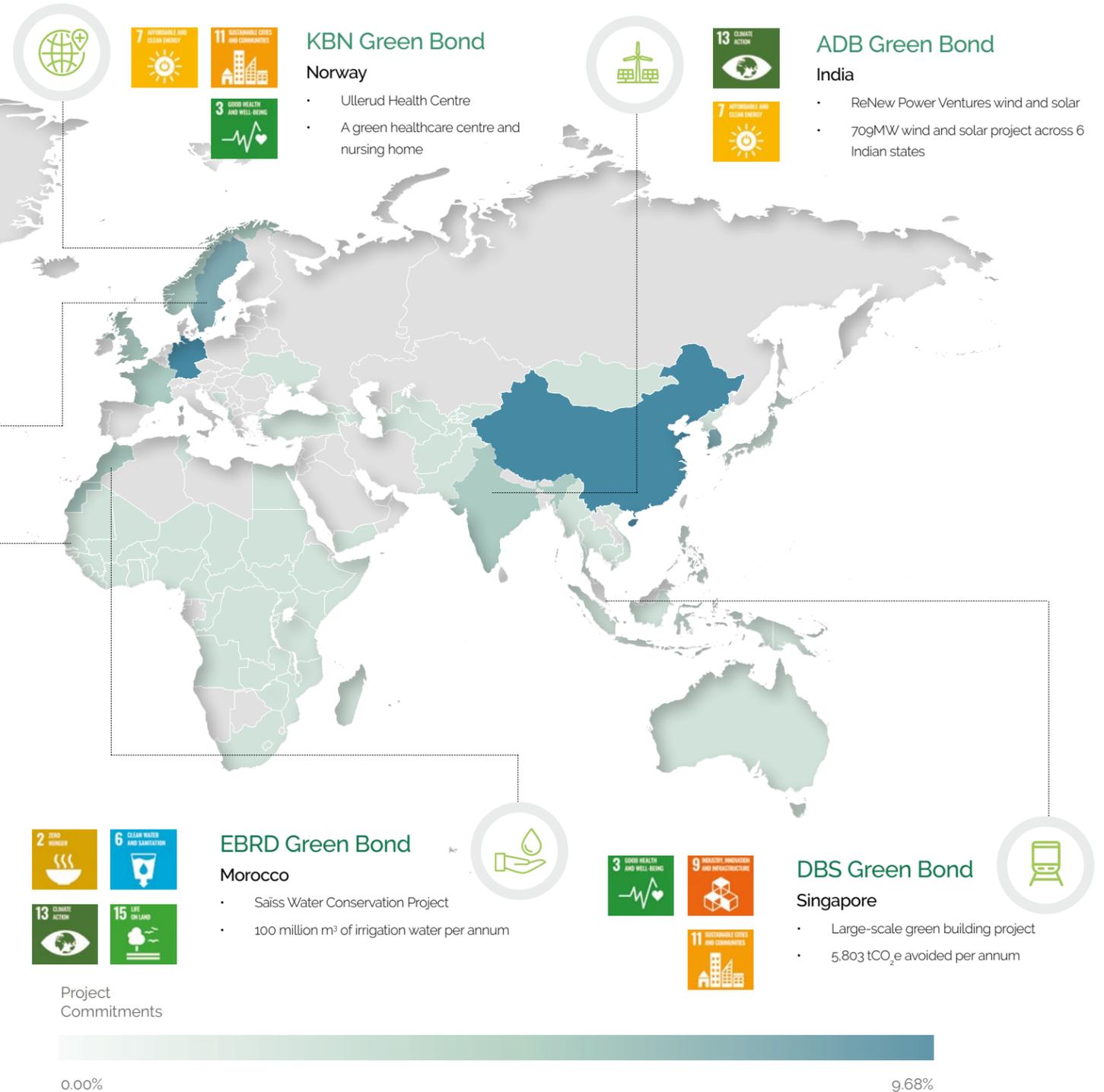
- Regional Express Train
- 113,000 passengers per day

AIM US\$ Liquid Impact Fund 2019 Geographic Distribution (portfolio-weighted, USD equivalent)



## AIM US\$ Liquid Impact Fund 2019 Map of Project Commitments<sup>1</sup> (Portfolio-weighted, USD equivalent)

Example supported projects (see SDG Case Studies for more detail)



Project Commitments



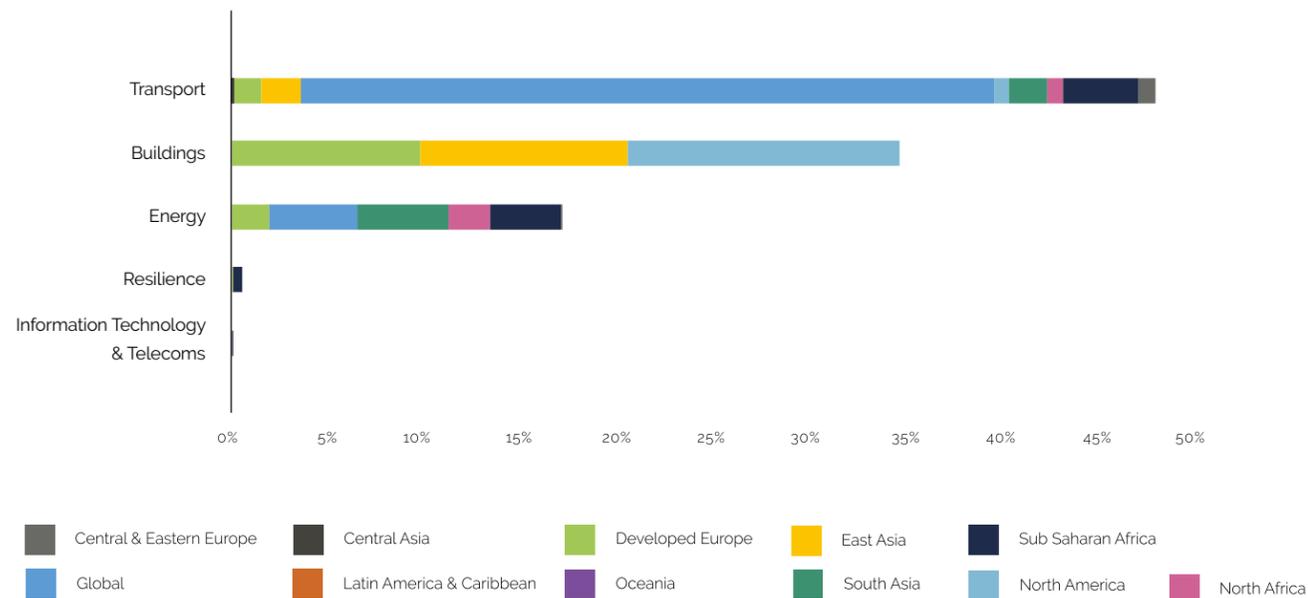
# Investing in Infrastructure

The 2018 report by the Intergovernmental Panel on Climate Change (IPCC), entitled *Global Warming of 1.5C*, warns that limiting global warming to 1.5C with no or limited overshoot would require rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems.<sup>1</sup> Global infrastructure is a major source of anthropogenic greenhouse gas (GHG) emissions. Hence, a transition to low carbon, resilient infrastructure is fundamental to achieving a low carbon economy and meeting the objectives of the Paris Agreement and the Sustainable Development Goals (SDGs).

In 2019, infrastructure was the most significant sector supported by AIM US\$ Liquid Impact Fund, accounting for 46% of investment, with transport being the main beneficiary within the infrastructure sector, at 48%, or 22% overall.

The transport sector was responsible for 24% of direct GHG emissions from fuel combustion in 2018.<sup>2</sup> Passenger and freight activity continue to grow, so reducing global transport emissions is challenging and involves decoupling growth in activity from associated emissions. Electric or hybrid public transport systems, cycle lanes, low emission vehicle fleets and supporting infrastructure—for instance, electric vehicle charging points—all contribute to achieving this decoupling and are examples of assets and projects funded by the investments in this portfolio.

AIM US\$ Liquid Impact Fund 2019 - Infrastructure by Region<sup>3</sup>



Investments within the infrastructure category have also been allocated to buildings, transmission and distribution of energy, climate change resilience, and information technology and telecommunications. Perhaps unsurprisingly, the latter accounts for a small share of investment, at less than 1%. However, we expect to see growth in this area and are already observing increasing issuance of bonds whose proceeds are partly dedicated to information technology and telecommunications.

The internet of things (IoT) is an inclusion we have begun to see in some use-of-proceeds bonds. The IoT is a vital facilitator and enhancer of many green technologies, providing increased (and smarter) connectivity. It can enable green microgrids to be brought online when demand surges, identify and implement energy efficiency gains, improve communications to reduce the need for travel, and organise transport networks in the most effective way. This is still an emerging area and we expect to see increasing application of the IoT to support the transition to a low carbon economy. The reporting of IoT impacts is at the nascent stage and proving challenging, since application of the IoT often achieves impact indirectly—reporting methodologies are in development. Not all IoT applications will contribute to greening the economy and it is important to analyse critically the gains they may achieve.

# Promoting (Bio)Diversity

The world is seeing a rapid decline in biodiversity, with more species at risk of extinction than ever before. Increasing media coverage and reports, including last year's dossier from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, have concentrated attention on the topic within the green investment space but is not well represented in its own right. Biodiversity is an emerging sector in the impact bond market but not well represented in its own right. However, it is potentially indirectly funded through large infrastructure projects, such as water, energy and travel networks, which often have negative biodiversity impacts, but steps can be taken to mitigate them.

## Why does biodiversity matter?

Ecosystems are fundamental for food security and human wellbeing—furthermore, they are an important source of income. There have been some alarming trends developing, driven mainly by changes in our use of both land and sea, and direct exploitation of resources: natural landscapes have declined by 47% on average, relative to their earliest estimated states, and approximately 25% of species are threatened with extinction. Over 70% of indicators for natural assets relevant to local and indigenous communities show a deterioration.<sup>1</sup>

These disturbing discoveries prompted policy makers to set the Aichi Biodiversity Targets for 2020, as part of the Convention on Biological Diversity (CBD). Unfortunately, it has been evident for some time that the targets were highly unlikely to be met this year and, at the time of writing, work is still underway to devise a post-2020 strategy.

While biodiversity is closely aligned with both SDG 14 and 15, it is highly vulnerable to the tragedy of the commons phenomenon: there may be a multitude of beneficiaries, but none feels directly responsible for maintaining an ecological asset, even when its decline would foreseeably produce a detrimental impact on everyone.



## Biodiversity in the SPECTRUM universe

In 2019, AIM was part of the EU Business @ Biodiversity Platform, an EU Commission initiative providing dialogue and policy interface between business and biodiversity. As dedicated impact investors, we continue to urge hesitant issuers to promote diversification of the impact bond market and the real ecological economy by supporting policy and industry initiatives.

Our experience of biodiversity in the use-of-proceeds (UoP) bonds space indicates that issuers are mostly from the public sector, reflecting their mandate to maintain and protect spaces ranging from city parks to marine national reserves through, for example, sovereign bonds and supranational impact bonds. Other important impact bond issuers financing biodiversity initiatives include utilities and infrastructure focused entities. For instance, many water utilities in the UK manage conservation areas within their territories, or collaborate with farmers to reduce runoff into rivers; grid and railway operators commonly minimise disruptions in the spatial continuity of ecosystems by undergrounding power lines or creating green and blue belts, which act as buffer zones. In many advanced economies, such activities are regulated, which provides some reassurance that they indeed produce positive impact.

Labelled bonds from these industries are generally well received in the market—examples include issues by the Finnish power transmission operator, Fingrid; British water company, Anglian Water; and French rail company, SNCF. Regulated utilities tend also to readily disclose their biodiversity strategies and interventions and may follow recommended reporting guidelines, such as the Global Reporting Initiative's (GRI) 304: Biodiversity Standard. However, challenges persist and impact bond issuers often struggle to produce reporting on their biodiversity performance.

AIM continues to encourage disclosure and engagement on the topic—despite the difficulties faced in trying to measure and aggregate achievements in this area—and, in doing so, we hope to promote a more transparent and diverse impact bond market.

# Paris Agreement Progress

## Paris Agreement – Where Are We?

In December 2015, the landmark Paris Agreement emerged with the central aim to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius (°C).<sup>1</sup>

The Paris Agreement came into force in November 2016, when at least 55 Parties to the Convention (ie countries), accounting for at least an estimated 55% of global GHG emissions, ratified their commitments. As at June 2020, 189 countries have ratified climate plans in accordance with Convention targets.

The Parties agree to review every five years their collective progress towards, and contributions to, achieving the targets of the Agreement.



## With the fifth anniversary of the Agreement fast approaching, how much progress has been made?

In 2018, the UN IPCC released their now seminal report on Global Warming of 1.5°C, warning that human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate<sup>2</sup>—well ahead of the previously predicted 2100 and the effects are long-lasting or, in many cases, irreversible.

Climate Action Tracker concluded, in their 2019 update on global climate progress<sup>3</sup>, that under current national pledges, the world is expected to warm by 2.8°C by the end of the century, close to twice the limit set by the Paris Agreement. In terms of current practices, governments are even further from the Paris temperature target, which they forecast to be on a 3°C pathway.

While it is expected that subsequent reviews of the Parties' commitments toward the Paris Agreement will result in more ambitious plans to close the gap, there remains considerable concern that we will still not be on track to avert a catastrophic warming scenario of above 2°C.

It is becoming increasingly evident that the private sector must also play an active role in driving progress towards limiting global warming.

## AIM's commitment to the Paris Agreement

Since inception, our corporate mission has been to support the Paris Agreement and/or Sustainable Development Goals. We continue to advocate diverting private capital markets towards financing the low carbon, climate-resilient transition through impact bonds. We facilitate efforts to close the gap and meet the Paris Agreement via active investment, engaging with issuers on the topic and supporting industry education and initiatives to promote sustainable green financing. Our portfolios finance climate mitigation and adaptation activities and we report on our GHG footprint and savings to evidence our impact.

In addition to detailing our support of the transition, this report includes TCFD-aligned physical risk assessments across four global warming scenarios this century—1° to 4°C pathways—which AIM calculated in partnership with climate experts, South Pole.

The risk profile of funded assets increases substantially from a 3°C scenario onwards and it is a future we seek to avoid by investing in the transition—we must, however, prepare for this potential outcome as it remains our current trajectory.

Our corporate sustainability commitment to be operationally carbon neutral and disclose our portfolio carbon metrics is part of our integrated approach to supporting the Paris Agreement.

# Assessing the Carbon Profile of Impact Bonds

In 2019, AIM conducted a best practice carbon assessment of all our 2019 time-weighted portfolio holdings, fully aligned with the recommendations on carbon metrics for asset managers by the Task Force on Climate-related Financial Disclosures (TCFD). It followed the guidance provided by the GHG Protocol for calculating GHG emissions associated with debt investments with known use of proceeds.

The TCFD-aligned GHG emission analysis supplements our climate change mitigation impact analysis, measured under the Carbon Yield® methodology, launched in 2016, which we co-developed with partners, ISS ESG and Lion's Head Global Partners, with funding from The Rockefeller Foundation.

The table below summarises the approach and the relevant disclosure frameworks used by AIM to articulate the AIM US\$ Liquid Impact Fund mitigation impact.

Impact Bonds GHG Emissions – Boundary	Main Disclosure Framework	Underlying GHG Emissions Data & Derived Carbon Metrics
<p><b>Scope 1</b>—Direct emissions from owned or controlled sources (eg facilities, vehicles)</p> <p><b>Scope 2</b>—Indirect emissions from purchased electricity, steam, heating or cooling for own use</p>	TCFD, Supplemental Guidance for Asset Managers, Metrics & Targets <sup>1</sup>	<p>Impact Bond Issuer Scope 1&amp;2 GHG Emissions</p> <p>TCFD-aligned Issuer-level AIM US\$ Liquid Impact Fund Carbon Metrics</p>
<p><b>Scope 3</b>—Other emissions that occur in the value chain (eg project operation, construction and material use)</p>	GHG Protocol, Guidance for Scope 3, Category 15: Investments—applicable to Debt Investments with known Use of Proceeds <sup>2</sup>	<p>Impact Bond Funded Project Scope 1&amp;2 (operational) and Scope 3 GHG Emissions (from construction and material use)</p> <p>Funded Projects - AIM US\$ Liquid Impact Fund Carbon Footprint</p>
<p><b>Avoided Emissions</b>—Avoided/reduced emissions due to a funded project being implemented vs a reasonable business-as-usual baseline</p>	Avoided Emissions and Carbon Yield® Methodology <sup>3</sup>	<p>Impact Bond-Funded Project Avoided GHG Emissions</p> <p>Funded Projects - AIM US\$ Liquid Impact Fund Avoided GHG Emissions</p>

<sup>1</sup>UN, Paris Agreement, 2015.

<sup>2</sup>UN IPCC, Special Report: Global Warming Of 1.5°C, 2019.

<sup>3</sup>Climate Action Tracker, Warming Projections Global Update, 2019.

<sup>1</sup>TCFD, Implementing the Recommendations of the TCFD (<https://www.fsb-tcfd.org/wp-content/uploads/2017/12/FINAL-TCFD-Annex-Amended-121517.pdf>).  
<sup>2</sup>GHG Protocol, Technical Guidance for Calculating Scope 3 Emissions ([https://ghgprotocol.org/sites/default/files/standards\\_supporting/Chapter15.pdf](https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter15.pdf)).  
<sup>3</sup>The Carbon Yield® was co-developed by AIM, ISS ESG and Lion's Head Global Partners, with funding from The Rockefeller Foundation. Please refer to Annex 2 for the full methodology (<http://carbonyield.org/>).

# TCFD Issuer-level Carbon Metrics

The Task Force on Climate-related Financial Disclosures (TCFD) was established by the Financial Stability Board (FSB) with the aim of developing voluntary, consistent climate-related financial disclosures that would assist the financial industry in assessing material risks. The TCFD has developed eleven recommendations around four thematic areas—governance, strategy, risk management, and metrics and targets—that are applicable to organisations across sectors and jurisdictions. The TCFD has also published supplemental guidance for specific sectors, including asset management. As shown in the table below, AIM calculated the carbon metrics for its investments in line with the TCFD recommendations on metrics and targets for asset managers, including the weighted average carbon intensity (WACI).

Carbon Metric	TCFD Definition	Description
<b>Total Carbon Emissions (tCO<sub>2</sub>e)</b>	The absolute GHG emissions associated with AIM US\$ Liquid Impact Fund	Traditional carbon footprint of a portfolio where a given issuer's Scope 1&2 GHG emissions are allocated to AIM US\$ Liquid Impact Fund based on an ownership approach—eg if AIM US\$ Liquid Impact Fund's investment in a given issuer accounts for 0.1% of the issuer's adjusted enterprise value, then 0.1% of the issuer's Scope 1&2 GHG emissions are allocated to the fund/portfolio.
<b>Carbon Footprint (tCO<sub>2</sub>e / USD m invested)</b>	Total carbon emissions for a portfolio normalised by the market value of AIM US\$ Liquid Impact Fund	AIM US\$ Liquid Impact Fund's total carbon emissions are normalised by the market value of AIM US\$ Liquid Impact Fund. This metric, also known as relative carbon footprint, expresses the amount of GHG emissions associated with an investment of 1 million (of the relevant currency) into AIM US\$ Liquid Impact Fund. It allows for comparisons across portfolios, and with benchmarks, and facilitates portfolio decomposition and attribution analysis.
<b>Weighted Average Carbon Intensity [WACI] (tCO<sub>2</sub>e / USD m revenue)</b>	AIM US\$ Liquid Impact Fund's exposure to carbon-intensive companies	The WACI is the carbon metric explicitly recommended by the TCFD. It is not a carbon footprint as, unlike the two metrics described above, which are based on the issuer's absolute Scope 1&2 emissions and the ownership approach, it is based on the issuer's Scope 1&2 emission intensity (by revenue) and portfolio weights. The WACI is, therefore, a carbon intensity metric that can be more easily applied across asset classes and allows for portfolio decomposition and attribution analysis.

The table below shows the results of the issuer-level GHG emission analysis of AIM US\$ Liquid Impact Fund for 2019. The assessment, which relies on GHG emissions data provided by ISS ESG, covers 78% of AIM US\$ Liquid Impact Fund. For the full methodology, please refer to the GHG Analysis appendix.

It is important to stress that the issuer-level carbon metrics are heavily dependent on the coverage and should be solely regarded as an assessment of the carbon profile for the share of the portfolio covered by the GHG analysis. Inter alia, this also means that the WACI was calculated by maintaining original portfolio weights.

AIM US\$ Liquid Impact Fund – Issuer-level Carbon Metrics	
Coverage	78%
Disclosed GHG Emissions (% of covered weight)	54%
Total Carbon Emissions (tCO <sub>2</sub> e)	43
Carbon Footprint (tCO <sub>2</sub> e / USD m invested)	1.78
Weighted Average Carbon Intensity (tCO <sub>2</sub> e / USD m revenue)	3.07

# Funded Projects Carbon Footprint and Avoided Emissions

In line with the TCFD recommendation to disclose any other relevant metric, besides the carbon metrics detailed in the previous section, we believe, as a dedicated impact bond investment manager, that a bottom-up assessment of the carbon abatement impact of the projects funded by the bond proceeds is crucial. This includes accounting for the GHG emissions arising from the funded projects, as per the guidance provided by the GHG Protocol—one of the most widely recognised GHG emissions frameworks—for debt investments with known use of proceeds. In particular, for funded projects, we partnered with ISS ESG to estimate both Scope 1&2 emissions (ie from project operations) and Scope 3 emissions (ie from project construction and material use), and then allocated GHG emissions to the AIM US\$ Liquid Impact Fund based on the share of the total project cost held in the fund.

Moreover, we estimated the climate change mitigation impact of our portfolios in the form of the GHG emissions that have been avoided/reduced by the implementation of funded projects in comparison to a reasonable business-as-usual baseline. The avoided GHG emissions are allocated to the portfolio based on the share of the total project cost held in the AIM US\$ Liquid Impact Fund. The calculation of GHG emissions avoided only considers the operation/use of the project and not the full value chain. For example, for a wind farm project, avoided GHG emissions are calculated based on the energy generated from the operation of the wind farm, excluding construction emissions, compared to the region/country's electricity grid emissions.



On average, for 2019, we were able to estimate the carbon footprint and avoided emissions of the funded projects for 56% of the AIM US\$ Liquid Impact Fund, covering about 78% of issuer disbursements per analysed framework (compared to an overall impact data coverage of approximately 99% on total issuer disbursements). When compared to a reasonable business-as-usual baseline, in 2019 the AIM US\$ Liquid Impact Fund was estimated to generate 72% GHG emissions savings.

**72%**  
GHG emissions savings

The tables below display the results of the carbon footprint and avoided GHG emissions analysis of the funded projects.

AIM US\$ Liquid Impact Fund Supported Projects Carbon Footprint	
Funded Projects Scope 1&2 (operational emissions) (tCO <sub>2</sub> e)	1,718
Funded Projects Scope 1&2 and Scope 3 (operational, construction and material use emissions) (tCO <sub>2</sub> e)	2,421

AIM US\$ Liquid Impact Fund Supported Projects Avoided GHG Emissions	
Funded Projects Lifetime GHG Emissions Avoided (tCO <sub>2</sub> e)	85,144
Funded Projects GHG Emissions Avoided Per Annum (tCO <sub>2</sub> e / year)	4,415

AIM US\$ Liquid Impact Fund Carbon Yield®	
0.14 tonnes of CO <sub>2</sub> e avoided per US\$1,000 per annum	
Calculated based on a 56% coverage ratio of the portfolio <sup>6</sup>	
Equivalent to 558km driven by an average passenger vehicle in the US <sup>7</sup>	
Equivalent to the average daily electricity consumption of 56 households in the UK <sup>8</sup>	

<sup>4</sup>By using (adjusted) enterprise value when allocating a given issuer's GHG emissions to an investor, both shareholders and bondholders can be accounted for the issuer's GHG emissions—therefore avoiding double counting—and the derived carbon metrics can be applied across equity and/or fixed income portfolios. Enterprise value is adjusted as per the definition provided by the EU Technical Expert Group on Sustainable Finance (Report on Benchmarks, p 11, December 2019). <sup>5</sup>Enterprise Value including Cash (EVIC) is defined as the sum of the market capitalization of ordinary shares at fiscal year end, the market capitalization of preferred shares at fiscal year end, and the book values of total debt and minorities' interests. No deductions of cash or cash equivalents are made to avoid the possibility of negative enterprise values.

<sup>6</sup>Issuer frameworks were not included in the GHG analysis if they did not significantly fund climate mitigation assets (eg focused on social benefits, such as vaccination programmes), or if issuers had not reported in time for AIM's annual impact data collection. <sup>7</sup>The average passenger vehicle in the US emits about 404 grams of CO<sub>2</sub> per mile (Source: EPA, Green Vehicle Guide). <sup>8</sup>On average a UK household consumes 3,600 kWh of electricity per year (Source: UK Government, BEIS, Annual Domestic Energy Price Statistics). GHG emissions from electricity usage are based on the 2019 conversion factor for electricity provided by BEIS and DEFRA (Greenhouse gas reporting, conversion factors 2019).

# TCFD–Aligned Physical Risk Assessment Results

Future climate change brings risks for investors all around the world. While investments in bonds that deliver positive environmental or social externalities can help to mitigate the impacts of climate change, this does not mean that they are immune from the risks posed by climate change.

Typically, the information that impact bond issuers provide sheds little light on the exposure, vulnerability and resilience of bond proceeds to climate change events. Last year, in conjunction with South Pole, we undertook a case study to assess physical risks to green bonds. This year we have expanded that to apply South Pole's physical risk assessment methodology across our own holdings (where data availability permits). See Annex 2 for details on the methodology.

## Step 1: Forward-looking Risk Screening Results

The first part of the three-step process is a forward-looking climate-related risk assessment. The assessment analyses the location and sector of each asset, and provides a measure of physical risk as a negative percentage change in output:

A risk score of 50% equates to a negative impact on output of 50%

The long-term impacts of climate change will, of course, differ depending on the pathway the world follows. To assess a range of possible climate pathways, as defined by the IPCC, South Pole assessed the funded underlying projects mapped by geography and sector of our holdings against four global warming scenarios: 1°C, 2°C, 3°C and 4°C, on a 2040 time horizon.

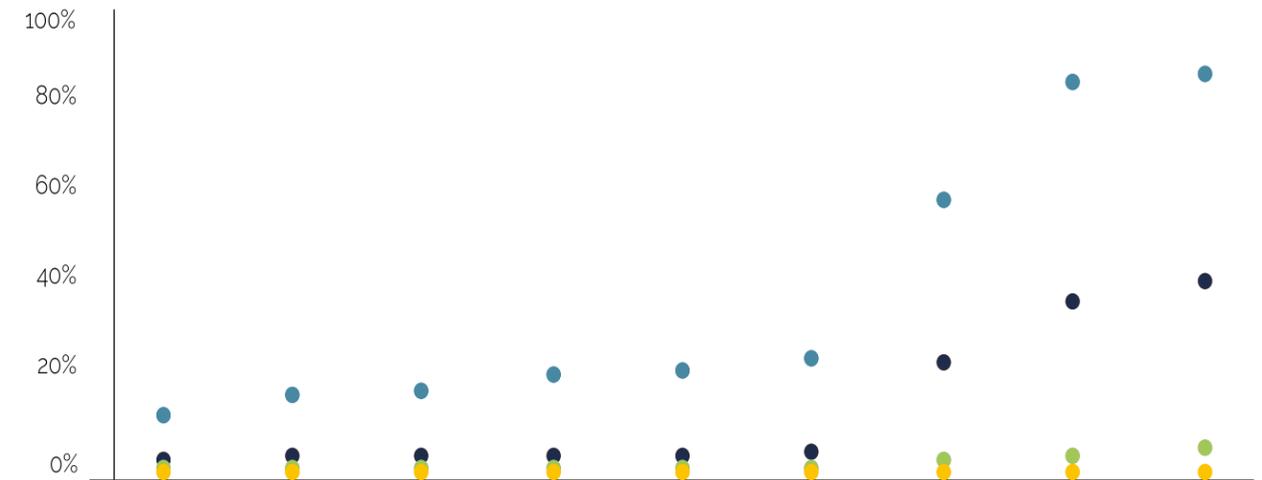
Percentage of AIM US\$ Liquid Impact Fund covered by analysis (%)	Portfolio Risk Score at 1°C	Portfolio Risk Score at 2°C	Portfolio Risk Score at 3°C	Portfolio Risk Score at 4°C
40%	0.30%	2.63%	18.19%	45.64%

As the table above demonstrates, portfolio-level risk scores are relatively stable in the 1°C and 2°C scenarios, compared with steep increases occurring in the 3°C and 4°C scenarios. In the 4°C scenario, some impact bonds show substantially higher levels of vulnerability—with the highest level at 87%. This would reflect significant loss in both financial performance and impact.



# Portfolio Physical Risk Assessment Results

AIM US\$ Liquid Impact Fund  
Physical Risk Screening



Impact Bond Ranked by Risk Level

● Risk Score [1°C] ● Risk Score [2°C] ● Risk Score [3°C] ● Risk Score [4°C]

The above chart shows the spread of risk for a large number of bonds under each warming scenario, with each data point representing the risk score for a single bond at the temperature indicated. As the figures show, between the 1°C and 4°C scenarios, the overall level of risk across all bonds rises significantly, as does the number of bonds approaching a potentially catastrophic decline in output. These results, envisaged on a global scale, underscore the profound urgency of meeting the targets set out in the Paris Agreement, and limiting warming to below 2°C.

The assessment also enables us to estimate the point at which an asset, or a bond, begins to experience the greatest increase in risk. This is achieved by identifying the temperature at which the peak rate of change—the most rapid increase in risk—occurs.

Percentage of AIM US\$ Liquid Impact Fund covered by analysis (%) *	Temperature pathway in which portfolio experiences peak increase in risk	Current projected temperature pathway
40%	4.0°C	2.8–3.2°C <sup>1</sup>
	Above current trajectory	Dependent on current announced policies and behaviour change

Aggregated across the holdings covered, AIM US\$ Liquid Impact Fund experiences the peak rate of change in risk at 4.0°C. This means that portfolio holdings are estimated to experience the largest step up in negative impact on output at 4.0°C of global warming.

Even though the portfolio's estimated peak rate of risk change is above the current global warming trajectory, we are still on a pathway that will bring significant negative impacts across asset classes and geographies. The aim is to invest in the shift to a lower warming trajectory, but we should also be cognizant of the risks to our portfolios based on the current pathway.

# Asset-level Hotspot Analysis and Adaptive Capacity Results

## Step 2: Hotspot Analysis

The biggest driver of risk in South Pole's physical risk screening is geographic location, rather than underlying characteristics of assets and sectors. Following the initial physical risk screening of the portfolio, we selected specific projects to go through hotspot analysis for further investigation.

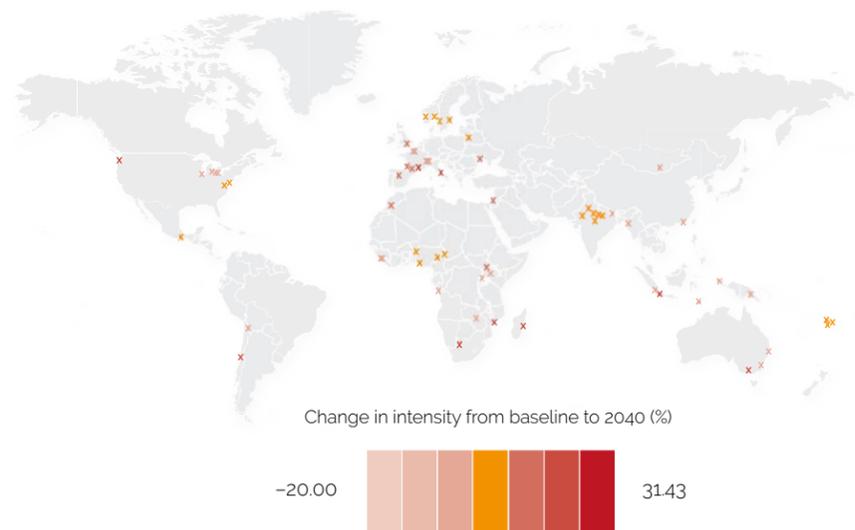
Hotspot analysis focuses on the effect of climate change on the probability and intensity of specific hazards, such as heavy precipitation and drought, at a specific location, therefore highlighting projects that may become increasingly vulnerable to these hazards in the future. The effect of climate change is calculated by comparing current climate conditions against future expected conditions, based on 18 climate models and IPCC climate scenarios. A positive score indicates that climate models project an increase in the probability and/or intensity of the hazard at the given asset's location. The higher the positive score the greater the change expected.

The maps below show the results of the hotspot analysis for selected projects, highlighting changes in the intensity of drought and heavy precipitation under RCP4.5. In both maps, project locations are marked by an X. The analysis was also run for RCP2.6 and RCP8.5, to provide us with a range of results to consider. However, we have chosen to present the results of RCP4.5 to demonstrate how even an intermediate emissions pathway will have significant consequences for which investors need to plan.

The Representative Concentration Pathways (RCPs) describe different future pathways of greenhouse gas (GHG) emissions and atmospheric concentrations. They represent a range of possible futures and are used in climate model simulations to project consequences for the climate system. IPCC has used four RCPs to represent the range of scenarios. These include an ambitious mitigation scenario (RCP2.6), two intermediate scenarios (RCP4.5 and RCP6.0), and one "business as usual" scenario with very high emissions and little mitigation (RCP8.5).

The first map shows the projected change in drought intensity for selected projects by 2040. The colour of the X indicates the hotspot analysis score. A darker shade of red indicates a higher score, meaning that the asset location is likely to experience an increase in the frequency and/or intensity of drought. Some locations score negatively, meaning they are likely to experience a decline in the frequency and/or intensity of drought; these are marked with a lighter shade of red.

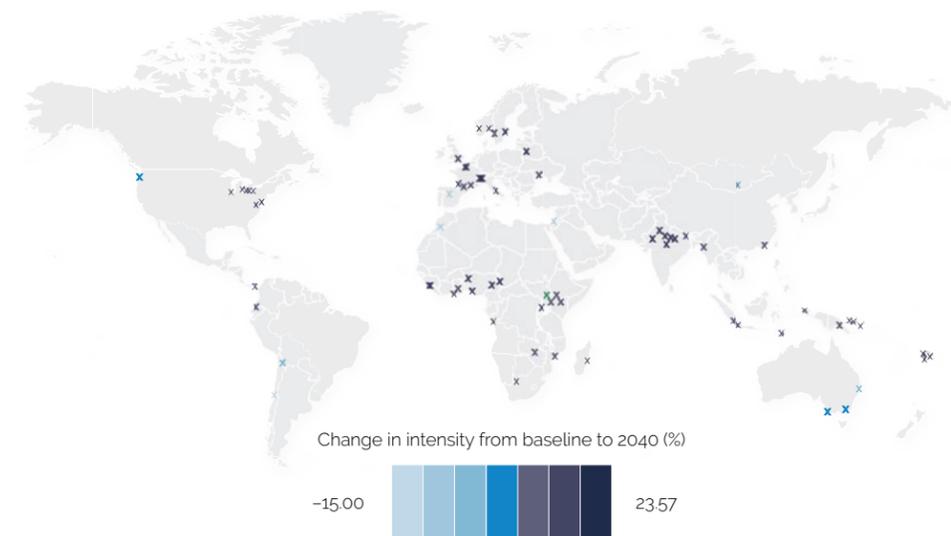
Project Hotspot Analysis Results (RCP4.5) – Drought



Similarly, the second map shows the projected change in heavy precipitation for selected projects by 2040. In this case, a darker shade of blue indicates locations likely to see an increase in the frequency and/or intensity of heavy precipitation, and a lighter shade of blue indicates locations likely to experience a decrease.

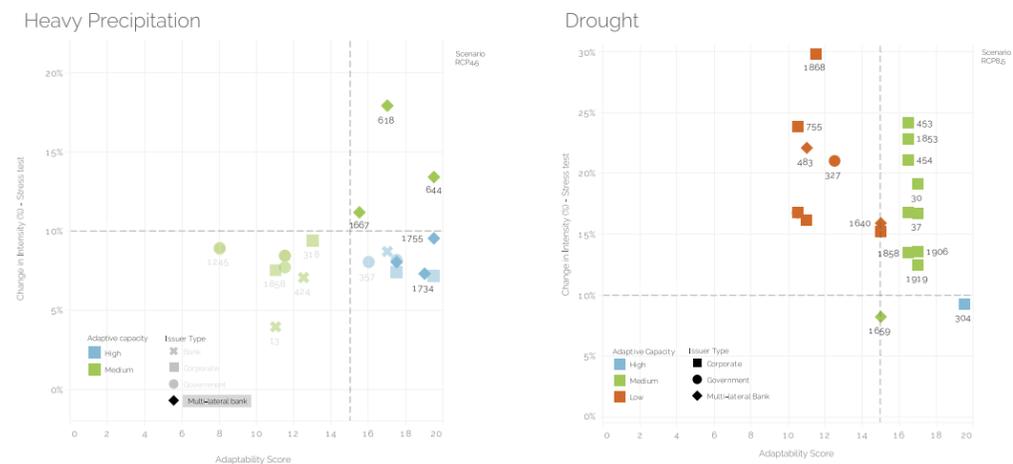
These maps help to identify the types of physical risks issuers should expect and plan for, in designing projects and investments. Such information can help to inform and structure decision making for project developers and investors alike, and allows us to make more informed decisions about whether issuers are implementing appropriate adaptation measures.

Project Hotspot Analysis Results (RCP4.5) – Heavy Precipitation



## Step 3: Adaptive Capacity Analysis

To understand how well an issuer has prepared for the risks identified in the forward-looking risk assessment and hotspot analysis, South Pole performed an adaptive capacity screening based on publicly available documents. This final step helps to determine whether an issuer has anticipated and planned for the climate risks likely to impact their projects or assets. The resulting score (shown in the figures below for the RCP4.5 scenario) allows us to understand the adaptive capacity of the issuer, and to identify those issuers in need of follow-up and engagement.



## Integrating the Results of Physical Risk Analysis

There are three key benefits to running physical risk screening on our holdings:

- First**, it helps us understand the risks that climate change poses to our current investments.
- Secondly**, it provides us with better information about what types of projects and which locations are likely to be most at risk from climate change. This does not necessarily mean that we will avoid these projects or locations in future, but it strengthens and informs our analysis to ensure that appropriate resilience and adaptation planning measures are in place.
- Finally**, it provides us with a starting point for engagement with issuers about the risks they face, whether they are cognizant of those risks and what they are doing to minimise and adapt to them.

# SDG Project Case Studies

## SDG 3 Project Case Studies

Ensure healthy lives and promote wellbeing for all at all ages



### Sector

Global Health



Global vaccine coverage is stagnating. Vaccination is core to preventive care—when a significant proportion of the population is not protected by vaccination, the opportunity for other diseases to spread also increases. Fragility of, and challenges linked to, the delivery of quality primary healthcare, vaccine hesitancy, logistics and health worker practices are some of the root causes of this under-immunisation. Affected children, often found in urban slum areas, rural locations or conflict settings, are highly susceptible to contracting vaccine-preventable diseases.

### Project

#### The International Finance Facility for Immunisation (IFFIm) – Vaccine Bond

IFFIm is a public/private partnership designed to raise capital for the Vaccine Alliance (Gavi), which is dedicated to immunisation programmes in over 70 of the poorest countries. In early 2020, IFFIm raised money for CEPI, the Coalition for Epidemic Preparedness Innovations. The CEPI initiative accelerates development of vaccines against emerging infectious diseases and enables equitable access to these vaccines during outbreaks.

Gavi has played a key role in increasing immunisation coverage across the continent by introducing nine vaccines: human papillomavirus (HPV), inactivated polio vaccine (IPV), measles, measles-rubella (MR), meningitis A, Pentavalent, pneumococcal, rotavirus, and yellow fever—providing protection against 13 vaccine-preventable diseases. In partnership with African member states, more than 300 vaccine introductions and campaigns have taken place on the continent. Gavi estimates that, every minute, 50 African children are vaccinated with the third dose of the diphtheria-tetanus-pertussis vaccine (DTP3) throughout the 40 Gavi-supported countries in Africa.

### Impact Context

#### Location – >70 Developing Countries

- WHO estimates that 1.5 million people die every year from vaccine-preventable diseases.
- Estimated 19.4 million children worldwide are under-immunised, 78% of whom live in Gavi-supported countries, including almost 8.5 million in Africa.
- 89% of children under 12 months old do not receive the full dose of the 11 antigens recommended by the WHO.

#### Output (Issuer KPIs)

- 76% DTP3 coverage in 40 Gavi-supported African countries (as of 2018).
- 134 million unique children in Africa immunised with Gavi support (as of 2018).
- 3.1 million girls in Africa immunised with the human papillomavirus vaccine (HPV) over the past 20 years.

#### Related SDGs



### Project

#### The International Finance Corporation (IFC) – Social Bond

Ariel Foods FZE Ltd

Ariel Foods works closely with—and is a top supplier of—nutritional products to UNICEF and WHO programmes. The company plays a major role in developing products to combat malnutrition in children, which can lead to poor cognitive development and learning capacity, as well as an increased risk of mortality. The Ariel Foods project supported construction of a plant in Lagos, Nigeria that produces a ready-to-use therapeutic food (RUTF) and ready-to-use supplementary food (RUSF) for people suffering acute malnutrition in conflict-affected areas and other emergency zones. The RUTF is a mixture of peanut paste, sugar, vegetable oil and milk powder, fortified with 23 vitamins and minerals and sealed in long-life foil packets for easy storage and transport. Products are ready to eat directly from the sachet and have a 24-month shelf life at 30 degrees Celsius. Reducing the administrative burden and time taken to get ready-to-use foods to Nigeria will also help, in emergency situations, to deliver faster treatment to children with acute malnutrition in the West and Central Africa Region.

### Impact Context

#### Location – Nigeria

- Second highest burden of stunted children in the world, with a national prevalence rate of 32% of children under five.
- Of the 2 million children suffering from severe acute malnutrition nationally, only two out of ten are reached with treatment. The reign of Boko Haram in the north has exacerbated this crisis.
- Nigeria has one of the largest UNICEF-supported treatment programmes in the world for severe acute malnutrition.

#### Output (Issuer KPIs)

- 6-10m metric tonnes of ready-to-use therapeutic sealed foil food packets per year.
- Enhance resilience of the existing ready-to-use foods market in the West and Central African region, by increasing the ability of the market to respond to crises.
- Target to reach 1.6m malnourished children.

#### Related SDGs



# SDG 6 Project Case Studies

Ensure availability and sustainable management of water and sanitation for all



## Sector

Water Management



Water and sanitation are critical to the survival of people and the planet. More than 2 billion people globally are living in countries with excessive water stress, defined as the ratio of total freshwater withdrawn to total renewable freshwater resources above a threshold of 25%.<sup>1</sup>

UNESCO predicts that, with the existing climate change scenario, by 2030, water scarcity in some arid and semi-arid locations will displace between 24 million and 700 million people.<sup>2</sup> Over 80% of the world's wastewater—and more than 95% in some of the least developed countries—is released untreated into the environment.<sup>3</sup>

Project

### European Bank for Reconstruction and Development (EBRD) - Green Bond *Water management in Shymkent, Kazakhstan*

The bond facilitates a financial package to a private water utility, TOO Vodnye Resoursy Marketing, for water and wastewater improvements in the southern city of Shymkent. Privately-owned Vodnye Resoursy Marketing is among the best utility companies in the country in terms of its operational and financial performance, despite operating in a low-income city. This intervention is addressing an emergency situation in the city of Shymkent, which was in urgent need of rehabilitating its main wastewater collection network. Since project inception, the quality of drinking water and discharges of treated wastewater have improved significantly and are now compliant with both national and EU standards. Furthermore, the borrowing company is improving management of water protection zones and implementing a variety of pollution prevention measures.

Context

#### Location – Kazakhstan

- 18.2 million inhabitants.
- 70% of Kazakh terrain is desert or semi-desert, and approx 13% of the population are vulnerable to high drought hazard—the highest in Central Asia.<sup>4</sup>
- Shymkent is the third largest city in Kazakhstan, with a population of circa 0.8 million and coverage area of approximately 670 km<sup>2</sup>.

Impact

#### Output (Issuer KPIs)

Impact from EBRD's global project portfolio for water and wastewater management:

- 206,000,000 m<sup>3</sup> of water savings per annum.
- 128,000,000 m<sup>3</sup> of water treated per annum.
- 49,000,000 beneficiaries reached.

#### Related SDGs



Project

### Kommunalbanken Norge *New Noresund Treatment Plant*

The bond supports the construction of a new water treatment plant incorporating chemical and biological systems, with strict release requirements for phosphorus and bacteria. As a new plant, some of the management systems will benefit from being automated for operational efficiency. The project also includes building an underwater pipeline to carry wastewater to the new treatment facility.

Context

#### Location – Norway

- Norway has one of the most efficient drinking water management systems in the world, with only 15% of freshwater used for consumption.<sup>5</sup>
- More than 92% of Norway's population has access to a 'good' water supply, as approved by the Waterworks Register; however, regional variations in quality persist, and there have been recent incidences of waterborne bacteria outbreaks.
- At the current rate of replacement, it would take 145 years to upgrade all water pipelines to a satisfactory quality.

Impact

#### Output (Issuer KPIs)

- Increased capacity production serving 4,107 people.
- 3km pipeline installed.

#### Related SDGs



# SDG 7 Project Case Studies

Ensure access to affordable, reliable, sustainable and modern energy for all



## Sector

Energy



Renewable energy has a crucial role to play in meeting the Paris Agreement targets. Globally, energy remains the single biggest source of GHG emissions by sector<sup>1</sup> and, while the installed capacity of renewable energy shows encouraging growth, its share of global electricity generation remains around 28%.<sup>2</sup> Rapid scaling up of renewable energy capacity is essential to meet the world's growing energy demands while reducing overall GHG emissions.

As of 2018, 860 million people around the world lacked access to electricity<sup>3</sup>, hampering economic development and leading to severe impacts on people's health and wellbeing. As developing countries push forward with efforts to build universal access to safe, reliable energy, investments in renewables are more important than ever, to improve lives, stimulate economic growth and avoid locking in GHG-intensive infrastructure. With rapid improvements in technology and growing attention from investors, renewable energy increasingly looks like a 'win-win' solution to achieve Paris Agreement goals and improve the lives of people around the world.

Project

### Asian Development Bank (ADB) – Green Bond *ReNew Power Ventures Wind and Solar Development Project*

This project will support the development of solar and wind power across the Indian states of Andhra Pradesh, Gujarat, Jharkhand, Karnataka, Madhya Pradesh and Telangana, with a total installed capacity of 709 MW when the project has been completed. The new energy facilities will contribute to the achievement of India's overall stated target of 175 GW of renewable capacity by 2022. While the country has decreased the energy intensity of its GDP by around 20% over the past decade, current IEA projections indicate that energy demand could double by 2040.<sup>5</sup> India has a rapidly growing economy and has made significant progress in expanding household access to electricity. Scaling up renewable energy production will serve the dual objectives of reducing GHG emissions and contributing to the country's economic growth.

Context

#### Location – India

- Fourth highest GHG emitting country.
- Approximately 700 million people gained access to electricity between 2000-18.
- National goal to install 175 GW of renewable energy capacity by 2022, 450 GW by 2030, vs 86 GW of renewables out of 369 total installed capacity in 2019.<sup>4</sup>

Impact

#### Output (Issuer KPIs)

- 398 MW of solar capacity installed.
- 311 MW of wind capacity installed.
- 1,400 GWh of renewable energy generated annually.
- 1.2 million tCO<sub>2</sub> avoided annually.
- Over 200 jobs provided at full operational capacity.

#### Related SDGs



Project

### Kommuninvest - Green Bond *Blaiiken Wind Farm*

The Blaiiken wind farm, situated in the north of Sweden, consists of 99 turbines and is the largest land-based wind farm in Europe. While non-fossil fuel energy sources already make up the majority of Sweden's electricity supply—with the country having reduced the share of fossil fuels in its overall energy supply from 81% in 1970 to 27% in 2017,<sup>6</sup> investment in new sources of renewable energy is fundamental to the country's long-term climate strategy. Sweden has high energy consumption per capita, but comparatively low GHG emissions per capita versus the EU average and rest of the world, due to its relatively clean energy systems.

Context

#### Location – Sweden

- National goal to have net-zero GHG emissions by 2045.
- 55% of total energy consumption in Sweden from renewables in 2018, the highest in the EU.
- Goal to reach 100% renewable electricity production by 2040.<sup>7</sup>

Impact

#### Output (Issuer KPIs)

- 247 MW renewable energy installed capacity.
- 129,724 tCO<sub>2</sub> avoided per year.
- 700 GWh of energy generation per year.
- Sufficient electricity to power 161,500 apartments annually.

#### Related SDGs



<sup>1</sup>UN-Water, Coping with Water Scarcity, 2007.  
<sup>2</sup>UNESCO, World Water Development Report, 2009.  
<sup>3</sup>UNESCO, Wastewater: The Untapped Resource, 2017.  
<sup>4</sup>South Korea, National Climate Change Adaptation Master Plan, 2008  
<sup>5</sup>Norwegian Institute of Public Health, Drinking Water in Norway, 2017  
Source: Impact Reports, AIM Engagement

<sup>6</sup>WRI, Global Historical Emissions, 2019.  
<sup>7</sup>IEA, Global Energy Review 2020, 2020.  
<sup>8</sup>IEA, SDG 7: Data and Projections, 2019.  
<sup>9</sup>Ministry of New & Renewable Energy, 2019.

<sup>1</sup>IEA, India 2020, 2020.  
<sup>2</sup>IRENA, Innovative Solutions For 100% Renewable Power in Sweden, 2020.  
<sup>3</sup>Sweden, Energy Use in Sweden 2018, 2019  
Source: Impact Reports, AIM Engagement

# SDG 9 Project Case Studies

Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation



## Sector Transport



According to the IEA, transport is responsible for 24% of direct GHG emissions from fuel combustion.<sup>1</sup> Road vehicles—cars, trucks, buses and two- and three-wheelers—account for nearly three-quarters of transport carbon emissions. Rail is one of the most energy-efficient transport modes, accounting for 15% of global transport, but only 2% of transport energy use.

## Energy



Electrification is at the forefront of clean-energy transitions, providing access to the 860 million people currently deprived of modern energy, as estimated by the IEA, helping cut air pollution and meet climate goals.<sup>2</sup> The global electricity supply is undergoing transformation with the increase of variable renewable sources of generation such as wind and solar these changes will require a new approach to our power transmission systems. Energy infrastructure investments are required as the generation mix changes, and ageing infrastructure is upgraded to minimise losses and promote efficiency and security.

## Project

### Kommuninvest

*Electrification of bus fleets in Umeå*

Kommuninvest is a Swedish municipal corporation that provides financing for housing, infrastructure, schools, hospitals and other local government investments. Electrification of the transport fleet is a prerequisite for Sweden to reach its environmental objectives and the municipalities have been accelerating their transition to fully electric buses. The bond financed a bus electrification project in the city of Umeå, a multiple finalist of the European Green Capital Award and Sweden's 2016 winner in WWF's global Earth Hour City Challenge. In recent years, the city has replaced 31 diesel buses with 34 fully electric buses in its public transport system, which has resulted in both carbon savings and reduced air pollution.

## Impact Context

### Location – Sweden

- National goal to reduce carbon emissions by 63% by 2030, compared with 1990.
- Target of net zero GHG emissions by 2045.
- Transport accounts for approximately a third of Sweden's GHG emissions currently.<sup>3</sup>

### Output (Issuer KPIs)

- Annual GHG emissions avoided: 1,404 tCO<sub>2</sub>e.
- Annual kms travelled: 2,304,000.
- Additional trips per year: 5,000.

### Related SDGs



## Project

### Toronto Dominion Bank Group (TD) - Green Bond

*One Vanderbilt Avenue, New York City*

Construction financing for One Vanderbilt Avenue, a 58-storey, Class A office tower in New York City. This building is on track to achieve the highest level of LEED and WELL certification and is projected to have one of the lowest carbon footprints in New York City. The inbuilt measures to reduce the carbon footprint are supplemented by the purchase of renewable energy certificates and carbon offsets.

This building incorporates a 12 MW cogeneration plant and other energy saving measures such as high-performance glazing and high efficiency lighting, chillers and boilers. It will include ultra-high efficiency bathroom fixtures designed to reduce water consumption and a storage tank that will capture rainwater for reuse in mechanical systems and irrigation. Structural steel and concrete will contain recycled components to reduce reliance on raw materials. Responsible construction practices have ensured that at least 75% of construction waste is diverted from landfill.

## Impact Context

### Location – USA

- Second highest GHG emitting country in the world.
- Buildings account for 71% of New York City's GHG emissions.
- New York City Council goal to reduce by 40% GHG from buildings by 2030.<sup>4</sup>

### Output (Issuer KPIs)

- Annual energy savings or green energy generated: 25,968 MWh.
- 6,739 tCO<sub>2</sub>e per annum GHG emissions avoided.
- Natural capital value: C\$76,722.

### Related SDGs



# SDG 11 Project Case Studies

Make cities and human settlements inclusive, safe, resilient and sustainable



## Sector Transport



According to the IEA, transport is responsible for 24% of direct GHG emissions from fuel combustion.<sup>1</sup> Road vehicles—cars, trucks, buses and two- and three-wheelers—account for nearly three-quarters of transport carbon emissions. Rail is one of the most energy-efficient transport modes, accounting for 15% of global transport, but only 2% of transport energy use.

## Buildings



Buildings were responsible for 28% of global energy-related GHG emissions in 2018.<sup>2</sup> Building GHG emissions rose in 2018, for the second year in a row, as extreme weather raised energy demand for cooling and heating. Globally, two thirds of countries do not have mandatory building codes. In order to meet the IEA's 2 degrees scenario, it is estimated that energy efficiency must double for existing building stock and new high performance construction must increase 16-fold in terms of square metres constructed.

## Project

### African Development Bank (AfDB) - Green Bond

*Dakar-Diamniadio-AIBD Regional Express Train*

As the capital of Senegal, Dakar is an important economic and social centre, but existing public transport is inadequate. The regional express train project will cover 55km connecting the city centre with the wider metropolitan area. The network will be supplemented with emission-free renewable energy to power the regional train's electric traction. This project provides a low carbon mass transport option to improve social mobility and economic development in one of the most economically important and population dense parts of the country. The project plan includes goals to monitor and improve the working conditions of women and youth, providing job opportunities and training.

## Context

### Location – Senegal

- In 2015, only 16% of an estimated 12.5m trips per day recorded within the Dakar area were taken on public transport—owing to low incomes and the poor quality of available public transport, the vast majority (80%) were by foot.
- Senegal is one of 47 UN-designated least developed countries (LDCs) with a GNI per capita of US\$1,004 in 2018.
- National poverty was last measured in 2011, with 47% of the population living below the national poverty line, according to the World Bank.

## Impact

### Output (Issuer KPIs)

- 113,000 passengers per day.
- Average travel time reduction from 108 to 45 minutes.
- 21,000 jobs created.
- At least 300 youths, 20% of whom are women, trained in railway occupations.
- Estimated 337,600 tCO<sub>2</sub>e avoided per annum.

### Related SDGs



## Project

### DBS - Green Bond

*Green Buildings*

Financing the Marina Bay Financial Tower 3 (MBFC T3), a commercial office property in Singapore which achieved Green Mark Platinum certification by the Building and Construction Authority (BCA)—the highest available rating. The award also recognises a commitment by the building's landlord and tenants to work together to achieve greater environmental sustainability, measured by landlords who have a substantial number of tenants and percentage of net lettable area which are certified Green Mark or higher. The site uses low-emissivity glass to minimise heat load and thermal transfer, coupled with energy efficient air conditioning to manage the temperature in the building in Singapore's year-round warm, tropical climate.

## Context

### Location – Singapore

- Singapore has a tropical climate with high temperatures and humidity all year round.
- The average commercial building energy intensity for mixed developments in Singapore is 274 kWh per m<sup>2</sup>.
- 95% of Singapore's electricity generation is from natural gas.

## Impact

### Output (Issuer KPIs)

- MBFC T3 achieved an average energy intensity of 183 kWh per m<sup>2</sup> in 2018 (versus average of 274 kWh for mixed developments in Singapore).
- Estimated energy savings of 13,843 MWh, sufficient to power 2,500 public housing 5-room units for a year.
- 5,803 tCO<sub>2</sub>e avoided per annum.
- Covering a gross floor area of 151,777m<sup>2</sup>.

### Related SDGs



# SDG 13 Project Case Studies

Take urgent action to combat climate change and its impacts



## Sector

Adaptation



Even under optimistic scenarios, climate change will present a wide range of challenges for human and natural systems, and the delicate links which bind them. The need for urgent action on climate adaptation is now widely recognised and is a key element of the Paris Agreement.

Developing countries will be particularly affected by climate change, as many will likely struggle to adapt vulnerable sectors. For example, according to the World Bank, while agriculture accounts for around 26.8% of global employment, this figure can be as high as 92% in developing countries.<sup>1</sup> Therefore, investment on a global scale is required to adapt systems and infrastructure, combined with efforts to reduce GHG emissions and mitigate the long-term threat of climate change.

Project

## European Bank for Reconstruction and Development (EBRD) – Green Bond

*Saïss Water Conservation Project*

The project will help protect Morocco's agricultural sector from the impacts of climate change, through the development of a transformative water transfer scheme that will deliver crucial irrigation water to the Saïss plain each year. It will enable a switch from groundwater to the use of significantly more sustainable surface water resources, and will improve access to efficient irrigation techniques. The investment will also increase community engagement in water governance, by scaling up technical skills and institutional capacities, while promoting private sector involvement in the adoption of improved, modern irrigation infrastructure and equipment. This will enhance the efficiency of water use and services, through drip irrigation and modern water demand management methods, strengthening the capacity for climate change adaptation in the region. The project also features a strong gender dimension, to promote the economic inclusion of women in commercial agriculture.

Context

### Location – Morocco

- North Africa is one of the most water-scarce regions in the world, with future conditions projected to worsen, due to increased demand and climate change.<sup>2</sup>
- While irrigated crops make up 20-25% of agricultural land, they account for nearly 65% of the monetary value of crops in Morocco.
- Morocco has made significant progress in meeting its Paris Agreement targets, through reducing GHG emissions and taking steps to protect dwindling water resources.
- Population of 36 million.

Impact

### Output (Issuer KPIs)

- 100 million m3 of irrigation water provided each year.
- 150 km of pipeline constructed.

### Related SDGs



Project

## African Development Bank (AfDB) – Green Bond

*Institutional Support for the Sustainability of Urban Water Supply and Sanitation Service Delivery*

The project aims to improve the reach and sustainability of water and sanitation services in seven provinces, by investing in institutional development and long-term water sector governance. The near-term focus will be the establishment of provincial level water utilities for service provision and expanded access, with the long-term goal of making these systems more resilient to the impacts of climate change.

Context

### Location – Angola

- Angola is the 45th most vulnerable country to climate change, and has been scored the 16th least ready to adapt.<sup>3</sup>
- 48% of the country's population is considered to live in multi-dimensional poverty, which measures access to services, health and housing, in addition to income.<sup>4</sup>
- Population of 30.8 million.

Impact

### Output (Issuer KPIs)

- Seven provinces targeted with improved water and sanitation sector governance.
- 338,000 people will receive access to the water supply.
- 75,000 people will receive access to wastewater services.

### Related SDGs



# SPECTRUM–Aligned Summary

<sup>1</sup>World Bank, Employment in agriculture, 2020

<sup>2</sup>World Bank Group, Water Scarcity in Morocco, 2020

<sup>3</sup>Notre Dame Global Adaptation Initiative, ND-GAIN Matrix Angola, 2017

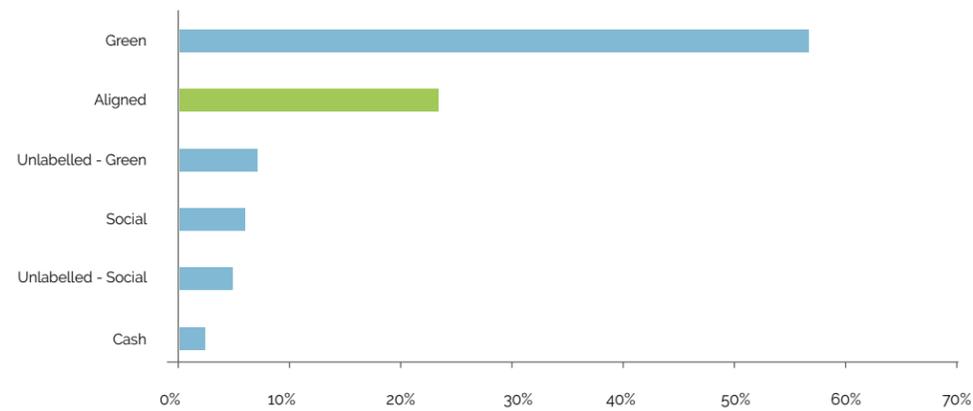
<sup>4</sup>University of Oxford, Global Multidimensional Poverty Index, 2019

Source: Issuer Impact Reports, AIM Engagement

# 2019 SPECTRUM–Aligned Investment

In 2019, 23.5% of the AIM US\$ Liquid Impact Fund was invested in SPECTRUM-aligned issuers.

AIM US\$ Liquid Impact Fund 2019 Holdings by Bond Type

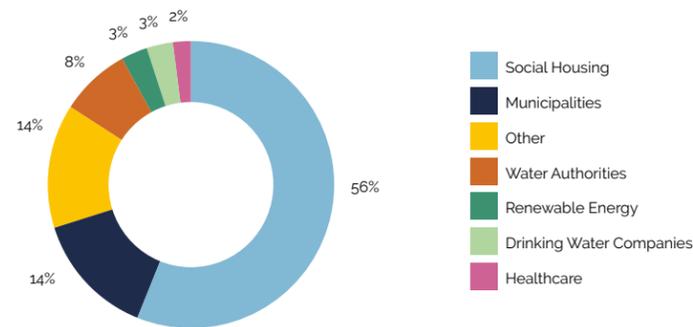


In 2019, the AIM US\$ Liquid Impact Fund invested in six SPECTRUM-aligned issuers, defined as issuers that deliver products or services in a range of sectors, with at least 50% of revenues generated from sectors aligned with the AIM taxonomy (see Annex 1) and high levels of issuer responsibility and disclosure. The issuers have a clear commitment to climate mitigation and adaptation, and to sustainable economic development, for example to the SDGs. SPECTRUM-aligned bonds are an important portfolio management tool.

## Nederlandse Waterschapsbank (NWB Bank) - 7.61%

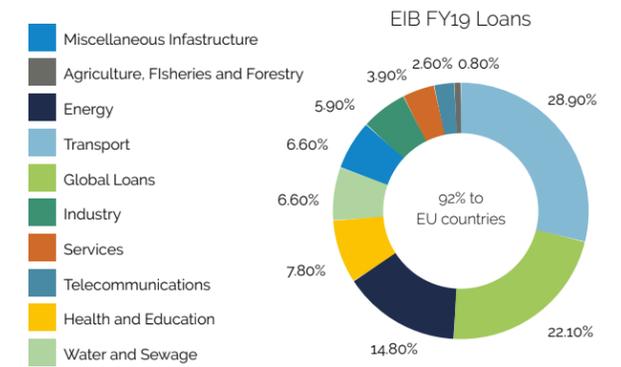
NWB Bank is owned by Dutch public authorities and is a financing entity for Netherlands water boards, municipalities, provinces, social housing, healthcare and educational institutions, as well as environment-focused public-private partnerships. Over 50% of NWB Bank's lending provides social housing and approximately 20% is allocated to the water sector—the bank has also issued social bonds and green bonds to fund these two sectors.

NWB Bank FY19 Lending



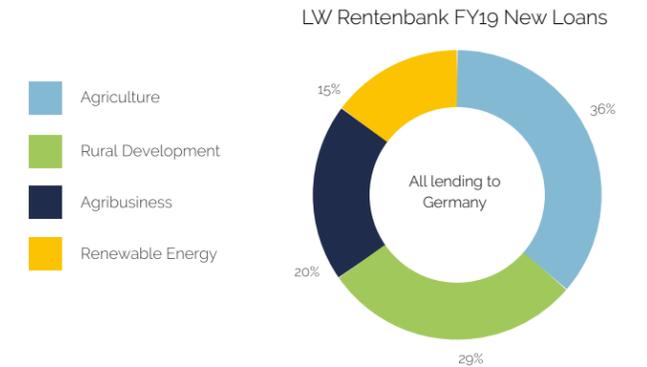
## European Investment Bank (EIB) – 6.11%

EIB Group is the largest multilateral borrower and lender, by volume. EIB is wholly owned by, and represents the interests of, the 28 EU member states—which include both developed and emerging economies—and it supports implementation of EU policy, such as financial inclusion, employment, infrastructure, and urban and regional development. Its mission is to finance projects in less developed regions, in modernisation, and/or of common interest, that cannot be financed by individual members. Climate action is taken into consideration throughout the assessment and monitoring of all projects—EIB estimates and reports the carbon footprint, in absolute and relative terms, for all directly financed projects that have material (undefined) emissions. Furthermore, an economic price of carbon is incorporated into the accounting for environmental externalities. In 2019, EIB updated its energy policy to cease financing fossil fuel projects from end-2021.



## Landwirtschaftliche Rentenbank (LW Rentenbank) – 5.84%

LW Rentenbank is a German state-owned financial institution, which provides loans and subsidies to the agriculture and food sectors, with a focus on SMEs. It also funds rural development and renewable energy. As a mission-driven organisation, LW Rentenbank creates positive impact in both the social and environmental spheres. Their mandate is underpinned by German governing law, giving confidence that overall alignment to AIM's sector taxonomy and sustainable development is strong.



## International Bank for Reconstruction and Development (IBRD) – 3.36%

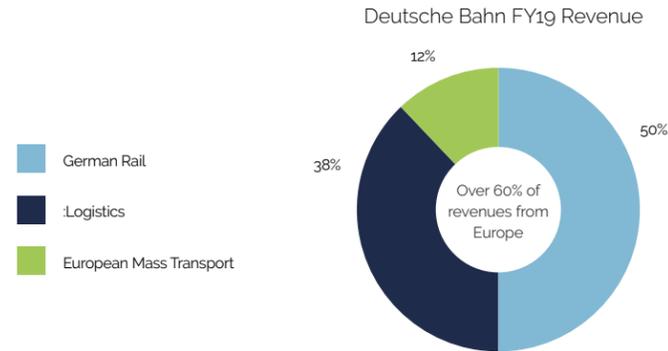
IBRD, part of the World Bank Group (WBG), is a mission-driven organisation that supports the dual goals of ending extreme poverty by 2030 and boosting shared prosperity for the bottom 40% of the population, with sustainable solutions. IBRD provides loans, guarantees, risk management products and advisory services to middle-income countries around the world, as well as technical assistance and regional coordination. It is estimated that more than 70% of the world's poorest people live in middle-income countries, often in remote areas. IBRD was a trailblazer in the green bond market, being the first issuer in 2008 (of the form of green bond recognisable in today's market). WBG also announced that it will no longer finance upstream oil and gas after 2019 (except, possibly, in the case of upstream gas in the poorest countries, where there is a clear benefit in terms of energy access for the poor and the project fits within the countries' Paris Agreement commitments).

IBRD FY19 Commitments



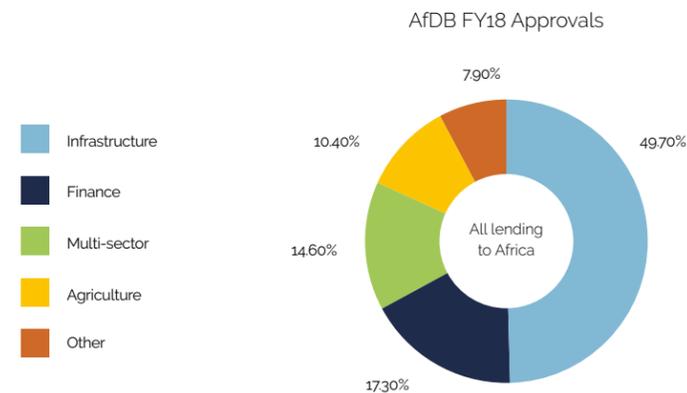
## Deutsche Bahn –0.41%

Deutsche Bahn AG is Germany’s state-owned railway company. It primarily provides cargo and public transport services across Europe, but also operates a large global logistics business. Deutsche Bahn has a strong sustainability strategy—including carbon reduction targets—that extends across all of its operations. The company provides a high level of disclosure and transparency in relation to both its services and its positive impact.



## African Development Bank (AfDB) – 0.18%

The AfDB is Africa’s leading development institution. Its current strategic priority is to achieve green and inclusive growth, with a special emphasis on climate resilience, gender equality and reducing conflict and fragility. AfDB reaches some of the most vulnerable populations in the world. 53% of the African population does not have access to electricity, with women and children experiencing the most disadvantages. AfDB, like most of its multilateral counterparts, has excellent ESG policies and procedures, which are meticulously documented. The bank’s governance and accountability mechanisms are very robust—evidenced by a comparatively moderate tally of ESG controversies.



# AIM Corporate Sustainability

As a dedicated impact fixed income manager, sustainability is a key element of our company mission and integral to everything we do. Our corporate sustainability programme comprises four focus areas: our people, our clients, our climate and our community. Specific pillars within each of these areas set out our commitment and key measurements/metrics for monitoring our progress.

Our annual Impact Report details the financial and environmental/social impact across our portfolios. We are proud of what we have achieved, on behalf of our clients, in our support of sectors such as clean energy and education, as well as our extensive carbon footprint calculations.

As we grow, and our clients grow with us, we are excited to report our progress towards achieving our sustainability goals.



People



Climate



Clients



Community

## Our People

Our greatest asset is our people. We know that a high-performing team requires diversity of thought. This is why we have created, and continue to cultivate, an environment which promotes inclusion, flexibility and wellbeing, and encourages opportunities to learn and develop, individually and as a collective.

### Diversity and Inclusion

At AIM, we are committed to diversity and inclusion, and to fostering a collaborative culture. Whether we are assessing potential investment opportunities or welcoming new people to the team, diversity and inclusion bring new perspectives and ideas to the table. We believe that a diverse team of individuals with different ideas, strengths, interests and backgrounds is crucial to the success of our firm, as it leads to a richer experience for our colleagues and positive outcomes for our global clients. We strive to create an environment in which our team can flourish, regardless of gender, race, nationality, ethnic origin, religion, world view, different abilities, age, sexual orientation or identity.



of senior management are women



of employees are women



of employees are Black, Asian and Minority Ethnic (BAME)



languages

### Expertise

Our team has extensive expertise in investing with impact and we believe it is important to continually develop the skills of our people. We have a collaborative working environment, hosting internal round table discussions to share knowledge and develop expertise. We also encourage everyone at the firm to attend at least one conference a year, to participate in workshops/collaborations on sustainable and impact investing, and to take advantage of our generous study leave policy. More detail about our collaborations can be found on the ‘Engaging for Impact’ section of our annual Impact Report.

Throughout 2019 our team has been involved in numerous projects, initiatives and speaker events. For example, AIM members provided guidance during the development phase of the Green Bond Transparency Platform (GBTP), an innovative digital tool that brings greater transparency to the Latin American and Caribbean’s green bond market. AIM representatives also serve on a number of boards, including the Great Barrier Reef Foundation and Male Champions of Change, as well as those of schools and various investment committees.

## Wellbeing

The wellbeing of our team is central to our culture. We continue to review and refine the policies and internal practises that enable everyone to thrive.

Our key policies include:

- Flexible working—our employees are set up with remote access for teleworking and we support flexible work schedules.
- Parental leave—both female and male employees receive 26 weeks' paid leave.
- Study leave—our employees are encouraged to continually develop their skill set and we work with each team member to accommodate their individual leave requirements. Support with course/tuition fees is also provided.

## Community Engagement

We encourage and support engagement in the community and many of our employees undertake initiatives outside the workplace. These include volunteering at centres for assisted learning, cooking for the homeless, participating in community clean-up projects and working on national intersectional pay gap campaigns. AIM members also serve on boards and investment committees which support climate change, diversity and education. Charitable donations are regularly allocated and the foundation of one of our founding partners has granted over US\$1.5 million in the past three years to environmental causes. The most significant of these was the catalyst grant of A\$1 million for an island restoration initiative in the Great Barrier Reef, which is an important sea turtle breeding ground.

## Our Climate

Our vision is to mobilise mainstream capital to address the major challenges the world faces. The greatest challenge of our generation is climate change. We are dedicated to reducing our carbon footprint and to being operationally carbon neutral.

### Carbon Neutral

We measure the carbon footprint of our business travel and office operations and are committed to operational carbon neutrality for Scope 1 and 2 emissions and part of Scope 3. More detail on our calculations can be found in our annual Impact Report under 'AIM Operational Carbon Footprint 2019'.

Every year, in order to offset our corporate carbon footprint that, currently, cannot be reduced or avoided, AIM purchases certified emission reductions (CERs) generated by the UNFCCC Clean Development Mechanism (CDM) projects.<sup>1</sup>

For 2019, AIM offset its corporate carbon footprint by supporting a project aimed at deploying improved institutional cook stoves (IICS) for schools and institutions in Uganda. For more about this project, please see the 'AIM Operational Carbon Footprint 2019' section of our annual Impact Report.



### Overall AIM Corporate Carbon Footprint

GHG Emissions Boundary	Description	GHG Emissions
Scope 2	GHG Emissions from Electricity Purchased	4,542.01 kgCO <sub>2</sub> e
Scope 3 – Category 6	Business Travel – Flights and Train Trips	31,266.65 kgCO <sub>2</sub> e
AIM Corporate Carbon Footprint 2019		35,808.67 kgCO <sub>2</sub> e (35.81 tCO <sub>2</sub> e)

## Travel

Despite being spread across three continents, we aim to reduce travel as much as we can by using technology to aid communication between colleagues and with our clients. We are also registered as a cycle to work scheme provider, encouraging our employees to use greener transportation wherever possible.

## Recycling

From the production of our materials to bins around the workplace, we recycle as much as possible. All of our booklets, if printed at all, are produced by an FSC-certified source using 100% recycled material. In our offices, we have on-site processes for the separation, collection and recycling of different types of waste materials. We recycle all paper, cardboard, printer toner cartridges, drinks containers and other items.

## Our Clients

Our clients come first in everything that we do. To build long-term client partnerships we believe in transparent, open relationships, and aim to deliver portfolios which generate mainstream returns, alongside environmental and social impact.

## Transparency

Transparency is one of our core values, as we know that it is crucial in building relationships of trust. We work hard to maintain open dialogue with clients, while providing transparency across all of our portfolios, evidenced in our annual Impact Reports.

## Education

We believe in the importance of sharing information. Our insights, thought pieces and Impact Reports are publicly available on our website. We host a number of client webinars and meetings, which provide an opportunity to air our views and observations about the impact bond market.

## Impact

Our clients' portfolios generate both financial and environmental/social impact. We measure, monitor and report the impact of all of our portfolios on a quarterly and annual basis.

## Our Community

We realise we cannot achieve our vision alone. We actively engage with our community through a number of initiatives, such as publishing our insights, collaborating with market specialists, participating in working groups and actively working with bond issuers to assist them in developing their frameworks.

## Initiatives

We believe in collaborating with other sustainability experts to create the tools that will enable a broadening and deepening of the impact bond market. Our initiatives are outlined in the 'Engaging for Impact' section of our annual Impact Report and shared on our website.

## Partnerships

Positive change is only truly meaningful when shared. We engage with numerous partners to support collective action, and to bring about this change. Our partnerships are fully detailed on the 'Partnerships for Impact' page of our annual Impact Report and on our website.

## Engagement

We actively engage with potential and current impact bond issuers to promote the development and maintenance of standards that will ensure a high level of transparency and a clear, ongoing commitment to positive environmental and/or social impact. A full summary of our engagement during 2019 is detailed in the 'Engaging for Impact' section of our annual Impact Report.

# AIM Operational Carbon Footprint 2019

**Scope 1** **0 kgCO<sub>2</sub>e**  
Direct GHG emissions from sources that are owned or controlled by AIM

**Scope 2** **4,542.01 kgCO<sub>2</sub>e**  
Indirect GHG emissions from the generation of electricity purchased by AIM

To derive Scope 2 GHG emissions, a location-based approach was used in line with the UK Government's guidelines for corporate carbon footprint reporting. As shown in Table 1, our office electricity consumption in 2019<sup>1</sup> was multiplied by the GHG emission conversion factor for the electricity supplied to the grid that UK-based organisations purchase.<sup>2</sup> It is worth noting that, in recent years, the carbon intensity of the UK electricity grid has steadily decreased due to a sharp decline in generation from fossil fuels and a rise in generation from renewable sources.<sup>3</sup>

2019 Electricity Consumption (kWh)	GHG Emissions Conversion Factor (kgCO <sub>2</sub> e per kWh)	GHG Emissions (kgCO <sub>2</sub> e)
17,770	0.2556	4,542.01

Table 1: Approach for Calculating AIM's 2019 Scope 2 GHG Emissions

**Scope 3** **31,266.65 kgCO<sub>2</sub>e**  
Category 6 – business travel: GHG emissions from air and train travel by AIM staff<sup>4</sup>

To derive Scope 3 GHG emissions for category 6: business travel, our employees' flights and train trips throughout 2019 were analysed. GHG emissions conversion factors were sourced from the UK Government's guidelines for corporate carbon footprint reporting. For air travel, flights were categorised according to their haul and origin/destination, and corresponding average passenger conversion factors were applied based on the distance flown. For land travel by rail, train trips were categorised according to whether they were domestic or international, and conversion factors were applied based on the distance travelled.<sup>4</sup>

## Overall AIM Corporate Carbon Footprint

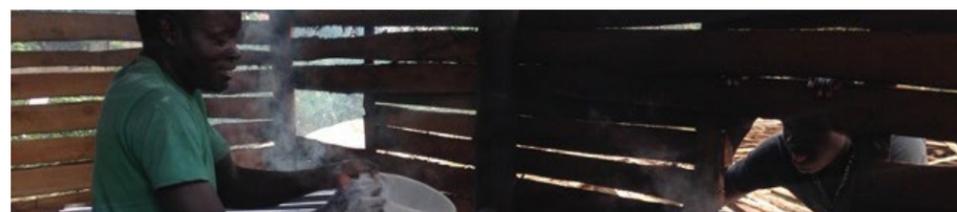
Table 2 below summarises the results for the calculation of AIM corporate carbon footprint in 2019.

GHG Emissions Boundary	Description	GHG Emissions
Scope 2	GHG Emissions from Electricity Purchased	4,542.01 kgCO <sub>2</sub> e
Scope 3 – Category 6	Business Travel – Flights and Train Trips	31,266.65 kgCO <sub>2</sub> e
AIM Corporate Carbon Footprint 2019		35,808.67 kgCO <sub>2</sub> e (35.81 tCO <sub>2</sub> e)

## Our Corporate Carbon Footprint

Every year, in order to offset our corporate carbon footprint that, currently, cannot be reduced or avoided, we purchase certified emission reductions (CERs) generated by the UNFCCC Clean Development Mechanism (CDM) projects.<sup>5</sup>

For 2019, AIM offset its corporate carbon footprint by supporting a project run by social enterprise, Simoshi, aimed at deploying institutional improved cookstoves (IICS) for schools and institutions in Uganda. This initiative provides a healthier, safer and cleaner technology with which to create meals, benefitting low income individuals, especially women and children. By replacing traditional cooking practices with the use of an IICS, an average school with 700 children is able to halve their firewood consumption—this equates to an annual saving of 90 tonnes of carbon dioxide that would have been released into the atmosphere.



# Annex 1:

## AIM Eligible Environmental and Social Sectors

<sup>1</sup>AIM Office Manager – Electricity Consumption Data for 3rd Floor, 7 Birch Lane, London  
<sup>2</sup>BEIS & DEFRA, UK Electricity, Standard Set, UK Government GHG Conversion Factors for Company Reporting, 2019.  
<sup>3</sup>Imperial College London, Drax Electric Insights, Britain's decade of decarbonisation, Electric Insights Quarterly – Q4 2019.  
<sup>4</sup>BEIS & DEFRA, Business Travel – Air, 2019 Standard Set, UK Government GHG conversion factors for

company reporting, 2019. In particular, for air travel, GHG emission factors included radiative forcing (RF), a measure of the additional environmental impact of aviation. As described in the source, organisations should include the influence of radiative forcing in air travel emissions to capture the maximum climate impact of their travel habits. However, it should be noted that there is very significant scientific uncertainty around the magnitude of the additional environmental impacts of aviation.  
<sup>5</sup>Each certified emission reduction (CER) credit is equivalent to one tonne of CO<sub>2</sub>.

## Eligible Environmental Sectors

AIM has an internal sector taxonomy that is complementary, but not restricted to the EU Taxonomy for Sustainable Activities. Example of eligible sectors in the AIM taxonomy include:



### Energy

- Renewable energy, such as solar, wind, wave, tidal, geothermal, hydropower and hydrogen (under certain conditions).
- Grid: transmission, distribution, and infrastructure efficiencies and resilience.
- Energy efficiency technologies, installations and systems design to reduce energy consumption.
- Clean energy access for underserved areas.



### Infrastructure

- Transport: sustainable mass transit infrastructure, efficient and low carbon public and private fleets.
- Water supply and sanitation infrastructure.
- Coastal zone and flood area protection.
- Resilient built environment and green building stock.
- Soft infrastructure: telecommunications and broadband connectivity, internet of things (IoT).



### Water Resource Management

- Watershed management and planning, including investment in catchments and aquifer recharge areas.
- Water use efficiency: new and retrofitted water supply and consumption infrastructure.
- Water restoration and water quality management, particularly with innovative materials and technologies, and practices.



### Resource Efficiency

- Sustainable, green materials management and substitution, including in green buildings.
- Pollution prevention and remediation: air, water and soil.
- Waste management, reduction and recycling.
- Responsible supply chains.



### Land Management

- Sustainable agriculture and forestry.
- Integrated landscape planning, maximising carbon efficiency, sequestration and ecosystem resilience.
- Regulatory conditions to promote diverse and resilient communities and landscapes (zoning, easements, etc).
- Biodiversity conservation and ecosystem restoration.



### Marine Environment & Fisheries

- Pollution prevention and clean up in the marine environment.
- Biodiversity and fishing stock management and regulation.
- Environmentally sound coastal zone management.
- Chemical and biological restoration of critical marine areas.

## Eligible Social Sectors

AIM has an internal sector taxonomy that is complementary, but not restricted to the EU Taxonomy for Sustainable Activities. Example of eligible sectors in the AIM taxonomy include:



### Education, Training & Employment

- Access to education, safe schools, teaching materials and teachers, food programmes and financial incentives for families.
- Employment training for new and re-entering job seekers in green and new economy sectors.



### Global Health

- Access to immunisation and other medical resources and services, through financing, distribution infrastructure and training.
- Access to healthcare in the form of hospitals, clinics, trained healthcare workers and information.
- Innovation in healthcare products, financing, distribution and services.



### Empowerment Of Women & Vulnerable Groups

- Activities promoting gender equality, eg education and training for women and girls.
- Access to improved maternal and child health services.
- Social and regulatory services to support protection and resilience of vulnerable and war ravaged groups.



### Financial Inclusion & Sustainable Enterprises

- Access to microfinance and financial services in underserved communities through regulation, financial institutions and technology.
- Access to funding for SMEs.
- Technical, energy and resource efficiency capacity building for SMEs.



### Food Security

- Crop insurance and risk sharing schemes to increase producer resilience to climate and other stresses.
- Water rights institutions to protect access by vulnerable groups.
- New cropping techniques and resilient crop varieties.
- Expanded market access through financial, regulatory and physical infrastructure.



### Social Housing

- Affordable housing for vulnerable groups.
- Access to credit for housing for disadvantaged groups.
- Shelter/temporary housing facilities.
- Activities and initiatives addressing homelessness.
- Integrated community planning.

## Annex 2: Methodologies

# AIM Impact Report Methodology

Issuer reporting is heterogeneous, utilising different methodologies, reporting formats and performance indicators. This often means that we cannot compare reported impact data accurately, nor appropriately. However, where possible, AIM engages and harmonises impact indicators, including working with independent specialists such as ISS ESG to adopt a common approach where appropriate.

The impact metrics included in this report can be considered underestimates for two key reasons:



Not all issuers are able to report on 100% of the portfolio. This may be due to a range of reasons, such as issuers having insufficient resources, or gaps in initial data collected to permit reasonable calculations, or lack of impact metric methodologies and expertise.



AIM and our partners (eg ISS ESG) were not able to use the supplied/reported impact data. This will be the case if, for example, there are differences in issuer reporting methods, or a lack of transparency in how the figures were calculated, or lack of comparability with other issuers.

The aforementioned barriers to impact reporting persist in the market. However, AIM engages with issuers to encourage market consistency in reporting, including adoption of industry best practices, such as disclosing their reporting methodologies, appropriate references to baselines and higher levels of disclosure—for example, prorated project-specific information, where available. This report has attempted to standardise the diverse methodologies and metrics used by issuers, where possible.

The overall methodology by which we collected, evaluated and processed impact data to present in this report is as follows:

- 1 Verified issuers' reporting and transparency of proceeds commitments as part of our SPECTRUM Bond® analysis. (Issuers with poor reporting practices are excluded or placed on the watchlist)
  - 2 Collected impact bond issuer proceeds commitments and impact performance metrics. Issuers tend to report annually on the anniversary of the first impact bond issuance and use different reporting periods.
  - 3 Engaged with all invested impact bond issuers to request greater disclosure, targeting project specific data where possible. To limit double counting, AIM requests that issuers determine their financing share of projects, permitting calculation of impact bond issuer prorated project information.
  - 4 Tagged and categorised issuer-reported impact bond data by AIM sectors, sub-sectors, region, country and SDG alignment at the project level, per issuer. Projects and bonds can be aligned to more than one SDG and sector
  - 5 Estimated portfolio share of impact data as a percentage of portfolio holding amount to total relevant impact bond funding. For example, if the portfolio had an average time-weighted holding of US\$1m of a US\$500m green bond funding programme—the Fund will be allocated 0.2% of reported impact bond key performance indicators (KPIs).
  - 6 Calculated portfolio time-weighted sector, geographic and SDG distribution in USD equivalent terms, and portfolio-adjusted KPIs using the above data.
- NOTE: Where the issuer reports at bond level, we included only projects associated with the bond held in our portfolio. Otherwise, as a general rule, AIM takes projects at the full framework level annually or, if annual reporting is not available, since inception.
- 7 Where relevant and possible, calculated independent portfolio metrics in adherence to international best practices, such as the Greenhouse Gas Protocol, with leading climate data specialists. Non-mitigation focused activities and social bonds are excluded from GHG emissions estimates currently.

# Independent GHG Emissions Footprint Methodology

AIM collaborated with leading climate data specialists at ISS ESG to estimate portfolio GHG emissions. GHG emissions are divided into Scope 1, 2 and 3 as per the Greenhouse Gas Protocol Standards, developed by the World Resources Institute and World Business Council for Sustainable Development. They are the most widely used GHG accounting standards in the world and include the seven greenhouse gases, as defined in the Kyoto Protocol.

Emissions are calculated at both the impact bond issuer and framework levels. In the case of a green bond, Scope 1 and 2 emissions are represented by the issuer's operational emissions. Scope 3 emissions are those caused by the specific activities financed by the bond. The estimated GHG emissions are proportional to the investment's share of total financing. It is important to emphasise that the bond itself does not yield these emissions; rather, this is a metric that is supposed to help illuminate the relative GHG share of investing in an issuer's debt. A conservative approach has been taken in the choice of assumptions and emission factors—in other words, when selecting data points, the value generating the highest amount of emissions has been chosen.

## Impact Bond Issuer GHG Emissions

- 1 ISS ESG uses an extensive database of 25,000 companies to gather the issuer's emissions. If the issuer credibly discloses the amount of GHG emissions from its operations, these numbers are used. If the issuer does not credibly disclose its greenhouse gas emissions—eg only discloses part of their total emissions—the emissions are calculated using an approximation model based on the ISS ESG data and its 800 sub-sector specific models.
- 2 The impact bond commitment/disbursement's share of the organisation's total outstanding debt is calculated to understand the percentage of emissions financed by the loans.
- 3 The results are presented as GHG emissions of the commitment/disbursement, ie total GHGs emitted during the financed year allocated to the bond framework.

## Total carbon emissions

$$\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{issuer's adjusted enterprise value}_i} * \text{issuer's Scope 1\&2 GHG emissions}_i \right)$$

## Carbon footprint

$$\frac{\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{issuer's adjusted enterprise value}_i} * \text{issuer's Scope 1\&2 GHG emissions}_i \right)}{\text{current portfolio value } (\$^m)}$$

## Weighted Average Carbon Intensity

$$\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{current portfolio value}} * \frac{\text{issuer's Scope 1\&2 GHG emissions}_i}{\text{issuer's } \$^m \text{ revenue}_i} \right)$$

## Impact Bond Proceeds GHG Emissions

- 1 Impact bond issuer and proceeds information is gathered: for example, type of technology financed, allocation of proceeds per technology, geographic location, and project specific information such as renewable energy capacity installed, green building certification achieved, or rail length constructed. If data gaps occur, AIM and ISS ESG engage with the issuer to gather further information.
- 2 If the issuer discloses project GHG emissions data of a high quality, these are used. If the issuer does not adequately disclose project emissions, estimates are made based on the best information available. ISS ESG makes a GHG estimate regardless of whether the company discloses project emissions or not and this is also used as a reference for quality checking emissions disclosures.
- 3 GHG estimates are made based on the best information available. If data is available, project level calculations are made. If project specific data is lacking, technology level information is used.
- 4 GHG estimates are allocated to the green bond framework, proportional to the investment's share of total project financing. The results are presented on an annual and lifetime basis.

## About ISS ESG



ISS ESG is the responsible investment arm of Institutional Shareholder Services Inc, the world's leading provider of environmental, social and governance solutions for asset owners, asset managers, hedge funds and asset servicing providers. With more than 30 years of corporate governance expertise and 25 years of providing in-depth responsible investment research and analytics, ISS ESG has a unique understanding of the requirements of institutional investors. With its comprehensive offering of solutions, ISS ESG enables investors to develop and integrate responsible investing policies and practices, engage on responsible investment issues, and monitor portfolio company practices through screening solutions. It also provides climate data, analytics and advisory services to help financial market participants understand, measure and act on climate-related risks across all asset classes.

# Carbon Yield® Methodology



The Carbon Yield® quantifies the environmental impact of a green bond in terms of GHG emissions avoided through the financed activities and was jointly developed by Lion's Head Global Partners, ISS ESG and AIM, with funding by the Rockefeller Foundation. Carbon Yield® is an open access methodology, available for issuers and investors to use. AIM published a case study on our experience of applying the Carbon Yield®, which can be accessed at <https://affirmativeim.com/insights/>.



The impact is expressed in Potential Avoided Emissions (PAE) enabled by the use of proceeds of the bond in terms of tonnes of CO<sub>2</sub>e/year/unit of capital. Full details on the Carbon Yield® can be found at <http://carbonyield.org/>.



- 1 Projects and activities funded through the issuer's green bond framework are identified and categorised according to sector and technology.
- 2 Relevant baselines for each project/activity type are identified. To calculate the abatement potential of an activity, a reference emissions baseline is applied.
- 3 For each project (and/or activity), the potential annual GHG abatement is calculated. This metric is defined as the average GHG abatement for the underlying project's expected lifetime, or the operating GHG abatement, adjusted for the construction years (where relevant). Under the initial proposal, the Carbon Yield® is not adjusted for GHG emissions created during the construction phase, although in time and as disclosure improves, the market may move to demand such an adjustment. The number of construction years is accounted for within the total project lifetime, however, such that the average abatement is an average over the whole project lifetime, including the construction phase.
- 4 The capital cost of the project is inputted. Where the full capital cost is not known, it can be imputed from technology benchmarks, published by entities such as the International Renewable Energy Agency (IRENA) and other industry organisations.



- 5 By combining the annual abatement potential with the capital cost of the project, the annual potential GHG abatement per unit of invested capital can be derived.
- 6 Once the annual potential GHG abatement per unit of invested capital is known, an issuer can allocate that potential abatement to the quantum of capital that they have invested in or committed to the project.
- 7 By taking a weighted average of the potential abatement impact per capital invested for each activity in the framework, the issuer can calculate the Carbon Yield® per unit of invested capital of their green bond framework, ie the Carbon Yield® of the green bonds issued under such a framework. Alternatively, if the issuer does not provide a Carbon Yield® for their security, the investor can still use this approach to calculate the Carbon Yield®, as long as certain base information regarding the use of proceeds is provided (through the green bond framework).
- 8 Individual bond Carbon Yields® are then aggregated to determine the portfolio-weighted GHG emissions avoided per US\$1,000 invested.

# Independent GHG Emissions Avoided Methodology

## The below elaborates on the Carbon Yield<sup>®</sup> methodology.

Avoided GHG emissions are defined as emissions that would have been released if a particular action or intervention had not taken place. The emissions avoided by using a more efficient product or service are often dependent on either consumer or market behaviour. This analysis does not make absolute predictions about behaviour or market developments. Consequently, the avoided emissions presented are not assured or verified by a third party and are conditional upon certain behaviours, but provide an estimate of the climate change mitigation of impact bonds.

To quantify an amount of potential avoided GHG emissions, a baseline must be established. The baseline describes what would have occurred if the product or service had not been made available. The avoided GHG emissions are made up from the difference in GHG emissions between the baseline level and the scenario where the product or service is made available.

The choice of assumptions and emission factors has followed a conservative approach. In other words, when selecting data points, the value generating the lower amount of avoided GHG emissions has been chosen. Conservative values and assumptions are those that are more likely to underestimate than overestimate GHG reductions, as recommended by the GHG Protocol for Project Accounting.

Methodologies are specific to the technology financed—the following example is used to calculate the avoided emissions of the leading sector supported by the portfolio:

## Energy – Renewable Energy Generation

- 1 The allocation of proceeds for the sector, and per project (where information is available), is acquired. Additionally, where project level information is available, the total cost of the project is ascertained to understand the percentage of emissions financed by the impact bond allocations.
- 2 Where available, the geographical location per project is used. Where this is not possible, the geographical distribution is used to allocate weightings to types of renewable energy projects.
- 3 Where available, the generation capacity (MW) is used. Where generation capacity cannot be obtained at project level, the financed capacity is estimated using the cost of MW per geographic location and the total proceeds allocated to the technology.
- 4 The annual generation (MWh) is calculated using geographical average capacity factors. Where information is available, country level average capacity factors are used—otherwise, average capacity factors at the regional level are used.
- 5 IEA 2019 grid emission factors per country, or per region, are used to calculate the emissions that would have been produced with grid-based electricity from equivalent annual generation. IEA grid emissions factors were chosen to promote consistency across countries, versus using national grid emission factors, for example.
- 6 In the case where the cleaner technology emits a substantial volume of GHGs, these emissions are calculated based on the annual generation (MWh) and the emission intensity of the technology. In the case of most renewable energy technologies, these emissions are considered negligible.
- 7 The resulting figure, which is the difference between the emissions from the use of grid-based electricity and those of electricity from renewable sources, equals avoided emissions—the potential amount of avoided emissions when substituting grid electricity with electricity from renewable sources.
- 8 The results are presented on an annual and lifetime basis.



# Physical Risk Assessment Methodology

In conjunction with South Pole, we have conducted a groundbreaking initiative to develop and test a TCFD-aligned climate-related risk tool for impact bond portfolios. In our pilot case study, published with South Pole in 2019, we concluded that, despite a common misconception otherwise, green assets could be vulnerable to physical risk. The assessment tool relies on three stages of analysis, each of which provides actionable insights into the level and nature of physical risk for green assets.

## Step 1

### Forward-looking physical risk assessment

A risk score is calculated for every holding, combining global climate change data with country and sector level vulnerability.

## Step 2

### Hotspot analysis

The potential impact of major risks is assessed for framework level projects, as well as revenue generating assets owned or operated by the issuer.

## Step 3

### Adaptive capacity screening

Given the risks identified through the hotspot analysis, demonstrated adaptive capacity of an issuer's projects is assessed and scored.

**Background and initial data collection:** As a first step, data is collected for an issuer's revenue generating activities and bond framework. This data is used to assign an industrial sector to the issuer's core business activities and all green bond projects. Where possible, asset level data is obtained. The issuer's key economic parameters, including revenue or production capacity, are then analysed and mapped according to their geographical distribution, outlining risk distribution given the key areas of revenue generation for the issuer.

**Forward-looking physical risk assessment:** Global climate temperature projections are extracted from a global climate model ensemble—the Coupled Model Intercomparison Project Phase 5 (CMIP5), which includes 15 global climate models—and are linked to a global vulnerability database developed by South Pole to address every country and industrial sector. Together, these inputs result in a geospatial model which can provide an asset level climate risk assessment based on the asset's specific location. A geospatial risk analysis is performed for both the issuer's overall activities and its green bond framework, using state-of-the-art data analysis tools. Infographics and physical climate risk maps are generated to show, for example, the geographical distribution of the framework's risk.

**Project level hotspot analysis:** The issuer's green projects are mapped, and an assessment is conducted of the impacts of major risks on these for a given point in the future, such as 2040. These can include heavy precipitation, drought and heat waves. Data is sourced from the CMIP5 global climate model used by the IPCC.

**Adaptive capacity screening:** Given the risk indicators revealed by the hotspot analysis, an assessment is conducted of the demonstrated adaptive capacity of an issuer's projects or framework by evaluating the issuer's green bond reporting and other public disclosure information. This identifies relevant climate-related risks, as well as any measures taken by the issuer to manage and adapt to them. The adaptive capacity screening is based on documents disclosed by the issuer through its green bond, company level and other reporting. The screening looks for evidence that the issuer carries out climate-related risk and vulnerability assessments, and that the issuer adheres to international environmental or risk management standards.



# Physical Risk Assessment Methodology

## Forward-looking Physical Risk Assessment

South Pole's climate risk screening tool scales global climate change impacts at an asset, company or entity level. This is carried out by applying the concept of global damage functions, developed by climate economists to estimate the overall impact of climate change on the global economy. The score provides a strong indicator of potential future threats to a company or entity's ability to produce goods or services, create value and generate revenue, as a result of the physical impacts of climate change. For example, a solar PV plant could have its infrastructure negatively impacted by climate events and experience a reduction in energy generation, lowering clean energy output and revenue.

The climate risk assessment tool measures physical risk as a **percentage change in output**. This risk score represents the potential impact of climate change events on an entity or their investments.

The climate risk assessment is based on the aggregation of three inputs:

### Hazard

Global climate projections, based on the Coupled Model Intercomparison Project Phase 5 (CMIP5).

### Vulnerability

Country level vulnerability factors, including vulnerability and readiness assessments produced by ND-GAIN.

### Exposure

Mapping of assets and operations, using issuer-provided location data

Sector vulnerability factors, based on data provided by OECD.

The risk score can be calculated for four separate temperature scenarios—1 to 4 degrees Celsius—providing a flexible and multi-scenario analysis tool which allows users to understand asset and portfolio impacts under multiple emissions pathways.

Furthermore, by aggregating assets by issuer, and issuers by portfolio, the tool enables us to generate portfolio-weighted analyses, such as those presented in this report.

## Hotspot analysis

The hotspot analysis evaluates the change in intensity of specific risks for business segments, green technologies, geographies or individual assets. The analysis focuses on the effect of climate change on the probability and intensity of specific hazards such as heavy precipitation and drought. The effect of climate change is calculated by comparing current day climate conditions with future forecast conditions. The hotspot analysis draws together asset location data with specific climate change risk information. By applying rigorous statistic testing, the analysis identifies the specific projects threatened by considerable changes in the frequency and intensity of future drought or heavy precipitation events.

## Adaptive capacity screening

Building on the risks identified in the forward-looking physical risk assessment and the hotspot analysis, the adaptive capacity screening assesses and scores the demonstrated adaptive capacity of an issuer's projects across the following key areas:

- The issuer's identification and assessment of the relevant climate-related risks facing the assets and projects that its proceeds finance.
- The development and implementation of risk management and adaptation strategies to address the identified risks.
- The issuer's level of reporting on its adaptive capacity strategies, placing attention on accessibility of the relevant documents. These include documents detailing both the type of assessment carried out to identify relevant risks, and the development and implementation of adaptive measures.

The criteria are applied at the highest level of detail possible according to

the issuers' disclosure practices. As part of this, transparency and public disclosure are an important factor in the overall outcome of the adaptive capacity score.

As an example, pure play, renewable energy issuers can apply certain risk management systems and standards across their entire framework, due to the fact that the technologies financed have similar characteristics. Adhering to one international risk management standard for all projects enables an issuer to design and operate a green asset in a way that takes climate-related risks into account without having to apply individual project level risk management strategies. Where an issuer carries out and reports on adaptation strategies across an entire category, all projects in this category will be scored the same, unless otherwise disclosed by the issuer. If risk assessment and adaptation strategies are developed and reported for each individual project, they will be scored individually.

## About South Pole

South Pole is a leading project developer and provider of global climate action solutions, with over 300 experts in 18 global offices. South Pole helps companies, capital markets, and the public sector reduce their impact on the climate while mitigating risk and creating value. South Pole is a science-based company and its expertise covers project finance, data collection, and climate risk analysis, as well as the development of environmental commodities, such as carbon and renewable energy credits. South Pole has mobilised climate finance to over 700 projects that reduce greenhouse gas emissions in areas such as renewable energy, energy efficiency and sustainable land use. For more information, visit [www.southpole.com](http://www.southpole.com)



# Resources

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In addition to the referenced reports in the footnotes, data from the below were also used in the report.

## Databases & Websites

Climate Action Tracker: <https://climateactiontracker.org/>

ICMA Green, Social and Sustainability Bond Principles: <https://www.icmagroup.org/green-social-and-sustainability-bonds/>

International Energy Agency (IEA) Data and Statistics: <https://www.iea.org/data-and-statistics>

International Renewable Energy Agency (IRENA): <https://www.irena.org/>

UNFCCC, Paris Agreement 2015: [http://unfccc.int/paris\\_agreement/items/9485.php](http://unfccc.int/paris_agreement/items/9485.php)

Sustainable Development Goals: <https://sustainabledevelopment.un.org>

World Bank, Open Data: <http://data.worldbank.org/>

World Health Organisation: <https://www.who.int/>

World Resources Institute (WRI), CAIT Climate Data: <https://www.wri.org/resources/websites/cait>

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