



Private Infrastructure  
Development Group

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# Task Force on Climate-related Financial Disclosures

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Report November 2023

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Published: November 2023

## Foreword

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**The Private Infrastructure Development Group (PIDG) is delighted to present our third annual disclosure report on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), which PIDG became a supporter of in January 2020.**

Building on our earlier reports, we outline our progress over the past year to further embed climate change mitigation and resilience through our operations and the investments of all the companies in the PIDG group.

This report follows the publication of PIDG's Strategy for 2023-30 earlier this year. PIDG operates in some of the countries most vulnerable to the impacts of climate change and our new strategy has action on climate and nature at its core. This report summarises our work to date on embedding climate considerations throughout our operations and investment decisions.

In June 2023 the International Sustainability Standards Board (ISSB) issued its first two International Financial Reporting Standards (IFRS), Sustainability Disclosure Standards, IFRS S1 General

Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures. We are exploring transition to these standards for our 2024 reporting. We have therefore made an initial self-assessment of where we consider this year's TCFD report to be in line with the S2 Climate-related Disclosures, and where gaps exist that we will work on next year.

Choosing and designing investments that strengthen system resilience, support climate adaptation, and protect and restore nature in the process, will be a strategic driver of our work over the coming years. There is much work to be done – and we look forward to engaging with all our partners and stakeholders as we begin work on implementing our new strategy.



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**Marco Serena**

Chief Sustainable Impact Officer

20/11/23

*This TCFD Report applies to the following Covered Assets that align with the TCFD Recommendations as part of the PIDG group:*

- *InfraCo Africa Ltd*
- *InfraCo Africa Investment Ltd*
- *InfraCo Asia Development Pte. Ltd*
- *InfraCo Asia Investments Pte. Ltd*
- *The Emerging Africa Infrastructure Fund Ltd*
- *GuarantCo Ltd*

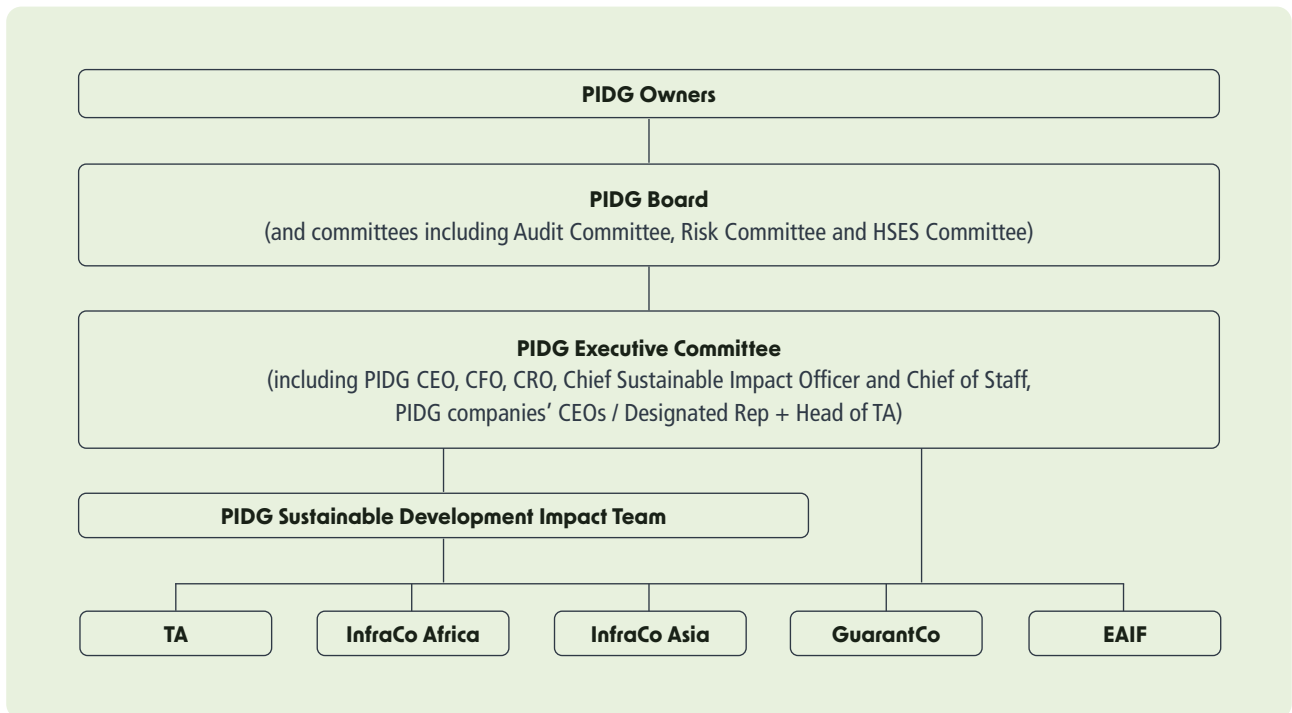
# 01 Governance

The overall governance structure to identify and manage climate-related risks and opportunities remains unchanged from last year, as outlined in the figure below.

PIDG’s Climate Change Approach is summarised in three key documents:

- PIDG Strategy: the public document outlining PIDG’s investment approach. This is described in section 2 of this report.
- PIDG Climate Change Standard: the internal document for investment teams providing sector specific guidance on aligning investments with PIDG strategic objectives on climate action. This is described in section 3 of this report.
- Annual TCFD Disclosures: this public document reporting on progress.

Figure 1: PIDG Climate Change Governance Structure<sup>1</sup>



1. Where:

- EAIF – Emerging Africa Infrastructure Fund
- HSES Committee – Health, Safety, Environmental and Social Committee
- TA – Technical Assistance

**Table 1: PIDG Climate Change Governance**

<p><b>Board and Owners level oversight</b></p>	<p>Overall oversight of PIDG climate-related activities and TCFD metrics lies with the PIDG Ltd.’s Board of Directors (the “Board”) and it is a standing item on the Agenda for each Board meeting, under the Chief Sustainable Impact Officer’s report. The Board meets quarterly and the Board level sponsor is the Chair of the Board. A quarterly update is provided to the Board on relevant activities in the last quarter and planned for the next.</p> <p>The Board considers the impacts of climate change as part of wider discussions on the future strategic direction of PIDG, including in discussions around business planning, strategy and risk. Over the past year, examples of discussions the Board have undertaken relating to climate change include:</p> <ul style="list-style-type: none"> <li>• Oversight of development and approval of PIDG Strategy 2023-30 and climate action becoming the central purpose of everything PIDG does.</li> <li>• Oversight of the development of a new Sustainable Impact Scorecard to align to our new strategy.</li> <li>• Oversight of PIDG activities at COP27 and plans for COP28.</li> <li>• Oversight of the development of PIDG’s partnership with The University of Exeter on climate resilience through infrastructure investment.</li> <li>• Oversight of the Group’s performance against climate-related KPIs.</li> </ul> <p>Where appropriate, climate-related risks and opportunities are also considered by PIDG Committees including, the Audit, Risk, HSES, Investment and Credit Committees.</p> <p>As of January 2022, Rachel Kyte joined the PIDG Board, and is a member of both the HSES Committee and Risk Committee. Rachel Kyte served as special representative of the UN secretary-general and Chief Executive Officer of Sustainable Energy for All. She previously was the World Bank Group vice president and special envoy for climate change, leading the run-up to the Paris Agreement<sup>2</sup>, and chair of FONERWA, the Rwanda Green Fund. Rachel is co-chair of the Voluntary Carbon Markets Integrity Initiative (VCMI), a member of the Advisory Board of Beyond Net Zero and Board Director of the Climate Policy Initiative. She is an advisor on climate strategy and finance to multilateral development banks and a member of the G20 expert group on their reform to respond to the climate crisis. She was a member of the UN Secretary-General’s high-level advisory group on climate and is now an advisor to the UNFCCC on the establishment of a Responsibility and Accountability Framework for Net Zero.</p> <p>In September 2022, Amanda Feldman joined the Audit Committee, which is responsible for overseeing all PIDG impact related disclosures. Amanda Feldman is an internationally recognised impact management expert and was the Technical Lead on Impact Transparency, Integrity and Reporting for the G7 Impact Taskforce, which recommended that impact performance falls under the responsibility of audit committee to ensure transparency and accountability. She previously supported the development of impact frameworks for investors like Bridges and more recently led on an SDG impact framework for UNDP. She has been part of building the field through her early work as co-founding Director of the Impact Management Project, and engagement with Impact Frontiers, the Global Steering Committee on Impact Investing and more recently the Predistribution initiative.</p> <p>Updates on climate-related risks and opportunities are provided on a quarterly basis to PIDG Owners, or more frequently as required.</p>
<p><b>Management role</b></p>	<p>The PIDG Executive Committee (ExCo) level sponsor is PIDG Chief Sustainable Impact Officer. Updates on climate-related risks and opportunities are a standing item on the agenda of the PIDG ExCo (consisting of a subset of PIDG Ltd.’s Executive Team and PIDG company CEOs) which meets twice monthly. An update is provided by the Chief Sustainable Impact Officer at each meeting, with input from other members of the ExCo as required. PIDG ExCo reviews climate-related risks and opportunities and makes recommendations to the PIDG Board as required.</p> <p>At an operational level, PIDG climate-related activities are led by the PIDG Sustainable Development Impact (SDI) team, working closely with PIDG HSES team as part of PIDG Sustainable Impact function, co-ordinating input from Risk, Finance, Legal and all PIDG business units (namely InfraCo Asia, InfraCo Africa, GuarantCo and the Emerging Africa Infrastructure Fund) and PIDG Technical Assistance.</p>

2. The Paris Agreement is a legally binding international treaty on climate change, adopted by 196 Parties at COP 21 in Paris, in December 2015 before entering into force in November 2016. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

<p><b>Management role (continued)</b></p>	<p>PIDG SDI has six full time equivalent staff plus support from consultants, including one with specific responsibility and expertise on climate change. In 2023 PIDG has recruited a full-time in-house climate change specialist to provide technical support to all PIDG teams. PIDG SDI is responsible for:</p> <ul style="list-style-type: none"> <li>• Climate change screening of all new investments by PIDG companies as part of the SDI Endorsement process.</li> <li>• Collection of climate data for projects in operation for annual reporting, as part of overall SDI results monitoring process.</li> <li>• Preparation of climate change related documentation (namely PIDG Strategy; PIDG Climate Standard and TCFD reports), as well as Board and ExCo updates and external presentations.</li> </ul>
<p><b>Investments</b></p>	<p>PIDG applies a deliberate climate lens to its investments, and climate impacts are included in investment papers (as part of the SDI endorsement note) and are therefore considered as part of investment proposal approvals. More detail on how climate impacts are considered throughout the different stages of PIDG companies' involvement with a project are described in later sections of this document.</p> <p>Since 2020, in order to track progress of PIDG overall and PIDG individual company performance on climate change, PIDG has set a specific climate change Key Performance Indicator (KPI). In 2020, this KPI was related to alignment to the goals of the Paris Agreement for new energy sector investments. For the period 2021-23, this KPI relates to the carbon intensity of all new investments (measured in tonnes of CO<sub>2</sub> equivalent per \$ million invested). Achievement of KPIs (including the climate change KPI) is directly linked to the performance appraisal and performance related payments of the PIDG companies.</p> <p>To meet the climate KPI, investment teams operate within an annual carbon budget<sup>3</sup>, meaning that low emitting investments take overall priority and high emitting investments are ranked for their wider benefits and selectively undertaken.</p> <p>PIDG met its climate KPI in 2021 and 2022 as the carbon intensity of the investments financially closed in 2021 and 2022 was below the average carbon intensity of the investments financially closed in 2015-20.</p> <p>PIDG has undertaken a programme of capacity building to upskill staff on climate change considerations. Building on previous years' activities, in 2022-23 dedicated capacity building has included:</p> <ul style="list-style-type: none"> <li>• Training by the Renewables Energy Institute on hydrogen energy for 20 staff from investment teams and impact teams across the group.</li> <li>• PIDG Institute flagship capacity building events in Nairobi, Casablanca and Singapore for PIDG investees, covering the basics of climate science, greenhouse gas (GHG) calculations and climate risk assessment.</li> <li>• Learning sessions on green bonds for investment teams with industry experts.</li> <li>• Learning sessions on battery energy storage and electric vehicles for PIDG investment teams.</li> <li>• Training for PIDG Impact team (SDI and HSES) on greenhouse gas calculations, climate change risk assessment and mitigation, climate considerations in IFC Performance Standard 5 (Land acquisition and involuntary resettlement).</li> </ul>
<p><b>Operations</b></p>	<p>PIDG is working to consider climate change in all aspects of operations. Primary sources of emissions from PIDG operations are business travel and our offices. We have developed an operations policy that aims to put our operation emissions on a net zero trajectory; the policy – currently in draft form and expected to be approved by the end of 2023 - is discussed further in section 4 of this document.</p> <p>Beyond this, PIDG also considers climate in other areas of operations: our UK pension provider is Scottish Widows who have committed to halving the carbon footprint of their investments by 2030 and reaching net zero across all their investments by 2050<sup>4</sup>.</p> <p>Finally, climate considerations were included in the selection procedure of third party asset managers selected to manage PIDG Group portfolios.</p>

3. The use of the term 'carbon' implies carbon dioxide equivalent covering the 7 GHGs under the Kyoto protocol.

4. Our climate change approach | Responsible investment | Scottish Widows

# 02 Strategy

**PIDG published its new 2030 Strategy in June 2023<sup>5</sup>. Our strategy for 2023-30 makes action on climate and nature, together with sustainable development through new and improved access to infrastructure, more than just part of our work. It is now the central purpose of everything we do.**

We invest in the countries with the most severe lack of access to basic infrastructure like energy, transport, telecommunications and water, where people have the highest vulnerabilities to climate shocks and changes and the fewest tools to adapt; the countries that historically contributed the least to the climate crisis, with the youngest and fastest growing populations and with some of the most important biodiversity and carbon sinks in the world that are fast being depleted. We believe that climate resilient development is an enormous opportunity in this context, and that new and improved access to infrastructure can drive action on the climate and nature, while accelerating sustainable development.

**Our commitment is that the infrastructure that we develop and finance will enable:**

- Rising living standards and inclusive job creation (direct and mostly indirect), unlocking opportunities for young and fast growing populations, and helping to shape inclusive, climate-resilient economies that reduce poverty.
- Sustainable development pathways that are compatible with climate and nature imperatives, improving resilience to climate shocks for some of the most vulnerable populations, while protecting and restoring nature.

**PIDG 2023-30 Strategy builds on our Climate Change Strategy published in September 2021<sup>6</sup>, outlining our overall commitment to support the goals of the Paris Agreement on Climate Change.**

PIDG identifies its role as:

- Investing in projects that assist countries PIDG operates in to transition towards a global net zero carbon economy by 2050, in the context of an equitable and just transition to net zero.
- Demonstrating the technical and financial viability of innovative low carbon and climate resilient infrastructure in low income and emerging markets of Africa and Asia.

**In 2021-23, PIDG climate action focussed on four strategic priorities:**

- Priority 1: Mobilise private climate finance in underserved, fast growing markets, demonstrating the viability of low carbon, climate resilient infrastructure for private investors.
- Priority 2: Strengthen climate change adaptation and resilience through our investments.
- Priority 3: Mobilise domestic investors, entrepreneurs and stakeholders in emerging markets in climate savvy investments, including through local currency solutions.
- Priority 4: Integrate climate and gender investment lenses in infrastructure investment to maximise the gender outcomes of climate related investment.

<sup>5</sup> [PIDG-Strategy-2023](#)

<sup>6</sup> [PIDG-climate-change-strategy-paper-2021](#)



## Supporting the transition to Net Zero

**As outlined in our 2021 and 2022 TCFD Reports, PIDG has already taken measures to mitigate against transition risks in new investments through adoption of a Climate Change Standard for all new direct and indirect investments and the PIDG Investment Policy.**

**This means that PIDG will not finance, directly or indirectly:**

- Coal or heavy fuel oil (HFO) fired power plants.
- Upstream investment in coal, oil or gas extraction, processing or production.
- New transport infrastructure (road, rail, waterway and port) constructed mainly for the transport of fossil fuels.

Gas fired power plants and associated infrastructure (e.g. pipelines, storage and distribution) will only be supported following a positive outcome of a systematic assessment to determine their alignment with the Paris Agreement goals.

Similarly, investments that are based mainly on fossil fuel-based transport systems (e.g. airports; roads; ferries, railways and ports) will only be supported by PIDG following a positive outcome of an assessment to determine their alignment with the Paris Agreement goals.

PIDG has also piloted an approach to assess the alignment of investments in the manufacturing sector (steel, cement, chemicals and fertilisers) based on:

- Estimated Greenhouse Gas (GHG) emissions per tonne of product for each year during lifetime of PIDG involvement to determine if production is on a Paris-aligned trajectory, based on science-based sectoral pathways.
- Confirmation of Board level sponsor commitment to reducing GHGs in line with Paris Agreement goals.
- Demonstration that the cleanest and most efficient technology is being used, and that provisions for allowing future technological switch to lower emission options are considered.

For new investments in the real estate sector, we will continue to support developments with high energy efficiency standards, such as projects that achieve IFC EDGE<sup>7</sup> certification.

Our next steps in this area include confirming our approach for investments via Financial Intermediaries, beyond current requirements to align investments supported by PIDG with the PIDG Climate Standard, to include reporting requirements in line with TCFD recommendations and the Global GHG Accounting and Reporting Standard for the Financial Industry (the PCAF Standard)<sup>8</sup>.

## Opportunities from the low carbon transition

**As outlined above, a key element of the PIDG Climate Change Strategy is demonstrating the viability of low carbon infrastructure for private investors in emerging markets.**

**PIDG is currently focusing on increasing investment in the following sectors:**

- Renewable energy – both on grid and off-grid.
- Transport – electric mobility.
- Energy efficient affordable housing and sustainable cities.
- Developing the green bond market in underserved low income and emerging markets.

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<sup>7</sup> Home – EDGE Buildings

<sup>8</sup> The Global GHG Accounting and Reporting Standard for the Financial Industry | PCAF (carbonaccountingfinancials.com)

## Examples of PIDG investments

**Battery storage**

**In 2021-22, PIDG companies InfraCo Africa and EAIF, supported two of the first grid scale solar projects with battery energy storage systems (BESS) in Africa<sup>9</sup>:**

- The 20MW<sub>AC</sub> Golomoti Solar photovoltaic project will deliver much-needed power to Malawi's national grid. It became operational in Q1 2022. With grant funding from Innovate UK, Golomoti Solar is pioneering a 5MW-10MWh BESS to reduce the national utility's reliance on hydropower and diesel generation, whilst ensuring that grid stability is maintained.
- The Cuamba Solar photovoltaic project will develop, construct and operate a 19MW solar plant with 7MWh BESS in Cuamba, Mozambique. It will also demonstrate the role of BESS in overcoming issues of intermittency from solar PV and 'firming' output of the solar plant to the grid. PIDG TA committed a Viability Gap Funding grant of \$7m, to support the project by enabling an affordable tariff, fund essential grid upgrades and BESS.
- In 2023, PIDG company EAIF signed a debt commitment to West Africa's first project financed solar PV + battery energy storage system project in Senegal, located in Bokhol. The Walo facility will be a 10MW/20MWh BESS supplied by a 16 MWp solar photovoltaic plant.

## Examples of PIDG investments

**Electric mobility**

**In 2022, PIDG company InfraCo Africa made its second and third investments in electric mobility in Africa:**

- In East Africa, InfraCo Africa provided \$3m equity to Zembo to deploy 2000 new electric bikes and increase the number of charging stations to more than 60 in Kampala, Uganda. The charging stations are solar-powered or utilise power from Uganda's national grid, the majority of which is derived from renewable sources. As part of global efforts to improve urban air quality and to achieve net zero emissions, Zembo's model has considerable potential for replication in other African cities.
- In Zimbabwe, InfraCo Africa provided \$2m equity to Mobility for Africa to expand their operations, assembling and deploying e-tricycles in rural Zimbabwe. The company targets women drivers and farmers, and is currently scaling to 400 e-tricycles – or "hambas" in local language. We expect 18,000 low-income smallholder farmers to access the service, leading to enhanced income generation and improved quality of life. An end user survey of the pilot phase showed that the majority of customers were accessing a service like the "hamba" for the first time, 79% of customers reported quality of life improvements and 70% reported a significant increase in income.

**In 2022 and 2023 PIDG guarantee arm GuarantCo provided guarantees for the development of electric mobility in India and Africa.**

- In May 2022, GuarantCo and Axis Bank signed a portfolio guarantee framework<sup>10</sup> agreement to stimulate electric mobility in India. GuarantCo is providing a \$200m local currency equivalent guarantee allowing between \$300m and \$400m of lending in local currency to be unlocked to finance electric mobility ecosystems including:
  - Manufacturing and distribution of EVs, batteries, components and charging infrastructure.
  - Services based on EV usage and/or to the EV sector.
  - Finance companies providing financing for the purchase of electric vehicles by consumers.
- In 2023, GuarantCo, in partnership with Societe Generale, announced local currency financing of up to \$63m, with a first tranche of c. \$35m equivalent, to support the financing of Spiro's fleet of electric motorbikes as well as the associated batteries and swap stations in Benin and Togo. The funding comprises a 70 percent partial credit guarantee from GuarantCo and a borrowing base facility provided by Societe Generale.

9. Note as Cuamba project was not operational as of 31 December 2022, it is not included in the data in section 4 of this report.

10. Not operational in 2022 hence not included in this report calculations



## Examples of PIDG investments

**Green bonds**

**In July 2022, PIDG supported the issuance of the first onshore, local currency, verified green bond in Vietnam, which is also the first Vietnamese corporate bond invested into by institutional investors with a partial rather than a full guarantee<sup>11</sup>. GuarantCo provided a \$50m equivalent local currency guarantee which unlocked \$75m investment from institutional investors including Manulife and AIA. Vietcombank Securities (VCBS), a leading investment bank and securities firm in Vietnam, acted as the mandate lead arranger on the transaction.**

The bond proceeds allow EVN Finance to issue longer term loans to finance capital expenditure of green infrastructure aligned with the company's Green Bond Framework including loans towards the fast-growing rooftop and ground-mounted solar sub-sectors in Vietnam. The green transaction contributes to Sustainable Development Goal (SDG) 7 (ensure access to affordable, reliable, sustainable, and modern energy for all) by enhancing Vietnam's energy and climate resilience.

**PIDG has previously invested in East Africa's first green bond** with dual listing on the London and Nairobi stock exchange, issued by Acorn Holding, a pioneer provider of quality student accommodation in Nairobi, with buildings built to high standards of sustainability and energy efficiency and meeting IFC-EDGE certification. The initial investment by PIDG companies EAIF and GuarantCo, was followed by an equity injection by PIDG company InfraCo Africa to allow Acorn to issue one of the first successful REIT (Real Estate Investment Trust), currently invested in by a host of Kenyan institutional investors.

### Investing in climate resilient infrastructure and in climate resilience through infrastructure

**PIDG works in some of the countries considered most vulnerable to the impacts of climate change and least prepared to deal with them. Changing weather patterns and increased number of extreme weather events caused by climate change have the potential to be a material risk for PIDG both at project, company and Group level.**

PIDG has undertaken a review of the existing portfolio to understand exposure to physical climate risks in 2021-22, updated this year (see results in section 4). Based on the portfolio risk assessment, we prioritised climate risk mitigation in new investments (see Chapter 3 Risk Management). Next steps will involve discussions with sponsors to communicate results of the review to them and to understand any existing or planned measures to manage climate risks and, if none, to work with sponsors to implement plans to manage physical climate risks.

As well as considering the resilience of the asset itself as part of screening and due diligence procedures (see section 3), PIDG is

actively considering how the investment impacts on the resilience of the ecosystem in which it is located i.e. local communities, businesses and the natural environment. We assess whether a project meets 'do no harm' thresholds and seek to identify and track any expected positive impacts on system resilience.

With the launch of the new PIDG Strategy, we have explicitly linked our strategic investment themes to the Sharm el-Sheik Adaptation Agenda launched at COP27 in Egypt in 2022. The figure below summarises this alignment:

<sup>11</sup>. As above

Examples of how we will contribute to the  
**Climate change adaptation agenda**

**Adaptation outcome targets from UNCCC COP27  
Sharm el Sheik Adaptation Agenda – Nov 2022**

**PIDG strategic  
investment theme**

- A diverse set of energy generation sources enable affordable access to electricity for **679 million unconnected people** and higher quality access for 1 billion underserved people through climate resilient energy systems.
- **2.4 billion people with access to clean cooking** through at least \$10 billion / year in innovative finance for clean cooking action worldwide.
- **585 GW of battery storage capacity** and extension of **transmission and distribution** networks to enable decentralised generation and consumption.



**Energy and  
electrification**

- **2.2 billion people access low-cost clean vehicles and mobility solutions** through the expansion of affordable public and private transport services.



**Transport and  
logistics**

- 150 million **green jobs** created in Africa.



**Cross-cutting**

- **Water systems** that are smart, efficient and robust with a reduction of water leakage; urban water resilience projects started in 100 African cities.
- Increased use of **waste as a secondary resource** reduces open waste burning by 60%.



**Sustainable and resilient  
cities and circular economy**

- Invest **\$4 billion to secure the future of \$15 million hectares of mangroves** globally.
- **1 billion people with access to nature-based solutions in urban areas and urban coastline** protected by grey and green-grey hybrid infrastructure solutions.



**Nature-based solutions  
associated to infrastructure  
investments**

Learning from our investments –

## Positive impacts of investing in infrastructure resilience

**In 2017, PIDG company EAIF and PIDG TA provided funding to Kigali Bulk Water, one of the first water Public-private partnerships (PPP) in Africa, currently operational and providing clean water to c.500,000 people in Rwanda's capital city Kigali.**

One of the choices made during construction was to use more expensive cabling suitable for underwater systems, even for some of the installation above water, to mitigate the risk of increased floods. The plant remained operational during unprecedented rainfall that caused floods in a number of Rwanda's districts this year.

**In 2019, PIDG company GuarantCo provided a \$50m equivalent local currency guarantee to enable investment in K-Electric, the Karachi electricity utility serving 3 million people.** Proceeds were used to substitute obsolete cabling with new safer arial bundled cabling and to improve the resilience of sub-stations. In 2022, notwithstanding increased floods, K-Electric reported its lowest level of service interruptions and no new electrocutions.

Learning from our investments –

## Counting the damage

**In 2022-23, we introduced a new incident category of "damage due to extreme weather events linked to climate change".**

This allows us to count such events, produce lessons learnt for each event and with time it will allow us to build a picture of any significant trends and to produce lessons learnt on each incident.

In 2023, we produced a first lessons learnt on damage to a run of river hydro in Uganda from extreme flooding.

Next step will be to start quantifying the value of any loss of operation linked to events reported as extreme events linked to climate change.

## Building the evidence base about investing for systemic resilience and climate resilient development

**In June 2023, PIDG launched a new partnership with climate scientists at the University of Exeter, coordinating with climate scientists in Africa. The partnership is exploring how climate change affects African regions differently from the global averages which dominate discourse, and how the analysis of climate vulnerability can create new opportunities to invest in climate action, improving climate resilience while addressing infrastructure access gaps and stimulating sustainable development.**

### **This work will:**

- Improve understanding of exposure to climate risk by providing more granular and specific assessment than is currently available.
- Improve understanding of risks and opportunities for infrastructure investments and what considerations should be prioritised to strengthen system resilience where people are at the greatest risk of adverse impact without appropriate mitigation.

PIDG and the University of Exeter co-hosted a series of three stakeholders' sessions on the theme in London (June 2023), at Africa Climate Summit in Nairobi with the Kenya Green Building Society (September 2023) and at New York Climate Week with Ninety One (September 2023).

The University of Exeter and PIDG will publish a new action-oriented evidence report at COP28 in Dubai where they will convene infrastructure investors, industry experts and other relevant stakeholders to present the latest evidence and call to action.

# 03 Risk management

Climate risks, both physical and transition, will impact on the existing risk categories considered by PIDG and PIDG companies. Given PIDG's mandate, PIDG considers impact of climate change on anticipated sustainable development impacts and on HSES performance, as well as financial risks.

### Physical risks

are either chronic, characterised by long-term shifts in weather patterns, or acute extreme weather events that are increasing due to climate change. These have the potential to be a material risk at project level and therefore to PIDG's overall portfolio.

#### Potential impacts include:

- Extreme weather events such as temperature rises and flooding leading to unsafe working environments which can lead to HSES risks.
- Extreme weather events leading to increased competition for natural resources, preventing planned operations and increasing HSES risks.
- Damage to a project due to extreme weather events preventing planned operation which can lead to risk that the expected positive impacts do not materialise (SDI risks).
- Damage to a project due to extreme weather events preventing planned operation, and leading to financial/ credit risks as revenues may be reduced and operation costs increase.

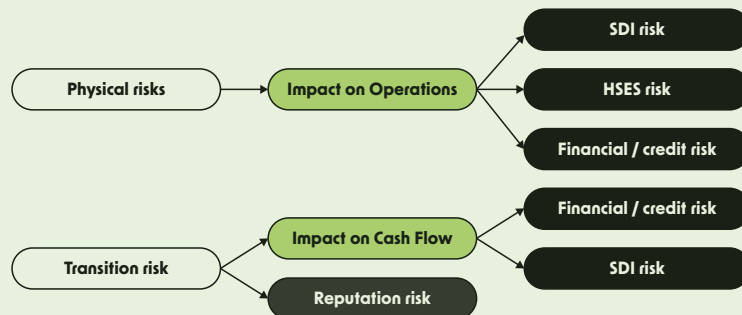
### Transition risks

are business-related risks which come about through a shift towards a low-carbon and more climate-friendly future.

#### This includes:

- Changing legislation as part of an individual country's transition to a net zero economy and/or introduction of new technologies can lead to revenue risks.
- Support to a project that is not Paris-aligned leading to reputational risks for PIDG and PIDG companies.
- Increasing likelihood of litigation risk for transition risks that have not been sufficiently managed and/or mitigated.

The figure below shows a high level mapping of transition and physical climate risks onto other PIDG risk categories (where SDI is Sustainable Development Impact and HSES is Health Safety Environmental and Social):



PIDG has implemented procedures to identify and manage climate risk for all new potential investments, as outlined in the tables below.

**Work is ongoing to integrate the results of the screening into existing risk management processes:**

- Impacts on sustainable development impact are integrated in the overall sustainable impact screening and endorsement process, where climate risks are systematically identified and documented at the beginning of due diligence and have to be addressed before investment approval as part of due diligence.
- Residual impacts are currently included in PIDG HSES Risk register.
- Impacts on financial returns and risk of default are currently discussed as part of investment approval and portfolio reviews where incidents materialise.

Work continues on further integrating climate considerations into the existing PIDG enterprise risk management framework.

**Next steps also include:**

- Starting to quantify losses linked to climate change where incidents and adverse impacts materialise.
- Development of methodology for adjusted physical climate risk score based on climate risk mitigation and management measures being implemented.
- Development of guidance to support sponsors to reduce and manage identified climate risks. Continuing the integration of climate considerations into PIDG’s overall Enterprise Risk Management Framework.

PIDG has also considered the impact of physical climate risks on PIDG’s own operations. PIDG staff are all able to work remotely should extreme weather events caused by climate change mean that staff are unable to travel to or work in PIDG offices. We therefore consider the potential impact to operations to be low.

**Table 2: Physical climate risk screening template**

Physical climate risks arise from climate variability, extreme events and longer-term shifts in climate patterns due to climate change, and are a function of geography and vulnerability of the project type.	
<b>Geography</b>	<i>[detail on hazards in geographic location of asset]</i>
<b>Vulnerability</b>	<b>Indicator 1:</b> Dependency of project operation / outputs on natural resources and weather (including water availability) - High/ Medium/ Low
	<b>Indicator 2:</b> Climate sensitivity of market demand for project/ project outputs - High/ Medium/ Low
	<b>Indicator 3:</b> Vulnerability of supply chain; reliance on secure transport routes and secure energy supply - High/ Medium/ Low
	<b>Indicator 4:</b> Reliance on labour for project operation - High/ Medium/ Low
<b>Result</b>	Resilience <i>of</i> the project: <i>[overview of potential physical climate risks to investment at asset level based on hazards and vulnerability]</i> Resilience <i>through</i> the project: <i>[overview of potential physical climate risks to investment at system level based on hazards and vulnerability]</i>

Table 3: Transition risks screening template

Transition risks arise from policy shifts and new technologies as the world moves to address climate change. Similarly, it is a function of geography and sensitivity of the project type.	
<b>Geography</b>	<i>[details of country NDC, key climate policies e.g. carbon tax]</i>
<b>Vulnerability</b>	<b>Indicator 1:</b> Direct impact of policy to reduce GHG emissions – <b>High/ Medium/ Low</b>
	<b>Indicator 2:</b> Indirect impact of policy to reduce GHG emissions – <b>High/ Medium/ Low</b>
	<b>Indicator 3:</b> Potential impact on revenue due to availability of lower carbon alternatives – <b>High/ Medium/ Low</b>
	<b>Indicator 4:</b> Level of investment needed to complete in a lower carbon economy – <b>High/ Medium/ Low</b>
<b>Result</b>	<i>[overview of potential transition risks to investment]</i>

Table 4: PIDG climate risk process for new potential investments

	Transition risk	Climate resilient (to physical climate risks)	
		Asset level (resilience of the investment)	System level (resilience through the investment)
<b>Initial screening pre-due diligence (SDI Clearance In Principal stage)</b>	<ul style="list-style-type: none"> <li>- Assessment of compatibility with goals to reach net zero by 2050 (sector specific guidance for energy, transport and manufacturing (draft) sectors in PIDG Climate Change Standard).</li> <li>- Initial estimation of GHGs during typical operation, emissions intensity (tCO<sub>2</sub>e/mUSD invested by PIDG) and PIDG 'share' of emissions (in line with PCAF standard).</li> <li>- Assessment of exposure to transition risks based on country and sector.</li> </ul>	<ul style="list-style-type: none"> <li>- Identification of physical climate risks and materiality assessment based on sector vulnerability and exposure to hazards in geographic location of asset(s).</li> </ul>	<ul style="list-style-type: none"> <li>- Identification of potential impacts (positive and negative) of investment to system level resilience to physical climate risks.</li> </ul>
	<ul style="list-style-type: none"> <li>- Prioritisation of investments that provide innovative solutions to climate related issues.</li> <li>- Results of climate risk assessment included in Investment paper for the proposed deal.</li> <li>- Dedicated due diligence actions to address identified risks.</li> <li>- Prioritisation of deals that improve system resilience (as part of the PIDG Strategy).</li> </ul>		
<b>Post due diligence (SDI endorsement stage)</b>	<ul style="list-style-type: none"> <li>- Confirmation of compatibility with goals to reach net zero by 2050 and ex ante estimation of GHGs during typical operation.</li> <li>- Description of how material transition risks have been mitigated and how remaining material risks will be managed.</li> </ul>	<ul style="list-style-type: none"> <li>- Description of how material physical risks have been mitigated and how remaining material risks will be managed.</li> </ul>	<ul style="list-style-type: none"> <li>- Confirmation that project is expected to do no harm to system level resilience.</li> <li>- If applicable, outline of how project contributes to:                             <ul style="list-style-type: none"> <li>• Reduce vulnerability to identified physical climate risks at a system level.</li> <li>• Transformational outcomes to increase resilience.</li> </ul> </li> </ul>
<b>Monitoring (operation phase, after FC)</b>	<ul style="list-style-type: none"> <li>- Annual calculation of GHGs and PIDG 'share' of emissions (in line with PCAF Standard).</li> </ul>		<ul style="list-style-type: none"> <li>- Climate resilience indicator(s) included in monitoring plan, where appropriate.</li> </ul>
	<ul style="list-style-type: none"> <li>- Climate monitoring requirement integrated with existing monitoring requirements by PIDG Sustainable Development Impact.</li> </ul>		



# 04 Metrics and targets

## 4.1 GHG emissions

This year, GHG emissions from PIDG operations and investments have been calculated and peer-reviewed internally. GHGs from investments were calculated using the Global GHG Accounting and Reporting Standard for Financial Institutions published by the Partnership for Carbon Accounting Financials (PCAF). Additional independent verifications might be carried out in future years, and, if necessary, adjustments to these figures may be published.

*Note: In some cases, totals of columns are not the sum of the individual rows due to rounding errors.*

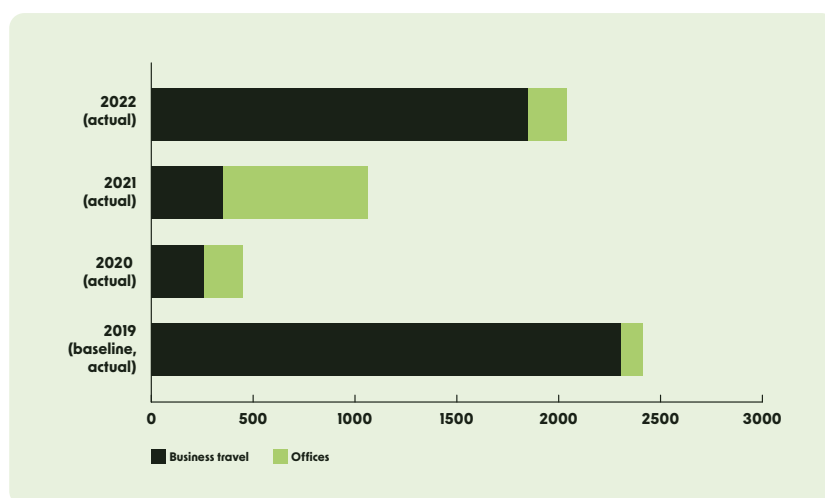
### GHGs from PIDG operations

The table below shows emissions from our operations in 2019-22. This includes emissions from our offices as well as travel for business purposes. The figures do not currently include emissions from homeworking, procurement or commuting, although this is something we will consider in future years.

**Table 5: Total absolute GHG emissions from PIDG operations 2019-22 (tCO<sub>2</sub>e)**

	2019	2020	2021	2022
<b>EAIF (debt)</b>	297	43	105	281
<b>GuarantCo (guarantees)</b>	956	178	379	758
<b>InfraCo Africa (equity)</b>	374	89	276	349
<b>InfraCo Asia (equity)</b>	270	39	5	164
<b>PIDG Ltd. (holding company)</b>	521	110	300	487
<b>PIDG overall Group</b>	<b>2419</b>	<b>459</b>	<b>1065</b>	<b>2039</b>

**Figure 3: Absolute GHG emissions from PIDG operations (tCO<sub>2</sub>e)<sup>12</sup>**



Over 2023 we have been working to further develop a policy to reduce operations from travel and offices. The policy is currently in draft form and is expected to be approved by the end of 2023.

<sup>12</sup> Note higher office emissions in 2021 were largely due to higher attribution to PIDG, based on lower occupancy of the same offices over the COVID-19 pandemic.

## GHGs from PIDG investments

PIDG has calculated the GHG emissions from investments using the Global GHG Accounting and Reporting Standard for Financial Institutions published by the Partnership for Carbon Accounting Financials (PCAF)<sup>13</sup>. Results are presented in the table below for 2019-22 (note 2019-21 data was presented in our previous TCFD reports; 2022 data is new data).

Note that under the PCAF methodology, emissions from guarantees are only included when the guarantee is called and converts to a loan. PIDG however, wants to recognise the emissions from all guarantees so all are included here, whether the guarantee has been called or not, aware that we are mostly guarantying local banks that might not be reporting to TCFD recommendations.

In line with PCAF recommendations, PIDG includes scope 3 emissions where they are likely to be significant. At this stage, we have included scope 3 emissions from oil and gas infrastructure and processing, as well as from vehicles using roads infrastructure. In line with the PCAF standard, we shall look to increase our coverage of scope 3 emissions of investments to other sectors. Please see Appendix 1 for further methodological notes.

**Table 6: Total absolute GHG emissions from PIDG investments 2019-22 (tCO<sub>2</sub>e)**

	2019		2020		2021		2022	
	Scope 1 & 2	Scope 3	Scope 1 & 2	Scope 3	Scope 1 & 2	Scope 3	Scope 1 & 2	Scope 3
<b>EAIF (debt)</b>	5,467,914	0	4,368,377	0	4,594,066	0	5,492,108	158,266
<b>GuarantCo (guarantees)</b>	2,439,199	5,050,111	1,103,374	4,881,555	161,410	4,881,555	5,357,750	2,614,935
<b>InfraCo Africa (equity)</b>	1,687	0	4,777	0	4,294	0	5,334	0
<b>InfraCo Asia (equity)</b>	106	0	262	0	82	0	78	0
<b>PIDG overall Group</b>	<b>7,531,078</b>	<b>5,050,111</b>	<b>5,408,181</b>	<b>4,881,555</b>	<b>4,690,033</b>	<b>4,881,555</b>	<b>10,701,557</b>	<b>2,773,201</b>

**Table 7: Attributed GHG emissions from PIDG investments 2019-22 (tCO<sub>2</sub>e)**

	2019		2020		2021		2022	
	Scope 1 & 2	Scope 3	Scope 1 & 2	Scope 3	Scope 1 & 2	Scope 3	Scope 1 & 2	Scope 3
<b>EAIF (debt)</b>	241,389	0	184,717	0	204,390	0	156,024	2,407
<b>GuarantCo (guarantees)</b>	217,330	695,846	58,583	636,530	20,057	612,310	71,194	288,735
<b>InfraCo Africa (equity)</b>	267	0	345	0	851	0	1,647	0
<b>InfraCo Asia (equity)</b>	106	0	262	0	82	0	78	0
<b>PIDG overall Group</b>	<b>459,092</b>	<b>695,846</b>	<b>243,907</b>	<b>636,530</b>	<b>225,380</b>	<b>612,310</b>	<b>228,943</b>	<b>291,142</b>
<b>Emissions Intensity (tCO<sub>2</sub>e)/mUSD)</b>	<b>585</b>	<b>-</b>	<b>311</b>	<b>-</b>	<b>281</b>	<b>-</b>	<b>232</b>	<b>-</b>

*Note:*

- As InfraCo Asia emissions are comparatively small, all are attributed to InfraCo Asia, as a conservative approach.
- Overall Group total emissions from operational projects is less than the sum of total emissions by company as some investments are funded by more than one PIDG company so only counted once in the PIDG total to avoid double counting.
- In some InfraCo investments, PIDG is the initial sponsor of a project. Lifetime emissions of these projects have not been reported here but this is something that may be included in future reporting.

<sup>13</sup> The Global GHG Accounting and Reporting Standard for the Financial Industry ([carbonaccountingfinancials.com](https://carbonaccountingfinancials.com))

## Avoided emissions and emission removals

PIDG does not currently have any projects that result in emission removals although we are actively considering investment opportunities in this sector. In line with the PCAF Standard, we report below on avoided emissions from project financed operational grid connected renewable energy projects<sup>14</sup>. As above, we include emissions avoided from guarantees.

**Table 8: Total Avoided GHG emissions from PIDG investments 2019-22 (tCO<sub>2</sub>e)**

	2019	2020	2021	2022
<b>EAIF (debt)</b>	138,931	208,397	167,666	202,247
<b>GuarantCo (guarantees)</b>	39,244	108,693	123,576	140,436
<b>InfraCo Africa (equity)</b>	0	0	0	110,491
<b>InfraCo Asia (equity)</b>	54,671	109,342	0	0
<b>PIDG overall Group</b>	<b>232,846</b>	<b>356,965</b>	<b>203,269</b>	<b>368,154</b>

**Table 9: Attributed Avoided GHG emissions from PIDG investments 2019-22 (tCO<sub>2</sub>e)**

	2019	2020	2021	2022
<b>EAIF (debt)</b>	30,387	50,849	44,780	47,244
<b>GuarantCo (guarantees)</b>	26,456	27,907	23,284	16,150
<b>InfraCo Africa (equity)</b>	0	0	0	5,730
<b>InfraCo Asia (equity)</b>	6,438	2,126	0	0
<b>PIDG overall Group</b>	<b>63,282</b>	<b>80,882</b>	<b>68,064</b>	<b>69,123</b>

Note:

– Overall group total emissions reductions from operational projects is less than the sum of emissions reductions by company as some investments are funded by more than one PIDG company so only counted once in the PIDG total to avoid double counting.

## 4.2 Transition risks and investment in climate opportunities

PIDG expects to manage transition risks through its investment screening processes, climate strategy and standard. Nevertheless, an assessment of exposure of the existing portfolio to transition risks was undertaken over the past year. The scope of the assessment included investments that had reached operation stage (or partial operation stage) and covered the years 2019-22. It included direct investments (via equity, debt or guarantees) but did not include investments via financial intermediaries.

### Our analysis considered:

- Vulnerability of sector: PIDG assessed the vulnerability of each investment based on sector vulnerabilities published by Moody's<sup>15</sup> combined with internal expert knowledge on the geographies that PIDG operates in.
- Exposure: this was based on financial exposure at year-end (i.e. amount of debt outstanding, equity investment, guarantee outstanding).

14. In line with PCAF, we use the operating margin emission factor, published by the IFI Technical Working Group on Greenhouse Gas Accounting IFI TWG - List of methodologies | UNFCCC

15. Moody's Investors Service, "Heat map: Sectors with \$3.4 trillion in debt face heightened environmental credit risk", December 2020

## Results

**Based on four years' of data available, the analysis shows:**

- Increasing exposure in sectors considered to have low transition risks and/or are climate opportunities.  
In 2021 and 2022 this category accounted well over 50% of the entire PIDG portfolio analysed.
- A trend of decreasing exposure in sectors considered to have high and medium potential transition risks (combined).
- In 2022 total exposure in high risk sectors increased due to road and manufacturing projects becoming operational within the year.

**Table 10: Portfolio exposure to climate-related transition risks and opportunities**

PIDG Overall		2019		2020		2021		2022	
Sectors	Risk	Exposure (\$m)	Total exposure (%)	Exposure (\$m)	Total exposure (%)	Exposure (\$m)	Total exposure (%)	Exposure (\$m)	Total exposure (%)
<b>Total exposure in high risk sectors</b>	<b>High</b>	<b>273</b>	<b>36%</b>	<b>295</b>	<b>38%</b>	<b>225</b>	<b>28%</b>	<b>351</b>	<b>36%</b>
Power generation – oil	H	54	7%	51	7%	37	5%	27	3%
Power generation – gas	H	130	17%	123	16%	108	13%	122	12%
Oil processing, transportation and storage	H	15	2%	11	1%	7	1%	1	0%
Gas processing, transportation and storage	H	17	2%	16	2%	15	2%	13	1%
Transport – air	H	4	1%	25	3%	28	3%	21	2%
Transport – rail	H	0	0%	27	3%	0	0%	35	4%
Transport – road	H	15	2%	5	1%	0	0%	70	7%
Manufacturing – steel	H	13	2%	30	4%	30	4%	30	3%
Manufacturing – chemicals	H	25	3%	7	1%	0	0%	32	3%
<b>Total exposure in moderate risk sectors</b>	<b>Medium</b>	<b>159</b>	<b>21%</b>	<b>117</b>	<b>14%</b>	<b>148</b>	<b>18%</b>	<b>77</b>	<b>8%</b>
Manufacturing – cement	M	28	4%	16	2%	0	0%	0	0%
Manufacturing – other	M	43	5%	43	5%	27	3%	0	0%
Transport – ports, ferry	M	55	7%	58	7%	54	7%	33	3%
Mining	M	28	4%	0	0%	67	8%	0	0%
Agri-infrastructure (not resilience solutions)	M	5	1%	0	0%	0	0%	0	0%
Bulk storage	M	0	0%	0	0%	0	0%	45	5%
<b>Total exposure in low risk sectors</b>	<b>Low</b>	<b>352</b>	<b>43%</b>	<b>371</b>	<b>48%</b>	<b>431</b>	<b>54%</b>	<b>557</b>	<b>57%</b>
Telecoms	L	39	5%	34	4%	107	13%	151	15%
Housing / construction	L	42	5%	48	6%	45	6%	54	5%
Water, Sewage and Sanitation	L / opportunity	1	0%	0	0%	19	2%	21	2%
Power generation – renewables	L / opportunity	213	26%	235	31%	214	27%	299	30%
Power generation – T&D	L / opportunity	55	7%	52	7%	39	5%	23	2%
Agri-infrastructure (irrigation)	L / opportunity	2	0%	2	0%	2	0%	4	0%
Transport – EV road	Low / opportunity	0	0%	0	0%	5	1%	5	0%
<b>Total</b>		<b>784</b>	<b>100%</b>	<b>783</b>	<b>100%</b>	<b>803</b>	<b>100%</b>	<b>986</b>	<b>100%</b>

## Next steps

Following this initial assessment and in parallel with our work on risk screening for new potential investments, our next steps include:

- Confirmation of our approach to investments via financial intermediaries.
- Confirmation of our approach for other sectors (manufacturing and chemicals) to further reduce transition risks for new investments.

## 4.3 Physical risks

### Our approach

An update of our assessment of exposure of the existing portfolio to physical climate risks was undertaken to take account of changes in the portfolio over 2022. The scope of the assessment included investments that had reached operation stage or partial operation stage at 2022 year-end and included fixed assets where geographic co-ordinates could be provided. We did not therefore include projects that, for example, involved internet cables, telco towers, transmission and distribution infrastructure. We also did not include financial intermediaries. Where one investment covered several sites, exposure was split on a pro-rata basis between the sites.

**Based on the definition of climate risk from the IPCC<sup>16</sup>:**

**Risk = hazard x exposure x vulnerability**

#### PIDG considered:

**Hazards:** based on geographic co-ordinates of assets, PIDG used data provided by Moody's to identify six potential climate hazards, namely floods, heat stress, hurricanes and typhoons, sea level rise, water stress and wildfire.

Climate modelling uses different scenarios based on different levels of GHG emissions. Some of the most commonly used are the Representative Concentration Pathways (RCPs) used in the IPCC 5<sup>th</sup> Assessment Report. Four scenarios were developed RCP8.5 (high emissions scenario); RCP6.0 and RCP4.5 (medium stabilisation scenarios); RCP2.5 (low emissions scenario)<sup>17</sup>. Moody's application compares changes in temperature and weather between historical conditions (1975-2005) and predicted future conditions (2030-40), using the RCP 8.5 (business-as-usual) scenario. A score is provided for each asset (from 1-100) which is further categorised into risk level: none, low, medium, high and red flag.

**Vulnerability of sector:** PIDG assessed the vulnerability of each investment based on four indicators<sup>18</sup>, designed to capture the ways in which climate hazards could impact on investment performance. Each investment was assigned red-flag, high, medium or low, depending on a qualitative assessment of impact on the investment:

- Dependency of project operation/ outputs on natural resources and weather (including water availability).
- Climate sensitivity of market demand for project/ project outputs.
- Vulnerability of supply chain; reliance on secure transport routes and secure energy supply.
- Reliance on labour for project operation.

Results from this assessment were compared with sector vulnerabilities published by Moody's<sup>19</sup> and UNEP FI<sup>20</sup> and found to be broadly comparable.

**Exposure:** this was based on financial exposure at 2022 year-end (i.e. amount of debt outstanding, equity investment, guarantee outstanding).

<sup>16</sup> 1 - Climate Change: New Dimensions in Disaster Risk, Exposure, Vulnerability, and Resilience (ipcc.ch)

<sup>17</sup> Explainer: The high-emissions 'RCP8.5' global warming scenario (carbonbrief.org)

<sup>18</sup> Adapted from UNEP FI, Charting a New Climate, 2020 and finance-for-a-climate-resilient-future-2.pdf (citigroup.com)

<sup>19</sup> Moody's Investors Service, "Heat map: Sectors with \$3.4 trillion in debt face heightened environmental credit risk", December 2020

<sup>20</sup> UNEP FI, Charting a New Climate, 2020

**Vulnerability:** Of the investments included in the analysis, all were in sectors considered either moderately vulnerable or highly vulnerable to the impacts of climate change, refer to the table right.

**Hazards:** There was at least one hazard deemed ‘red-flag’ or ‘high’ risk<sup>21</sup> at the location of all but seven PIDG deals included in the analysis, refer to the table below.

**Table 11: PIDG exposure to climate hazards**

PIDG exposure (\$m)				
Hazard	Low	Moderate	High	Red flag
Floods	236	108	72	289
Heat stress	267	81	285	71
Hurricanes and typhoons	106	75	0	6
Sea level rise	166	1	0	63
Water stress	408	233	62	1
Wildfire	44	449	190	21

PIDG exposure (% of total)				
Hazard	Low	Moderate	High	Red flag
Floods	24%	11%	7%	29%
Heat stress	27%	8%	29%	7%
Hurricanes and typhoons	11%	8%	0%	1%
Sea level rise	17%	0%	0%	6%
Water stress	41%	24%	6%	0%
Wildfire	5%	46%	19%	2%

**Table 12: PIDG exposure by sector and their vulnerability to climate change<sup>22</sup>**

Sectors	PIDG Total Exposure (\$m)	Vulnerability
Power generation – thermal	149	High
Power generation – hydro	66	Moderate
Power generation – PV	127	Moderate
Power generation – biomass	16	Moderate
Gas pipelines, transportation and storage	13	High
Oil processing, transportation and storage	1	High
Transport – ports, ferry	8	High
Transport – air transport	21	Moderate
Transport – rail transport	35	Moderate
Transport – road transport	70	Moderate
Manufacturing – steel	30	Moderate
Manufacturing – cement	0	Moderate
Manufacturing – chemicals	32	Moderate
Manufacturing – other	20	High
Telecoms	0	Moderate
Housing/ construction	54	Moderate
Agri-infrastructure	2	High
Mining	0	High
Water, Sewerage and Sanitation	21	High
Bulk storage	38	Moderate
<b>not included</b>	<b>281</b>	
<b>Total</b>	<b>986</b>	

### Next steps

Following the portfolio assessment and in parallel with our work on risk screening for new potential investments, our next steps include:

- Development of methodology for overall physical climate risk score based on hazard exposure and sector vulnerability.
- Development of methodology for adjusted physical climate risk score based on climate risk management by sponsors.
- Inclusion of temporal aspects into overall methodology (as well as hazard exposure and sector vulnerability considered currently).
- Development of guidance to support PIDG teams working with sponsors to reduce and manage identified climate risks.
- Continued work to include system resilience in our physical climate risk assessment.

21. Based on the Moody's methodology, high risk is defined as "exposed today and exposure level is increasing" and red flag is defined as "Highly exposed to historical and/or projected risks, indicating high potential for negative impacts".

22. Note 'not included' figure includes investments where geographic co-ordinates were not available including projects that, for example, involved internet cables, telco towers, T&D infrastructure. We also did not include financial intermediaries.



## Appendix 1: Alignment with PCAF Standard

This appendix gives more detail as to how PIDG has reported financed emissions in line with the PCAF Standard 2<sup>nd</sup> Edition, in particular chapter 6 of the Standard, reporting recommendations and requirements. Note, we have calculated and checked the financed emissions in-house. These have not been validated externally but we will consider this in future years.

<b>PCAF reporting recommendations and requirements</b>	<b>PIDG alignment</b>
<b>Report using the operational or financial control consolidation approach</b>	PIDG has calculated financed emissions for all investments by PIDG companies as scope 3 category 15 emissions.
<b>Overall reporting requirements and recommendations</b>	<ul style="list-style-type: none"> <li>- Principles: Our GHG accounting and reporting is based on the principles of relevance, completeness, consistency, transparency, and accuracy.</li> <li>- Purpose: Our reporting aligns with our business goals i.e. for identifying and managing climate-related transition risks and as a starting point for developing an emissions reduction trajectory.</li> <li>- Frequency: Financed emissions were calculated at a fixed point in time, namely 31 December 2022, in line with the financial reporting cycle.</li> <li>- Recalculation and significance threshold: we have adopted a baseline recalculation policy (see Appendix 2). To date, no events (e.g. structural changes to the organisation) have occurred that would trigger the need to recalculate the baseline.</li> <li>- Form of reporting: this report is made available on our website.</li> <li>- Past performance: This report discloses financed emissions for 2019-22.</li> </ul>
<b>Coverage</b>	<p>Financed emissions were calculated for all investments and investment types made by PIDG, namely debt (EAIF), equity (InfraCo Asia and InfraCo Africa) and guarantees (GuarantCo) that have reached operation stage.</p> <p>Note while under the PCAF methodology, emissions from guarantees are only included when the guarantee is called and converts to a loan. PIDG wants to recognise the emissions from all guarantees so all are included here, whether the guarantee has been called or not, aware that we are mostly guarantying local banks that might not be reporting to TFCFD recommendations.</p> <p>Note PIDG does make some investments via financial intermediaries. These are not currently included in our GHG calculations as the PCAF methodology does not include this type of investment in the current version of the Standard.</p>
<b>Gases and units</b>	PIDG GHG calculations accounted for all 7 GHGs under the Kyoto protocol, which were converted to tonnes of carbon dioxide equivalent.
<b>Absolute emissions</b>	<ul style="list-style-type: none"> <li>- PIDG GHG financed emission calculations include combined scope 1 and 2 emissions of each investment. Figures are disaggregated at the PIDG company level which is equivalent to the asset level.</li> <li>- This report also includes emissions associated with PIDG operations i.e. scope 1 and 2 emissions and scope 3 emissions associated with business travel.</li> <li>- PIDG includes scope 3 emissions of investments where they are likely to be significant. At this stage, we have included scope 3 emissions from oil and gas infrastructure and processing, as well as from vehicles using roads infrastructure.</li> <li>- In some InfraCo investments, PIDG is the initial sponsor of a project. Lifetime emissions of these projects have not been reported here but this is something that will be included in future reporting.</li> <li>- PIDG does not retire carbon credits (and as far as we are aware our investee companies also do not retire carbon credits) to offset absolute emissions.</li> </ul>

<b>Avoided emissions and emission removals</b>	<ul style="list-style-type: none"> <li>- PIDG has included avoided emission calculations for grid connected renewable energy projects. These figures are reported separately from absolute emissions and do not take account of any carbon credits generated for these same emissions.</li> <li>- PIDG does not currently have any investments that generate emission removals.</li> </ul>
<b>Emissions intensity</b>	PIDG has included emission intensity of investments this year (scope 1 and 2 emissions / mUSD invested).
<b>Data quality</b>	<ul style="list-style-type: none"> <li>- This report presents the most recent data available i.e. as at 31 December 2022. In cases where data for 2022 was not available, data from an earlier year was used.</li> <li>- Data has been verified internally; external data verification is under consideration for future years.</li> <li>- A weighted data score of 2.24 was calculated across the PIDG group for scope 1 and 2 emissions.</li> </ul>

### Description of types and sources of data

<b>Activity data</b>	<p>Given the markets that PIDG operates in, GHG emissions are not typically reported by investee companies. At the end of each financial year therefore, PIDG asks for data needed for GHG calculations as part of its annual impact reporting.</p> <p>Data points requested are:</p> <ul style="list-style-type: none"> <li>- Activity data (e.g. MWh power generated, tonnes cement produced).</li> <li>- Energy consumption data (e.g. MWh power consumed from grid, tonnes of HFO burned).</li> <li>- GHG calculations (if available).</li> </ul>
<b>Assumptions</b>	<p>In cases where activity data is not provided by clients, PIDG will follow the following hierarchy:</p> <ul style="list-style-type: none"> <li>- Use data from the last year that data was available.</li> <li>- Use ex ante estimates from the time of the investment decision.</li> <li>- Estimate GHGs based on assumptions from a credible source, including the PCAF database, UNFCCC CDM methodologies, EIB carbon footprinting methodology<sup>23</sup>.</li> </ul>
<b>Emission factors</b>	<p>For calculating GHGs, PIDG typically uses emission factors from:</p> <ul style="list-style-type: none"> <li>- IPCC Guidelines for National GHG Inventories.</li> <li>- GHG conversion factors published annually by the UK government.</li> </ul> <p>For calculating emission reductions, PIDG uses grid emission factors published by the UNFCCC IFI TWG.</p>
<b>Attribution factor calculation</b>	<ul style="list-style-type: none"> <li>- For project finance deals, PIDG uses data on outstanding amount (at end of financial year, either debt or equity) and total project cost (at financial close).</li> <li>- For business loans and unlisted equity, data was requested from investee companies on EVIC (for listed companies) or total debt and equity (for unlisted companies) as at year end. If this wasn't available, data from the most recent year it was available was used.</li> </ul>

<sup>23</sup> EIB Project Carbon Footprint Methodologies

## Appendix 2: PIDG base year GHG recalculation policy

<b>Context</b>	<p>The PCAF Standard 2nd Edition states that financial institutions shall, in line with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard requirement, establish a baseline recalculation policy to define under which circumstances a recalculating of (base year) financed emissions is necessary to ensure the consistency, comparability, and relevance of the reported GHG emissions data over time.</p> <p>As part of this base year emissions recalculation policy, financial institutions shall establish and disclose the significance threshold that triggers base year emissions recalculations.</p>
<b>PIDG approach</b>	<p>PIDG has calculated and published GHG emissions associated with its operations and investments ("financed emissions") using a base year of 2019.</p> <p>We recognise that it may be necessary to recalculate base year emissions (or to establish a new, more recent base year) at certain points in time in order to ensure consistency and comparability of data over time. As outlined in the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard<sup>24</sup>, we will recalculate base year emissions when changes occur that have a significant impact on our GHG emissions. These are outlined below. PIDG defines the significance threshold that triggers base year emissions recalculations to be 10%, although in certain circumstances we may recalculate emissions for a smaller change.</p>
<b>Structural changes in the reporting organisation</b>	<p>This could include mergers, acquisitions, divestments, outsourcing, and insourcing.</p>
<b>Changes in calculation methodologies, improvements in data accuracy, or discovery of significant errors</b>	<p>PIDG is continually aiming to improve data quality by working with investee companies to collect complete and accurate data. PIDG is also planning to have GHG data verified by a third party in the future. Where data quality improvements and/or discovery of errors lead to changes in total emissions greater than the significance threshold, base year emissions will be recalculated.</p> <p>Similarly, if changes in methodologies, emission factors or other factors lead to significant changes in results, base year emissions will be recalculated.</p>
<b>Changes in the categories or activities included in the scope 3 inventory</b>	<p>PIDG is planning to increase the categories of scope 3 emissions included in its reporting over time to include, for example, employee commuting and homeworking. In this instance, if these lead to changes in total emissions greater than the significance threshold, base year emissions will be recalculated using historical data where available and/or estimates.</p>
<b>Timeline and reporting</b>	<p>Where recalculations are needed, these will be carried out at the end of the financial year and published in our next TCFD report.</p>

<sup>24</sup> [Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf \(ghgprotocol.org\)](#)