GPCA
Global Private Capital Association

The Climate Crisis: What GPs Need to Know

In collaboration with FMO: the Netherlands' Development Finance Company

About GPCA

The Global Private Capital Association, which was founded as the Emerging Markets Private Equity Association (EMPEA) in 2004, is a non-profit, independent membership organization representing private capital investors—inclusive of private equity, growth equity, venture capital, private credit and real assets strategies—who manage more than USD2t in assets across **Asia**, **Latin America**, **Africa**, **Central & Eastern Europe** and the **Middle East**.

Global Fund Managers

KKR

L CATTERTON

GENERAL ATLANTIC

actis

WARBURG PINCUS

Institutional & Direct Investors

TEMASEK

CDPQ

CALSTRS

CPP Investments

Regional/Country Fund Managers

NAVIS

openspace VENTURES

AFFIRMA CAPITAL

CITIC CAPITAL 中信資本

MULTIPLES

Development Finance Institutions

DFC U.S. International Development Finance Corporation

IFC International Finance Corporation WORLD BANK GROUP

ADB Asian Development Bank

SIFEM SWISS INVESTMENT FUND FOR EMERGING MARKETS

KFW DEG

GPCA

GPCA Offerings + Content

GPC Analytics is a proprietary data platform with fundraising, investment and exit activity.

GPCA maintains a curriculum of live & virtual practitioner-led investor trainings for PE and VC GPs, as well as institutional investors.

The program recognizes investments with extraordinary outcomes in environmental sustainability, social impact, gender/diversity & innovation.

GPCA members receive regional and country Data Insights, sector- and strategy-specific reports & investor surveys.

GPCA hosts regular live and virtual investor meetings to connect a global community of private capital investors.

NewsWatch is a weekly round-up of key private capital transactions across asset classes in global markets.

Search profiles of 300+ GPs, LPs & other industry stakeholders. Profiles include description, HQ, contacts, AUM & geographic focus.

Detailed portfolio company cases from fund managers across Asia, Latin America, Africa, CEE and the Middle East.

The Global Tech Brief is a bi-weekly review of tech transactions and innovations with cross-border applications.

GPCA

Baseline Questions

- How many funds have an ESG policy?
- How many funds have a dedicated, internal ESG resource?
- How many funds have a sustainability report?
- How many funds measure Scope 1 and 2 emissions?
  - For themselves
  - For their portfolio companies
- How many funds measure Scope 3 emissions?
- How many funds have a Net Zero target?
  - For themselves
  - For their portfolio companies
- How many funds follow the TCFD model for climate risk?

Agenda

0900	Introduction
0930	Scene Setting on Climate Risks and Opportunities
1000	Introduction of TCFD: Physical and Transition Risks
1100	Decarbonization and Transitioning to a Net Zero Economy
1145	GP Climate Journeys and Case Studies
1245	Lunch
1345	Climate Transition Opportunities
1430	Governance and Reporting
1515	Roundtable Discussion and Closing Remarks
1630	Networking Reception

To submit questions online

Go to slido.com or scan the QR code below

Enter 1180510

GPCA

Speakers

Milena Nikolova
Partner
Aera VC

Noel Peters
Principal Investment Specialist
ADB

Eileen Gallagher
Director, Climate
BSR

Roshini Bakshi
Managing Director, Private Equity & Head of Impact
Everstone

Steve Okun
Senior Advisor
GPCA

George Janssen
Senior Investment Officer
FMO

Vika Bhagat
Senior Technical Assistance Associate
FMO

Charissa Bosma
Sustainable Finance Officer
FMO

Bence Szegedi
Senior Director, ESG Portfolio Operations
Navis

Dominic Chan
AVP, ESG Investment Management
Temasek

GPCA

Attendees

GPCA

GPCA
Global Private Capital Association

Scene Setting on Climate Risks and Opportunities (30 minutes)

George Janssen Senior Investment Officer, **FMO**

Charissa Bosma Sustainable Finance Officer, **FMO**

Noel Peters Principal Investment Specialist, **ADB**

FMO: Why LPs/DFIs Care

FMO
Entrepreneurial Development Bank

CLIMATE CHANGE

Setting the Scene

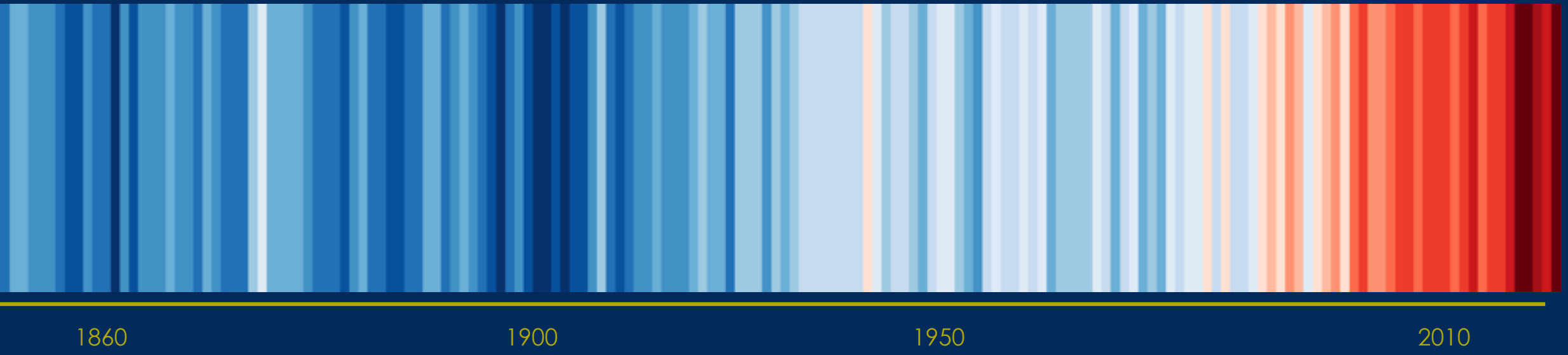


Image Source: www.climatecentral.org/showyourstripes

PART 1

CLIMATE CHANGE BUSINESS IMPACT

FMO
Entrepreneurial Development Bank

CLIMATE CHANGE IN THE MEDIA

Delhi suffers at 49C as heatwave sweeps India

16 May 2022

Climate change

Mekong coffee growers struggle with drought and heating climate

Drought aggravated by climate change is hurting coffee growers in the Mekong region, and intensive farming techniques are part of the problem

Pakistan floods 'made up to 50% worse by global heating'

Study says climate crisis likely to have significantly increased rainfall and made future floods more likely

'Not enough water': Cambodia's farmers face changing climate

Communities around Southeast Asia's biggest lake are feeling the effects of droughts and rising demand for land.

QUESTION 1

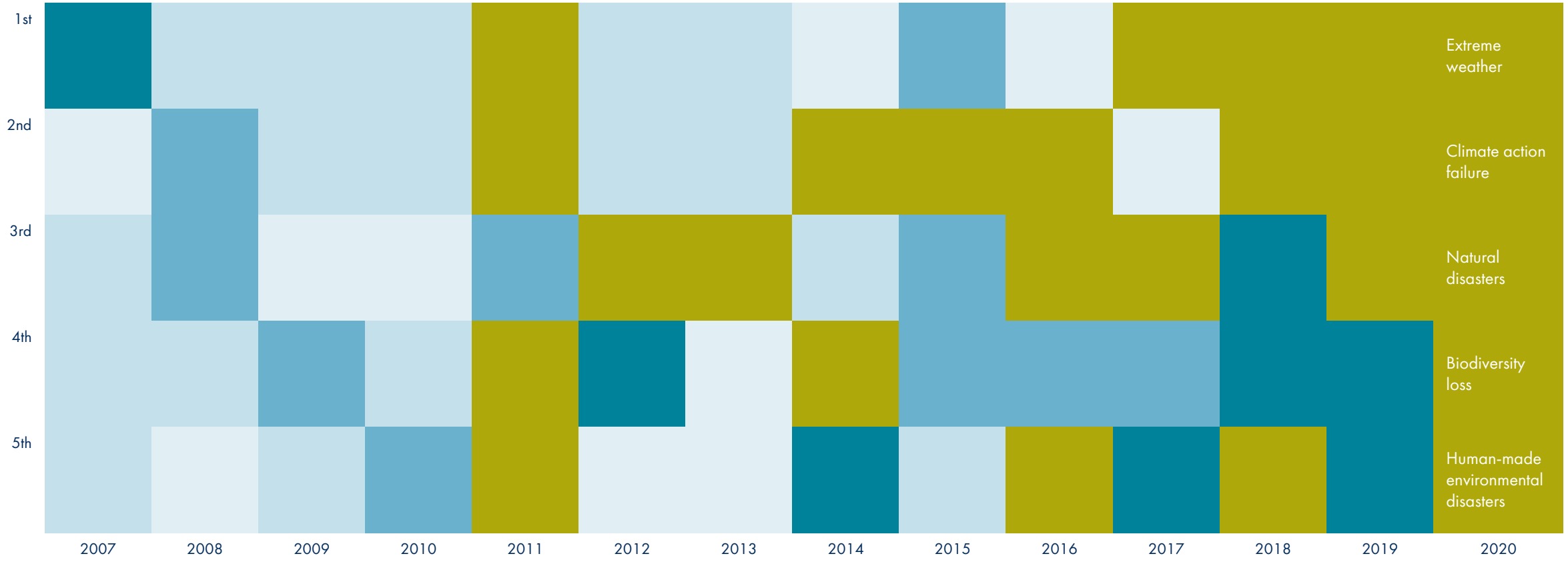
Do you foresee any business impacts from climate for your fund, and if so over what time horizon?

a. No, I do not think climate will impact my business.
b. Yes, it impacts business already
c. Yes, it will impact business in the next 1 to 5 years.
d. Yes, it will impact but only more than 10 years from now.

FMO
Entrepreneurial Development Bank

WORLD ECONOMIC FORUM: LIKELIHOOD OF RISKS

Top 5 Global Risks in Terms of Likelihood



ECONOMIC | ENVIRONMENTAL | GEOPOLITICAL | SOCIETAL | TECHNOLOGICAL

DROUGHTS, WATER STRESS, FLOODING, EXTREME WEATHER

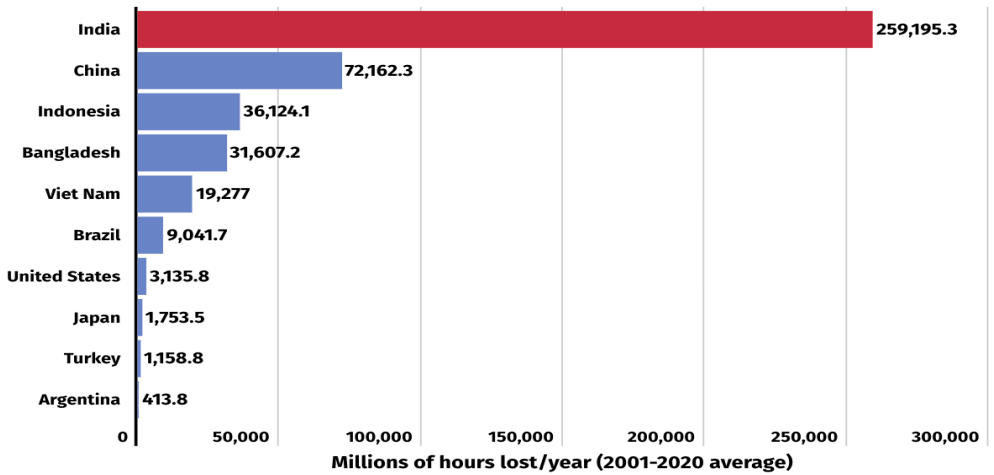
Singapore: limited domestic availability of water resources. Rising global temperatures have changed rainfall patterns, which affect the amount of water collected and stored in reservoirs.

India: flooding in 2021 cost $3.2 billion, affects 50,000 people

Cambodia: Temperature rise and associated heat stress are likely to cause Cambodia's GDP to reduce by at least 10% by 2050.

India: Hours of Labour Lost

India Lost 259 Billion Hours of Labour Annually due to Global Warming (Between 2001 and 2020)



Source: Global labor loss due to humid heat exposure underestimated for outdoor workers

Even fractions of a degree of global climate change can have large-scale implications for labour

The loss of these productive hours cost India $624 billion

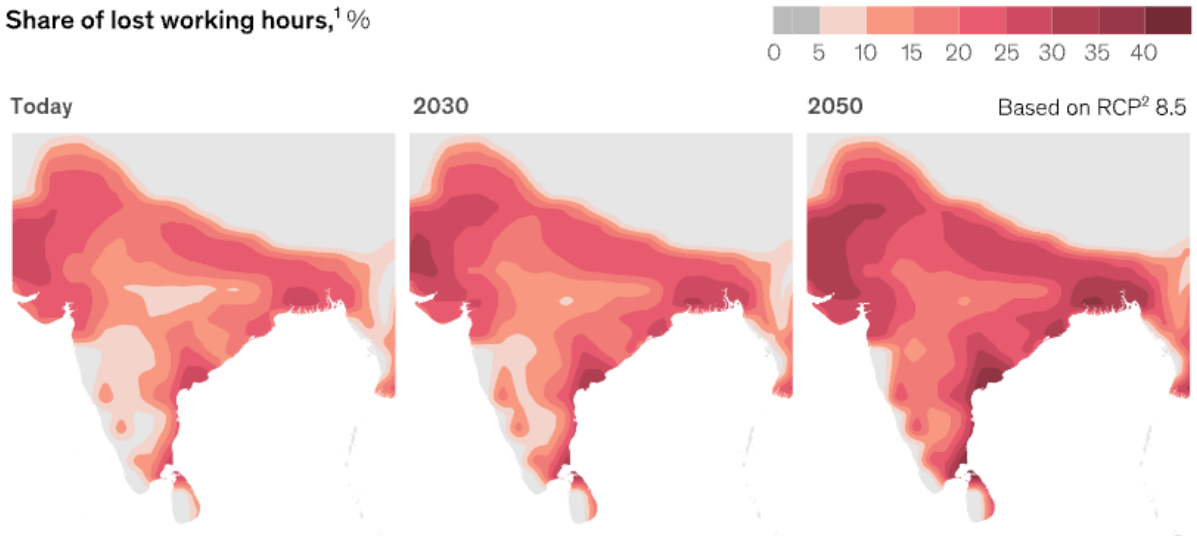
Over the last four decades, heat related labour losses globally have increased by at least 9% (>60 billion hours annually)

Source: *https://www.business-standard.com/article/current-affairs/india-lost-259-bn-hours-of-labour-annually-because-of-global-warming-122012500258_1.html*

Climate Crisis' Impact in India

North of India has historically exhibited some of the world's hottest wet-bulb temperatures

The affected area and intensity of extreme heat and humidity is projected to increase, leading to a higher expected share of lost working hours in India.



Given the inherent risk of rising wet-bulb* temperatures, adaptation is likely to happen in India but may need to be accelerated.

- Shifting working hours for outdoor workers
- Undertaking albedo heat management efforts
- Establishing early-warning systems and cooling shelters to protect people
- Considering movement of people and capital from high-risk areas
- Accelerate the transition out of outdoor work already underway

Wet-bulb temperature is an indicator that combines air temperature and relative humidity and provides a more accurate measure of heat stress on the human body than air temperature.

Source: *https://www.mckinsey.com/capabilities/sustainability/our-insights/will-india-get-too-hot-to-work*

GPCA

Climate Crisis' Impact in Southeast Asia – Philippines Snapshot

12,600 fatalities and $10b loss in the last decade despite only accounting for 0.3% of global emissions

1. Sea level rise
2. Coastal erosion
3. Flooding
4. Increase in frequency & severity of tropical cyclones
5. Extreme drought
6. Rising urban heat index
7. Extreme rainfall
8. Climate influenced diseases
9. Wind patterns
10. Biodiversity loss

The Philippines Will Be One of the Most Negatively Impacted Counties in the World from the Climate Crisis: This will impact nearly every company that operates in the Philippines

Source: https://www.pna.gov.ph/articles/1164164

Adapting to Persistent Floods: Philippines

Some motorbike taxi drivers in Hagonoy, Philippines, have remodelled their vehicles to adapt to persistent flooding in the area. They have installed strips of metal and steel tubes to elevate their bikes, helping commuters stay dry while travelling through flooded streets.

"The floods do affect us. For us motorbike taxi drivers, our vehicles are not made to cross floodwaters, so what we did was we modified them in order to make a living despite having year-long floods," said Russel Lopez, who has been a motorcycle taxi driver for the past 10 years.

Transition Opportunities: Adapting to Persistent Floods

The Indonesia government aims to have 2 million electric motorbikes by 2025

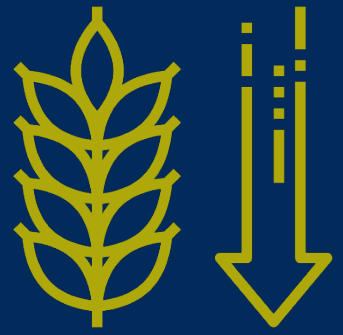
- Travel as far as 100 kilometers if the three batteries are full.
- Distribution spreading Indonesia.
- Opportunities for expansion across South and Southeast Asia.

FOOD IN 2050

DEMAND

50%
INCREASE IN DEMAND BY 2050

YIELDS



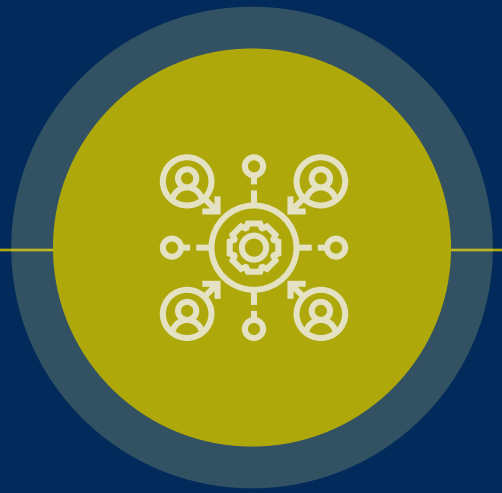
30%
DECREASE IN CROP YIELD BY 2050 WITH NO ADAPTATION

LIVELIHOODS

500 MLN
SMALL FARMS MOST AFFECTED

CURRENT SITUATION

FMO
Entrepreneurial Development Bank



Pressure will come from multiple fronts:

- Regulators
- Government
- Investors
- Investees
- Consumers
- Activists

QUESTION 2

Where will the biggest pressure come from on your fund to act on climate change?

a. Regulation & supervision
b. Government policies
c. Investors
d. Investees
e. Activists
f. other

FMO
Entrepreneurial Development Bank

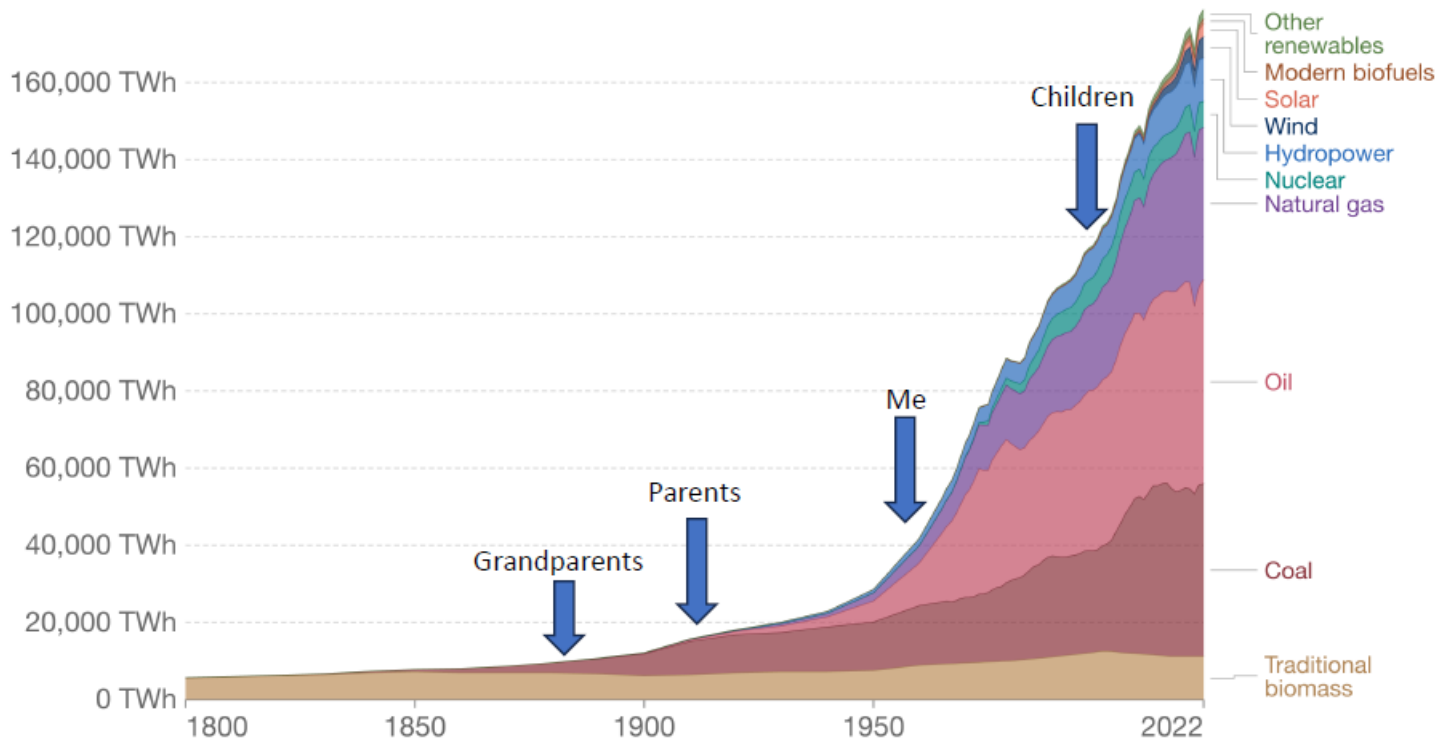
Energy consumption tsunami

Global primary energy consumption by source

Primary energy is calculated based on the 'substitution method' which takes account of the inefficiencies in fossil fuel production by converting non-fossil energy into the energy inputs required if they had the same conversion losses as fossil fuels.

Our World in Data

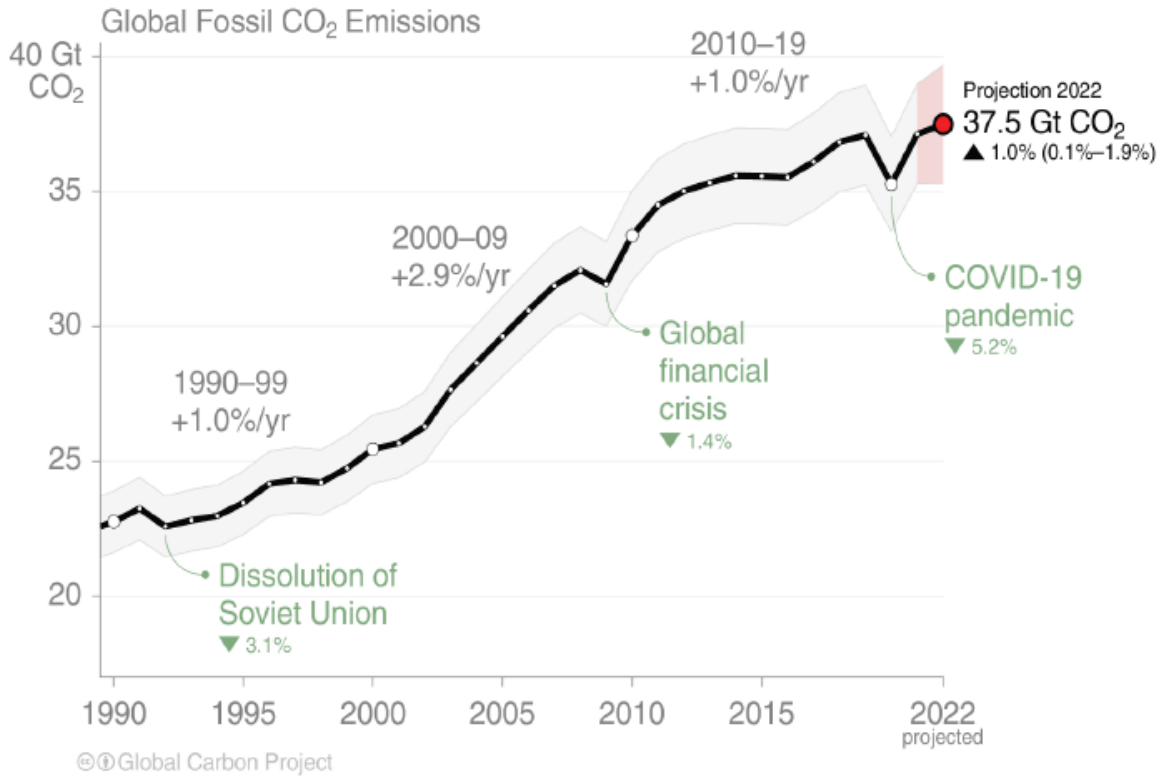
Presentation last saved: Just now



Source: Energy Institute Statistical Review of World Energy (2023); Vaclav Smil (2017)
OurWorldInData.org/energy • CC BY

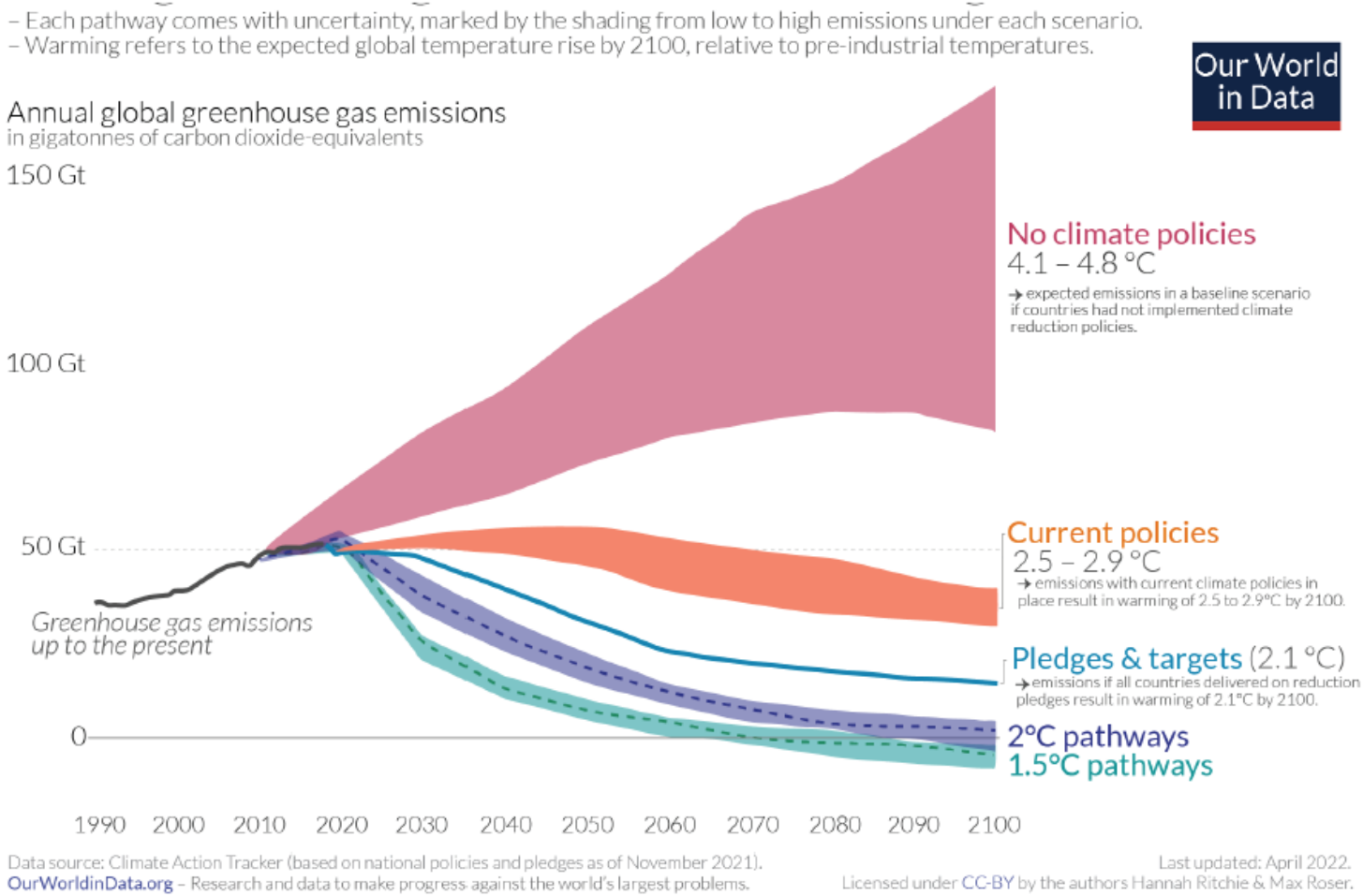
ADB

Global fossil CO2 emissions 2022: 36.8 Gt Highest ever



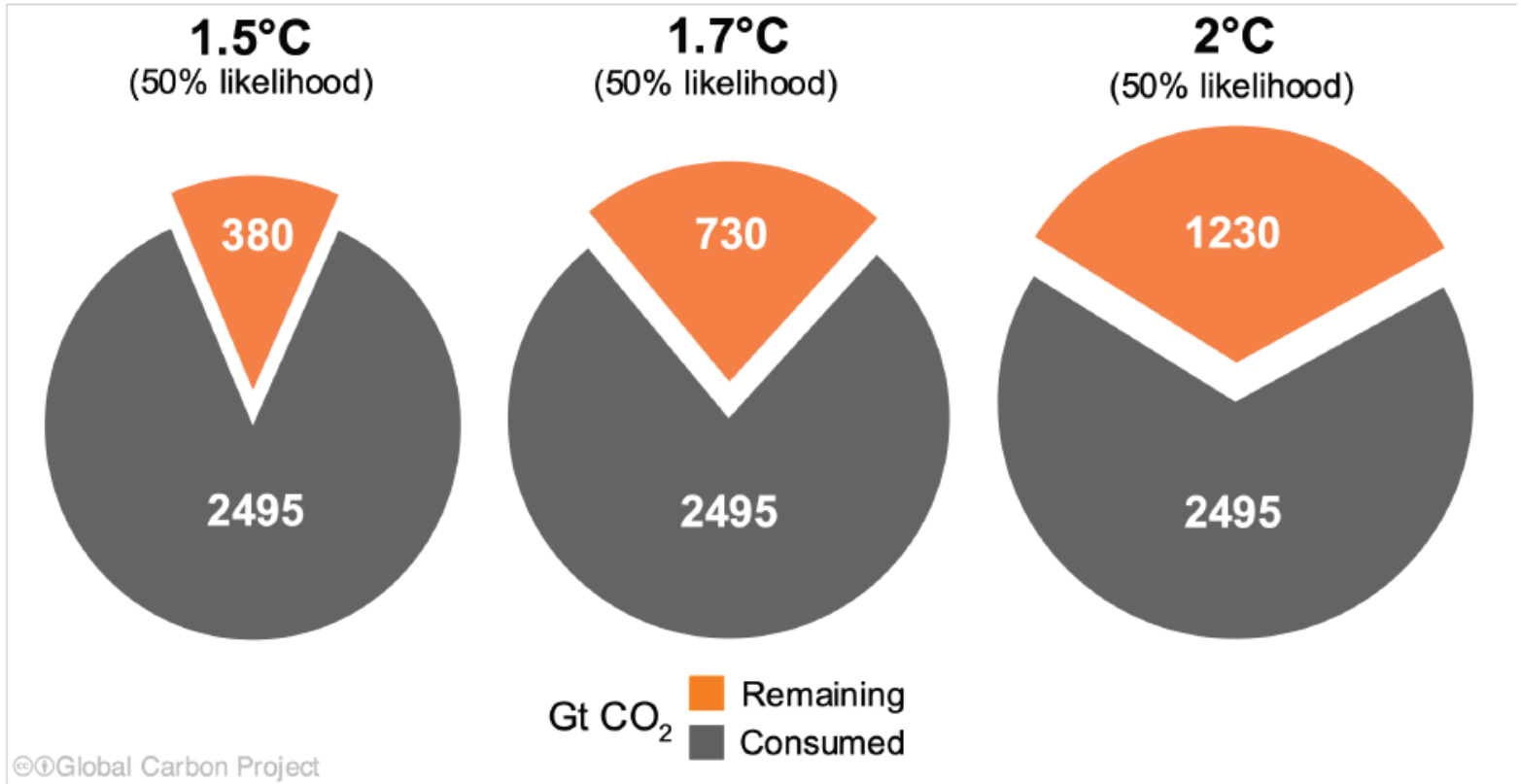
When including cement carbonation, the 2021 and 2022 estimates amount to 36.3 ± 2 $GtCO_2$ and 36.6 ± 2 $GtCO_2$ respectively
The 2022 projection is based on preliminary data and modelling.
Source: Friedlingstein et al 2022; Global Carbon Project 2022

Global GHG emissions and warming scenarios



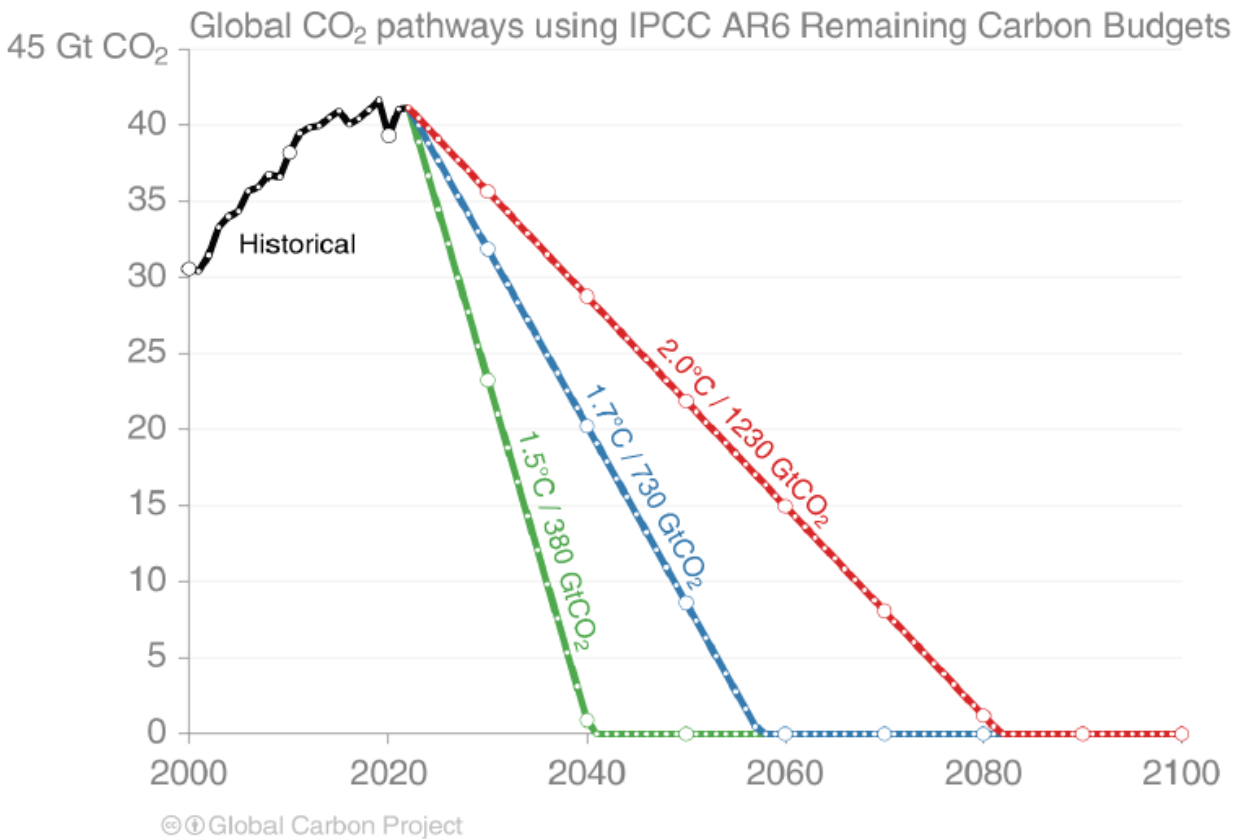
ADB

Remaining carbon budget



The remaining carbon budgets are updated from IPCC AR6 WG1 Chapter 5 by removing additional historical emissions since 1 January 2020.
Quantities are subject to additional uncertainties e.g., future mitigation choices of non-CO_2 emissions
Source: IPCC AR6 WG1; Friedlingstein et al 2022; Global Carbon Budget 2022

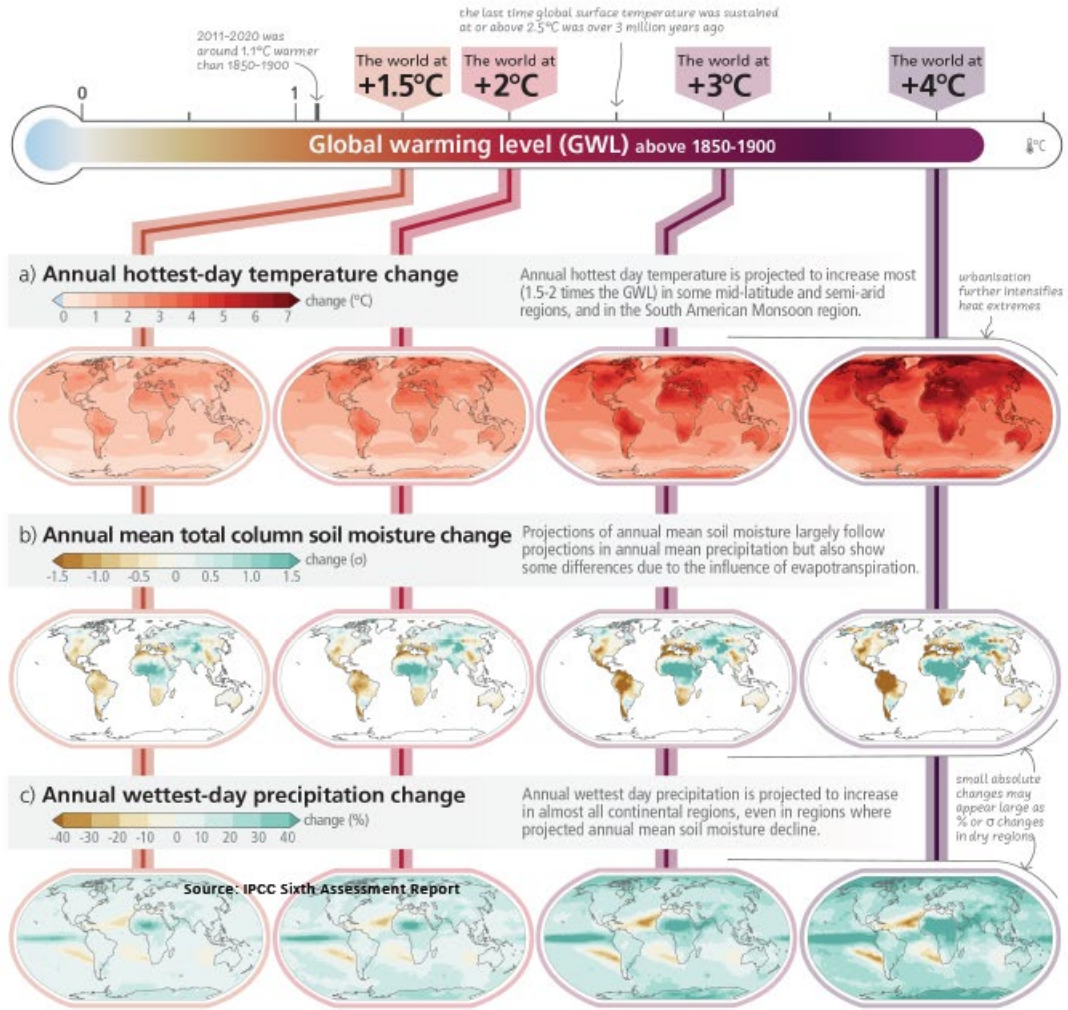
Remaining carbon budget



Source: Friedlingstein et al 2022; Global Carbon Project 2022

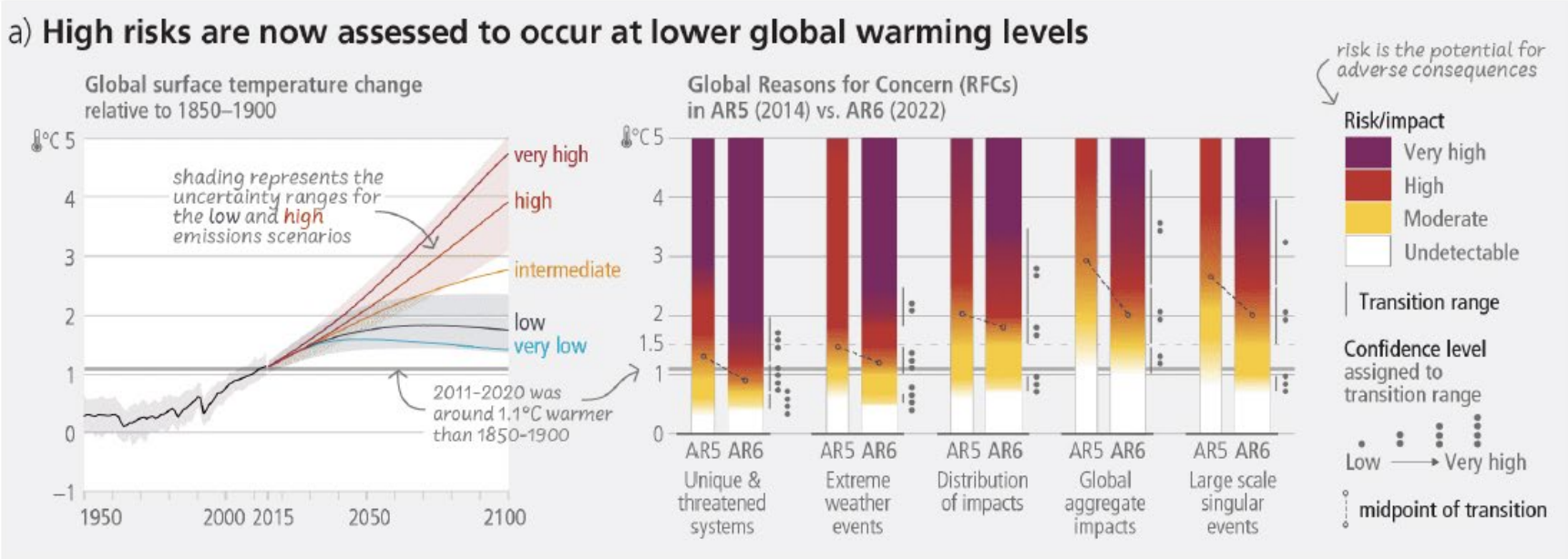
Regional changes and extremes

With every increment of global warming, regional changes in mean climate and extremes become more widespread and pronounced

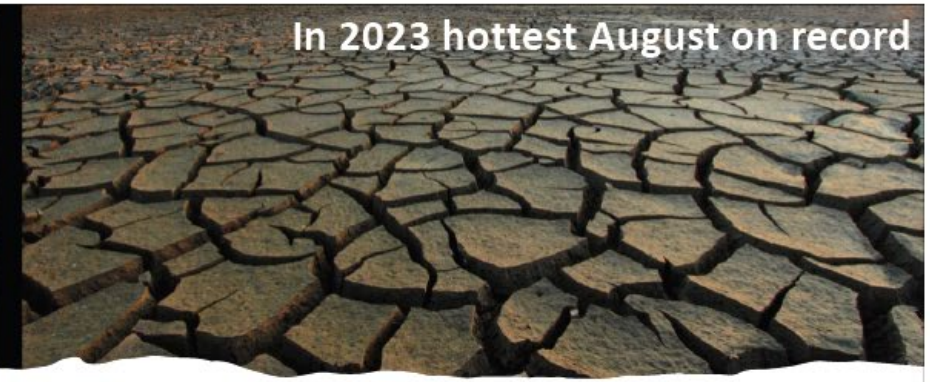


Source: IPCC Sixth Assessment Report

Risks are increasing with every increment of warming (IPCC 6th Assessment Report)



"Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020. Global greenhouse gas emissions have continued to increase, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals (high confidence)."



It’s already happening

FMO Entrepreneurial Development Bank

Investment Opportunities

Climate-resilient infrastructure
(e.g. green buildings, green rail transport infrastructure, energy efficiency)

Circular economy systems
(e.g. waste and recycling management; sustainable packaging and fabrics)

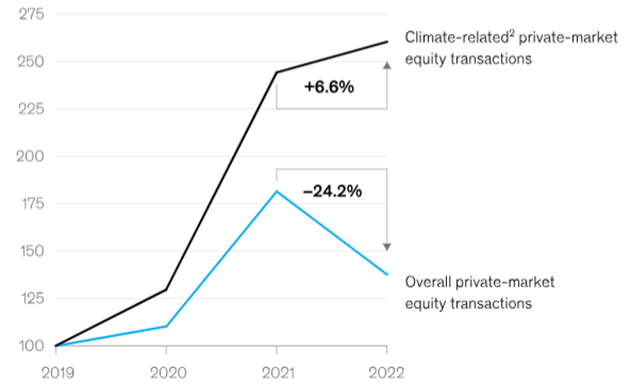
Renewable energy
(e.g. renewable energy generation, energy storage systems)

Climate tech
(e.g. weather forecasting, green rail transport infrastructure, energy efficiency, carbon removal technologies, carbon capture and storage technologies)

Sustainable food systems
(e.g. regenerative agriculture, drought-resilient seeds, forestry, ecosystem restoration)

Climate-related private-market equity investments have grown significantly despite a slowdown in the broader market.

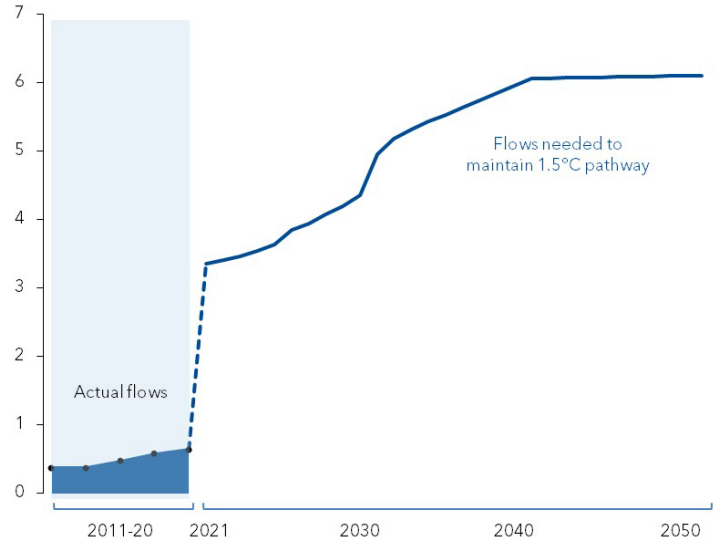
Private-market equity deal volume,[1] index (100 = 2019)



Fundraising Opportunities

Governments, MDBs, DFIs, and the private sector commit increasing amounts to climate objectives to bridge the finance gap

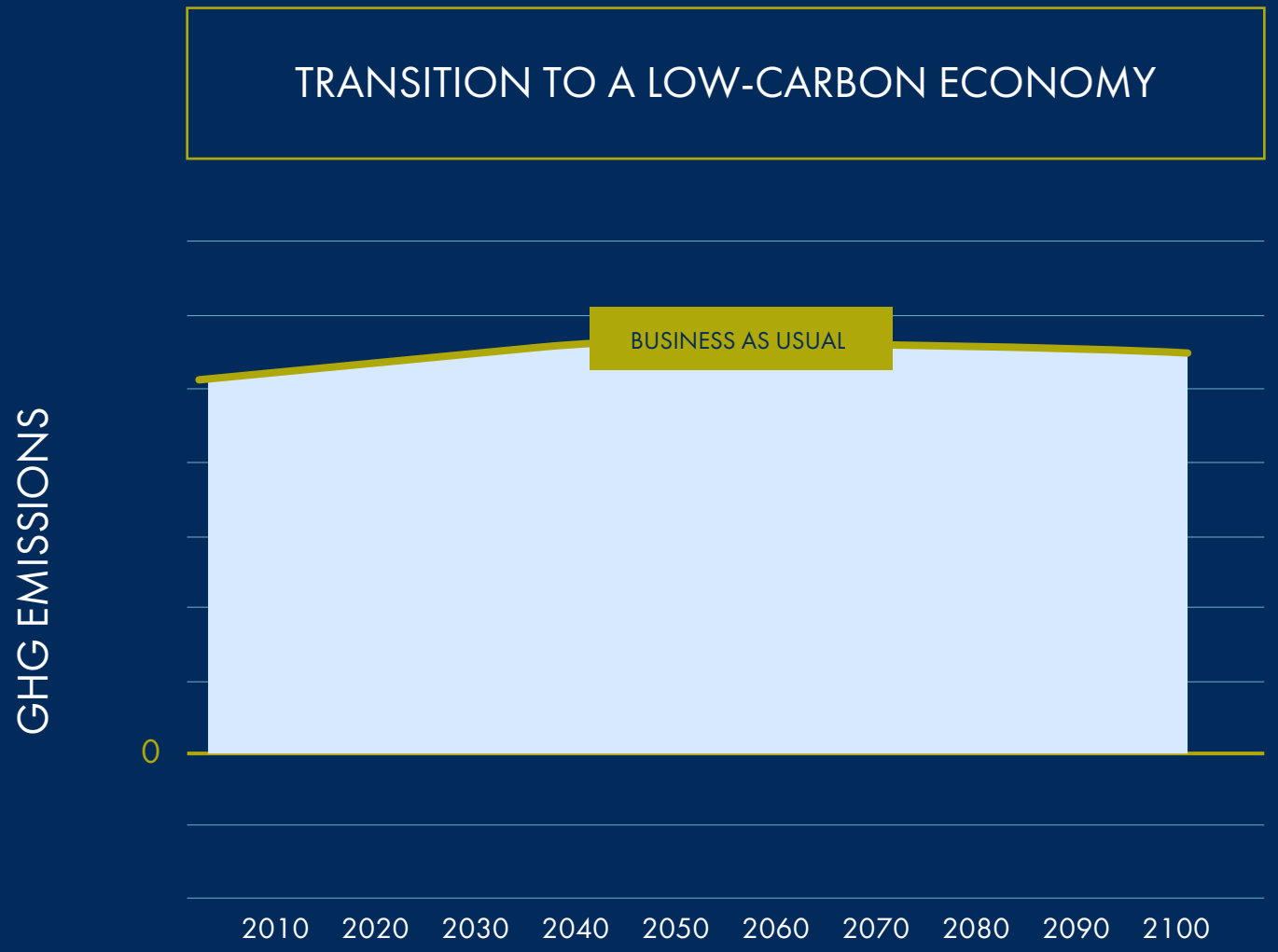
Falling short
At $630 billion a year, climate finance is a fraction of what's needed for developing countries.
(global climate financing, US$ trillion)



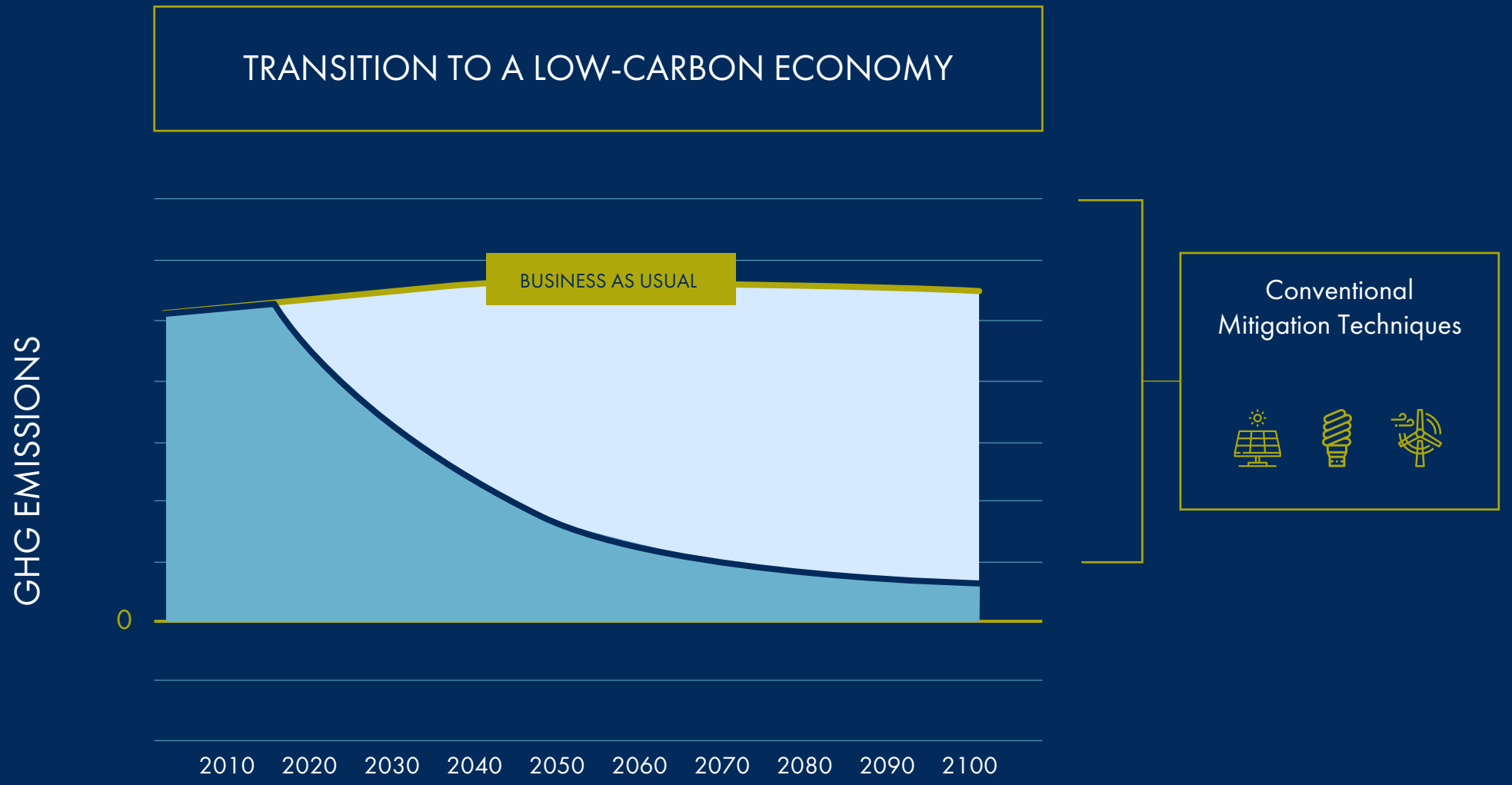
Source: Global Landscape of Climate Finance 2021, Climate Policy Initiative.

IMF

HOW THE WORLD CAN GET TO NET ZERO

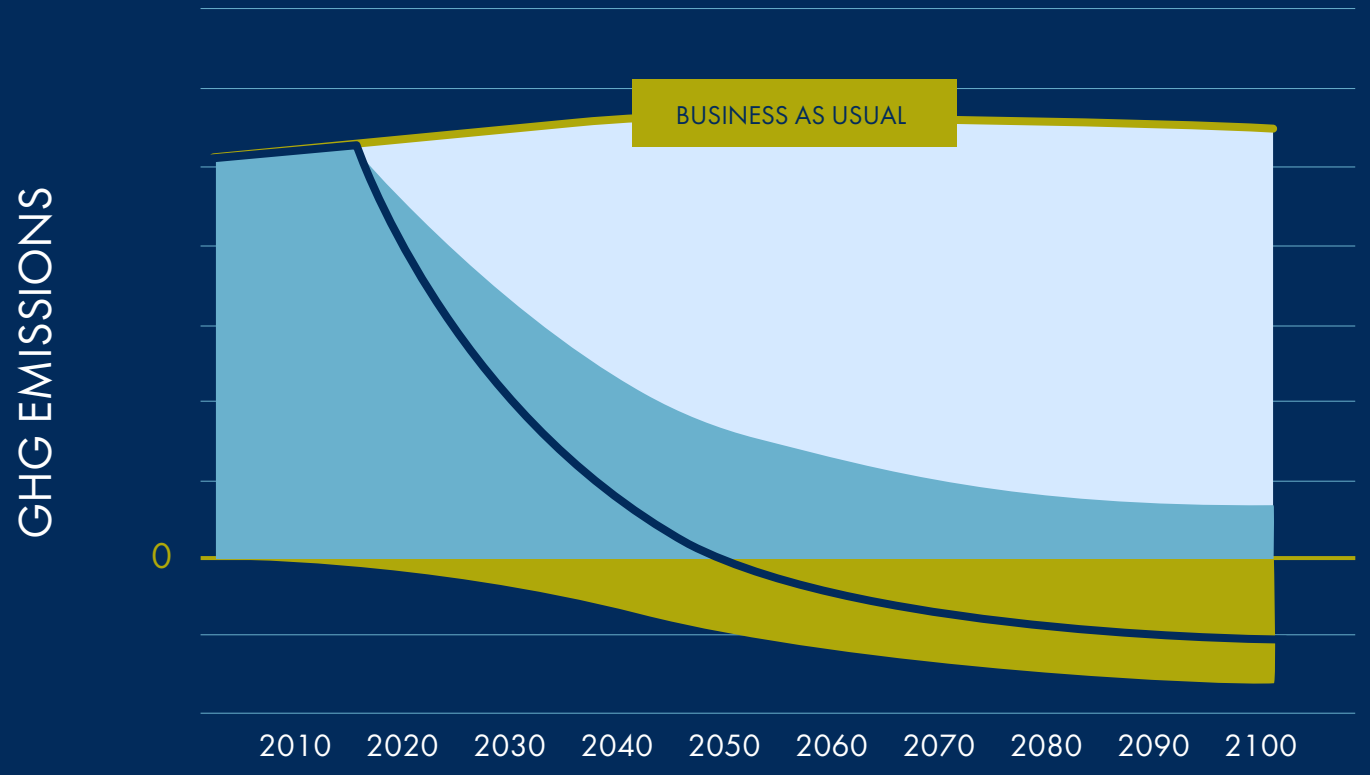


HOW THE WORLD CAN GET TO NET ZERO



HOW THE WORLD CAN GET TO NET ZERO

REMOVE CARBON TO BALANCE OUT REMAINING EMISSIONS

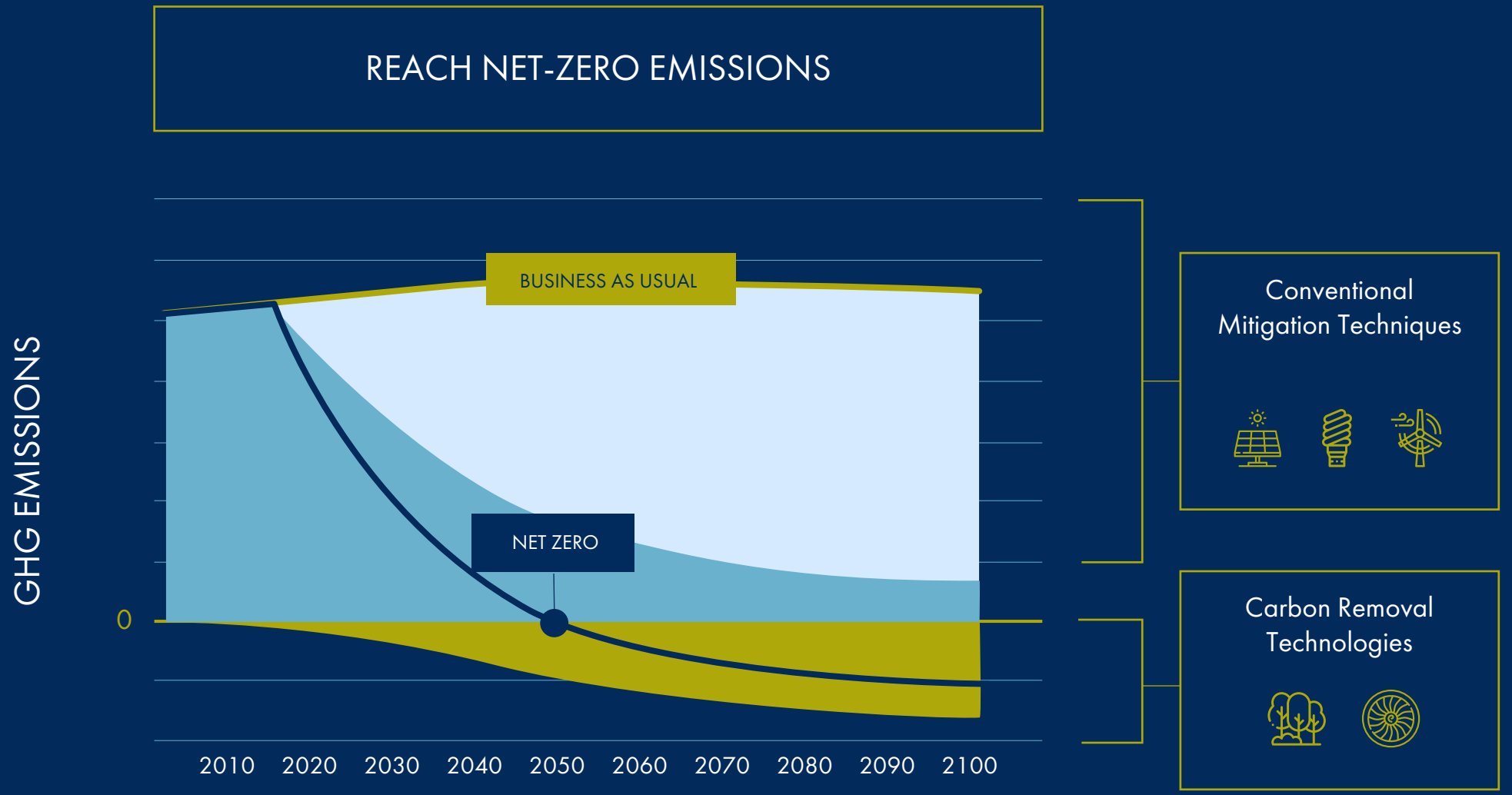


Conventional Mitigation Techniques

Carbon Removal Technologies

HOW THE WORLD CAN GET TO NET ZERO

FMO Entrepreneurial Development Bank

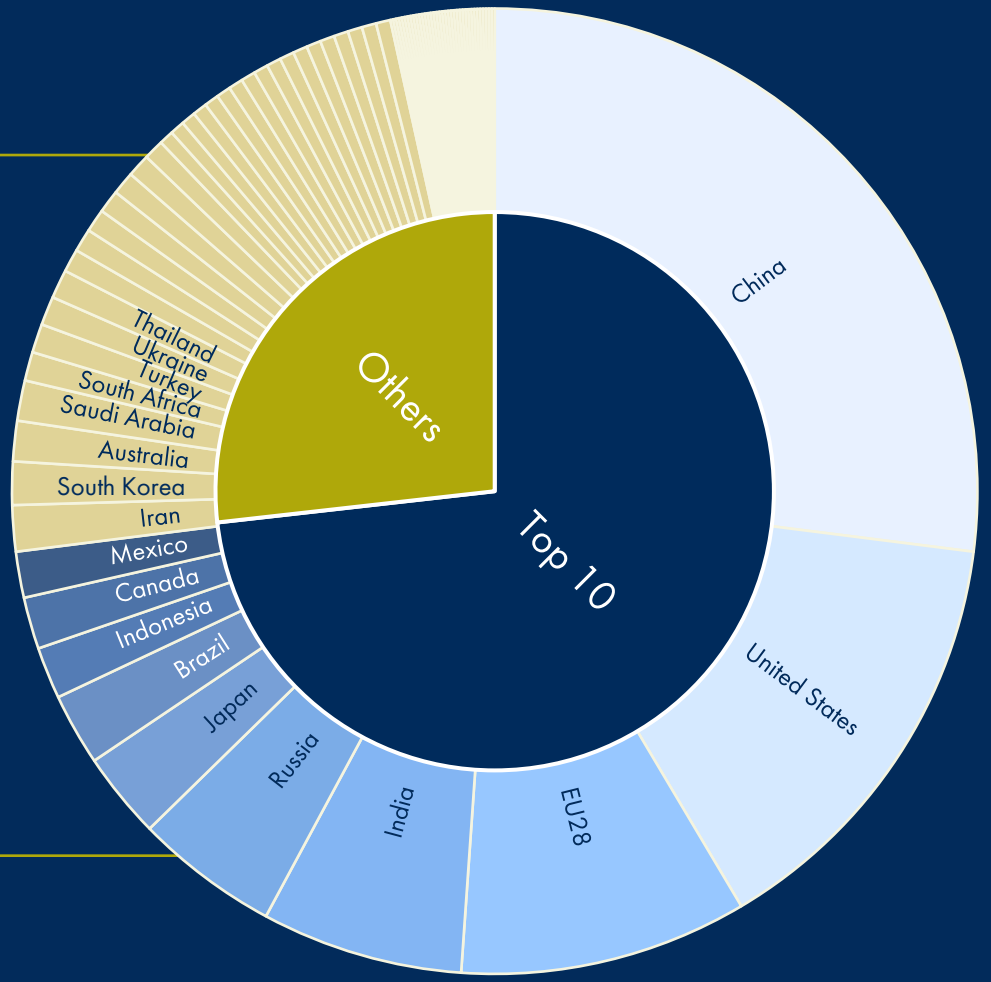


WHO IS PRODUCING ALL THE EMISSIONS?

A small number of countries contribute the vast majority of greenhouse gas emissions, with the

top 10 emitters accounting for over two-thirds

of annual global greenhouse gas emissions.



Global Private Capital Association

Introduction of TCFD (45 minutes)

Charissa Bosma Sustainable Finance Officer, **FMO**

Eileen Gallagher Director, Climate, **BSR**

Steve Okun Senior Advisor, **GPCA**

Roshini Bakshi Managing Director, Private Equity & Head of Impact, **Everstone**

FMO
Entrepreneurial Development Bank

CLIMATE CHANGE

TCFD as a model for assessing climate risks and opportunities

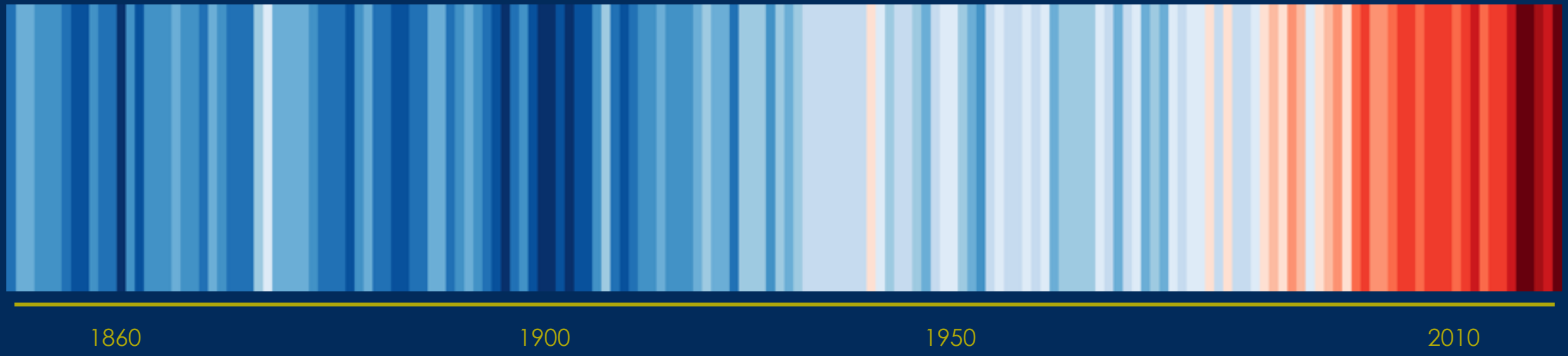


Image Source: www.climatecentral.org/showyourstripes

HOW TO NAVIGATE THIS CHANGING LANDSCAPE

FMO
Entrepreneurial Development Bank

01

WHERE TO GO

Vision of Fund Manger

02

SELECT A ROUTE:

Strategy and Risk Management

03

NAVIGATE:

Set Priorities

04

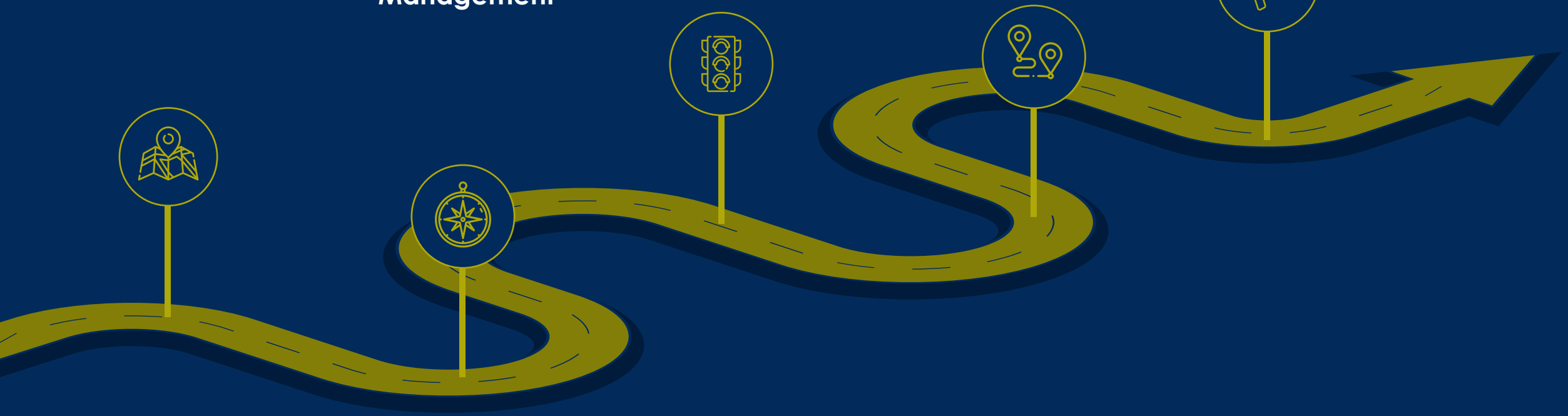
SET MILESTONES:

Metrics and Targets

05

COMMUNICATE:

TCFD

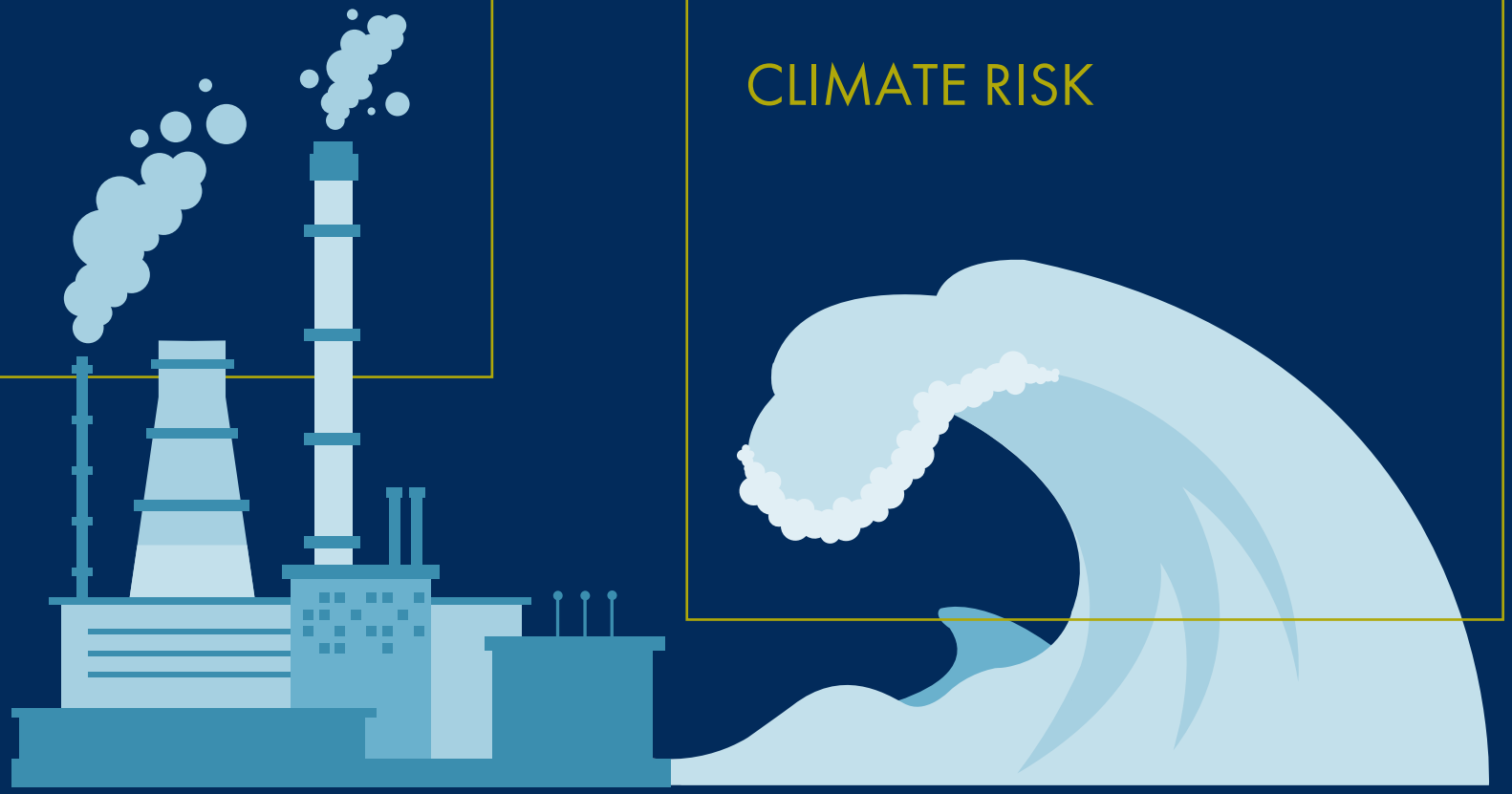


E&S RISK VERSUS CLIMATE RISK MANAGEMENT

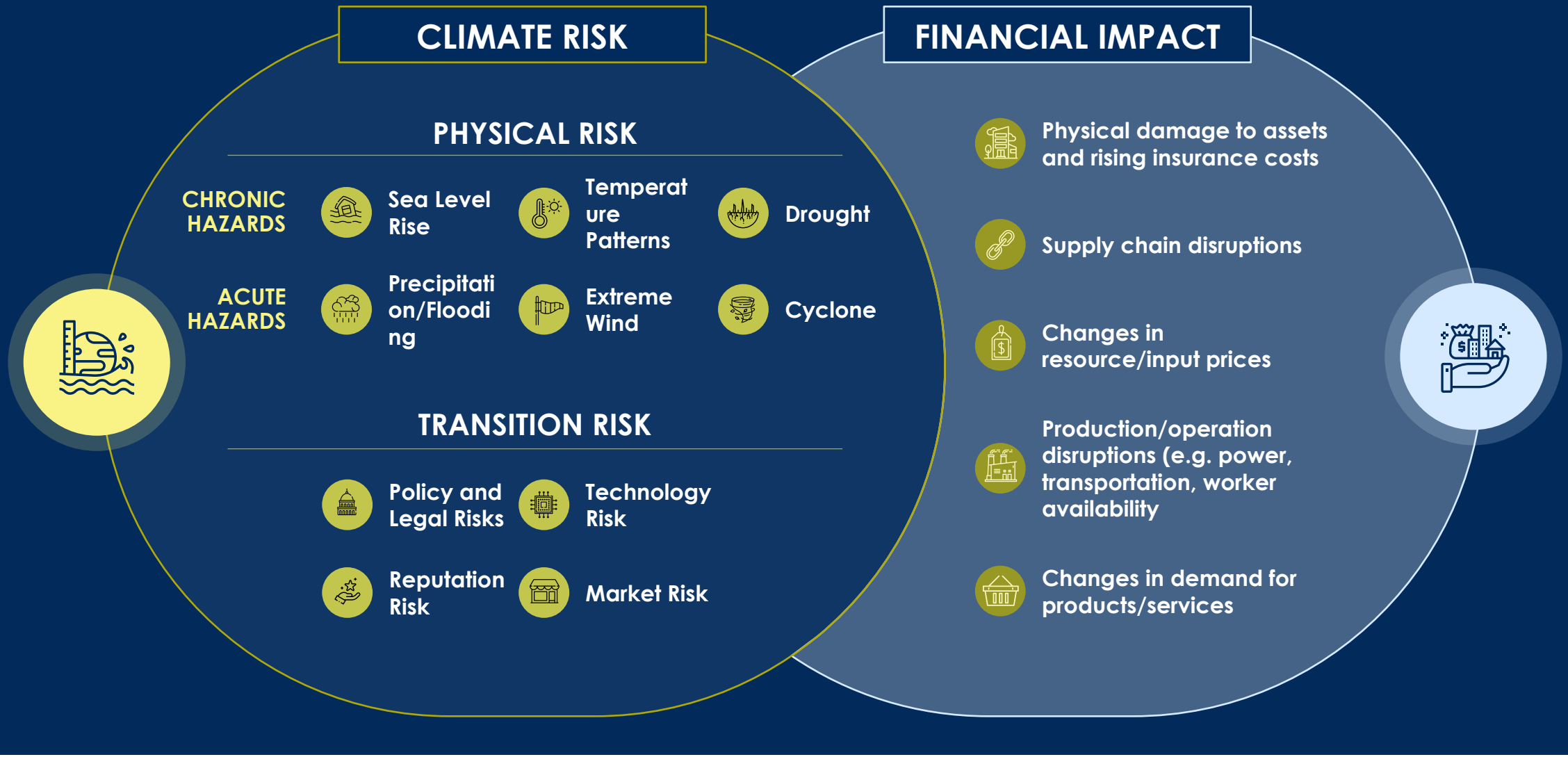
FMO
Entrepreneurial Development Bank

E&S RISK

CLIMATE RISK



RISK AND IMPACT



Source: Climate Finance Advisors (2019)

FMO
Entrepreneurial Development Bank

CLIMATE RISK MANAGEMENT: WHY IS IT DIFFICULT?

THE TIME HORIZON CHALLENGE

Photo: www.flickr.com/photos/herbraab/20279078454/

FMO
Entrepreneurial
Development
Bank

PHYSICAL RISK

DIRECT & INDIRECT TRANSMISSION

FMO
Entrepreneurial Development Bank

TRANSITION RISK

DIRECT & INDIRECT TRANSMISSION

© Mark

Two Major Frameworks on a Company's Relationship with Climate

A company's impact on the climate is addressed by the Paris Agreement. Reducing companies' emissions helps us all avoid unmanageable climate risks.

The climate's impact on a company is addressed by the Taskforce on Climate-related Financial Disclosures. All companies will need to manage unavoidable climate risks.

SCIENCE BASED TARGETS

The SBTi's NET-ZERO STANDARD

TRANSITION PATHWAY INITIATIVE

BUSINESS AMBITION FOR 1.5°C

The Paris Agreement

Defines a climate-resilient world through a global temperature goal and emissions reduction goal.

United Nations Climate Change

Taskforce on Climate-related Financial Disclosures

Framework for companies to disclose climate-related risks. By extension, it defines key actions for companies to manage these risks.

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

ISSB

IFRS International Financial Reporting Standards

CDP

PRI Principles for Responsible Investment

SASB

GRI

CDSB Climate Disclosure Standards Board

Source: The Paris Agreement, TCFD

Climate Disclosures are Being Mandated Across the Globe

Companies that align with the Paris Agreement will get ahead of inbound regulation.

- The **UK SDR** is intended to create an integrated and streamlined framework that brings together sustainability-related reporting requirements (including climate) under one roof for corporates and financial institutions. Final statement due EOY.
- For accounting periods from January 2022, **listed issuers** in scope of the UK Financial Conduct Authority's (FCA) **climate-related disclosure rules are expected to describe their plans for transitioning to a low-carbon economy.**
- August 2023: the FCA signaled its intention to consult on **transition plan disclosures by listed companies in line with the TPT Disclosure Framework**, alongside its consultation on implementing UK-endorsed ISSB Standards. These new requirements are anticipated to come into force for accounting periods from January 2025. **The first reporting would begin from 2026.**

- EU regulation comprises the **Sustainable Finance Disclosure Regulation (SFDR); Corporate Sustainability Reporting Directive (CSRD); and EU Green Taxonomy Regulation.** The SFDR applies at asset manager level and product/fund level. The final CSRD entered into force on **January 5, 2023.**
- The European Commission adopted the **European Sustainability Reporting Standards (ESRS)** as a delegated act of the CSRD, and this act details the components of a corporate **climate transition plan.**
- All large* European companies and those **listed on the EU-regulated markets, including EU subsidiaries of non-EU parent companies** will have to apply the new rules for the first time in the **2024 financial year, for reports published in 2025.** CSRD requires a third-party assurance and external auditing (limited assurance).

- The US Securities and Exchange Commission (US SEC) developed a proposed rule, **The Enhancement and Standardization of Climate-Related Disclosures for Investors**, in early 2022 (this proposal has not yet been finalised by the SEC and is therefore subject to change).
- Under the proposed rule, **companies with a US listing** would present climate-related financial metrics as well as a discussion of climate-related impacts on financial estimates and assumptions in a footnote to the audited financial statements.
- Registrants that have adopted a climate transition plan as part of its climate-related risk management strategy would be required to disclose a description of the plan under the proposed rule. The proposed SEC requirements do not mandate exactly what should be disclosed about the plan.

- SGX mandates climate related disclosures based on **TCFD recommendations for issuers in 5 industries** from FY2024 and **proposes** mandatory climate reporting mirroring ISSB for all **listed issuers and large non-listed companies** from FY2025.
- The Monetary Authority of Singapore (MAS) issued a set of **consultation papers proposing Guidelines on transition planning by banks, insurers and asset managers** to enable the global transition to a net zero economy. Comments welcome by 18 Dec 2023.
- The Guidelines on Transition Planning set out MAS' supervisory expectations for **financial institutions to have a sound transition planning process to enable effective climate change mitigation and adaptation measures by their customers and investee companies** in the global transition to a net zero economy and the expected physical effects of climate change.

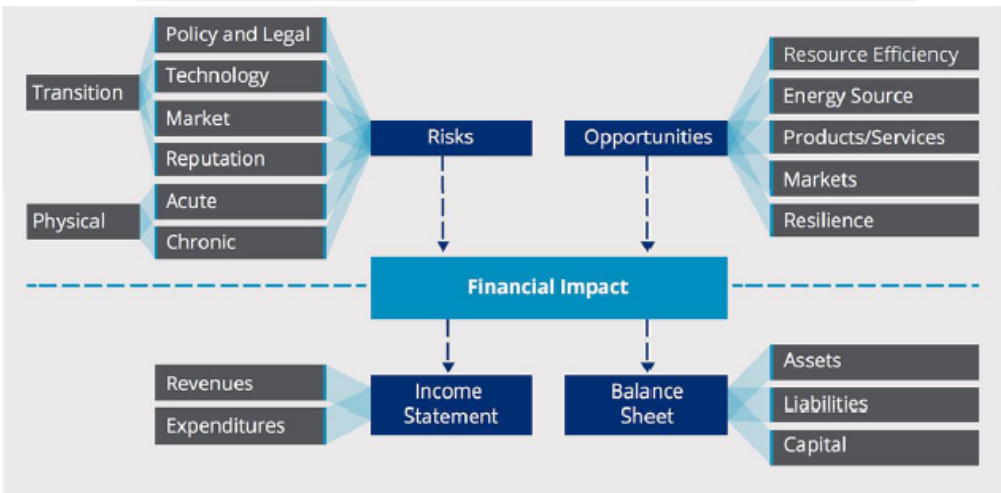
https://transitiontaskforce.net/wp-content/uploads/2023/10/TPT-Summary-Recommendations.pdf
The TPT Disclosure Framework in the Global Landscape - Transition Taskforce
* over EUR 20 million in total assets, a net turnover of EUR 40 million and/or 250+ employees

The Taskforce on Climate-Related Financial Disclosures Helps Companies to Understand their Climate Risk

The TCFD Recommendations have become a *de facto* standard for climate risk management

What are they?

- They provide guidance on how to disclose **decision-useful, consistent, comparable, reliable, clear and efficient information** on climate-related risks and opportunities, to investors, lenders, and underwriters.
- The recommendations are **for disclosures in mainstream financial filings** although disclosures typically occur in the sustainability report, a specialized climate report, or the annual report.
- The recommendations themselves span four pillars: **governance, strategy, risk management, and metrics and targets.**



TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Source: TCFD, Final Recommendations

The TCFD Recommends Climate-related Scenario Analysis

The Task Force on Climate-related Financial Disclosures (TCFD) recommends that companies should undertake **climate scenario analysis** to disclose the "resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2ºC or lower scenario."

The Recommendations specify that disclosure of this analysis will assist investors, underwriters, insurers and other stakeholders to better understand:

- the degree of **robustness of the organization's strategy and financial plans** under different plausible future states of the world;
- how the organization may be positioning itself to **take advantage of opportunities** and plans to **mitigate or adapt to climate-related risks**; and
- how the organization is challenging itself to **think strategically** about longer-term climate related risks and opportunities.

Figure 4

Recommendations and Supporting Recommended Disclosures

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures	**Recommended Disclosures**	**Recommended Disclosures**	**Recommended Disclosures**
a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Opportunities and Challenges with TCFD's Recommended Scenario Analysis

Unfortunately, the TCFD does not specify how to implement the recommendations, leaving uncertainty and room for interpretation, which is particularly problematic for one recommendation: **using scenario analyses** to assess climate-related risks and opportunities.

The IFRS Foundation's International Sustainability Standards Board (ISSB) unanimously confirmed that companies will be **required to use climate-related scenario analysis** to report on climate resilience and to identify climate-related risks and opportunities to support their disclosures.

As of 2024, ISSB will take over responsibility for monitoring progress of companies' climate-related disclosures from the TCFD. ISSB is now considered the primary authority on climate-related disclosures

- With a potential shift towards TCFD-aligned mandatory disclosure, aligning with TCFD recommendations will be crucial, **yet many struggle to undertake appropriate climate scenario analyses**.

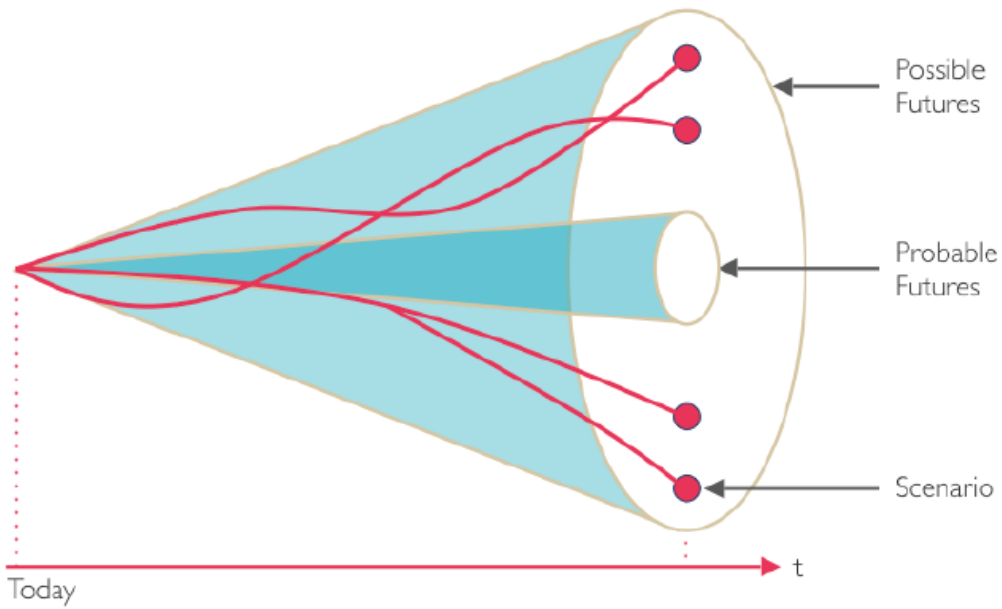
- The causes behind this include:
    1. A poor understanding of climate risks and how climate impacts can compound other crises;
    2. No specified methodology for scenario analysis or how to integrate climate risks in to management systems; and
    3. Lack of precedent.

What are Scenarios

Scenarios are a tool to allow us to explore uncertain futures and make wiser decisions in the present.

Too often, we respond to future uncertainty with **denial** (oversimplification or false confidence) or **paralysis** (planning for everything or wait and see) or **confirmation bias** (interpreting data to fit our preconceived beliefs). This can blind us to reality and make it impossible to act.

Scenario analysis can enable business leaders to hold uncertainty, hedge risk, embrace strategic agility, and not lose sight of the long term.



- **Scenarios are not predictions** about a single "most likely" future. They describe a set of plausible hypothetical futures.
- **Scenarios correct against cognitive biases.** Good scenarios challenge assumptions and help us identify blind spots in our thinking.
- **Scenarios allow us to stress test strategy.** Resilient strategic ideas are those that work across most or all scenarios.

Maximizing the Value of Scenario Analysis

The risks uncovered through climate scenarios impact a company financial performance through economic transmission channels. Understanding these transmission channels enable companies perform deeper financial analysis to quantify the impact of climate related risks and implement the TCFD recommendations.

Climate Risks

Transition Risks

- Policy and regulation
- Market
- Technology development
- Reputation

Physical Risks

- Chronic (ex. precipitation, sea level rise, agricultural productivity, mass migration)
- Acute (ex. Hurricanes, wildfires or heatwaves)

Transmission Channels

Macroeconomic channels: Impacts on the economy

- Socioeconomic changes (population change, climate migration, shifting consumer preferences etc.)
- Changes in global investment and capital stock depreciation
- Shifts in prices due to supply and demand mis-matches
- Labor market productivity and economic growth because of transition and physical risks
- Impacts on global supply chains to changes in socio-political changes and disruptions
- Varied national and regional policies leading to uncertainties pertaining to cost of conducting business or license to operate

Microeconomic channels: Impacts on businesses and households

Corporates

- Stranded assets and capex due to low-carbon transition
- Property damage and business disruption
- Legal and regulatory liabilities due to failure to mitigate impact
- Additional costs of business such as reduced access, cost of water, energy or materials

Households

- Migration and exiting markets due to weather severity disruptions
- Loss of consumption due to purchasing capacity
- Workforce access

Financial Risks

Income Statement

- Lower top-line revenue due to reduction in sales, lower production capacity, decreased demands for goods & Services
- Higher costs because of carbon pricing and sourcing of materials
- Higher OPEX due to increased interest expense, higher R&D, higher compliance costs, higher insurance premiums etc.

Balance Sheet

- Decrease in useful life causing asset impairments or write-offs
- Write-downs of inventories due to limits or bans on products or changing consumer preferences
- Increase in provisions such as environmental or decommissioning obligations
- Increase in interest payable because of higher cost of capital

Leveraging the NGFS

Benefits of the NGFS Scenario Framework

A range of third-party climate scenarios are publicly available. Most of these are narrowly focused, explore only transition or physical risks, and are based on assumptions not always relevant for the business community. BSR chose the Network for Greening the Financial System (NGFS) scenarios as the foundation for this set of climate scenarios for several reasons:

The scenarios were derived from multiple **reputable climate models** by the Potsdam Institute for Climate Impact Research, the University of Maryland, and the International Institute for Applied System Analysis, among others.

They were developed with reference to the TCFD recommendations and are suitable for all sectors, not just finance, to undertake climate scenario analysis in line with the recommendations.

They integrate **both physical *and* transition risks into the same set**, with shared assumptions and parameters.

They are accompanied by **substantial supporting documentation** and are regularly updated.

The NGFS approach allows for **the exploration of a broad range of temperature pathways as well as different assumptions** that better reflect the uncertainty of future conditions, and guards against model bias.

Scenario analysis results using the NGFS framework represent **aggregate sectors and markets** and can be a guide to assess individual company risks.

NGFS Scenario Framework

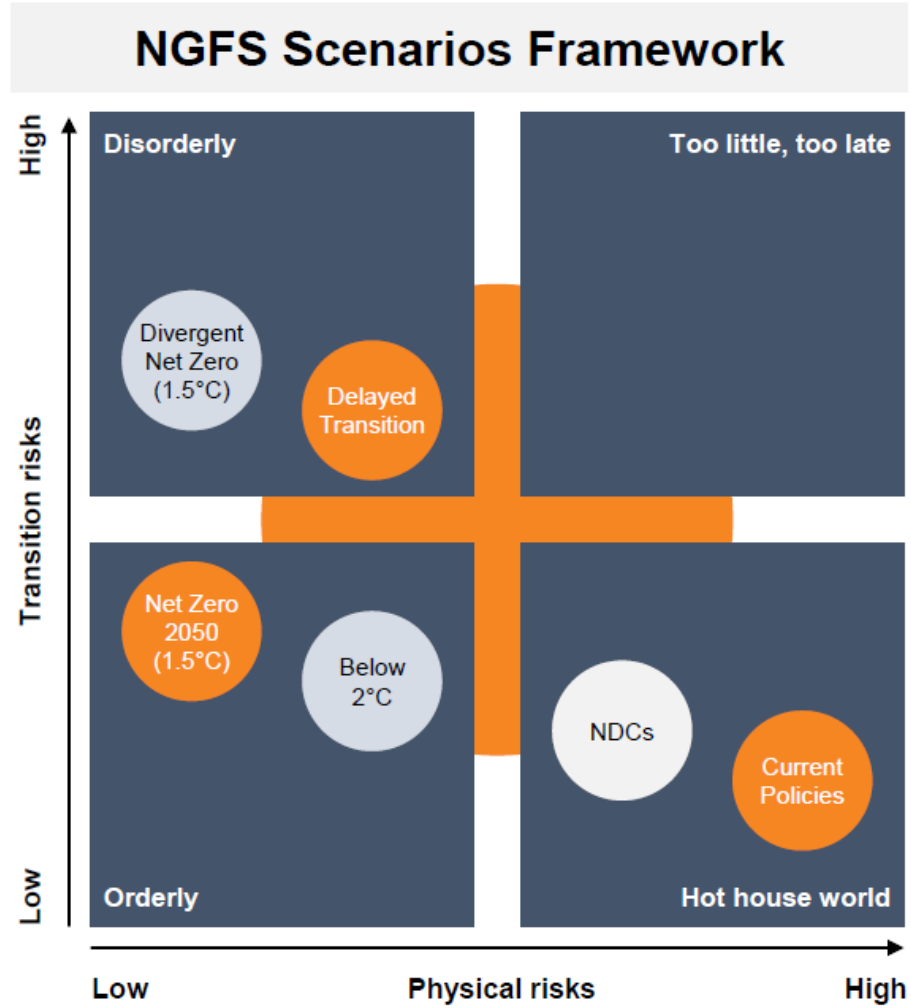
The NGFS scenarios were developed to provide a common starting point for analyzing climate risks to the economy and financial system. They represent a global, harmonized set of transition pathways, physical climate impacts, and economic indicators. The framework describes three types of climate scenarios:

- **Disorderly** scenarios explore higher transition risk due to policies being delayed or divergent across countries and sectors. Carbon prices are typically higher for a given temperature outcome.

- **Orderly** scenarios assume climate policies are introduced early and become gradually more stringent. Both physical and transition risks are relatively subdued.

- **Hot house world** scenarios assume that some climate policies are implemented in some jurisdictions, but global efforts are insufficient to halt significant global warming. Critical temperature thresholds are exceeded leading to severe physical risks and irreversible impacts like sea-level rise.

BSR has extended the narratives of one of each type of scenario: **Net Zero 2050**, **Delayed Transition**, and **Current Policies.** It has also highlighted **business-relevant data points** from the NGFS datasets that help quantify the physical and transition risks in each scenario.

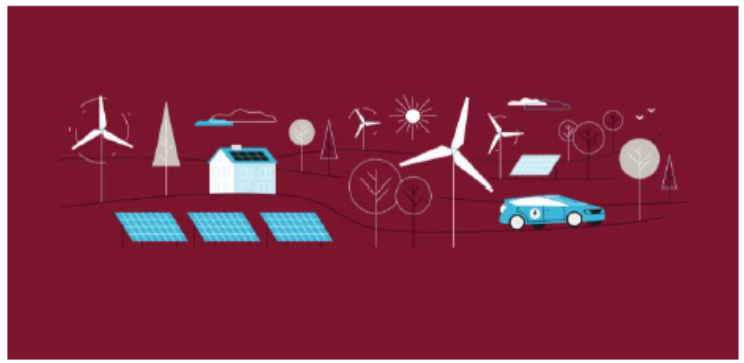


Source: NGFS Climate Scenarios Database Technical Documentation V2.2 (June 2021)

Three Scenarios Are:

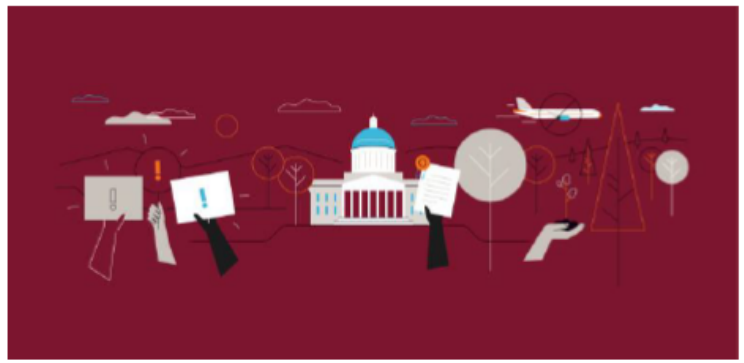
Current Policies

Only currently implemented policies (as of 2020) were preserved. Absent ambitious government or business action, emissions are on track to reach at least 3.3°C of warming by 2100.



Net Zero 2050

The transition to a net-zero economy required drastic and coordinated global action, particularly in the 2020s. The cost of action was high but warming peaks at 1.6°C in 2050 then declines to 1.5°C by 2100.



Delayed Transition

After a decade of inaction, a set of uncoordinated and stringent policies were adopted in the 2030s to rapidly halt greenhouse gas (GHG) emissions. This approach came at high social and economic costs but ultimately held warming to a peak of 1.8C by 2050 and 1.7C by 2100.

While each scenario features increasing physical risks from climate change over the next 15 years, those diverge significantly thereafter-- with radically different outcomes over the long term. Ambitious climate action is able to moderate physical risk over time. However, the scenarios also make clear that delayed action significantly increases both physical and transition risks for business and society.

This document provides the extended narratives, along with more information on climate scenarios, their role in sustainability reporting, and how to best use them.

How to Use These Scenarios

Use the scenario set to test your strategy, challenge assumptions, uncover blind spots, and identify additional actions to address climate-related risks and opportunities. Resilient strategic ideas are those that work across most or all scenarios.

Taking each scenario in turn, ask:

- If this scenario were to transpire, **what would be the impacts on our business?**
- **What new challenges and opportunities would be created**, and are we prepared for these?
- **Are there any strategic moves** that we can make that would position the business to thrive across all the scenarios?

Be sure to **give equal consideration** to all three scenarios rather than trying to choose "the most likely" scenario. History is full of unlikely scenarios causing great disruption. Scenario analysis provides an important opportunity to ask "what if" questions.

Discuss the scenarios among a diverse group of internal stakeholders because no individual expert has a complete view of the emerging future.

Consider drawing from the NGFS data sets to add additional data and further contextualize and tailor the scenario narratives to your organization and industry.

Given that the scenarios take a global view, **consider the specific policy changes in your region** that may impact your operating context, and explore the regional data available in the NGFS datasets.

BSR can help your organization use these scenarios in a variety of ways, including informing strategy processes; conducting a TCFD-aligned scenario analysis, stress-testing plans, assessments, and targets; and designing more transformative and foresightful industry collaborations. For more information, please contact Ameer Azim (aazim@bsr.org) or Eileen Gallagher (egallagher@bsr.org).

Case Study on Climate Action

Calibre Chemicals

November 2023

Everstone Capital

Overview

Benefitting billions of lives and catering to industries for sustainable growth

Company overview

Calibre™ Engineering Chemistry

Life sciences (food, health and nutrition) and Personal & Home care end market focused leading specialty ingredients company

Closed in August 2021

Manufacturing footprint in Eastern and Western hemispheres

Over **500** customers in 75 countries

$56 mn invested **50.9%**[1] ownership

Marquee Client Base

TATA CHEMICALS LIMITED, asianpaints, Henkel, DSM, unicef, L'ORÉAL PARIS, ORICA, Biocon

Core Impact

3 GOOD HEALTH AND WELL-BEING

Access to quality essential healthcare services, quality & affordable medical devices, medicines, vaccines for all

Iodine derivative products made by Calibre expected to **save more than 1.82 billion animal lives,** annually

Core Impact under Everstone Holding Period

8 DECENT WORK AND ECONOMIC GROWTH

Doubled to 300 employees, 6% being women and 50% contract workers

Engages with (i) local unemployed youth (ii) local communities for village development programs

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Manufacturing base in **tier-2** cities, serving clients globally with **60% export**

Collaborates with **737 local MSME suppliers**, including female suppliers, and distributed USD 182 mn net economic value since 2020

13 CLIMATE ACTION

Captive **Windmills** generated 1.7 million kWh **green energy**, which met 7.5% of its total energy demand & avoided 1.59K tCO2e GHG emissions

Calibre | Early Identification and Resolution of Issues

Key Issues Identified During DD

- ✓ Lack of Fire No Objection Certificate (NOC)
- ✓ Failure to submit Environmental Compliance Report
- ✓ No Environment, Health and Safety personnel
- ✓ Absence of Electrical Safety procedure in factory
- ✓ High GHG Emissions (Scope 1 & 2)

Key Actions

- ✓ Obtained fire No Objection Certificate — **Pre-investment**
- ✓ Environmental Compliance Report Submitted

- ✓ Hired an Environmental, Health & Safety Manager
- ✓ **ESG committee** established with CxO in charge of governance
- ✓ Identify **GHG inventory**
- ✓ Electrical safety and **energy audit** conducted by professionals
- ✓ Formation of **decarbonization** plan

Post-investment

Six months

- ✓ Current renewable energy mix is 6% of total energy requirement - to be enhanced to 15%
- ✓ Added 2.8 MW of renewable energy

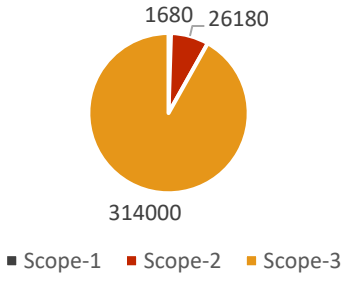
Ongoing

Assessment of SoPs on Climate Action

Elements	Pre-investment time / Then	Post-investment / Now
Governance	There was no governance framework in place to ensure that the company evaluated and handled climate-related risks and opportunities.	For Calibre Chemicals, Everstone has established a procedure for management supervision of climate risks and opportunities. headed by the senior management team consisting of the CEO, COO, CFO, and compliance manager, under the board's supervision.
Strategy	The strategic or guiding concepts outlining how climate-related risks and opportunities should be taken into account when allocating company-level assets were absent.	By establishing a short-, medium-, and long-term action plan to reduce GHG emissions, including its value chain based on SBTi climate science, the company is now able to implement its clear strategy for managing climate-related risks and opportunities throughout its asset levels.
Risk Management	The risk management framework, while there, is solely focused on finance and internal control measures. It lacks a system of practice for addressing climate risks.	The Risk Management Framework now includes risk management from a climate perspective.
Metrics & Targets/ KPIs	There was no process for identifying or collecting climate-related target KPIs and no climate-based reporting.	GHG inventory has been developed, and a target has been set for the year-over-year reduction of S1, S2, and S3, which will help the company on its journey to net zero or carbon neutral.

Climate Action : Strategy & Governance

CY-22 GHG Emissions (tCO2e)



Emission Reduction Strategy

- ✓ Scope-1: Explore and evaluate **techno-commercial feasibility** on green hydrogen as substitute of primary fuel (natural gas) or steam generation through RE boilers
- ✓ Scope-2 : Reduce Scope-2 emission by increasing its **green energy consumption** share from 6% to 15% by 2024 and reach to 50% by 2030 + Energy Efficiency 15%
- ✓ Scope-3: To **source raw materials** from **lowest specific GHG emission vendors** and use of **EV fleet** for upstream and downstream freight movements

Waste Minimization Strategy

- ✓ Liquid waste: To adopt **Zero Liquid Discharge concept**
- ✓ Solid Waste: To reduce land fill by **reusing waste** to make value added products

Water Saving Strategy

- ✓ To reduce use of **freshwater** by approx. 4K cu mtr /year through reuse of **recycled water**
- ✓ Adopted **Rainwater Harvesting** at both the plants

Governance

- ✓ GHG Inventory along with emission sources finalized
- ✓ Physical Energy **Audit** completed through an agency
- ✓ **15% energy savings potential** identified through energy efficiency measures
- ✓ **Decarbonization Roadmap** prepared through an environmental consultant

Environmental Footprint due to

- Fuel (Natural Gas)
- Electricity consumption
- Effluent generation
- Solid waste generation
- Raw material consumption

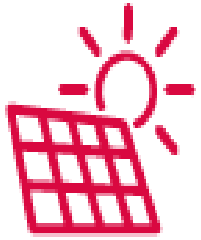
Current Position

- 0.8 million SCM per annum
- 25 - 30 million units per annum
- @35- 40 KLD
- @30 MT/month
- ~15K MT per annum

Strategy

- The adopted **3R** (recycle, reuse, and reduce) concept created the potential for 100T iodine derivative recovery from pharma waste, which will **improve EBITDA by INR 51 million per year**
- 3X increase of **renewable energy** usage by 2024 and 50% by 2030 and 100% in 2050
- Aim for **Zero liquid discharge in 2030**
- **Increase green belt** in and around the plant periphery from 2023

Action & Result



+

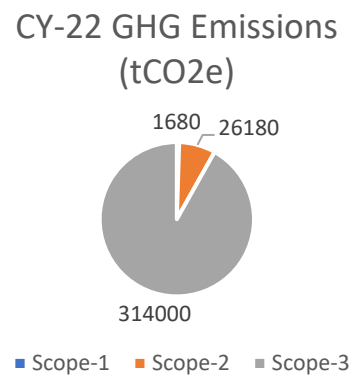
Current Action

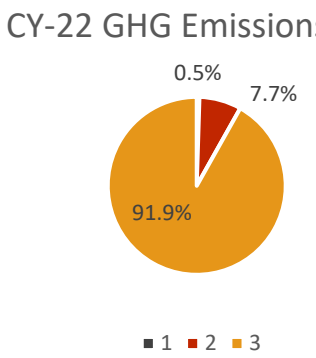
CY-22 : 1.6 MW (RE)
CY-23 : 4.4 MW (RE)

- ✓ *Current share of renewable energy is 6% over grid energy*
- ✓ *Avoided @1.59K tCO2e in CY-22*
- ✓ *Reduced 145 MT Solid waste landfill*
- ✓ *Added 2.8 MW RE more in CY-23 which will increase RE usage to 15% in CY-23 and improve **EBITDA by INR 28 million per year***

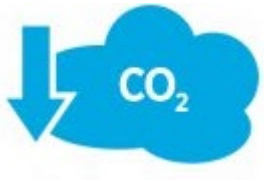
Positive Impact on SDGs

Climate Action : Decarbonisation Roadmap





[Statistics of baseline year : 2022 at 1.5 degree Cent scenario]

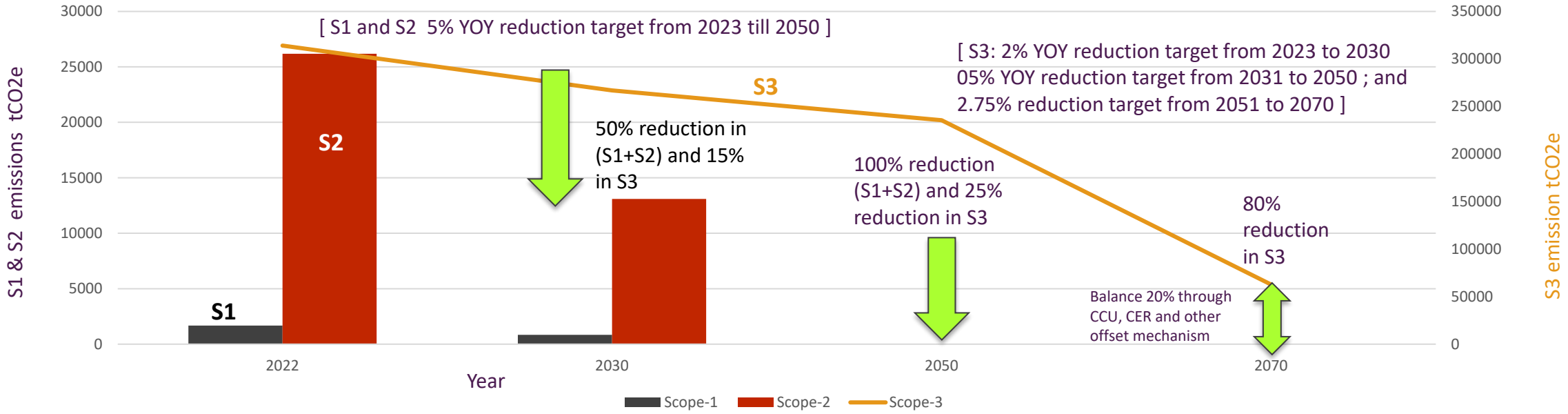


Avoided GHG emission: 1.59K tCO2e

Energy saved: 7.38 Mwh

GHG Intensity

Decarbonisation Roadmap



Action Levers

S1 reduction : Through fuel shift and renewable energy based steam generators

S2 reduction : through addition of renewable energy usage and energy efficiency measures

S3 reduction : less business travel, using EV transportation for both upstream and down stream freight & employee commute. Engaging with raw material suppliers having low specific GHG intensity. Using green fuel & energy

Challenges and Benefits of Implementing a Climate Action Strategy

Challenges During Implementation

1. **Convincing Management**

   Educating and persuading management about the significance of climate action, emphasizing the need to assess both the risks and opportunities associated with it

2. **Rapid Adoption of Renewable Energy**

   The challenge of expediting the integration of renewable energy within operational expenditures, while dealing with constraints like inadequate infrastructure and contractual obligations to maintain conventional grid power sources

Benefits

1. **Strategic Climate Assessment:** Calibre can now proactively assess any climate-related risks and opportunities in its operations, enabling early mitigation planning

2. **Financial Stress Testing for Carbon Transition:** Conducting financial stress tests to gauge the impact on cash flow and capital requirements, factoring in the internal carbon tax and transitional risk mitigation costs.

3. **Emission Reduction Actions:** Following a materiality analysis of scope-3 emissions, take targeted actions to reduce greenhouse gas emissions.

4. **Supply Chain Emission Reduction:** Evaluate major suppliers and select low-carbon raw materials to cut scope-3 emissions, encouraging supplier transition to net-zero or carbon neutrality.

5. **LCA Integration in R&D:** Incorporate life cycle analysis into new product development to minimize specific carbon emissions, aligning with sustainability goals.

Key Take Aways

1

Integration of Climate Risk Management

- The integration of the climate risk management committee with the organization's existing risk management committee, **overseen at the board level**, is essential for the effective management of climate risks and opportunities

2

Capacity-Building and Training

- To address a lack of technical knowledge within the team, **capacity-building and training** are necessary to ensure that all team members are on the same page regarding climate-related matters

3

Step-by-Step Implementation Strategy

- An action plan for managing greenhouse gas emissions should be implemented in a **phased approach**, including GHG inventory, short-term, medium-term, and long-term emission reduction strategies, and **engagement with Tier 1 supply chain vendors** for GHG intensity data.

4

Periodic Review

- The senior management or the board should **regularly review the action plan or strategy** to ensure its effectiveness in managing climate risks and opportunities.

GPCA
Global Private Capital Association

Decarbonization and Net Zero (45 minutes)

Eileen Gallagher Director, Climate, **BSR**

Steve Okun Senior Advisor, **GPCA**

To submit questions online

Go to slido.com or scan the QR code below

Enter 1180510

Emergence of "Net-zero Targets" and Impact on Corporate Climate Action

Paris Agreement (2015) → **IPCC Report (2018)** → **Company Commitments En Force (2019 – Present)** → **Race to Zero (2020)** → **SBTi Net Zero Standard (2021-now)**

Article 4.1 (Emissions Reduction)

"In order to achieve the long-term temperature goal set out in Article 2, Parties aim to

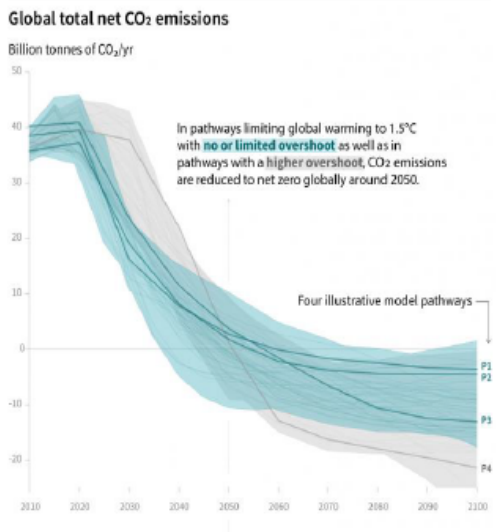
reach **global peaking** of greenhouse gas emissions **as soon as possible**…

and to undertake **rapid reductions thereafter** in accordance with best available science,

so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases **[net zero global emissions] in the second half of this century.**"

Source: UNFCCC

Special Report: Global Warming of 1.5°C



Source: IPCC

Examples:

BUSINESS AMBITION FOR 1.5°C

June 13, 2019

January 16, 2020

Unilever is investing $1.1 billion in a new climate fund—and hopes to reach net zero emissions by 2039

The goal is to hit the benchmarks set by the Paris Climate Agreement far earlier than the 2050 deadline.

June 15, 2020

RACE TO ZERO

- Coalition of net zero initiatives representing 454 cities, 23 regions, 1,397 businesses, 74 investors, and 569 universities that have joined 120 countries in the Climate Ambition Alliance and commit to achieving **net zero carbon emissions by 2050 at the latest**
- Collectively, members cover almost 25% of global CO_2 emissions and over 50% GDP

Source: UNFCCC

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

- SBTi launched a process to develop the first **science-based global standard for corporate net-zero targets**
- The final net-zero framework, including **target-setting guidance and target validation criteria**, was released in 2021.

Source: SBTi

BSR

Summary | Key Features of Net Zero Targets

Emerging thinking, such as the SBTi Net Zero Standard, the Oxford Principles for Net Zero Aligned Carbon Offsetting, as well as new corporate initiatives are setting the foundation of best practices for net-zero strategies and implementation.

Net zero as a science-based ambition

Net zero targets are the baseline for corporates to align to the Paris Agreement goals. To be credible, they need **first and foremost to be grounded in science-based decarbonization**. But net zero targets go well beyond—they are a North Star to transform the business.

Key features of a net zero target

When setting net zero targets, companies will need to consider different features:

- **Boundary**: What level of coverage of GHG scopes? Clearly, **there is no net zero ambition without Scope 3**. The Scope 3 boundary might vary for different companies.
- **Timeframe**: Net zero is an end goal, with the Paris Agreement requiring a "**2050 or earlier**" timeline and is also a pathway.
- **Underlying level of decarbonization**: Solid net zero targets build on **science-based decarbonization**. Clarifying the intended level of decarbonization underlying net zero targets is paramount.

Net Zero | The Current SBTi Net Zero Definition*

Organizations need to fully decarbonize and achieve net zero by **2050 or sooner**. Achieving an end-state of net zero before 2050 is encouraged **if grounded in science-based decarbonization**.

A net zero target is a commitment to reach an **end state of no impact on the climate from greenhouse gas (GHG) emissions**

Underlying criteria

Achieving a scale of **value chain emissions reductions** consistent with the depth of abatement in pathways that limit warming to **1.5°C** with no or low overshoot

1.5°C value chain decarbonization

+

Neutralizing the impact of any source of **residual emissions** that is unfeasible to eliminate by **permanently removing** an equivalent volume of atmospheric CO2.

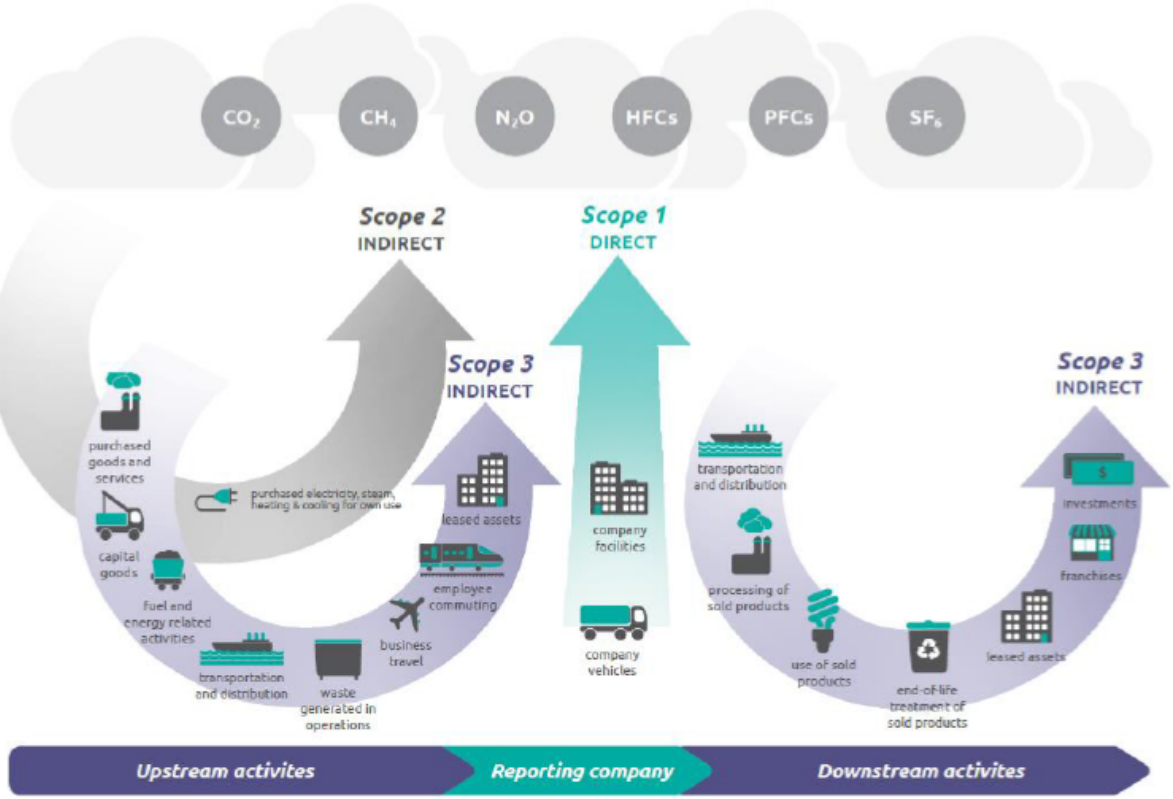
Use of Removals for end-point neutralization

- Companies should also consider investments in climate solutions as part of their strategies
- Avoided emissions are not counted here

The Scope of a Net Zero Goal Builds Upon GHG Accounting Scopes

Science-based decarbonization of all emissions scopes is the underlying objective of a robust net zero goal.

Emissions Source	Definition	Examples
Scope 1	Direct emissions from operations	Operations facilities, company vehicles
Scope 2	Indirect upstream emissions from energy use	Purchased electricity, heating/cooling, steam
Scope 3	Indirect upstream and downstream emissions from company value chain	Upstream: Purchased goods and services, business travel, employee commuting, transportation and distribution Downstream: Use of sold products, end-of-life treatment of sold products, transportation and distribution



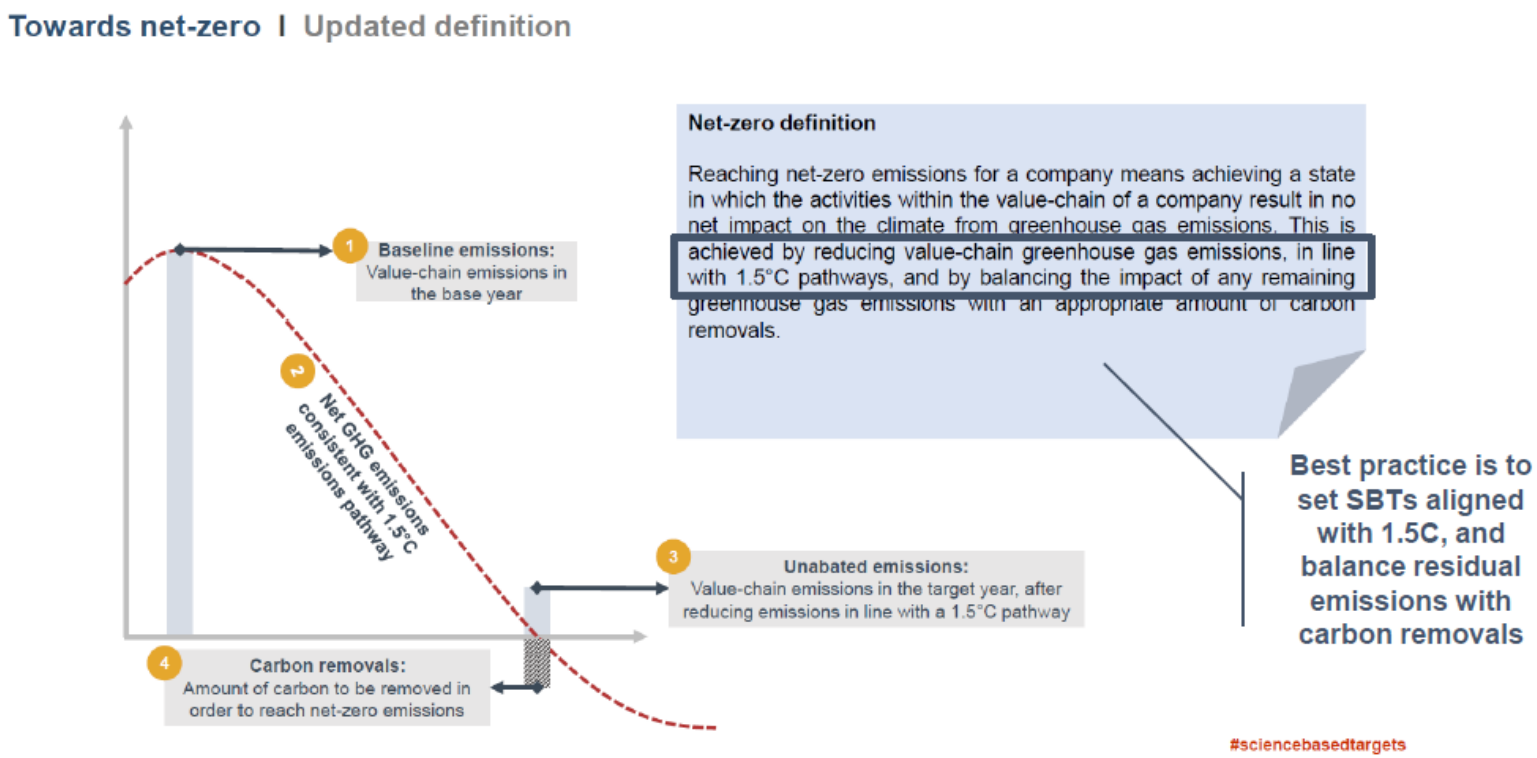
Source: www.ghgprotocol.org

BSR

Timeline for a Net Zero Goal

Companies need to fully decarbonize and achieve net zero by **2050 or sooner**. Achieving an end-state of net zero before that is encouraged, but **only if grounded in science-based decarbonization**. It is vital that companies clarify the **intended level of decarbonization** underlying net zero targets, and the intermediate steps towards the end goal.

Net Zero Target Year	Intended Impact
2030	At the current global trajectory, it is estimated that the world will reach 1.5°C as early as 2030. A 2030 net zero target is more ambitious and aligns with the commitment to accelerate global GHG reductions to reach a 1.5°C trajectory that will lead to net zero by the year 2050.
2050	1.5°C requires halving global CO_2 emissions from 2010 levels and reaching net zero by 2050. A 2050 net zero target aligns with the targets set in the Paris Agreement in 2015.



Graph Source: [Towards a Science-based Approach to Climate Neutrality in the Corporate Sector. Discussion paper, Draft Version 1.0, August 2019.]

BSR

What Does it Mean for an Offset to be Credible?

There is no SBTi standard on credibility for offsets. The SBTi states: "The **use of carbon credits must not be counted as emission reductions** toward the progress of companies' near-term science-based targets. Carbon credits may only be an option for neutralizing residual emissions or to finance additional climate mitigation beyond their science-based emission reduction targets".

EDF, for BASCS, used the Taskforce on Scaling Voluntary Carbon Markets (TSVCM) guidance to define a quality carbon offset along the following key dimensions:

Additional	Permanent	Monitored, Reported and Verified	Leakage Accounted for and Minimized	Does No Net Harm
Offsets must be "additional **beyond GHG emission reductions or removals** that would otherwise occur without revenue from credits" (TSVCM)	Offsets should represent carbon reductions or removals that are **durable and protected over time.** Oxford principles note that the timeframe for removals should be long (e.g. storing CO2 in geological reservoirs or mineralizing carbon into stable forms).	**Accurate, transparent, and credible accounting** is also critical for carbon offset quality. Offsets should be associated with a recognized and credible standard-setting body that has robust and transparent governance. Offsets should also be **validated or verified** by an accredited, third-party entity	In some cases, activities that reduce or remove emissions can have other impacts, potentially increasing emissions elsewhere, known as leakage. **Offset programs should rigorously monitor and mitigate leakage.**	Offsets must not create unintended negative environmental or social impacts. At a minimum, offsets **should do no net harm**, and include impact assessments, stakeholder consultations, and grievance mechanisms.

Source: BASCS – Carbon Credit Basics for Business

What are the Key Features of a Good Net-zero Strategy?

A net-zero strategy should support the business vision. Though the specifics may differ from company to company, a well-designed net-zero strategy:

- **Is centered at the core of business strategy and purpose**
- **Is designed in the context of current and emerging societal challenges, and ensures climate justice**
- **Is appropriately positioned vis-a-vis peers and competitors**
- **Delivers emissions reduction as a part of a company's Climate Transition Action Plan**
- **Allocates and mobilizes appropriate resources**
- **Measures and communicates performance**

The Gap Between Climate Targets and Action

Companies are showing growing ambition in setting climate targets, yet a significant gaps exists between targets and progress against those targets. Climate transition plans outline the actions a company intends to take in the short-, medium- and long-term to achieve its climate targets.

In 2022, more than a third of the world's 2,000 largest companies had goals to reach net zero emissions by 2050 or sooner…

…however, 65% of those with such goals exclude details, such as emissions scopes covered, and how they plan to meet their goals.

The Science Based Target initiative's (SBTi) 2022 progress report shows exponential growth in corporate target setting…

…yet only 46% of companies are reporting progress on those targets.

While it is important that companies make long-term goals and targets to reduce emissions…

…they must create and implement plans, including near-term action, to put them on a credible path to achieve those goals.

A growing number of stakeholders, including investor groups, are calling on companies to set and disclose their **climate transition plans** to show clarity on how they are moving from target setting to taking action to achieve those targets, in line with a 1.5°C pathway.

Source: We Mean Business, Science Based Targets Initiative, Net Zero Tracker

Climate Transition Plans are Key to Delivering on Commitments

Investor groups have issued expectations for company climate transition plans and incoming regulation will require their disclosure. However, few companies have implemented and / or disclosed credible climate transition plans.

Several organizations that have developed **frameworks and guidance** for developing and disclosing transition plans:

TPT Transition Plan Taskforce

The UK-commissioned TPT developed a draft Disclosure Framework and Implementation Guidance, which it intends will serve as the transition plan "gold standard"

GFANZ

Its Expectations for Real Economy Transition Plans highlights the investor perspective

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Its Guidance on Metrics, Targets, and Transition Plans includes characteristics of "effective transition plans"

WE MEAN BUSINESS

Published a landscape assessment and consolidated guidance

CDP

Released a Technical Note on reporting on climate transition plans

among others…

A recent CDP report revealed, that of 18,600 reporters, 21.5% disclosed that they had a climate transition plan, but **only 0.4% demonstrated best practice** by disclosing against all 21 indicators of a credible plan.

Five Criticisms of Net Zero (and How to Avoid Them)

Diverts Attention from Immediate Action

- Net-zero commitments divert attention from immediate abatement, effectively licensing short-term emissions. That is why firms should also **set and deliver an interim emissions reductions target following a 1.5°C trajectory**, such as a 4.2% reduction target in line with global average trajectories

Widens Inequity

- Net-zero commitments, which are typically based on a company's fair share of global net zero carbon dioxide by 2050, should not be inequitable as between developed and developing countries. For investments that sit largely in developed countries, investors should **aim to achieve net zero ahead of 2050**.

Relies on Removals

- Because removals can be used to net out emissions in the target year, it diverts attention from immediate climate investments that are needed to keep 1.5°C within reach. Firms should not merely abate emissions in their portfolios but seek **real economy carbon reductions** and **invest in climate solutions.**

Leads to Greenwashing

- Net-zero commitments may greenwash business-as-usual action. Net zero implementation must **demonstrate business transformation across all functions**, including the investment team, operations, risk, and legal with a clear climate action plan by leadership

Perpetuates Injustice

- Net zero can perpetuate climate and environmental injustice among most affected communities (low income, indigenous, women, etc.). To prevent this, **firms should integrate climate justice and the just transition into net-zero planning** by: purchasing renewable electricity from companies with a track record of increasing energy access, selecting carbon credits that benefit affected communities, and investing in low-carbon products and services that improve the equitable distribution of benefits of the net-zero economy.

BSR Source: Only Transformative Net-Zero Implementation Will Meet Our Climate Crisis

Considerations for PE Firms

Across different public frameworks, several common points emerge for firms to make initial progress.

1. Measure and increase **PC adoption of the SBTi Net Zero Standard,** which includes short-term SBTs.
2. Measure and increase adoption of **Sectoral Decarbonization Approach (SDA) pathways** in covered industries.
3. Encourage **decarbonization** among portfolio companies, given the climate crisis and market indicators.
4. Measure and develop a plan to increase to invest in companies that contribute to tackling the climate crisis / innovative business models that stay within planetary boundaries.
5. Set **parameters on high-carbon industries**, especially coal, tar sands, and other fossil fuels.
6. Adopt a **stewardship/engagement strategy for non-control assets.**
7. Advance integration of climate into **diligence** and pre-investment process.
8. Continue to increase **disclosure** of climate risk, targets, and climate transition plans—monitor for frameworks, best practice and regulation.
9. Include consideration of **social factors** (e.g. climate justice, just transition) into climate transition plans.

Climate Action: Grab's Roadmap to Carbon Neutrality by 2040

Renewable Energy for all Grab's Premises

- **Grab is committed to minimising energy usage and powering all its premises using renewable energy, including operation hubs and data centres**

Carbon Avoidance & Removal Programmes

- **Grab invests in high quality carbon avoidance and removal programmes in Southeast Asia.**
- **In 2022, Grab extended its carbon offset toggle from rides to include deliveries.**

Transitioning to Low-Emission Vehicles

- **Grab works with governments, automakers and infrastructure players to build a sustainable and inclusive electrification ecosystem across the region.**

100%

Offices across 12 countries worldwide are fully powered by renewable energy.

The shift to renewable energy will extend next to all operational hubs and data centres.

~30,000 t CO2e

Greenhouse gas emissions avoided through the retirement of carbon credits funded by consumers' carbon offset contributions.

>200,000

Planting of trees in the region also funded through the carbon offset contributions.

4.4 Million

Rides in Singapore were taken with the eco-friendly toggle switched on, allowing passengers to opt for preferential allocation of low-emission vehicles.

More than 800

Battery swap stations deployed in Indonesia with partners to support the adoption of two-wheel EVs.

GPCA

Transition Risks: Carbon Reduction Expected

Malaysia At Risk Of Losing RM291.56 Billion In Revenue If Local Suppliers Miss Out On Green Transition

Key Concerns

1. Many customers have already embarked on the net zero targets
2. SMEs/ Suppliers will be left out of the supply chain if they don't align with this
3. Green transition is an expensive and high-cost journey for MSME & SME which hinders transition

Study from Standard Chartered (Surveyed 400 MNCs in 2021)

Expect to **exclude over a third (35%)** of their current suppliers as they make the transition away from carbon

78% of respondents will remove suppliers that endanger their carbon transition plan by 2025

57% are willing to replace emerging market suppliers with ones in developed markets that are less reliant on fossil fuels

Source: https://www.businesstoday.com.my/2022/08/24/malaysia-at-risk-of-losing-rm291-56-billion-in-revenue/

GPCA

Financial Services: Not Taking into Account Physical & Transition Risks

Risk	Operational risk to FS	Business risk to FS	Impact to Customers
Physical	• **Property damage** (i.e., data centres, HQ, buildings) • **Impact on resources** (i.e., ability to go to work)	• **Revenue loss** due to data losses if data centres are affected	• Increase in **probability of default** of certain exposures • Increase in country/sovereign risk through **lower productivity and economic disruption** • Lower **debt repayment capacity** of borrowers • Lower **collateral values** (e.g., lower value of real estate due to higher flood risk)

Transition	• Risk of **lagging behind** regarding new green activities and technologies
	• Risk of **new technologies being less promising** than expected
		• **Reputational risk** if an institution does not manage to adapt its own business models
		• Change in **customer preference** for greener products
			• Increase in **probability of default** of:
			  • Carbon-intensive industries (stranded assets)
			  • Companies subject to carbon taxes
			  • Assets that turn out to be less green as initially expected (greenwashing)
			• Lower collateral values (lower value of real estate due to policy changes)

Liability		• **Liability risk** resulting from (e.g., greenwashing/ litigation/mis-rating)	• Potential losses or impact on **failure to account climate risks**

Source: NGFS

GPCA

Where to Start

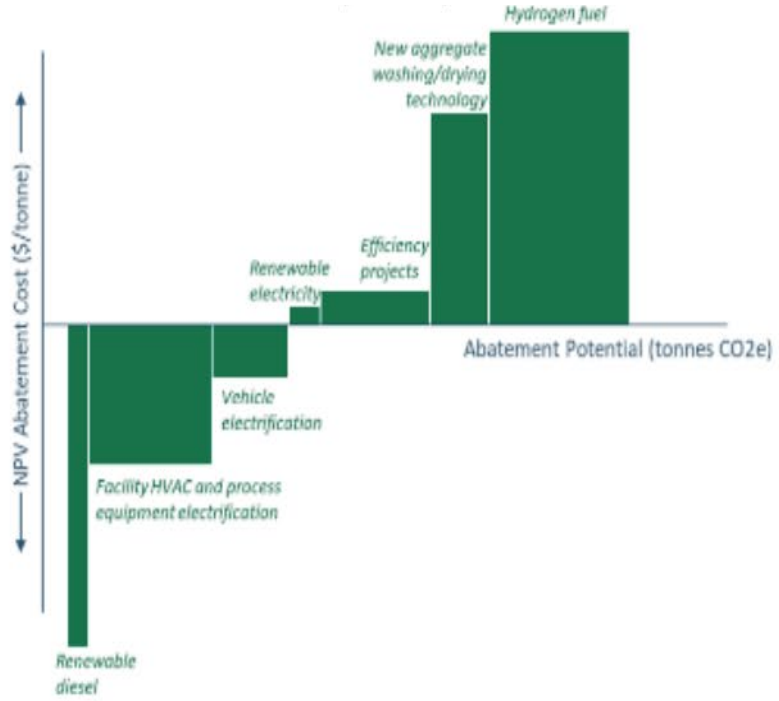
1	**CARBON FOOTPRINT BASELINING**	• Scope 1 and Scope 2 baseline • Scope 3 to be determined
2	**OPTIONS IN GETTING TO NET ZERO**	• Energy efficiency • Shift to renewable/green energy • Carbon offsets
3	**COST & BENEFITS OF GETTING TO NET ZERO**	• Considering abatement costs • Opportunity cost avoided (i.e., carbon tax, consumer switch, potential litigations)
4	**TARGET SETTING**	• Short-term emission reduction targets • Carbon neutral for Scope 1 and Scope 2 • Near-term climate targets • Net zero target

GPCA

Marginal Abatement Cost Curve

The Cost of Reducing One More Unit of Pollution

Marginal Abatement Cost Curve (MACC)



Notes

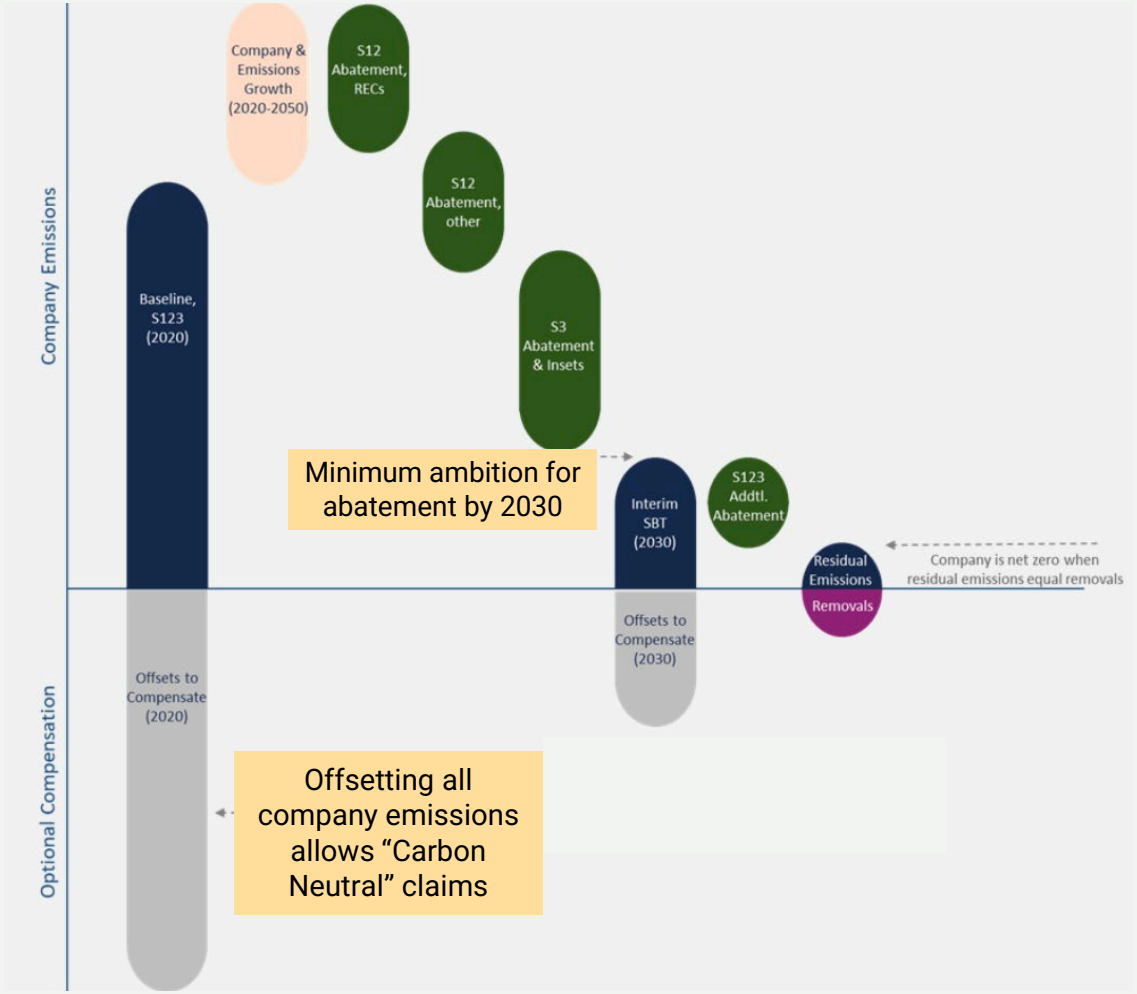
- Each bar represents one abatement measure.
- The height of the bar shows how costly the emission reduction will be.
- The width of the bar shows how much GHG can be reduced using that measure.
- A company operating perfectly rationally should start by pursuing the measures furthest to the left first and working their way to the right until they hit the total abatement desired (often dictated by a GHG reduction target).

Costs or savings come from different opportunities, alongside the potential volume of emissions that could be reduced. MACCs measure and compare the financial cost and abatement benefit of individual actions.

GPCA

Charting a Course to Net-Zero

Step-by-Step Approach



LEGEND

- TOTAL EMISSIONS
- EMISSIONS GROWTH
- REDUCTION WITHIN YOUR SCOPE 1, 2, 3
- GHG REMOVAL (DRAWING OUT GHG OUT OF THE AIR)
- REDUCING EMISSIONS OUTSIDE YOUR SCOPE 1,2, 3 (THROUGH OFFSETS)

ILLUSTRATIVE

GPCA

GPCA
Global Private Capital Association

GP Climate Journeys and Case Studies (60 minutes)

Dominic Chan AVP, ESG Investment Management, **Temasek**

Roshini Bakshi Managing Director, Private Equity & Head of Impact, **Everstone**

Bence Szegedi Senior Director, ESG Portfolio Operations, **Navis Capital**

To submit questions online

Go to slido.com or scan the QR code below

Enter 1180510

TEMASEK

Temasek Climate Journey

GPCA Climate Training

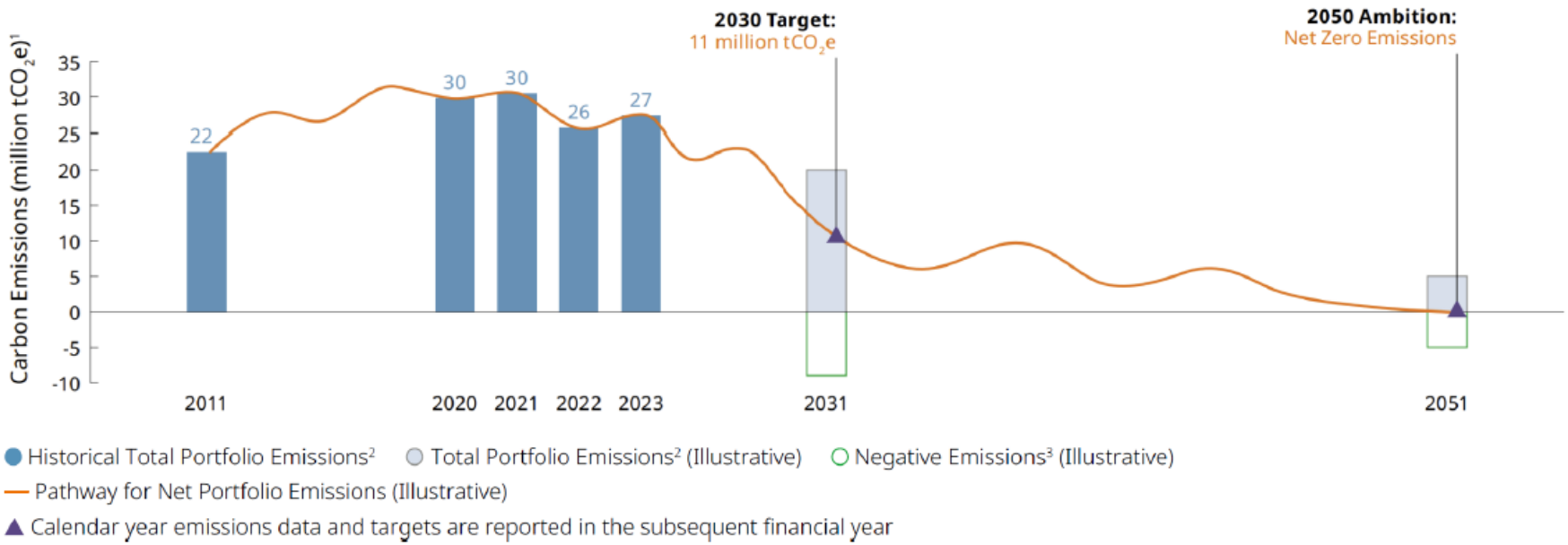
Nov 2023

Temasek's commitment to addressing climate change

Institution	Portfolio
• **Carbon Neutrality:** Achieved our target of **carbon neutrality** as a company in 2020 and have maintained this status • **Long Term Incentives:** A portion of our **long-term staff incentives** is aligned with our portfolio carbon targets	• **2030 Target:** Reduce net carbon emissions attributable to our **portfolio to half the 2010 level** (11million tCO2e) • **2050 Ambition:** **Net zero carbon emissions** • **Internal Carbon Price: US$50 per tCO_2e** in 2022, aim to increase to US$100 per tCO_2e by 2030

(for year ending 31 March)

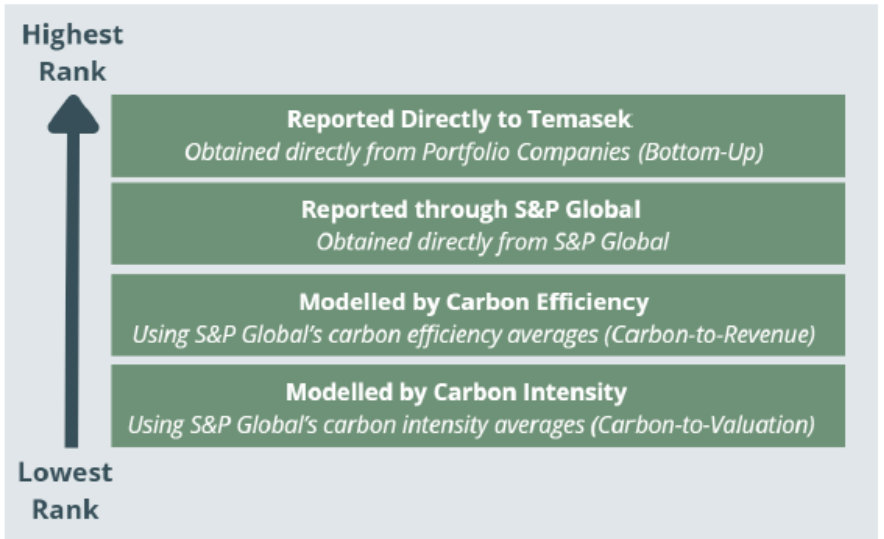
Towards Net Zero



Source: For Temasek's full TCFD disclosure, please reference: https://www.temasek.com.sg/en/sustainability/focusing-on-climate-change

Measuring Temasek's portfolio (financed) emissions

Sources of Emissions Data



Scope of Emissions

- **Scope 1 and Scope 2 emissions** of the underlying companies
- **Scope 3 emissions** currently excluded

Attribution Approach

- Temasek's ownership interest in each company, "equity share approach" (*not the PCAF enterprise value approach)*

Asset Classes

- **Included**: Listed Equity, Private Equity
- **Excluded**: Funds, Credits

Temasek's pathway to decarbonising the portfolio

Temasek deploys a **three-prong approach** to drive decarbonisation across our portfolio and beyond

Investing in Climate-aligned Opportunities

- Investments in carbon efficient businesses and decarbonization solutions
- Strategic partnerships to scaleup and accelerate decarbonization

Enabling Carbon Negative Solutions

Through GenZero and other investments:

- Nature-based and tech-based solutions that result in emissions removals
- Enable a transparent and robust carbon market / measurement reporting and verification (MRV)

Encouraging Decarbonisation Efforts in Businesses

- Engaging portfolio companies to accelerate climate transition
- Catalysing decarbonisation solutions in hard to abate sectors (e.g. SAF for aviation)

Investing in climate-aligned opportunities

I. Carbon Footprint Analysis

- Carbon emissions
- Carbon intensity
- Carbon efficiency
- Carbon spread

II. Climate Risks (Physical & Transition)

Physical Risk

Physical risk analysis is built on:

- Reviewing climate hazards expected by geographical area
- Analysing potential impacts of those hazards on company assets and how company is mitigating those risks

Assessment of vulnerability of physical assets

Transition Risk

Transition risk includes discussion on:

- Upcoming regulatory changes around transport emissions
- Evolving customer preference lower emissions and use of sustainable materials in manufacturing

Review of product portfolio and strategic positioning

III. Climate Opportunities (if applicable)

Climate opportunities can include:

- Resource efficiencies and cost savings
- Development of new products & services
- Access to new markets
- Increased customer demand
- Supply chain resilience

Internal carbon pricing in the form of a carbon spread

Carbon Spread = Current emissions* (tCO_2e p.a.) x Carbon price / Market Value (US$)

Applicable Investments	Applicable to all equity and equity like (e.g. convertible, preferred) investments Currently, does not apply to credit and other non-equity investments
Key Inputs Required	Scope 1 & 2 carbon emissions tonnes p.a. for the latest full year Carbon price updated to US$50 per tonne for FY23

Encouraging decarbonisation in businesses

	Dimensions	Description
1	Governance & Organisational Competencies	An organization's ability to manage climate risks and capture opportunities, including (i) board oversight, (ii) senior management's leadership, accountability (e.g., KPI and incentives), and management of the company's climate change strategy and goals, and (iii) organization wide climate competencies.
2	Strategy	Integration of climate-related risks and opportunities into the company's strategy including capturing new sources of revenue / innovation from the transition, decarbonization / efficiency of operations, and building long-term resilience.
3	Capital Allocation	Strategic allocation and availability of capital to fund decarbonization plans and develop green growth to achieve GHG targets and Paris alignment.
4	Scenario Planning	Incorporation of various scenarios resulting from material climate-related risks and opportunities (e.g., ambition level/ degrees and time horizon) to test the resilience of business strategy and operations, and to guide transition strategy.
5	Risk Management	Incorporation of all relevant climate related risk factors (e.g., physical, transition, reputation, legal) into risk management systems and processes, including decisions to mitigate, adapt, and transfer risks.
6	GHG Reduction Targets & Progress	Setting of near-, medium- and long-term GHG reduction targets, including net-zero ambitions, across scope 1, 2, 3 (where material), and scope "4" (avoided / reduced GHG); tracking of progress against the targets.
7	External Involvement & Engagement	Alignment and engagement in trade associations, coalitions and partnerships that are advancing climate progress.
8	External Verification & Disclosures	Climate-related disclosures that are aligned to market standards and encompasses all material considerations, which are also independently verified.

Everstone Climate Journey

November 2023

Everstone Capital

Everstone Group's Responsible Investing Journey

2021+ Contribute to Positive Outcomes

- Design of an Impact Management Framework to embed impact considerations across the investment process and help drive positive outcomes
- Transparency and accountability of impact goals and performance in accordance with globally recognized impact management standards

2019 Align with SDGs

- Everstone Group becomes a signatory to UN Principles for Responsible Investment (UN PRI)
- Define strategic impact objectives for the portfolio to achieve positive and measurable social or environmental effects, which are aligned with the SDGs

2016 Benefit All Stakeholders

- ECP III adopts the IFC Performance Standards
- Significant focus on Healthcare expands overall development impact
- Ensure businesses have robust policies around governance and key areas such as HR, labor, anti-corruption, health & safety, etc.

2011 Avoid Harm

- Everstone Capital as an independent firm and responsible fiduciary
- Meet regulatory standards and LP requirements

Operating Principles for Impact Management

initiative climat international
Private equity action on climate change

CDP

IMPACT MANAGEMENT PROJECT

IRIS
IMPACT REPORTING & INVESTMENT STANDARDS

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

PRI Principles for Responsible Investment

IFC International Finance Corporation WORLD BANK GROUP

GRI

GPCA Global Private Capital Association

Responsible Investing Framework

Intentionality in implementation
Detailed monitoring and measurement
Transparency in reporting

Best-in-class ESG practices

+

Impact Management Framework

Generate positive returns

Vision

Be a Leader in India and SE Asia for Responsible and Sustainable Investing

To pursue **financial returns** while **proactively** and intentionally **mitigating ESG risks** and **contributing** to **positive measurable outcomes** for all our stakeholders – our investors, our employees, our portfolio companies, and the communities where we are present

Proprietary PIA Framework to bring focus on the **UN SDGs**

+

Assessment based on **IFC's Anticipated Impact Measurement and Monitoring (AIMM) Framework**

+

Assessment based on the **Avoid-Benefit-Contribute (ABC) Framework** to draw distinction in outcomes for under- served beneficiaries

+

Impact Thesis for the **Fund** and individual **Focus Sectors**

SUSTAINABLE DEVELOPMENT GOALS

ANTICIPATED IMPACT MEASURING & MONITORING
IFC International Finance Corporation

Operating Principles for Impact Management

Proprietary Responsible Investing Framework

4 Pillars of ESG linked to the UN SDGs to develop our proprietary Purpose-Intentionality-Additionality with a significant focus on 5 SDGs to deliver Employment growth, Gender equality, **Climate action**, Digitalization and Healthcare efficiency

Principles of Governance

Planet

People

Prosperity

UN SDGs

PURPOSE

Principal Goals

- Climate Action
- Decent Work & Economic Growth
- Gender Equality

INTENTIONALITY

Organizational Behaviour

- Peace, Justice & Strong Institutions
- Partnership For The Goals
- Responsible Consumption & Production
- Reduced Inequalities
- Industry, Innovation & Infrastructure

ADDITIONALITY

Investment Specific Impact Outcomes

- Clean Water & Sanitation
- Affordable And Clean Energy
- Life Under Water
- Life On Land
- Quality Education
- Good Health & Well Being
- Sustainable Cities & Communities
- No Poverty
- Zero Hunger

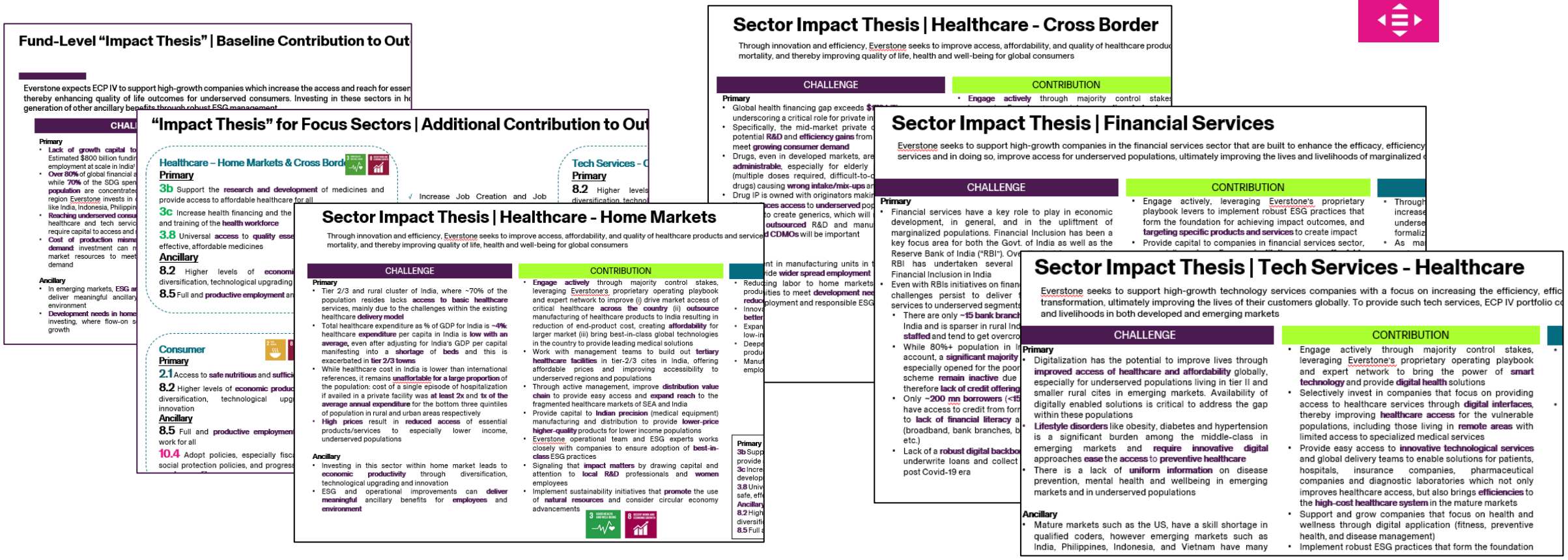
ALIGNED TO THE ENTIRE PORTFOLIO

ALIGNED TO SPECIFIC INVESTMENTS

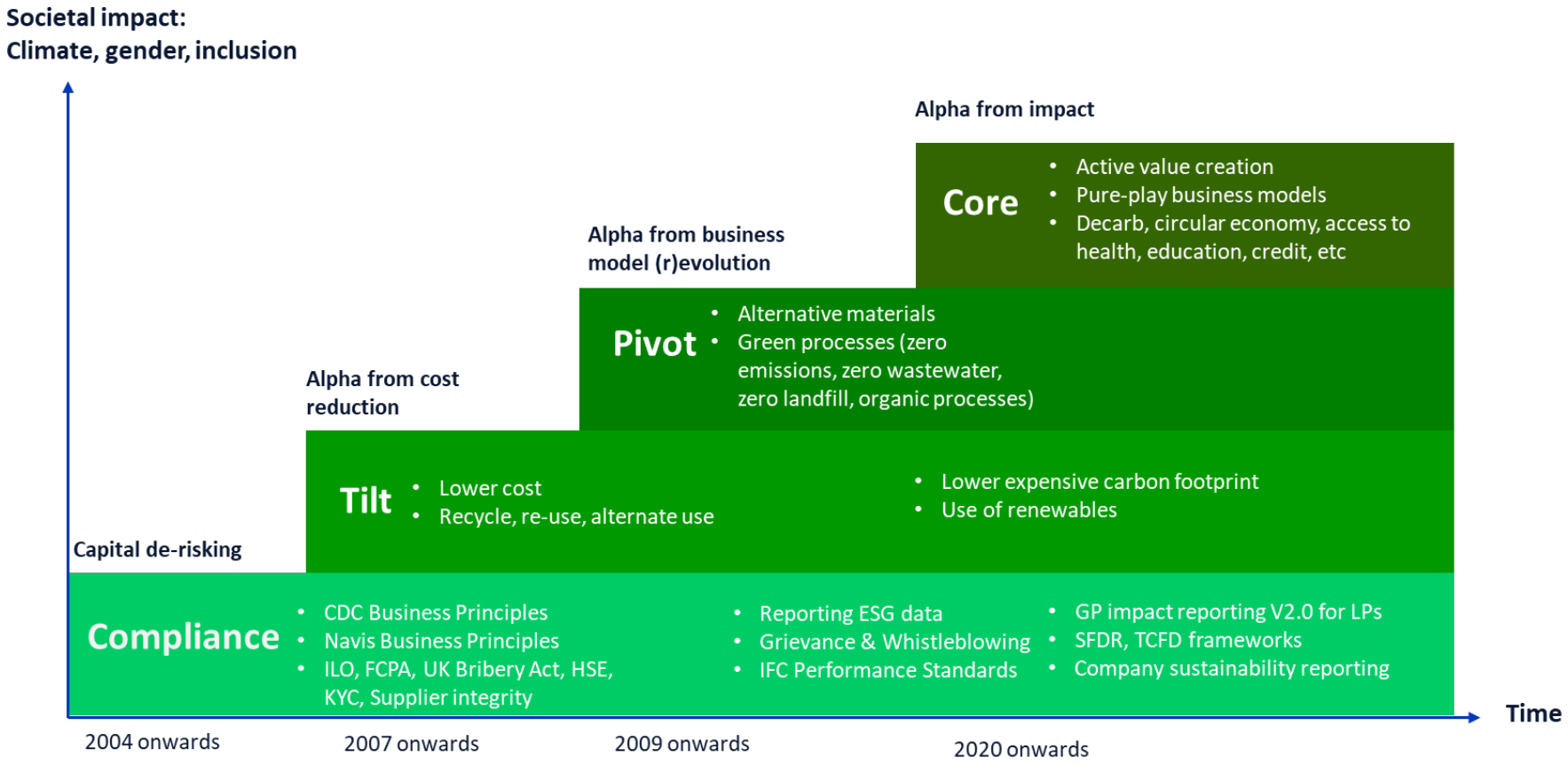
Impact Thesis for the Fund and for each Focus Sector

As part of this Impact Management Framework, we developed an impact thesis for the Fund and each focus sector to drive clear alignment with the Sustainable Development Goals

Healthcare - Home Markets*	Healthcare - Cross Border	Tech Services - Healthcare	Tech Services - Others	Consumer	Financial Services
3 GOOD HEALTH AND WELL-BEING	3 GOOD HEALTH AND WELL-BEING	3 GOOD HEALTH AND WELL-BEING; 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	8 DECENT WORK AND ECONOMIC GROWTH; 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	2 ZERO HUNGER; 8 DECENT WORK AND ECONOMIC GROWTH	1 NO POVERTY; 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE; 10 REDUCED INEQUALITIES



20 years of ESG at Navis, from compliance to a decade of Alpha



8	Member of	2X GP	ISSB S1/S2
dedicated ESG professionals	PRI Principles for Responsible Investment; IFRS Sustainability Alliance; ESG Data Convergence Initiative	36% of portfolio companies qualified	full adoption by 2025

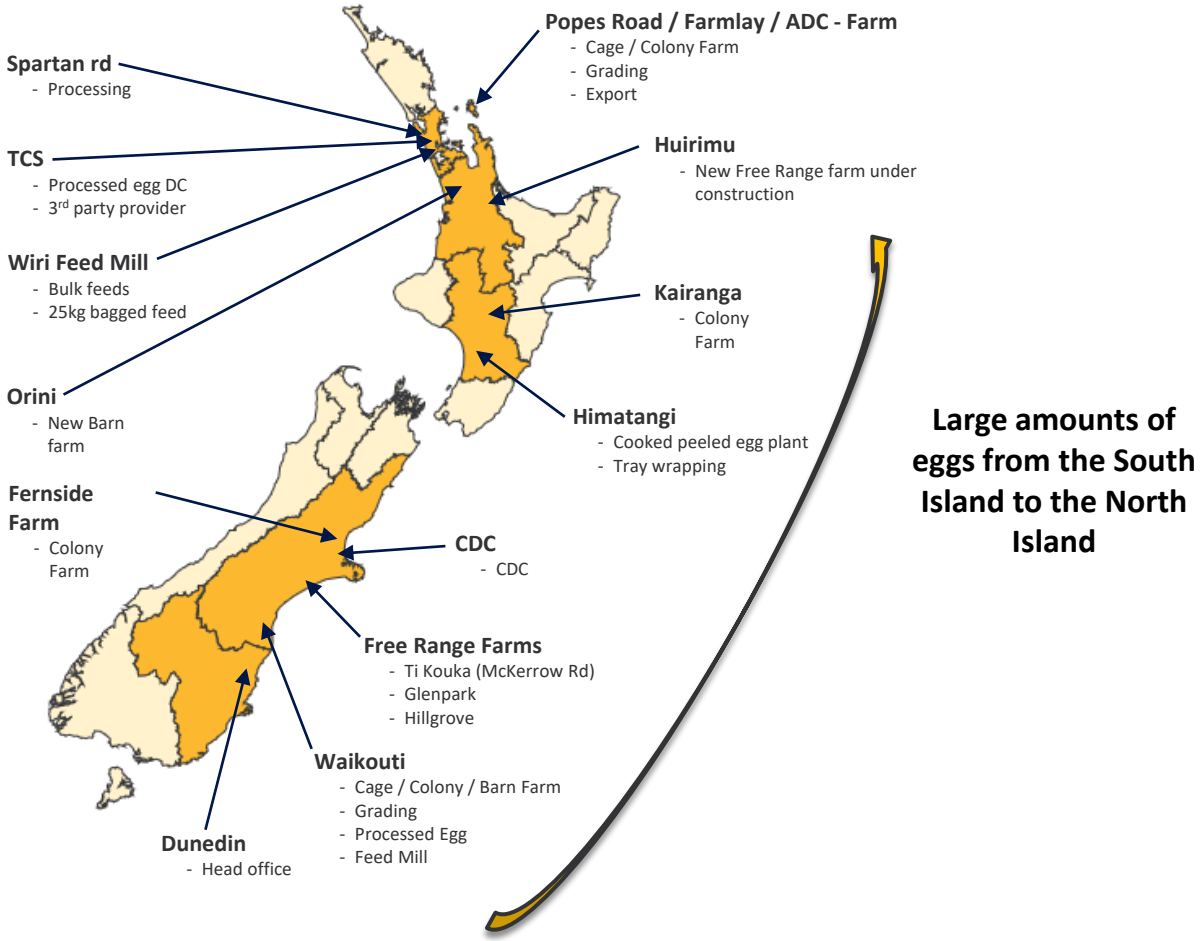
Zeagold's Low Carbon Egg Ambition
Mainland Poultry Overview

Key Brands	Farmer Brown	Farmer Brown	WOODLAND FREE RANGE EGGS	ZEAGOLD QUALITY EGGS	MainFeeds Barnyard
Product Offering	**Colony Eggs**	**Barn Eggs**	**Free Range Eggs**	**Processed Eggs**	**Layer Hens / Multi-species Feed**
Sqm per bird	750cm^2	1,400cm^2	1,000cm^2 per bird	N/A	• Provides animal feeds for layer hens, pigs, rabbits, guinea pigs, and horses.
Description	• Colony sheds have a larger indoor space	• Indoor sheds with larger space allocation per bird	• Unrestricted access to the outside environment	• Pasturised and ready to eat egg products	

Zeagold's Low Carbon Egg Ambition
Mainland Poultry Overview

Farms	Livestock
Huirimu	120,000
Farm Lay	60,000
Orini	300,000
Fernside	95,000
Kairanga	86,000
McKerrow Rd	101,000
Waikouaiti	372,000
Hillgrove	160,000
Dunback Free Range	63,000
North Island	**566,000**
South Island	**791,300**
Total Birds	**1,357,300**

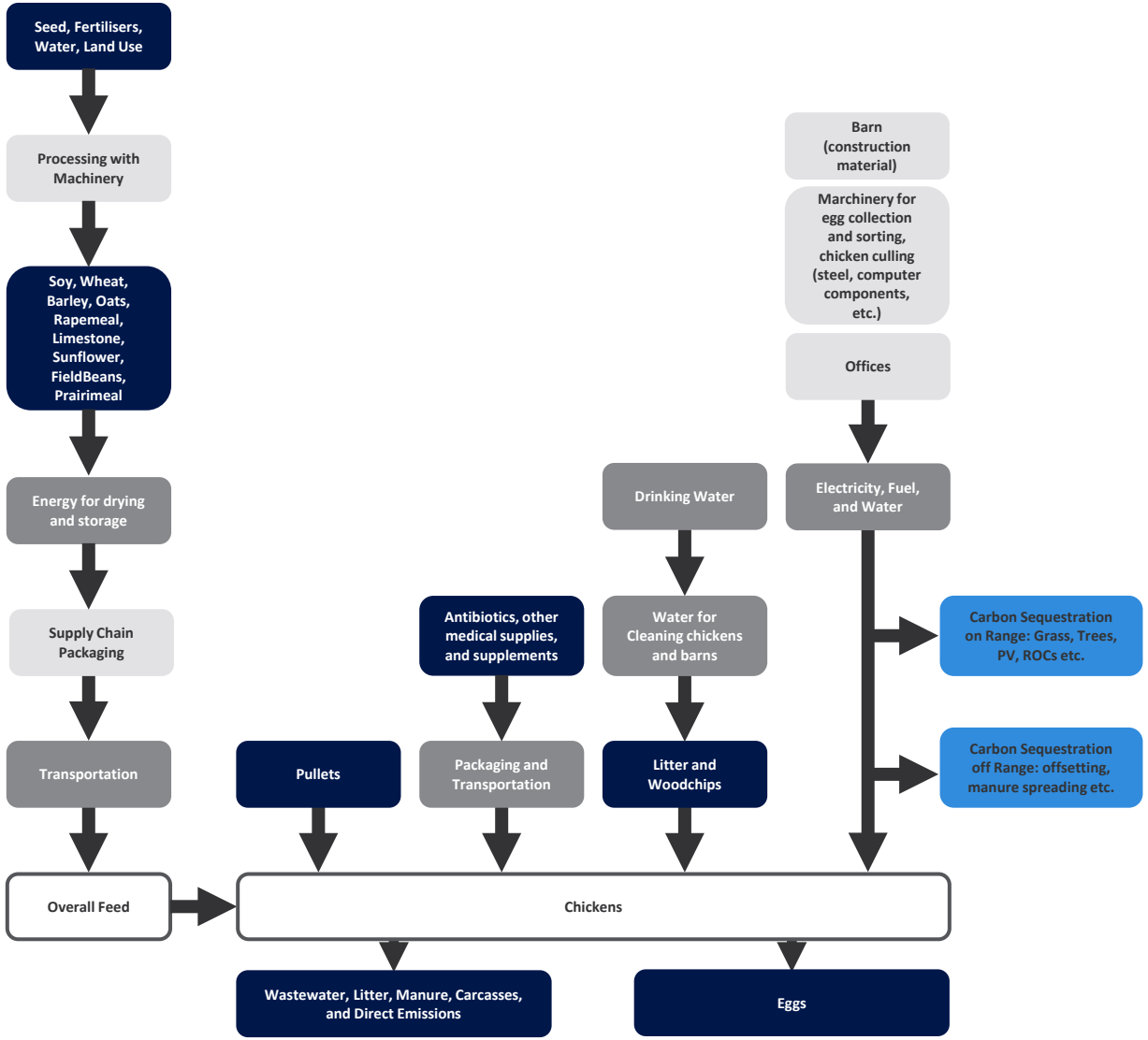
77% of NZ Population is in the North Island



Large amounts of eggs from the South Island to the North Island

South Island produces 58% of our eggs

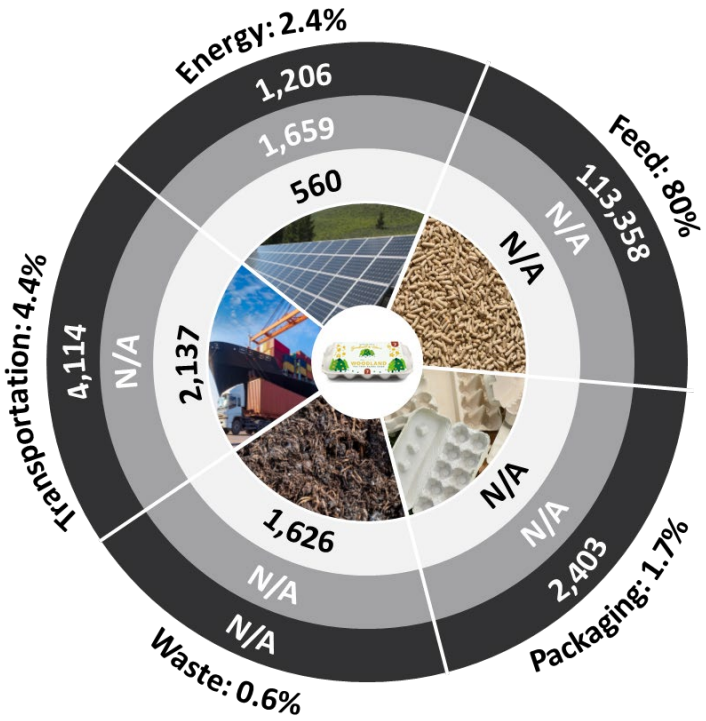
Zeagold's Low Carbon Egg Ambition
Challenge: major GHG factors



Main Challenges	Scope of GHG Emissions		% of total emissions
Manure (25,000 tons per year) • Dried in laying sheds • High N, K, and Carbon • Sold to farms via distributors • Spread onto farms as raw manure • Low value	1	✓	1.14%
	2	✓	
	3		
Transportation • Importing grain from global suppliers • Distribution of our Eggs from the South Island to the North Island • We use LPG for heating and forklifts	1	✓	4.41%
	2		
	3	✓	
Feed • GHG associated with land use change are the main ones associated with feed within the carbon footprint of poultry systems	1		80%
	2		
	3	✓	

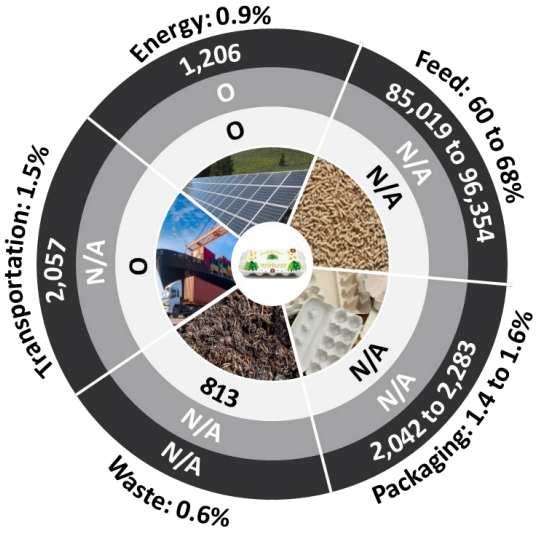
Zeagold's Low Carbon Egg Ambition
Pilot Program

Total emissions: 127,063 tCO_2e



25% reduction

Total emissions: 91,137 tCO_2e*



*Up to 25% reduction depending on set of initiatives

GPCA

Global Private Capital Association

Lunch

To submit questions online

Go to slido.com or scan the QR code

Enter 1180510

GPCA
Global Private Capital Association

Climate Transition Opportunities (30 minutes)

Steve Okun Senior Advisor, **GPCA**

Milena Nikolova Partner, **Aera VC**

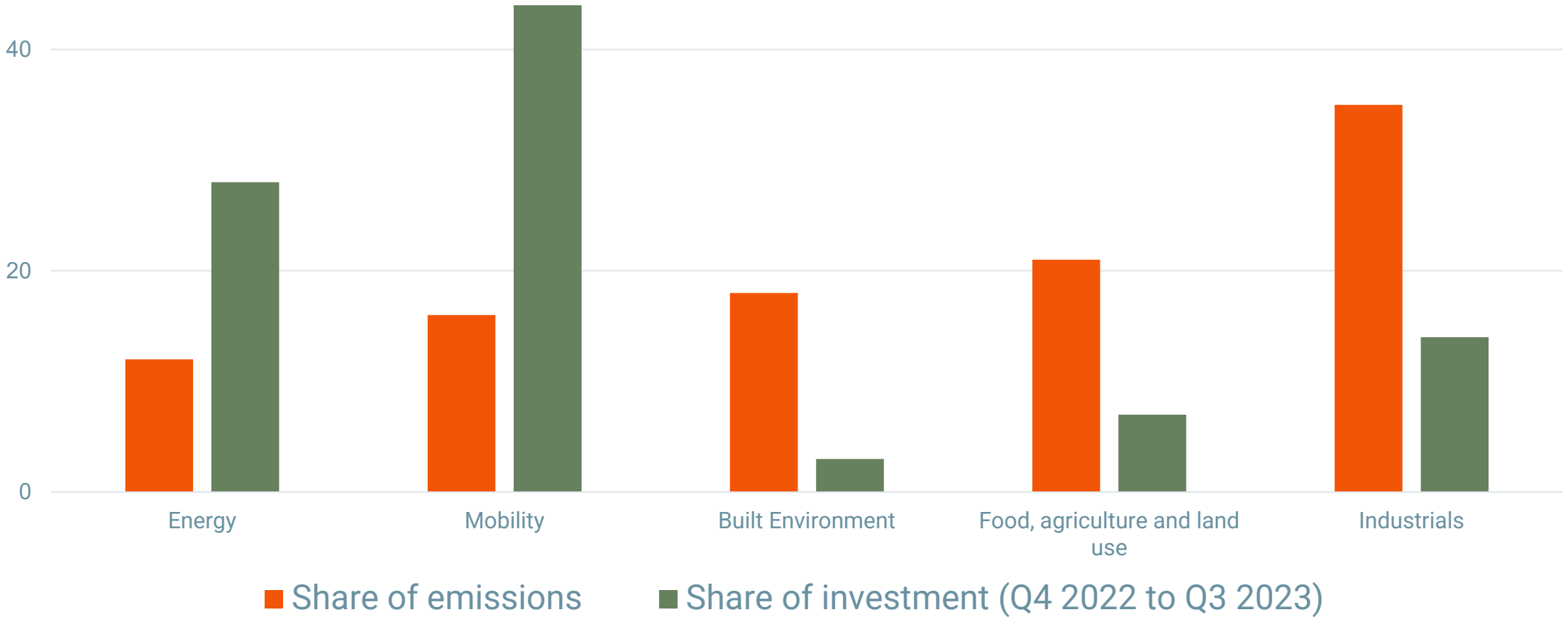
Bence Szegedi Senior Director, ESG Portfolio Operations, **Navis Capital**

To submit questions online

Go to slido.com or scan the QR code below

Enter 1180510

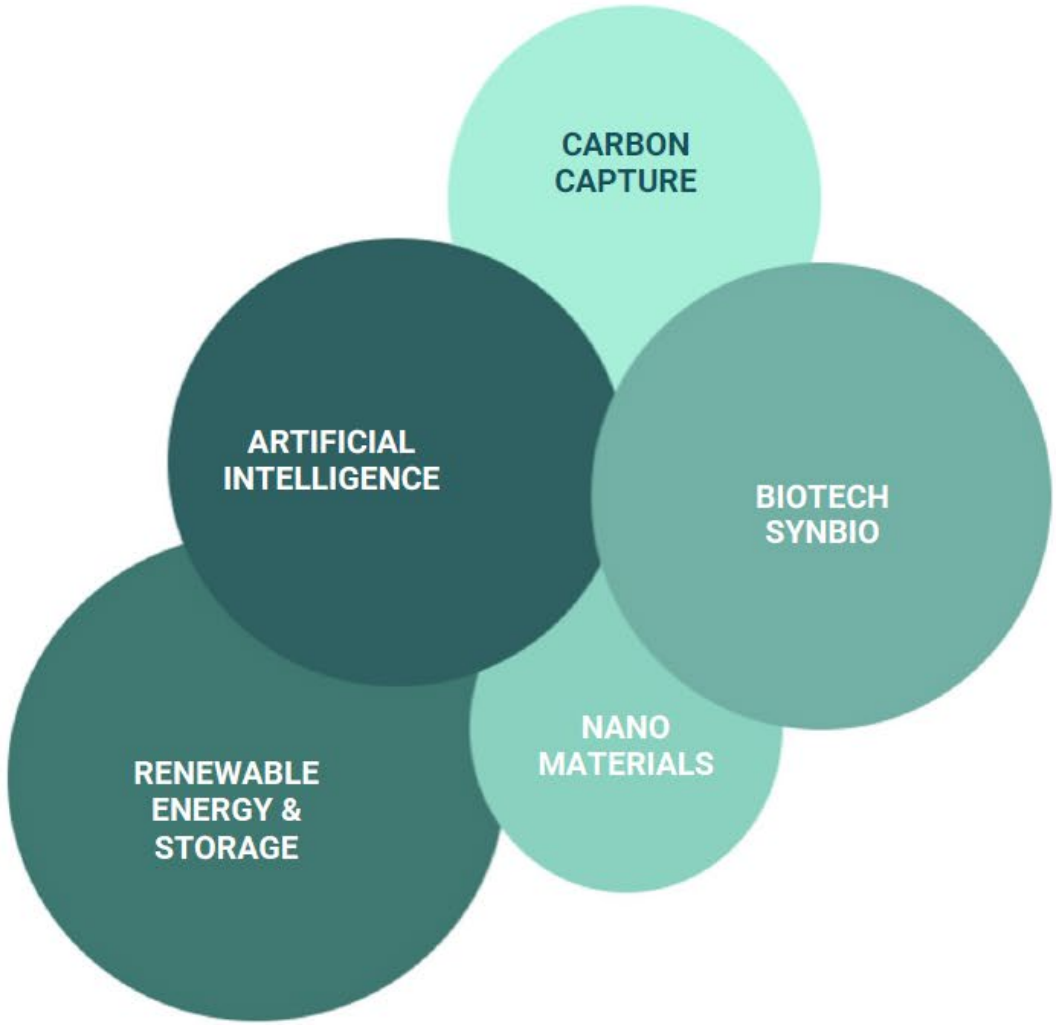
Global Emissions Sources Compared to Global Climate Tech Investment



Source: PwC

GPCA

Convergence of mega tech and scientific trends



NEW ENERGY SOURCES – Geothermal, fusion (holy grail)

REIMAGINING BUILT WORLD – Climate friendly materials

PRECISION AGRICULTURE – Crop protection, biodiversity

CARBON CAPTURE + UTILISATION – DAC, land/sea CDR pathways

BIOREMEDIATION – Wastewater treatment, extraction of heavy metals

ENABLERS/ADAPTATION – Software, satellite monitoring, circularity

Synbio Portfolio Examples

solugen

DECARBONIZING THE CHEMICAL INDUSTRY FOREVER

Chemicals production accounts for >10% of GHG emissions.

Solugen use AI to engineer enzymes to make carbon negative industrial chemicals by upcycling food waste and replacing petrochemicals.

- $100mn ARR and very high margins from their first Bioforge facility
- US$200M Series D in 2022 at valuation of >US$2 billion.
- #2 of "World's 50 Most Innovative Companies, 2022" by Fast Company.
- "Builders + Innovators of 2022" by Goldman Sachs and Tech Pioneers by WEF.

robigo

PROGRAMMABLE MICROBES TO REDEFINE AGRICULTURE

Chemical pesticides are destroying soil health and biodiversity.

Robigo bioengineer microbes into "molecular vigilantes", which have the multiple benefit of:

- Protect crops against diseases, replacing toxic pesticides
- Enriching soil health and biodiversity
- can make crops climate resilient (flooding, draughts, etc)

Recently raised oversubscribed US$8M Seed round.

Founder recognized as Top 10 Synbio Woman Founders in Forbes.

CO2 Utilisation Portfolio Examples

INDUSTRIAL PHOTOSYNTHESIS

Without carbon capture and utilization net zero can not be achieved

Twelve is a carbon transformation company turning CO2, water and green energy into jet fuel or plastics applying electrocatalysis technology.

- US$130M Series B in 2H 2022
- Signed deals with Alaska Airlines, Mercedes and P&G for product testing
- Named “Best Invention of 2022” by TIME Magazine.
- #3 of “World’s 50 Most Innovative Companies, 2022” by Fast Company.
- Top 12 “Climate Innovations” by Bloomberg NEF for ‘Decarbonizing Aviation’.

CARBON NEGATIVE CONCRETE

Concrete production accounts for 6-8% of GHG emissions

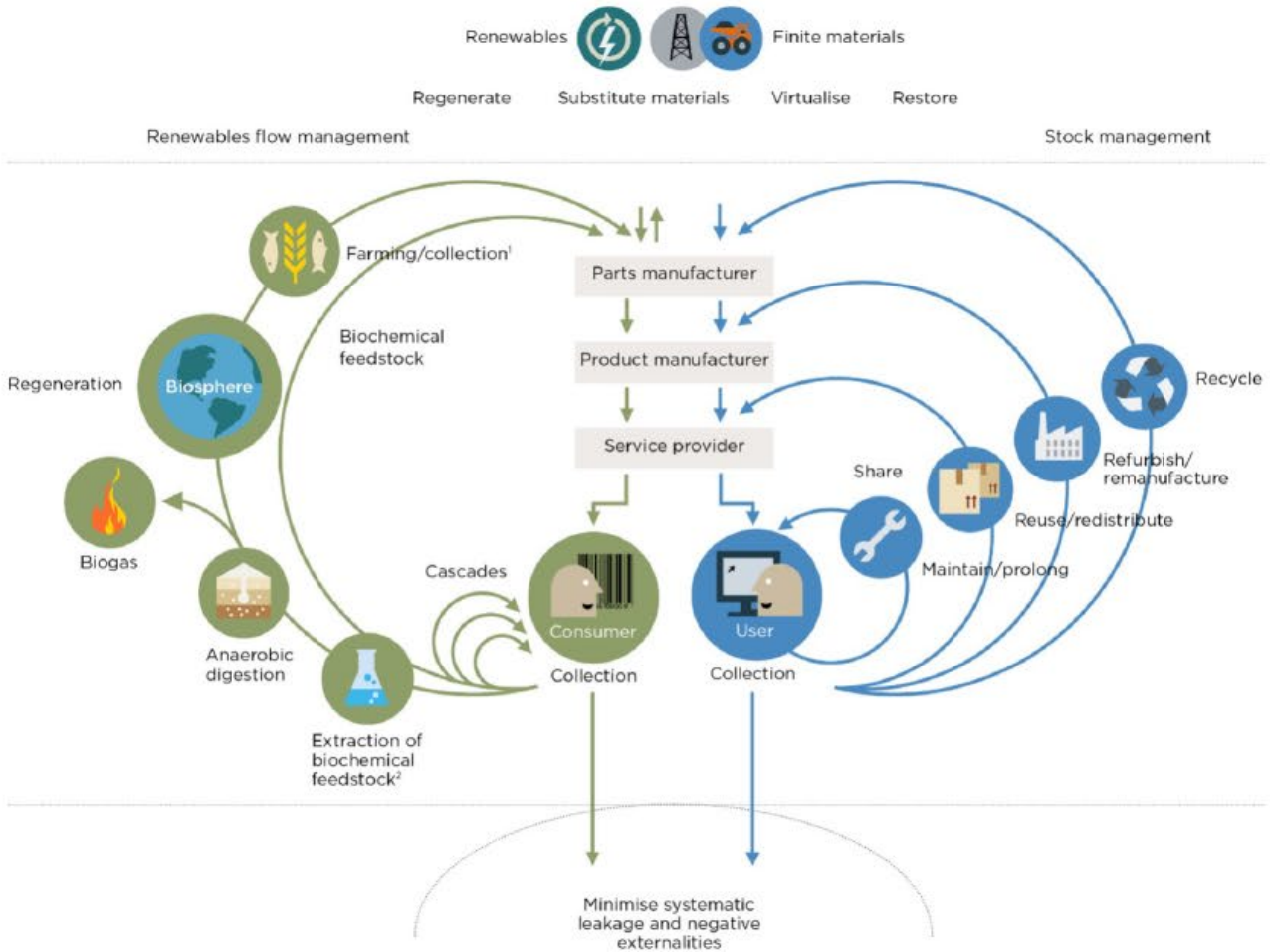
CarbiCrete makes carbon negative concrete by replacing limestone with steel slag (waste product) and injecting CO2 at the end

Key benefits:

- stronger, cheaper than current and cures in 1 day (vs 4 weeks)
- can retrofit in existing facilities
- not only abates, but also sequesters CO2

Raise US$18M Series A round in 2022 - St. Gobain one of the backers.

Circularity to become mainstream



AERA VC PORTFOLIO EXAMPLES

solugen	Plant waste → Green chemicals
twelve	Recycling CO2 → Sustainable fuels
CarbiCrete	Steel slags → Emissions free concrete

Future of VC is Climate Native

World's Most Innovative Companies*

2018 WINNERS

SOFTWARE AND PLATFORM LED

01 **Apple**

For delivering the future today

02 **Netflix**

For mastering the smallest screen

03 **Square**

For extending the benefits of banking

2022 WINNERS

CLIMATE LED

01 **Stripe**

For kick-starting the carbon-removal industry

02 **Solugen**

For devising an emissions-free way to turn sugar into industrial chemicals

Aera VC Portfolio

03 **Twelve**

For turning the tide on petrochemicals

Aera VC Portfolio

"The next 1,000 unicorns won't be search engines or social media companies, they'll be sustainable, scalable innovators – startups that help the world decarbonize"

- Larry Fink, BlackRock

* Fast Company Awards

Sample Investment Themes

Energy Transition

Energy Generation
- Solar PV
- Wind
- Green Hydrogen
- Biogas and Biomass
- Waste to Energy
- Related ecosystems and technologies

Energy Storage
- Battery Energy Storage






Decarbonization of Industry and Sustainable Transportation

Energy Efficiency
- Waste Heat Recovery
- HVAC / Building Efficiency
- Enabling Technologies

Alternative Materials
- Circular Economy Solutions
- Recycled plastics and metals

Sustainable Transportation
- Alternative Fuels
- Fleet Electrification





Sustainable Agriculture and Water

Sustainable Agriculture
- Enabling Technologies / Precision Agriculture
- Biochar, Green Fertilizers, Reforestation

Water
- Enabling Technologies




NOVEMBER 2023

GPCA
Global Private Capital Association

Preview

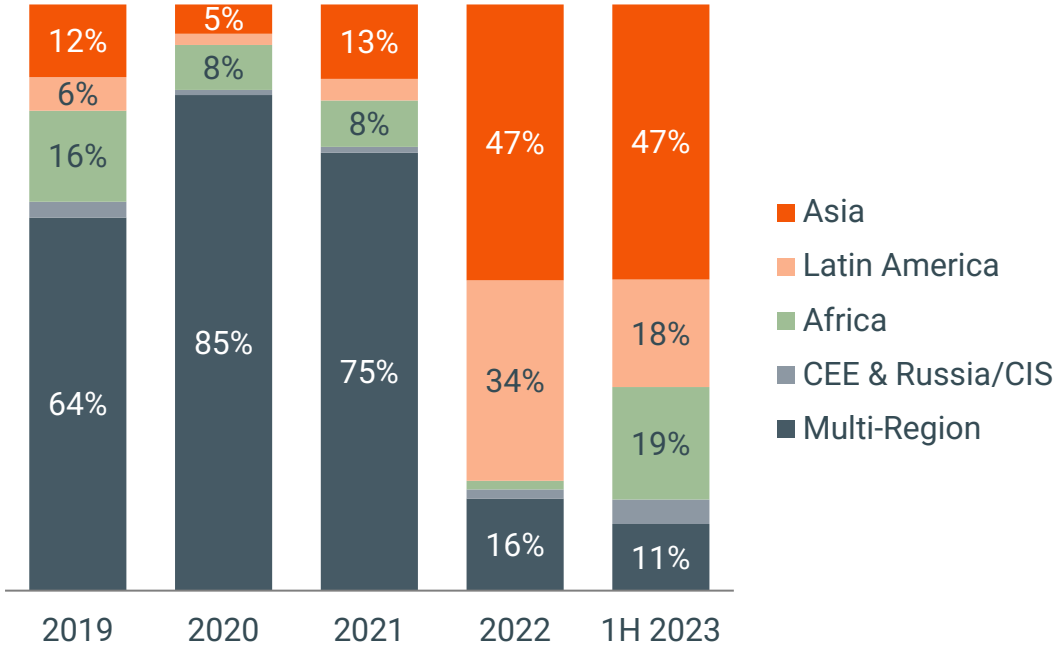
Climate Funds in Global Markets

MAPPING PRIVATE CAPITAL STRATEGIES

Preview: Region and country-specific climate vehicles are gaining traction

Funds targeting Asia, Latin America and Africa on a regional basis, or specific countries within these regions, have raised USD4.4b since the beginning of 2022.

Fundraising for Climate Funds by Geographic Focus, 2019-1H 2023 (% of Capital Raised)



Source: GPCA. Data as of 30 June 2023.

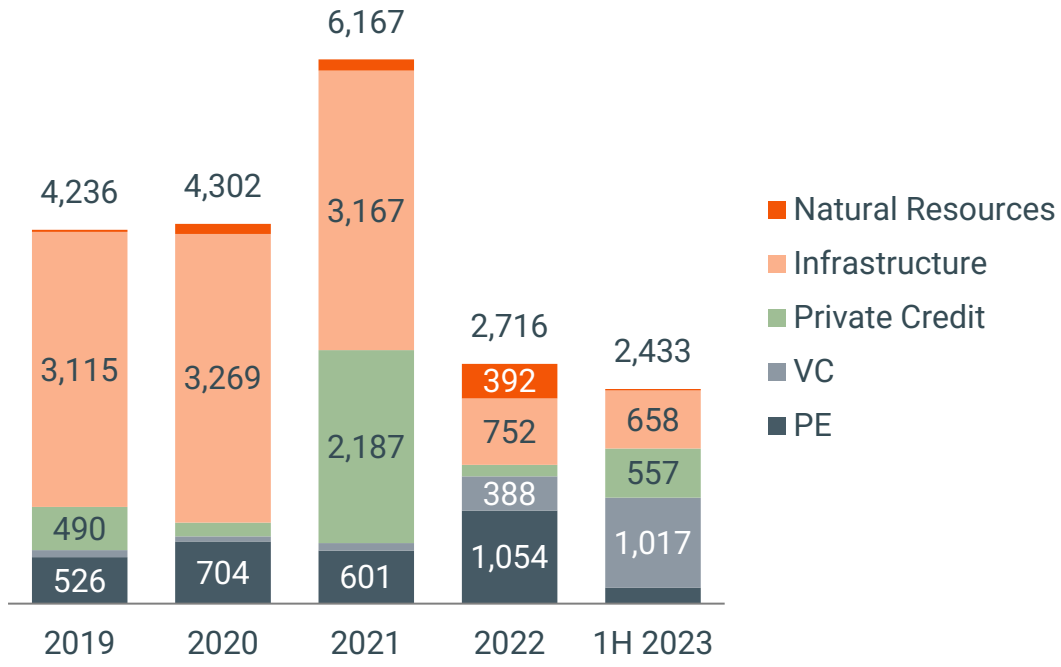
Select Regional- and Country-Dedicated Climate Funds, 2021-1H 2023

Fund Manager(s)	Fund	Fund Type	Geo. Focus	Capital Raised (USDm)	Vintage Year
Everstone Capital Asia	Green Growth Equity Fund	Infrastructure	India	741	2018
IDG Capital Partners, Towngas	IDG Carbon-Free Technology Fund	Multi-Stage/ Opportunistic	China	709	2023
Navis Capital Partners	Asia Green Loop Fund	Restructuring/ Continuation	Asia	450	2021
BTG Pactual	Brazil Timberland Fund II	Natural Resources	Brazil; Latin America	230	2022
Lion's Head Global Partners	Facility for Energy Inclusion	Infrastructure Debt	Africa	211	2019
Vinci Partners	Vinci Climate Change FIP	Infrastructure	Brazil	123	2023
Inspired Evolution	Evolution III	Infrastructure	Africa	199	2023

Preview: Climate funds are becoming more diverse, include climate tech-focused VC

Renewable power strategies have accounted for the bulk of commitments to climate funds in GPCA's markets, but VC funds investing in climate tech opportunities raised over USD1b in the first half of 2023. Commitments to specific sector verticals outside of renewable power and food/agriculture remain limited.

Climate Fundraising by Asset Class – GPCA Markets, 2019-1H 2023 (USDm)



Climate Fundraising by Geographic Focus and Vertical – GPCA Markets, 2019-1H 2023 (USDm)

	Multi-Region	Asia	Latin America	Africa	CEE
Alternative Fuels	25	-	-	40	-
Utility-Scale Renewable Power	10,255	537	765	1,310	265
Distributed Generation	419	-	17	450	-
Energy Efficiency	-	117	-	-	-
Green Transportation	-	231	-	-	-
Forestry & Carbon Sequestration	159	120	320	35	94
Sustainable Food & Agriculture	106	755	604	58	-
Climate-Focused Financial Services	220	62	-	-	-
Diversified Climate Solutions	459	2,121	223	88	-
Total	11,643	3,942	1,928	1,981	359

Source: GPCA. Data as of 30 June 2023.

GPCA
Global Private Capital Association

Governance and Reporting (45 minutes)

Vika Bhagat Senior Technical Assistance Associate, **FMO**

Noel Peters Principal Investment Specialist, **ADB**

Bence Szegedi Senior Director, ESG Portfolio Operations, **Navis Capital**

Roshini Bakshi Managing Director, Private Equity & Head of Impact, **Everstone**

Steve Okun Senior Advisor, **GPCA**

Charissa Bosma Sustainable Finance Officer, **FMO**

To submit questions online

Go to slido.com or scan the QR code below

Enter 1180510

FMO
Entrepreneurial Development Bank

Climate Action Capacity Building for PE fund managers

Vika Bhagat: Technical Assistance, Senior Associate

Role of Capacity Development

Capacity Development for climate action starts at the GP level moving to the portfolio level

FMO Entrepreneurial Development Bank

GP Level

Climate Change is a strategic risk & opportunity: GP level engagement is the first step.

After GP awareness has been raised, portfolio companies can be engaged.

PORTFOLIO LEVEL

Portfolio level Capacity development and technical assistance is required to achieve Fund Level climate targets.

GP LEVEL CAPACITY DEVELOPMENT

EDUCATION AND STRATEGIC PLANNING, BACKED BY EXPERTISE, IS THE FIRST STEP

FMO Entrepreneurial Development Bank

Education & Awareness

Start by educating the management and investment teams about climate change, climate finance, Paris Agreement, its goals, and the implications for the private equity industry.

Talent Development

Invest in the development of in-house climate expertise and engage external experts to stay updated on climate science, risk assessments, and mitigation strategies.

Strategic Planning

Develop a clear climate strategy that outlines the fund's commitment to aligning with the Paris Agreement.

Set targets and timeframes for carbon reduction and climate risk management. Explore integrating climate mitigation and adaptation into investment strategies, emphasizing investments in companies with significant climate impact.

Consider development of an impact/climate framework criteria into the investment decision-making process and

Regular reporting, collaboration and carbon offsetting initiatives to embed climate action

FMO Entrepreneurial Development Bank

Monitoring and Reporting

Stay informed about evolving climate-related regulations and ensure compliance with relevant laws and reporting requirements.

Establish robust monitoring and reporting mechanisms to track progress toward emissions reduction goals. Regularly report to investors on the fund's climate-related activities and performance.

Collaboration and Stakeholder Engagement

Engage with investors, industry peers, and regulators to align with emerging climate-related standards and expectations.

Collaborate with other private equity firms, organizations, and initiatives focused on sustainable finance and climate action. Sharing best practices and learning from others is invaluable.

Carbon Offsetting

Consider carbon offsetting for emissions that cannot be eliminated within the portfolio. Invest in projects that remove or reduce carbon dioxide from the atmosphere, such as reforestation and renewable energy projects.

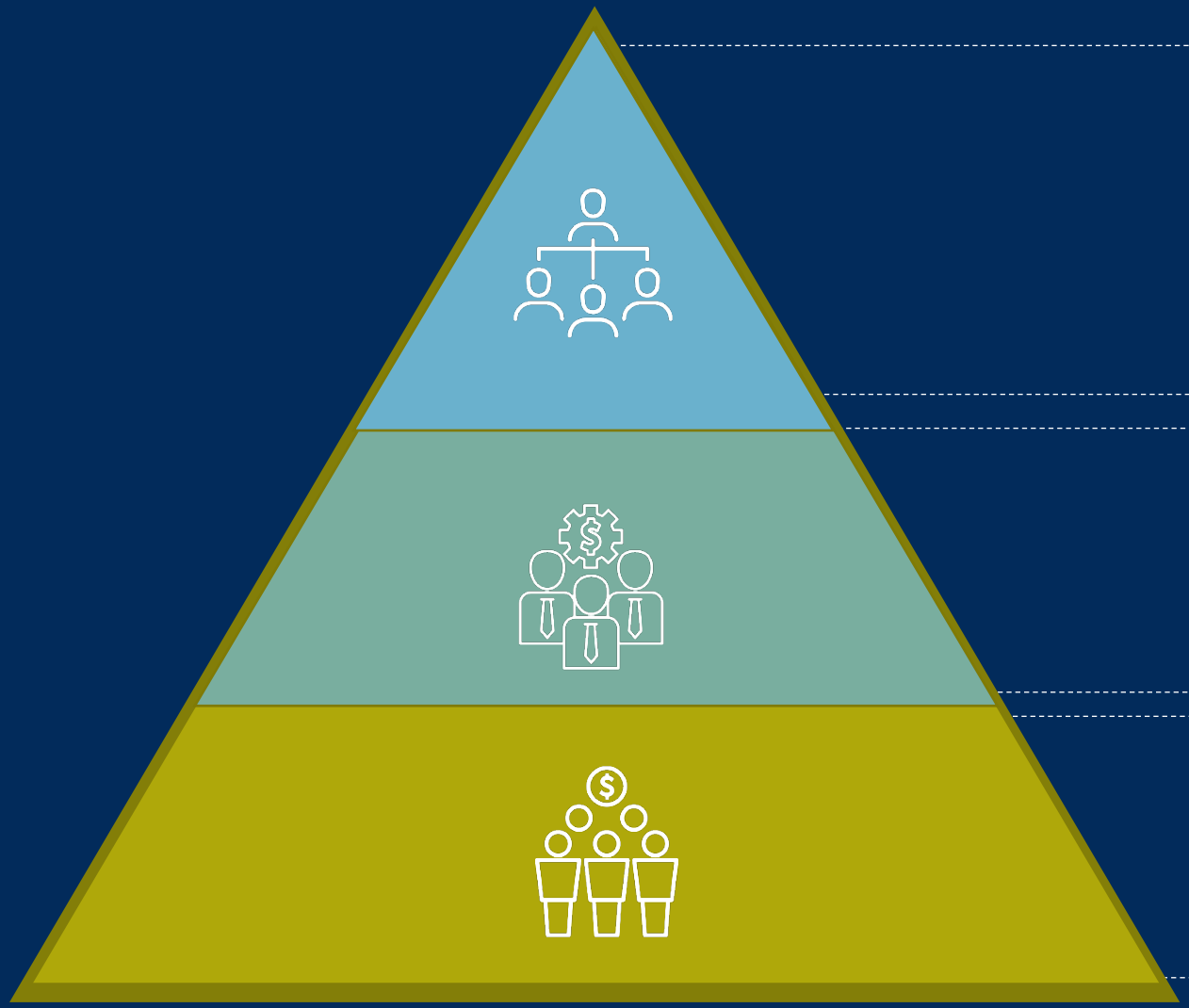
QUESTION 1

Who has engaged in capacity building activities to better align their investment portfolio with the Paris agreement?

FMO
Entrepreneurial Development Bank

PORTFOLIO LEVEL CAPACITY DEVELOPMENT

Portfolio engagement requires education, assessment and target setting

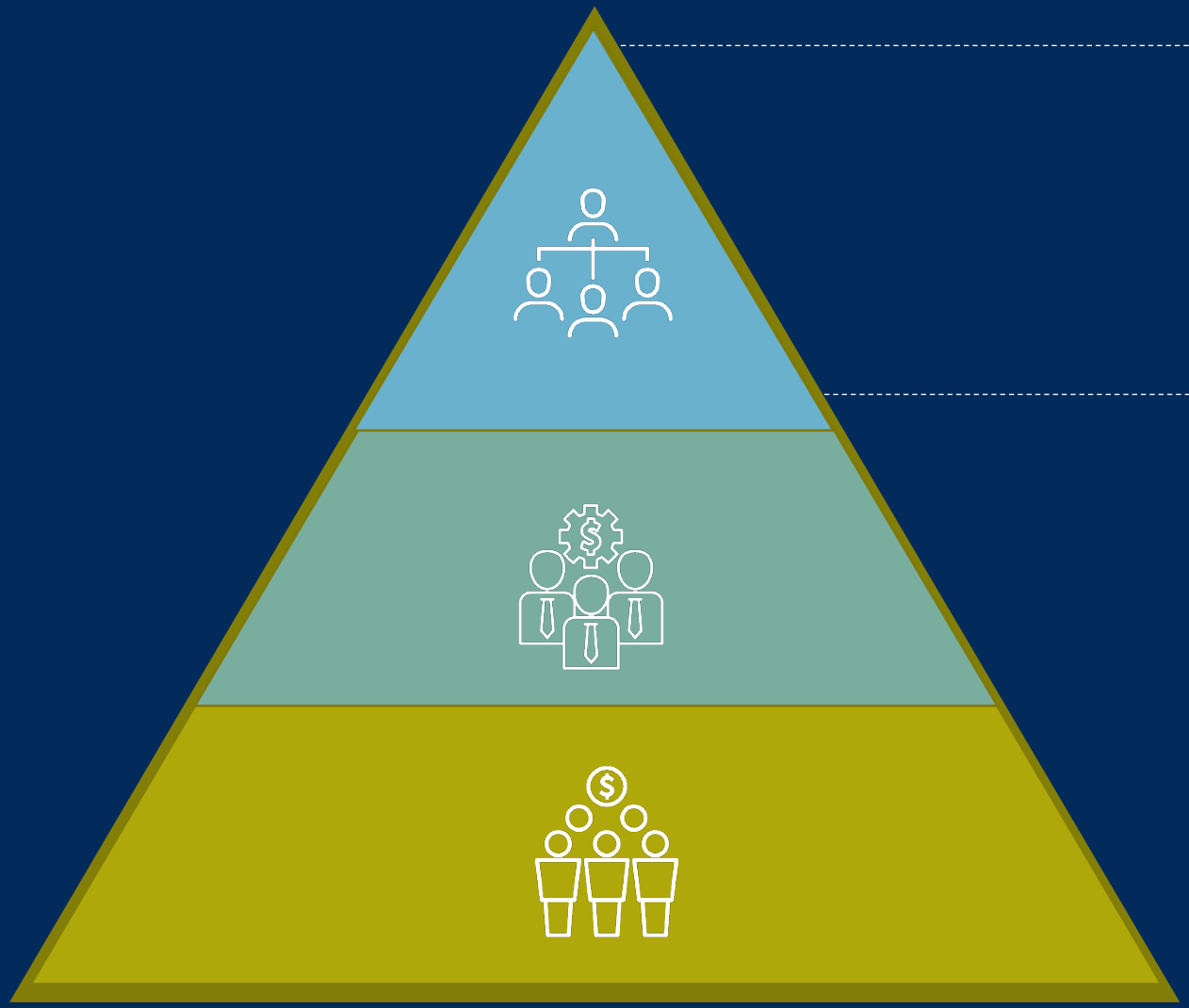


1. Education

2. Assessment

3. Target setting

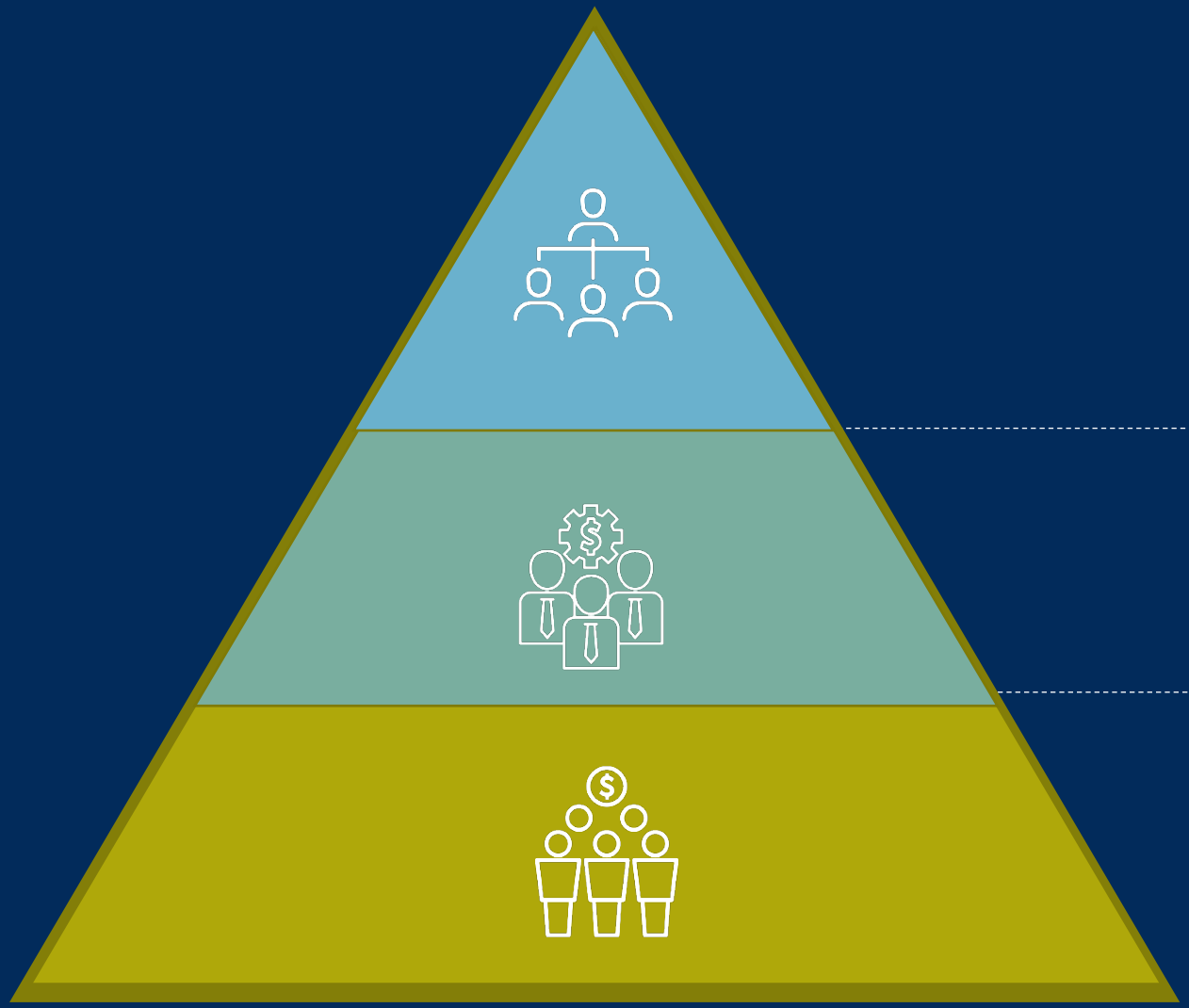
Awareness raising at the board level, followed by management and employees is the starting point



1. Education and Awareness raising

Educate the Board, management and employees of portfolio companies about the Paris Agreement, its goals, and the implications for their specific industry.

Assessing emissions and climate risks guides critical areas for action

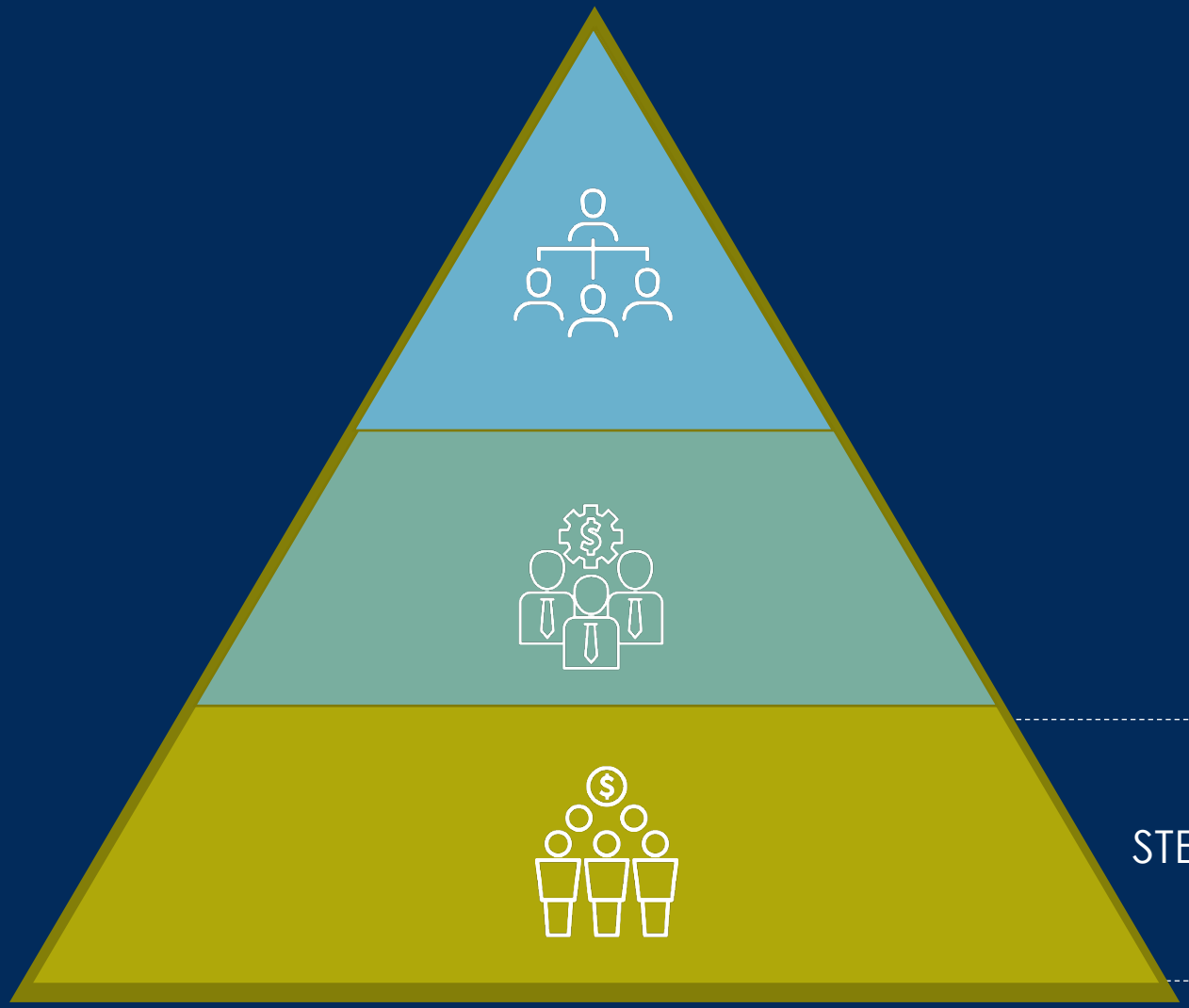


Mitigation
Evaluate the current carbon footprint of the portfolio to understand the emissions and climate risks associated with each investment

2. Assessment

Risk Assessment
Assess climate-related risks within the portfolio. This includes both physical risks (e.g., extreme weather events) and transition risks (e.g., regulatory changes).

Effective target setting and roadmaps are crucial to drive action



STEP 3

3. Target setting

Mitigation
Work with portfolio companies to identify and implement emissions reduction measures e.g. energy efficiency, transitioning to renewable energy sources, and adopting sustainable practices.

Risk Assessment
Develop sustainability roadmaps to address key physical and transition risks e.g. climate smart agriculture, customer awareness raising etc.

Technical Assistance and incentives can be used to accelerate climate action goals in the portfolio

FMO Entrepreneurial Development Bank

TECHNICAL ASSISTANCE

Develop Technical Assistance packages to support portfolio companies with climate action.

- **Climate Action trainings**
- **Resource efficiency audits**
- **Climate risk assessments and roadmaps**
- **Emission measurement and reporting**
- **Developing sustainability roadmaps and setting science-based targets**

INCENTIVES

Consider aligning compensation and incentives for portfolio company executives with climate and ESG performance to drive action.

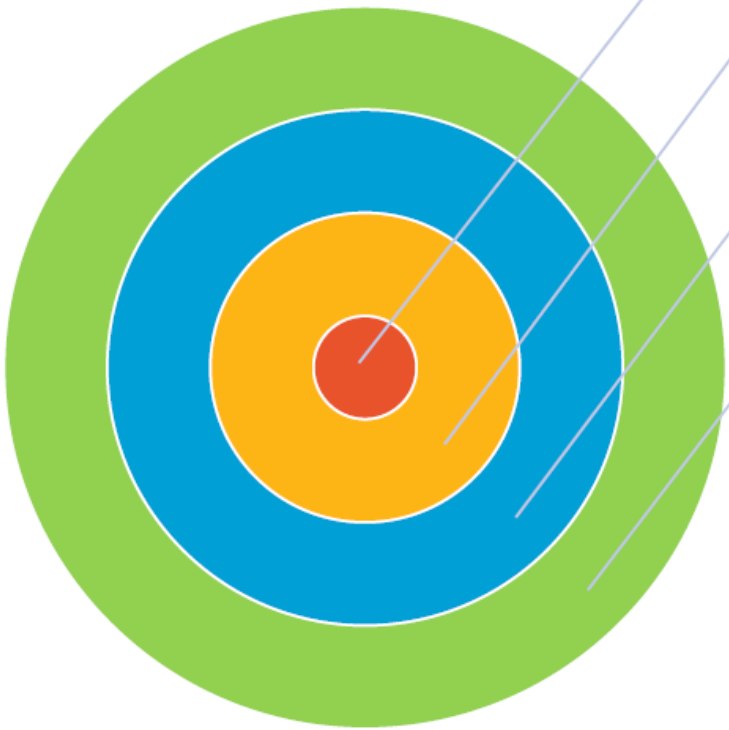
QUESTION 2

What are you going to do in the next 5 days, 5 months and 5 years to achieve Climate Action goals?

FMO
Entrepreneurial Development Bank

Benefits of TCFD reporting

Companies reporting on TCFD recommended disclosures have experienced the following:



- More informed strategic planning
- Increased awareness and therefore better risk management
- Easier or better access to capital by increasing investors and lenders' confidence
- Reduced climate-related information requests from investors

Source; TCFD survey results conducted by Accounting For Sustainability

ADB

Framework

- Over 100+ indicators collected annually from SE Asian SMEs (!)
- Limited feedback from Navis to PCs on data collected
- Reporting frameworks constantly evolving

Technical Solution

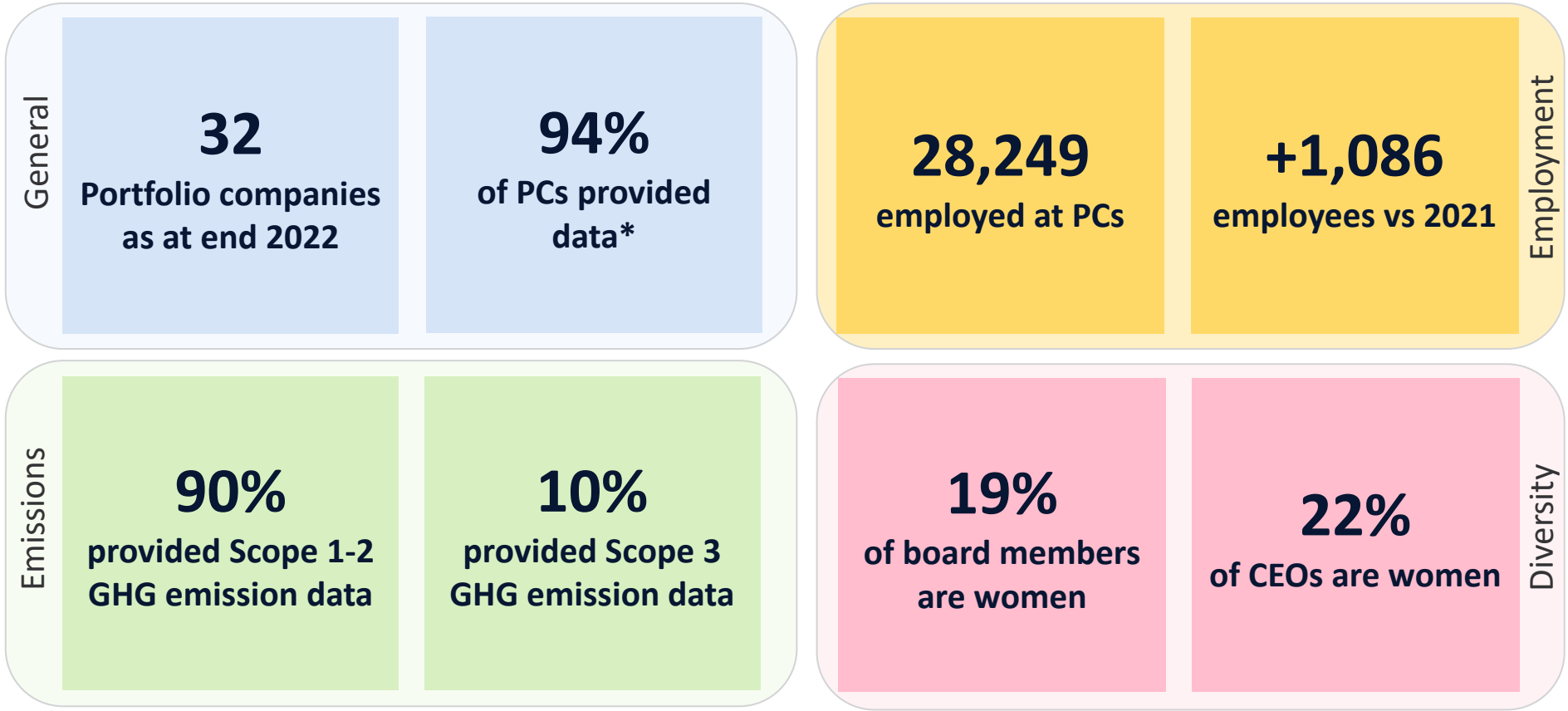
- Annual data collection took too long and very resource intensive for portfolio companies
- No systematic ongoing measurements at PCs
- Increasing number of reporting requirements for LPs

Framework

- Identified pain points:
  - Too many indicators yet not enough for LPs
  - No benchmarking available
- Decided to adopt EDCI reporting as it offers:
  - Limited number but universal indicators
  - Access to benchmarks

ESG Data Convergence Initiative

Select portfolio indicators



*As at 31 Dec 2022. 30 out of 32 PCs provided data. PCs invested in 2023 or divested during 2022 are not required to provide data

Technical Solution

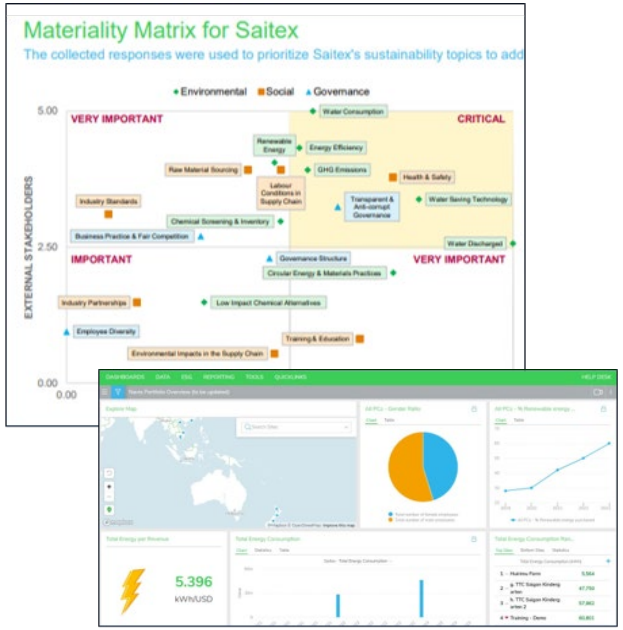
- Identified pain points:
  - Resource intensive -> managed service
  - Online solution -> future API/RPA integration
- Reviewed over 15 potential provider solutions
- Contracted Schneider Electric to help with a pilot for three companies

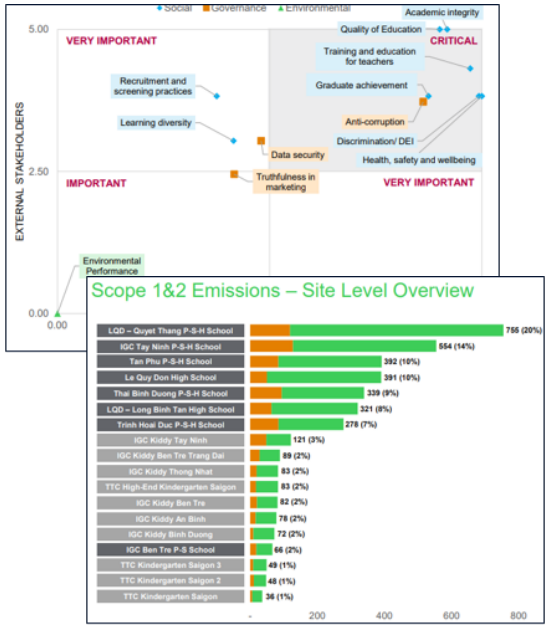
Governance and Reporting
New Technical Solution

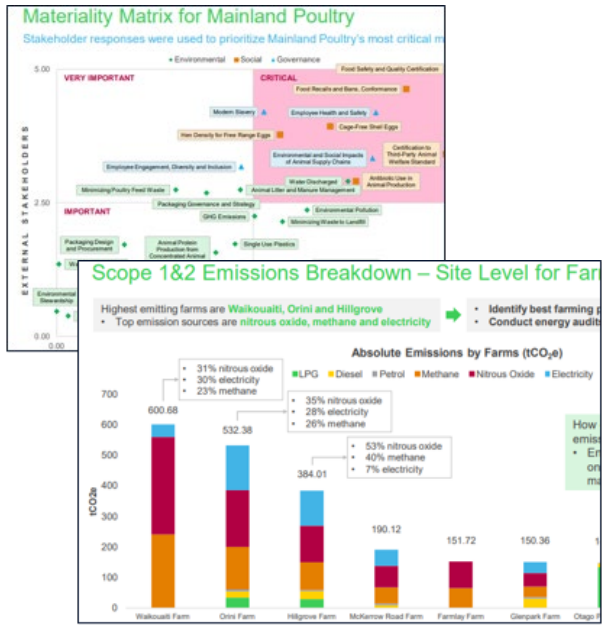
SAITEX

IGC SCHOOL

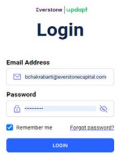
ZEAGOLD® QUALITY EGGS







Everstone ESG Digital Solutions Report



Everstone Capital

Implementation of an ESG Digital Solution

Motivation

- The ESG digital solution was implemented across all portfolio companies with the aim of
  - assessing and analyzing the **ESG performance** of the portfolio
  - achieving **consistent reporting** from all portfolio companies
  - producing **diverse reports** to meet stakeholder demands
  - effectively overseeing the **ESG initiatives** of the portfolio companies

The Process

- Diligence performed on **11 vendors** before shortlisting the desired platform, Updapt
- Tool live across our Private Equity, Climate Impact, Real Estate/Industrial Logistic Parks
- 180+ predetermined KPIs tracked using the tool
- New portfolio companies are onboarded into the platform as part of the **initial investment agreement**, which also includes **the budget allocation**
- Necessary **training and onboarding support** given to the portfolio companies in collaboration with the software provider, Updapt
- Auto-email reminders sent to users and their approvers for exception/ non-reporting
- While largely plug-and-play, **customizations** were done in the tool for specific reports like impact and SFDR-PAI

AIMM IFC

ilpa

The Reporting Module

Various Reports

SFDR-PAI Report

Impact Report

Sustainability Report

ILPA/EDCI Report

Material ESG Incident Report

ESAP Implementation Report

IFC –AIMM Report

ESG Performance Report

- Investee companies report on Qtrly basis through UPDAPT portal
- More than 180 KPI data points on PEOPLE, PLANET, PROSPERITY, CORPORATE GOVERNANCE, and Impact/Sustainability themes
- Reports can be generated with a single click from the menu icons
- All users log trails help on auditing/assurances
- Auto-email reminders to all the users and their approvers for exception/ non-reporting

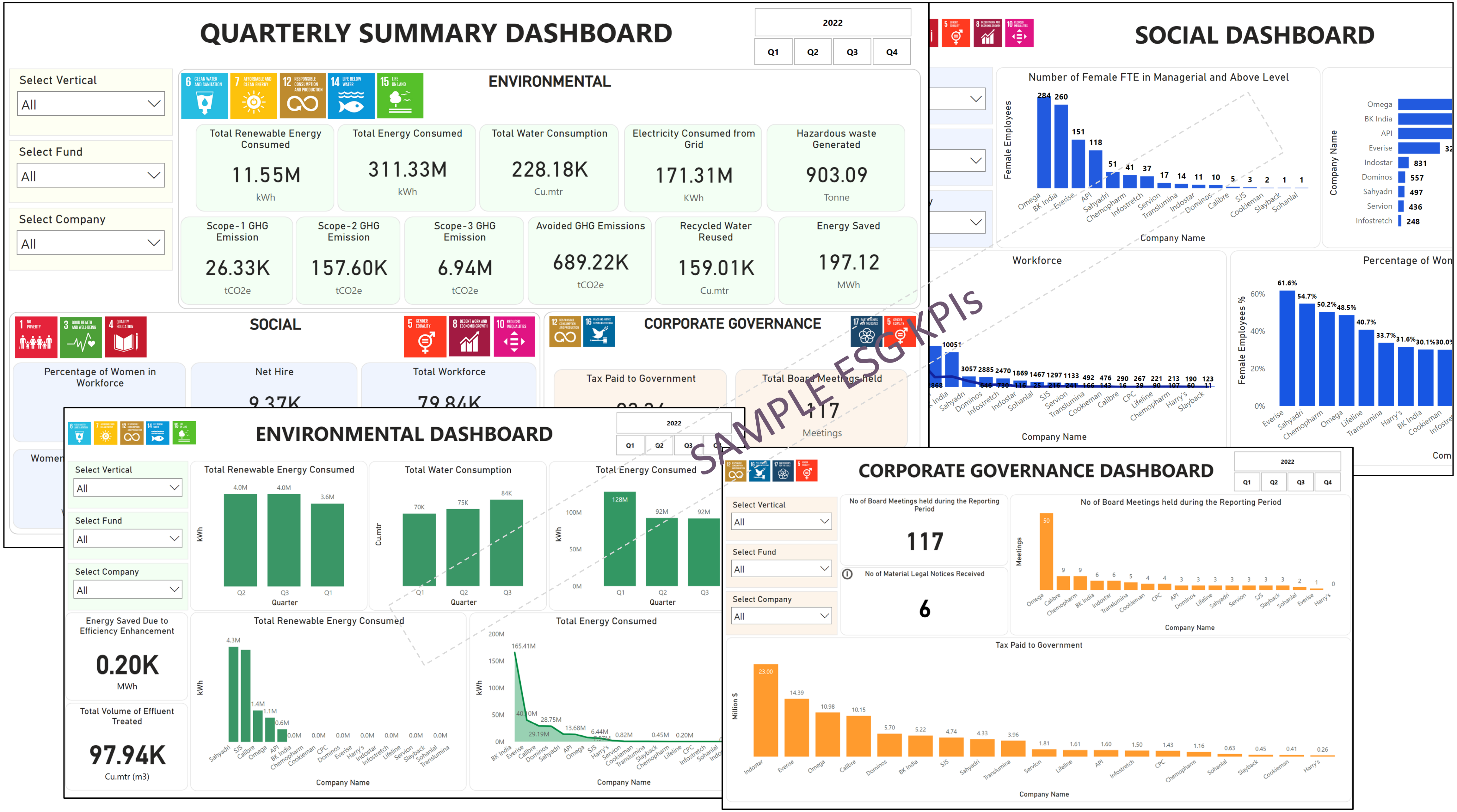
Audit & Assurances: Towards Confidence Building Measures

BDO

Assurance for OPIM's Impact Disclosures

pwc

Assurance for Annual Sustainability Report


QUARTERLY SUMMARY DASHBOARD
2022
Q1 Q2 Q3 Q4
Select Vertical
All
Select Fund
All
Select Company
All
ENVIRONMENTAL
Total Renewable Energy Consumed
11.55M
kWh
Total Energy Consumed
311.33M
kWh
Total Water Consumption
228.18K
Cu.mtr
Electricity Consumed from Grid
171.31M
KWh
Hazardous waste Generated
903.09
Tonne
Scope-1 GHG Emission
26.33K
tCO2e
Scope-2 GHG Emission
157.60K
tCO2e
Scope-3 GHG Emission
6.94M
tCO2e
Avoided GHG Emissions
689.22K
tCO2e
Recycled Water Reused
159.01K
Cu.mtr
Energy Saved
197.12
MWh
SOCIAL
Percentage of Women in Workforce
Net Hire
Total Workforce
CORPORATE GOVERNANCE
Tax Paid to Government
Total Board Meetings held
117
Meetings
SOCIAL DASHBOARD
Number of Female FTE in Managerial and Above Level
Female Employees
Company Name
Workforce
Percentage of Women
SAMPLE ESG KPIs
ENVIRONMENTAL DASHBOARD
Total Renewable Energy Consumed
Total Water Consumption
Total Energy Consumed
Energy Saved Due to Efficiency Enhancement
0.20K
MWh
Total Volume of Effluent Treated
97.94K
Cu.mtr (m3)
CORPORATE GOVERNANCE DASHBOARD
No of Board Meetings held during the Reporting Period
117
No of Material Legal Notices Received
6
Tax Paid to Government
Company Name

Select Vertical: All

Select Fund: All

ANNUAL REPORT SUMMARY

Select Year: 2022

Sustainability Goals & Outcomes

PEOPLE | PROSPERITY | PLANET | GOVERNANCE

203.14
Million $ Paid in Taxes

47.24
Million sqr ft of Certified Green Buildings

71.48
Million sqr ft of Certified Green Buildings (Cumulative)

20.31
Million $ Spent on R&D

52.00
No. of Retail Loans Provided to SMEs

2.34K
MW of Renewable Energy Capacity Installed

3.34K
MW of Renewable Energy Capacity Installed (Cumulative)

1.22M
People Benefitted from Clean Energy

4.52
Reduction in Air pollution (PM 2.5 + PM 10) [Tonnes]

47
Women at Board

2.3K
Women Managers

118
Female Suppliers

36.87%
Percentage of Female Workforce

59.38K
MWh Energy Saved

618.6K
Cubic Meter Volume of Recycle Water Reused

31.0M
MWh of Renewable Energy Consumed

0.36M
IPD+ OPD Patients Treated

11.32K
BPL Patients Treated

16.99M
No. of People Benefited from the Products/Services the company offers

123.71K
tCO2e of Avoided GHG Emission

No Data
$ Spent Towards Zero Hunger

No Data
Number of Farmers Supported Directly

No Data
Million $ of Raw Materials Purchased Directly from Farmers

150
BODs

47
Female BODs

253
Meetings

1.42M
$ Spent on CSR

14.28K
No. of Vehicle Loans Provided

No Data
Housing Loans Provided to the First time Buyer

104.09K
Total Headcount

Everstone

SAMPLE SUSTAINABILITY WHEEL

Challenges and Benefits of Implementation

Challenges During Implementation

1. **Convincing portfolio company management**

   Educating and persuading management about the significance adapting to a new technology

2. **Non-existence of Quality Historical ESG/Sustainability Data**

   There was no quality historical data on ESG or sustainability KPIs in the majority of the cases

3. **No ESG Governance Framework or Board's Oversight**

   There was no governance framework in place to ensure that the company evaluated and handled climate-related risks and opportunities

Benefits

- Efficiency
- Accuracy
- Transparency
- Real-Time Updates
- Risk Mitigation
- Enhanced Reporting
- Customization
- Scalability
- Data Integration
- Transparency

INSTITUTIONAL LIMITED PARTNERS ASSOCIATION

Decarbonisation Handbook for LPs

October 2023

October 18, 2023

4b

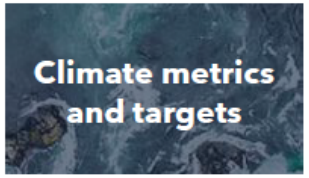
Collect climate data | LPs should determine what information is important to collect based on their ambitions

Example questions to ask GPs

- **Who in your organisation implements the sustainability strategy?** Do they regularly engage with assets and provide hands-on support when required?
- Is there **board-level oversight** of climate-related issues and **progress** against plan?

- What are the firm's **climate-related policies** and how do **climate factors influence investment beliefs?**
- Have you **developed a carbon transition plan** aligned with the Paris requirements? What are the levers it focuses on (e.g., climate solutions)?

- Have you **identified climate change-related risks and opportunities** that could significantly affect your financial returns?
- How are **climate-related risks and opportunities documented and tracked** by the investment committee?



- Do you **track climate-related KPIs** for your assets? Are they standardised across your portfolios?
- Have you **set sustainability-related targets,** including emissions reduction targets, and how do you **track progress** against these?

- For how much of your portfolio do you **collect and report on Scope 1, 2 and 3 emissions data**? What service providers (if any) do you use for data collection?
- Do you **use a third party to verify your emissions** data? If so, who?

Collecting qualitative data is crucial to understand a GP's operational context

Example resources to guide data collection

DDQ

ESG component provides **questions LPs can ask GPs** (link: pages 36-40)

ESG Assessment Framework

Framework for evaluating a GP's climate progress can provide **guidance on relevant factors to consider** (link: page 7)

Transition Plan Taskforce

Disclosure recommendations for high-quality transition plans can serve as a **guidance for LPs collecting information from GPs** (link)

The Institutional Investors Group on Climate Change

Asset Owner Stewardship Questionnaire can be used to **understand asset manager climate engagement** (link)

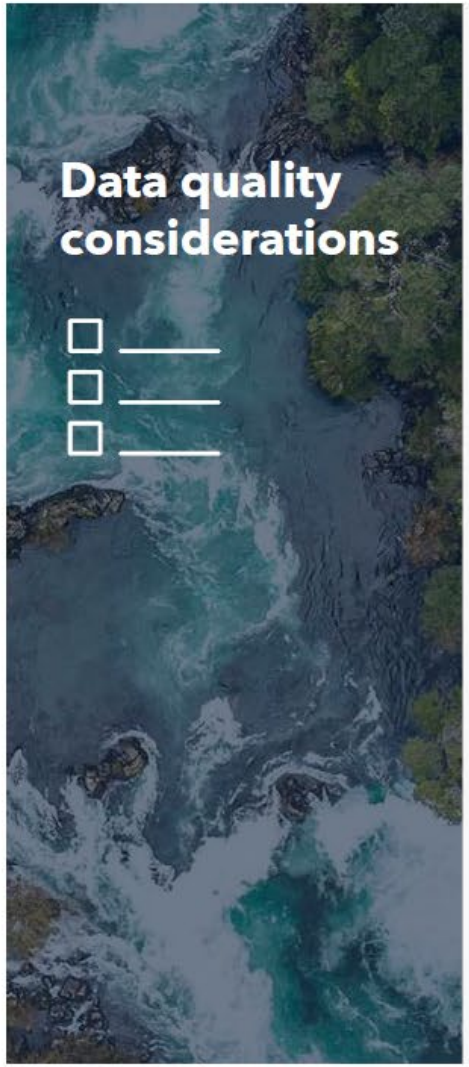
Further resources on next page →

Source: ILPA ESG Assessment Framework: Climate Supplement, ILPA DDQ, Transition Plan Taskforce, IIGCC

4b

Collect climate data | Following emissions data collection from investments, LPs should consider what quality checks to have in place

/EMISSIONS ANALYSIS



- ☐ Is the emissions data **based on actual values or proxy values** (e.g., through external providers) and what methodology was used?
- ☐ Which **scope emissions are included** in the emissions data (e.g., only Scope 1 and 2)?
- ☐ Does the **emissions data match publicly reported information** by GPs?
- ☐ Does the emissions data **only include assets that have made the greatest decarbonisation progress**?
- ☐ Are there any **obvious red flags or errors** in the emissions data (e.g., missing data point)?
- ☐ Has the reported emissions data been **audited by a third party**?
- ☐ *As both LPs and GPs progress on their data collection maturity* - Has the GP used **PCAF scores to measure the reliability of the data**?

Source: Market Participant Interviews

Climate Disclosures are Being Mandated Across the Globe

Companies that align with the Paris Agreement will get ahead of inbound regulation.

- The **UK SDR** is intended to create an integrated and streamlined framework that brings together sustainability-related reporting requirements (including climate) under one roof for corporates and financial institutions. Final statement due EOY.
- For accounting periods from January 2022, **listed issuers** in scope of the UK Financial Conduct Authority's (FCA) **climate-related disclosure rules are expected to describe their plans for transitioning to a low-carbon economy.**
- August 2023: the FCA signaled its intention to consult on **transition plan disclosures by listed companies in line with the TPT Disclosure Framework**, alongside its consultation on implementing UK-endorsed ISSB Standards. These new requirements are anticipated to come into force for accounting periods from January 2025. **The first reporting would begin from 2026.**

- EU regulation comprises the **Sustainable Finance Disclosure Regulation (SFDR); Corporate Sustainability Reporting Directive (CSRD); and EU Green Taxonomy Regulation.** The SFDR applies at asset manager level and product/fund level. The final CSRD entered into force on **January 5, 2023.**
- The European Commission adopted the **European Sustainability Reporting Standards (ESRS)** as a delegated act of the CSRD, and this act details the components of a corporate **climate transition plan.**
- All large* European companies and those **listed on the EU-regulated markets, including EU subsidiaries of non-EU parent companies** will have to apply the new rules for the first time in the **2024 financial year, for reports published in 2025.** CSRD requires a third-party assurance and external auditing (limited assurance).

- The US Securities and Exchange Commission (US SEC) developed a proposed rule, **The Enhancement and Standardization of Climate-Related Disclosures for Investors**, in early 2022 (this proposal has not yet been finalised by the SEC and is therefore subject to change).
- Under the proposed rule, **companies with a US listing** would present climate-related financial metrics as well as a discussion of climate-related impacts on financial estimates and assumptions in a footnote to the audited financial statements.
- Registrants that have adopted a climate transition plan as part of its climate-related risk management strategy would be required to disclose a description of the plan under the proposed rule. The proposed SEC requirements do not mandate exactly what should be disclosed about the plan.

- SGX mandates climate related disclosures based on **TCFD recommendations for issuers in 5 industries** from FY2024 and **proposes** mandatory climate reporting mirroring ISSB for all **listed issuers and large non-listed companies** from FY2025.
- The Monetary Authority of Singapore (MAS) issued a set of **consultation papers proposing Guidelines on transition planning by banks, insurers and asset managers** to enable the global transition to a net zero economy. Comments welcome by 18 Dec 2023.
- The Guidelines on Transition Planning set out MAS' supervisory expectations for **financial institutions to have a sound transition planning process to enable effective climate change mitigation and adaptation measures by their customers and investee companies** in the global transition to a net zero economy and the expected physical effects of climate change.

https://transitiontaskforce.net/wp-content/uploads/2023/10/TPT-Summary-Recommendations.pdf
The TPT Disclosure Framework in the Global Landscape - Transition Taskforce
* over EUR 20 million in total assets, a net turnover of EUR 40 million and/or 250+ employees

ESG Data Convergence Initiative ("EDCI") to support LP reporting and transparency

Navis and EDCI

- Navis joined EDCI in February 2023
- Navis is part of the Private Credit Working Group
- EDCI was established to create meaningful, performance-based ESG data from private companies by converging on a standardized set of ESG metrics for private markets
- As of April 2023, over 275 members (177 GPs and 98 LPs) have committed to the EDCI, representing c. USD 25 trillion of AUM worldwide
- EDCI data is aggregated across a set of ESG metrics by secure third party into benchmark available to any participating LP
- EDCI metrics are aligned with standard reporting formats such as SFDR and TCFD
- Aggregated data can be developed into meaningful statistical measures linking ESG to performance materiality

EDCI Metrics Reported

GHG emissions
- Scope 1
- Scope 2
- Scope 3 (optional)

Renewable energy
- % renewable energy usage

Diversity
- %women on board
- % women in C-suite (optional)
- % underrepresented groups on board (optional)
- % LGBTQ on board (optional

Work-related accidents
- Injuries
- Fatalities
- Days lost due to injury

Net new hires
- Net new hires (organic and total)
- Turnover

Employee engagement
- Employee survey (yes/no)
- Employee survey response (optional)

Joint Impact MODEL

Climate Solutions Hub - JIM Foundation:

PE Funds in Emerging Markets

GPCA Climate Training

Singapore November 2nd 2023

AFRICAN DEVELOPMENT BANK GROUP Building today, a better Africa tomorrow

BIO Belgian Investment Company for Developing Countries

British International Investment

CIF CLIMATE INVESTMENT FUNDS

FinDev Canada

FMO Entrepreneurial Development Bank

KFW KFW DEG

OeEB Development Bank of Austria

PIDG Private Infrastructure Development Group

PROPARCO GROUPE AFD

The Excel data output can be found in your "downloads" folder.

Filters

Investment data

Clients (#)	5
Countries (#)	4
Economic activities (#)	21
Total revenue (mUSD)	10
Total outstanding (mUSD)	21

GHG emissions

8,033
tCO2eq

	#	Emmision intensity
Scope 1	3,814	333
Scope 2	513	221
Scope 3	3,706	234
Total	*8,033*	*196*

Employment

2,370
Total jobs

	#	Employment intensity
Direct	924	87
Induced	545	45
Supply chain	758	67
Finance enabling	47	3
Power enabling	95	7
Total	*2,370*	*58*

Value added

26
mUSD/EUR

	# (000's)	Economic intensity
Wages	11,286	0.71
Savings	7,524	0.32
Taxes	6,270	0.31
Total	*25,710*	*0.49*

Clients/Sectors · Country · Economic activity		GHG emissions			Employment		Value added	
Sector	Total advances (USD)	Scope 1 & 2 emissions	Scope 1, 2 & 3 emissions	Scope 1 & 2 emissions per USD million	Total employment	Employment per USD million	Total contribution to GDP	Economic intensity
Arts, entertainment and recreation - Peru	182,744	152	295	832	110	603	1,234,244	7
Construction - Peru	16,289	7	25	2,456	11	670	130,667	8
Education - Peru	73,036	23	27	314	275	3,759	1,650,338	23
Electricity, gas, steam and air conditioning supply - Peru	16,002	58	62	3,632	3	187	22,175	1
Fruit producer - Peru	9,976	5	8	1,100	6	601	3,541,914	1
Information and communication - Peru	228,983	24	101	105	98	427	1,529,506	7
Manufacturing - Peru	135,115	96	618	711	124	918	1,540,538	11
Peru Bank - Peru	22,175	119	541	24	495	99	8,160,429	2
Real estate activities - Peru	202,455	17	31	85	37	184	669,049	3
Transportation and storage - Peru	9,765	25	38	2,510	5	468	49,062	5

Filters

GHG emissions

8,033
tCO2eq

	#	Emmision intensity
Scope 1	3,814	333
Scope 2	513	221
Scope 3	3,706	234
Total	*8,033*	*196*

Individual clients

	CO2	Non-CO2	Total
Scope 1	189	2,883	3,072
Scope 2	124	63	187
Scope 3	573	964	1,537
Total	886	3,910	4,796

Sectoral exposure

	CO2	Non-CO2	Total
Scope 1	428	315	742
Scope 2	302	25	326
Scope 3	1,069	1,101	2,170
Total	1,798	1,440	3,238

Clients/Sectors · Country · Economic activity

Sector	Total advances (USD)	Direct: Scope 1 emissions	Supply chain: Scope 2 emissions	Supply chain: Scope 3 emissions	Scope 1 & 2 emissions	Scope 1, 2 & 3 emissions	Scope 1 & 2 emissions per mUSD
Arts, entertainment and recreation - Peru	182,744	77	75	143	152	295	832
Construction - Peru	16,289	2	5	18	7	25	2,45
Education - Peru	73,036	13	6	4	23	27	3[illegible]
Electricity, gas, steam and air conditioning supply - Peru	16,002	53	5	4	58	62	3,632
Fruit producer - Peru	9,9[illegible]	4	1	3	5	8	1,100
Information and communication - Peru	228,983	9	15	77	24	101	105
Manufacturing - Peru	135,115	66	30	522	96	618	711
Peru Bank - Peru	5,000,000	39	80	422	119	541	24
Real estate activities - Peru	202,455	5	13	14	17	31	85
Transportation and storage - Peru	9,765	23	2	14	25	38	2,510

What is the JIM

Established in May 2022, the JIM foundation manages the JIM, a web-based **tool**, which enables the reporting and assessment of key impact indicators such as **jobs, contribution to GDP, and greenhouse gas (GHG) emissions** related to investments of financial institutions.

Our mission: To provide the means to quantify impact **aligned with industry regulatory standards**, contributing to impact harmonization for the financial sector in developing countries.

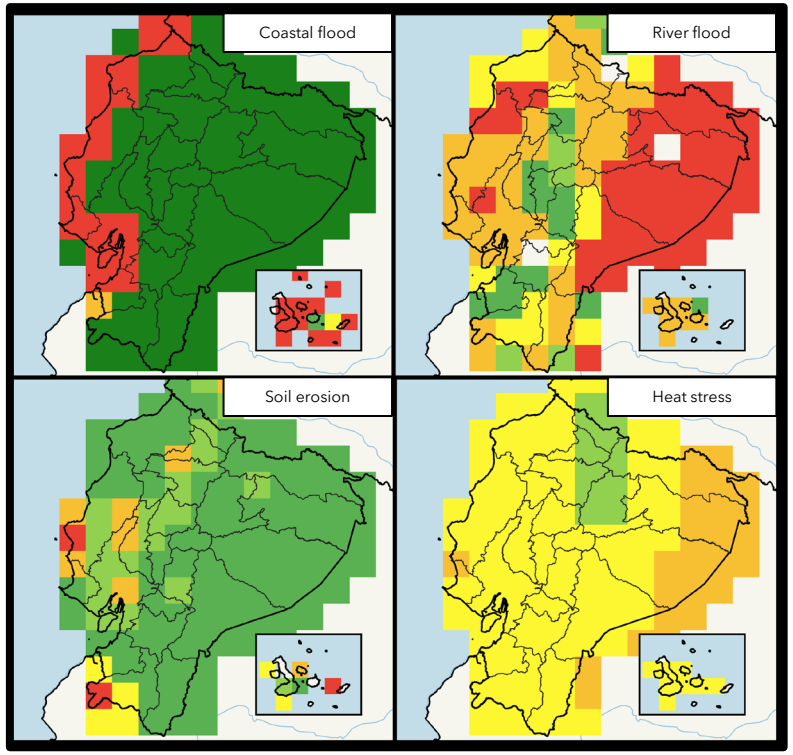
Our vision: We strive for an **inclusive, aligned, and actionable financial sector** that is geared towards impactful investments in sustainable economic development while decarbonizing portfolios.

Future updates: Climate/Biodiversity risk

By integrating Climate Risk scanning into the JIM, FI clients can receive their carbon footprint as well as the assets that are at risk of experiencing physical risks due to climate change.

JIM input file
Enter province as well as other JIM inputs (country, sector)

Receive Portfolio scan on Climate and Biodiversity risk



Contact us

Joint Impact MODEL

www.jointimpactmodel.org

info@jointimpactmodel.org

Scan the QR code and become a JIM member!

Roundtable Discussion and Q&A (45 minutes)

Milena Nikolova
Partner
Aera VC

Noel Peters
Principal Investment Specialist
ADB

Eileen Gallagher
Director, Climate
BSR

Roshini Bakshi
Managing Director, Private Equity & Head of Impact
Everstone

Steve Okun
Senior Advisor
GPCA

George Janssen
Senior Investment Officer
FMO

Vika Bhagat
Senior Technical Assistance Associate
FMO

Charissa Bosma
Sustainable Finance Officer
FMO

Bence Szegedi
Senior Director, ESG Portfolio Operations
Navis

Dominic Chan
AVP, ESG Investment Management
Temasek

To submit questions online, go to slido.com (#1180510) or scan the QR code below

Please fill in the form below to receive the **Climate Training Resource Pack**

GPCA