Green Finance & AgriCoops

NEDAC Workshop
Sustainable Financing and Achieving SDGs for Agricultural Cooperatives
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Presentation Plan

- Why & What are Sustainable Development Goals (SDG)
- Cooperatives and the UN system
- The Climate Emergency
- Net Zero Concept
- Green Finance- Typology & Quantum
- The Lender's Dilemma
- Alliance Possibilities- NEDAC & APRACA
- The Way Ahead

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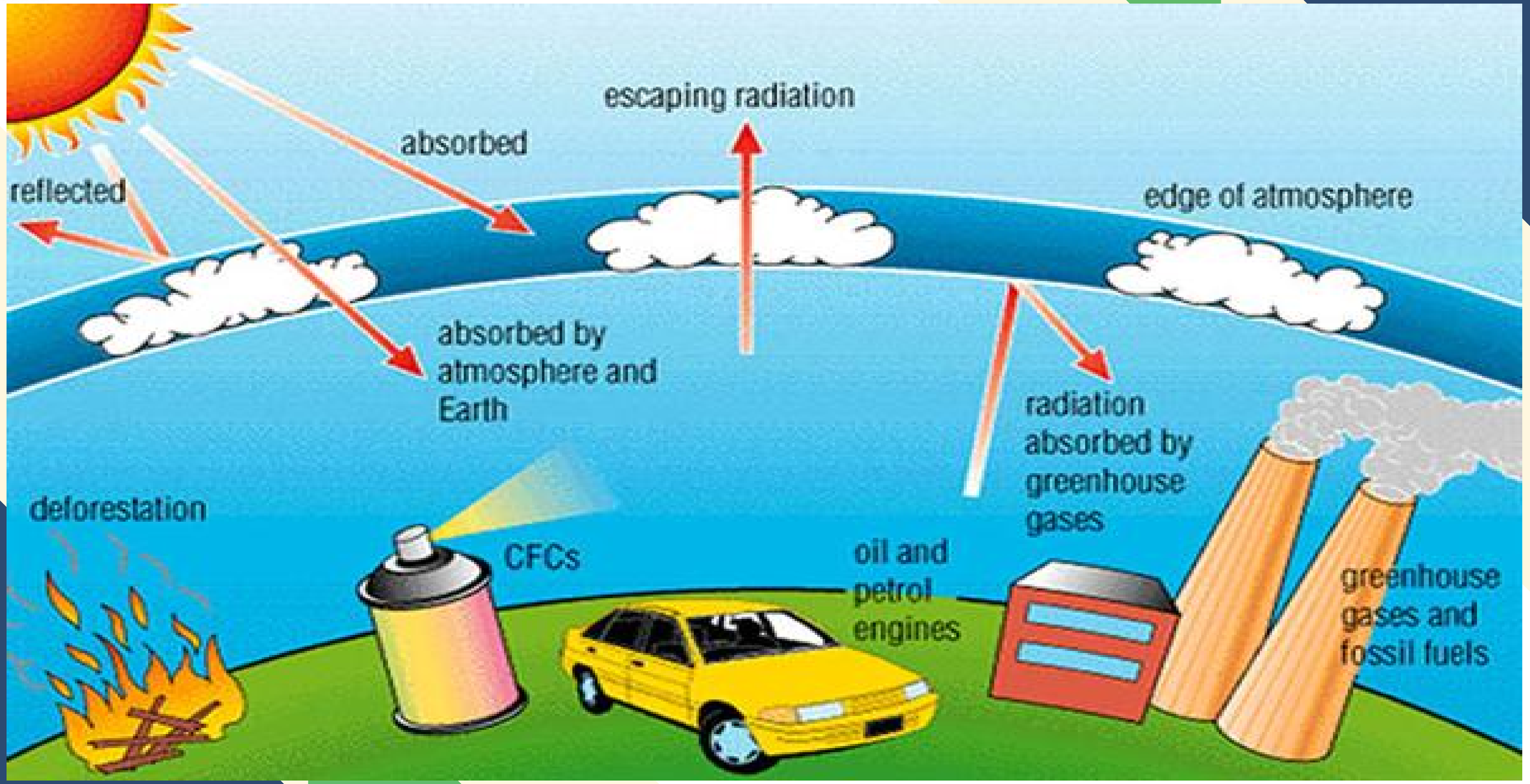
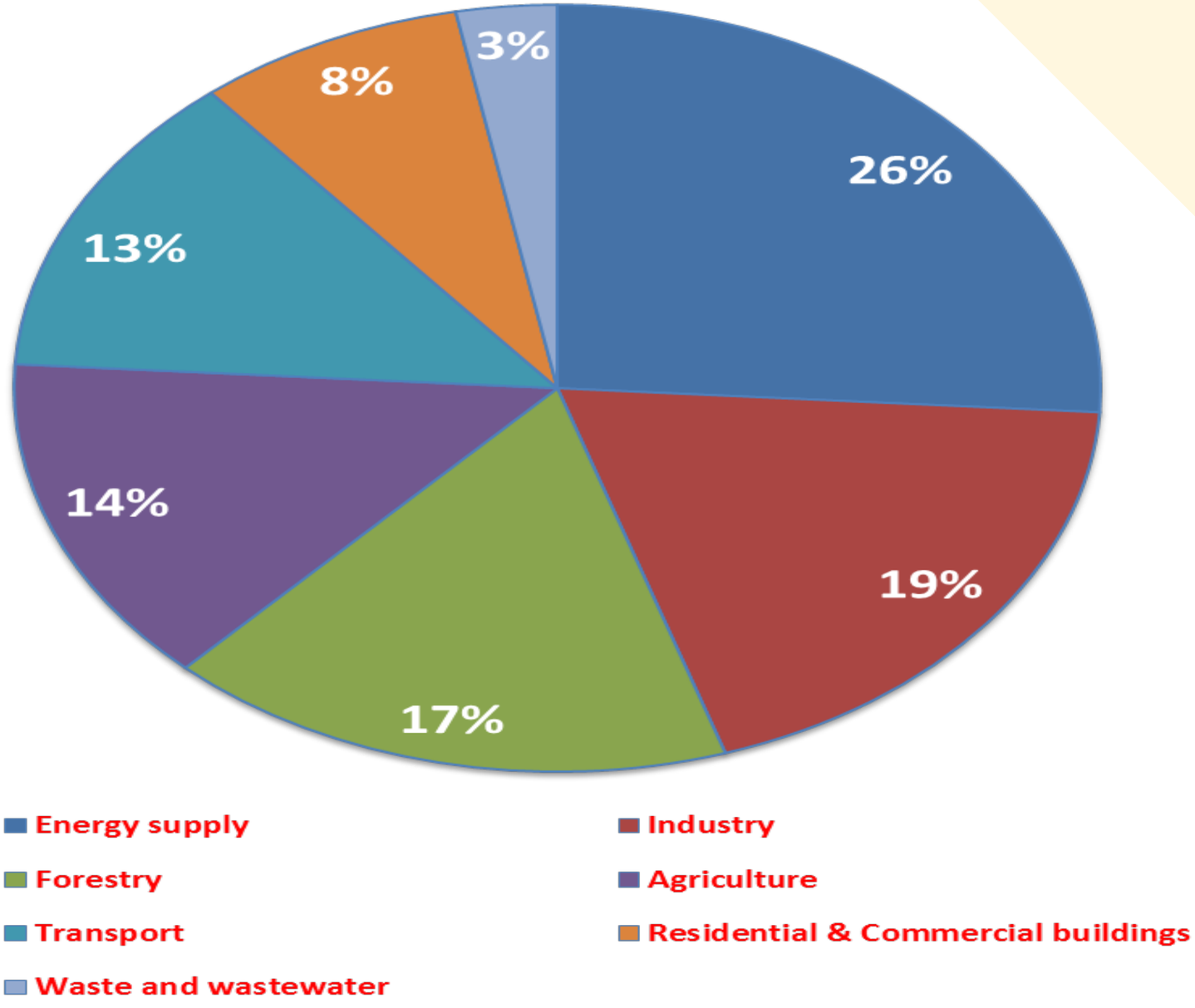
Why & What are the SDGs ?

	Before 1880s	Now
Industry	Manual labour Traditional agriculture	Industrialized world Industry 4.0, Robotics, AI
Transportation	Steam powered, animal driven	Airplanes, automobiles, high speed rail
Population	1.5 Billion people	7.9 Billion people
Life	Rural living	Urbanized
Housing	Natural material for construction	Cement, steel, tiles; heating, cooling, amenities
Clothing	Natural fibre	Synthetic fiber, stain resistant, water-repellent etc
Connectivity	Not well connected world	Highly connected / globalized
Life expectancy	43 to 45 years	80-85 years
Child mortality rate	509 per 1000 live births	26 to 30 per 1000 live births
Environment	**Not recognized as important**	**Climate change, global threat to survival**

The Green House Effect



GHG by source



The Five P's of Sustainability

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1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

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Cooperatives
&
United Nations System

The International Day of Cooperatives

- The International Day of Cooperatives was officially proclaimed by the United Nations General Assembly in 1995 and is celebrated annually.

- On 1 July 2023, the global cooperative movement came together to commemorate the 2023 International Day of Cooperatives with theme, “Cooperatives for sustainable development."

- The 6 round tables highlighted the profound impact of cooperatives in driving progress towards the Sustainable Development Goals (SDGs).

- The conference tried to explore the intricate relationship between the cooperative movement and each of the 17 SDGs.

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The Global Boiling !

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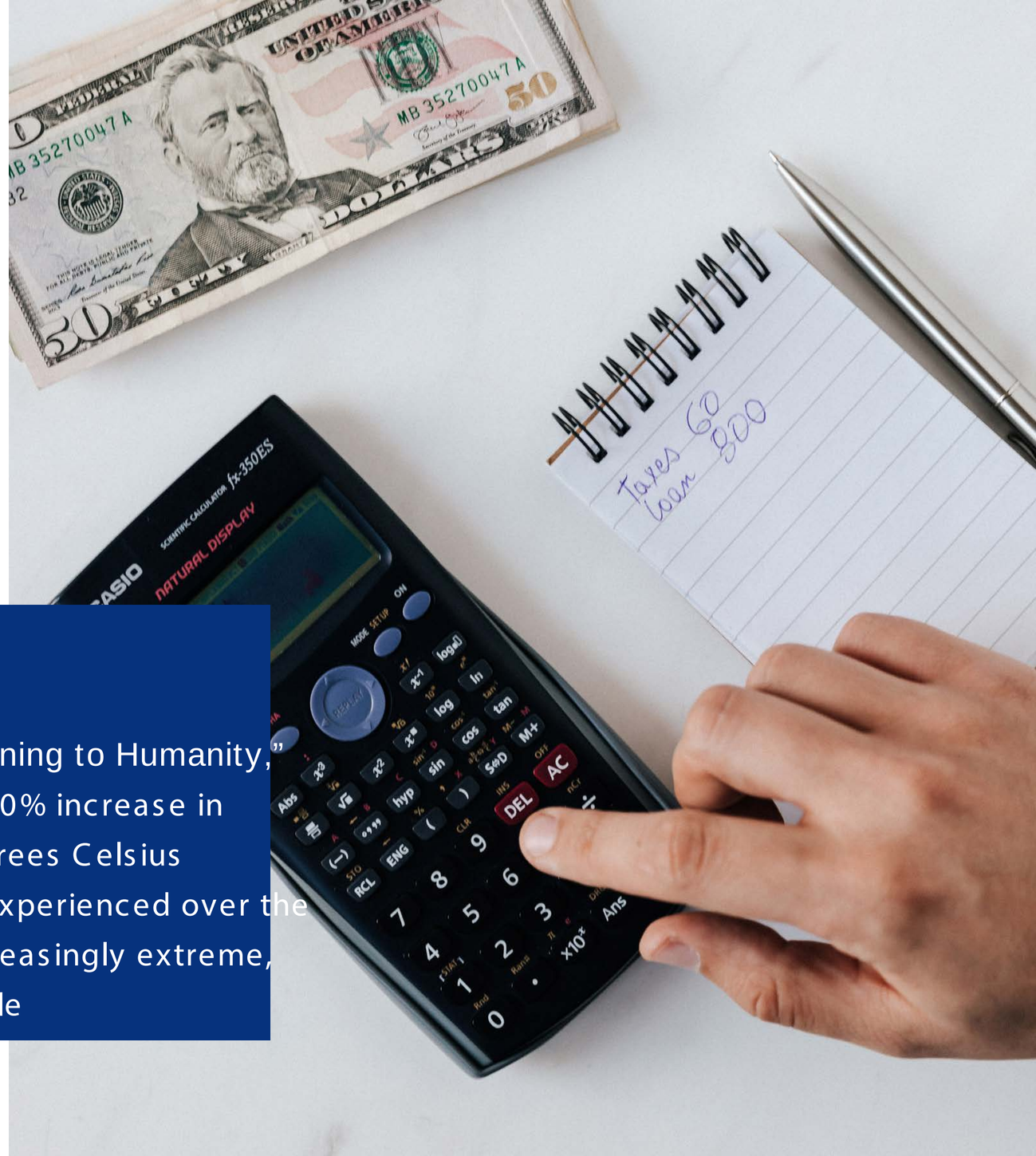
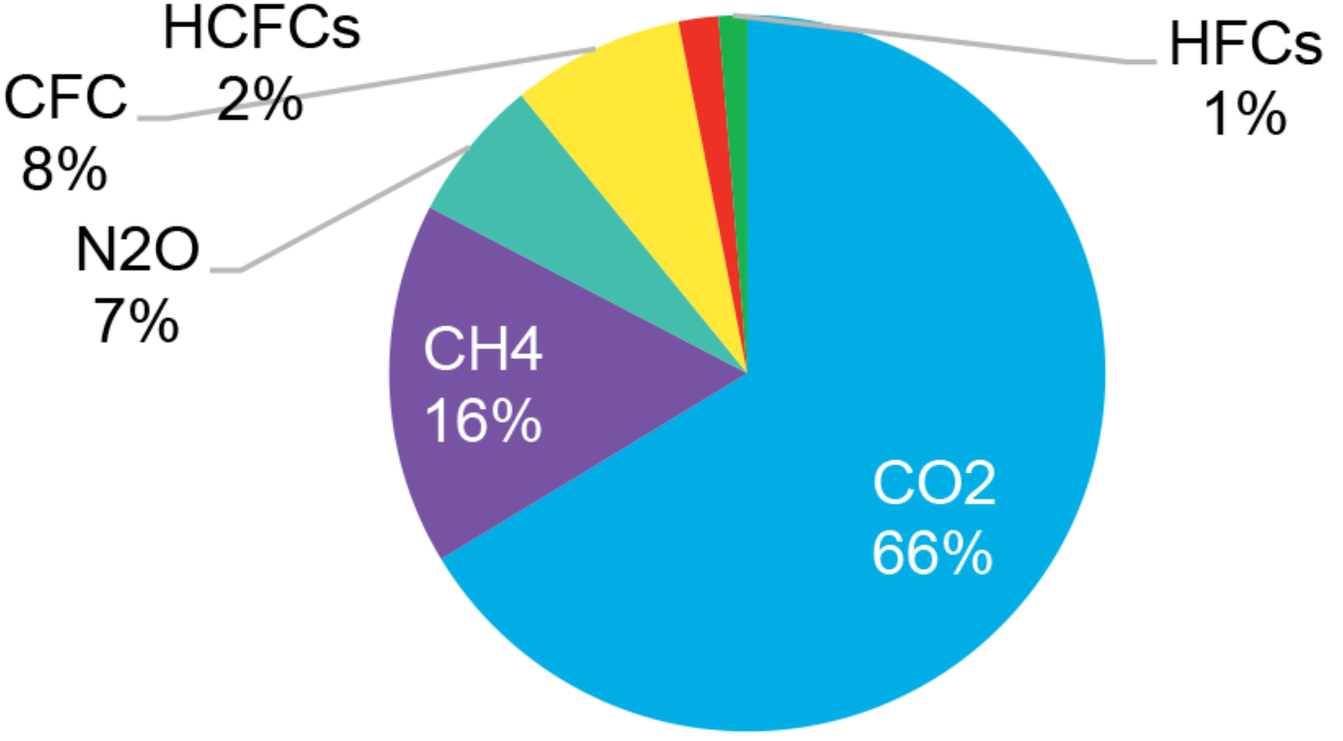
The Climate Emergency



Now is the time to ACT

2023 marks the 31st anniversary of “World Scientists’ Warning to Humanity”, signed by more than 1700 scientists in 1992. Since then, 40% increase in global GHG emissions. Current policies are towards 3 degrees Celsius warming by 2100, a temperature level that Earth has not experienced over the past 3 million years. The consequences are becoming increasingly extreme, and outcomes such as global societal collapse are plausible

Global warming impact of GHGs, 2020



Source: BloombergNEF, NOAA. Note: Warming impact treated as equivalent to radiative forcing. CFCs = Chlorofluorocarbons, HCFCs = Hydrochlorofluorocarbons, HFCs = Hydrofluorocarbons

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The Net Zero

Net Zero

Net zero refers to the balance between the amount of GHG produced and the amount that is removed from the atmosphere.

Water

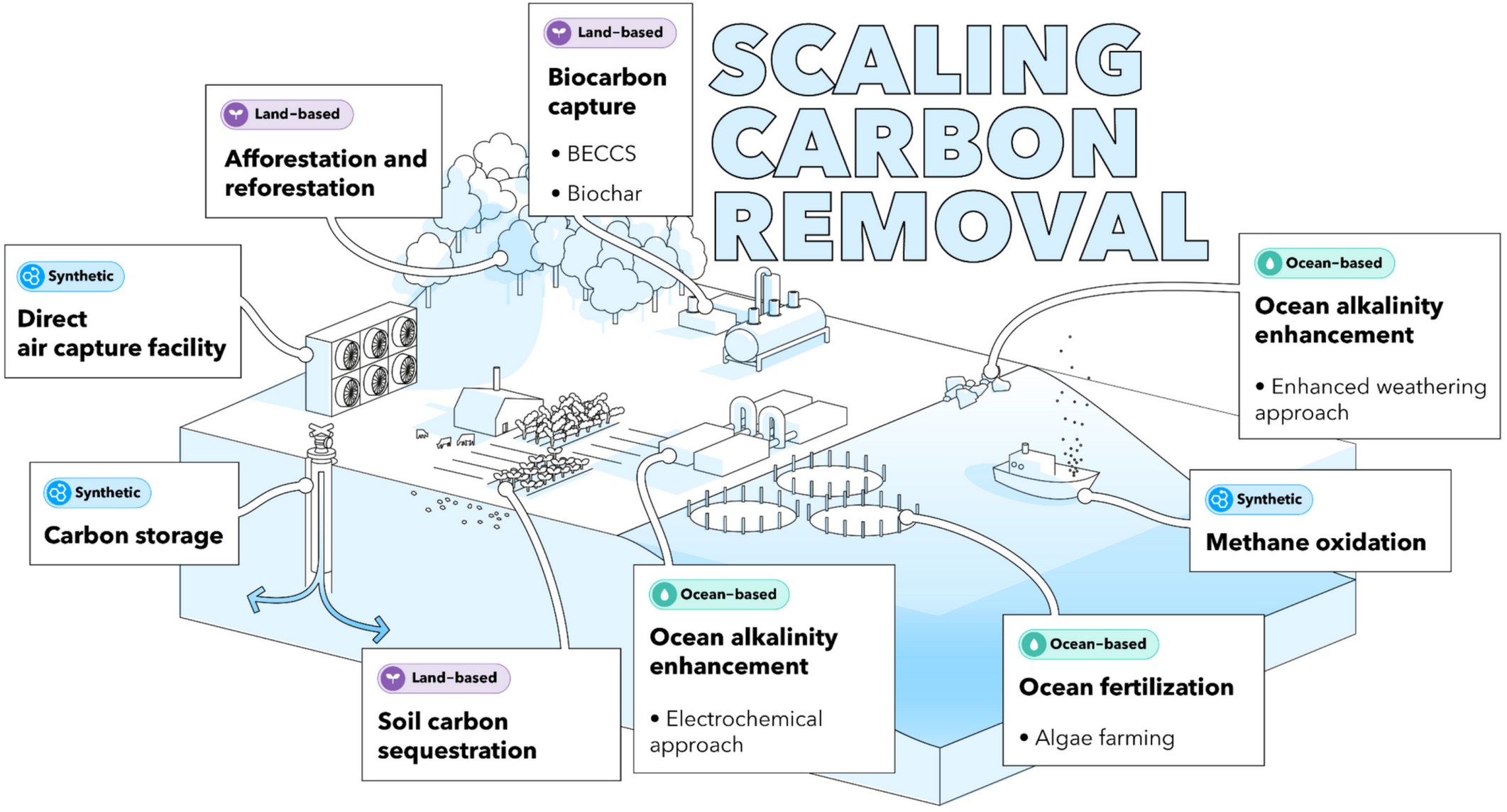
Sustainable balance between water availability and demand..

Energy

Consuming as much energy as produced.

Solid waste

Eliminating solid waste sent to landfills



Source: BloombergNEF

Innovation map of carbon removal technologies

Synthetic carbon removal

Direct air capture

Liquid solvent

MISSION ZERO TECHNOLOGIES

Carbon Engineering

Solid adsorption

climeworks

CarbonCapture

noya

Global Thermostat

Sustæra

Other

RedoxRG

INFINITREE

Heirloom

VERDOX

Calcite Carbon Removal

REPAIR CO_2 CAPTURE

carbyon

Carbon storage

Carbfix

44.01

Methane oxidation

Blue Dot Change
Helping nature repair the climate

(zelp

Land-based carbon removal

Afforestation and reforestation

Robotics

AirForestry

drone seed

dendra SYSTEMS

Photosynthetic enhancement

RIPE

Living Carbon

Soil carbon sequestration

CarbonCount Measurement and Certification

YARD STICK Soil Carbon Revealed

GRASSROOTS CARBON

Nori

loam

HONE CARBON

Perennial

indigo

Biocarbon sequestration

Pyrolysis

CARBOFEX

Climate Robotics

CHARM INDUSTRIAL

carbo culture

Standard Gas

TAKACHAR

ECOERA

net zero

BECCS

Biorecro

drax

mote

Inter Earth

CARBON SEQUESTRATION INC

Ocean-based carbon removal

Ocean fertilization

Brilliant Planet

RUNNING TIDE

Enhanced weathering

Coastal

PROJECT VESTA

Cquestr8

Terrestrial

Eion

the future forest company

greenSand

CO_2-ZERO

RockFarm

Electrochemical

Electrochemical ocean alkalinity enhancement

PLANETARY

HEIMDAL

ebb carbon

Direct ocean capture

SEACHANGE

Source: BloombergNEF

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Green Finance

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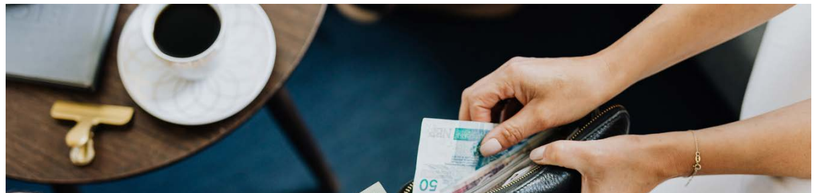
What is Green Finance

At its simplest, green finance is any structured financial activity – a product or service – that has been created to ensure a better environmental outcome. It includes an array of equity, loans, debt mechanisms and investments that are used to encourage the development of green projects or minimize the impact on the climate of more regular projects or, a combination of both.



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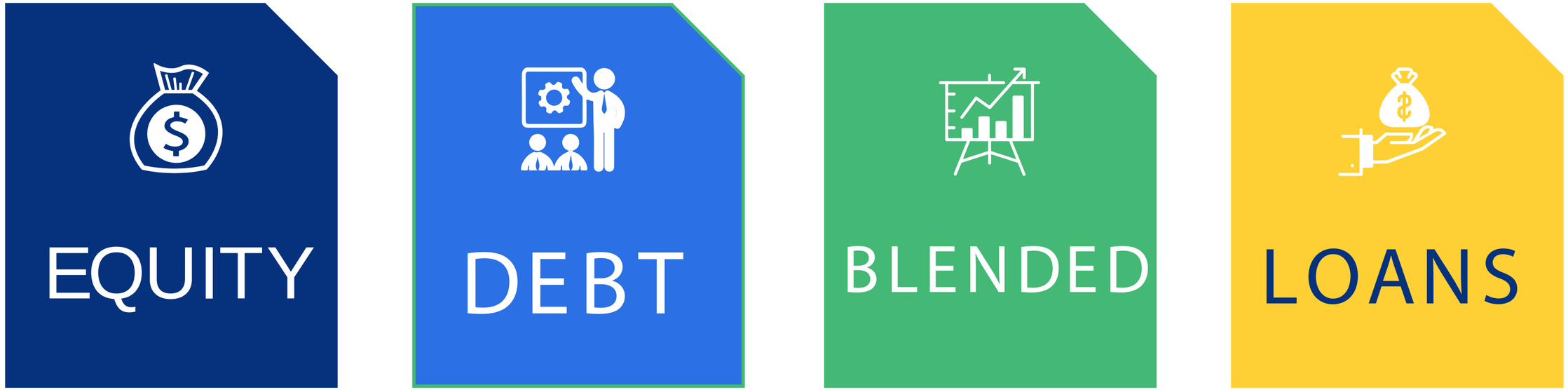
Green Finance Types: Public & Private



The Quantum

Globally, of the total US $ 120 trillion investible assets, 50% (50 to 60 trillion $) managed by asset managers. ESG assets are US $ 3 trillion, out of the 60 trillion. Climate funds are US $ 130 billion. Total size very small.

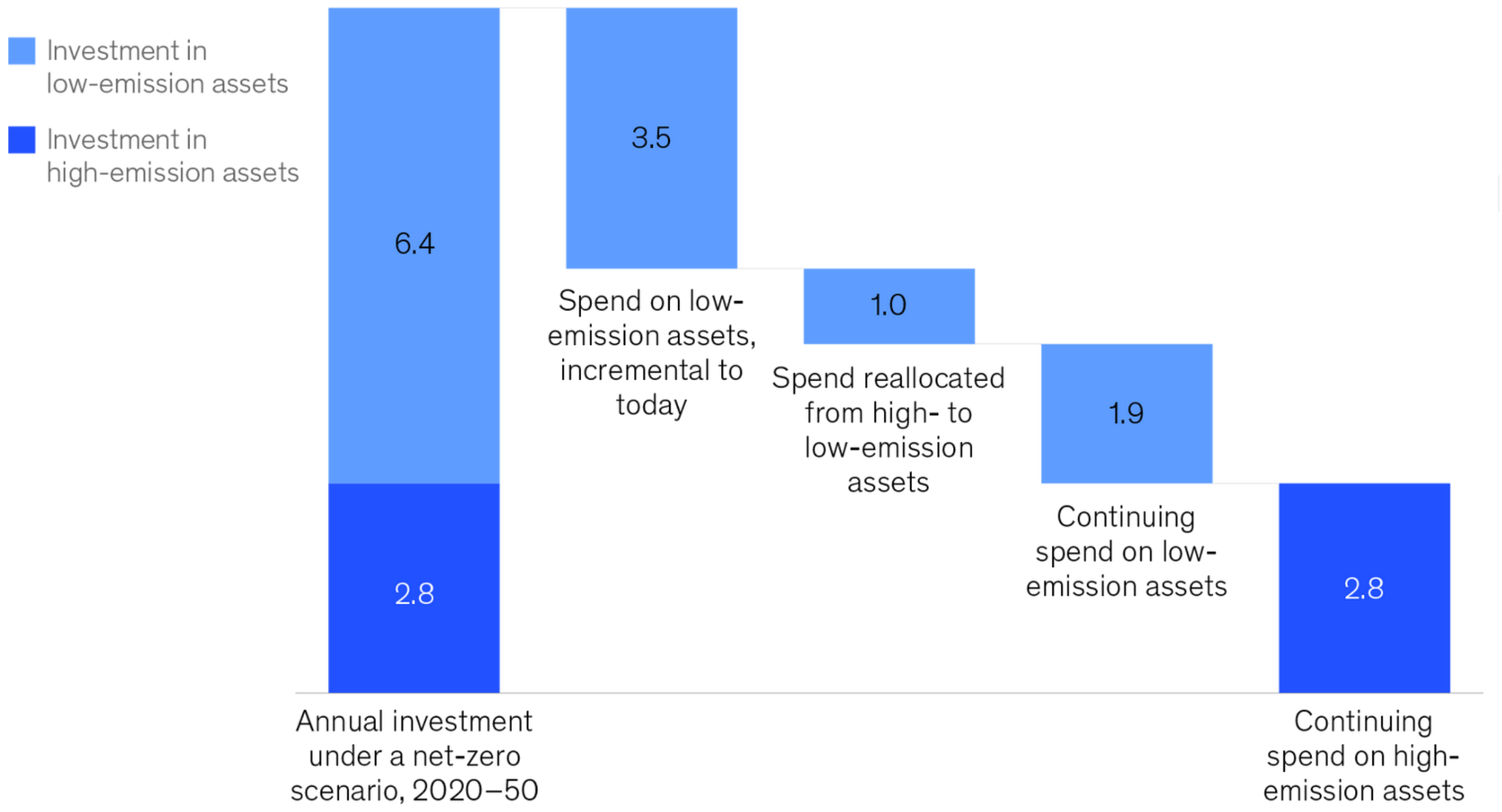
$275 tn 4 Net Zero

Transition to Net Zero global GHG emissions by 2050 would require US $275 trillion investment in physical assets. It is unprecedented reallocation of capital.

(IIF+McKinsey Report 2022)

Exhibit 1. **Solving the net-zero equation would require an approximate $9.2 trillion annual investment in energy and land-use systems.**

Average annual investment under the NGFS[1] Net Zero 2050 scenario, 2020–50, $ trillions



Note: Investment amounts compared with today's investment in the same systems.
[1]Network for Greening the Financial System.
Source: McKinsey Center for Future Mobility; McKinsey Decarbonization Pathway Optimizer; McKinsey Energy Insights; McKinsey Global Institute; McKinsey Nature Analytics; NGFS scenario analysis 2021 Phase 2 (Net Zero 2050 scenario); REMIND-MAgPIE model; VIVID Economics; World Bank Open Data; McKinsey analysis

01.

Source

Private financial institutions can allocate US $ 3.5 trillion annually between 2022 and 2050 totalling about US $ 102 trillion

02.

Source

Commercial bank can allocate US $ 2 to 2.60 trillion annually

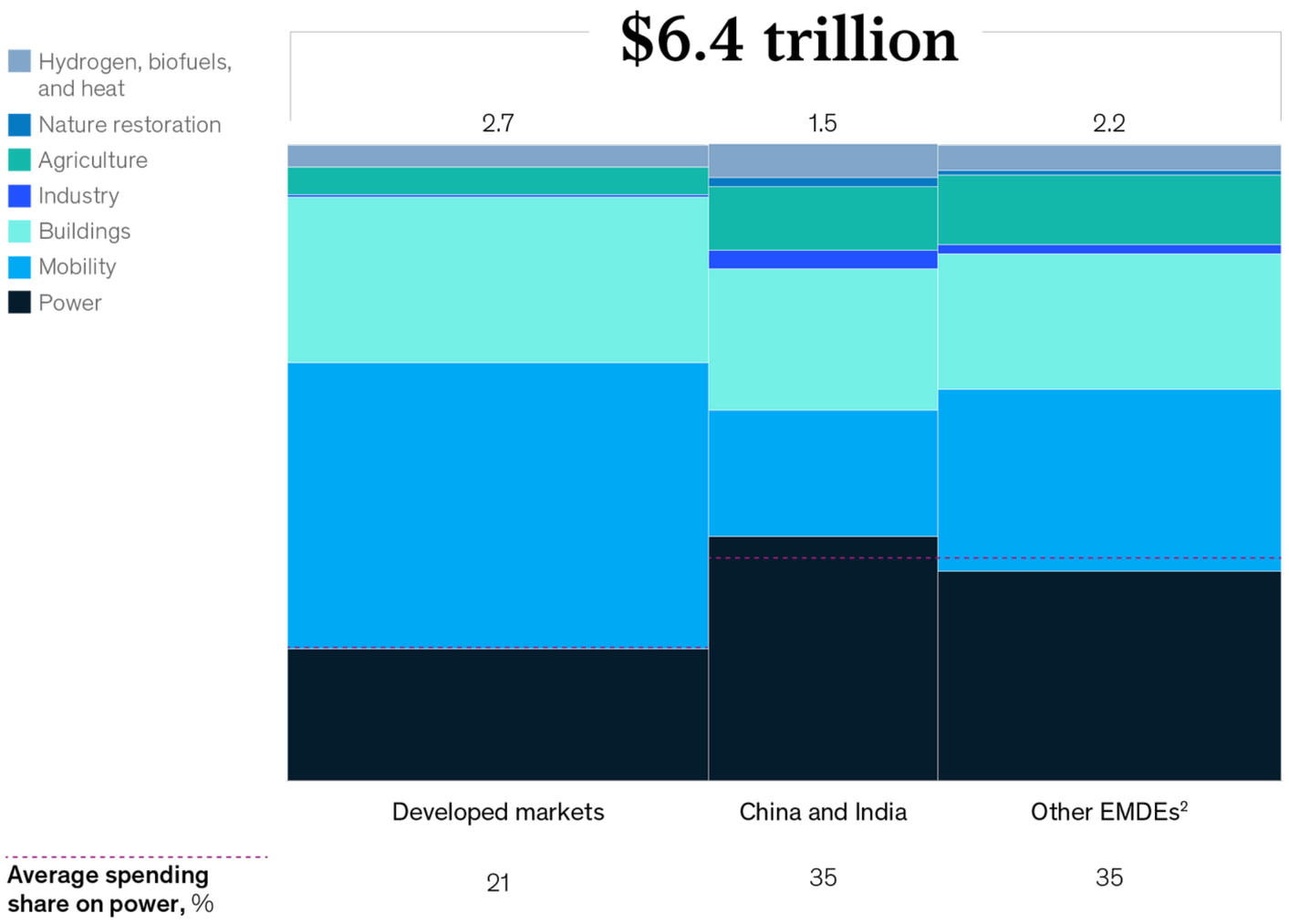
03.

Source

Asset managers, Pvt equity and venture capital funds can allocate US $ 950 billion to 1.5 trillion annually

Exhibit 2. **Mobility will attract most investment in developed economies, while emerging markets and developing economies need to channel capital to decarbonizing power.**

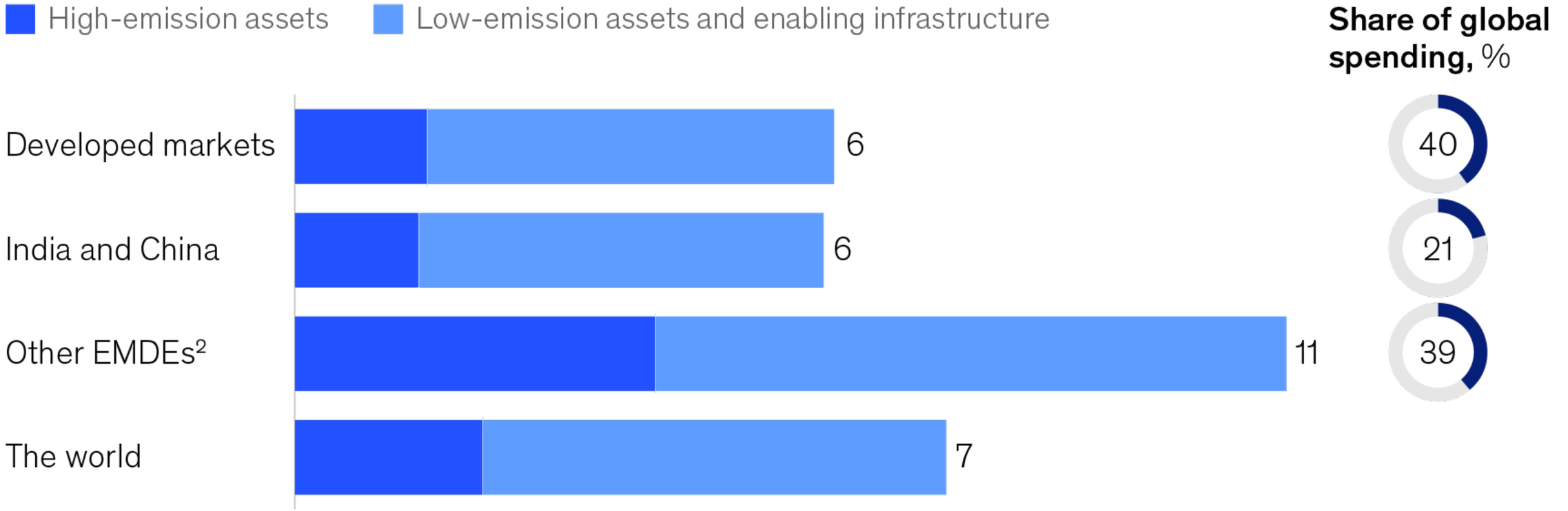
Annual investment need for low-emission assets by region and sector,[1] 2022–50, $ trillions



[1]Based on the Network for Greening the Financial System's (NGFS) Net Zero 2050 scenario.
[2]Emerging markets and developing economies.
Source: NGFS Net Zero 2050 scenario; *The net-zero transition: What it would cost, what it could bring*, McKinsey Global Institute, January 2022

Exhibit 3A. **Emerging and developing markets would spend more to decarbonize and secure low-emissions growth.**

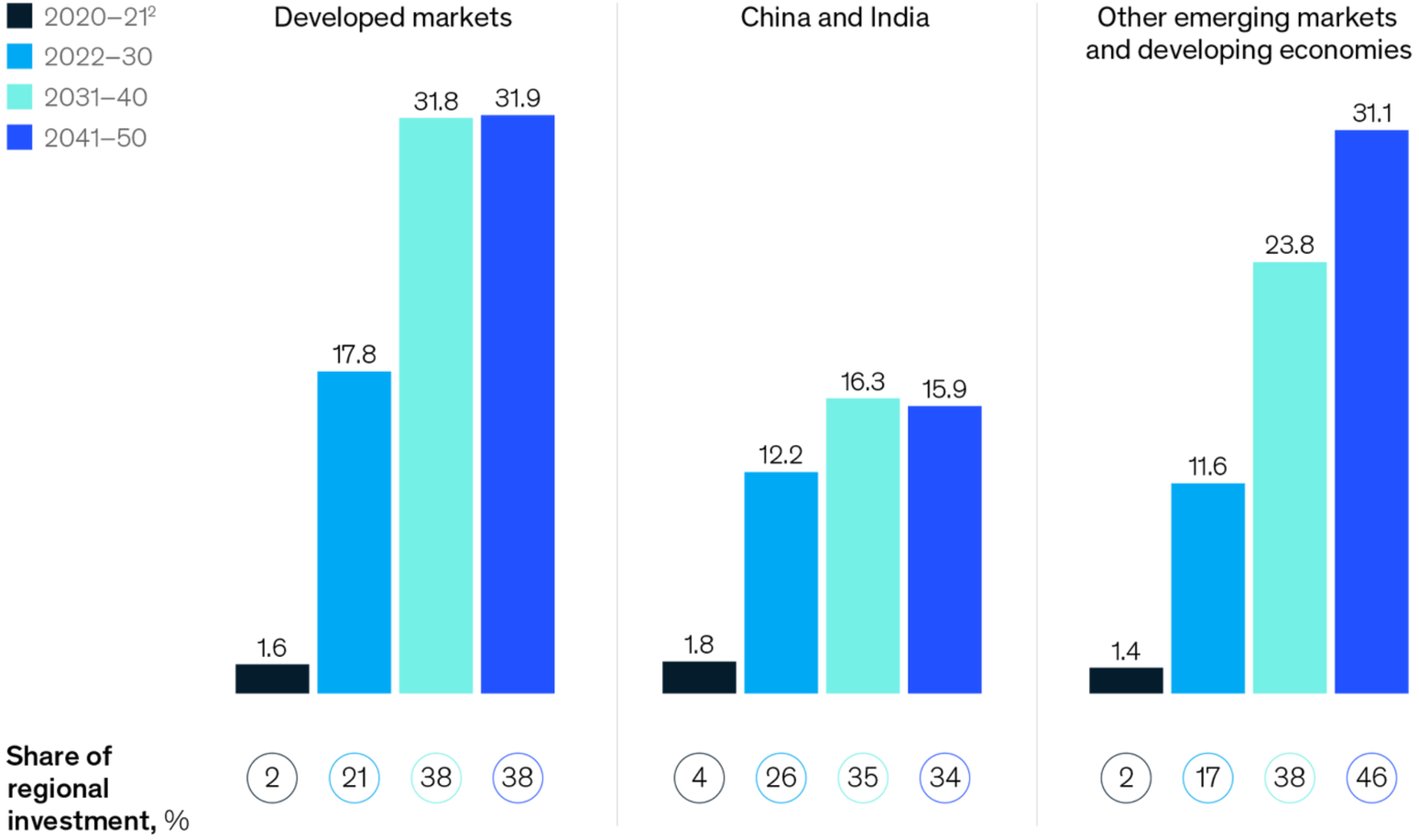
Spending for energy and land-use systems,[1] % of 2022–50 GDP



[1]Spending values based on the Network for Greening the Financial System's (NGFS) Net Zero 2050 scenario.
[2]Emerging markets and developing economies.
Source: NGFS Net Zero 2050 scenario; *The net-zero transition: What it would cost, what it could bring*, McKinsey Global Institute, January 2022

Exhibit 3B. **Physical-asset investment in emerging and developing economies would grow more significantly after 2030, compared with other economies.**

Share of investment in low-emission assets by region,[1] 2020–50, $ trillions



Note: Figures may not sum to 100%, because of rounding.
[1]Share of investment based on the Network for Greening the Financial System's (NGFS) Net Zero 2050 scenario.
[2]Historic investment.
Source: NGFS Net Zero 2050 scenario; *The net-zero transition: What it would cost, what it could bring*, McKinsey Global Institute, January 2022

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The Lender's Dilemma

The Lender's Dilemma

Among the providers of technologies necessary for decarbonising the economy, most are young companies. Makers of solutions such as long duration energy storage or carbon capture and storage tend to have

> Most financing is front loaded, needed in next 5 to 10 years. 1/3 of US $ 275 trillion is for legacy obligations 2/3 for new technologies

limited scale
undiversified businesses

small balance sheets
constrained revenue and earnings

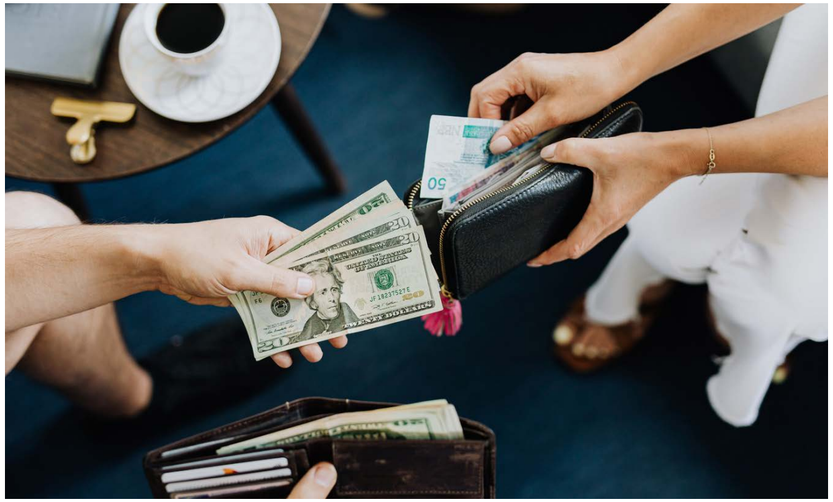
limited track records of credit performance
lenders lack expertise in nascent technology

finance supply is constrained
available debt is unsustainable

Sovereign borrowers facing growing pressure from creditors seeking greater transparency on ESG priorities targets and outcomes

Whither Green Finance

Transition Finance



Transition finance includes investments typically bonds or loans designed to help companies in heavy emitting industries to be more energy efficient and reduce GHG emissions. China is creating a transition taxonomy to power sectors including steel and agriculture. Corporate transition bonds are booming in Japan which plans to issue $154 billion sovereign transition bonds over the next decade. Since 2019 about US $ 18 billion transition bonds issued worldwide largely by China and Japan. It is tiny compared to US $ 2.2 trillion green bonds, and is miniscule of overall bond issues.

Facilitative Ecosystem

DATA

DISCLOSURE

TAXONOMY

POLICY STABILITY
STABLE CONTRACTS
CURRENCY RISK
CARBON MARKET

Disclosure frameworks

- Standards and regulatory frameworks with components that companies should disclosure

ISSB / IFRS
TPT Transition Plan Taskforce
EFRAG

Validation and assessment services

- Validation of science-based targets
- Transition plan assessments

SCIENCE BASED TARGETS
Climate Action 100+
Transition Pathway Initiative

Pathways and methodologies

- Methodologies for companies to set GHG emission targets
- Guidance and tools for companies to develop TPs

TCFD
SCIENCE BASED TARGETS
ACT | ASSESSING LOW CARBON TRANSITION
Climate Action 100+
GFANZ

Data collection and analysis

- Data collection and analysis on entities' transition plans and targets

CDP
NET ZERO BETA TRACKER

Case: Korea

POSCO focus on green materials.
Future mobility. Infrastructure steel.
Cathode and anode materials.
Saltwater based lithium production.

Case: India

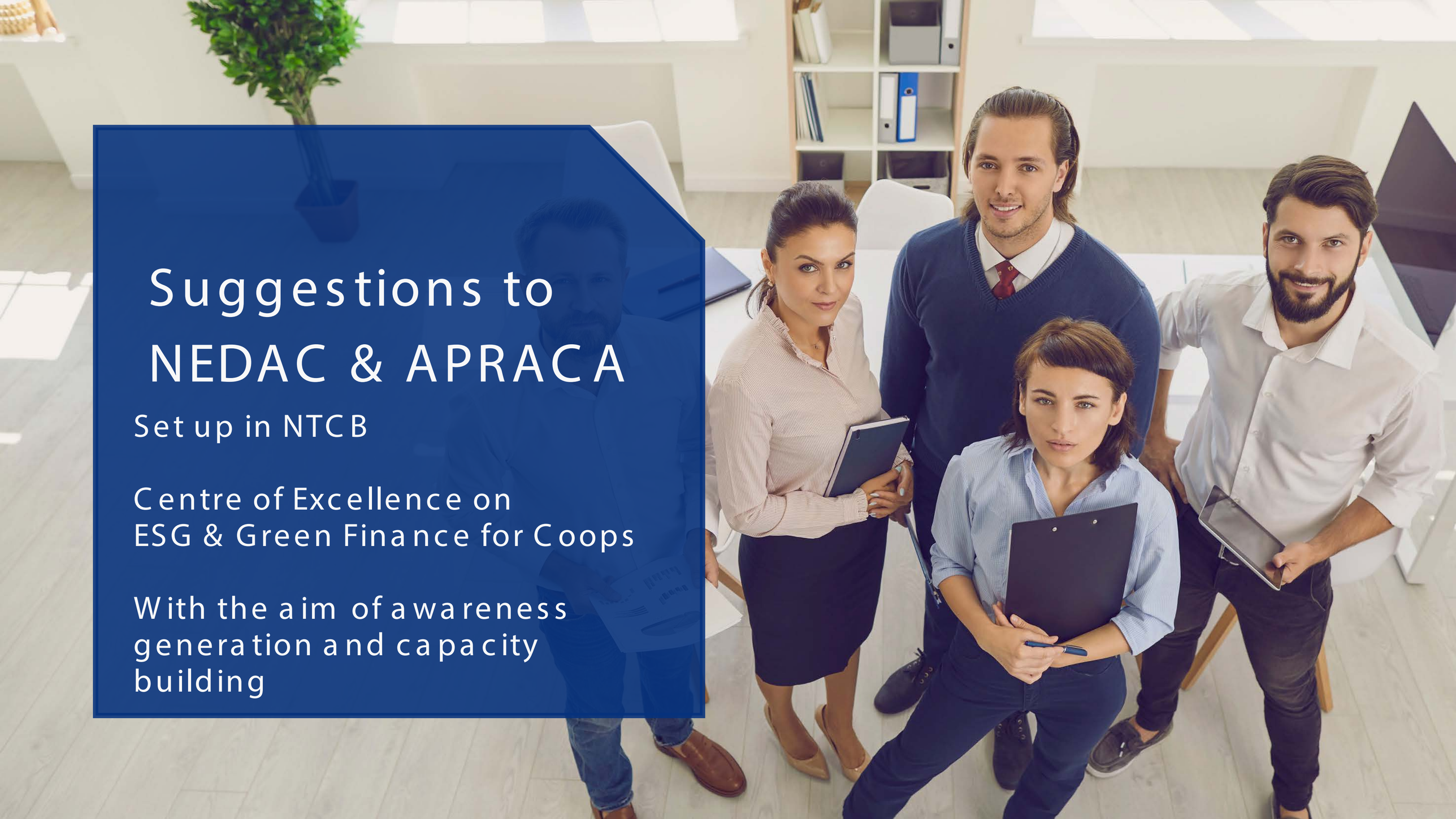
TATA Group, diversified multinantiona aiming at Net Zero by 2045

Case: Indonesia

PERTAMINA, transition to clean energy technology. Net zero. 1.8 GW geothermal. Green refinery. CCUS for EOR & EGR

Case: India

Central Bank- Issued Green Bonds
Market Regulator- mandated 1000 top companies to file ESG reports



Suggestions to NEDAC & APRACA

Set up in NTCB

Centre of Excellence on
ESG & Green Finance for Coops

With the aim of awareness generation and capacity building

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Thank You

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