



**SUSTAINABILITY AND DECARBONIZATION : OPPORTUNITIES AND INSIGHTS FROM TECHNOLOGY  
POWERED INTERVENTIONS**

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## ABSTRACT

Collaboration efforts between India and Japan can have massive impact on decarbonization and how digital technologies such as Cloud, AI, Data Analytics could help mitigate the climate challenge. The session would provide insights from Sustainability efforts at Microsoft and how technology is being leveraged towards decarbonization. The lessons learned from such a collaboration can be replicated in other Asian countries and Global South.



## India-Japan Environmental Technology Forum (IJFET)

### Mission

- The mission is to engage with key stakeholders from Government, industry, academic and key international organizations and NGOs to collaborate on decarbonization efforts.

### Context

- This forum has been set up in 2023 April .
- This would enable the stakeholders from Japan and India to dialogue and share the best practices from India and Japan.
- This would create opportunity to collaborate between the two countries on decarbonisation policy, document best practices and opportunities and share policy inputs for decarbonization.
- The initial dialogue could be a bi-annual symposium bringing in stakeholders and then moving towards other regions. This could then be showcased to the Government in Japan and India.
- This could further be elevated to documentation of experiences in other Asian countries and eventually Global South.
- The dialogue could offer building linkages between academics and practitioners across countries contributing to the larger mission of Climate Change and creating insights from multiple segments.
- Evolve the roadmap for strengthening efforts on decarbonisation

# MISSION OF JAPAN INDIA COLLABORATION ON DECARBONISATION

- India-Japan Forum on Environmental Technology ( IJFET) involves Indian leading institutes involving in environmental technology evangelism.
- The working group/Task Force involves participation from members of multiple bodies such as PHD Chamber of Commerce, CII Northern Region Committee on Education.
- The Key members of the India Japan Task Force group are
  - Prof. Chihiro Watanabe, Chair, International Committee of Japan Society for Research Policy and Innovation Management, Director of Forum of X Center Japan, Professor Emeritus of Tokyo Institute of Technology
  - Dr. Vinnie Jauhari, Director Education Industry , WW Public Sector, Microsoft Corporation India Pvt Ltd.
  - Mr.Nishit Jain, Sr. Spl. Advisor, Asia EFMD
  - Dr Ranjeet Mehta, Executive Director , PHD Chamber of Commerce
  - Ms. Shalini Sharma, Asst Secretary General, PHD Chamber of Commerce
  - Mr. Siddharth Banerjee, CEO Univo. Chair of Northern Region CII Committee for Education
  - Dr Kirti Sharma, Assoc. Professor, MDI Gurugram

## Mission of the Working Group

- Evaluate the opportunities around Decarbonisation in India and contribute to the first pilot Symposium
- Facilitate the network and exchange of ideas between various stakeholders and policy influencers- Universities, Industry, Government, International Organisations

# TASK FORCE INDIA JAPAN FORUM ON ENVIRONMENTAL TECHNOLOGY

Forum of X-Center Japan (*FoXc-J*)

Director

Advisor (Indian branch)



JSRPIM is based out of Japan- 1027 members, Ind. 416, Univ. 526, Gov. 85

PHD Chamber of Commerce and Industry (PHDCCI) has been working as a catalyst for the promotion of Indian industry, trade and entrepreneurship for the past 118 years. It has over 150,000 members from various industry segments

EFMD, or the European Foundation for Management Development, is a global, non-profit, membership-driven organisation dedicated to management development. EFMD is based in Brussels and is Europe's largest network association in the field of management development. It has over 890 member organizations from academia, business, public service, and consultancy in 88 countries.

**JSRPIM** Japan Society for Research Policy and Innovation Management

**EFMD** European Foundation for Management Development

**PHD CCI** PHD Chamber of Commerce and Industry

**CII** Confederation of Indian Industry

**MDI** Management Development Institute



# India-Japan Environmental Technology Forum (IJFET)

## Outcomes

The outcomes could be research partnerships, policy papers, partnerships between industry, government and academics for deeper engagement.

This would also influence the focus of research investments in a University and also create global linkages across countries.

This effort would bring forward the best practices and also challenges that could be mitigated in the realm of decarbonization.

Alliances between institutes working on Sustainability areas

Engagement on best practices between faculty and students

Collaborative research opportunities and publications

# DECARBONISATION - INDIA CONTEXT



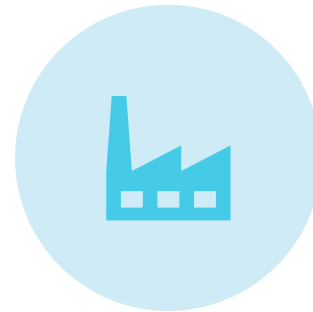
Decarbonisation is the process of reducing carbon dioxide emissions to achieve a lower output of greenhouse gases



India is the third largest emitter of CO2 gases after China and US



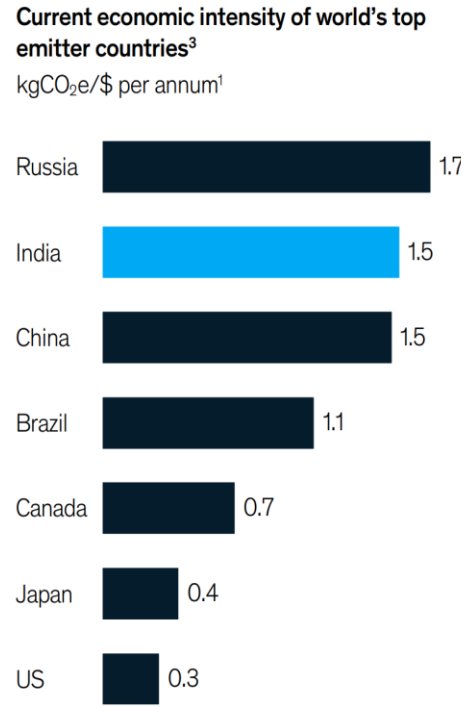
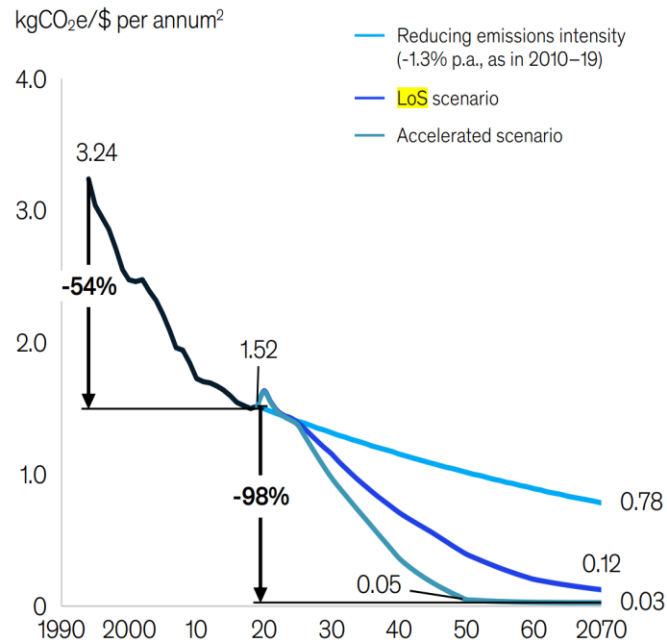
The Segments that have the largest scope of impacting decarbonization efforts is the energy, transportation, power generation, building/infrastructure, cement and construction sector.



India aims to attain 500 GW of non fossil capacity and 50% of its energy requirement through renewables by 2030( McKinsey and Co has proposed more than 100 decarbonisation levers across these key sectors.

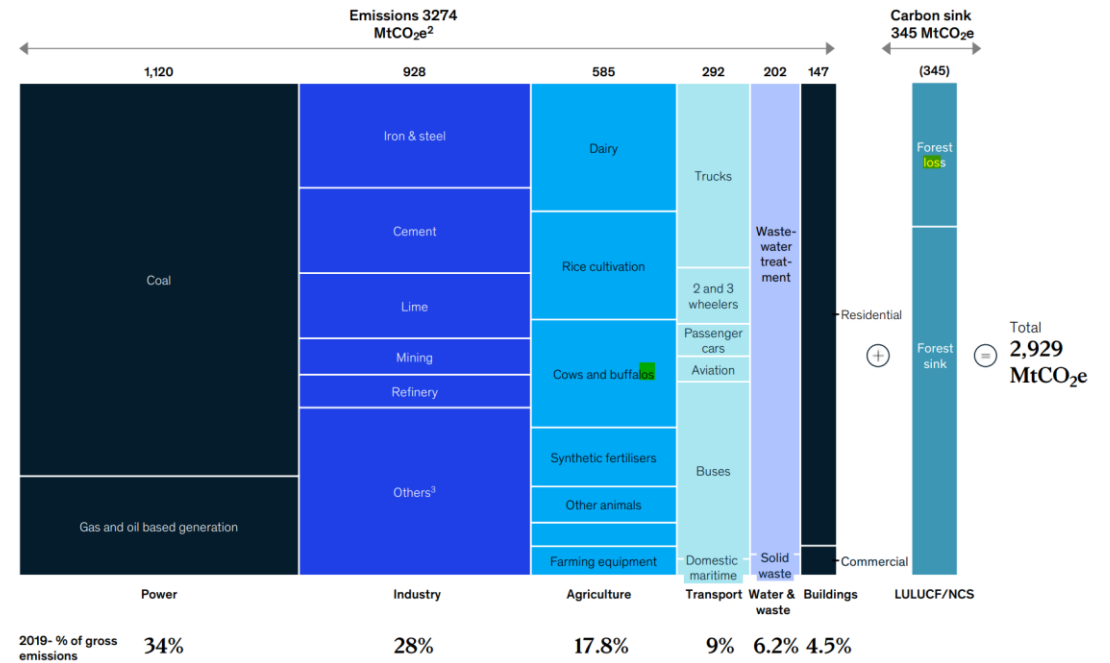
# INSIGHT INTO INDIA'S CURRENT CARBON EMISSION MIX

India's GHG economic emissions intensity<sup>1</sup> (volume of emissions/unit of GDP)



India's current carbon emission mix.

Baseline emissions, MtCO<sub>2</sub>e<sup>1</sup>, 2019



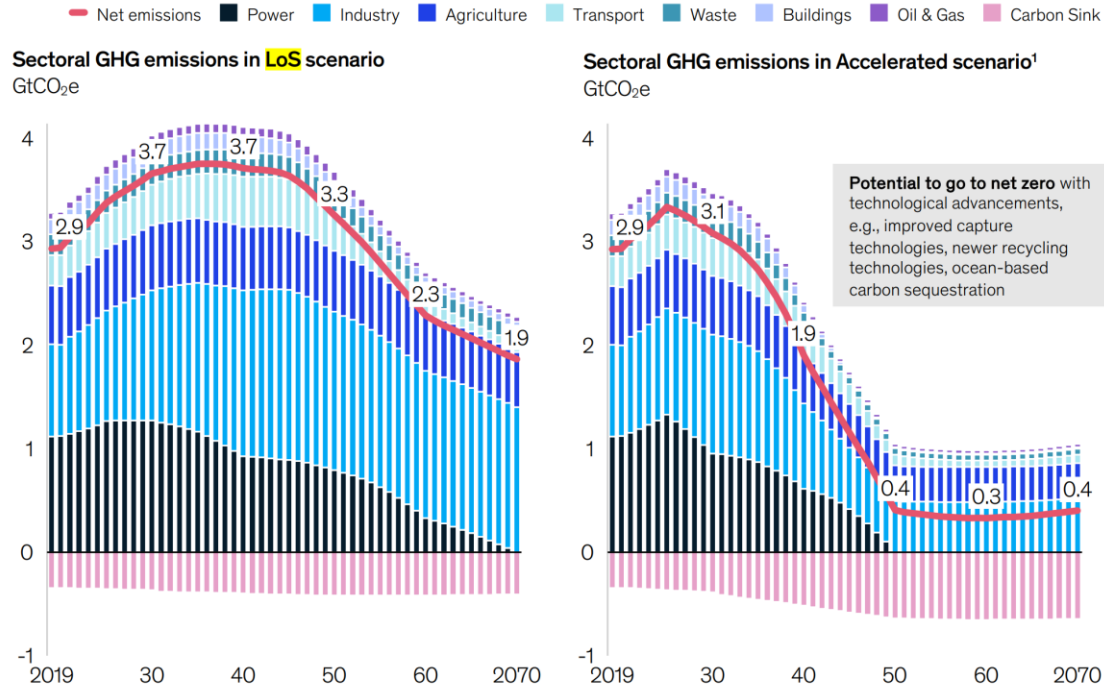
1. Converting GHGs into CO<sub>2</sub>e assuming GWP-100 and AR5 methodology with India's BUR-3 reported emissions for 2016 as baseline.  
 2. Gross and net emissions for 2019 based on Climate Action Tracker overall emissions for India.  
 3. Others include: other industry oil & coal use, ammonia, aluminium, F-gases and ethylene.

Source: McKinsey India Decarbonisation Scenario Explorer



# INDIA DECARBONISATION INSIGHTS

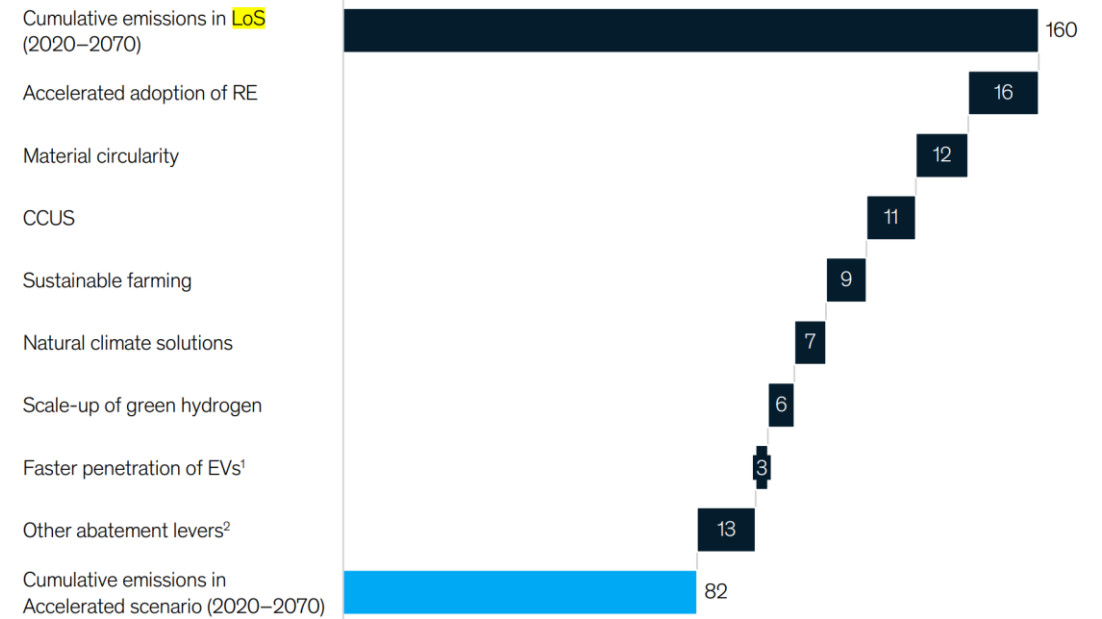
Emission curves for the **LoS** and Accelerated scenarios.



1. These emissions have been estimated with largely currently feasible technologies. It is to be expected that India could get to its net-zero-by-2070 commitment through the upcoming technology developments over the next decades (e.g., direct air capture).

More than 80% of abatement can be achieved through 7 key levers.

Cumulative emissions reduction between **LoS** and Accelerated scenarios, 2020–70, GtCO<sub>2</sub>e



1. In the **LoS** scenario, EV penetration reaches 100% only by 2070.

2. Includes other miscellaneous abatement levers such as 100% electrification of cooking, complete treatment of wastewater, improved energy efficiency in industry, and so on.

# Microsoft sustainability journey





**Our future,  
our responsibility**

# Applying our best practices to help others achieve meaningful transformation

A trusted advisor with solutions for YOUR environmental challenges



**Carbon negative  
by 2030**



**Water positive  
by 2030**



**Zero waste  
by 2030**



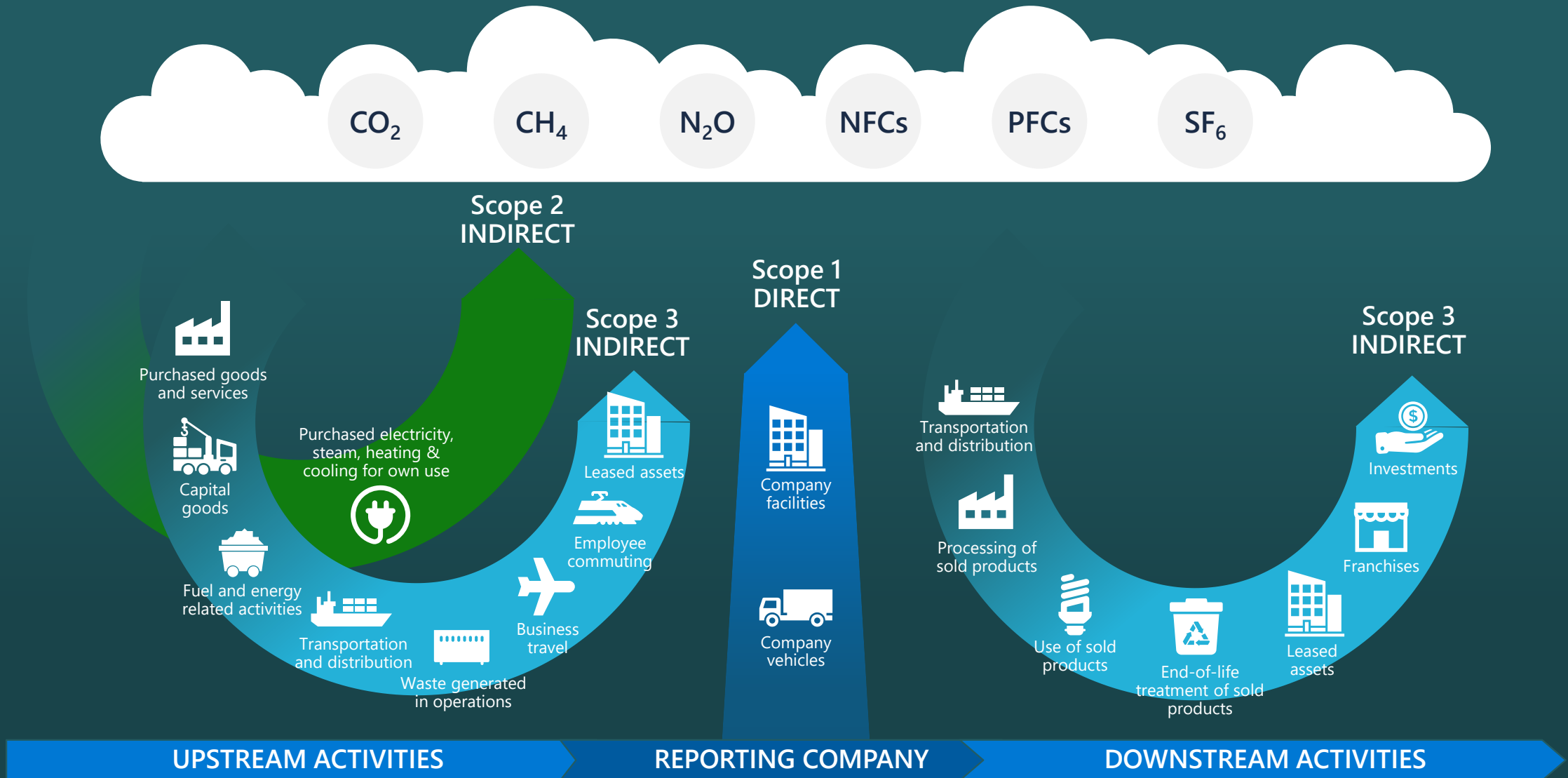
**Protect ecosystems  
and build a Planetary  
Computer**



# Investing to build the leading platform for technology solutions to environmental challenges



# Scopes and emissions across the value chain



# Multi-horizon sustainability transformation journey

Build a robust digital foundation and evolve over time

## Engage on all horizons simultaneously

Address immediate impacts and then leverage transformative capabilities to:

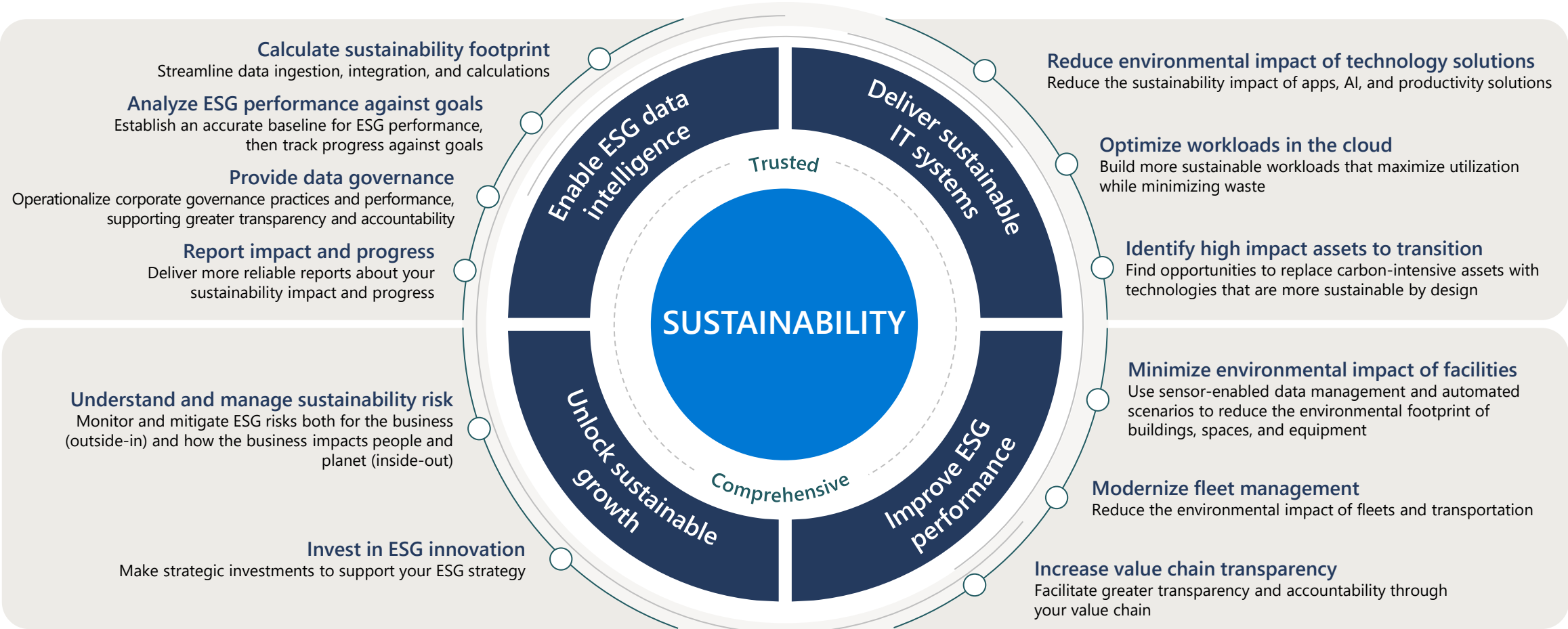
- Develop sustainable policies
- Create sustainable operational models
- Meet the needs of society

Digital enablers are necessary to solve sustainability challenges and realize opportunities for organizations



# Microsoft Cloud for Sustainability

*Accelerate sustainability progress and business growth*





# Scoring Decarbonisation Progress- Economist 2023 Research Supported by Microsoft

This study examines sectoral decarbonization through an assessment—conducted between March and May, 2023—of 160 of the largest publicly listed firms from 4 sectors (Energy, Manufacturing, Retail, and Financial Services) across North America, Europe, Asia, and Latin America.

It assesses the progress that sectors and companies have made in terms of corporate commitments and governance, addressing emissions in operations and across the value chain, and promoting an equitable low carbon transition.

It does so in order to understand their progress on decarbonization, how it is being achieved and what can be done to accelerate it. This research program is a research program conducted by Economist Impact and supported by Microsoft.

**This study examines sectoral decarbonization through an assessment—conducted between March and May, 2023—of 160 of the largest publicly listed firms from 4 sectors (Energy, Manufacturing, Retail, and Financial Services) across North America, Europe, Asia, and Latin America.**

Source: Scoring Decarbonisation Progress,  
The Economist  
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# Scoring Decarbonisation Progress- Economist 2023 Research Supported by Microsoft

Using publically reported material, firms were evaluated along four main criteria (“Pillars”):

- Corporate governance and public commitments to reaching net-zero emissions
- Operational decarbonization efforts
- Value chain decarbonization efforts
  - Progress towards tying social sustainability considerations into their emissions reductions work, also known as the just transition

Each firm was evaluated using a subset of 27 specific metrics (“indicators” and “sub-indicators”) spanning these four categories, each of which was adjusted into scores out of 100, and which were further aggregated into higher-level

It does so in order to understand their progress on decarbonization, how it is being achieved and what can be done to accelerate it.

Source: Scoring Decarbonisation Progress, The Economist  
Copyright - The Economist Group 2023

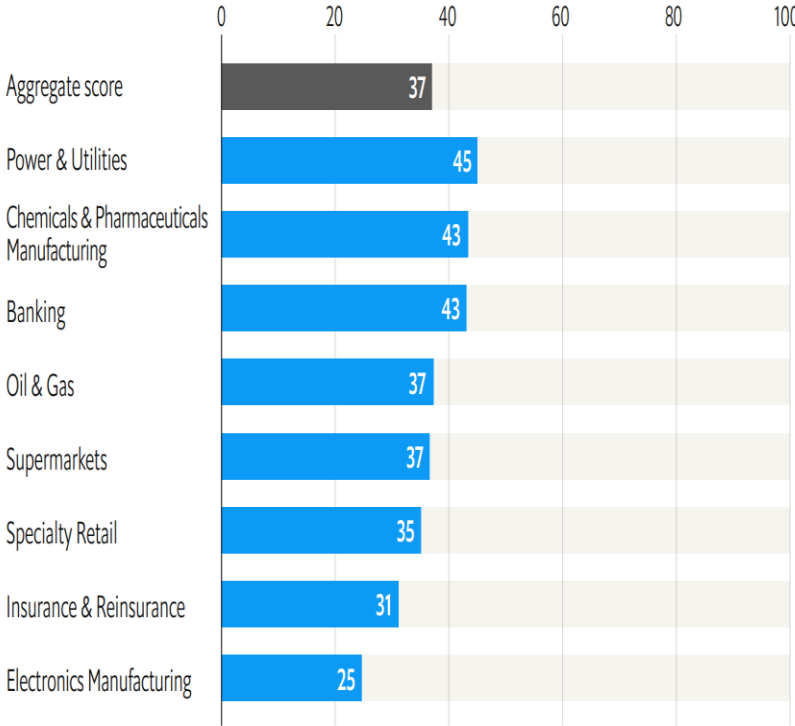
Figure 1: Decarbonization Progress Benchmark

#	Level	Pillar, Indicator, or Sub-indicator
<b>1</b>	<b>1</b>	<b>Corporate governance and commitment</b>
<b>1.1</b>	<b>2</b>	<b>Corporate governance</b>
1.1.1	3	Board structure
1.1.2	3	Board gender diversity
1.1.3	3	Executive compensation
1.1.4	3	Decarbonization leadership
<b>1.2</b>	<b>2</b>	<b>Commitment to decarbonization</b>
1.2.1	3	Scope 1 & 2 commitment
1.2.2	3	Scope 3 commitment
<b>1.3</b>	<b>2</b>	<b>Policy outlook and influence</b>
1.3.1	3	Policy outlook
1.3.2	3	Policy influence
<b>2</b>	<b>1</b>	<b>Operational Transformation</b>
<b>2.1</b>	<b>2</b>	<b>Measurement and tracking</b>
<b>2.2</b>	<b>2</b>	<b>Action plan for operational transformation</b>
<b>2.3</b>	<b>2</b>	<b>Operational transformation: reducing scope 1 emissions</b>
<b>2.4</b>	<b>2</b>	<b>Operational transformation: reducing scope 2 emissions</b>
<b>2.5</b>	<b>2</b>	<b>Decarbonization innovation in key operations</b>
2.5.1	3	Investment in developing decarbonizing innovation
2.5.2	3	Deployment of innovative solutions
<b>3</b>	<b>1</b>	<b>Value Chain Transformation</b>
<b>3.1</b>	<b>2</b>	<b>Measurement and tracking</b>
<b>3.2</b>	<b>2</b>	<b>Action plan for value chain transformation</b>
<b>3.3</b>	<b>2</b>	<b>Phasing out carbon-intensive product offerings</b>
3.3.1	3	Commitment towards phasing out the most carbon-intensive key product offerings
3.3.2	3	Scaling up decarbonized key product offerings
<b>3.4</b>	<b>2</b>	<b>Driving decarbonization across value chain partners</b>
3.4.1	3	Divesting from high-emitting value chain partners
3.4.2	3	Encouraging value chain partners to decarbonize
<b>3.5</b>	<b>2</b>	<b>Investing in decarbonization innovation</b>
3.5.1	3	Investing in development of decarbonized product offerings
3.5.2	3	Supporting decarbonization innovation
<b>4</b>	<b>1</b>	<b>Social Sustainability and Just Transition</b>
<b>4.1</b>	<b>2</b>	<b>Impact assessment, targets and planning</b>
4.1.1	3	Low-carbon transition impact assessment
4.1.2	3	Action plan for just transition
<b>4.2</b>	<b>2</b>	<b>Implementation strategy</b>
4.2.1	3	Just-transition implementation in current operational and value chain transformations
4.2.2	3	Just transition in FSI
<b>4.3</b>	<b>2</b>	<b>Policy outlook and proactive collaboration with the government on just-transition issues</b>

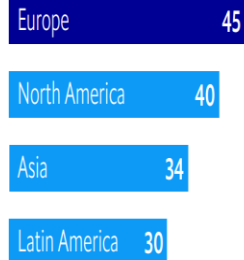
# Insights from Economist Research 2023

**Companies' decarbonization performance is far from what is necessary to achieve net-zero emissions**

Overall score\* on the Decarbonization Progress Benchmark



**Europe is the top-performing region on the benchmark**

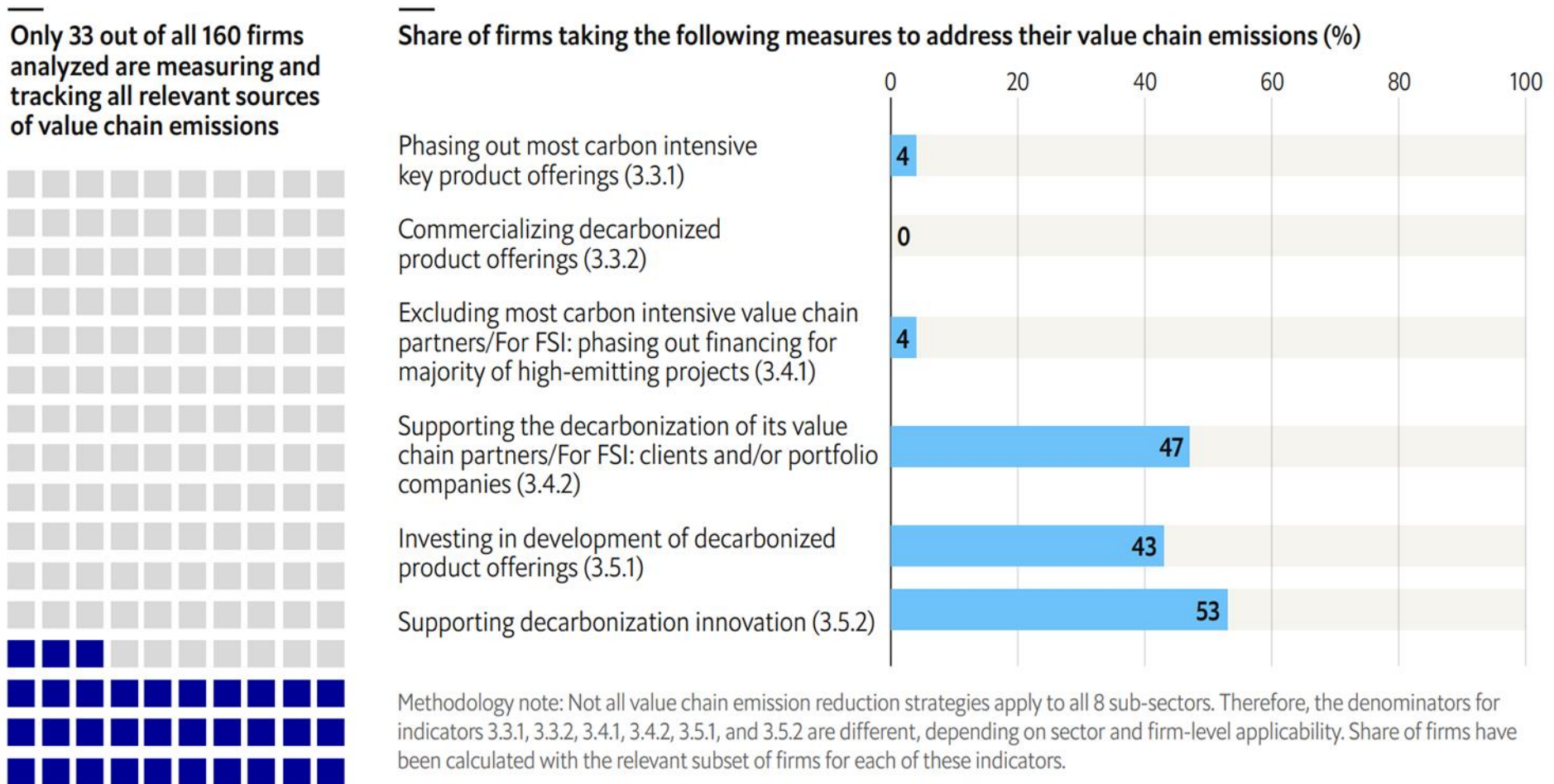


Source: Economist Impact's Decarbonization Progress Benchmark (2023)

Source: Scoring Decarbonisation Progress, The Economist  
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# Economist Study 2023

**Figure 3: Firms are lagging in measuring and addressing their value chain emissions**

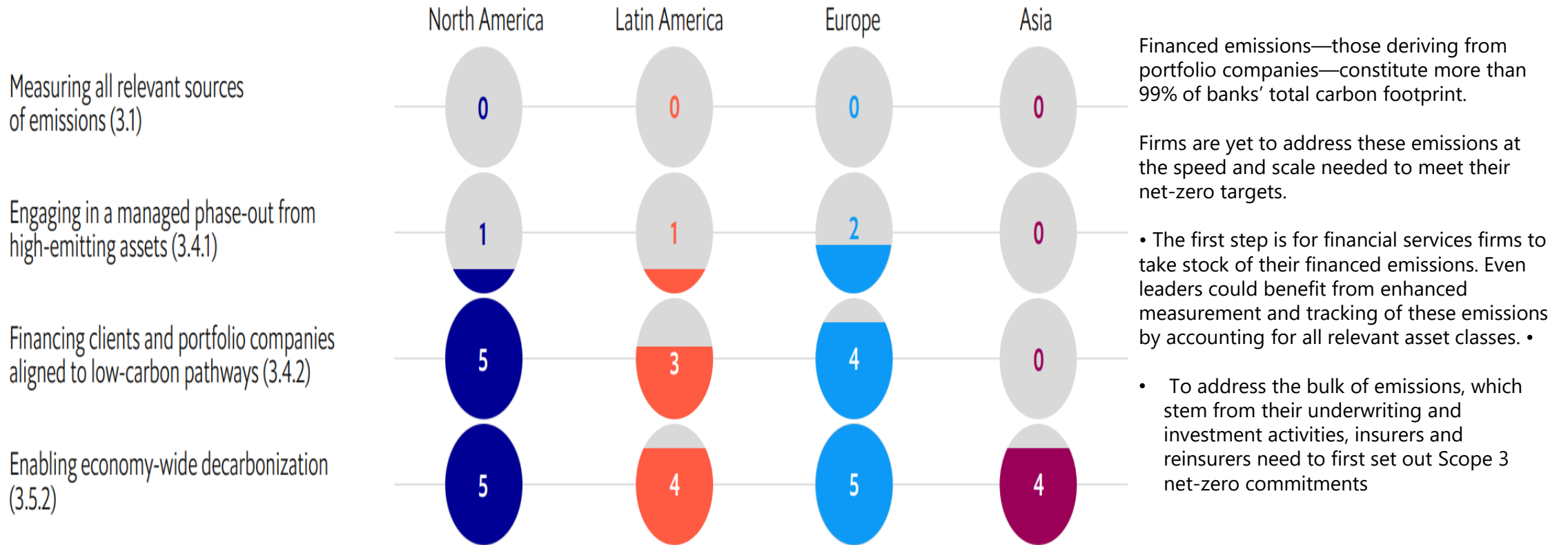


Source: Scoring Decarbonisation Progress, The Economist  
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# Financial Services Sector- Economist Study 2023

## Figure 1: Banks are yet to meaningfully address their financed emissions

Number of banks out of 5 in each region actively taking the following decarbonizing measures



Source: Economist Impact's Decarbonization Progress Benchmark (2023)

# Next Steps

Next round of Decarbonisation Symposium with more speakers and representation from multiple other segments such as Financial institutions, Cement, Transport, Manufacturing, Energy

Deeper Engagement for Decarbonisation for Global south beyond India

Setting up regular dialogues between India, Japan and other Countries in Global South

Dialogue between Universities for Global Exchanges of students, teachers

Collaborative research engagements , White papers through mutual partnerships

Customer story: Carnegie Mellon University

## University improves operational efficiency, cuts energy consumption by 30 percent with BI solution



Carnegie Mellon University (CMU) wanted to improve building management and energy efficiency, so it implemented the PI System from Microsoft Global ISV partner OSIsoft based on Power BI for Office 365 and the Windows Azure platform. CMU reduced building energy consumption by 30 percent and gained better operational insight with powerful, easy-to-use business intelligence (BI) tools built into Microsoft Excel.



**Gain better insight** into data from diverse sources—sharing information more easily and empowering people to manage buildings more strategically

**Connect devices, data sources, and analytics tools** to create an extensible solution that can be applied to multiple scenarios with far-reaching benefits



An aerial photograph of a dense, vibrant green forest. A prominent, winding river with a light blue-green hue meanders through the landscape, creating a series of meanders and loops. The forest canopy is thick and textured, with varying shades of green. The river's path is clearly defined against the surrounding vegetation.

Thank you