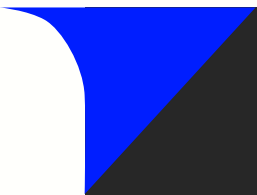


The Landscape of ClimateTech

By Aakanksha, Aviral and Akul

Contents

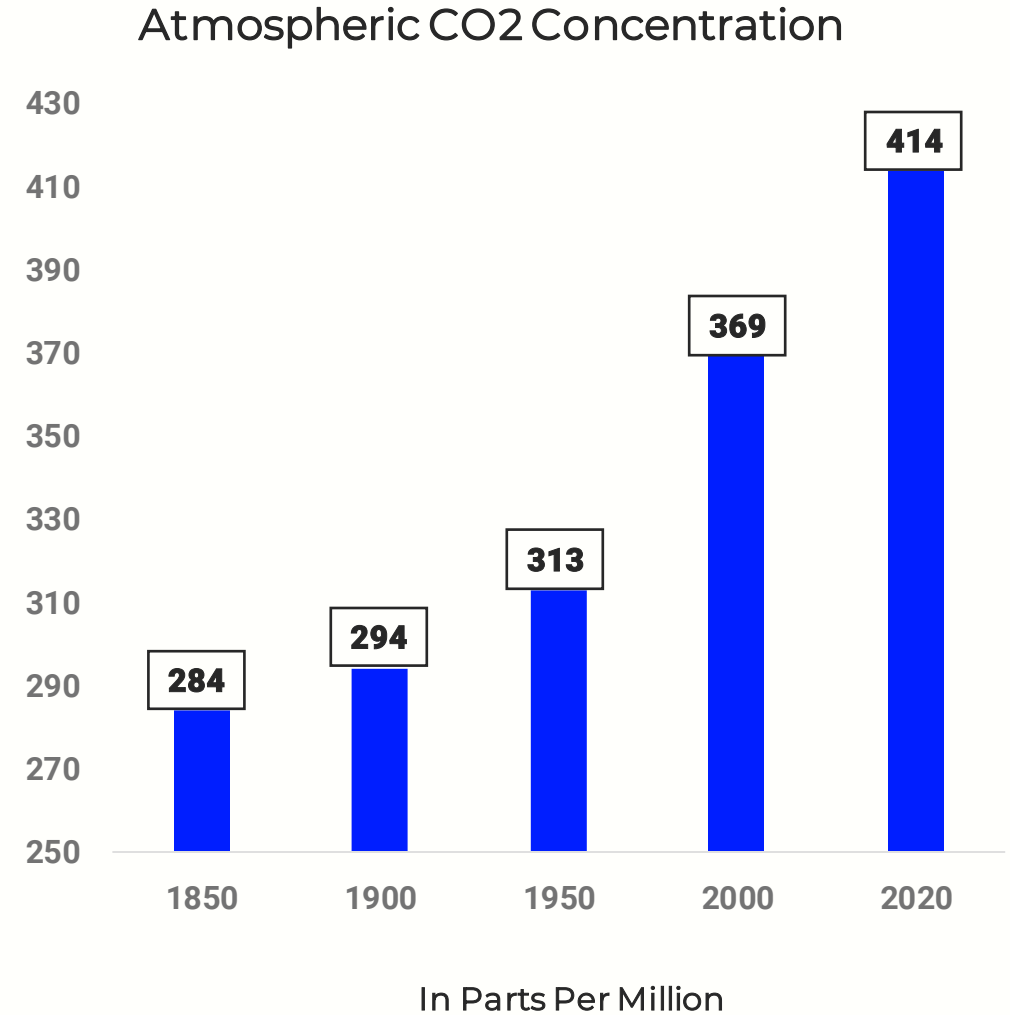
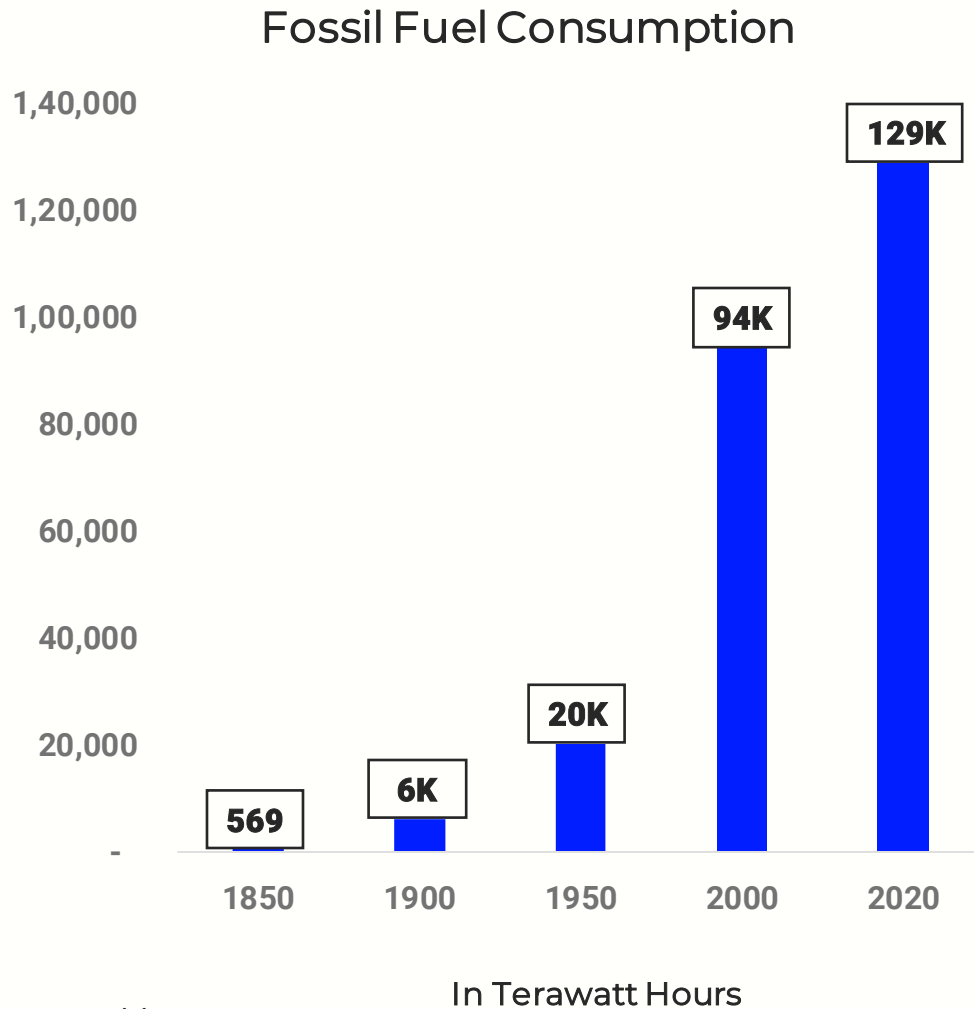
1. The Problem of Climate Change
2. Funding for ClimateTech
3. Our Thesis



The Problem of Climate Change

Impact of Fossil Fuel Consumption

We have scaled our fossil fuel consumption, unaware of the climate impact of this exponential growth



Cost of Climate Change

Climate change has exacerbated natural calamities, causing large-scale losses to the global economy...

1.7°C

Increase in temperature from pre-industrial times

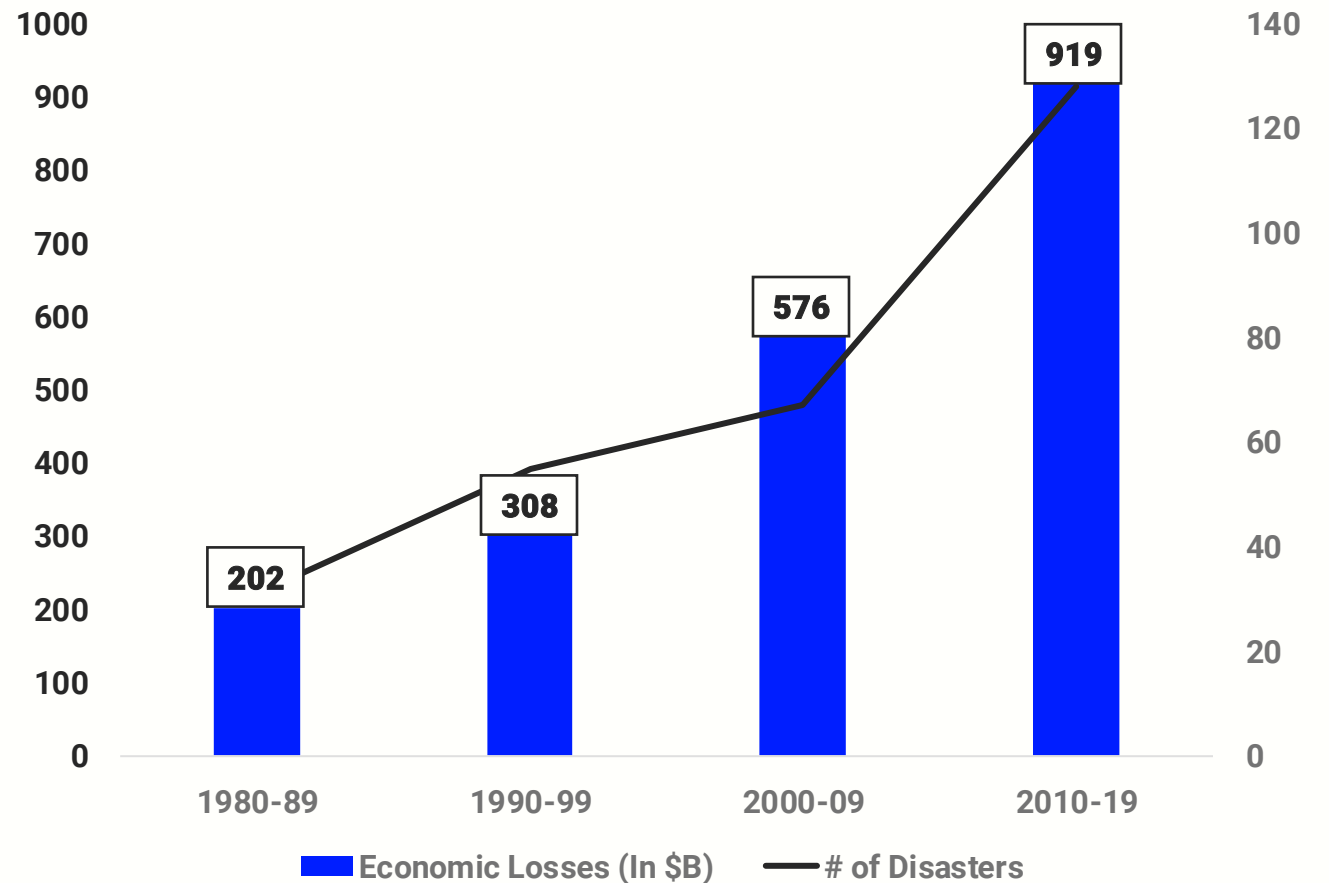
22

Disasters in 2021 that costed \$1B+

\$343B

Economic loss due to climate change in 2021

Cost of Climate Disasters, USA



The Cost of Climate Change

...uprooting thousands of lives in their course



\$65B: Hurricane Idaho



\$43B: Germany and Belgium Floods



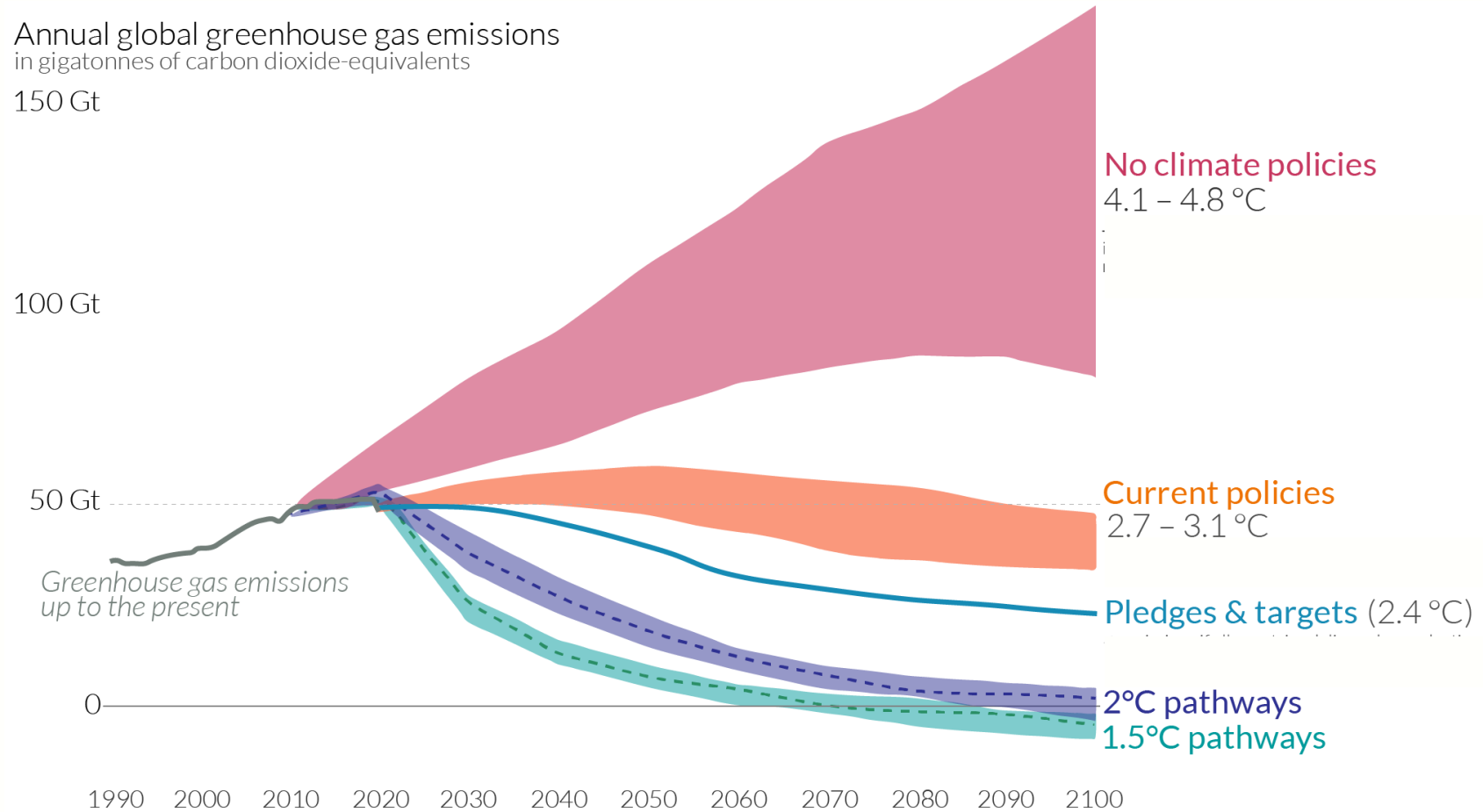
\$23B: Winter Storm in Texas



\$17.6B: China's Henan Province Floods

Our Future

Climate related challenges will intensify, as we breach twice the target increase in global warming by 2030



Combating Climate Change

Governments globally are hence pressuring businesses to undertake better environmental footprint management

The EU is finalising disclosure rules for 50,000 companies in the 27-country bloc to report on environmental, social and governance (ESG) factors, as well as a company's impact on the environment known as double materiality

Source: Reuters

Fines have been issued for breaches of climate change schemes which are in place to help ensure the UK reaches its target of net zero emissions by 2050

Source: UK Govt Website

How ClimateTech Startups Can Help

ClimateTech startups help businesses navigate these changes enabling us to create a sustainable future

Measure

How do I measure my organisation's carbon footprint?

Software to calculate carbon footprint of the organisation

What risks does my organisation face because of climate change?

Software to compute the value-at-risk due to climate change

Mitigate / Reduce

How can we produce and deliver goods more sustainably?

R&D for low-carbon production, and delivery systems

How do we offset our carbon emissions?

Marketplace for purchase of carbon credits

Accelerate the Transition

How do we help businesses navigate climate risk?

Supply chain planning and insurance for value-at-risk due to climate change

How do we enable businesses' access to sustainable finance?

Business-focused financial products with fractional investments for retail investors

Theme 1: Measurement

Carbon Accounting

Globally regulators are directing enterprises to measure their environmental footprint

US SEC proposal for mandatory carbon reporting

The SEC has proposed new climate-related disclosure requirements for public companies. In March 2022, with the “issuer rule,” the SEC proposed rule amendments that would require public companies to provide certain climate-related financial data, and greenhouse gas emissions (both direct and supply chains) insights, in public disclosure filings.

Source: Bloomberg

EU rules for audited carbon reporting

The EU said over three years companies covered by the rules - renamed as the Corporate Sustainability Reporting Directive - would more than triple to around 49,000. The new rules, which require companies to disclose a broader range of data such as their carbon emissions.... Companies would also be required to obtain limited assurance for their sustainability disclosures from an auditor.

Source: Reuters

Cross-border Carbon Tax

The EU has implemented a Cross-Border Carbon "Tax" on the carbon emitted during the production of goods entering the EU



Cost of “GreenWashing”

The penalties for non-compliance or “greenwashing” are huge, with incorrect reporting costing millions of US dollars

German government fined energy company for greenwashing

Back in 2020, Eni was fined €5 million for deceiving consumers on its “green” diesel. And as the 2022 German police raid on Deutsche Bank’s DWS proved, there is potentially much more money to be lost. In 2023, we expect at least 10 companies to incur \$5 million or more in greenwashing fines.

Source: Forbes

SEC fined financial services company for improper reporting

DWS was fined \$19m this week by the US Securities and Exchange Commission (SEC) for marketing itself as a leader in ESG while making misleading statements about controls for incorporating research and investment recommendations for ESG-integrated products.

Source: IPE

The Carbon Equation

Carbon accounting is as complex as financial accounting for a multinational organization, with each business activity having a different “carbon cost”

$$\text{Business Activity} \times \text{Emissions Factor} = \text{CO}_2e$$

Company’s daily actions that cause global warming:

- Electricity consumed by building, factory and data centres
- Employees driving to work and flying to meetings
- Raw material purchased from other companies

Measures how much carbon is emitted for each business activity:

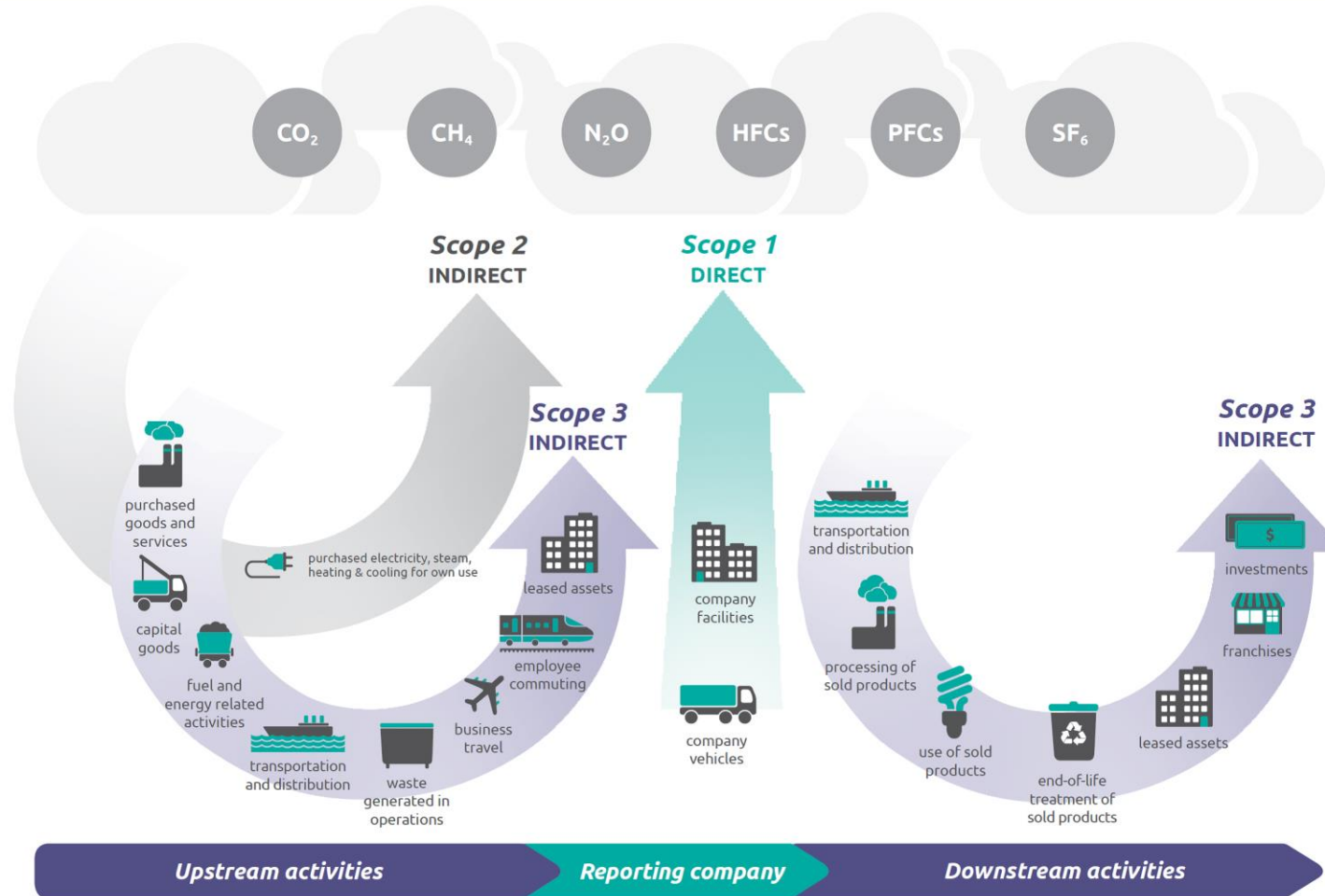
For instance, we know that growing a tomato emits 0.65 kg of CO₂e, and manufacturing a MacBook Pro emits 185 kg of CO₂e, etc.

Gases are converted into measures equivalent to a tonne of carbon dioxide for consistency:

For instance, methane emissions are 84 times more potent over a 20 yr period

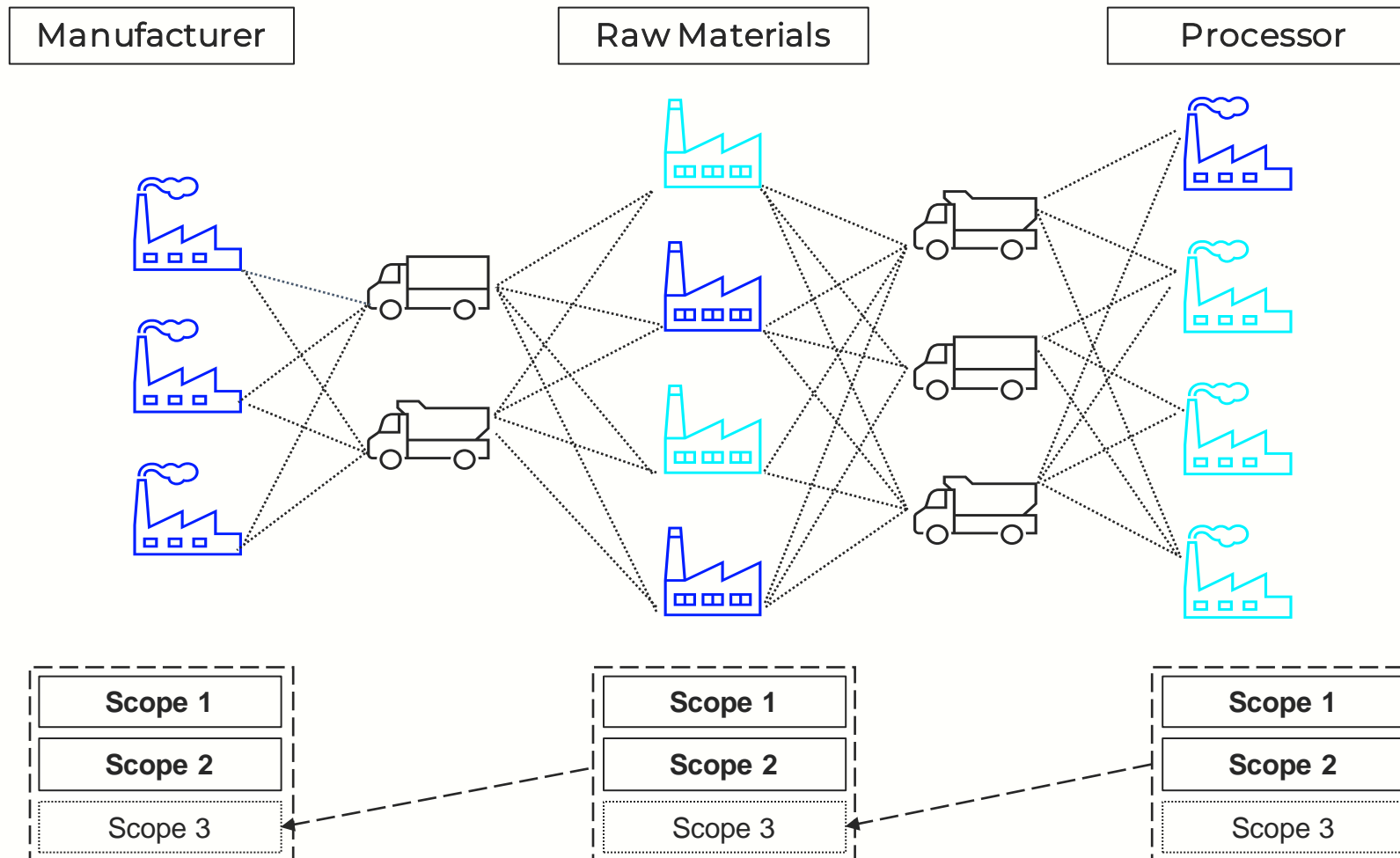
What is Your Carbon Footprint?

Computing your organizational carbon footprint requires assessing the impact of your business, and your upstream and downstream supply chain partners...



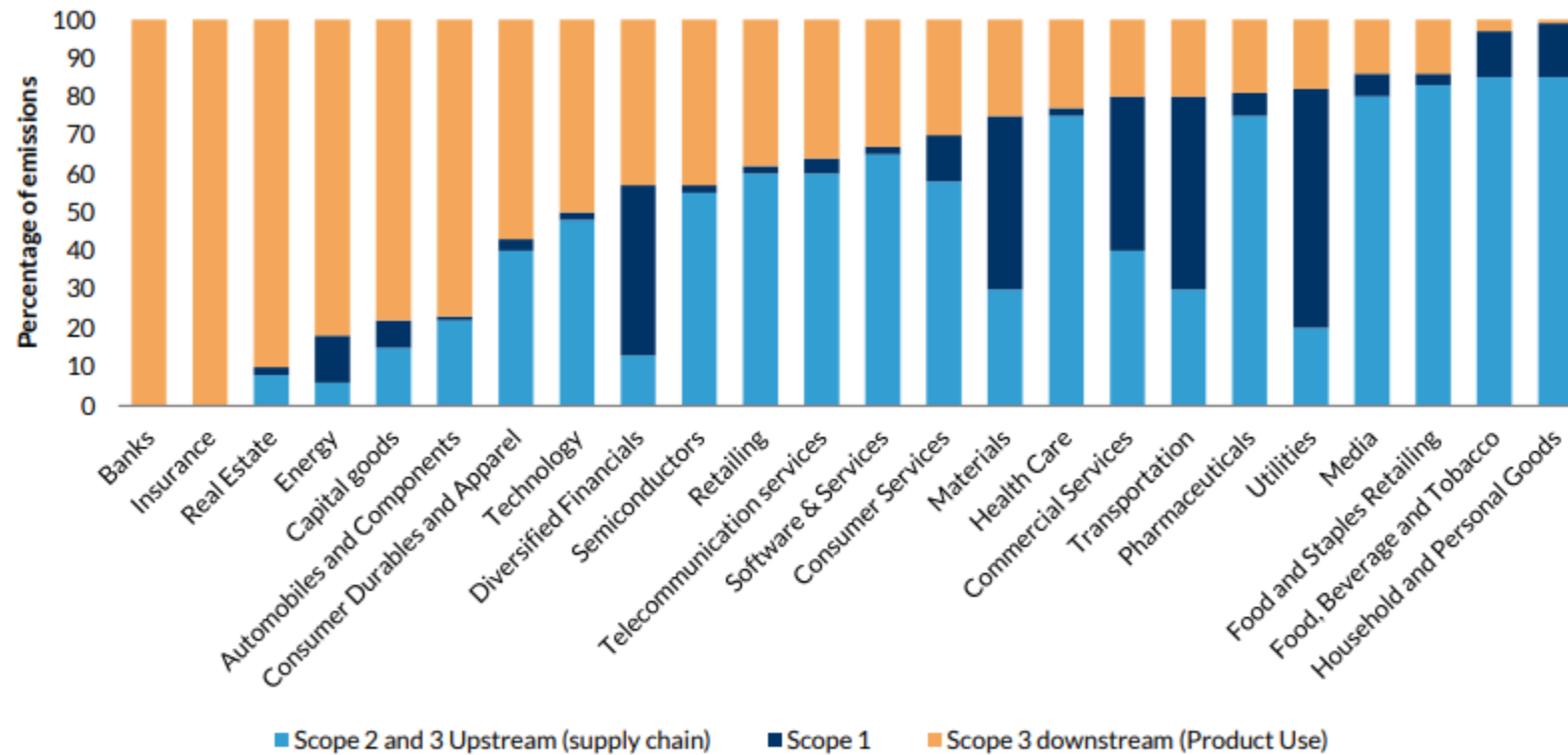
The Trickle-Down Effect

...with low-carbon cost partners, positively impacting the entire supply chain



The Interdependence

Each chain has its unique characteristics, with higher Scope 3 emissions implying higher interdependence, driving supply chain reconsiderations



Global Players

Many publicly-listed enterprises and startups globally are helping organizations compute their environmental footprint



Traditional SaaS companies



\$101M, Series B, 2021



\$73M, Series B, 2022



\$70M, Series B, 2022



\$32M, Series B, 2022



\$22M, Series A, 2022



\$10M, Series A, 2022



\$10M, Series A, 2021



Acquired by OneTrust, 2021



Acquired by NASDAQ, 2022



\$2M, Seed, 2022



NPO, Collective

What are we looking for?

While the market is competitive, we believe that there is opportunity for Indian startups to build verticalized user-friendly products to capture this market

- Deep experience in carbon consulting and building user-friendly products that can effectively tackle scopes 1 through 3, with a specific emphasis on scope 3 emissions
- A strong focus on building deep vertical distributions in industries with large scope 3 emissions like automobiles, real estate and fashion etc
- The ability to cultivate strong channel partnerships with industry leaders in tax/audit/consulting to pursue enterprise clients with large Requests for Proposals (RFPs)

Indian Startups



Theme 2: Mitigation/Reduction Carbon Capture and Offset

Global Emission Reduction Initiatives

4K+ businesses and financial institutions are working with the Science Based Targets initiative (SBTi) to turn “Net Zero”

Goldman Sachs Commitment to “Net Zero”

- Achieve Net Zero emissions in our operations and supply chain by 2030
- Reduce energy intensity by 20% from a 2017 baseline for offices under operational control
- Extend Scope 3 carbon neutrality commitment for business travel to include hotel night stays
- Ensure that 80% of renewable energy procurement is from long-term, impactful agreements...

Source: Goldman Sachs

Apple Plans to turn Carbon Neutral

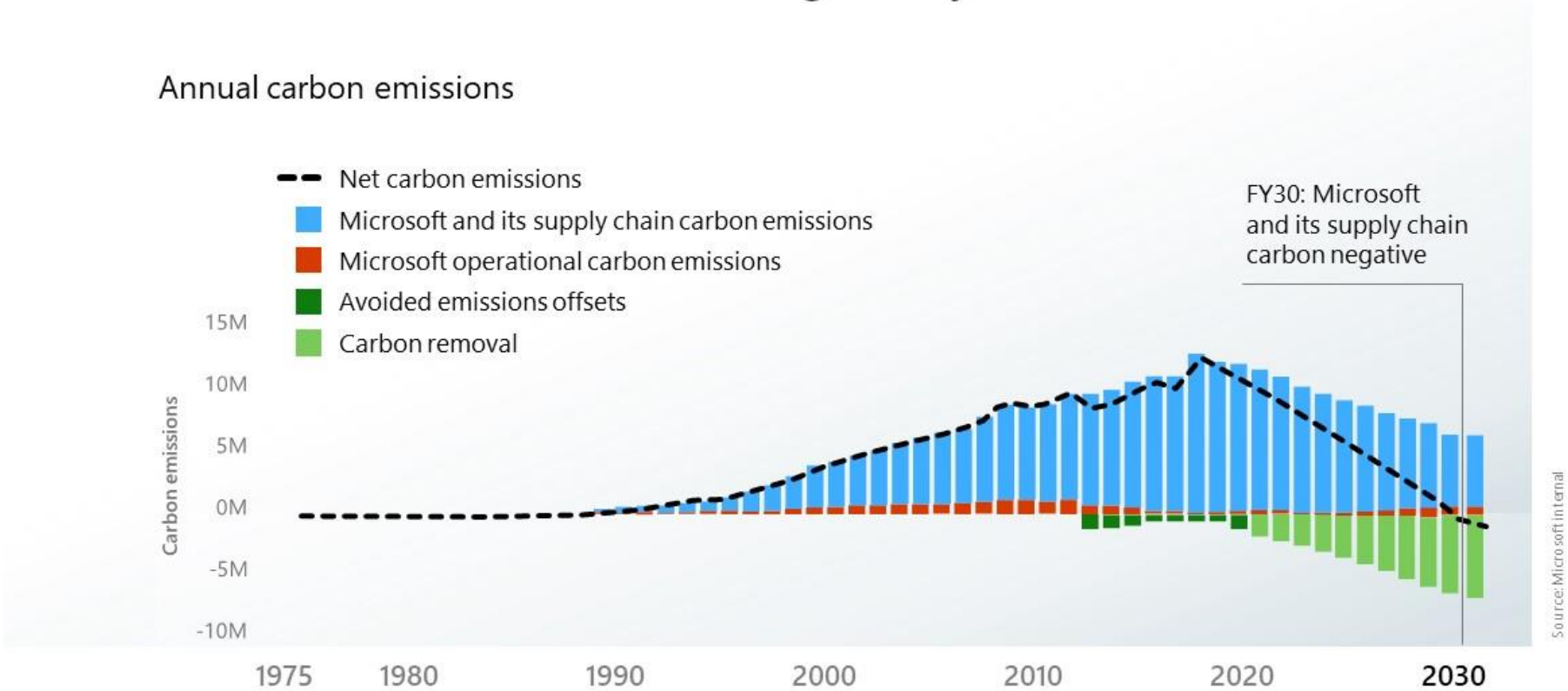
Apple today unveiled its plan to become carbon neutral across its entire business, manufacturing supply chain, and product life cycle by 2030. The company is already carbon neutral today for its global corporate operations, and this new commitment means that by 2030, every Apple device sold will have net zero climate impact.

Source: Apple

Corporate Emission Reduction Initiatives

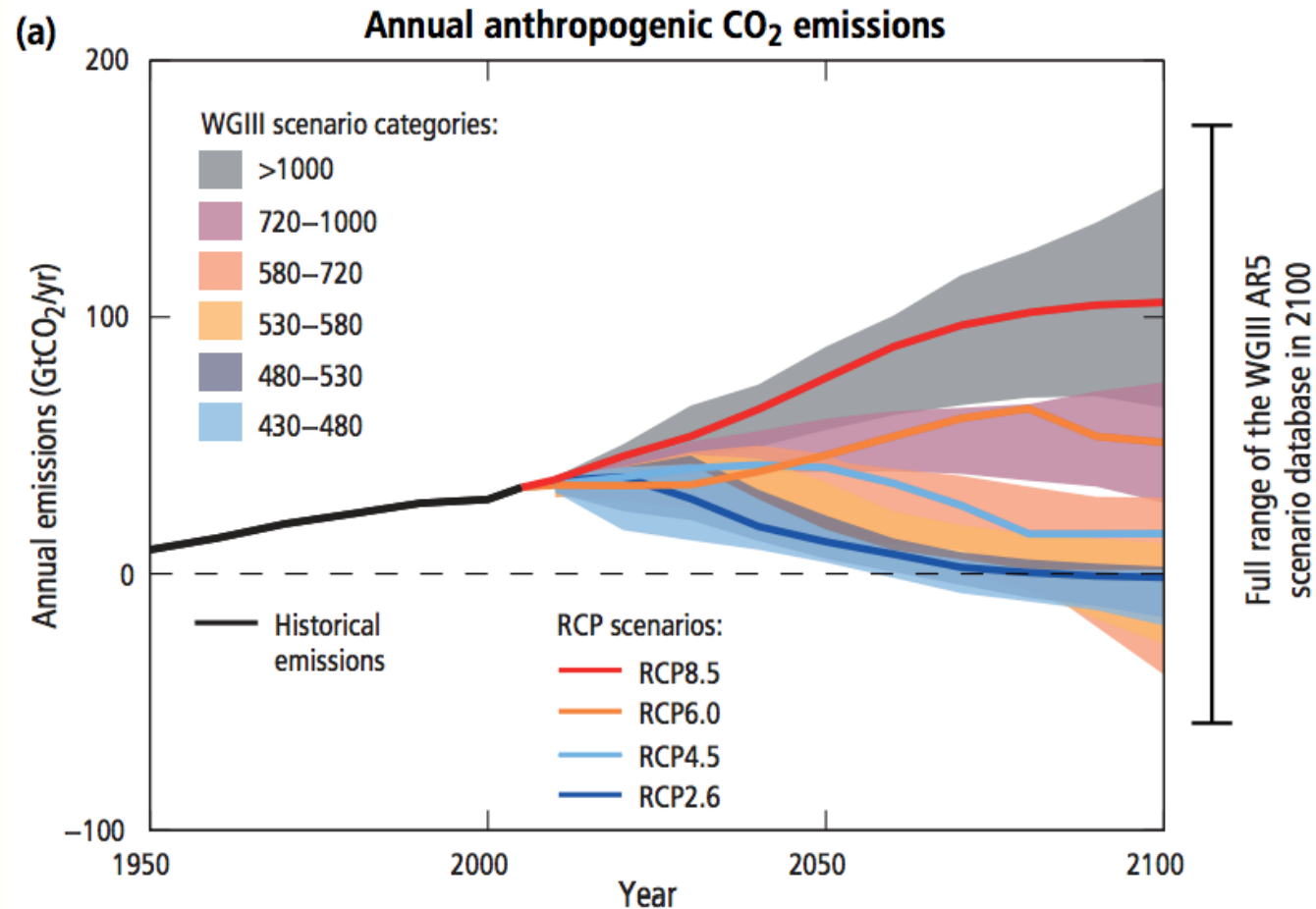
Companies like Microsoft have also published their pathways to “Net Zero” for investors, and customers

Microsoft’s pathway to carbon negative by 2030



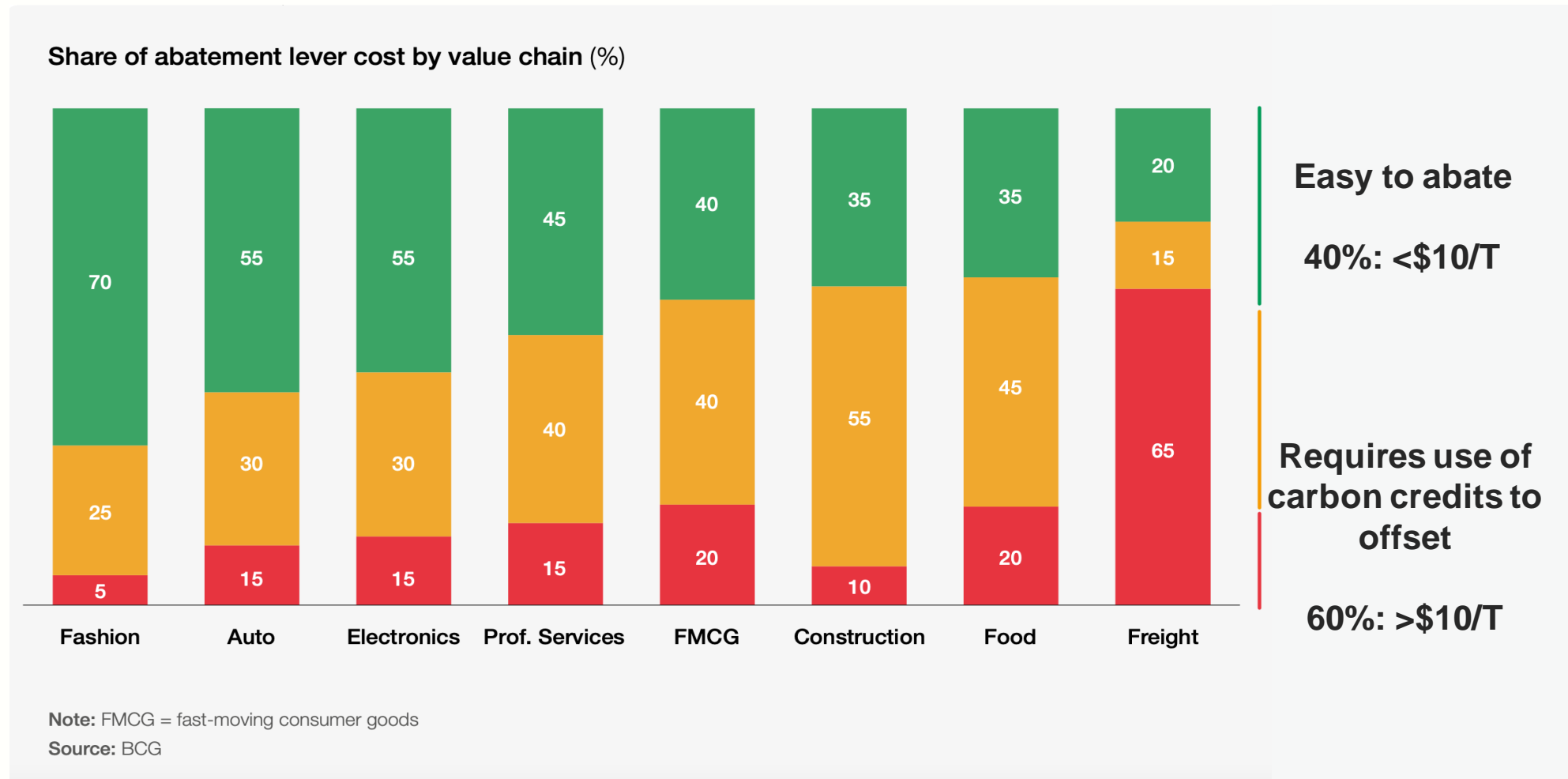
Meeting the 1.5C Paris Goal

Turning “Net Zero” alone is not sufficient to restrict the rise in temperature, since temperature change is dependant on the stock and not the flow of GHGs, removing existing GHGs from the atmosphere is critical



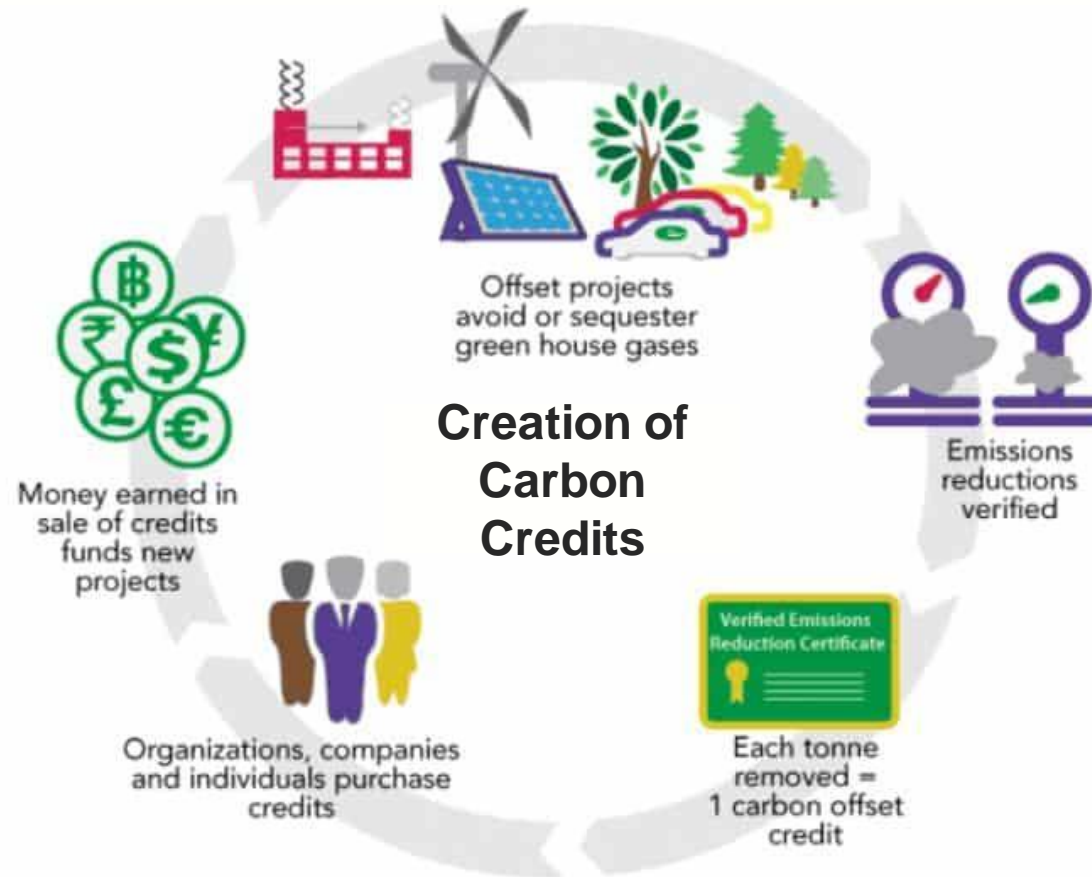
Business Challenges in Achieving 'Net Zero'

Making all value chains "Net Zero" is prohibitively expensive and disrupts business operations, necessitating their use of carbon credits



Introduction to Carbon Credits

Carbon credits are generated from projects that pull Greenhouse Gases (GHGs) out of the atmosphere or keep emissions from being released



Types of Carbon Credits

There are 4 broad categories of carbon credits...



Technology-based removal



Emissions avoidance/reduction



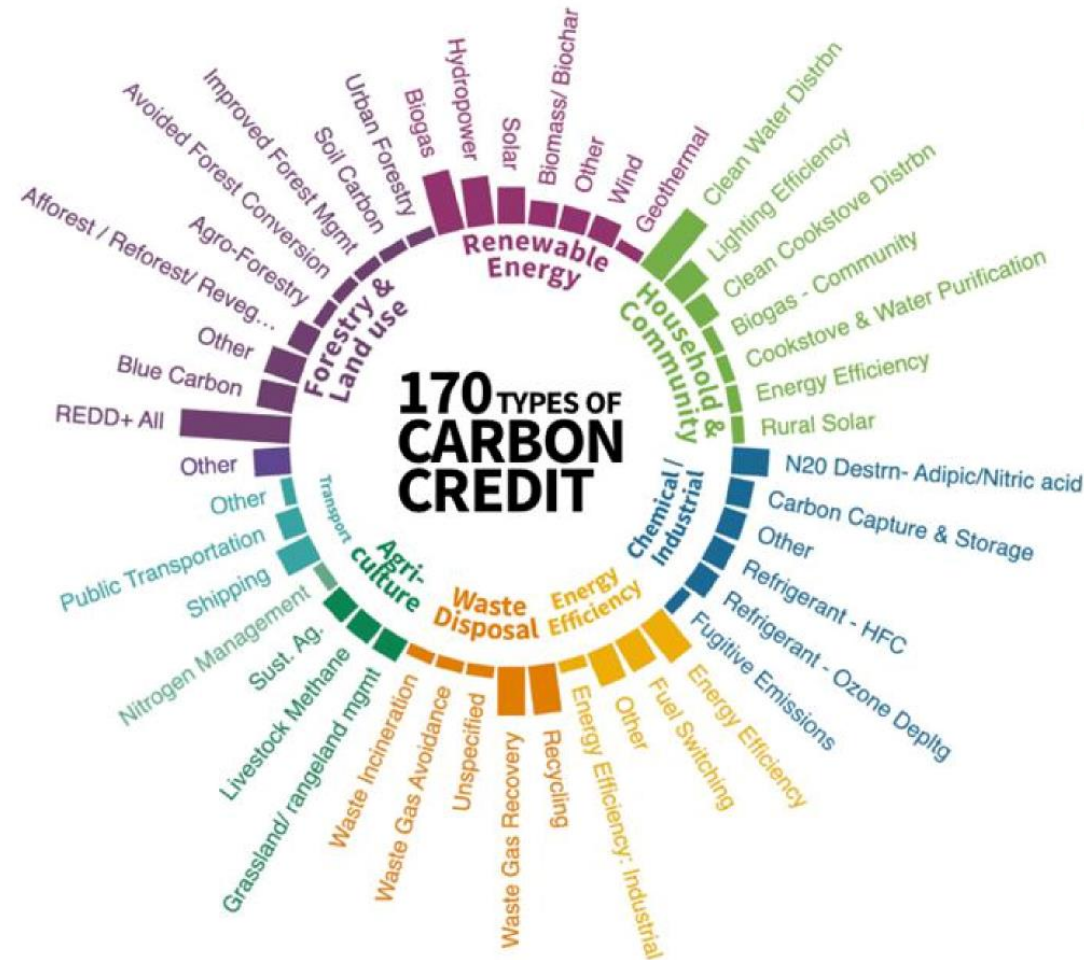
Nature-based sequestration



Avoided nature loss

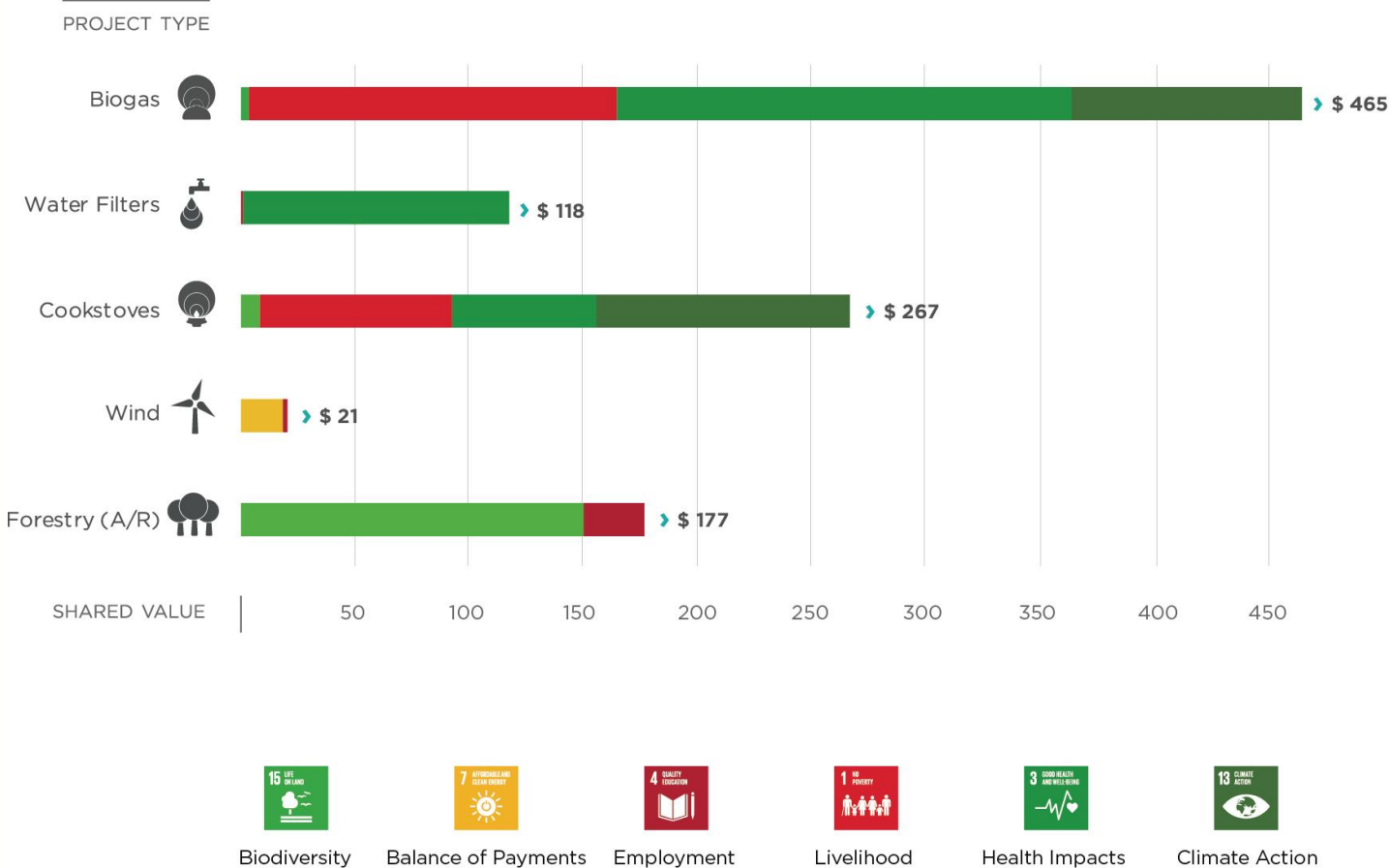
Types of Carbon Credits

...which include 170+ types of carbon credits...



Price of Carbon Credits

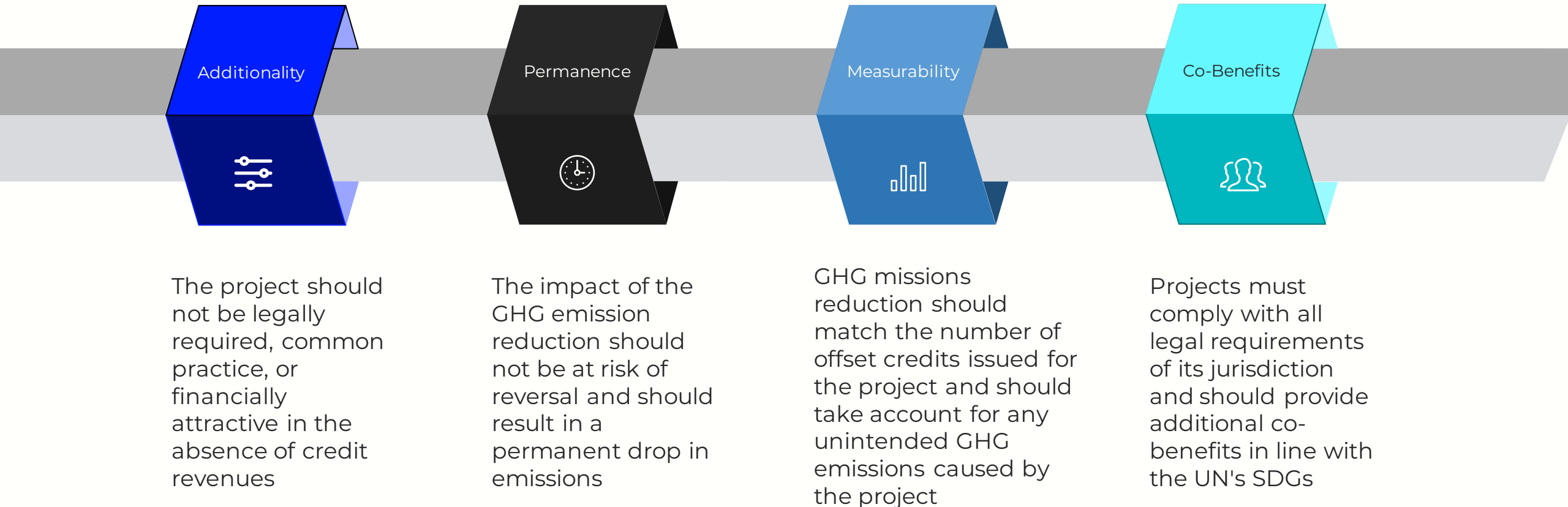
...with prices ranging from a few cents to \$2000+ per ton



Source: Gold Standard

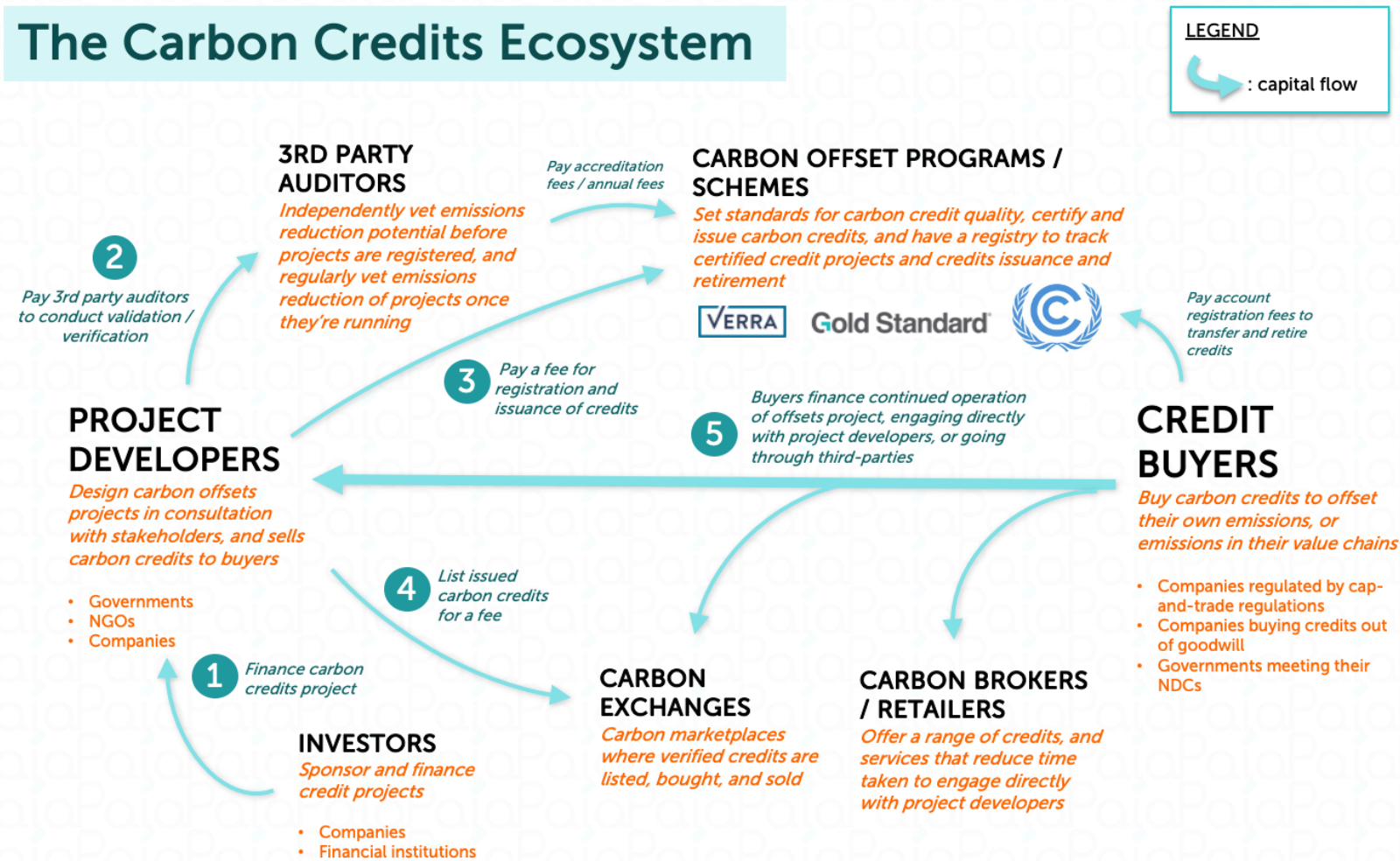
Understanding Carbon Credits

There are 4 parameters basis which organizations evaluation carbon credits



Purchasing Carbon Credits

Organizations have to navigate a complex ecosystem to understand these projects and determine which credits to buy and from whom

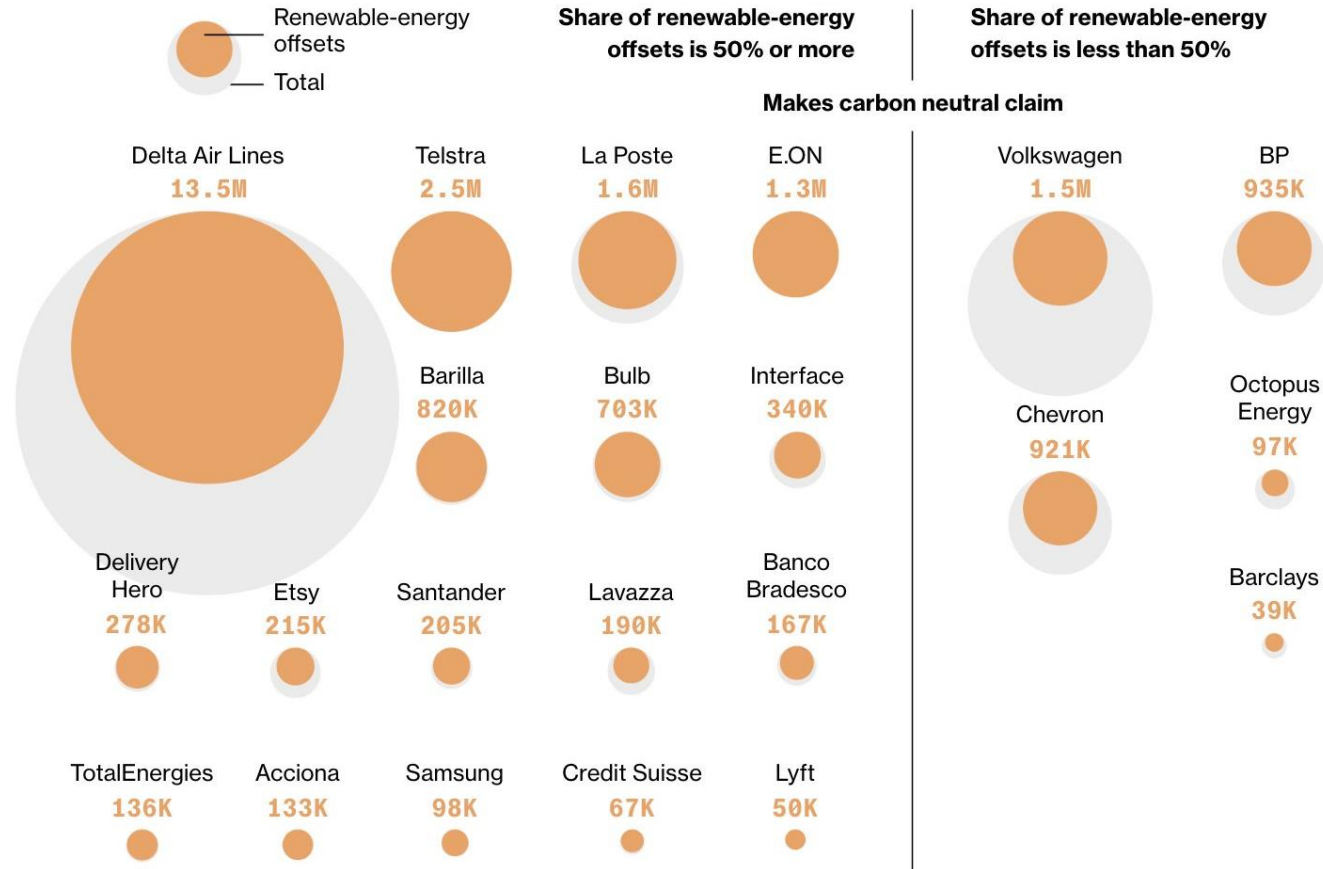


Purchasing Carbon Credits

Organisations that fail to purchase high-quality carbon credits also risk getting accused of greenwashing, consequently inviting regulatory action and consumer pressure

Buying Bogus Offsets

Total carbon offsets bought in 2021 and the share coming from renewable-energy projects for a selection of big buyers



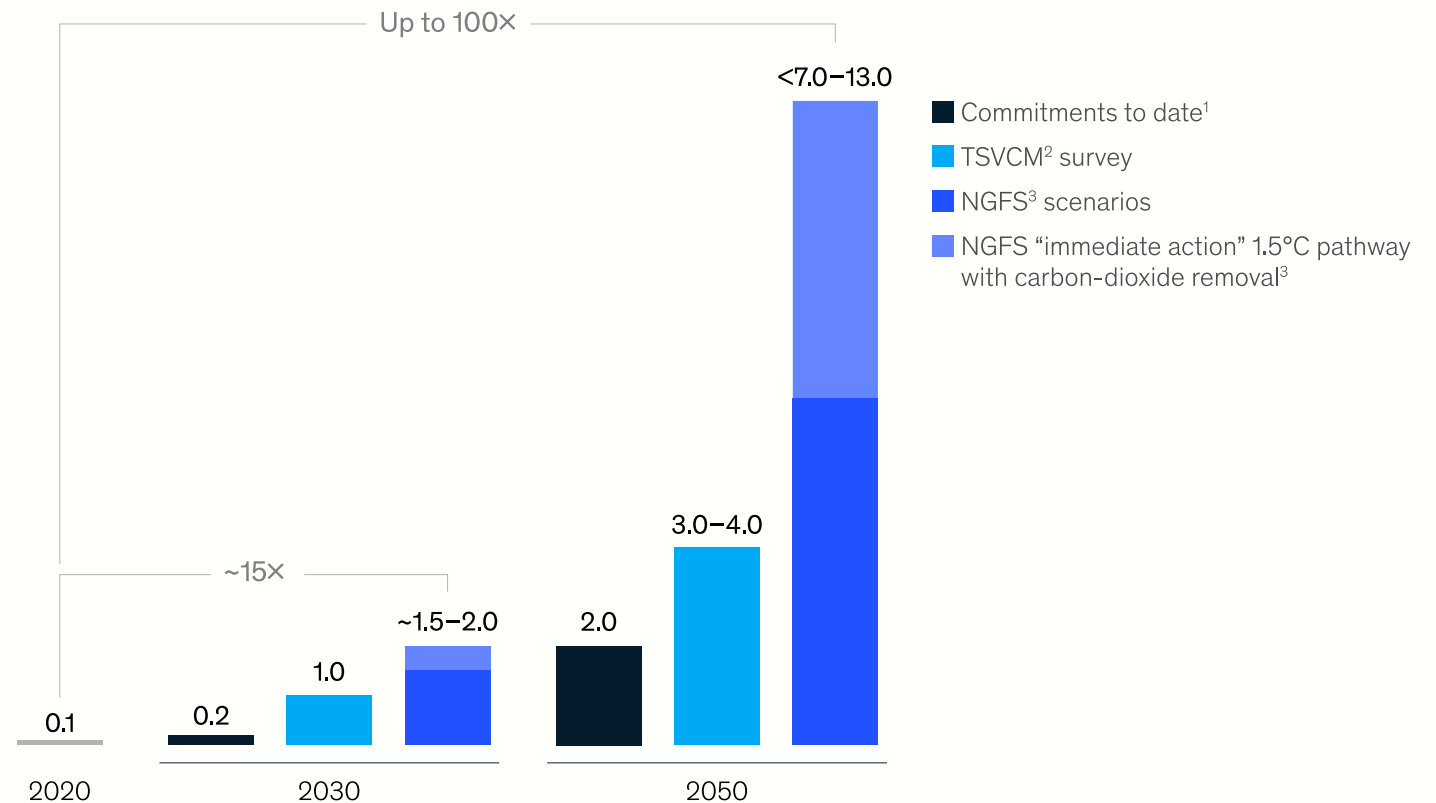
The Demand for Carbon Credits

The demand for carbon credits is set to grow exponentially

\$50B+
Exp. Voluntary Carbon
Market Size, 2030

Global demand for voluntary carbon credits could increase by a factor of 15 by 2030 and a factor of 100 by 2050.

Voluntary demand scenarios for carbon credits, gigatons per year



Global Players

Public corporations and well-capitalized startups are building to capitalize on the growth of the carbon credits market



Public, \$160B MCap



\$400M, Series D, 2022



\$70M, Series A, 2022



\$61M, Series C, 2022



\$55M, Series B, 2022



\$55M, Series B, 2022



\$50M, Series B, 2022



\$50M, Series B, 2022



NATURE & FUTURE

\$38M, Series B, 2022



\$33M, Series A, 2022



\$10M, Series A, 2022



\$7M, Series A, 2022

What are we looking for?

We believe that India's biodiversity provides our entrepreneurs fertile grounds to develop methodologies to generate carbon credits and capitalize on this growing market

- Expertise in the development of technologies crucial for credit certification; this encompasses areas such as the measurement, collection, and computation of field and satellite data
- A solid grasp or experience in global financial markets, particularly the green finance sector to secure access to cost-effective working capital
- The ability to efficiently coordinate offline operations in collaboration with regional and local stakeholders at scale

Indian Startups



Theme 3: Accelerating the Transition

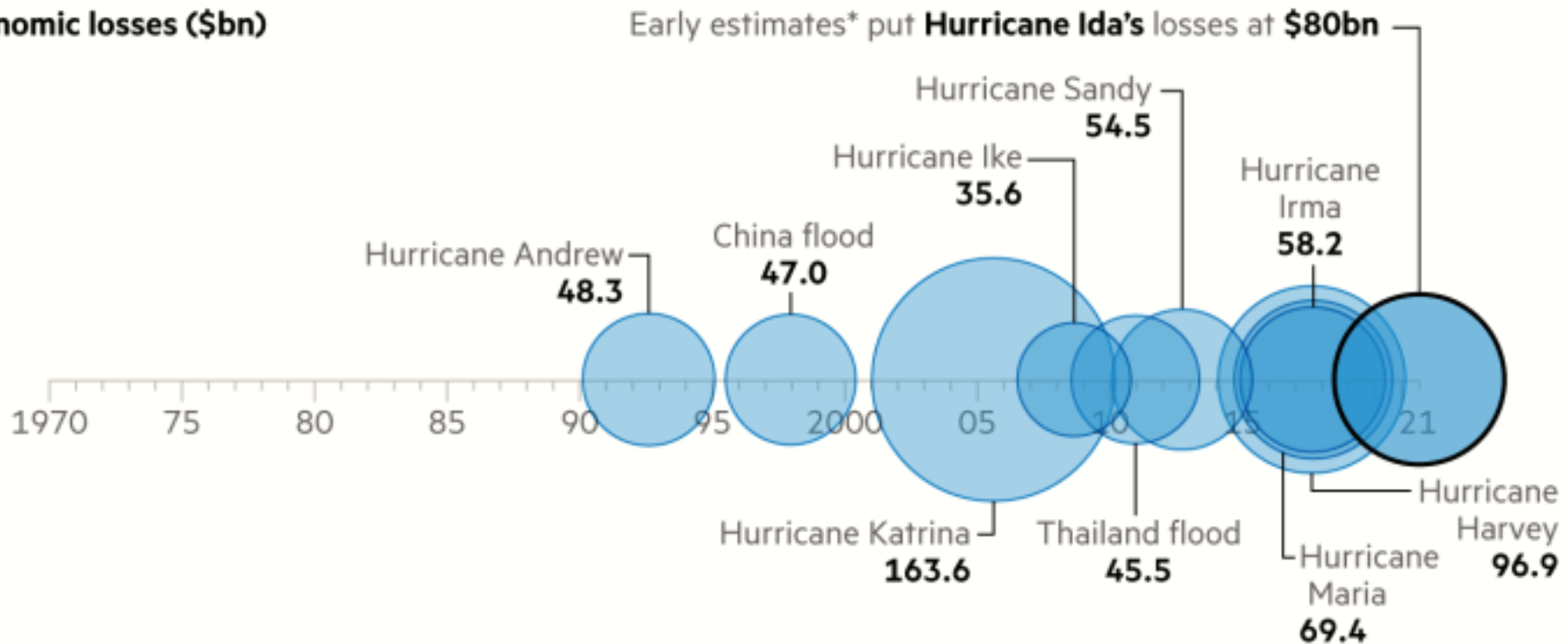
Climate Intelligence

Climate Change's Economic Toll

Developed nations have incurred the bulk of \$3.6T in economic losses from severe weather events over the past five decades

Top 10 disasters by reported economic losses and deaths since 1970

Economic losses (\$bn)



Climate Change's Economic Toll

Swiss Re Institute expects climate risks to add \$183B to property insurance costs by 2040

Economic development will remain the key driver of premium growth across all lines of business over the next 20 years. In property, climate risks will raise property claims and premiums.

	Motor	Property	Liability
Economic development	↑	↑	↑
Climate risk and associated policies	↓	↑	↑
Technology/digitalisation	↓	=	↑
Urbanisation	↓	↑	↑
Liability regimes, social inflation	↑	↑	↑

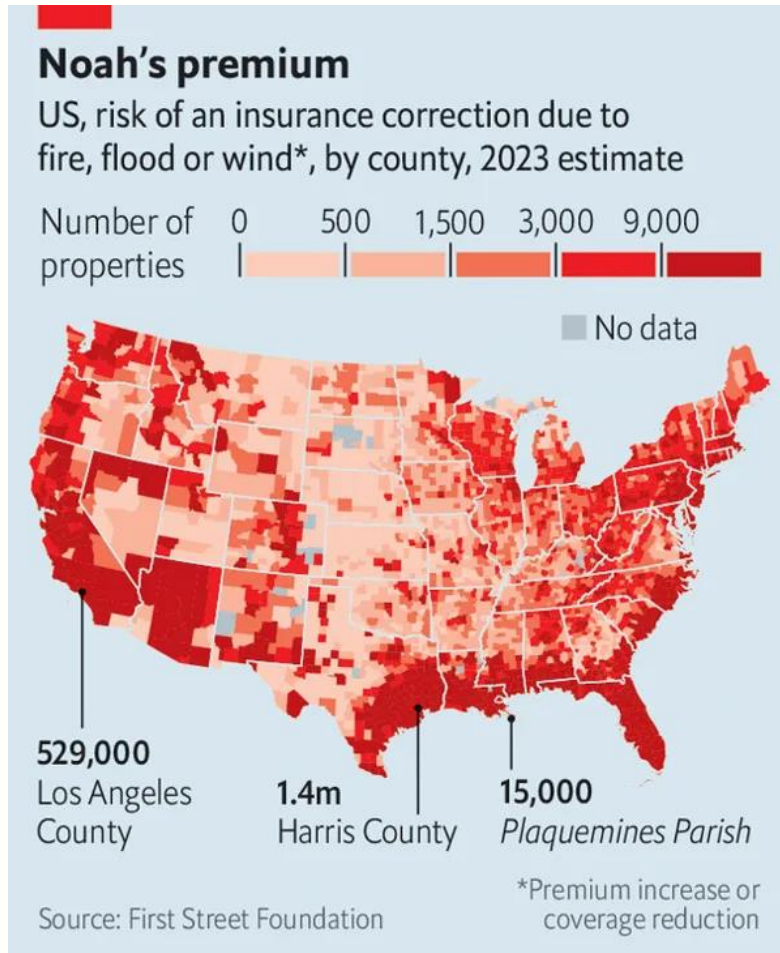
● Explicit quantitative analysis of impact
 ● Implicit quantitative analysis of impact
 Source: Swiss Re Institute

	Motor	Property	Liability	Other	Total
Additional premiums by 2040F (USD million)	635	823	369	681	2508
Contribution by driver					
Economic development	194%	75%	100%	100%	116%
Urbanisation	na	3%	na	na	1%
Climate change	na	22%	na	na	7%
Technology & sustainability	-94%	na	na	na	-24%

na = implicit quantification only
 Source: Swiss Re Institute

Climate Change's Economic Toll

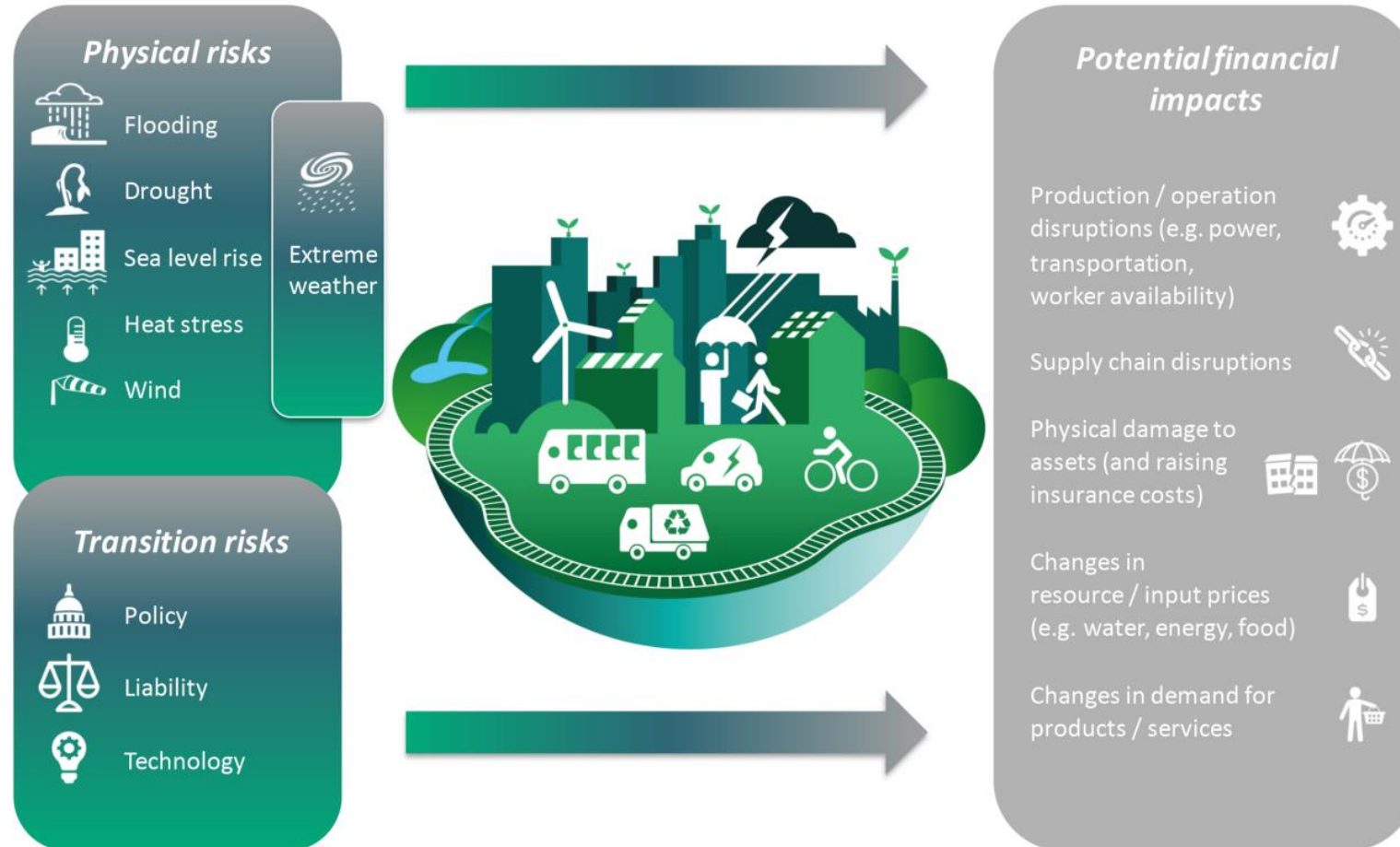
Early impacts on the rise in property insurance costs are visible with many properties in California and Australia becoming unstable



In Florida the average home-insurance premium in 2023 is around \$6,000, more than three times the national average and up 42% year-on-year. Yet rather than drooling over juicy profits, insurers are fleeing. At least 15 firms have recently limited their business in the state, according to the Insurance Information Institute; seven others were declared insolvent. With 1.3m policies, the state-backed insurer of last resort now has the highest market share in Florida and is insuring assets worth \$608bn. When it can't afford to pay claims, policyholders foot the bill.

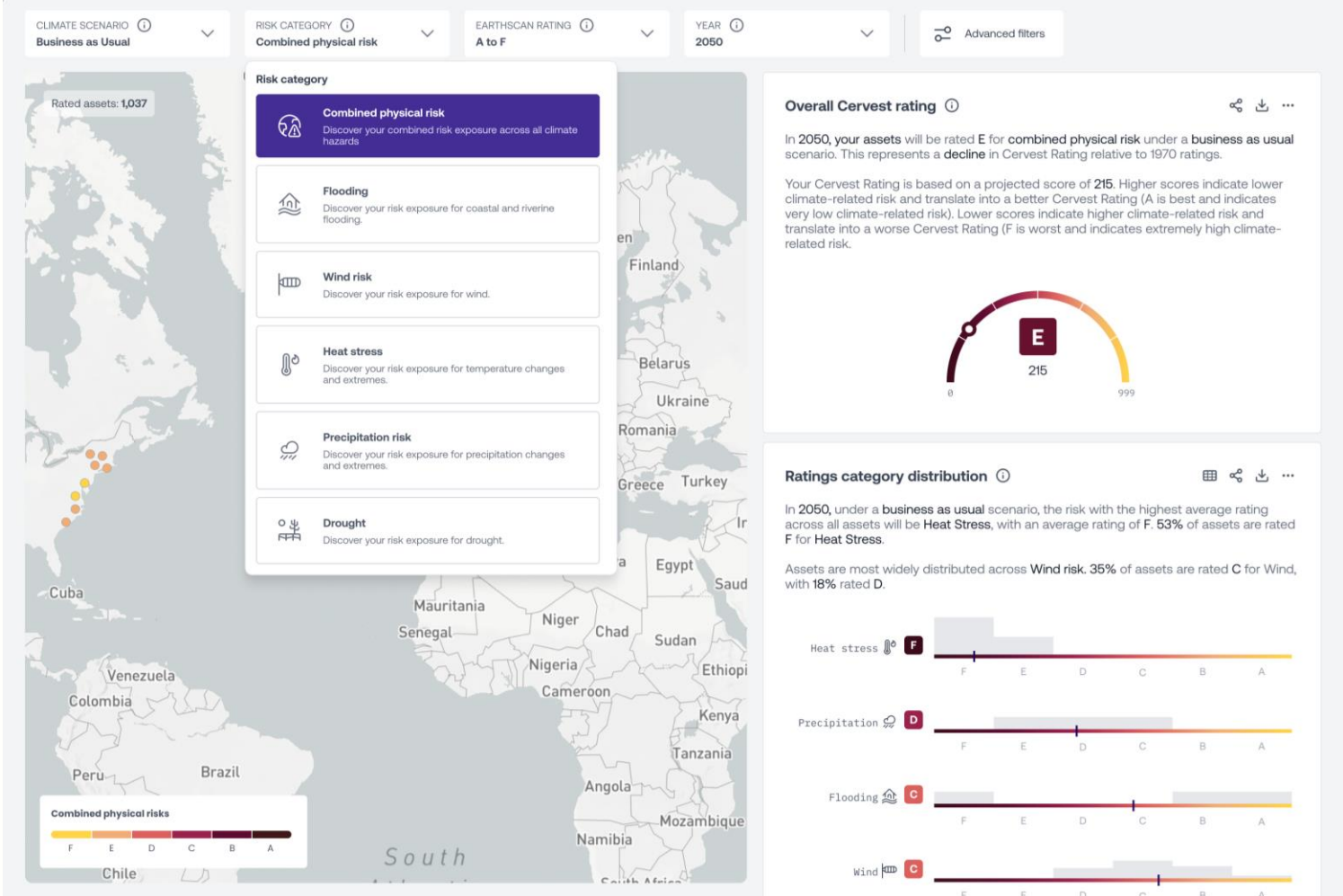
Translation of Climate Risks to Financial Risks

Physical and transition risks of climate change have the potential to cause severe financial distress to organizations, resulting in operational, credit, insurance and market risks



Quantifying Climate Risk

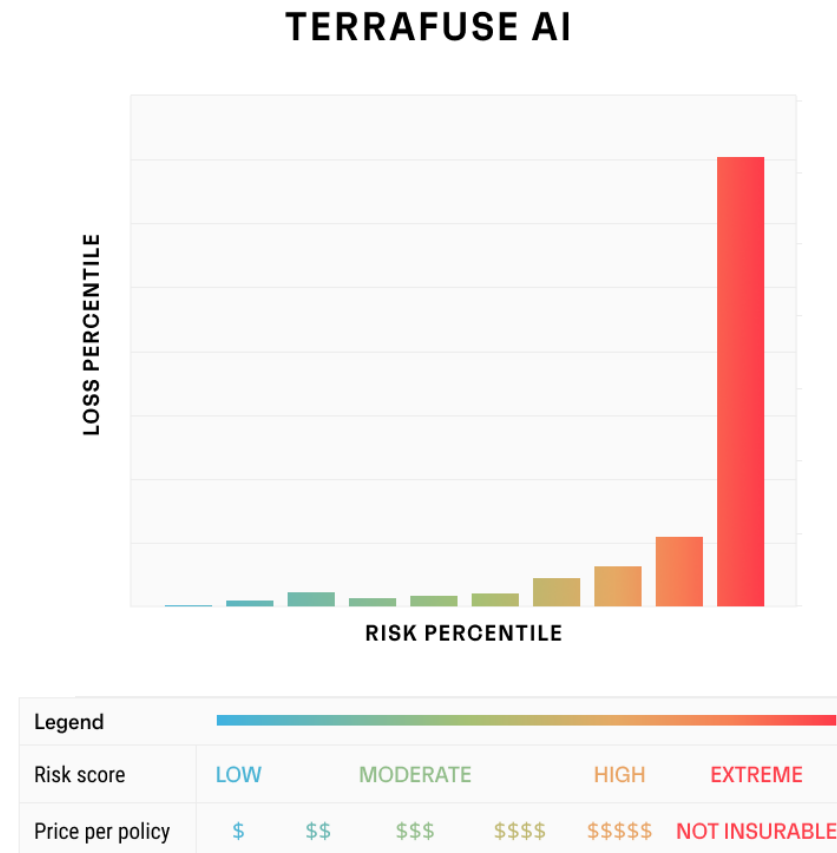
Climate intelligence will allow organizations to quantify and objectively evaluate risk to their assets and supply chains



Source: Cervest

Climate Risk Assessment

Compared with traditional methods, the use of real-time data, integrated assessment models and hyperscaled geospatial data allows for better assessment of climate specific risk



Global Players

The climate intelligence market has many traditional and new players to provide raw data and analytics

McKinsey&Company

Consulting Firms

Climavision

\$100M, Series C, 2022

tomorrow.io

\$77M, Series D, 2021

JUPITER™
Predicting risk in a changing climate

\$54M, Series C, 2021

cervest

\$30M, Series A, 2021

MANIFEST CLIMATE

\$24M, Series A, 2022

BreezoMeter

Acquired by Google

EARTH NETWORKS®

Acquired by Union Park Capital

planalytics®

\$11M, Series A, 2018

FUTUREPROOF

\$7M, Series A, 2022

dClimate

\$3.5M, Seed, 2021

TERRAFUSE AI

\$1.5M, Seed, 2020

What are we looking for?

Despite intense competition, we believe there is opportunity for Indian startups to emerge as thought partners, developing best in-class models to analyze climate data and inform global businesses

- Proficiency in developing technologies for collecting and analyzing climate data, constructing integrated climate assessment models, and effectively applying this data to specific geospatial contexts
- Experience of selling to global enterprises with distributed operations or supply chains and governments
- The ability to cultivate a network of climate leaders and position the company as the industry's preferred thought partner

Indian Startups



ambee

Thank you!

If you are building in ClimateTech, please feel free to write to us at reachus@venturehighway.vc

Note : Climate Fintech is a part of our larger Fintech thesis and is therefore excluded from the scope of this presentation;
it continues to be a focus area for VH