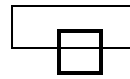




Energy Transition and Global Finance

October 2, 2024

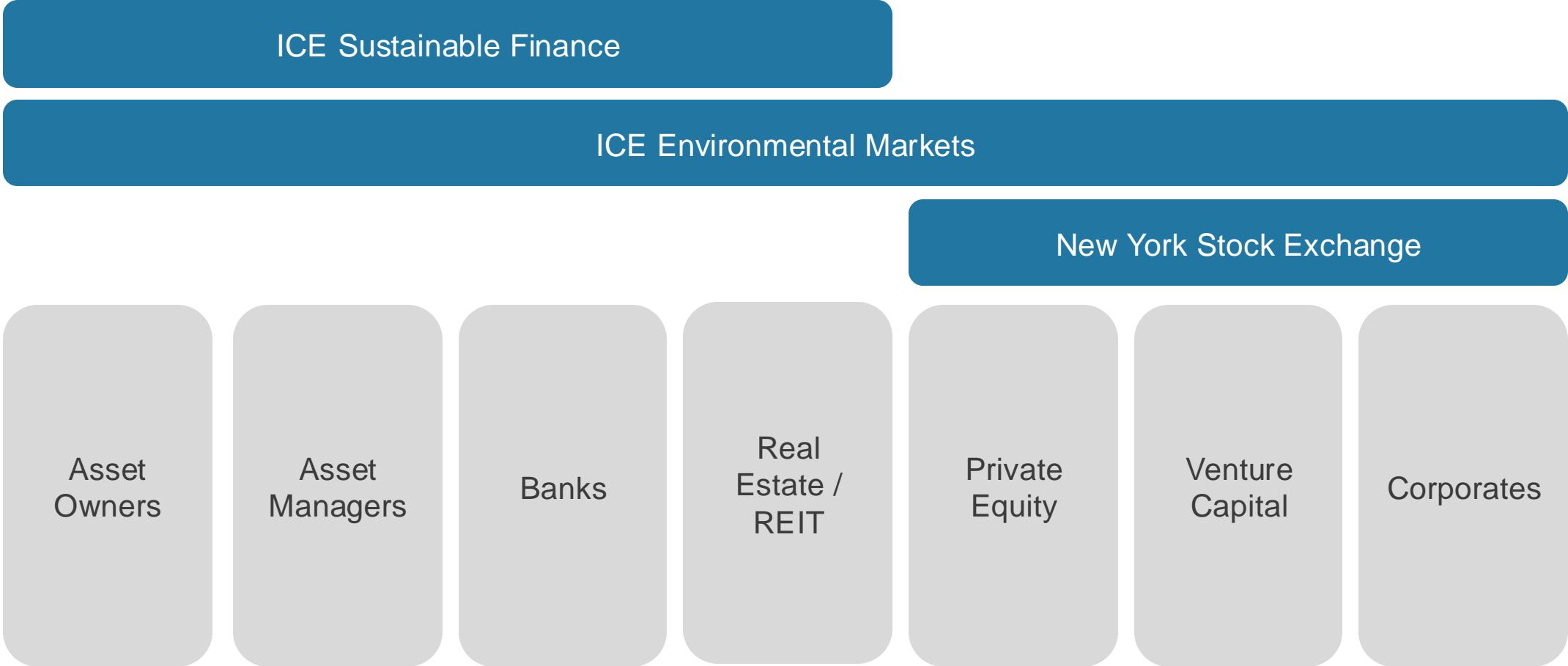




Who is ICE?

ICE Sustainable Finance - Clients

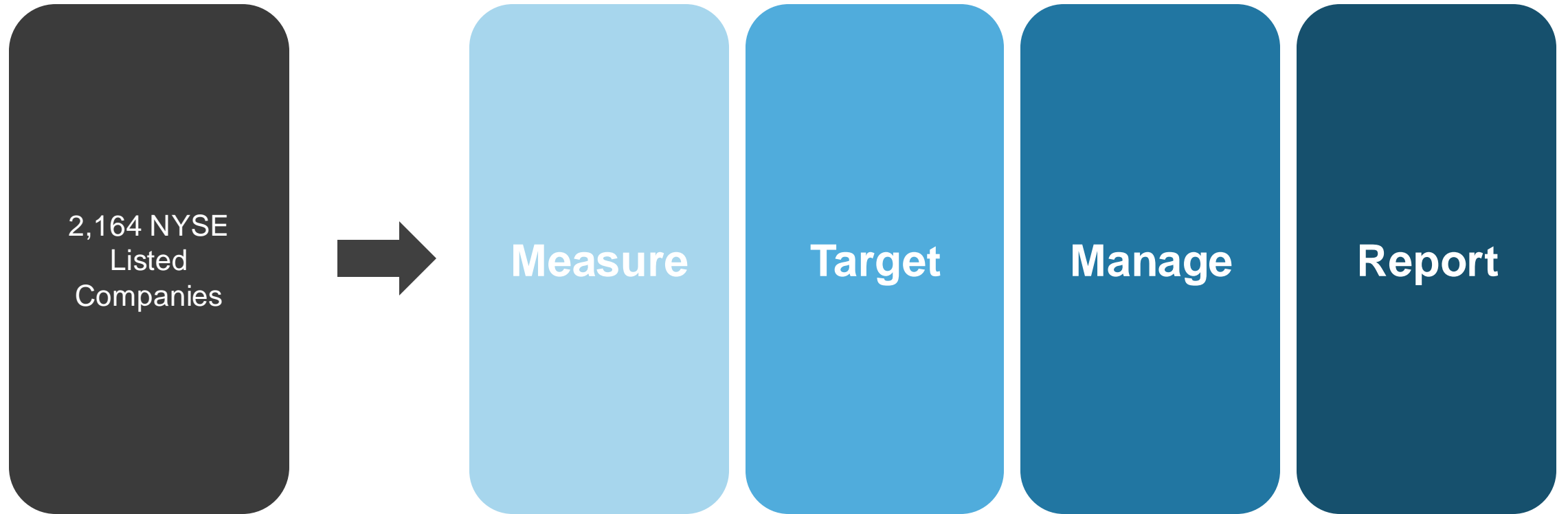
ICE faces nearly every type of corporate and financial institution through three business lines today





Corporate Issuers and Climate Transition

The Decarbonization Journey – Corporates



Measure

Corporates with GHG emissions disclosure by Scope

All US Companies	Basic Materials	Consumer Discr.	Financials	Industrials	Real Estate	Technology	Utilities	All US Companies
Scope 1&2 / Scope 3								
Large Cap	100% / 73%	84% / 67%	80% / 67%	90% / 57%	97% / 63%	79% / 67%	97% / 93%	85% / 65%
Mid Cap	89% / 37%	53% / 32%	31% / 17%	68% / 27%	56% / 31%	44% / 26%	92% / 42%	52% / 24%
Small Cap	52% / 10%	21% / 9%	7% / 3%	26% / 11%	30% / 10%	18% / 12%	29% / 21%	16% / 7%

Target

Corporates with forward-looking targets

		All US Companies	Basic Materials	Consumer Disc.	Financials	Industrials	Real Estate	Technology	Utilities
Any Tgt	Large Cap	92%	75%	56%	73%	69%	64%	97%	
	Mid Cap	80%	34%	9%	46%	42%	26%	88%	
	Small Cap	31%	10%	3%	16%	24%	9%	21%	
Science-Based	Large Cap	58%	53%	23%	30%	43%	36%	13%	
	Mid Cap	33%	18%	2%	9%	18%	7%	12%	
	Small Cap	2%	4%	0%	4%	4%	2%	8%	

Manage

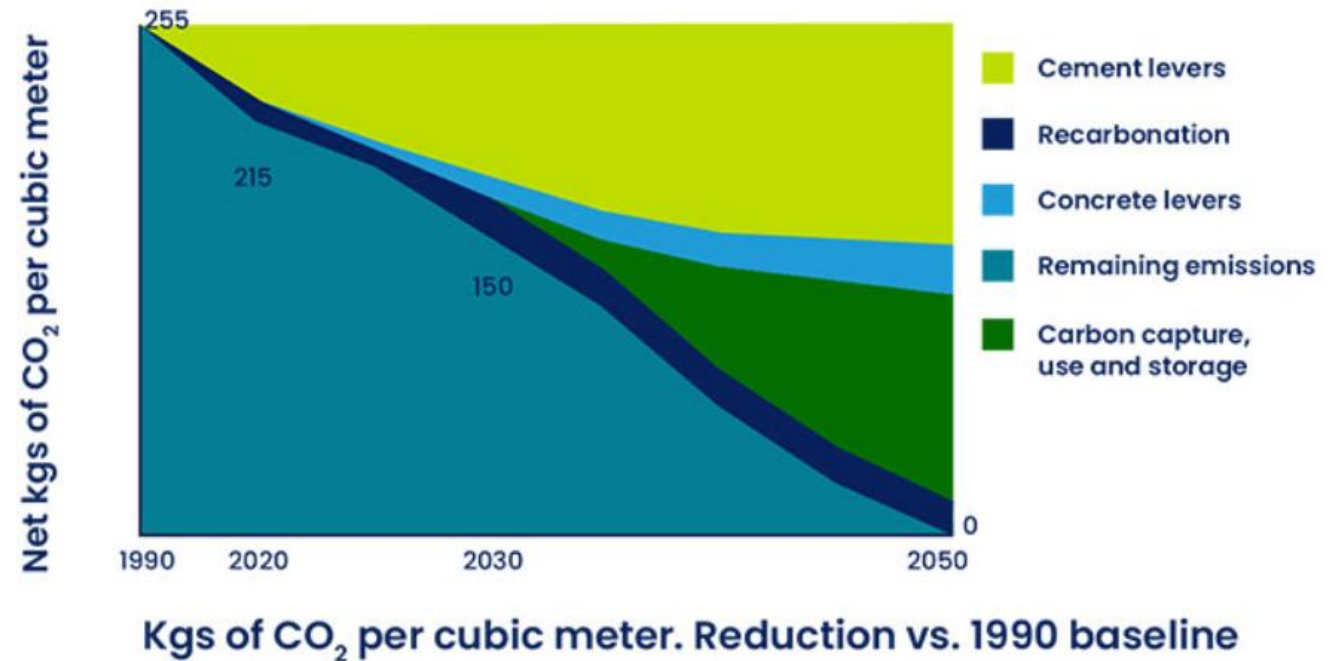
Establish capabilities for internal transition, external needs

Evaluate **national** and **industry** pathways

Evaluate company **reduction** & **mitigation** opportunities

Consider **carbon credits** for hard-to-abate

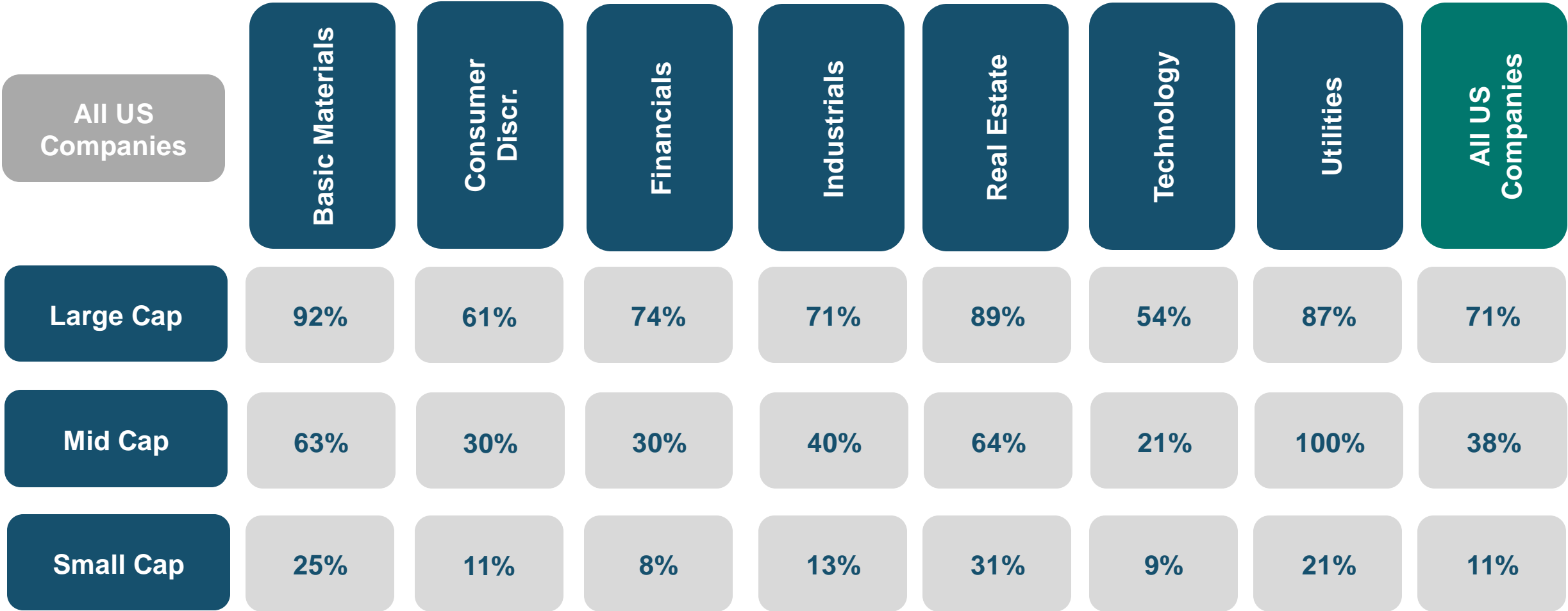
Example – Cemex decarbonization pathway



Source: <https://www.cemex.com/sustainability/future-in-action/by-the-numbers>

Report

Corporates with TCFD-aligned climate risk reporting



Insights from Corporate Issuers

Companies prepare for regulation, incorporate climate risks & opportunities into business strategy

Stakeholder Demand Grows

- Companies see increased engagement from **customers**, especially those with their own Scope 3 goals
- **Investor** engagement expands as investors set their own portfolio-level targets
- **Regulators** increasingly add climate risk and emissions disclosures to reporting requirements

Most Common Successes

- Implementing new **decarbonization** programs
- Gaining **management buy-in** for value-creating sustainability programs
- Evolution of climate into **business strategy**
- Integration of **reporting** processes
- Launching **supply-chain engagement** programs

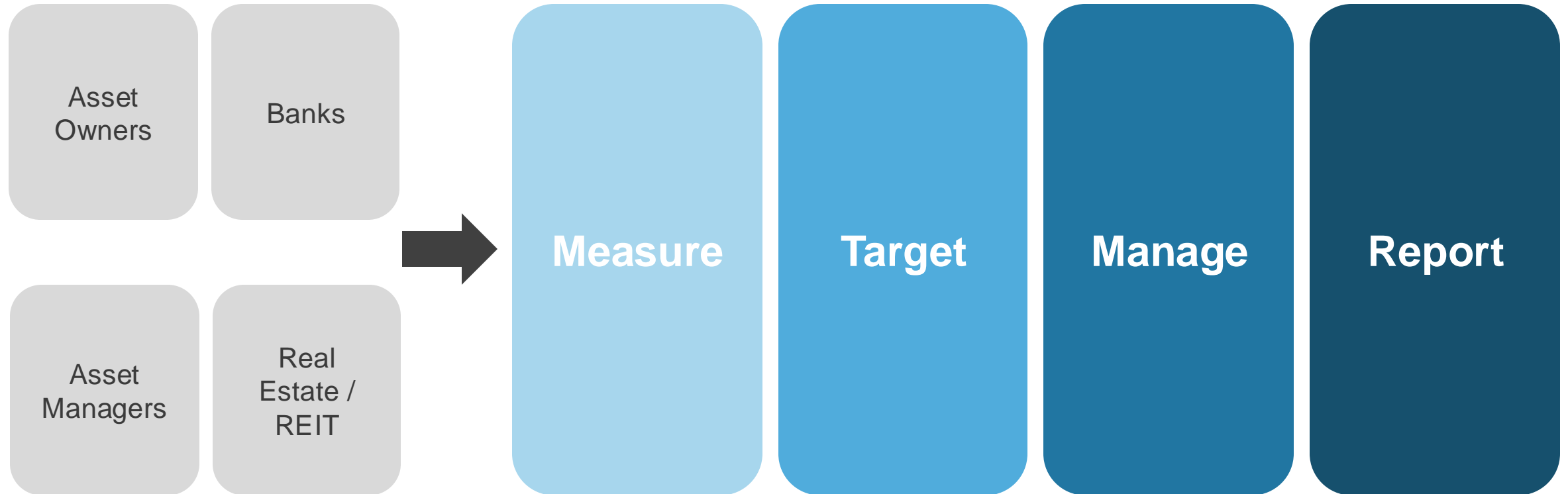
Most Common Challenges

- Tracking current / potential **regulation**
- **Data** collection & measurement
- Measuring the **ROI** on sustainability programs
- **Board** engagement and education
- Accessing **skills and talent**



Financial Industry and Climate Transition

The Decarbonization Journey – Financials



Measure

We think measuring emissions is the first step towards managing your climate risk and your net zero journey

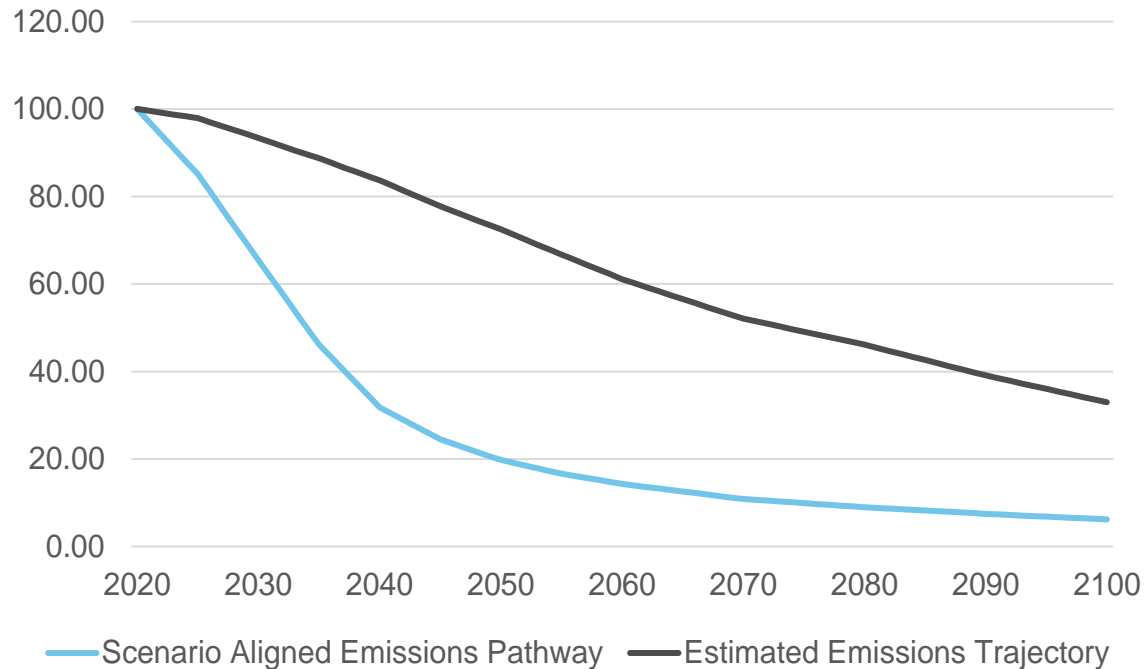


Source: PCAF: Partnership for Carbon Accounting Financials

Target

Forward looking Net Zero Alignment Analysis and Target Setting - including IPCC, IEA and NGFS scenarios

Net Zero Analysis – Projections to 2100



Portfolio Cumulative Emissions Projections

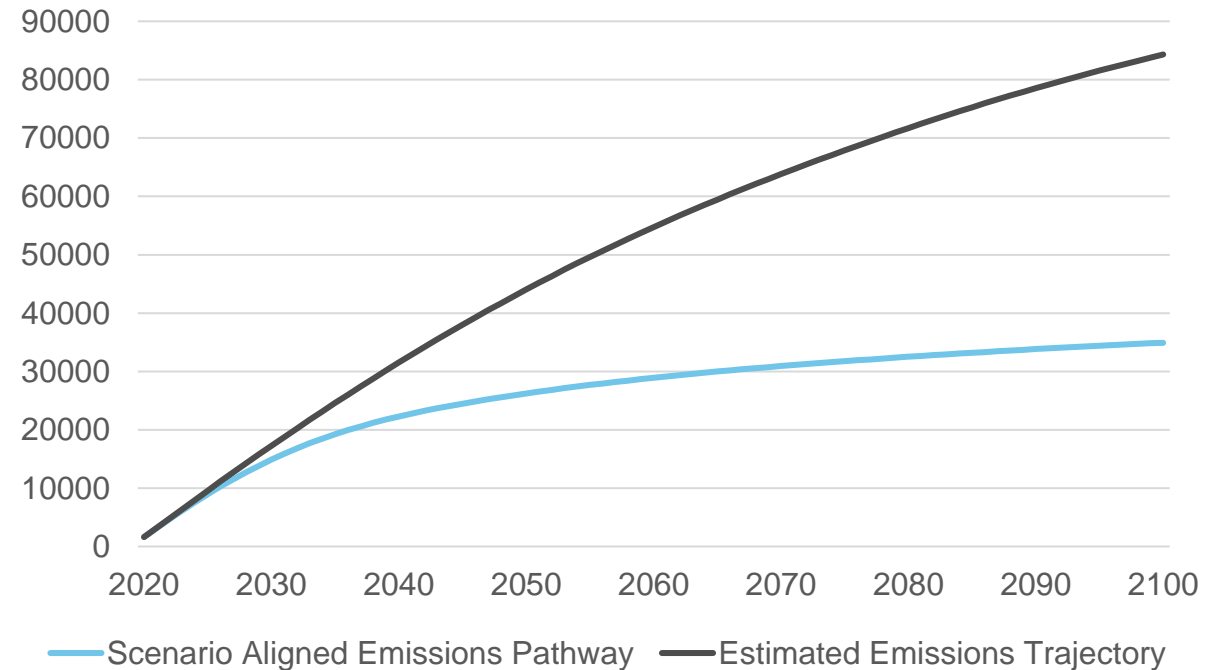


Chart Source: ICE Climate Transition Analytics Tool

Manage

Use case: bank climate stress testing



Climate Data

- Central **Bank Stress Test**: Emission data can be provided by ICE Climate Transition Finance for a tailored dataset of companies (subject to customer data input and data availability)
- 10+ years of **historical** emissions data (to the extent available)
- Scope 1,2 and all 15 Categories of Scope 3 emissions covered
- Transparency: Identify **Self-Reported** or **Inferred** Emission

Methodology

- Methodology incorporates NGFS scenarios plus individual company emission reduction targets
- Projects future emissions of private and listed companies until 2100
- Methodology expands the inference of emissions data to unlisted companies, loan books and investment portfolios

Use Case Example

- As part of the European Central Bank economy-wide climate stress ICE Climate Transition Finance provided emissions data for 4 million companies (both Listed and Private companies)*
- **ECB economy-wide climate stress test - Methodology and results; No 281; September 2021*

Report

Use Case: Support PCAF/TCFD and other regulatory reporting requirements



Footprint Reporting

- Produce TCFD and other regulatory aligned **portfolio footprint** reports
- Carry out in-depth analysis to identify **sources of emissions** within portfolios
- Scope 3 Emissions **materiality analysis** to highlight climate risks in supply and value chains
- Help to identify **causes of misalignment** to benchmarks

Climate Alignment

- **Forward looking analysis** to assess Portfolio Alignment to various climate scenarios (Net Zero, 1.5 Degree, Paris Alignment)
- Set Decarbonization Rates and Targets at a portfolio, sector and company level
- Assess **Carbon Adjusted Returns** for portfolios

Temperature Scores

- Produce **Temperature Scores** for Portfolios and individual companies
- SBTi methodology incorporating company Temperature Targets
- Temperature Scores across different time frames and emissions scopes (Scope 1,2&3)
- Help to identify the source of Temperature misalignment within portfolios

Insights from Asset Managers

Climate data increasingly integrated in investment decision-making

Climate risk is investment risk

- Portfolios with **long time horizons** (pensions, endowments) among the first to integrate climate risks
- **Physical risks** are apparent in company capex and opex today
- **Transition plans** from issuers face increased scrutiny

Total portfolio view needed

- Net Zero Asset Owners Alliance members are setting **2030 and long-term net zero targets**
- Asset owners still struggle to evaluate climate risk and transition **across all asset classes** they're invested in (equities, debt, real estate, structured products, infrastructure)
- Increased **demand for transparency** from asset owners to asset managers

Data overload

- Increased focus on **data quality**
- **Estimation methodologies** face more scrutiny as investors meet regulatory demands
- **Decreased reliance on ESG ratings** as investors build in-house models based on multiple data sets

Insights from Other Financials

Climate is an input to decisions in both concentrated and diverse portfolios

Private Equity

- Many large PE firms have **in-house ESG / climate-focused staff**
- ESG-related **due diligence** increasingly important for portfolio exits
- Larger PE firms collect **climate data** from portfolio companies and provide it in aggregate to investors/limited partners

Real Estate

- **Physical risk evaluation** is a growing part of business development process
- Leases increasingly require **two-way communication** of climate-related data between landlord and tenant
- **Green premiums** already seen on resilient, transition-ready properties (LEED certifications)

Banks

- Lenders setting public targets for lowering **emissions financed** across specific sectors
- Some banks disclosing **financing ratio of low-carbon energy to fossil fuels**
- Increased interest in measuring **avoided emissions financed**



Metrics

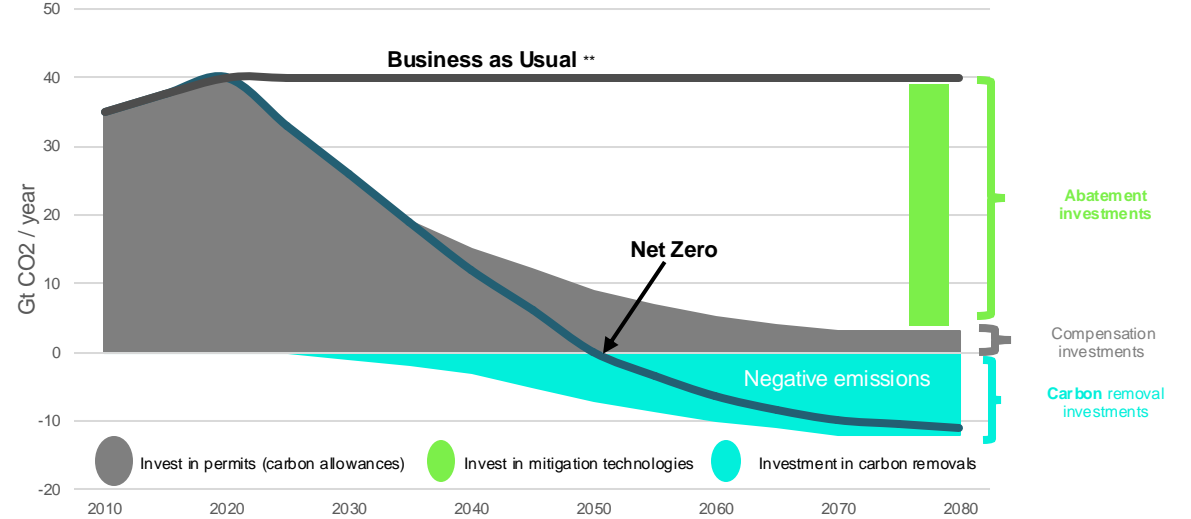
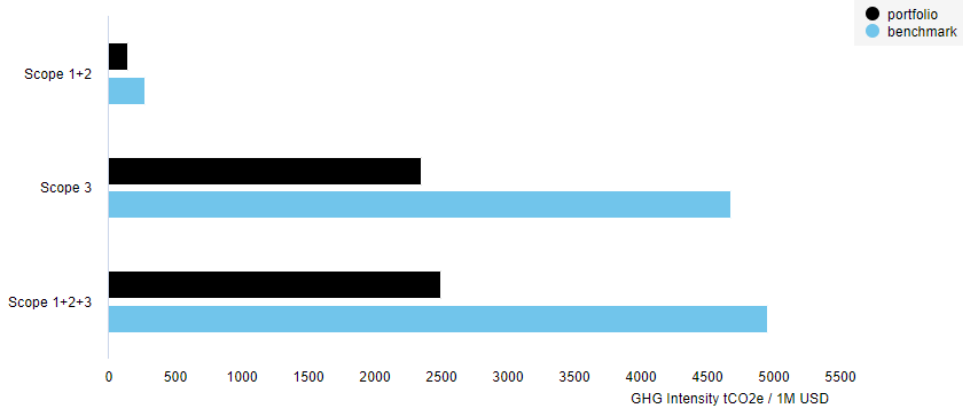
Measurement, Compensation & Abatement



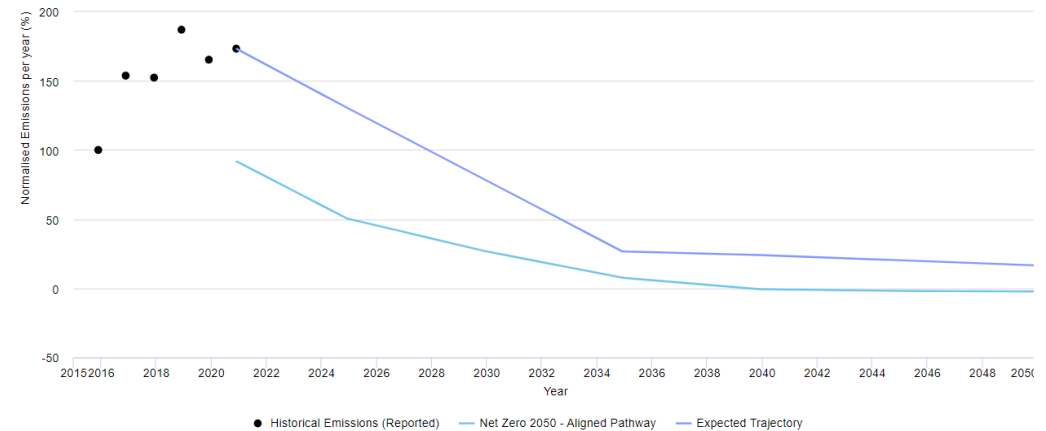
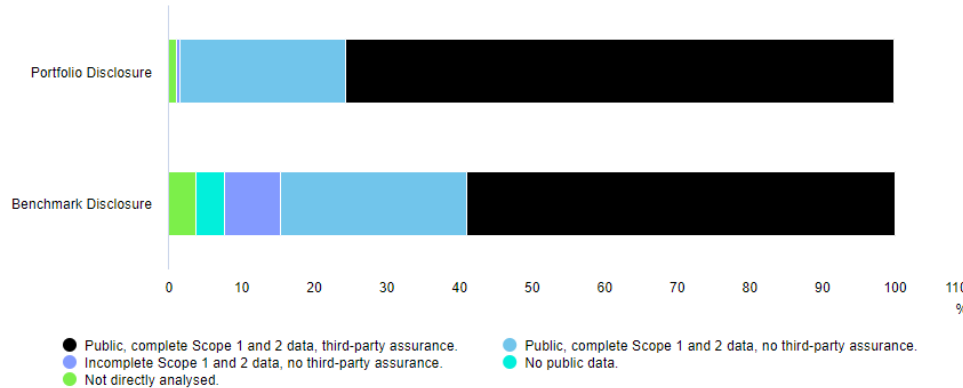
Target Setting: Driving decarbonisation or *Greenwashing* ?

Net Zero is a state in which there are no incremental greenhouse gas emissions into the atmosphere.

Portfolio Footprint



Scope 1+2 Carbon Emissions Disclosure



Impact Analytics Dashboard

Assess the environmental and social impacts funded by a selected portfolio and based on the portfolio's investment in bonds labelled as having a purpose of funding projects for sustainable objectives

Module Features

Portfolio Constituent Breakdown

- Identify the breakdown of an investment portfolio by Sustainable Bond type

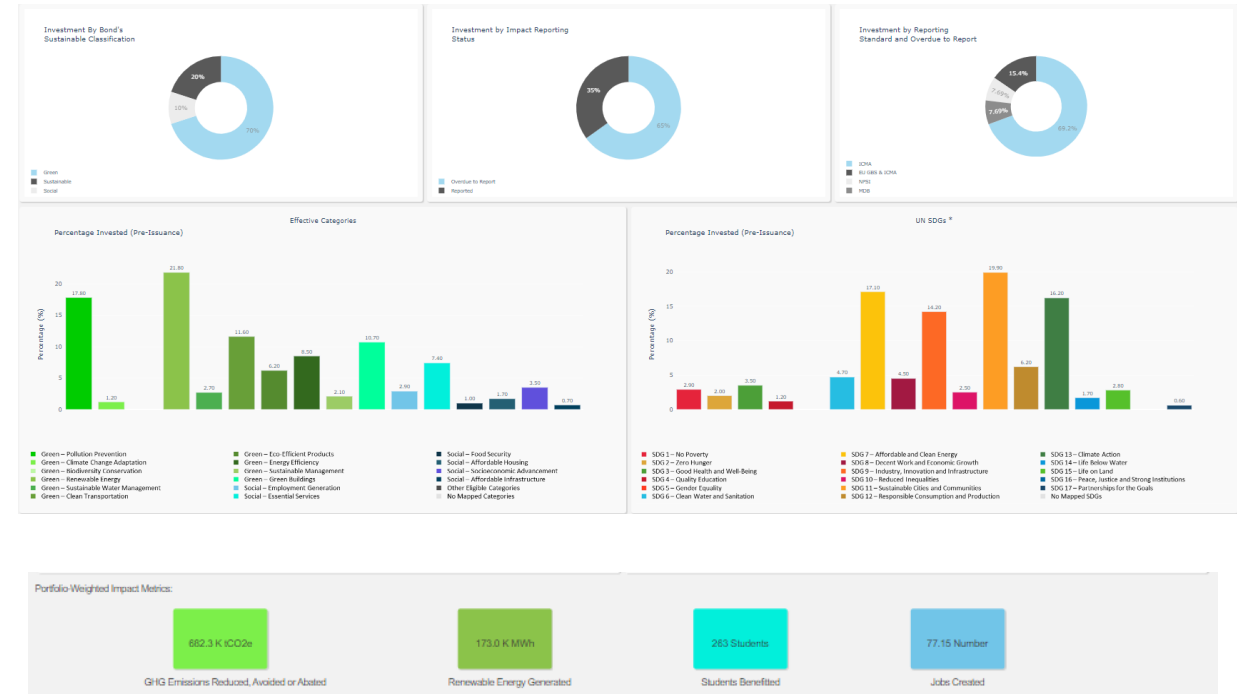
Invested Amount

- Analyze the invested amount or percentage invested of a portfolio into key metrics of a bond such as project classification, impact metric, reporting status and United Nations (UN) Sustainable Development Goals (SDG's)
- Identify key themes of funded initiatives or misalignment with reporting standards within a portfolio

Portfolio-Weighted Impact Metrics

- Assess the portfolio-weighted contribution towards reported impact metrics
- Identify the most commonly reported impact metrics within a portfolio

Dashboard Visualisation of Metrics



Screenshot: Sustainable Bonds Dashboard, June 2024



Carbon & Renewables Pricing and Climate Transition

ICE is host to the world's largest environmental markets



>115 billion tonnes of allowances equivalent to 3x world's annual CO₂ footprint



>350 million RECs equal to the annual per capita energy consumption of nearly million people



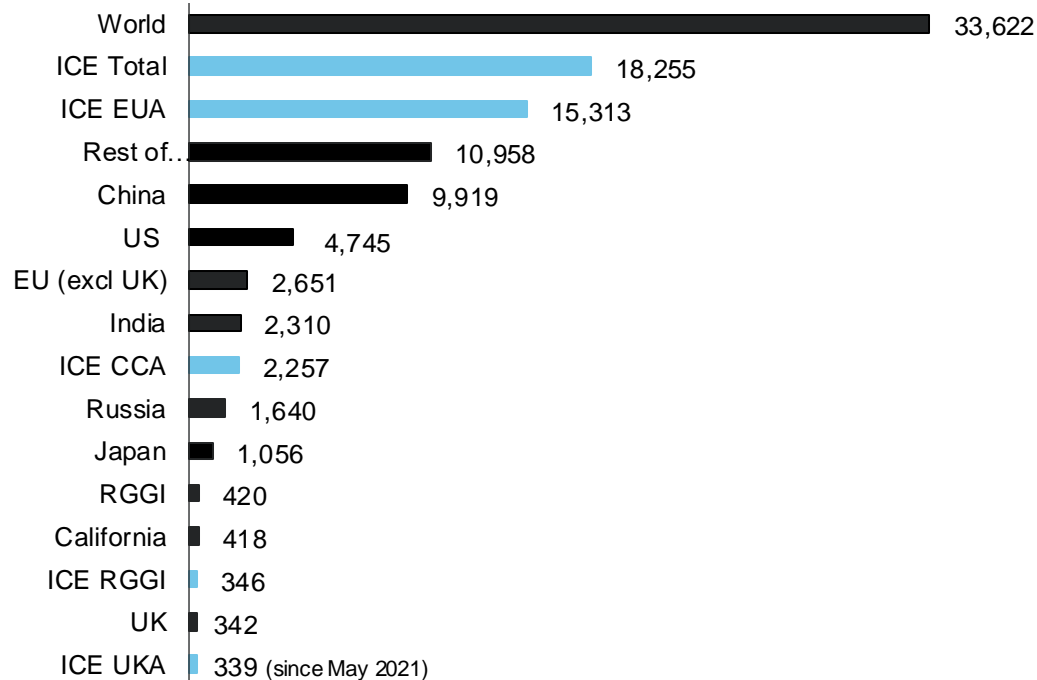
>5 billion RINs equal to 118 million barrels of renewable fuels



>6 billion tonnes of carbon credits corresponding to the Co₂ absorption of 6 billion trees



>50% of world's annual emissions footprint equivalent traded on ICE



2019 emissions per country/region in MtCO₂ (sources: IEA, California ARB, RGGI)
Emissions traded on ICE in 2021 in MtCO₂ (source: ICE)



\$75B open interest of environmental futures and options risk managed at ICE



\$1T notional value of environmental futures and options traded per annum since 2021

California Compliance Carbon Market

ICE Futures US lists California Carbon Allowances (CCA), California Carbon Offsets (CCO), and Low Carbon Fuel Standard (LCFS)

Notional Value of \$11B California Futures and Options

Preferred market operator globally for hedging price risk.



ICE futures discover prices on carbon, renewables

Negative Externalities >

- EU Carbon Allowance (EUA) >
- UK Carbon Allowance (UKA) >
- California Carbon Allowance (CCA) >
- RGGI Carbon Allowance (RGA) >
- Washington State Carbon Allowances (WCA) >
- Global Carbon Index Future (CO2) >

Positive Externalities >

Baseline and Credit

- Alberta Emissions Offsets Futures (AEO) >
- Alberta Emissions Performance Credits (AEPC) >
- California Carbon Credits (CCO) >
- CORSIA Carbon Credits (CP1) >
- Low Carbon Fuel Standard Credits (LCFS) >

Energy Attribute Certificates

- Renewable Energy Credits (REC) >
- Renewable Identification Number (RIN) >
- Renewable Volume Obligation (RVO) >

Carbon Auctions >

- UK Carbon Allowance Auctions >
- Carbon Credit Auctions >

Renewable Fuels >

- FAME >
- UCOME >
- RME >
- HVO >
- Ethanol >

Insights from Carbon Markets Participants

Transparent carbon pricing beginning to affect business decisions

CBAM impact

- **EU** CBAM is in reporting phase, **expect payments to begin in 2026**
- **UK** has announced similar border adjustment program, expected by 2027
- **Turkey, Indonesia, Vietnam, Australia, Thailand** considering own carbon prices
- Both **US** political parties have sponsored carbon border adjustments legislation

Carbon markets standards

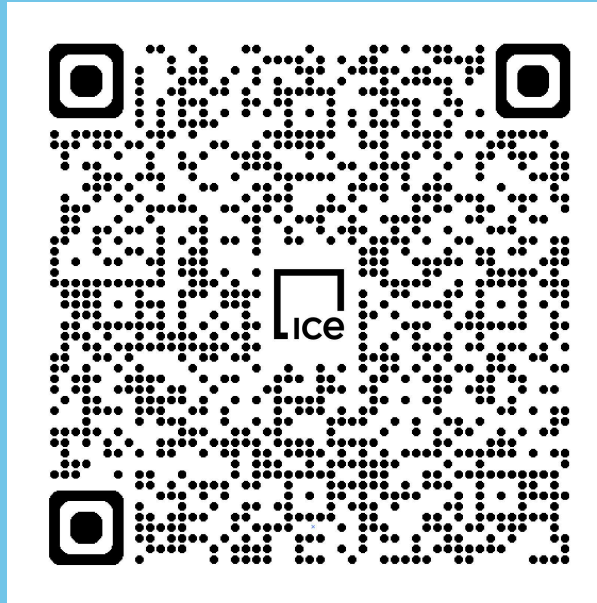
- ICVCM setting standards for **high-quality carbon credit projects**
- VCMI setting standards for **corporate claims** around carbon credit usage
- **SBTi** considers **allowing carbon credits to meet Scope 3** portion of net zero targets

ETS programs expand

- **Washington State** Cap and Invest program builds
- **Mexico** to move from pilot to broad emissions trading system
- **New York State** considering cap-and-invest

ICE Sustainable Finance Solutions

Find out more



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