



Updates on GHG Emissions & Sustainability Reporting

December 7, 2021

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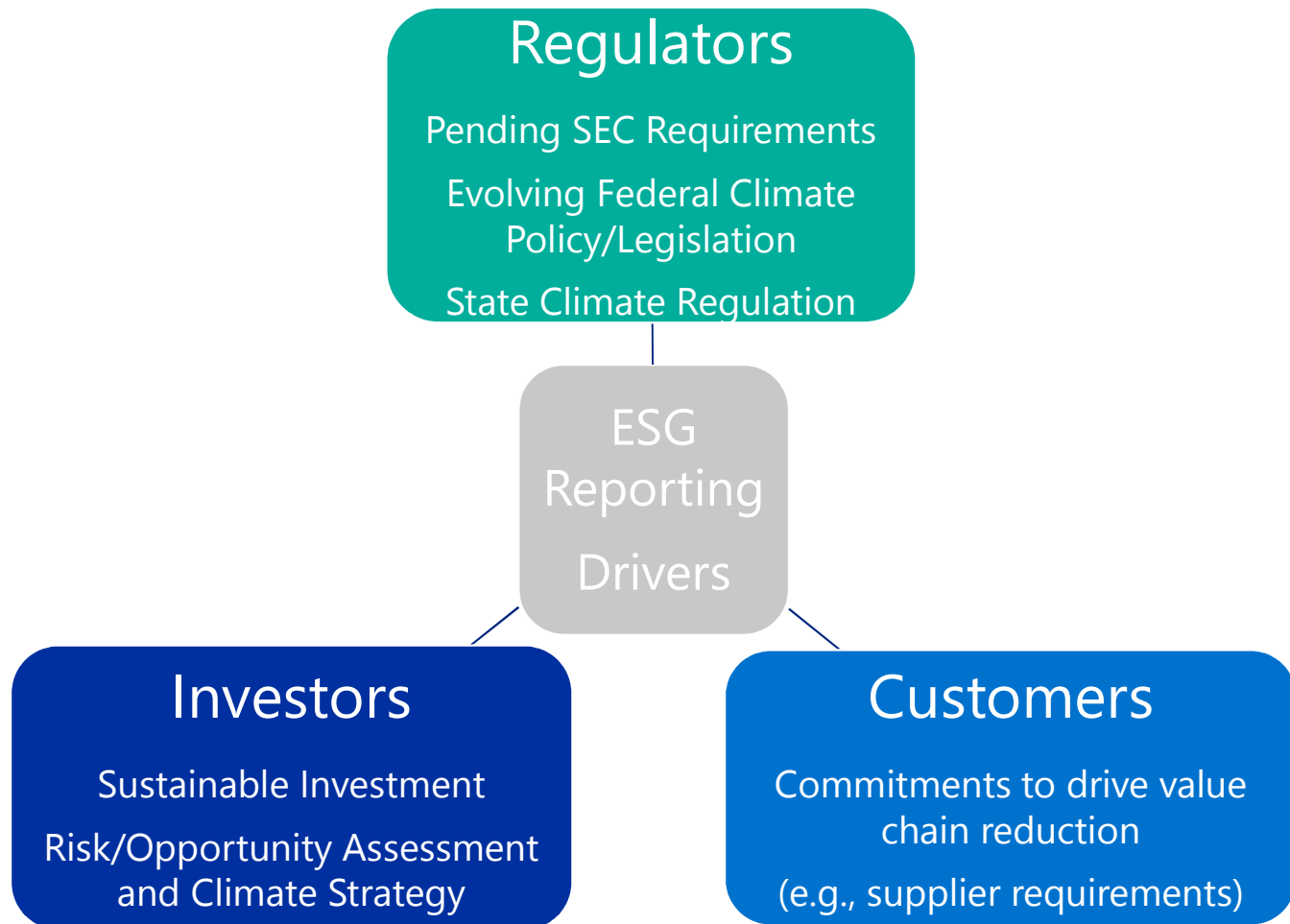
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Topic Overview

- ▶ Drivers for ESG Reporting
- ▶ Trends in Voluntary Reporting & TCFD Updates
- ▶ Scope 1, 2 and 3 Emissions Accounting FAQs
- ▶ Science-Based Targets and Net Zero Commitments
- ▶ What are other industry groups doing?

Drivers for ESG Reporting

Drivers for ESG Reporting



Environmental Social Governance (ESG) Drivers

Investor Scrutiny of ESG Metrics



Sustainable Investing in the United States 1995-2020

ESG index funds hit \$250 billion as pandemic accelerates impact investing boom

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KEY POINTS

- Index funds investing in companies that rate highly on environmental, social and governance (ESG) factors have received a boost during Covid-19, with increased interest in stakeholder capitalism.
- Sustainability funds were experiencing big growth before coronavirus: assets doubled over the past three years, according to a new Morningstar report.
- Impact investing index funds have topped \$250 billion, and the U.S. market is now 20% of the total.

CHASE



2021 Business Outlook

Reference: <https://www.ussif.org//Files/Trends/2020%20Trends%20Report%20Info%20Graphic%20-%20Overview.pdf>

TCFD

TASK FORCE ON
CLIMATE-RELATED
FINANCIAL
DISCLOSURES

TCFD Framework

Key Features:

- ▶ Adoptable by all organizations
- ▶ Included in financial filings
- ▶ Designed to solicit decision-useful, forward-looking information on financial impacts
- ▶ Strong focus on risks and opportunities (R & O) related to transition to a lower-carbon economy



TCFD – Recommended Disclosures

Figure 6

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.

In 2017, the Task Force developed an annex report that provides both general and sector-specific guidance to assist organizations with implementing the TCFD recommendations and recommended disclosures.



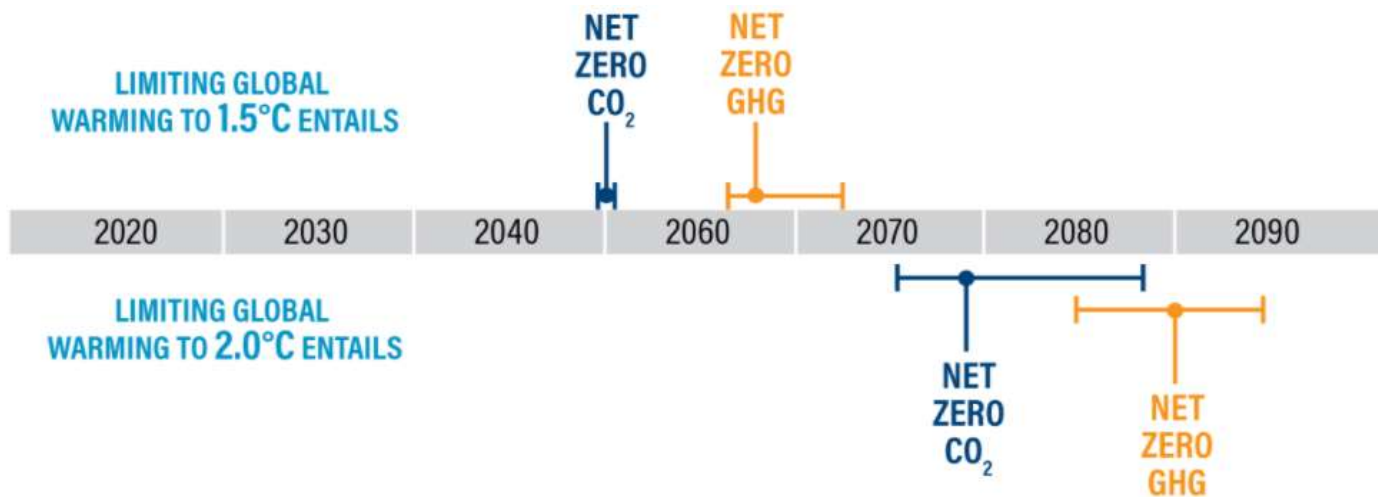
Regulatory Drivers - Biden Climate Policy

Tackling the Climate Crisis at Home and Abroad

- ▶ EO 14008 signed on January 27, 2021
- ▶ Goal: carbon pollution-free power sector by 2035 and Net-Zero economy by 2050
- ▶ Biden hosted “Leader’s Climate Summit” on 4/23/2021 to build momentum towards UN COP 26 Conference in November 2021
- ▶ Outlined elements of Biden’s Climate Policy
 - Federal procurement of clean electricity and ZEVs
 - Moratorium on new O&G Leases on federal lands
 - 30 x 30 conservation of federal lands
 - Clean energy financing to spur RD&D
 - Eliminate fossil fuel subsidies from budget by 2022
 - Create Civilian Climate Corps to address environmental conditions resulting from climate change
 - Develop plan to address Environmental Justice Issues related to climate change

Global GHG Reduction Targets

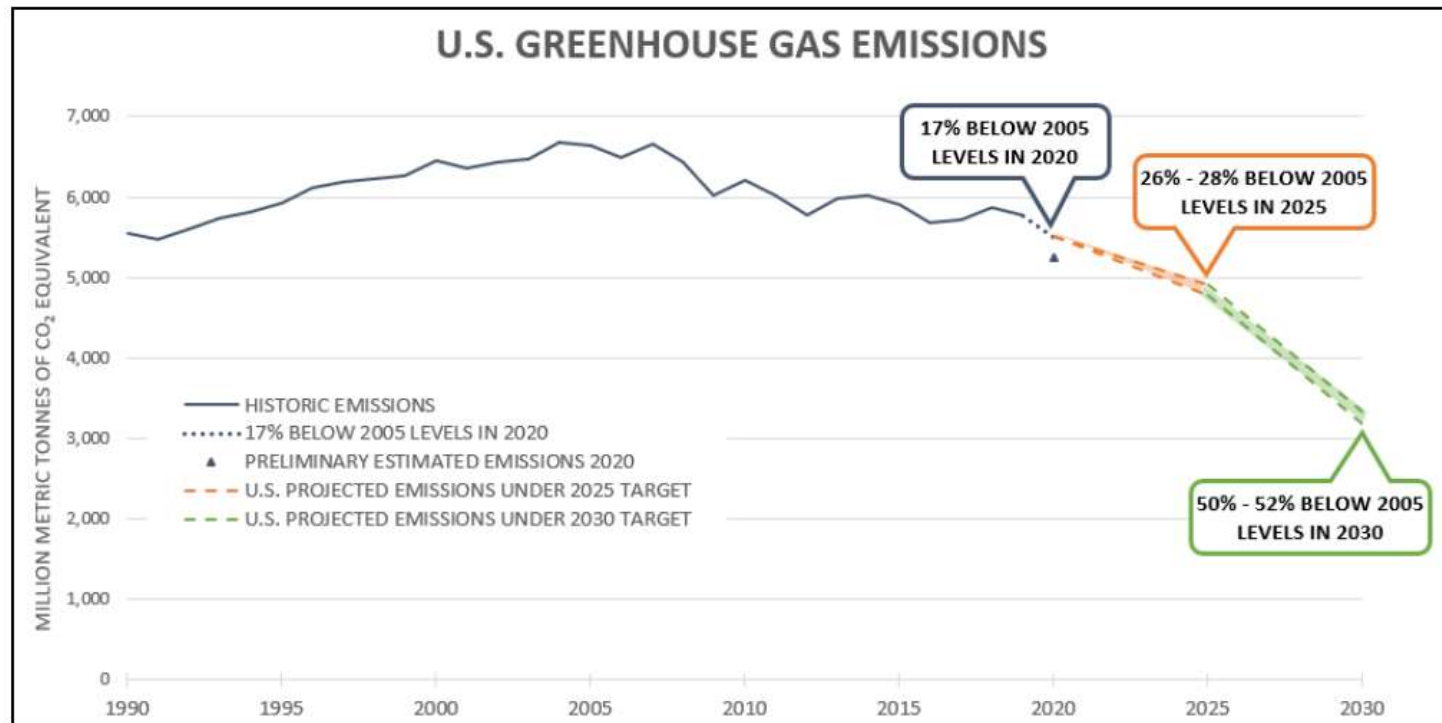
- ▶ Paris Agreement Temperature Goal: Limit warming to below 2°C, ideally below 1.5 °C
- ▶ Global timeline to achieve:



Source: IPCC Special Report on Global Warming of 1.5°C

US Nationally Determined Contribution – April 2021

Updated US Paris Agreement Commitment Unveiled for Earth Day Summit



United States Historic Emissions and Projected Emissions Under 2030 Target

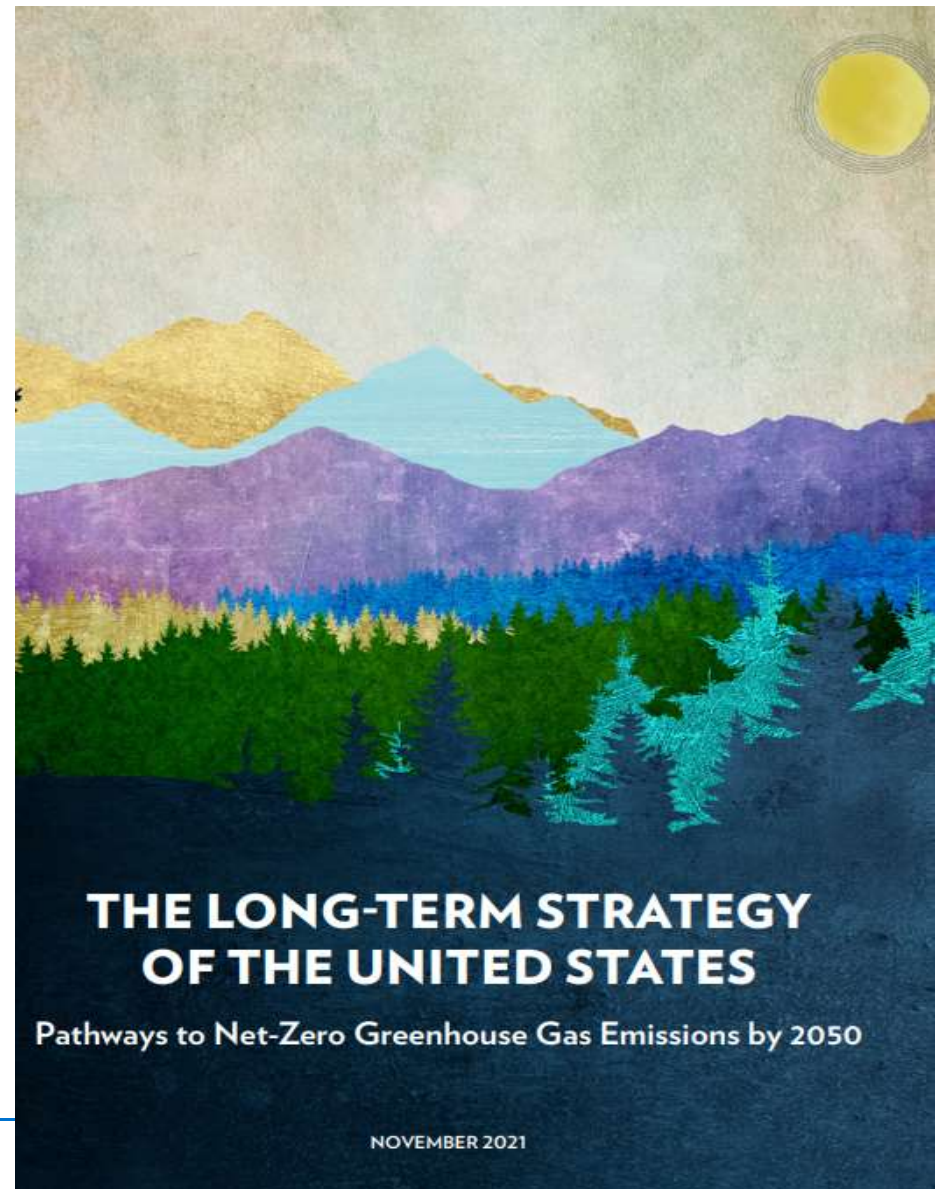
Source: <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/United%20States%20NDC%20April%202021%202021%20Final.pdf>

ESG Drivers – Biden Executive Action

Focus on Five Key Transformations:

US Strategies essential to achieving Net-Zero by 2050:

1. Decarbonizing Electricity.
2. Electrifying End Uses and Switching to Other Clean Fuels.
3. Cutting Energy Waste (i.e., Efficiency Improvements).
4. Focusing Beyond CO₂ – on CH₄, HFCs, and N₂O. The strategy emphasizes “comprehensive and immediate” actions for reducing non-CO₂ emissions in the U.S.
5. Scaling Up CO₂ Removal from Sectors Like Agriculture. The strategy speaks to scaling up land carbon sinks and “engineered strategies.”



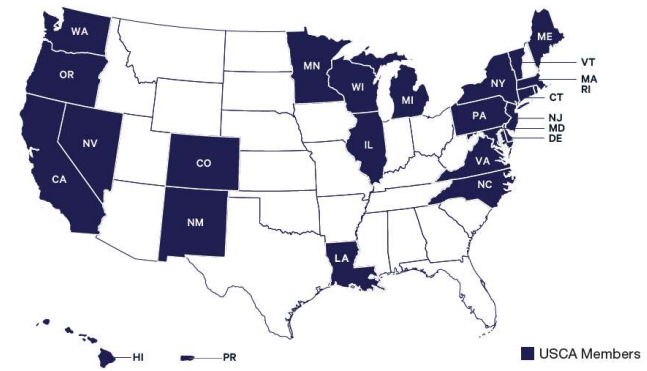
Pending Climate Disclosure Requirements from SEC



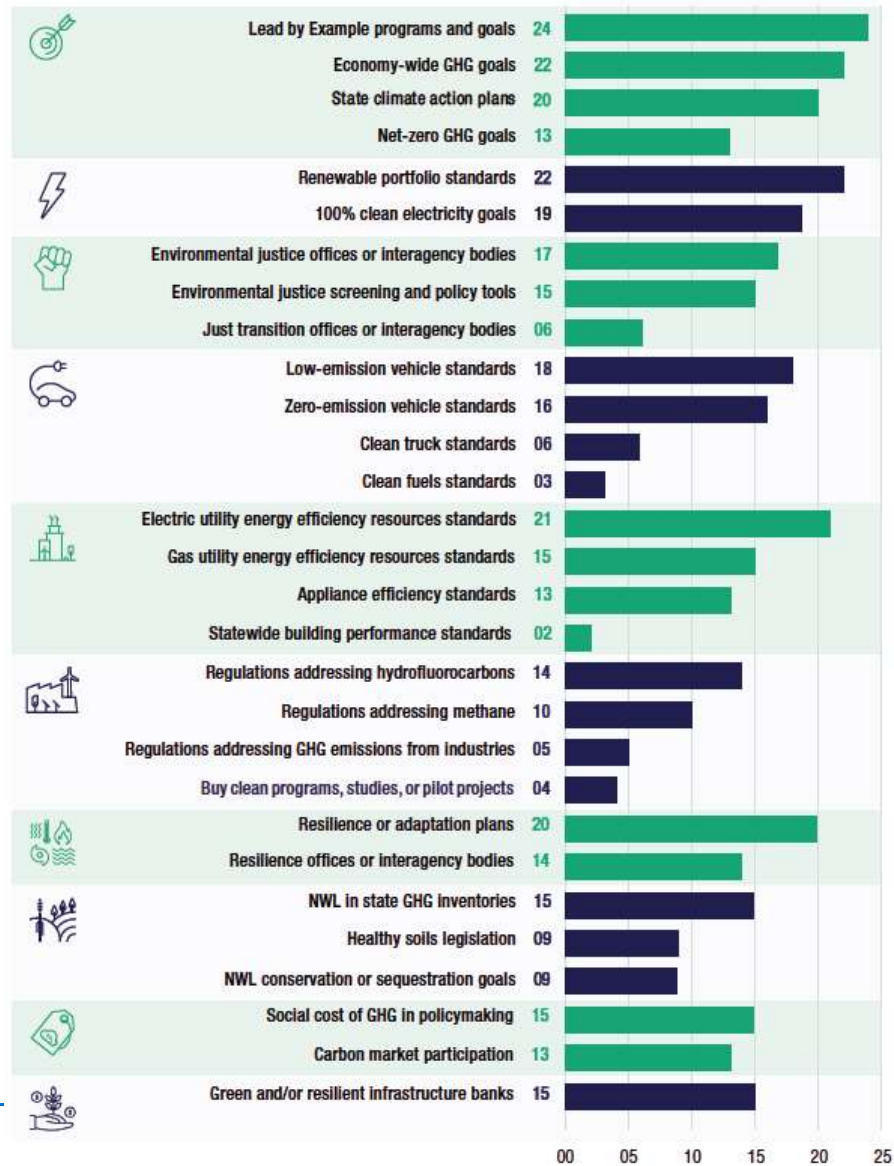
- ▶ March 2021: SEC seeks comments on climate-related disclosures to assist the agency's review of existing 2010 guidance *"with an eye toward facilitating the disclosure of consistent, comparable, and reliable information on climate change."*
 - Comments reportedly showed general agreement that climate disclosure:
 - ◆ Should be required if material impact to investor decisions
 - ◆ Should require Scope 1 and Scope 2 reporting
 - ◆ Should be consistent with frameworks such as SASB and TCFD
- ▶ July 2021: US SEC Chair, Gary Gensler, has stated that SEC will propose a rule requiring climate-related disclosures in public filings, likely by the end of 2021
- ▶ In the meantime, SEC has ramped up scrutiny of the current 2010 requirements including sending letters to companies regarding their climate change disclosure in financial filings (or lack thereof)
- ▶ SEC recognized the GRI and CDP in its 2010 guidance and SEC officials have recently referenced the TCFD on multiple occasions

Source: <https://www.lw.com/thoughtLeadership/Climate-Disclosures-and-the-SEC>

US Climate Alliance States



- ▶ Trump Administration's withdrawal from Paris Agreement resulted in bipartisan coalition of 25 governors
- ▶ Current Members
 - CA, CO, CT, DE, HI, IL, ME, MD, MA, MI, MN, MT, NV, NJ, NM, NY, NC, OR, PA, PR, RI, VT, VA, WA, WI
- ▶ Members commit to:
 - Implement policies that advance the goals of Paris Agreement
 - Track and report progress to the global community in appropriate settings including when world convenes to take stock of the Paris Agreement, and
 - Accelerate new and existing policies to reduce carbon pollution and promote clean energy deployment at the state and federal level



Business Implications of Climate Policy













1. Climate regulation is on the way.
2. Delayed action is a business risk.
3. Investors will increasingly favor businesses taking climate action.
4. Corporate disclosure on climate risk and GHG emissions will become mandatory.
5. Carbon pricing is in the pipeline.
6. Public investment in a clean energy economy will rise.
7. Corporate climate advocacy will drive a smooth transition to net-zero.

Customer Drivers Example: Ford Motor Company

Our Sustainability Aspirations

We are working to revolutionize mobility, fueled by new challenges and the desire to help build a better world for everyone.

 <p>Climate Change Achieve carbon neutrality by 2050</p>	 <p>Air Attain zero emissions from our vehicles and facilities</p>	 <p>Energy Use 100 percent local, renewable electricity in all manufacturing by 2035</p>	 <p>Waste Reach true zero waste to landfill across our operations Eliminate single-use plastics from our operations by 2030</p>	 <p>Water Make zero water withdrawals for manufacturing processes Use freshwater only for human consumption</p>
 <p>Materials Utilize only recycled or renewable content in vehicle plastics</p>	 <p>Safety Work toward a future that is free from vehicle crashes and workplace injuries</p>	 <p>Human Rights Source only raw materials that are responsibly produced</p>	 <p>Diversity, Equity and Inclusion Create a truly diverse culture where everyone feels like they belong</p>	 <p>Access Drive human progress by providing mobility and accessibility for all</p>

Source: <https://corporate.ford.com/microsites/integrated-sustainability-and-financial-report-2021/files/ir21-tcdf.pdf>

Impacts to Ford's Value Chain

- ▶ Ford's *Supplier Code of Conduct* requires suppliers to:
- ▶ Protect and Respect Human Rights
- ▶ *Protect the Environment*
- ▶ Responsibly Source Materials
- ▶ Maintain Responsible Business Practices



OUR SUPPLIERS:

Comply with or exceed Ford's environmental requirements and policies, including all relevant national, regional, environmental, and chemical legislation. All Tier 1 manufacturing, assembly, and Ford Customer Service Division suppliers must:

- Maintain an environmental management system certified to ISO 14001 through an accredited third-party registrar.

Minimize their impact on climate change aligned with the United Nations Framework Convention on Climate Change (Paris Climate Agreement), striving towards carbon neutrality. Our suppliers are required to:

- Report their Scope 1, 2, and 3 emissions and water usage data to Ford if requested.
- Establish science-based GHG reduction targets, action plans, and transparent reporting mechanisms.

Trends in Voluntary Disclosure & TCFD Updates

ESG Ratings, Frameworks, & More

Frameworks
GRI
CDP
SASB
TCFD
WDI
Climate Disclosure Standards Board (CDSB)
UN Principles for Responsible Investment (PRI)
UN Sustainable Development Goals (SDG)



ESG rating	A scored or graded evaluation of a company based on an assessment of its performance on ESG issues.
ESG index	A group of stocks tracked by ESG performance, used to research investments and create ETFs and other investment products.
ESG benchmark	An assessment of an organisation's ESG performance as compared to its peers and/or competitors, usually accompanied by recommendations for improving performance.
ESG ranking	A list of companies ordered or grouped based on relative ESG performance according to specified ESG metrics.
ESG framework	Standards used to guide the reporting and disclosure of ESG metrics by an organisation. Frameworks are created and maintained by various nonprofits, NGOs, and industry groups.

Reference: <https://www.rio.ai/guide-esg-ratings>; <https://www.forbes.com/sites/betsyatkins/2020/06/08/demystifying-esgits-history--current-status/?sh=b58d3f42cdd3>; <https://corpgov.law.harvard.edu/2020/06/22/the-rise-of-standardized-esg-disclosure-frameworks-in-the-united-states/>.

Common ESG Reporting Frameworks

► Sustainability Accounting Standards Board (SASB)

- Formed in 2011
- Focuses on concept of *materiality*– disclose if information likely to affect financial condition or operating performance
- Investor-focused reporting
- Provides industry-specific guidance for ~ 80 industries
- US Chamber of Commerce’s Center for Capital Markets & Competitiveness (CCMC) survey: *44% companies using*

► Global Reporting Initiative (GRI)

- Formed in 1997
- Reporting on climate change, human rights, governance, social
- Aimed at broad range of stakeholders (not just investors)
- Often used alongside SASB, considered complementary
- CCMC Survey: *31% companies using*



Source: <https://www.irmagazine.com/esg/us-issuers-still-split-esg-standard-and-framework-preferences-study-finds>

Common ESG Reporting Frameworks

- ▶ Task Force on Climate-Related Financial Disclosures (TCFD)
 - Formed in 2015/recommendations issued in 2017
 - Goal to standardize climate-related financial disclosure
 - Focus on governance, strategy, risk management & metrics/targets
 - Endorsed by G20 Finance Ministers as framework of reference
 - CCMC Survey: *29% companies using*



- ▶ CDP
 - Formed in 2000 as the Carbon Disclosure Project
 - Disclosure system for investors, companies, cities, states, regions
 - Focus on climate change, water security and deforestation
 - Responses to detailed questionnaires scored by CDP
 - CCMC Survey: *24% companies using*



Source: <https://www.irmagazine.com/esg/us-issuers-still-split-esg-standard-and-framework-preferences-study-finds>

SASB Materiality Map

		Consumer Goods	Extractives & Minerals Processing	Financials	Food & Beverage	Health Care	Infrastructure
Dimension	General Issue Category [Ⓢ]	Click to expand	Click to expand	Click to expand	Click to expand	Click to expand	Click to expand
Environment	GHG Emissions		■		■	■	■
	Air Quality		■				■
	Energy Management	■	■		■	■	■
	Water & Wastewater Management		■		■		■
	Waste & Hazardous Materials Management		■		■	■	■
	Ecological Impacts		■		■		■
Social Capital	Human Rights & Community Relations		■			■	
	Customer Privacy	■		■			
	Data Security	■		■	■	■	
	Access & Affordability			■		■	■
	Product Quality & Safety	■			■	■	■
	Customer Welfare				■	■	
	Selling Practices & Product Labeling			■	■	■	

- Issue is likely to be material for more than 50% of industries in sector
- Issue is likely to be material for fewer than 50% of industries in sector
- Issue is not likely to be material for any of the industries in sector

Reference: <https://materiality.sasb.org/>.



SASB Materiality Map

		Consumer Goods	Extractives & Minerals Processing	Financials	Food & Beverage	Health Care	Infrastructure
Dimension	General Issue Category [Ⓢ]	Click to expand	Click to expand	Click to expand	Click to expand	Click to expand	Click to expand
Human Capital	Labor Practices	■	■		■		■
	Employee Health & Safety		■		■	■	■
	Employee Engagement, Diversity & Inclusion	■		■		■	
Business Model & Innovation	Product Design & Lifecycle Management	■	■	■	■	■	■
	Business Model Resilience		■				■
	Supply Chain Management	■	■		■	■	
	Materials Sourcing & Efficiency	■			■		■
	Physical Impacts of Climate Change			■		■	■
Leadership & Governance	Business Ethics		■	■		■	■
	Competitive Behavior		■				
	Management of the Legal & Regulatory Environment		■				
	Critical Incident Risk Management		■				■
	Systemic Risk Management			■			■

- Issue is likely to be material for more than 50% of industries in sector
- Issue is likely to be material for fewer than 50% of industries in sector
- Issue is not likely to be material for any of the industries in sector

Reference: <https://materiality.sasb.org/>.



TCFD 2021 Updated Guidance for Implementing Recommendations

- ▶ Directions for application of recommendations
- ▶ Information on how to assess financial impacts of climate-related risks and opportunities
- ▶ Supplemental guidance financial sector and for industries potentially most affected:
 - Energy
 - Transportation
 - Materials & Buildings
 - Agriculture, Food and Forest Products
- ▶ 7 Principles for effective disclosure




Source: TCFD *Implementing the Recommendations Annex*, October 2021, <https://www.fsb-tcf.org/publications/>

TCFD Principles for Effective Disclosures



TCFD – Climate-Related Risks & Opportunities

Risks	
 Transition	<p>Policy and Legal</p> <ul style="list-style-type: none"> • Carbon pricing and reporting obligations • Mandates on and regulation of existing products and services • Exposure to litigation <p>Technology</p> <ul style="list-style-type: none"> • Substitution of existing products and services with lower emissions options • Unsuccessful investment in new technologies <p>Market</p> <ul style="list-style-type: none"> • Changing customer behavior • Uncertainty in market signals • Increase cost of raw materials <p>Reputation</p> <ul style="list-style-type: none"> • Shift in consumer preferences • Increased stakeholder concern/negative feedback • Stigmatization of sector
 Physical	<ul style="list-style-type: none"> • Acute: Extreme weather events • Chronic: Changing weather patterns and rising mean temperature and sea levels

Opportunities	
 Resource Efficiency	<ul style="list-style-type: none"> • Use of more efficient modes of transport and production and distribution processes • Use of recycling • Move to more efficient buildings • Reduced water usage and consumption
 Energy Source	<ul style="list-style-type: none"> • Use of lower-emission sources of energy • Use of supportive policy incentives • Use of new technologies • Participation in carbon market
 Products & Services	<ul style="list-style-type: none"> • Development and/or expansion of low emission goods and services • Development of climate adaptation and insurance risk solutions • Development of new products or services through R&D and innovation
 Markets	<ul style="list-style-type: none"> • Access to new markets • Use of public-sector incentives • Access to new assets and locations needing insurance coverage
 Resilience	<ul style="list-style-type: none"> • Participation in renewable energy programs and adoption of energy-efficiency measures • Resource substitutes/diversification

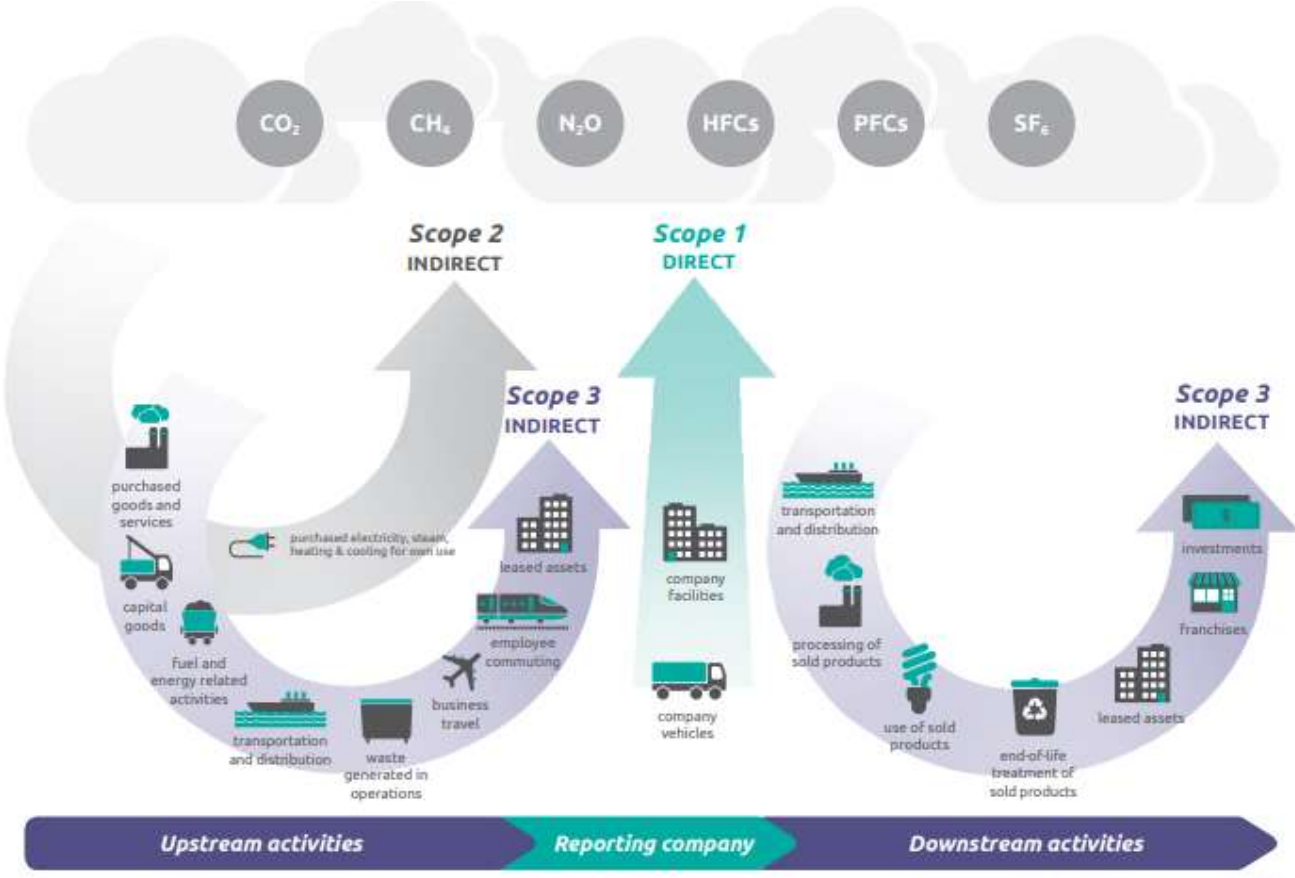
TCFD 2021 Guidance: Cross-Industry, Climate Metrics

GHG Emissions¹	Absolute Scope 1, Scope 2, and Scope 3; emissions intensity
Transition Risks	Amount and extent of assets or business activities vulnerable to transition risks
Physical Risks	Amount and extent of assets or business activities vulnerable to physical risks
Climate-Related Opportunities	Proportion of revenue, assets, or other business activities aligned with climate-related opportunities
Capital Deployment	Amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities
Internal Carbon Prices	Price on each ton of GHG emissions used internally by an organization
Remuneration	Proportion of executive management remuneration linked to climate considerations

Source: TCFD Guidance on Metrics, Targets, and Transition Plans, October 2021, <https://www.fsb-tcf.org/publications/>

Scope 1, 2, and 3 Emissions Accounting FAQs

GHG Protocol Scopes & Emissions Across the Value Chain



Reference: https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf

Scope 1 FAQ: What emissions sources are included?

Direct Emissions within Organization Boundary

- ▶ Stationary Combustion
 - Boilers, Furnaces, Burners, Turbines, Heaters, Incinerators, Engines, Flares, etc.
- ▶ Mobile Combustion
 - Autos, Trucks, Buses, Trains, Airplanes, Marine vessels, etc.
 - Includes non-road equipment
- ▶ Process Emissions
 - Industry Specific Manufacturing Processes
- ▶ Fugitive Emissions
 - Intentional or unintentional releases that do not pass through stack, vent, exhaust pipe, etc.
 - Examples: electric equipment SF₆, refrigerant leaks, gas pipeline or landfill CH₄

Many industry-specific guides and protocols have been developed or are in the process of being developed currently.

Scope 1 FAQ: How do I account for Biomass Emissions? (1 of 2)

▶ GHG Protocol Corporate Reporting Standard re: biomass combustion accounting:

- Biomass CO₂ emissions reported separately from fossil-based CO₂
- Biogenic CO₂ not included in overall CO₂e, however CH₄ and N₂O included
- Is carbon neutrality a valid assumption? Need to assess a particular feedstock's production/consumption cycle

"consensus methods have yet to be developed under the GHG Protocol Corporate Standard for accounting of sequestered atmospheric carbon as it moves through the value chain of biomass-based industries"

▶ GHG Protocol Land Sector and Removals Initiative

- Currently working on new guidance for companies to account for and report the following in GHG inventories:
 - ◆ Land use/land use change
 - ◆ Carbon removals and storage
 - ◆ Bioenergy and other biogenic products
- New guidance, to be finalized by end of 2022, will likely be adopted by SBTi and other key programs

<https://ghgprotocol.org/blog/update-greenhouse-gas-protocol-carbon-removals-and-land-sector-initiative>

Scope 1 FAQ: How do I account for Biomass Emissions? (2 of 2)

► SASB Guidance requires that biomass sources be...

“certified to a third-party standard (e.g., Forest Stewardship Council, Sustainable Forest Initiative, Programme for the Endorsement of Forest Certification, or American Tree Farm System), materials considered eligible sources of supply according to the Green-e Framework for Renewable Energy Certification, Version 1.0 (2017) or Green-e regional standards, and/or materials that are eligible for an applicable state renewable portfolio standard.”

► SBTi Guidance on biogenic carbon accounting:

“If biogenic carbon emissions from biofuels and/or biomass feedstocks are accounted for as neutral, the company must provide justification of the underlying assumptions.”

“Assumptions of neutrality for bioenergy tend to overlook that there is a significant time-lag between the bio-based resource removal (wood/crop) and later regeneration. They also overlook possible differences in productivity among forest/crop systems used as bioenergy feedstock and the effects of long-term carbon storage in bio-based products and/or disposal. For these reasons, until a standardized method for bioenergy GHG accounting is developed under the GHG Protocol, the SBTi strongly recommends companies take into account the time of emissions (i.e. wood/crop removal) and sequestration (i.e. forest/crop regrowth) in their accounting methodologies.”

Scope 2 FAQ: Should we use Location- or Market-based approach?

▶ Location-Based

- Based on emission factors for locally-generated energy
- Reflects average emissions intensity of local grid
- EPA Emissions and Generation Resource Integrated Database (eGRID) Factors for state or ISO region
- Latest factors released 2/23/2021 based on 2019 data

▶ Market-Based

- Allows for use of source or supplier-specific emission rates associated with organization's energy purchasing choices:
 - ◆ Energy Attribute Certificates (RECs) or direct contracts (PPAs)
 - ◆ Ensure contract conveys the environmental attributes
- On-site energy generation
- Emission factor based on contractual instruments for purchasing energy attributes
- Recognizes use of energy supply changes to drive GHG reductions



GHG Protocol Scope 2 Guidance

An amendment to the GHG Protocol
Corporate Standard



Scope 2 Quality Criteria

CONTRACTUAL INSTRUMENTS MUST:	
1. Convey GHG information	» Convey the direct GHG emission rate attribute associated with produced electricity.
2. Prevent double counting	<ul style="list-style-type: none"> » Be the only instrument that carries the GHG emission rate attribute claim associated with that quantity of electricity generation. Clear and explicit ownership must be demonstrated by either third-party verification that includes a chain of custody audit, or documentation of permanent retirement in an electronic tracking system in a dedicated, named retirement subaccount for a particular TCR reporting year. » Be distinct from offsets. A MWh generated by a renewable energy project and claimed as an offset cannot also be claimed as a contractual instrument (e.g., REC).
3. Be retired	» Be tracked, redeemed, retired, or canceled by or on behalf of the reporting organization.
4. Be of recent vintage	» Have been generated within a period of six months before the reporting year to up to three months after the reporting year.
5. Be sourced from same market as operations	» Be sourced from the same market in which the reporting organization's electricity consuming operations are located and to which the instrument is applied. Market boundaries are assumed to match national boundaries, except where international grids are closely tied.
UTILITY-SPECIFIC EMISSION FACTORS MUST BE:	
6. Calculated based on delivered electricity	» Calculated based on contractually-delivered electricity, incorporating RECs or other instruments sourced and retired on behalf of customers.
DIRECT LINE GENERATION OR ORGANIZATIONS CONSUMING ON-SITE GENERATION MUST:	
7. Convey GHG claims to the organization	» Ensure that all emission claims are transferred to the reporting organization only.
ALL CONTRACTUAL INSTRUMENTS MUST OPERATE IN MARKETS WITH A:	
8. Residual mix	» Adjusted, residual mix emission factor characterizing the GHG intensity of unclaimed or publicly shared electricity. Organizations must disclose the lack of an available residual mix emission factor if one is not available.

Source: <https://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/>



Scope 3 FAQ: Do we need to include?

- ▶ S1/S2 reporting is required by GHG Protocol Corporate Standard
- ▶ S3 reporting is optional, but frameworks are requiring if “relevant” based on following criteria
 - ▶ **Size** contributes significantly to the company’s total anticipated Scope 3 emissions profile
 - ▶ **Influence** – potential emission reductions for this category could be undertaken or influenced
 - ▶ **Risk** – contributes to the company’s risk exposure
 - ▶ **Stakeholders** – deemed critical by key stakeholders (e.g., customers, suppliers, investors, or civil society)
 - ▶ **Outsourcing** – activities that were previously performed in-house by reporting company or are typically outsourced by other similar companies in the sector
 - ▶ **Sector guidance** – identified as significant by sector-specific guidance
 - ▶ **Other** – meet additional criteria for determining relevance developed by the company or industry sector

Scope 3 FAQ: If need to include, where do we start?

- ▶ Start with screening tool developed by WRI/Quantis
- ▶ Available online: <https://quantis-suite.com/Scope-3-Evaluator/>
- ▶ Provides data collection list in excel format

The screenshot shows the website for the Greenhouse Gas Protocol Scope 3 Evaluator. The header includes the Greenhouse Gas Protocol logo, the Quantis logo, and navigation links for Home, FAQ, login, and password. There are also links for 'Not registered yet?' and 'Forgot password?'. Below the header is a navigation menu with tabs for General, Facilities, Purchases, Logistics, Travel, Customer, Downstream leased assets and investments, and Results. The main content area is divided into two columns. The left column contains a login form with fields for 'Login' and 'Password', a 'Sign in' button, and links for 'Not registered yet?' and 'Forgot password?'. Below the login form is a link to 'Begin a new questionnaire without a log in' and a 'Start without login' button. The right column contains a welcome message, a description of the tool, and a section titled 'Why use the Scope 3 Evaluator?' with two columns of text explaining the benefits and a footnote.

GREENHOUSE GAS PROTOCOL Quantis Home FAQ login password Sign in
Not registered yet? Forgot password?

General Facilities Purchases Logistics Travel Customer Downstream leased assets and investments Results

Your data will be automatically saved if you are logged

Login
Password
Sign in
[Not registered yet?](#)
[Forgot password?](#)
Begin a new questionnaire without a log in
Start without login

Welcome to the Scope 3 Evaluator!

You will be asked a series of (relatively) simple questions to quickly calculate a comprehensive first screening of your company's scope 3 (value chain) carbon footprint, in alignment with the WRI/WBCSD GHG Protocol.

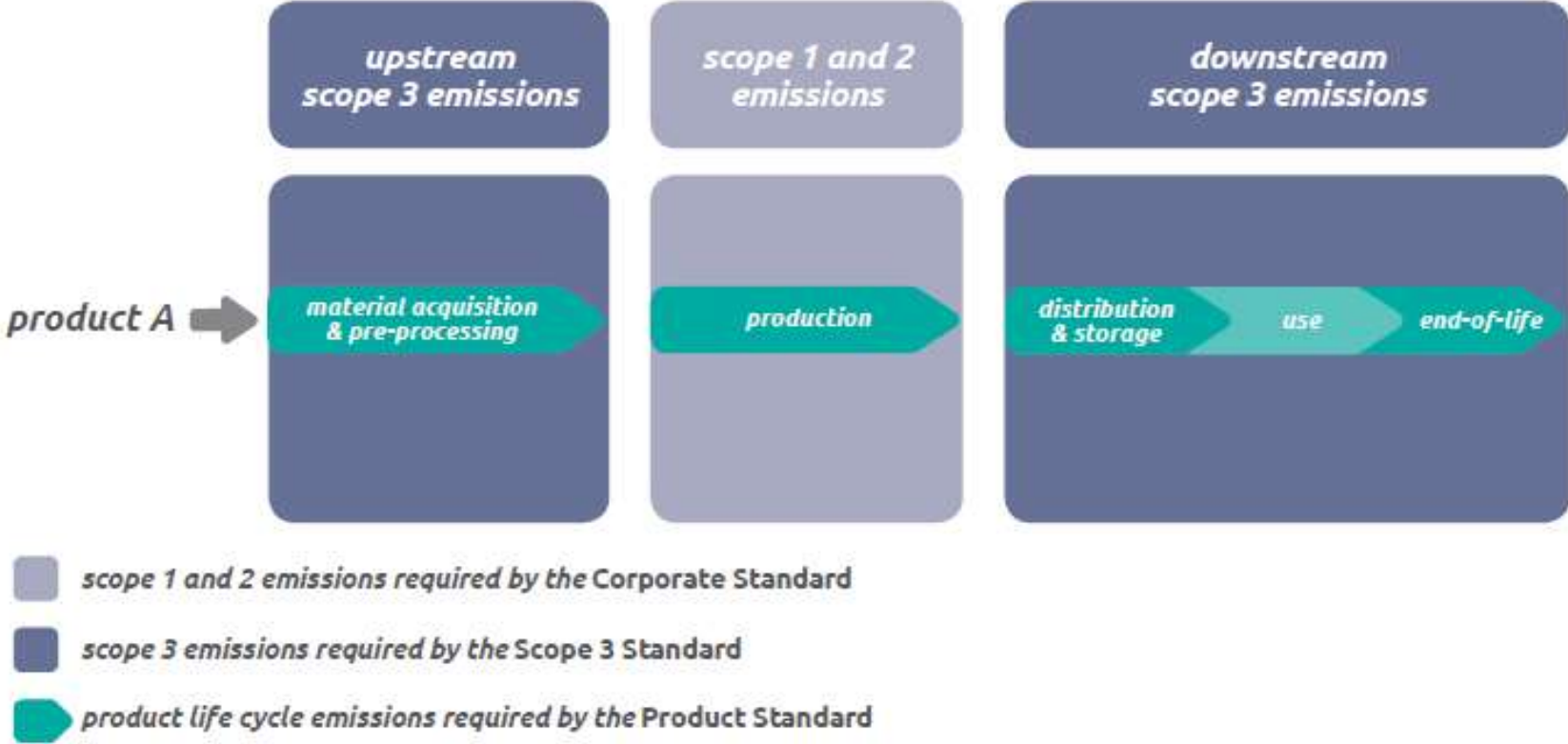
Why use the Scope 3 Evaluator?

For many companies, more than 80% of their GHG impacts occur outside of their own operations*. However, quantification and reporting of value chain emissions can be a time intensive task and many companies just don't know where to start. As the developers of the Scope 3 Accounting and Reporting

Standard, GHG Protocol seeks to reduce barriers to uptake of the standard and encourage the use of the standard to improve management of companies' value chain GHG emissions.

* State of Green Business 2013, GreenBiz

Scope 3 GHG Inventory vs. Product Life Cycle Analysis



Source: <https://ghgprotocol.org/standards/scope-3-standard>

Product Life Cycle Accounting

- ▶ Business Goal of Product LCA
 - Climate change management (identify market risks/opportunities)
 - Performance tracking (efficiency improvements, GHG reductions)
 - Product differentiation (competitive advantage, brand image, corporate reputation)
 - Potential International Trade Tariffs - several national governments and the EU have discussed imposing border carbon adjustments (i.e., tariffs) on imported goods from countries with less ambitious climate commitments under Paris Accord
 - Customers/shareholders may request LCA from manufacturer
 - ◆ To support their corporate sustainability goals
 - ◆ Environmental Product Declarations (EPD's)
- ▶ California Assembly Bill 262 - "Buy Clean California Act" (2017)
 - Requires contractors bidding on state infrastructure/construction projects to submit EPDs from their suppliers of concrete, asphalt, steel, glass, etc.
- ▶ EPD requires assessment of other environmental impacts as defined in product category rule (e.g, land use, water use, waste, etc.)

Source: https://ghgprotocol.org/sites/default/files/standards/Product-Life-Cycle-Accounting-Reporting-Standard_041613.pdf

What is a Life Cycle Assessment?

A Life Cycle Assessment (LCA) is an analysis of a product's environmental impact along its entire value chain.

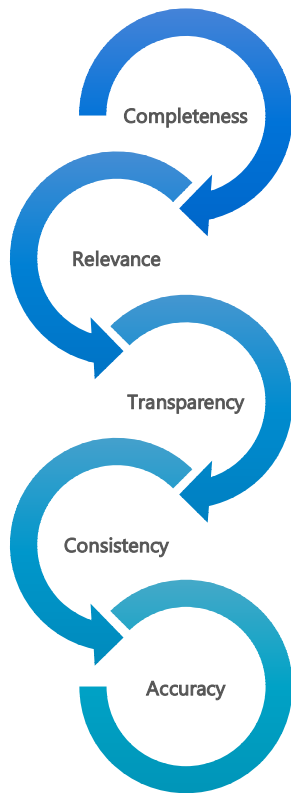
- ▶ Acquisition of raw materials
- ▶ Manufacturing
- ▶ Transportation of raw materials / product
- ▶ Product use
- ▶ End-of-life treatment (Landfill, recycle, etc.)

The entire value chain may consist of:

- ▶ Cradle to Grave
- ▶ Cradle to Gate
- ▶ Gate to Gate



GHG Inventory Best Practice: Develop Protocol Documentation



- ▶ **Baseline inventory should be comprehensive (including all emissions that are material and relevant) for internal purposes:**
 - Scope 1 + Scope 2
 - Scope 3: assess categories; screening tool available
 - All GHG pollutants (e.g., CO₂, CH₄, N₂O, SF₆, HFC/PFC)
- ▶ **Develop written inventory protocol document to establish:**
 - Baseline boundaries & timeframe
 - Materiality & significance thresholds
 - Baseline recalculation policy
 - Calculation methodology & key assumptions
 - Target boundaries & time horizon(s)

Science-Based Targets and Net Zero Commitments

Example Targets

Amazon

- Net Zero Carbon by 2040
- 100% Renewable Energy by 2025
- 50% Shipment Zero by 2030

WalMart

- SBT – Reduction of 18% by 2025
- Zero Emissions by 2040 (without offsets)

AT & T

- Reduce absolute Scope 1 & Scope 2 GHG 26% by 2030
- Ensure 50% of suppliers set SBTs on Scope 1 & 2 by 2024
- Carbon Neutrality by 2035

Ford Motor Co.

- Reduce CO₂ from manufacturing by 30% per vehicle produced by 2025
- Carbon Neutrality by 2050

Boeing

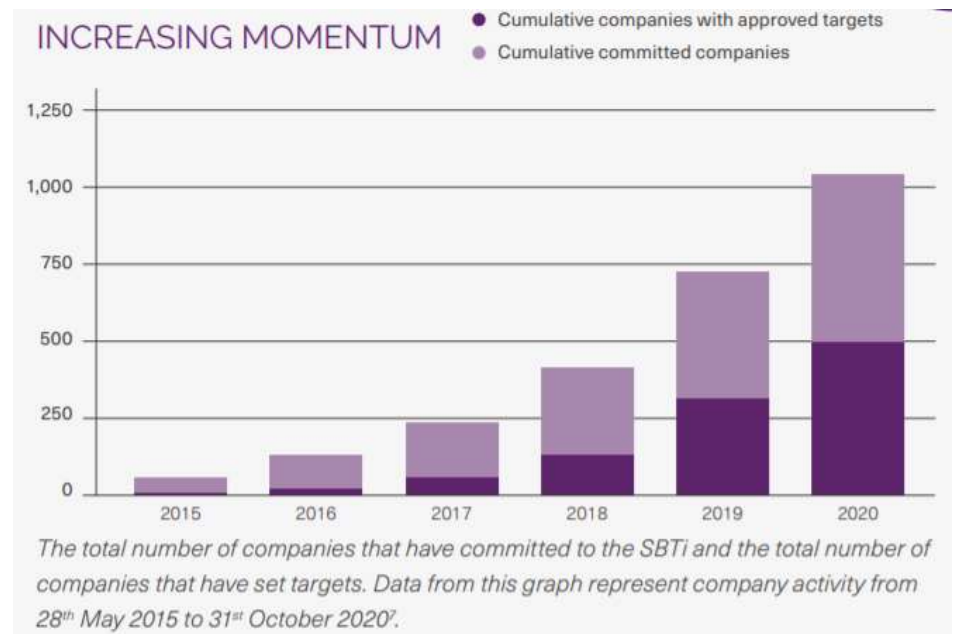
- Carbon Neutral Growth from 2020
- Reduce carbon emissions 50% over 2005 levels by 2050

What is a Science-Based Target?

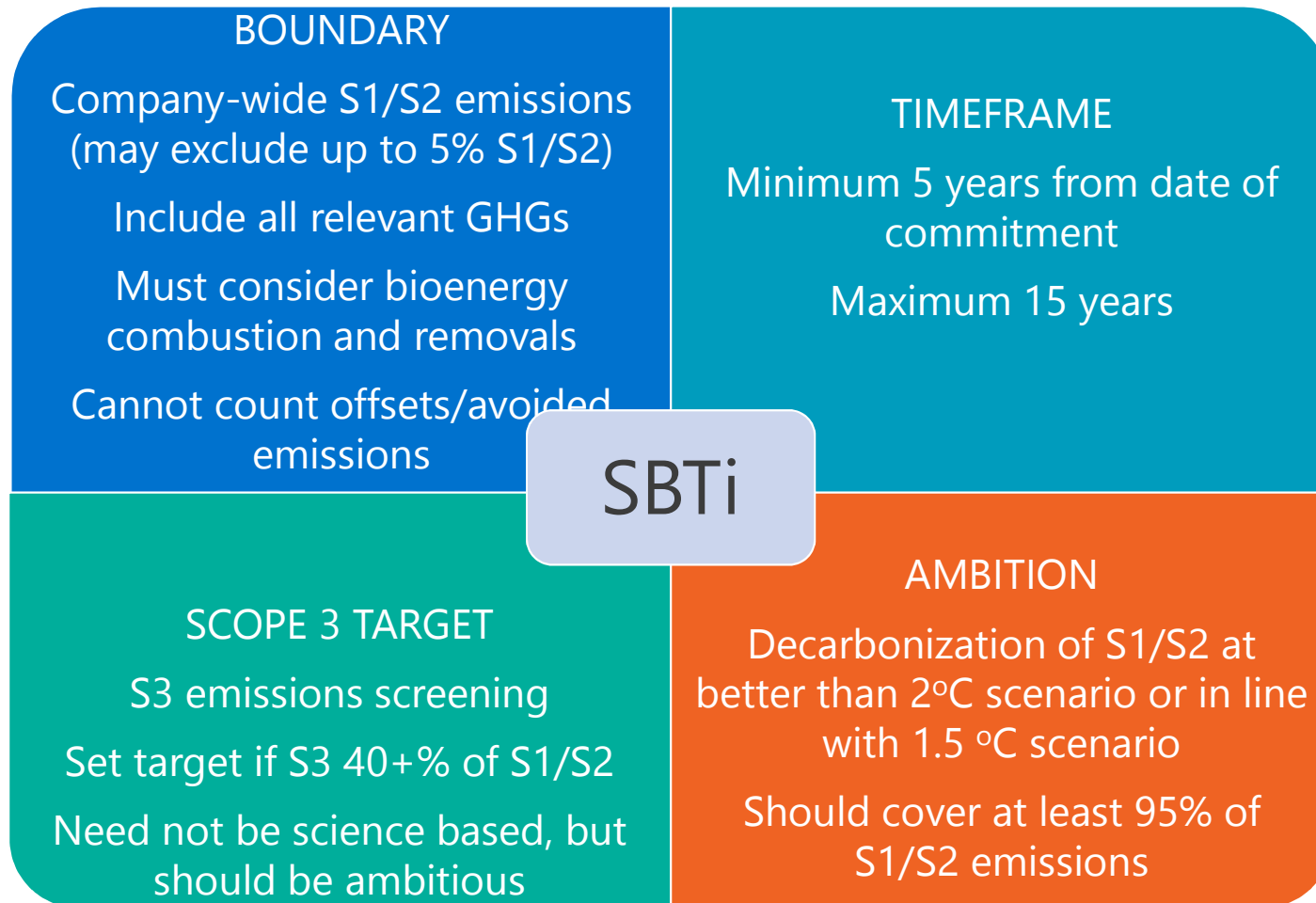


DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

- ▶ Targets that aim to reduce emissions at rate that is consistent with level of decarbonization required to limit global warming to 1.5°C or well-below 2°C
- ▶ SBTi is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI), and World Wide Fund for Nature (WWF) founded in 2015



SBTi Overview



Source: <https://sciencebasedtargets.org/resources/legacy/2017/04/SBTi-manual.pdf>

SBTi Target Setting Approaches

- ▶ SBTi first determines global GHG budget over a given timeframe that is aligned with specific global temperature rise threshold (e.g., 1.5 °C)
- ▶ Various emissions scenarios are then assessed
 - Based on information from the Integrated Assessment Modeling Consortium (IAMC) and the International Energy Agency (IEA)
 - Predict future emissions and temperature outcomes based on assumptions re: population growth, economic growth, policy developments, technology advancement
- ▶ Absolute Contraction Approach:
 - % reduction in absolute emissions required is applied to all companies equally
 - Target overall reduction in amount of absolute GHG emitted by target year relative to base year
- ▶ Sectoral Physical Intensity Convergence:
 - Global carbon budget is divided by sector
 - SDA sets intensity targets (i.e., MT CO₂e / MT of product produced) for given sector

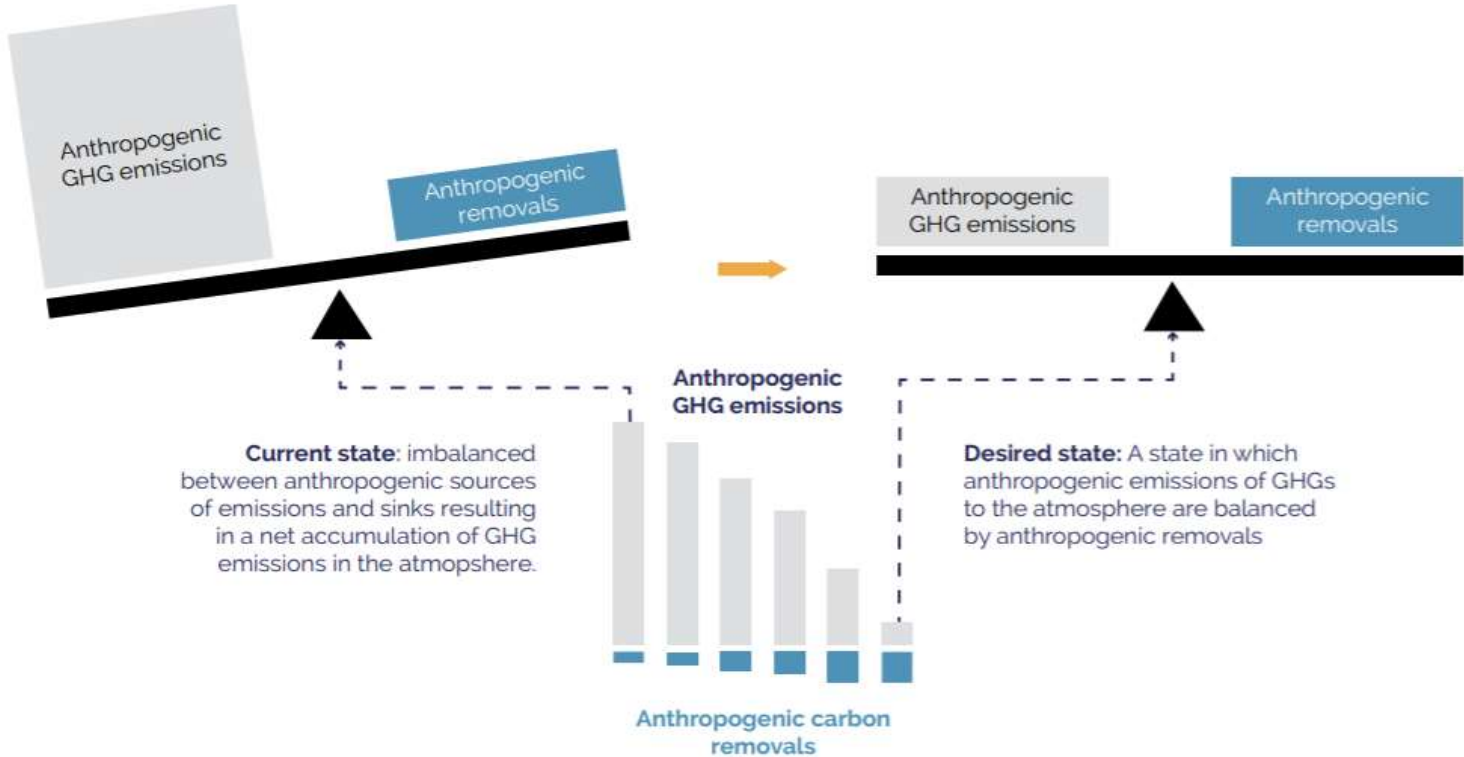
Source: <https://sciencebasedtargets.org/resources/legacy/2017/04/SBTi-manual.pdf>

October 28, 2021: SBTi Launches Net Zero Standard

- ▶ Provides criteria for companies to set science-based (1.5°C scenario), net zero targets
- ▶ Developed to address concerns about:
 - Lack of robustness in targets that do not cover all emissions
 - Lack of urgency in timelines
 - Overreliance on carbon offsets
 - Alleged “greenwashing” due to the lack of external verification



What is Net Zero?



Source: <https://sciencebasedtargets.org/resources/legacy/2020/09/foundations-for-Net-Zero-full-paper.pdf>

Types of Mitigation Strategies



Within the company's value chain

Outside the company's value chain

Abatement

Measures that prevent, reduce, or eliminate GHG emissions within the value chain

Compensation

Offsetting emissions with GHG reductions outside the value chain (e.g., financing clean energy projects, purchasing credits)

Neutralization

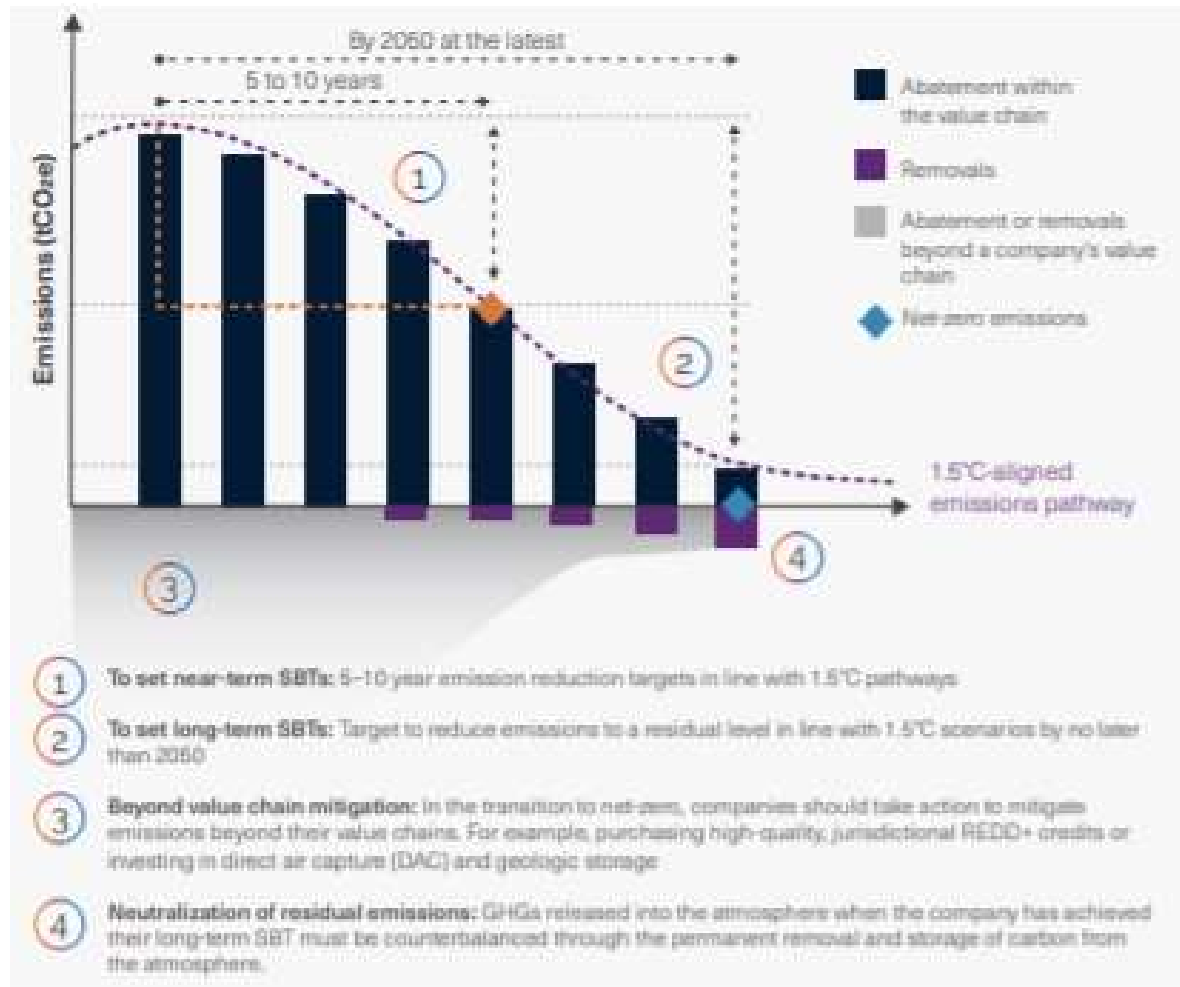
Carbon dioxide removal (CDR) from the atmosphere within or beyond value chain through enhancements of natural sinks (afforestation/reforestation) or through chemical/physical capture and sequestration

Key Elements of SBTi Net-Zero Standard

- ▶ **Near-term targets** based on 5-10 years timeframe covering at least 95% of S1/S2 emissions and at least 67% S3 (if baseline S3 \geq 40% of total S1/S2/S3)
 - ▶ Must complete S3 screening
 - ▶ Companies selling/distributing fossil fuels must set S3 targets regardless of magnitude
- ▶ **Long-term targets by 2050** covering 90-95% across all scopes before 2050 with limited dependence on neutralization of residual emissions that cannot yet be eliminated (5-10%)
- ▶ **Alternative S2 Target:** Commit to 80% renewable electricity procurement by 2025 and 100% by 2030 (rate determined in line with 1.5°C scenario)
 - ▶ Achieved with Renewable Energy Credits (RECs) and Power Purchase Agreements (PPAs)
- ▶ **Baseline** no earlier than 2015
- ▶ Requires **external verification** of corporate net-zero targets and annual progress reporting
- ▶ Requires **Supplier/Customer Engagement Targets** – must be science-based (set at a minimum ambition of well below 2°C) and must be near term (5 yr)

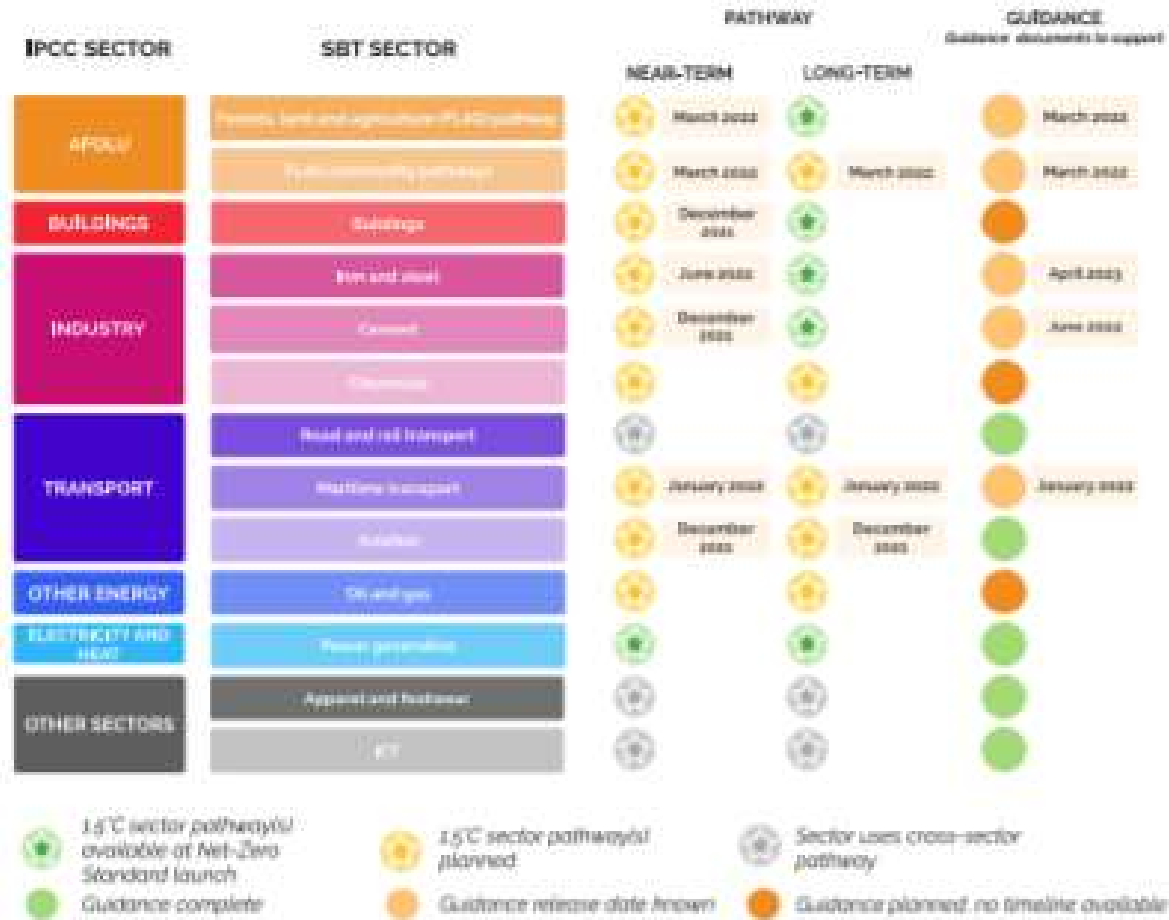
Source: <https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf>

Key Elements of SBTi Net-Zero Standard



Source: <https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf>

SBTi Net-Zero Pathways/Guidance Under Development

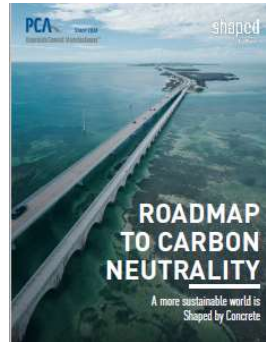


Source: <https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf>

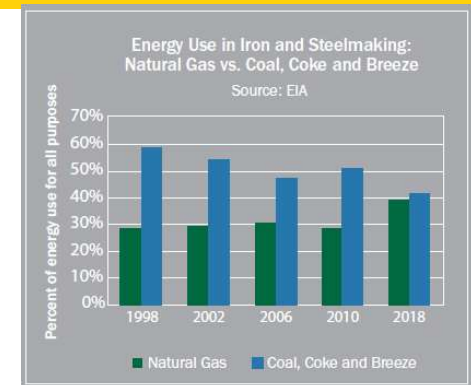
What are other industry groups doing?

What are other Industry Groups doing?

- ▶ Establishing Sustainability Committees
- ▶ Engaging with international sister organizations in EU for insights on how to navigate evolving policy
- ▶ Developing industry-level transition plans for low carbon economy
- ▶ Tracking evolving policy/legislation and providing comments
- ▶ Providing guidance to members for consistent reporting across the industry
- ▶ Developing industry-wide EPDs
- ▶ Preparing messaging on Industry's Sustainable Practices



FACTS ABOUT AMERICAN STEEL SUSTAINABILITY



**ALUMINIUM SECTOR
GREENHOUSE GAS
PATHWAYS TO 2050**

PARAMETERS



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