Corporate ESG & Sustainability Reporting – Preparing for the Inevitable

MEC's 32nd Annual Sustainability & Environmental Health & Safety Symposium

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Agenda

- Sustainability and ESG Reporting Drivers
- Sustainability Program Development
  - Foundation and Key Components
  - Assessing Materiality
  - Voluntary Reporting
- Setting ESG Targets
  - GHG Emissions Accounting Example
  - Science-Based Target Initiative
  - Net-Zero Standards
- Data Management Strategies

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Key Sustainability Terms

- ***"Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*** — UN World Commission on Environment and Development, and first coined by the Bruntland Report, 1987 ("Our Common Future")
- **Environmental, social, and governance (ESG)** metrics are the sustainability metrics connected to financial performance and used by investors to determine material risks/opportunities
- ESG metrics are **specific** and **data-driven**
  - **E** – environmental criteria such as GHG, energy use, waste generation, etc.
  - **S** – social criteria such as fair labor practices, workplace safety, privacy & data security, human rights
  - **G** – corporate governance criteria such as business ethics, board diversity, executive compensation

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Reference: https://theinkgroup.co.uk/news-insights/esg-investing-what-it-is-and-why-its-important

ESG Overview

Reference: https://theinkgroup.co.uk/news-insights/esg-investing-what-it-is-and-why-its-important

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Sustainability and ESG Reporting Drivers

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Sustainability Drivers in the Market Place

Increased Action

Increased Transparency

Increased Standardization

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Global Sustainability Initiatives: 1990s

1992 – UN Conference on Environment and Development (Earth Summit).
Earth Summit focused on need for integration of economic development, environmental protection, and social justice and inclusion. Produced "Agenda 21" action plan.

1995 – World Business Council for Sustainable Development created.
WBCSD is an organization made up of leading global companies who promote sustainable development through business action. They work with governments and other organizations to develop policies that help companies to become more environmentally and socially responsible.

1997 – Global Reporting Initiative Founded.
GRI was founded following public outcry over the environmental damage caused by Exxon Valdez spill. Created the first accountability mechanism to ensure companies adhere to responsible environmental conduct principles. GRI was broadened to include social economic and governance issues. First GRI guidelines issued in 2000.

1997 – Kyoto Protocol convened world leaders to set goals addressing global warming.
This was the first agreement between nations mandating country-by-country reductions in greenhouse gases.

Reference: https://movingworlds.org/esg-reporting-guide#history-of-esg-reporting and https://www.morningstar.com/features/esg-investing-history

Global Sustainability Initiatives: 2000s and 2010s

2000 – UN Global Compact Initiative Launched.
The Global Compact Initiative is a voluntary corporate citizenship effort based on set of human rights, labor, environmental, and anti-corruption principles.

2000 – CDP was founded.
CDP is a non-profit with ambition of transforming capital markets by making environmental reporting and risk management a new business norm.

2006 – UN Principles for Responsible Investment (PRI) was launched.
The goal of PRI is to encourage further development of sustainable investing. PRI signatories incorporate ESG into investment analysis and decision making processes.

2011 – Sustainability Accounting Standards Board (SASB) Formed.
SASB's mission is to establish industry-specific standards for corporate reporting on ESG issues to help companies to understand what and how to report.

2015 – Paris Agreement was written and formed during UN Framework Convention on Climate Change.
Goal to limit average global temperature rise to well below 2°C (ideally below 1.5°C) above pre-industrial levels

Reference: https://movingworlds.org/esg-reporting-guide#history-of-esg-reporting and https://www.morningstar.com/features/esg-investing-history

Global Sustainability Initiatives: 2010s

2015 – UN adopted the Sustainable Development Goals (SDGs).
The UN SDGs align the world on social and environmental priorities. All member countries are now using these objectives to frame their development policies over the next 15 years.

2015 – The Science-Based Targets Initiative (SBTi) was launched.
SBTi works with companies and financial institutions to set targets which align with the latest climate science to meet the Paris Agreement goals.

2016 – CalPERS adopted a 5-year plan to incorporate ESG principles into its investment process.
The CA Public Employees Retirement System is the largest public pension fund in the US. Its adoption of sustainable investing practices marked a significant shift towards valuing non-financial KPIs.

2015 – The Task Force on Climate-Related Financial Disclosures (TCFD) formed.
In 2017, TCFD issued recommendations for identification and management of risks & opportunities associated with climate change.

Reference: https://movingworlds.org/esg-reporting-guide#history-of-esg-reporting and https://www.morningstar.com/features/esg-investing-history

Global Sustainability Initiatives: 2020s

2021 – The International Sustainability Standards Board (ISSB) established.
The ISSB was created at the COP26 climate conference as a new international effort to merge many ESG disclosure standards into one, and to encourage adopting these standards globally.

2021 – The Task Force on Nature-Related Financial Disclosures (TNFD) formed.
The TNFD is developing a framework for financial institutions and companies to understand how nature impacts the organization's immediate financial performance, or longer-term risks that may arise from how it impacts nature.

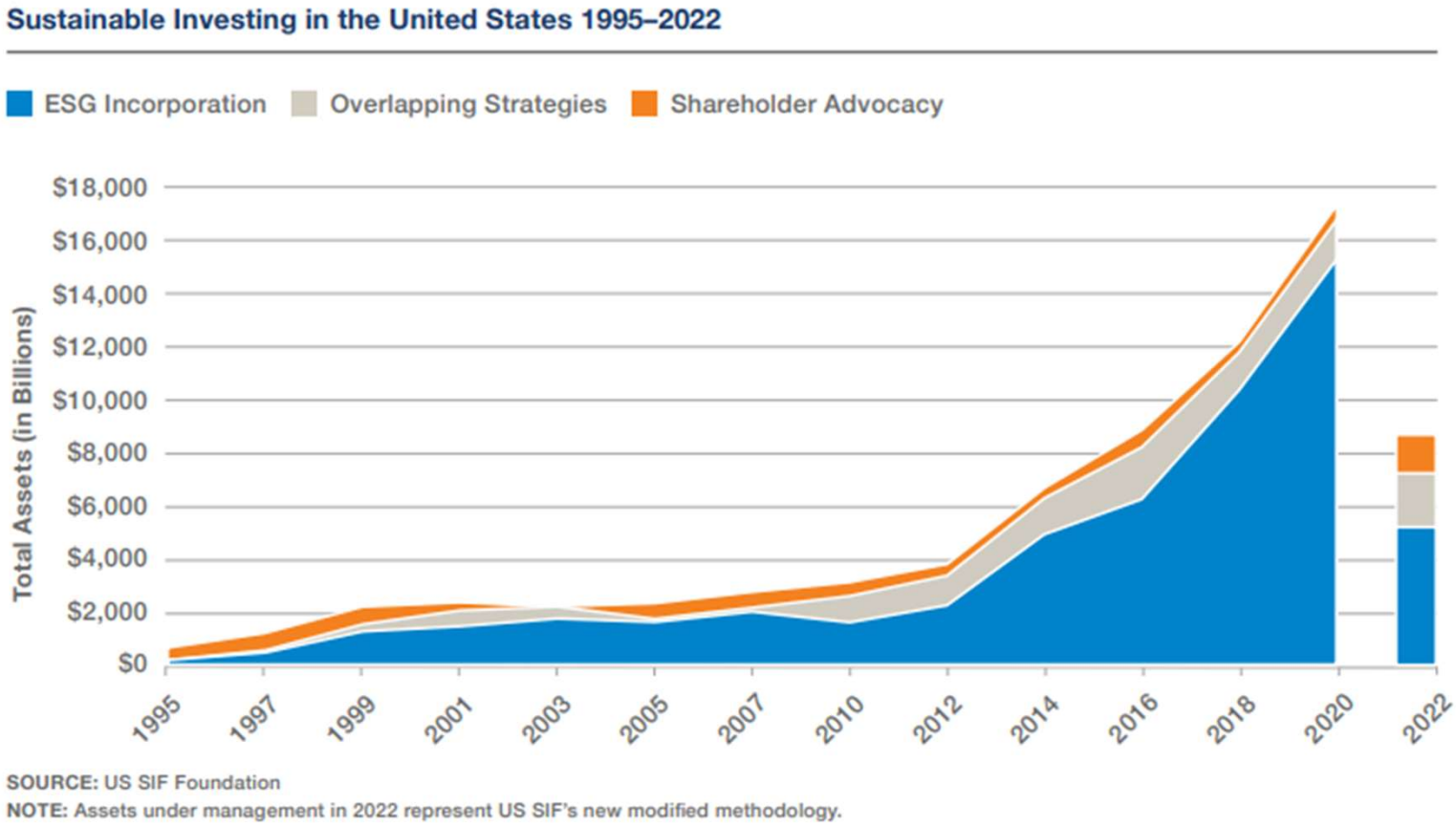
2022 – US SEC proposes *"The Enhancement and Standardization of Climate-Related Disclosures for Investors"* amendments to existing rules for disclosure of climate-related information.

2022 – US Inflation Reduction Act is passed by Congress.
The IRA is the most significant climate bill in US history. It provides billions of dollars for investment in low carbon energy technology and GHG reduction.

2022 – COP15 in Montreal adopts global biodiversity goals for 2030.
Goals include: Protect 30% of Earth's lands, oceans, coastal areas, and inland waters; Require large companies to disclose risks, dependencies, and impacts to biodiversity across their value-chain.

Reference: https://movingworlds.org/esg-reporting-guide#history-of-esg-reporting and https://www.morningstar.com/features/esg-investing-history

Sustainable Investment



Reference: https://www.ussif.org//Files/Trends/2022/Trends%202022%20Executive%20Summary.pdf

Supply Chain Drivers: Procurement Policies

- Report their Scope 1, 2, and 3 GHG emissions data to Ford if requested
- Establish science-based GHG reduction targets, action plans, and transparent reporting mechanisms
- Achieve continual environmental improvement in manufacturing operations by reducing emissions, increasing energy efficiency, and utilizing renewable energy

Microsoft

- Disclose their Scope 1, 2, and 3 GHG emissions required for CDP disclosure
- Provide 3rd Party Verification of GHGs
- Provide and achieve plan to reduce absolute GHG emissions by a minimum of 55% by 2030 (or alternative target established by agreement with Microsoft)

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Supply Chain Drivers: Customer Inquiries

Example Customer Product Environmental Performance Request:

Environmental performance – Product

1. Does the product have an Environmental Product Declaration (EPD), either Product specific, Group or Industry Average or equivalent?
If yes, please provide a link or a pdf copy.

2. If no on Q1, does the product have a life cycle assessment (LCA) based on ISO 14040-series on LCA requirements or equivalent?
If yes, please provide a link or a pdf copy.

3. If no on Q1-Q2, can you provide GHG-performance data on product or product group level based on a cradle-to-gate approach (upstream and core modules)?
If yes, please provide the result, measured in kg CO2e/ton of dry content or equivalent. Please provide a brief description of method of calculations and any limitations in emissions included. Please provide a link or a pdf copy if available.

4. If no on Q1-Q3, can you provide GHG-performance data on product or product group level on selected parts of the value chain?
If yes, please provide the result, measured in kg CO2e/ton of dry content or equivalent. Please provide a brief description of method of calculations and any boundary limitations in emissions included. Please provide a link or a pdf copy if available.

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Regulatory Drivers: Proposed SEC Rulemaking (1 of 4)

The Enhancement and Standardization of Climate-Related Disclosures for Investors

- March 2021: SEC seeks comments on climate-related disclosures ***"with an eye toward facilitating the disclosure of consistent, comparable, and reliable information on climate change."***
- March 2022: SEC proposes to amend existing rules to require public companies to provide certain climate-related information in their SEC filings (e.g., registration statements, annual Form 10-Ks)
- Public Comment Period extended → ended 11/1/2022 (extended due to error in electronic tracking system)
- Final rule expected in Spring 2023
- Requirements are based on existing disclosure frameworks and standards:
  - **Task Force on Climate-Related Financial Disclosure (TCFD)**
  - **GHG Protocol Corporate Reporting Standard**

Reference: https://www.sec.gov/rules/proposed/2022/33-11042.pdf

Proposed SEC Rulemaking (2 of 4)

The Enhancement and Standardization of Climate-Related Disclosures for Investors

- Climate – related risks and management processes (e.g., whether there is governance by BOD or management)
- How the **physical risks** (e.g., severe weather events, sea level rise, temperature pattern changes) associated with climate change impact financial statement line items and assumptions
- How the **transition risks** (e.g., increased cost of carbon, cost to implement low carbon technology or strategies) associated with climate change impact financial statement line items and assumptions

Reference: https://www.sec.gov/rules/proposed/2022/33-11042.pdf

Proposed SEC Rulemaking (3 of 4)

The Enhancement and Standardization of Climate-Related Disclosures for Investors

- **If company** uses internal cost of carbon, disclose how price is determined
- **If company** uses scenario analysis to assess risks, disclose description of scenarios, assumptions, and projected financial impacts
- **If company** has climate transition plan, describe plan and relevant targets and metrics
- **If company** set GHG reduction targets, disclose basis for targets, the plan for achieving them (including details related to use of carbon offsets and RECs), and progress made year over year

Reference: https://www.sec.gov/rules/proposed/2022/33-11042.pdf

Proposed SEC Rulemaking (4 of 4)

The Enhancement and Standardization of Climate-Related Disclosures for Investors

- Scope 1 and Scope 2 emissions from company's owned or controlled operations – ***excluding*** the impact of any purchased or generated offsets
- Scope 3 emissions ***if considered "material"*** or if the company has set a GHG emissions target or goal that includes Scope 3 emissions
- Report each GHG separately as well as aggregated together as CO_2e, and in terms of intensity metric (i.e., per unit of economic value or production)
- Large accelerated filers and accelerated filers must obtain a ***third-party verification*** of their Scope 1 and Scope 2 emissions
  - Limited assurance during phase-in period
  - Reasonable assurance after first two years

Reference: https://www.sec.gov/rules/proposed/2022/33-11042.pdf

Reg Drivers: US Inflation Reduction Act (1 of 2)

- September 12, 2022: Most significant climate bill in US history signed
- Provides $369 billion for investment in low carbon energy technology and GHG emissions reduction
- Opportunities for US Industry:
  - Tax credit for renewable energy and related infrastructure
  - Investment in RD&D to reduce emissions from energy intensive industry sectors
  - Incentives for use of US-manufactured building products
  - Tax credit for Carbon Capture and Sequestration & Direct Air Capture technology
  - Tax credit for clean hydrogen
  - New clean fuels production credit, renewable fuels standards

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US Inflation Reduction Act (2 of 2)

- Risks/Costs for US Industry:
  - Reinstates tax credit on crude oil received at US refineries
  - Tax on methane emissions
  - Enhanced methane monitoring
  - Enhanced GHG reporting and transparency
  - Enhanced standardization of EPDs for construction products and low embodied carbon labeling (“green standards”)
  - Fenceline monitoring and screening air monitoring
  - Updated building codes to meet 2021 International Energy Conservation Code

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Reg Drivers: Proposed Federal Procurement Policy

- On November 14, 2022 - proposed amendment to the Federal Acquisition Regulation, **Disclosure of Greenhouse Gas Emissions and Climate-Related Financial Risk**, was published in the Federal Register
- Public comments were due January 13, 2023
- Requires major federal contractors (>$50 million in annual contracts) to:
  - Disclose Scope 1, Scope 2, and relevant categories of Scope 3 GHG emissions via **CDP**
  - Disclose climate-related financial risks in alignment with **TCFD**
  - Set science-based GHG reduction targets via **SBTi** (validated by SBTi)

Reference: https://www.federalregister.gov/documents/2022/11/14/2022-24569/federal-acquisition-regulation-disclosure-of-greenhouse-gas-emissions-and-climate-related-financial

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Reg Drivers: Interim Guidance for Climate Change Analysis in NEPA Reviews

- On January 9, 2023 – CEQ published guidance for use by federal agencies when evaluating actions that trigger NEPA review
- Public comments were due March 10, 2023
- CEQ will either revise the guidance based on public comments or finalize interim guidance
- Recommends that agencies:
  - Integrate **GHG emissions and climate change considerations** into identification of proposed actions, reasonable alternatives, and potential mitigation measures
  - Quantify **"reasonably foreseeable" GHG emissions for lifetime of action** and monetized climate damages using social cost of GHG
  - Consider **"cumulative effects"** of proposed action
  - Consider whether certain communities experience disproportionate cumulative effects, raising **EJ concerns**

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Reference: https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate

Reg Drivers: Buy Clean Initiatives

- September 15, 2022– Biden Administration announced new actions under **Federal Buy Clean Initiative**
  - Federal Government to prioritize purchase of low carbon construction materials – steel, concrete, asphalt, flat glass
  - Working to increase through EPDs and GHG reporting
  - Taskforce of stakeholders formed in February
  - $4.5 billion in IRA for GSA, DOT and EPA to implement federal program
- **Buy Clean California** requirements apply to certain building materials (e.g., steel) used for public works projects with contracts awarded on or after July 1, 2022
  - Compliance demonstrated based on GWP in a manufacturer's facility-specific EPD
  - EPD must be independently verified and developed in accordance with applicable Product Category Rule (PCR) identified by agency
- **Buy Clean Colorado** starts January 1, 2024
  - Covers asphalt, cement/concrete, glass, steel, wood
- Other states developing similar policies: MN, WA, OR

BCCA
Buy Clean California Act

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Sustainability Program Development

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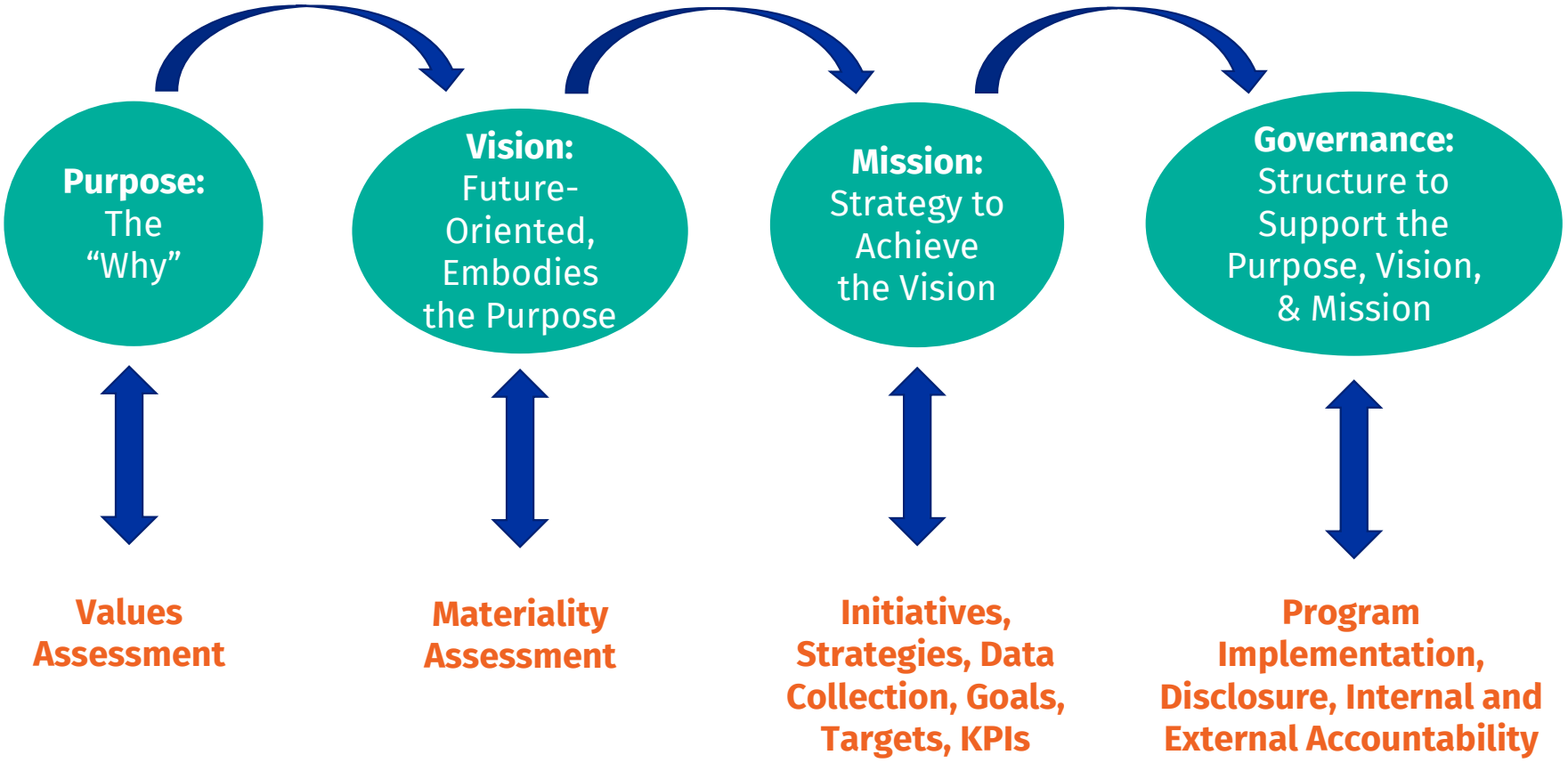
Foundation of a Sustainability Program



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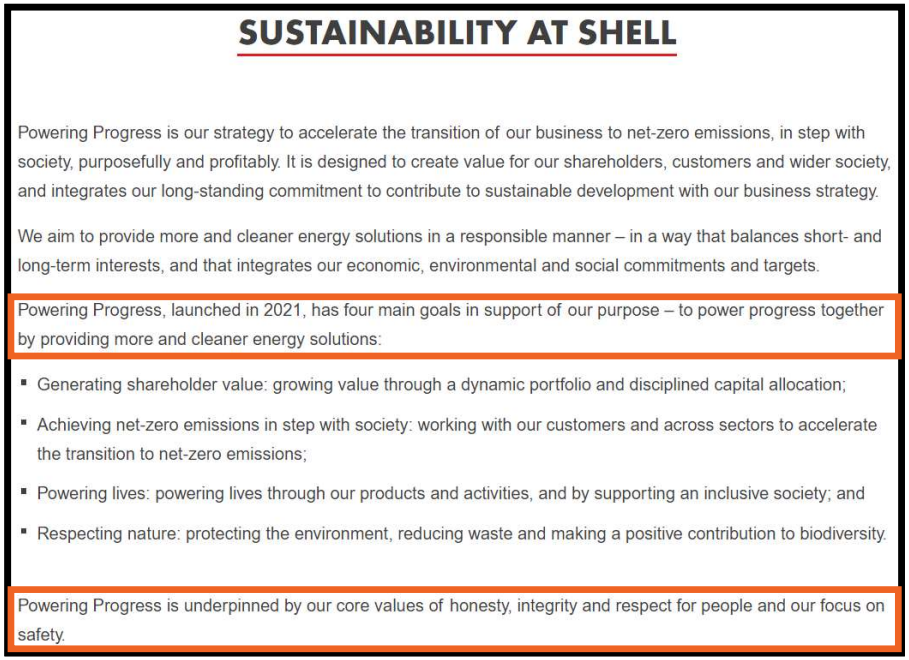
Foundation of a Sustainability Program

▸ Sustainability Program Purpose Definition:

- Alignment of the company's unique capabilities with a **greater sense of prosperity**. Demonstrates shared value for all key stakeholders, aligns financial interest, business strengths, and the **company's role in sustaining and improving the well-being of the planet and society**.



SUSTAINABILITY AT SHELL

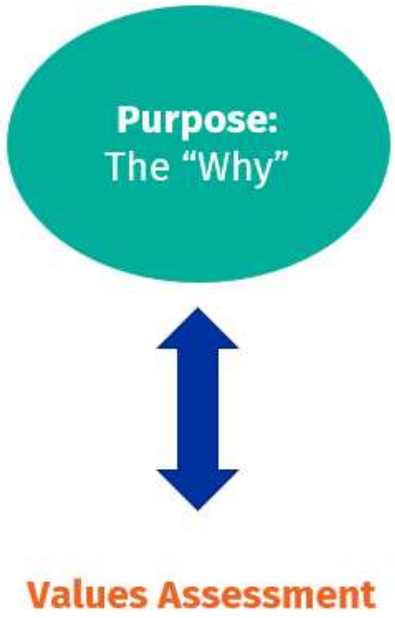
Powering Progress is our strategy to accelerate the transition of our business to net-zero emissions, in step with society, purposefully and profitably. It is designed to create value for our shareholders, customers and wider society, and integrates our long-standing commitment to contribute to sustainable development with our business strategy.

We aim to provide more and cleaner energy solutions in a responsible manner – in a way that balances short- and long-term interests, and that integrates our economic, environmental and social commitments and targets.

Powering Progress, launched in 2021, has four main goals in support of our purpose – to power progress together by providing more and cleaner energy solutions:

- Generating shareholder value: growing value through a dynamic portfolio and disciplined capital allocation;
- Achieving net-zero emissions in step with society: working with our customers and across sectors to accelerate the transition to net-zero emissions;
- Powering lives: powering lives through our products and activities, and by supporting an inclusive society; and
- Respecting nature: protecting the environment, reducing waste and making a positive contribution to biodiversity.

Powering Progress is underpinned by our core values of honesty, integrity and respect for people and our focus on safety.



Reference: Ceres Roadmap 2030, Shell Sustainability

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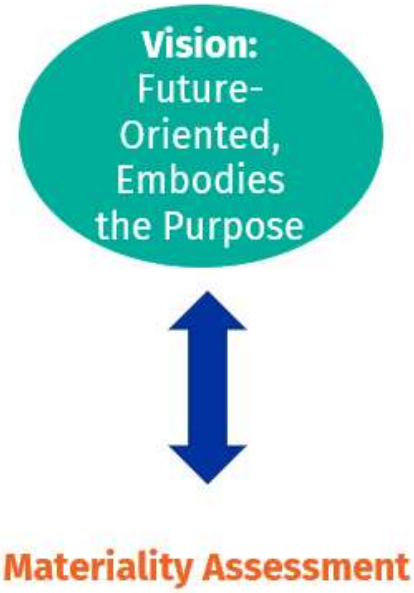
Foundation of a Sustainability Program

- **Sustainability Program Vision Definition:**
  - The desired **end-goal** as it pertains to the sustainability program. Defined by **material sustainability impacts**.

Our vision at Walmart is to help transform food and product supply chains to be regenerative, working in harmony with nature - to protect, restore and sustainably use our natural resources.

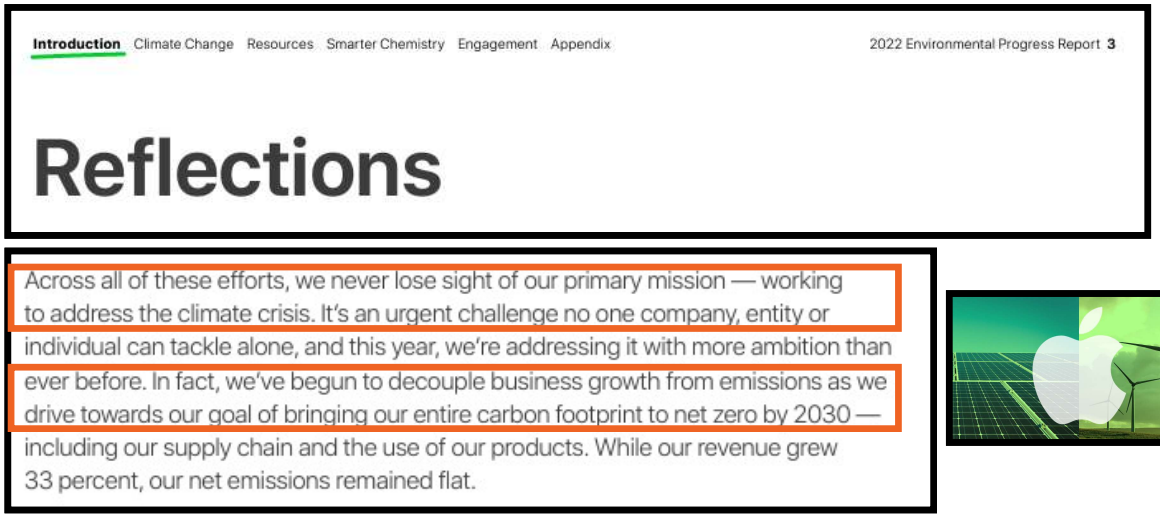
KATHLEEN MCLAUGHLIN
EXECUTIVE VICE PRESIDENT AND CHIEF SUSTAINABILITY OFFICER FOR WALMART, INC. AND PRESIDENT OF THE WALMART FOUNDATION.



Reference: Ceres Roadmap 2030, Walmart Sustainability

Foundation of a Sustainability Program

- **Sustainability Program Mission Definition:**
  - Communicates a company's **plan to achieve the sustainability program's vision**.

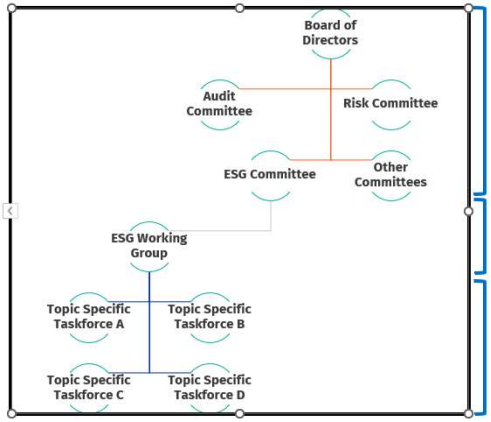


Reference: Ceres Roadmap 2030, Apple Environmental Progress Report

Foundation of a Sustainability Program

- **Sustainability Governance Structure Definition:**
  - **Board of Directors Oversight**
    - Formalize Board oversight of sustainability risks and opportunities and integrate into Board decisions on strategy, risk, and revenue
  - **Management Oversight**
    - Senior leadership maintains oversight of sustainable business priorities and is held accountable via internal mechanisms

Outline ESG Governance Structure:



BOARD LEVEL

MANAGEMENT LEVEL

IMPLEMENTATION LEVEL

- EHS and maintenance representatives
- Human resources, public relations, marketing, and financial representatives

Reference: Ceres Roadmap 2030

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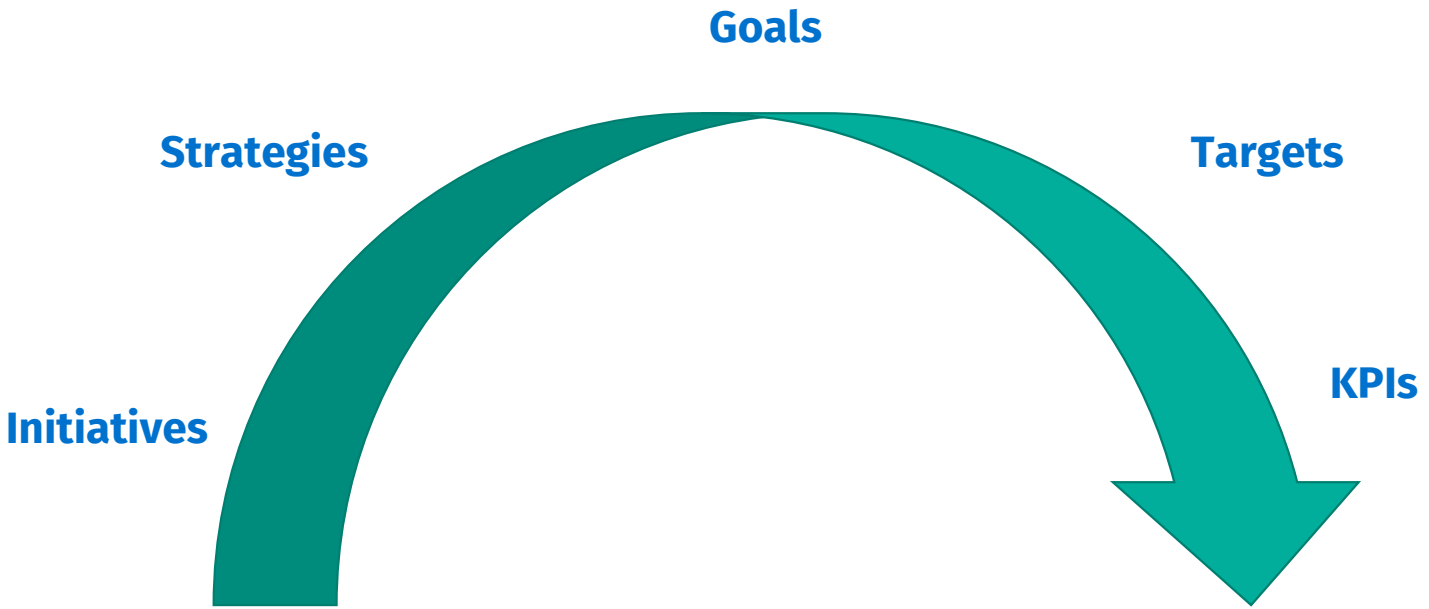
Key Components of a Sustainability Program

How is success measured?



Global Reporting Initiative™ | SASB | TNFD | TCFD Task Force on Climate-Related Financial Disclosures | CDP

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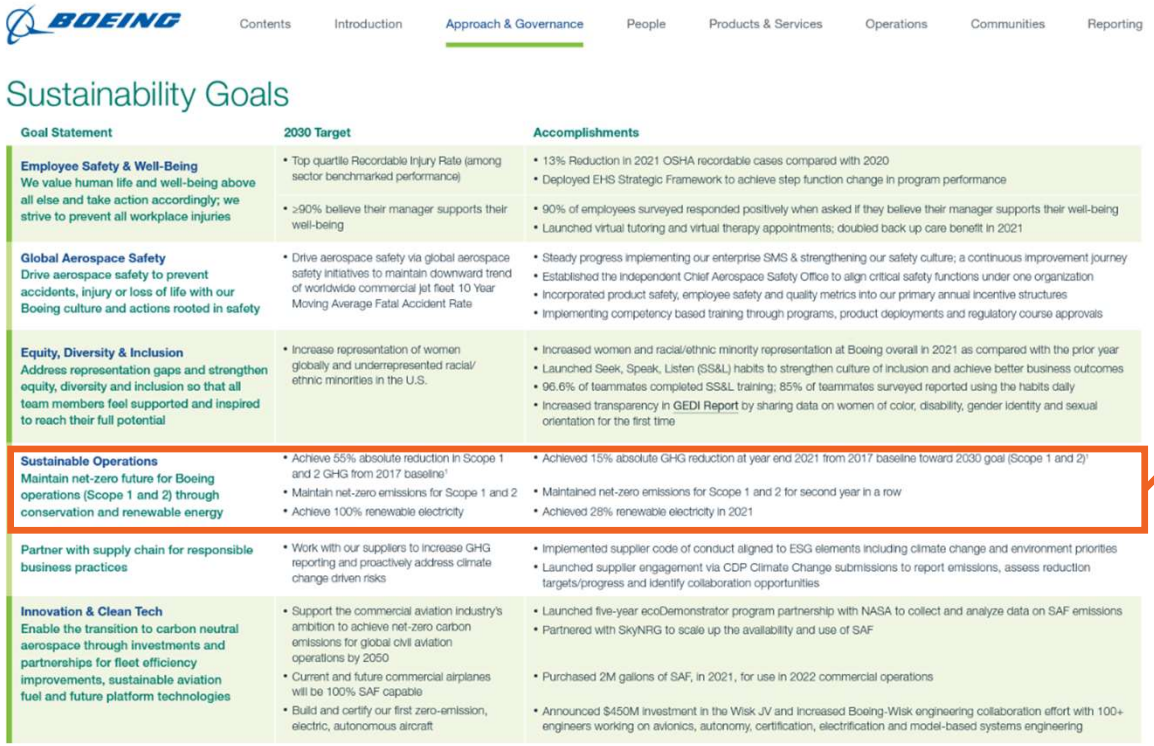
Sustainability Program Components Example



BOEING

Contents | Introduction | Approach & Governance | People | Products & Services | Operations | Communities | Reporting

Sustainability Goals

Goal Statement	2030 Target	Accomplishments
Employee Safety & Well-Being We value human life and well-being above all else and take action accordingly; we strive to prevent all workplace injuries	• Top quartile Recordable Injury Rate (among sector benchmarked performance)	• 13% Reduction in 2021 OSHA recordable cases compared with 2020 • Deployed EHS Strategic Framework to achieve step function change in program performance
	• ≥90% believe their manager supports their well-being	• 90% of employees surveyed responded positively when asked if they believe their manager supports their well-being • Launched virtual tutoring and virtual therapy appointments; doubled back up care benefit in 2021
Global Aerospace Safety Drive aerospace safety to prevent accidents, injury or loss of life with our Boeing culture and actions rooted in safety	• Drive aerospace safety via global aerospace safety initiatives to maintain downward trend of worldwide commercial jet fleet 10 Year Moving Average Fatal Accident Rate	• Steady progress implementing our enterprise SMS & strengthening our safety culture; a continuous improvement journey • Established the independent Chief Aerospace Safety Office to align critical safety functions under one organization • Incorporated product safety, employee safety and quality metrics into our primary annual incentive structures • Implementing competency based training through programs, product deployments and regulatory course approvals
Equity, Diversity & Inclusion Address representation gaps and strengthen equity, diversity and inclusion so that all team members feel supported and inspired to reach their full potential	• Increase representation of women globally and underrepresented racial/ ethnic minorities in the U.S.	• Increased women and racial/ethnic minority representation at Boeing overall in 2021 as compared with the prior year • Launched Seek, Speak, Listen (SS&L) habits to strengthen culture of inclusion and achieve better business outcomes • 96.6% of teammates completed SS&L training; 85% of teammates surveyed reported using the habits daily • Increased transparency in GEDI Report by sharing data on women of color, disability, gender identity and sexual orientation for the first time
Sustainable Operations Maintain net-zero future for Boeing operations (Scope 1 and 2) through conservation and renewable energy	• Achieve 55% absolute reduction in Scope 1 and 2 GHG from 2017 baseline[1] • Maintain net-zero emissions for Scope 1 and 2 • Achieve 100% renewable electricity	• Achieved 15% absolute GHG reduction at year end 2021 from 2017 baseline toward 2030 goal (Scope 1 and 2)[1] • Maintained net-zero emissions for Scope 1 and 2 for second year in a row • Achieved 28% renewable electricity in 2021
Partner with supply chain for responsible business practices	• Work with our suppliers to increase GHG reporting and proactively address climate change driven risks	• Implemented supplier code of conduct aligned to ESG elements including climate change and environment priorities • Launched supplier engagement via CDP Climate Change submissions to report emissions, assess reduction targets/progress and identify collaboration opportunities
Innovation & Clean Tech Enable the transition to carbon neutral aerospace through investments and partnerships for fleet efficiency improvements, sustainable aviation fuel and future platform technologies	• Support the commercial aviation industry's ambition to achieve net-zero carbon emissions for global civil aviation operations by 2050 • Current and future commercial airplanes will be 100% SAF capable • Build and certify our first zero-emission, electric, autonomous aircraft	• Launched five-year ecoDemonstrator program partnership with NASA to collect and analyze data on SAF emissions • Partnered with SkyNRG to scale up the availability and use of SAF • Purchased 2M gallons of SAF, in 2021, for use in 2022 commercial operations • Announced $450M investment in the Wisk JV and increased Boeing-Wisk engineering collaboration effort with 100+ engineers working on avionics, autonomy, certification, electrification and model-based systems engineering

Initiative:

Sustainable Operations

Goal:

Maintain net-zero future for Boeing operations (Scope 1 and 2) through conservation and renewable energy

Target:

- Achieve 100% renewable electricity

KPI:

- Achieved 28% renewable electricity in 2021

Reference: Boeing 2022 Sustainability Report

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ESG Strategy Development: Concept of Materiality

- Guides a company's sustainability strategic planning processes
- A material sustainability issue is:
  - An economic, environmental, or social issue on which a company has an impact, or may be impacted by or,
  - Significantly influences the assessments and decisions of stakeholders
- Sustainability reporting is currently a voluntary exercise and the overall process is largely left up to company
- Recognized best practice that a company report on the relevant (or 'material') issues that have a direct or indirect impact on its ability to create or maintain or erode economic, environmental, and social value for itself, its stakeholders, the environment, and society at large

Reference: https://www.stern.nyu.edu/sites/default/files/assets/documents/NYUSternCSBSustainabilityMateriality_2019_0.pdf.

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ESG Materiality Process

Generally, the process for conducting a materiality assessment includes the following steps:

1. Identify key issues, relevant stakeholder groups, and business drivers
2. Collect data from internal and external stakeholders
3. Map and prioritize the issues
4. Align the issues with management and business vision
5. Develop the strategy
6. Put insights into action

Reference: https://www.stern.nyu.edu/sites/default/files/assets/documents/NYUSternCSBSustainabilityMateriality_2019_0.pdf.

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ESG Materiality Process: Step 1

1 → Identify key issues, relevant stakeholder groups, and business drivers

- Develop comprehensive list of issues
  - Refer to latest materiality matrix
  - **Reporting frameworks/standards (e.g., GRI, SASB)**
  - Peer company sustainability/ESG reports
- Use a standard process → helps to identify and prioritize issues most material to business and most relevant to stakeholders
- Issues that appear on a companies' materiality matrix are all expected to be managed at some level
- Mapping and prioritization exercise → helps identify focus areas and potential partnerships
- Repeat process regularly to uncover 'fast moving' issues → enables companies to proactively identify and get in front of a material issue and develop collaborative relationships with stakeholders to work on solutions

Reference: https://www.stern.nyu.edu/sites/default/files/assets/documents/NYUSternCSBSustainabilityMateriality_2019_0.pdf.

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ESG Materiality Process: Step 2

2 → Collect data from internal and external stakeholders

- Internal stakeholders: Key management and business leaders are asked to weigh a list of issues by their relative importance
  - Example: If PepsiCo's leaders were asked to assess the issue of water scarcity, they would need to ask themselves "How might the issue of water scarcity impact our ability to drive revenue, reduce risks, and enhance employee retention?"
  - Answers help the assessment team understand the relative importance of an issue such as water scarcity in driving business success
- External stakeholders: Also asked to prioritize issues based on relative importance
  - Example: An environmental NGO might say that water scarcity is the most important issue, while a human rights NGO might say the most important issue is labor rights in the supply chain
  - Stakeholder feedback may be solicited through online surveys, group or individual interviews
  - External stakeholder involvement adds credibility to the process

Reference: https://www.stern.nyu.edu/sites/default/files/assets/documents/NYUSternCSBSustainabilityMateriality_2019_0.pdf.

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ESG Materiality Process: Step 3

3 → Map and prioritize the issues

- All data collected from internal and external stakeholders is implemented into a model or framework (generally with a quantitative ranking component)
- Transformed into a quantitative score that can be used to map and prioritize issues
- Useful to make the mapping process quantitative but process and methods are not prescribed and exact → company specific
- This matrix is an example of a possible approach – organizations are not required to use it

Reference: https://www.globalreporting.org/how-to-use-the-gri-standards/questions-and-answers/pre-2021-gri-standards-system-faq/materiality-and-topic-boundary/.

ESG Materiality Process: Step 4

4 → Align the issues with management and business vision

- Present matrix of issues to key executives and managers for review for potential final changes
- Questions to ask:
  1. Is anything surprising? What has changed since the last assessment?
  2. Did we make any key assumptions or exclude any key stakeholders?
  3. What ESG data do we currently collect? What other data do we need to collect?
  4. How are we currently communicating our purpose and ESG objectives to stakeholders? Should we adjust/modify based on the assessment?
  5. How are our ESG objectives (including material topics) integrated with strategy and risk management?
  6. Can we currently assess the impact of ESG performance on economic performance?
  7. Do we currently use ESG data to inform internal management decision-making and is the board made aware of and involved from a governance perspective?

Reference: https://www.stern.nyu.edu/sites/default/files/assets/documents/NYUSternCSBSustainabilityMateriality_2019_0.pdf.

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ESG Materiality Process: Step 5

5 → Develop the strategy

- Next → begin the strategy development process:
  - Outline a roadmap for focusing on identified material issues including setting specific goals and milestones → be intentional with achievable goals
  - Identify gaps in processes and practices related to governance, planning, and risk management
  - Develop **KPIs** to track impact
  - Consider returning to the key stakeholder groups to present and discuss the matrix
- Revisit the materiality matrix every two years or other predetermined frequency
- Create an action plan for addressing risks and integrating sustainability into policies and processes
- Prioritize material topics based on the strategic importance to the business, importance to stakeholders, and the social, economic, and environmental impact of each topic in the value chain

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Reference: https://www.stern.nyu.edu/sites/default/files/assets/documents/NYUSternCSBSustainabilityMateriality_2019_0.pdf.

ESG Materiality Process: Step 6

6 → Put insights into action and report on progress

- Disclose information to report on progress → consider purpose, messaging, metrics, standards, and frameworks used
- Common platforms include proxy statements, CSR/ESG/sustainability reports, company websites → important to understand the common location for the company's industry as well as evolving stakeholder preferences
- Refer back to the materiality matrix, strategy, and provide update on key metrics and targets
- Consider including:
  - Narrative on targets missed, or goals not achieved
  - Testimonials from stakeholders on collaborations

Reference: https://www.stern.nyu.edu/sites/default/files/assets/documents/NYUSternCSBSustainabilityMateriality_2019_0.pdf and https://corpgov.law.harvard.edu/2021/12/15/the-corporate-directors-guide-to-esg/.

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Voluntary Reporting

Standards ---------→ Frameworks

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Voluntary Disclosure – Frameworks & Standards

	Primary Purpose	Audience	Standard or Framework?	Primary Focus
GRI	Helps companies understand what ESG and CSR factors it can measure and manage, and guidance how to do so	All stakeholders	Standard	Covers all ESG topics – includes universal, sector-specific and topic-specific standards
SASB	Help companies understand what ESG factors are material to their business, and should be disclosed to investors	Primarily investors	Standard	Financially material ESG topics – identifies subset of ESG issues most relevant to financial performance of 77 industry sectors
SBTi	Set and commit to science-based GHG reduction targets	All stakeholders	Standard	GHG targets
SBTN	Set and commit to nature-based GHG reduction targets	All stakeholders	Standard	Nature targets
UNGC/ SDGs	Help companies set ESG and CSR targets in service of the UN SDGs	All stakeholders	Framework	Covers universal Sustainable Development Goals (SDGs)
CDP	Global disclosure system for investors, companies, cities, states and regions to manage environmental impact – disclosures scored	Investors, companies, cities, states, regions	Framework	Environmental topics – GHG, water, Forests
TCFD	Help companies identify financial risks and opportunities related to climate change	Primarily investors	Framework	Climate-related financial risks
TNFD	Help companies report and act on nature-related risks	Primarily investors	Framework	Nature-related financial risks

Setting ESG Targets

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Technical Approach to ESG Metrics/Targets

Step 1: Establish a Baseline

- Develop a comprehensive baseline
- Determine what environmental impacts are material
- Use to inform target boundaries

Step 2: Identify Viable Mitigation Strategies

- Obtain Management/Internal Stakeholder Input
- Benchmark Peers
- Assess impacts of evolving environmental policies and regulations
- Research current/emerging technologies and best practices

Step 3: Assess Mitigation Strategies

- Determine technical feasibility, % reduction
- Estimate costs & rank alternative strategies based on $/unit (MT CO_2e, gallon water, ton waste)
- Assess timeframe for implementation – available now vs. emerging technologies

Step 4: Target Setting & Planning

Informed by Step 1, Step 2, & Step 3

Step 5: ESG Reporting & Disclosure

Informed by Steps 1-4

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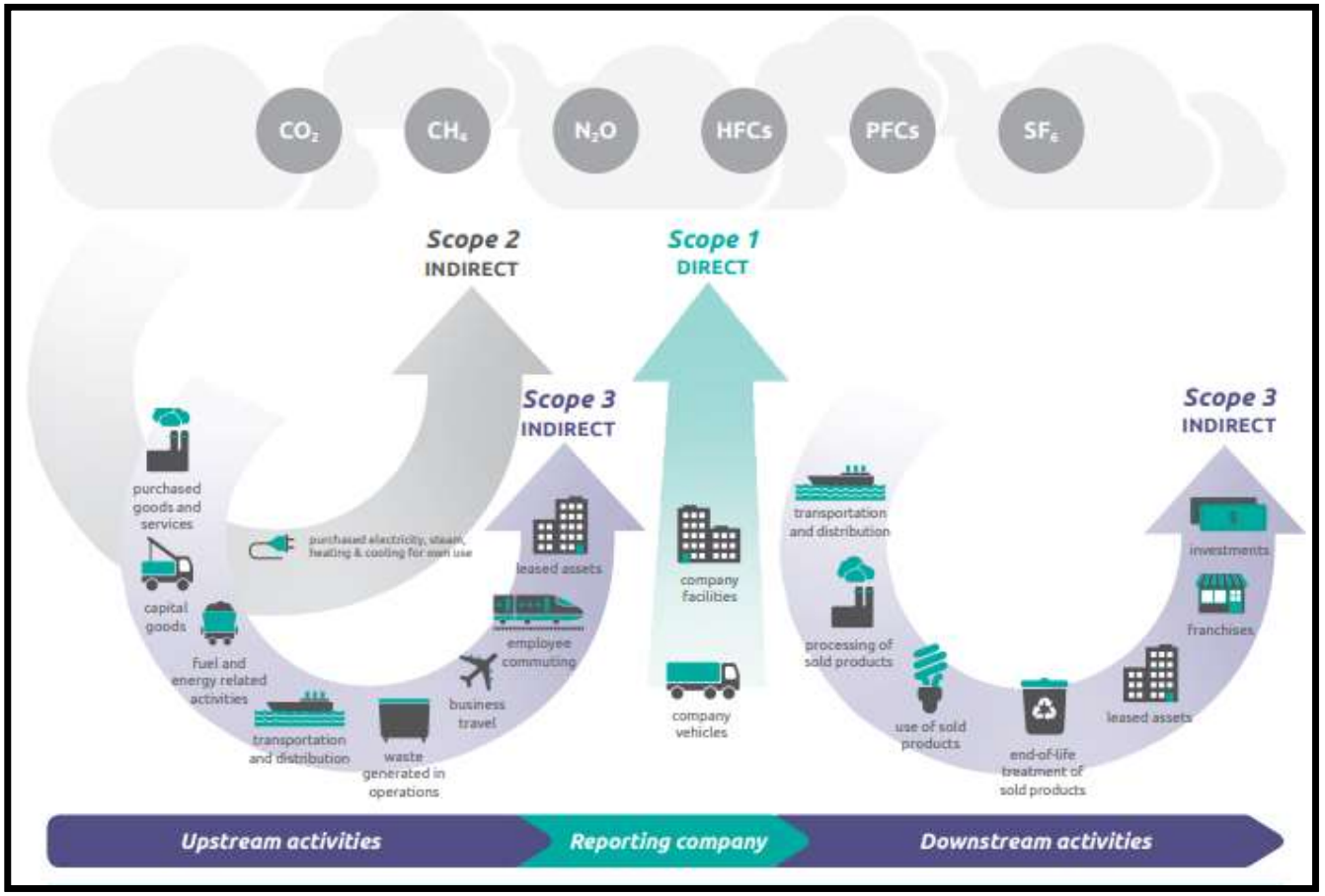
Example: GHG Reduction Targets



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

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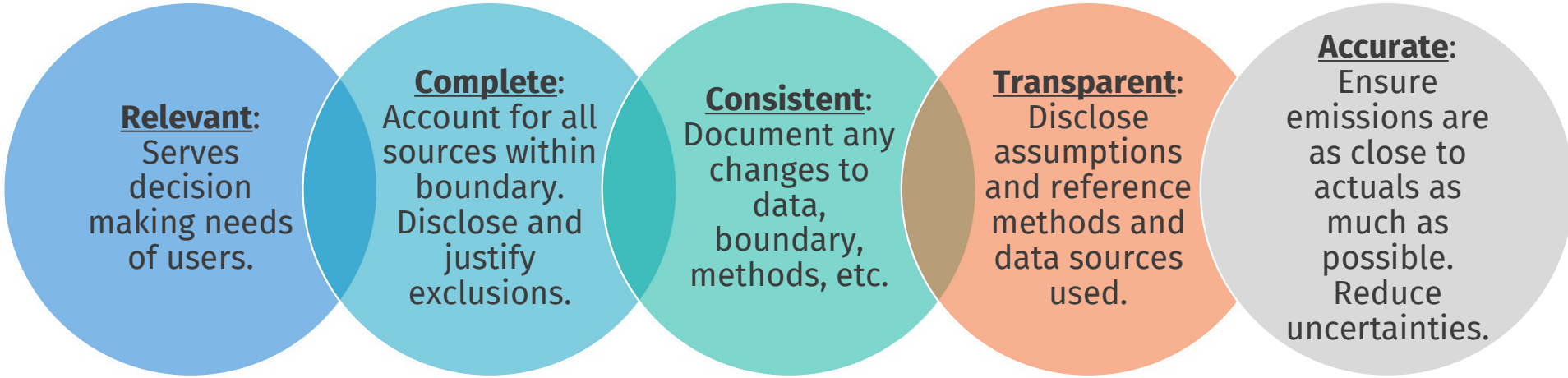
GHG Protocol Accounting & Reporting Principles

Principles

Implement



Disclose material/ relevant categories and activities.

Use results of screening assessment to justify.

Changes as move from secondary to primary data methods and include more activities.

Examples: use of proxy data to fill data gaps and excluding certain suppliers.

Expected to increase with time.

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

Scope 1 GHG Emissions

Direct Emissions within Organizational 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**
  - Physical or Chemical Manufacturing Processes
- **Fugitive Emissions**
  - Intentional or unintentional releases that do not pass through stack, vent, exhaust pipe, etc.
  - Examples: electric equipment SF_6, refrigerant leaks, gas pipeline or landfill CH_4

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

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Scope 2 GHG Emissions

Indirect Emissions

- Consequence of activities that occur within the organizational boundary
- Occur at point of generation by sources owned/controlled by another organization
- Reporting Options:
  - 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 (non-US → International Energy Agency)
  - Market-Based
    - Allows for use of source or supplier-specific emission rates associated with organization's energy purchases (e.g., purchase power agreements)
    - Emission factor based on contractual instruments for purchasing energy attributes
    - Recognizes use of energy supply changes to drive GHG reductions

Reference: https://www.epa.gov/egrid/download-data.

Scope 3 GHG Emissions

- Scope 3 reflects a company's "value-chain" emissions
- GHG Protocol
  - Incorporates 15 categories, 8 upstream and 7 downstream (see next slide)
  - *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*
  - *Technical Guidance for Calculating Scope 3 Emissions*
  - *Product Life Cycle Accounting and Reporting Standard*
- Inclusion of Scope 3 emissions is optional for voluntary reporting
  - Disregard of Scope 3 categories can affect an entity's score if disclosing to a platform which has a rating system, such as CDP
- Scope 3 emissions often largest contributor to emissions inventory
  - Results can be used to identify "hot spots", which become focus of reduction efforts

Scope 3 Emissions Categories

Upstream or downstream	*Scope 3 category*
Upstream scope 3 emissions	1. Purchased goods and services 2. Capital goods 3. Fuel- and energy-related activities (not included in scope 1 or scope 2) 4. Upstream transportation and distribution 5. Waste generated in operations 6. Business travel 7. Employee commuting 8. Upstream leased assets
Downstream scope 3 emissions	9. Downstream transportation and distribution 10. Processing of sold products 11. Use of sold products 12. End-of-life treatment of sold products 13. Downstream leased assets 14. Franchises 15. Investments

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

Steps in Calculating & Managing GHG Emissions Inventory

1. Select Baseline Year
   - Identify Sources (Scope 1, 2, 3)
2. Evaluate Calculation Methods
   - Select Pollutants, Emission Factors, & GWP
3. Collect Activity Data
4. Perform Calculations
   - Assess Significance
5. Compile Results/Roll-Up to Corporate Level

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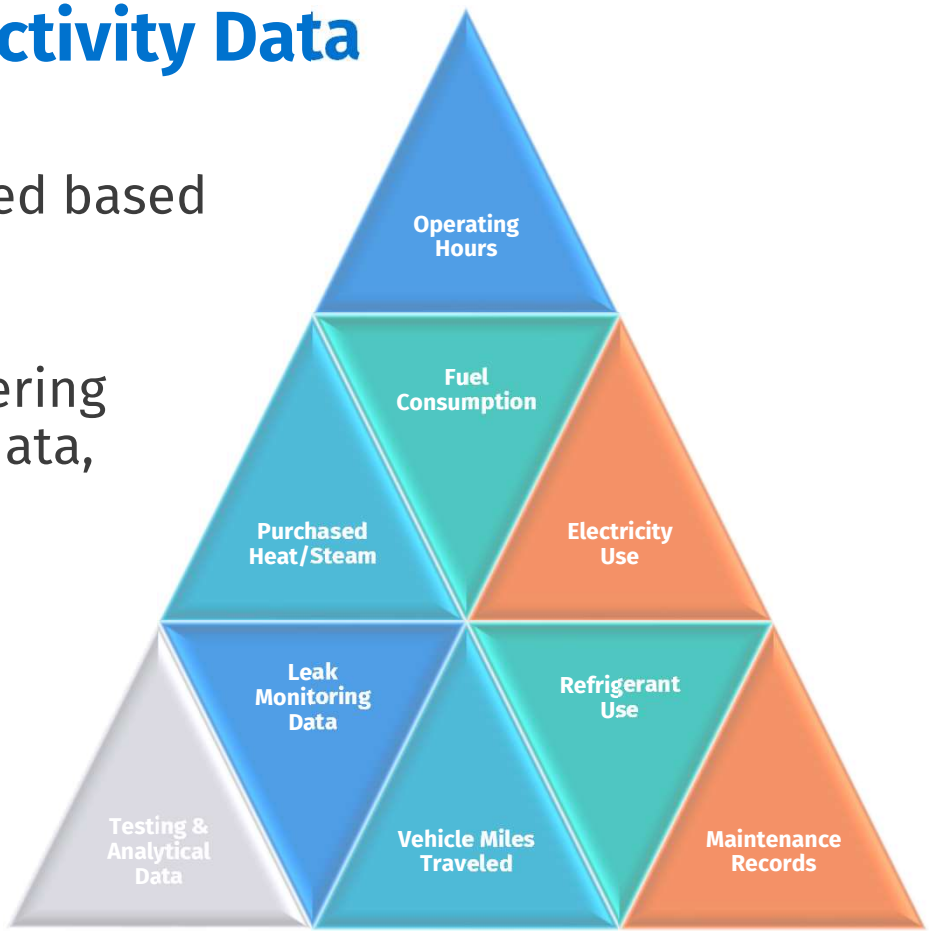
Collecting GHG-Related Activity Data

- Determine all activity data needed based on calculation methods selected
- Records may be based on direct measurement/metering, engineering estimates, sampling/analytical data, purchasing records, etc.
- Plan ahead! This takes time and resources



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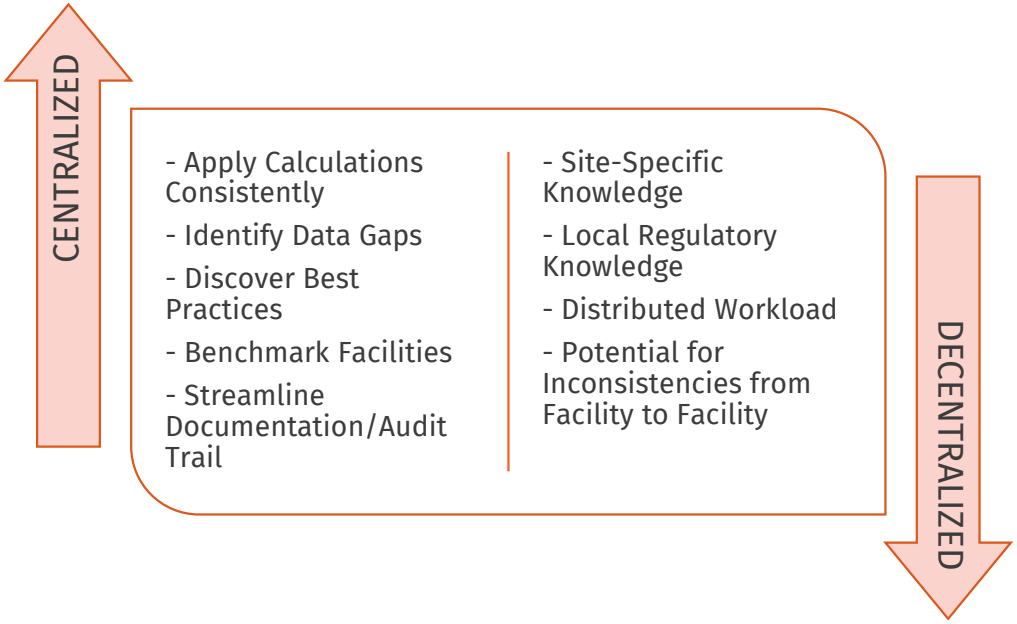
Compile Results / Roll-Up

- Two general approaches (not mutually exclusive):

1. **Centralized:** individual sites provide activity data to corporate for emission calculations

2. **Decentralized:** individual sites collect data and perform calculations and provide results to corporate for compilation



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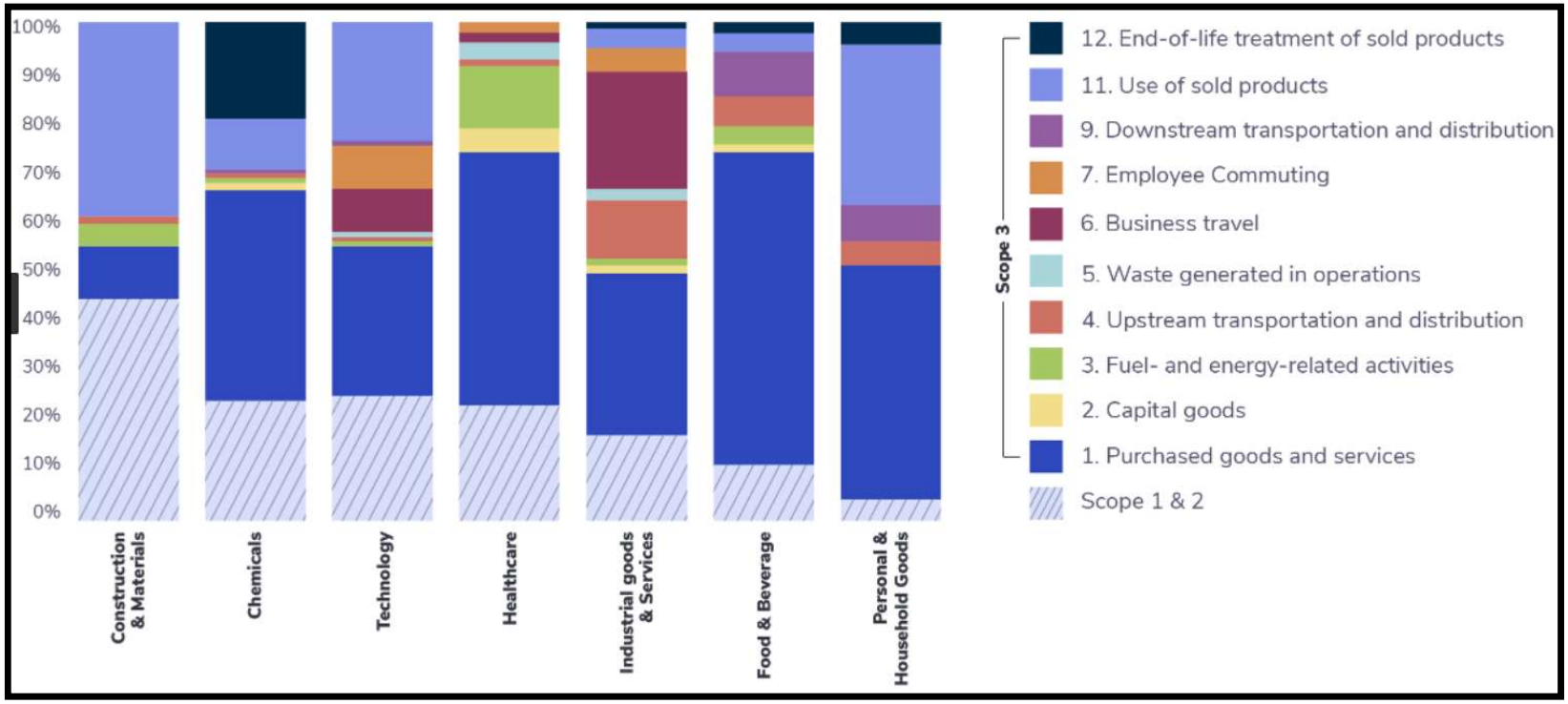
GHG Emissions Impact of Value Chain



Reference: https://envizi.com/guide-to-scope-3-emissions-reporting/

GHG Emissions Accounting: Best Practices

- Adequately plan for data collection & calculation needs (internal & external resources)
- Develop company-specific protocol to ensure **consistency** across facilities, business lines, geographies, etc.
- Look at all scopes and sources (at least initially) to evaluate all potential risks and opportunities
- Integrate with existing systems, reporting programs, tools & processes to the extent possible to minimize burden and disparities in reported data
- **Standardization** is key to reducing risk of errors and inconsistencies in reporting practices
- **Documentation** is key for transparency and to establish an audit trail (especially if 3rd party verification is desired)

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Setting GHG Targets: What is a Science-Based Target?

- Considered science-based if targets **align with the latest science in support of the goals of the Paris Agreement**
  - 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
- Targets specify how much reduction a company needs to make, and by when, to support the achievement of these goals
- Ensure targets do not conflict with or prevent economic growth

SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

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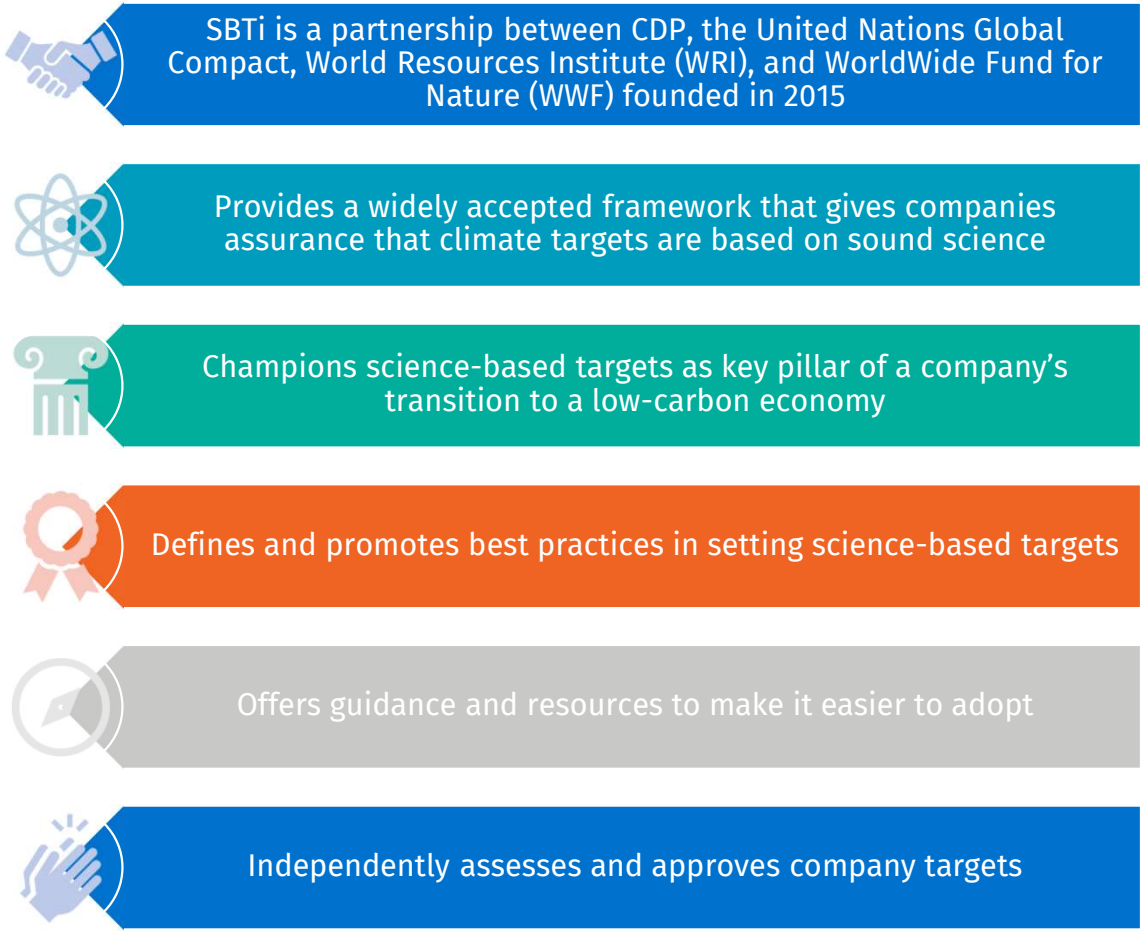
What is the Science-Based Target Initiative (SBTi)?



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SBTi's 5-Step Process

COMMIT

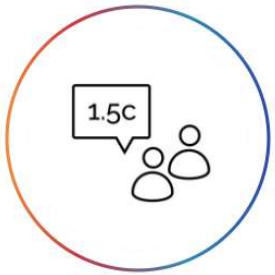
Submit a letter establishing your intent to set a science-based target

DEVELOP

Work on an emissions reduction target in line with the SBTi's criteria

SUBMIT

Present your target to the SBTi for official validation



COMMUNICATE

Announce your target and inform your stakeholders

DISCLOSE

Report company-wide emissions and progress against targets on an annual basis

Send a Commitment Letter → then have 24 months to submit target.

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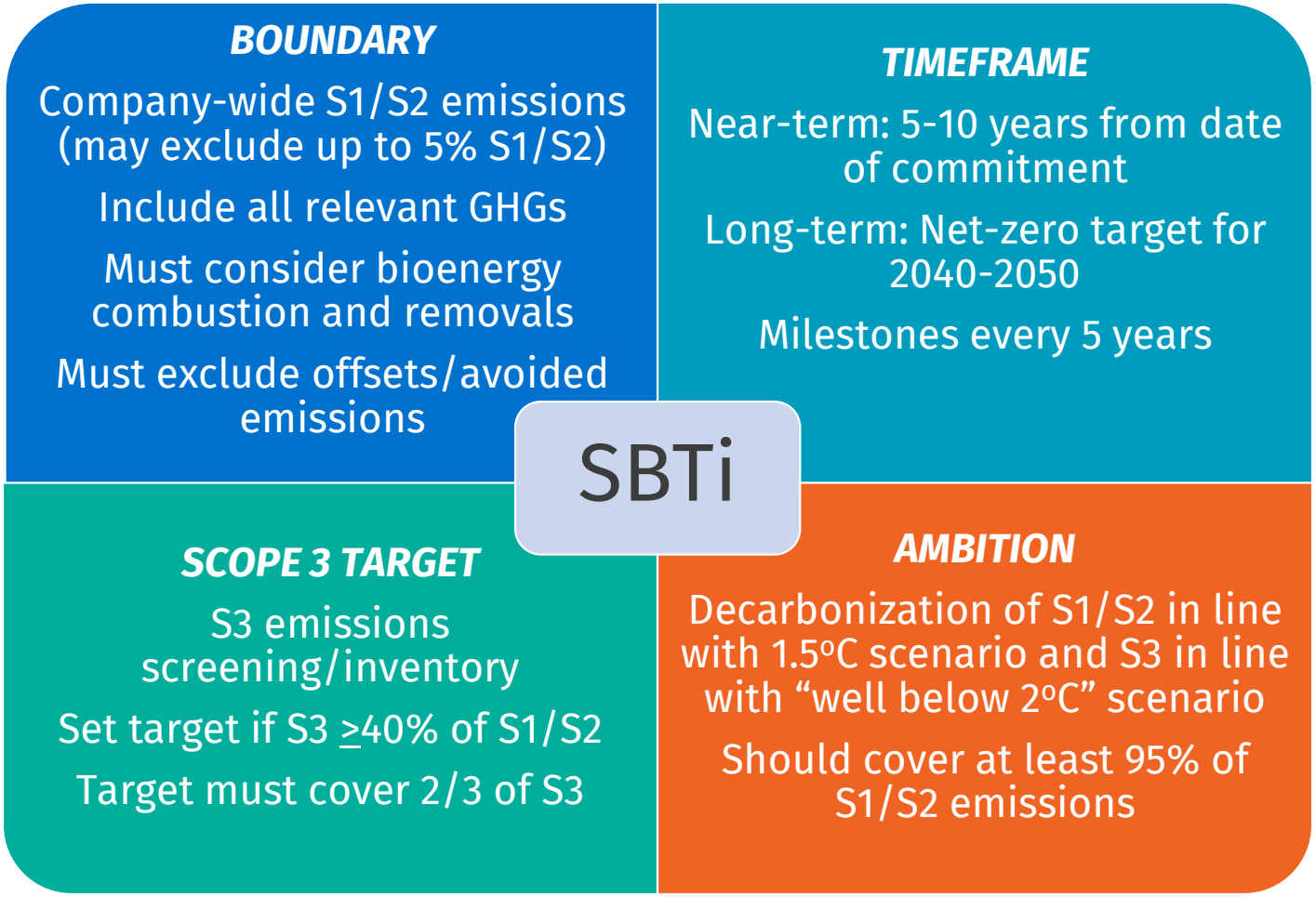
Science-Based Targets Initiative for GHGs

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



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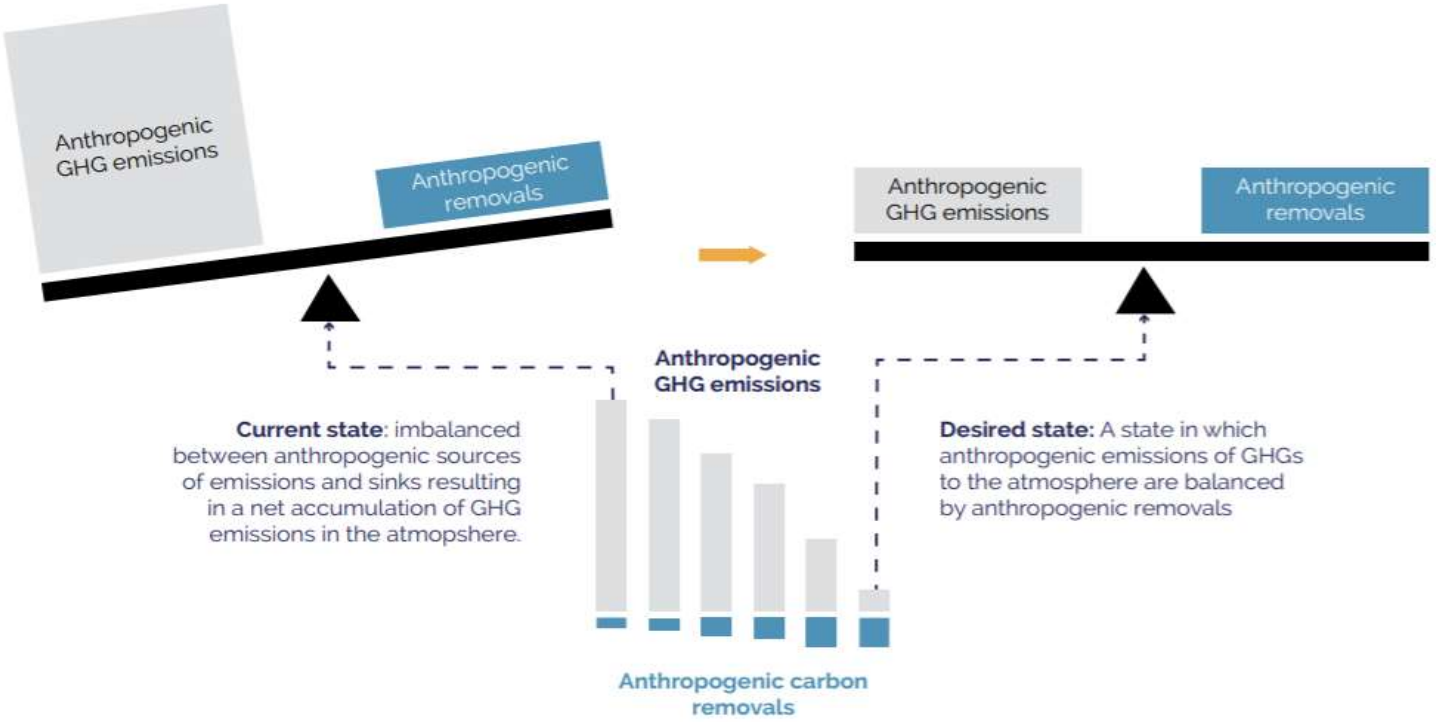
Source: *https://sciencebasedtargets.org/resources/files/SBTi-Corporate-Manual.pdf*

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 does “Net-Zero” mean?



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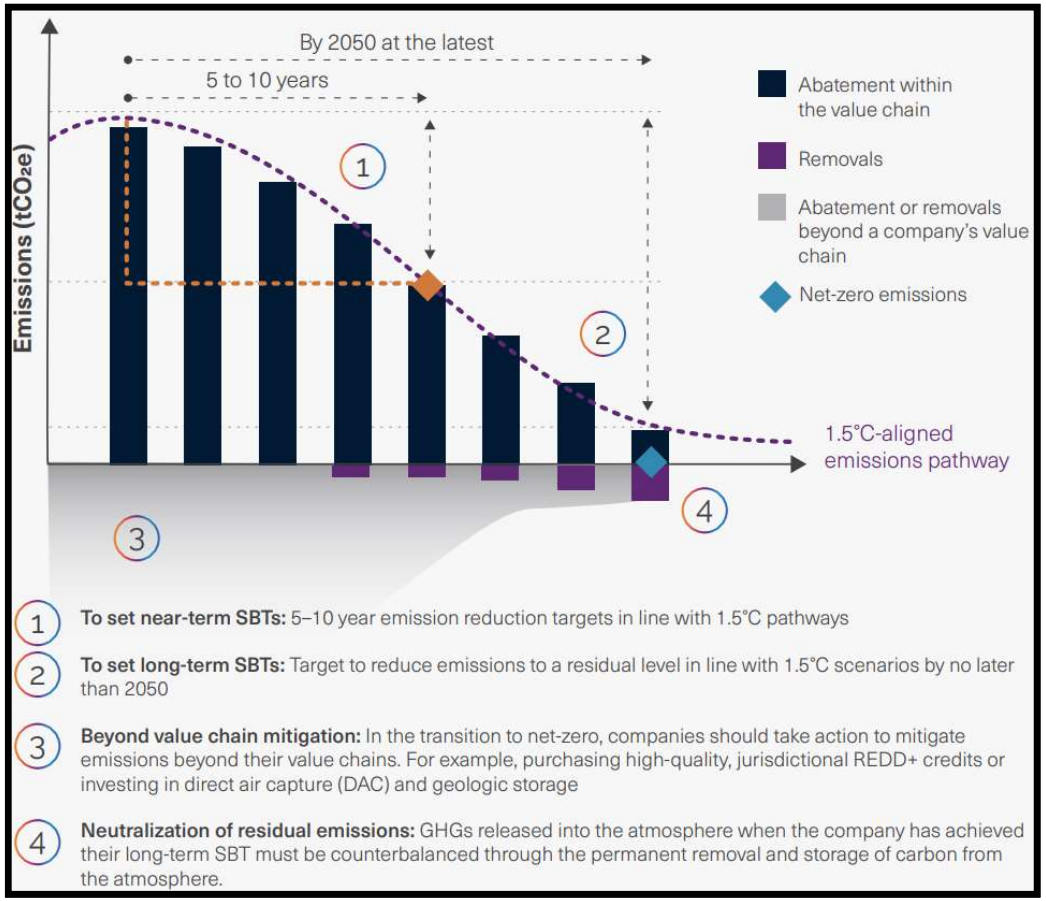
Source: *https://sciencebasedtargets.org/resources/legacy/2020/09/foundations-for-net-zero-full-paper.pdf*

Key Elements of SBTi Net-Zero Standard



- Expectation is to focus on abatement in near-term; vast majority of reductions should happen here
- Removals (CDR, CCS, Carbon Sinks) are only used to neutralize remaining unabated emissions

Reference: https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf

SBTi Net-Zero Pathways/Guidance Under Development

Sector	Status	Notes on Expected Timing
Aluminum	scoping phase	
Apparel and Footwear	finalized	
Aviation	in development	Version 1.0 issued August 2021
Buildings	in development	Expected by end of 2023
Chemicals	in development	Expected early 2024
Cement	finalized	
Financial Institutions	finalized	
Forest, Land & Agriculture	finalized	
Information & Communication Technology	finalized	
Maritime	finalized	
Oil & Gas	in development	Currently forming EAG
Power	finalized	
Steel	in development	Draft for Public Consultation issued November 2022
Transport	in development	

Reference: https://sciencebasedtargets.org/sectors

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Value Chain Emissions – Reducing Scope 3 Emissions

Reference: SBTi - https://sciencebasedtargets.org/resources/files/SBT_Value_Chain_Report-1.pdf

SBTi Supplier Engagement Framework

Stage 1 – Develop a supply chain engagement strategy

- Step 1: Identify (suppliers to engage)
- Step 2: Formulate (the strategy)

Stage 2 – Implement the supply chain engagement strategy

- Step 3: Communicate
- Step 4: Collaborate
- Step 5: Support
- Step 6: Monitor
- Step 7: Reinforce

Reference: SBTi - https://sciencebasedtargets.org/resources/files/SBT_Value_Chain_Report-1.pdf

Data Management Strategies

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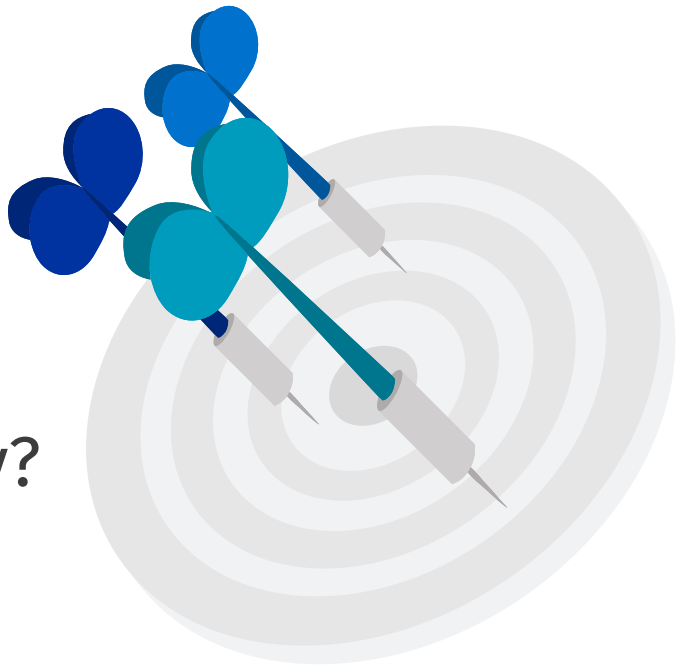
Current ESG Data Collection – Questions to Ask

- What is the original source of data needed for ESG purposes?
- Who owns each data set or source system?
- When is the data collected today?
- What is the granularity of data today?
- What unit of measure is associated with data in the source system?



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Future ESG Data Collection – Questions to Ask

- How often do we want to gather each data set in the future?
- What level of granularity do we need for each data set in order to drive change?
- What other teams use the same data and is there overlap in needs/use of the data?
- How do we automate data collection via integrations or use of surveys/data collection forms?
- How do we want to handle estimated data (i.e., some utility data)
- What outputs do we need for reporting?
- What analytics do we want for program management?

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Challenges with Excel-Based Methods for ESG Tracking

Data Collection Breadth & Depth

Broad spectrum of data to be collected, many different sources of data, and granularity and frequency with which data is needed for ESG purposes is not realistic with manual processes

Data Quality

Data integrity can be compromised by limited time and push to send in data, data entry errors

Resources

ESG teams are not typically staffed to handle massive data collection efforts and their time is better spent trying to be proactive and implement strategic change

Organizational & Operational Change

Difficult to keep up with continuous organizational and operational changes which are inevitable in business and present risk to ESG programs

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How Digital Tools Help Manage ESG Programs

DATA QUALITY ASSURANCE CHECKS

Automated quality checks of data to flag anomalies and address issues proactively

AUTOMATE DATA COLLECTION

Integrations and automated data pulls/pushes from existing systems eliminates duplicative data collection efforts and reduces risk of errors

DATA ANALYTICS

Advanced data analytics to provide meaningful and real-time insights into progress towards ESG related targets and goals

STANDARIZATION

Best practices for implementing digital tools encourages standardization which ultimately reduces organizational risk

VERIFICATION

Digital tools support standardization of data and ability to more easily verify data and audit ESG programs

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ESG Digital Management Best Practices

Integrate with Data Source Systems

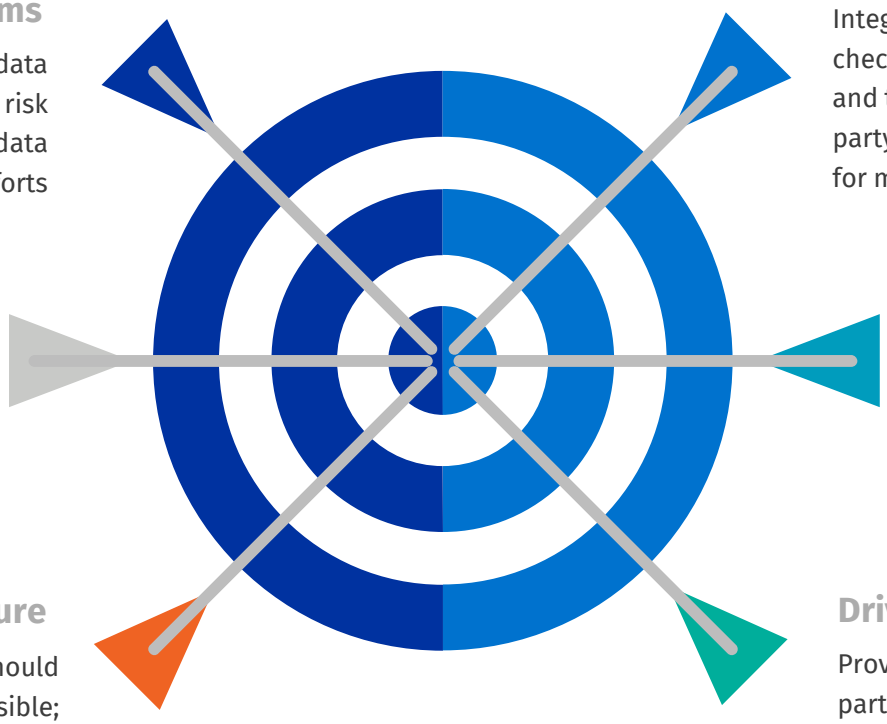
Where possible, integrating with data source systems will result in lowest risk of data entry errors and lowers data collection efforts

Data Granularity

Aim to balance volume of data and troubleshooting/validation efforts associated with large quantities of data with granularity that allows for identification of areas for improvement

Units of Measure

Units of measure for data entry should align with source system when possible; leverage base unit of measure conversion capabilities within software



Validation & Verification Checks

Integrate validation and verification checks into digital tools to improve value and to be prepared for audits and third-party verification efforts. See next slide for more details

Consider Reporting & Data Analytics

Consider data analytics and reporting needs (today and expected future needs) upfront to ensure comprehensive data set is gathered. Data points often overlooked include production totals and accounting data for intensity analytics

Drive Data Ownership

Provide site level operators and leaders to participate in data validation processes and provide with dashboards & reports specific to the site to help drive ownership over data

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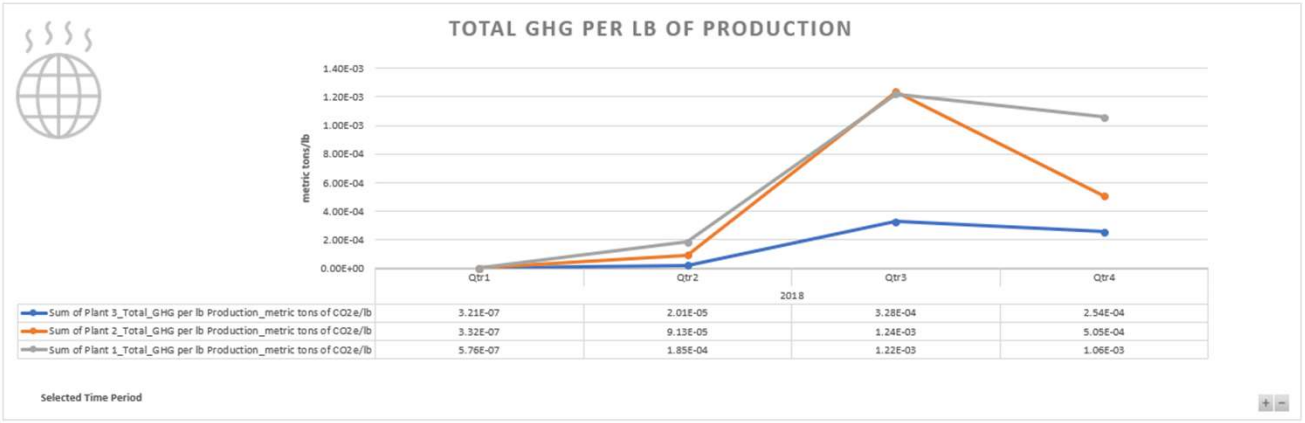
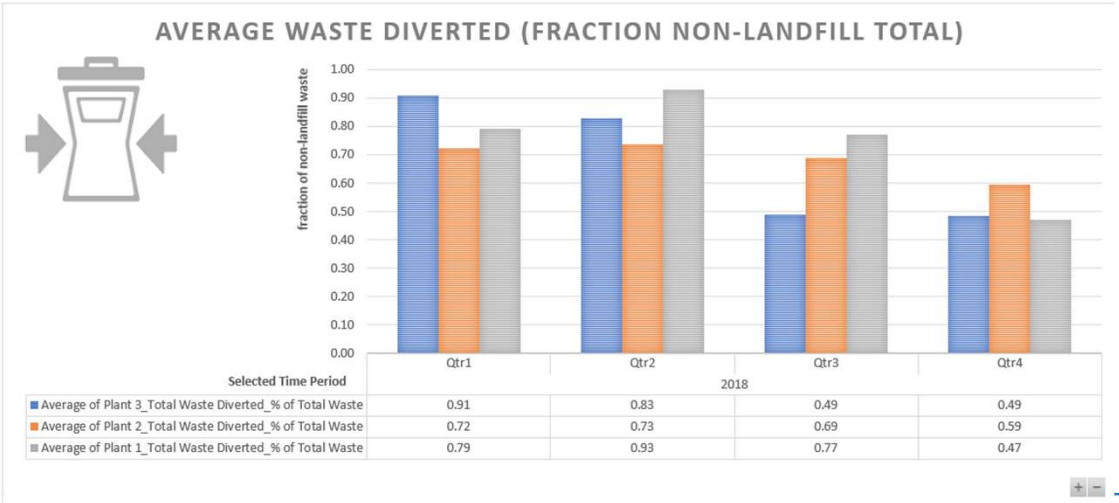
Data Analytics





Common Data Analytics Tools:

- Microsoft PowerBI
- Microsoft Excel
- QlikSense
- Tableau
- Spotfire
- Pi Vision

Many software vendors also have their own analytics tools built into the platform.

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Questions | Discussion

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Brent Goetz has been with Covestro, LLC since 2019, where he currently serves as the HSEQ Manager at the Newark Compounding facility, which manufactures engineered plastic resins. Mr. Goetz is responsible for all aspects of environmental compliance, quality, and leads the Newark Compounding Site Sustainability Team. Additionally, Mr. Goetz leads Operation Clean Sweep Blue, a campaign focused on helping industry achieve zero plastic resin loss, for all of Covestro, LLC.

Mr. Goetz has over 19 years of environmental experience, including 6 years of environmental consulting where he worked on a variety of projects including brownfield remediation, environmental permitting, and to the development of sustainability plans. Additionally, Mr. Goetz spent 10 years working at the Ohio EPA where he worked in the Division of Materials and Waste Management in both the solid waste and hazardous waste programs, the Division of Environmental Response and Revitalization where he worked in the Voluntary Action Program, and the Office of Compliance Assistance and Pollution Prevention where he served as the supervisor for the Compliance Assistance Program.

Mr. Goetz earned his bachelor's degree in environmental science from the University of Toledo. He is a Registered Environmental Health Specialist in the State of Ohio and an Institute for Sustainable Infrastructure, Envision Sustainability Professional.

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After graduating from Ohio State University with a degree in chemical engineering, Maren Seibold began her career at Trinity Consultants. For the past 17 years, she has conducted multimedia compliance audits, prepared regulatory reviews and permit applications, developed emission inventories, designed and implemented compliance plans, and assisted facilities with greenhouse gas (GHG) and refrigerant management. She has also assisted with the development of sustainability programs and associated voluntary reporting. She has worked in a variety of industries including the distilled beverages, chemical, pharmaceutical, secondary aluminum, and electric utility sectors.