Navigating Net Zero Commitments

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Topic Overview

- **Current Drivers**
- **Setting Corporate GHG Targets**
  - Establishing a Baseline
  - Assessing Transition to Low Carbon Economy
  - Identifying/Assessing Mitigation Strategies
  - Science-Based Targets
  - What is Net Zero
- **Pathways to Achieving Targets**

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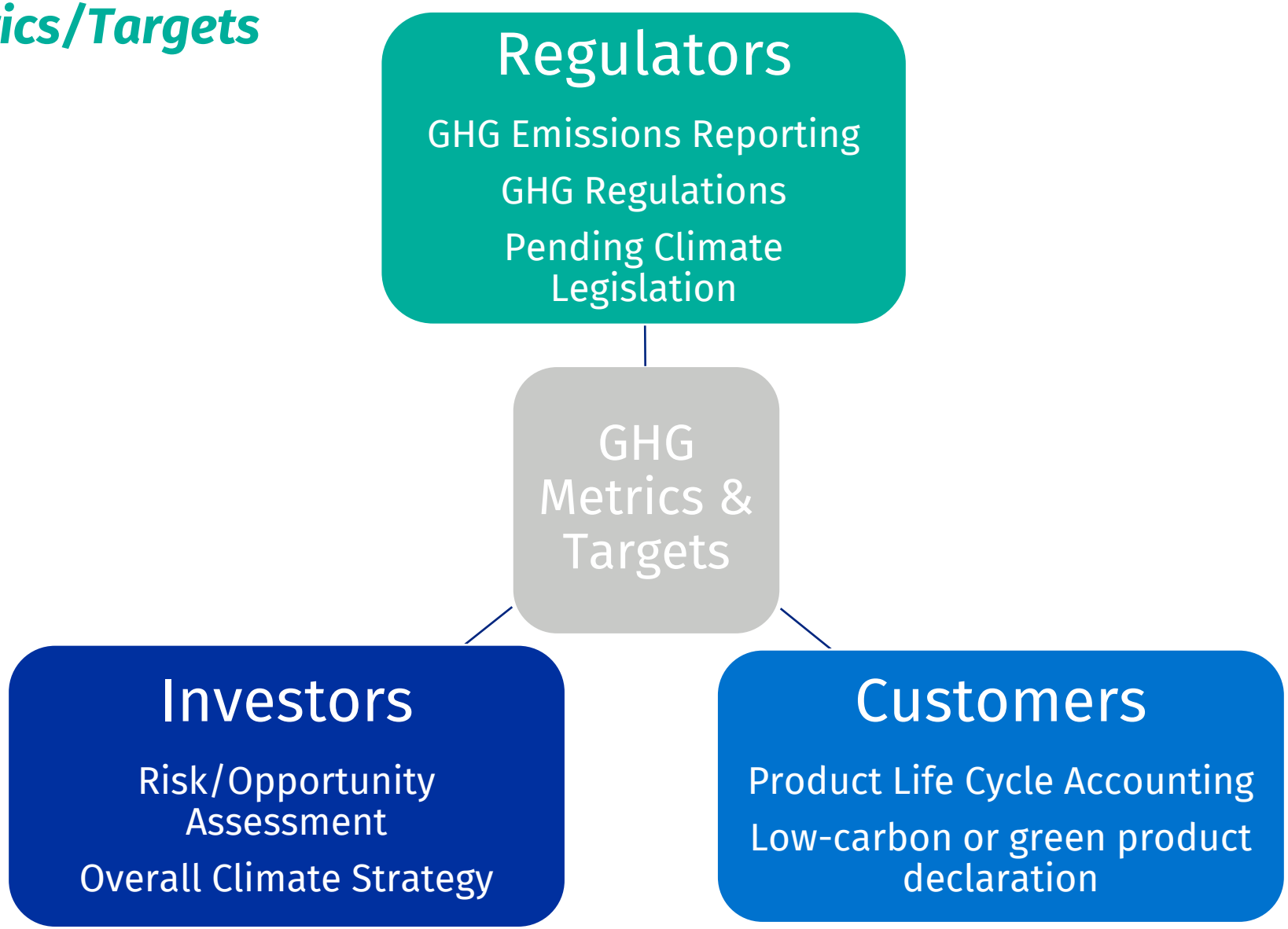
Drivers for GHG Metrics/Targets Reporting

Metrics/Targets



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Why Set GHG Reduction Targets?

- Assess and manage relevant climate-related risks & opportunities
- Stimulate innovation and navigate costs associated with transition to low-carbon economy
- Prepare for future regulations and policy shifts
- Demonstrate leadership and corporate responsibility
- Participate in voluntary reporting programs

The number of companies making climate-neutral or net zero pledges has doubled during the COVID-19 pandemic

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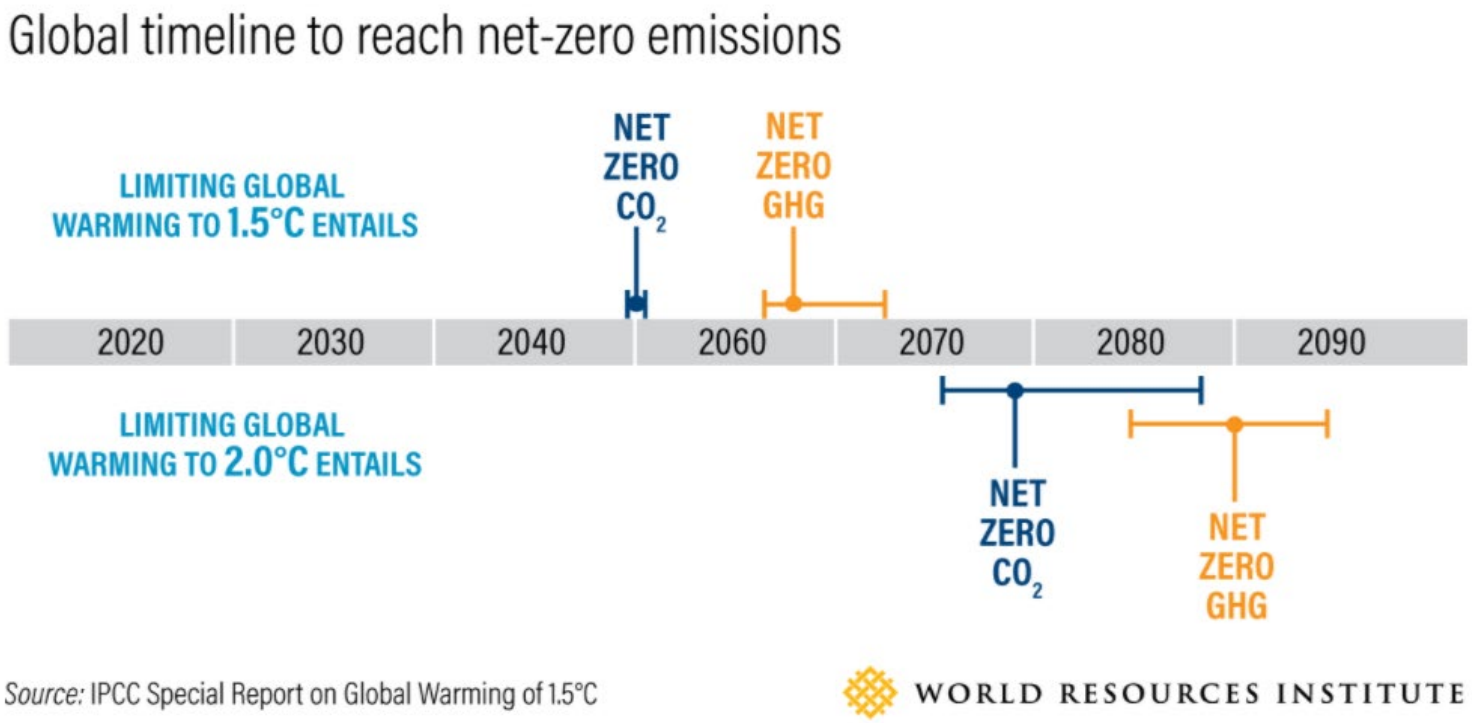
Global GHG Reduction Targets

- Paris Agreement Temperature Goal: Limit warming to below 2ºC, ideally below 1.5 ºC
- Timeline to achieve:



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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 CO_2 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

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Setting Corporate GHG Targets

Step 1: Establish a Baseline

- Develop comprehensive GHG Inventory
- Determine what sources and GHG are material
- Use to inform target boundaries

Step 2: Assess Impacts of Low Carbon Economy

- Obtain Management/Internal Stakeholder Input
- Benchmark Peers
- Assess impacts of evolving climate policies and regulations
- Research avenues to decarbonization

Step 3: Assess Mitigation Strategies

- Determine technical feasibility, % reduction
- Estimate costs & rank alternative strategies based on $/MT CO_2e
- Assess Timeframe for implementation – available now vs. emerging technologies

Step 4: GHG Target Setting

Informed by Step 1, Step 2 & Step 3

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Step 1: Baseline Emissions

Current Status of GHG Accounting at Many Facilities

- Regulatory reporting aimed at developing future regulation – cap and trade or carbon tax
- 40 CFR Part 98 : GHG Mandatory Reporting Rule (MRR)
  - MRR Reporting began in 2010/2011
  - Limited scope of emission sources (e.g., 25,000 MT CO_2e threshold for most subparts, all direct sources not covered)
  - Outdated GWP (IPCC, AR4)
  - Outdated emission factors for certain sectors
  - Potentially limited accuracy (e.g., Subpart C options)

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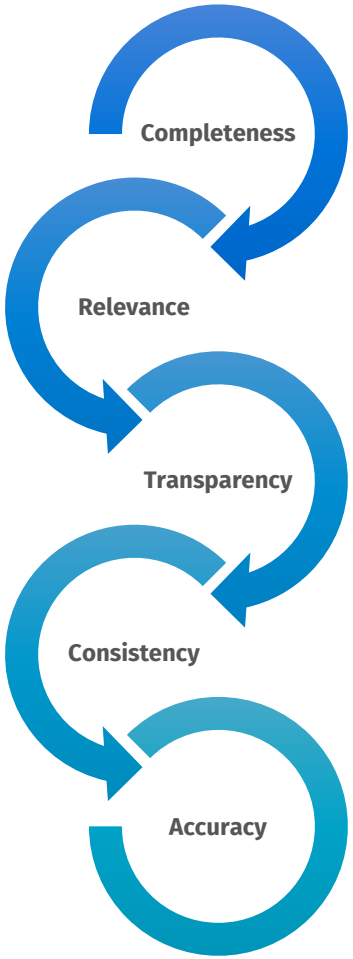
Step 1: Baseline Emissions

Best Practices



- Initial baseline 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
- Develop written inventory protocol document to establish:
  - Baseline boundaries & timeframe
  - Materiality & significance thresholds
  - Calculation methodology & key assumptions
  - Target boundaries & time horizon(s)

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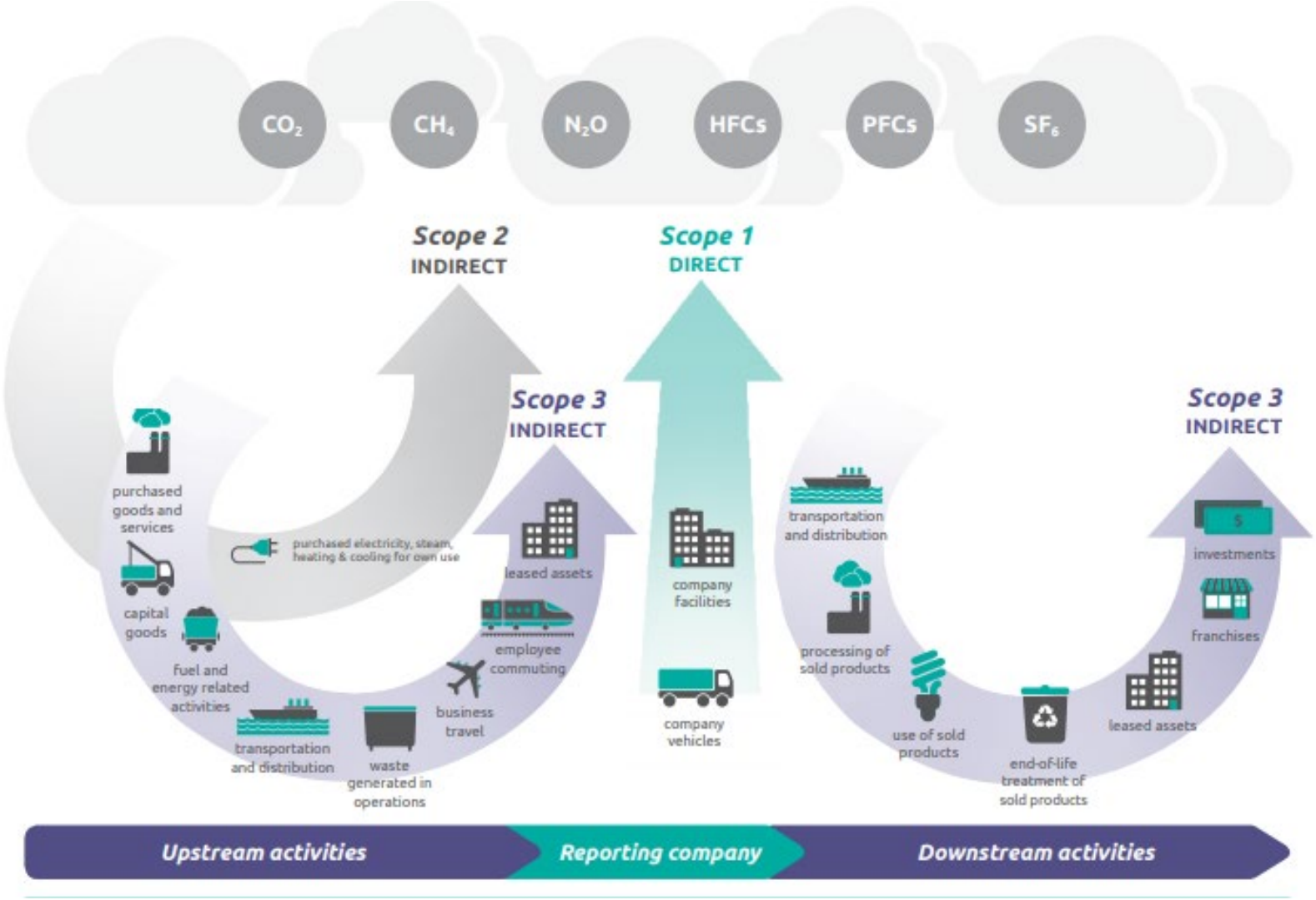
Step 1: Baseline Emissions

GHG Protocol Scopes & Emissions Across the Value Chain



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

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Step 2: Assess Impacts of Low Carbon Economy

Overview

- Obtain Management Support/Direction
  - Level of aspiration
  - Financial commitment
- Interview Internal Stakeholders
  - Business priorities (near and long term)
  - Anticipated market changes/business viability in low carbon economy
  - Current mitigation strategies
- Review Current and Evolving Policies/Regulations
  - Company-specific impacts
- Benchmark Industry Peers
  - Competitor practices and targets
- Review Published Decarbonization Studies
  - Impacts related low carbon economy transition

Step 2: Assess Impacts of Low-Carbon Economy

Key Considerations for Industry

- Increased energy efficiency
  - Producing same products with less energy
  - Better insulation, reuse of waste heat, etc.
- Electrification to greatest extent possible
  - Assumes greening of electric grid
  - Barriers: cost and infrastructure challenges
- Biomass for bio-based products and energy
- CO_2 capture, utilization and storage
- Hydrogen for carbon-free energy and decarbonization of certain processes
- Reduced non-CO_2 GHG emissions (methane, SF6, HFCs)
- Enhanced Land Sinks

Step 3: Assess Mitigation Strategies

Overview

- Identify mitigation strategies for each emissions source identified in inventory
- For each identified strategy, assess:
  - Technical feasibility
  - Economic viability – consider initial and ongoing costs
  - Current status of research, development, and deployment of emerging technologies
- Develop matrix of baseline emissions by source category and information on viable mitigation strategies associated with each source category, including:
  - Estimated timeframe for implementation
  - Estimated percent GHG reduction achievable
  - Estimated cost ($/ton CO_2e reduced) for competing strategies

Step 3: Assess Mitigation Strategies

Basic 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

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Step 3: Assess Mitigation Strategies

Offsets & Credits

- Offsets are discrete GHG reductions used to compensate for (i.e., offset) GHG emissions elsewhere
- Targets referred to as “carbon-neutral” or “climate-neutral” generally refer to practice of balancing a company’s emissions with equivalent amount of offsets or credits
- Reduction/Avoidance should make up the largest portion of your climate strategy, but you will likely still have residual carbon
- Short-term goals often rely on compensation/offsets to provide more time for a company to employ strategies for long-term abatement of emissions

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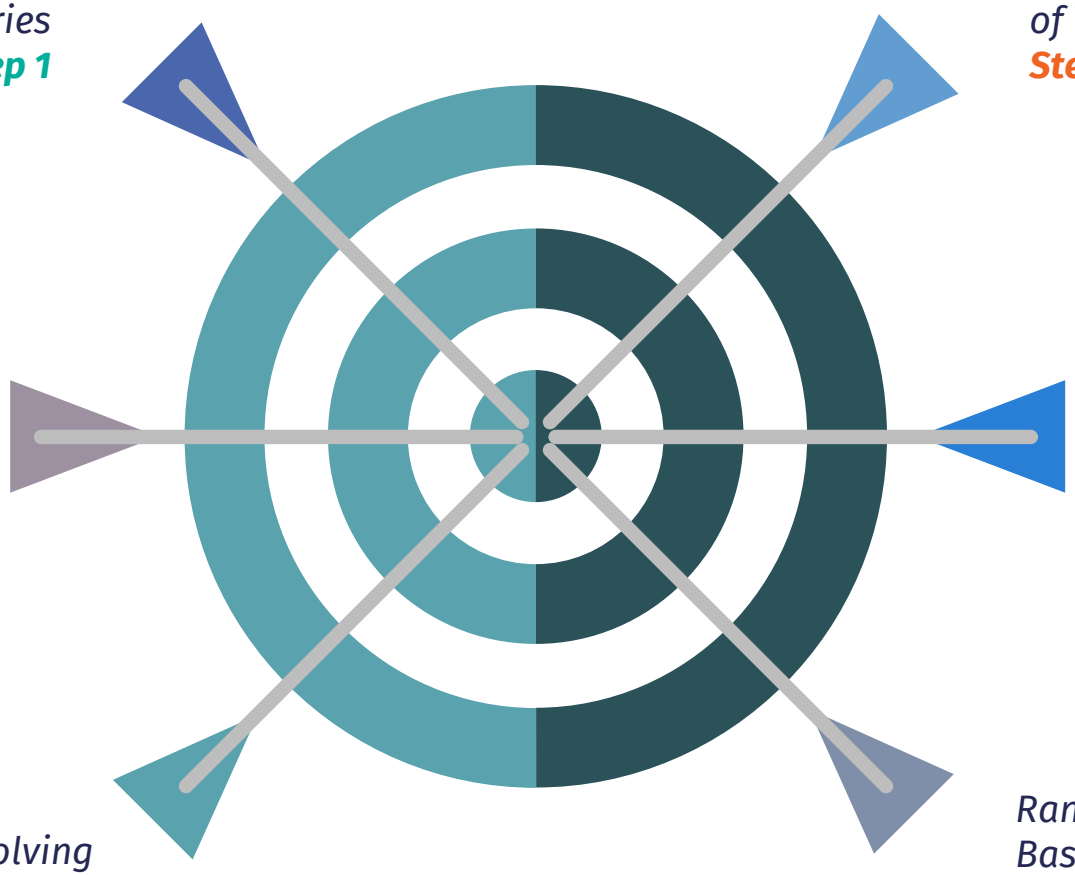
Step 4: GHG Target Setting

Overview

Material Emission Sources & Target Boundaries
Step 1

Timeframe for Implementation of Viable Mitigation Strategies
Step 3



Peer Benchmarking & Management/ Stakeholder Insights
Step 2

% Reduction Achieved by Identified Mitigation Strategies
Step 3

Impacts of Evolving Climate Policies & Regulations
Step 2

Rank alternative Technologies Based on MT/CO_2e
Step 3

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Step 4: GHG Target Setting

Form of Target

- Targets *should*:
  - Include a base year and a target year
  - Describe the boundaries included (global operations, domestic operating facilities, Scope 1 & 2, etc.)
  - Be science-based
  - Set a target level with a clearly defined basis:
    - Absolute based (e.g., “reduce GHG emissions by 25% over 2020 levels by 2030”)
    - Intensity based (e.g., “reduce GHG emissions per ton of product below 1% by 2030”)
- Targets can:
  - Have both a long-term aspiration goal as well as short-term/intermediate targets
  - Be multi-faceted (e.g., separate goals for different core businesses) and have an industry- or company-specific focus
  - Ultimately be to attain “Net Zero”

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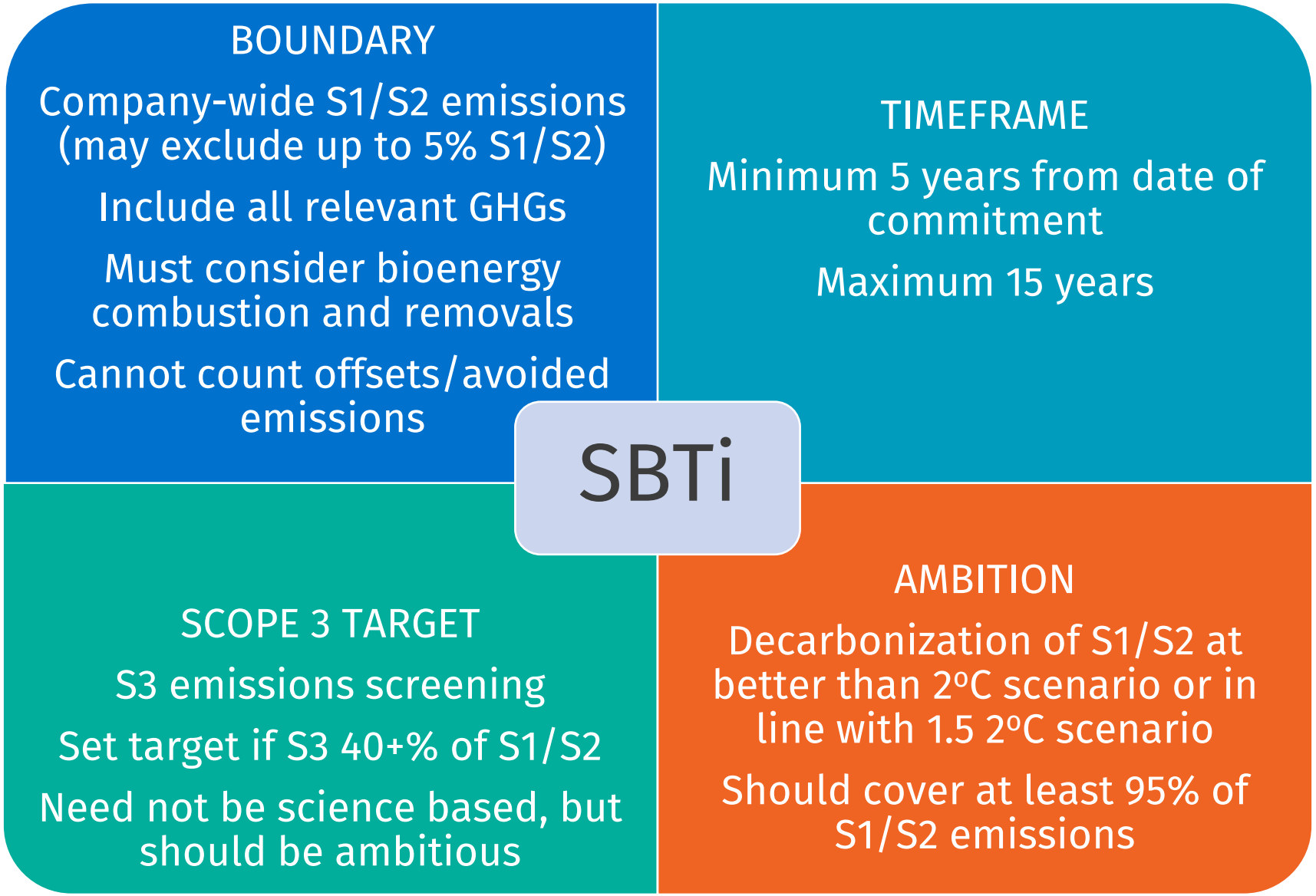
Step 4: GHG Target Setting

SBTi Overview



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

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Step 4: GHG Target Setting

SBTi Target-Setting Approaches

- Absolute Emissions Contraction:
  - % 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 Decarbonization Approach (SDA):
  - Global carbon budget is divided by sector
  - SDA sets intensity targets (i.e., tonne CO_2e per tonne of product produced) for given sector; recommended for energy-intensive sectors
- Economic Intensity Contraction:
  - Carbon budget equated to global GDP
  - Company's share of emissions determined by gross profit ; target is intensity reduction of tCO_2e/$ value added

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

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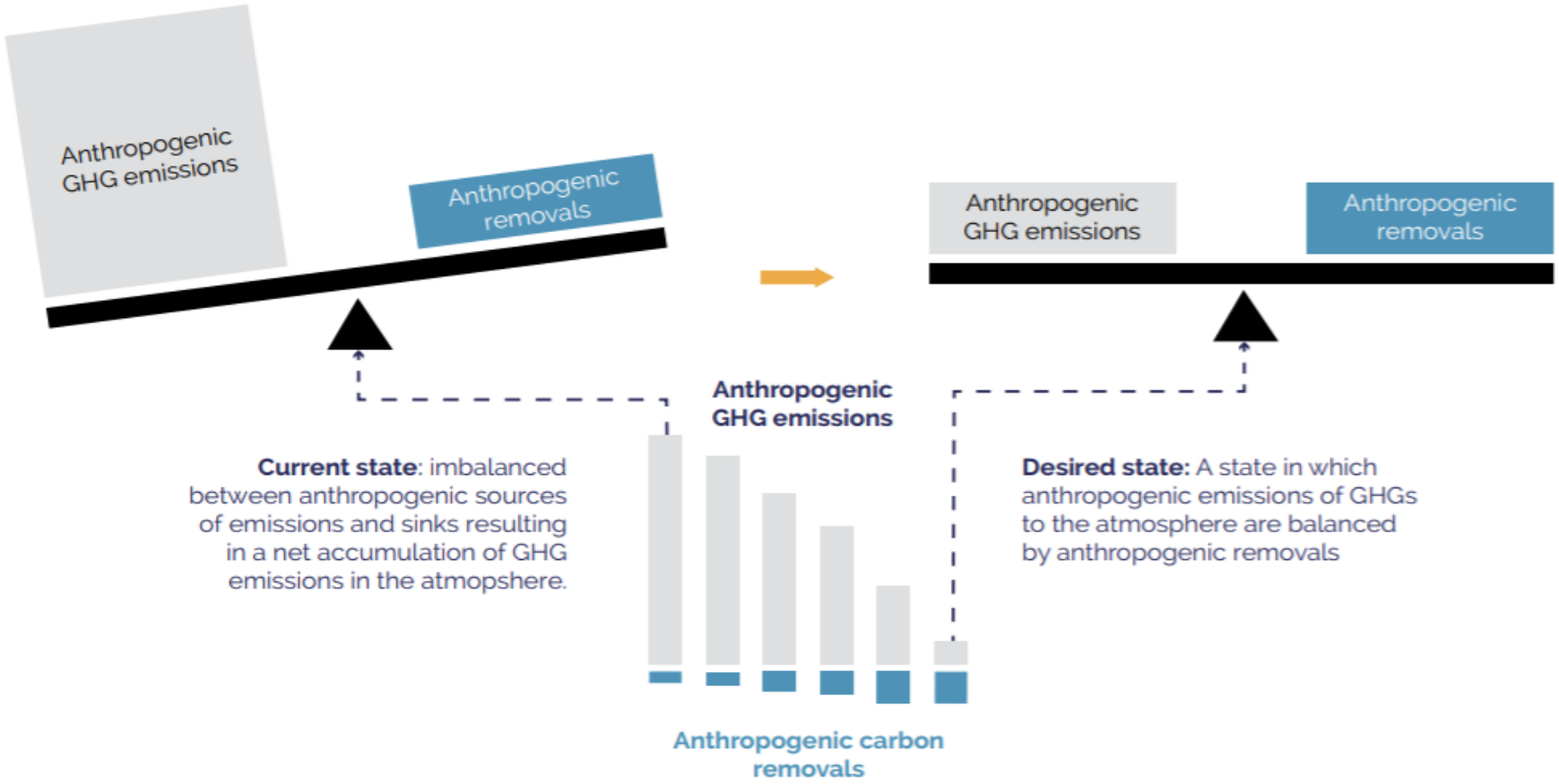
Step 4: GHG Target Setting

What is Net Zero?



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

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Setting a Corporate GHG Reduction Target

Net Zero Targets - Areas for further development

- CDP/SBTi working to develop standard practice for setting corporate net zero goals
- Areas for further development:
  - Standard criteria for setting science-based net-zero target in corporate sector;
  - Validation protocol; and
  - Detailed guidance for setting targets and making credible claims

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

Pathways to Achieving Targets

- Publicize commitment through formal disclosure
- Establish senior level management ownership & accountability
- Commit to capital expenditures
- Enhance monitoring practices
- Increase frequency & scope of emissions assessments
- Carry out routine performance checks as well as internal/external communications of status
- Update/Revise Targets as needed
- Establish internal carbon pricing

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Questions?

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