

# Welcome

● We will begin shortly...

## Introduction to Carbon-related Standards and Frameworks 碳排放有关的国际准则和框架介绍



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Partner  
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17 March 2022

*The business of sustainability*



# House rules



We encourage active participation. You can post your questions at any time using the Q&A function at the bottom of your screen.

We will discuss the questions by the end of presentation.



This webinar is being recorded and will only be used for ERM internal purposes.

The presentation material will be available after the completion of this webinar.



We have enabled the English transcript feature.

Simply click the Live Transcript button at the bottom of your screen and select "Show Subtitle."

## 1 Basics of Climate Change / 气候变化与碳排放、碳中和、碳交易概述

- Climate Change and GHG Emissions / 气候变化与温室气体排放
- Carbon Neutrality / 碳中和
- Emissions Trading Scheme / 碳交易

## 2 Carbon-Related Standards and Frameworks / 碳排放有关的国际准则和框架介绍

- Greenhouse Gas (GHG) Protocol / 温室气体核算体系
- CDP / 环境信息披露
- Science Based Target Initiative (SBTi) / 科学碳目标倡议
- Task Force on Climate-related Financial Disclosure (TCFD) / 气候相关财务披露工作组
- Carbon Border Adjustment Mechanism (CBAM) / 碳边境调节机制
- PAS 2060 / 碳中和标准

## 3 ERM Case Studies / ERM相关案例

## 4 Q&A / 问答

## 0. ERM Overview

- ERM 简介



# ERM

- 全球领先的环境、健康、安全、社会咨询和可持续发展相关服务的管理咨询公司



## 历史

与全球领先的组织紧密合作40年，在过去的5年中为超过50%的财富500强公司提供顾问服务



## 员工

总部位于英国，在全球40余个国家设立有160多个办公室，拥有6,000多名专业咨询顾问



## 专注可持续发展

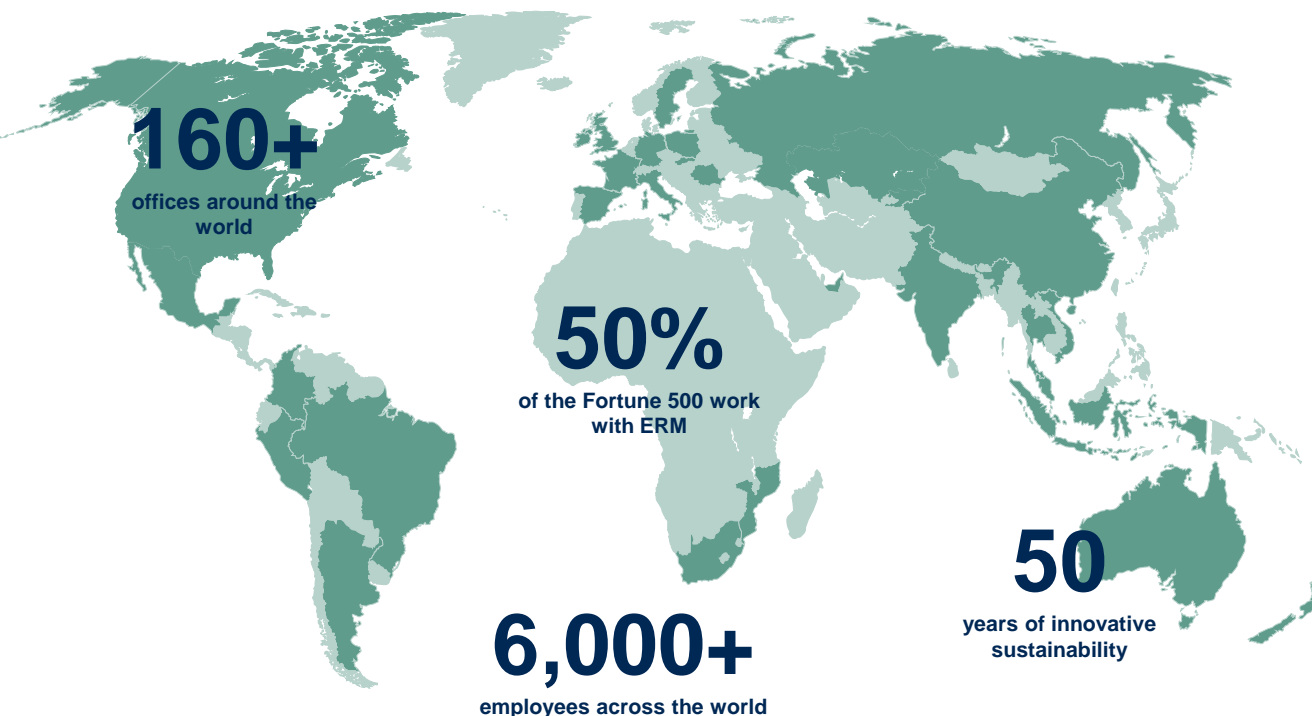
我们帮助客户衡量和披露难以量化的商业价值，并调整其的商业实践或商业模式以创造长期价值



## 经验

ERM凭借其丰富的经验、雄厚的技术实力和广泛的全球资源，已为众多跨国公司、本土企业、政府、金融机构以及国际组织提供了大量环境社会影响评价，环境管理与合规，环境社会 and 治理（ESG），并购交易管理，尽职调查，可持续金融，气候变化风险，低碳管理，碳中和战略，碳披露，数字化管理以及新能源规划（包括太阳能、风能、储能、氢能、CCUS等）等咨询服务。

Ranked #2 among All-Environmental Management Firms  
ENR 2021 全球环境管理企业200强排名世界第二



强有力的合作伙伴:



# ERM's Clients in Climate Change Advisory

*We have massive experience in supporting organisations to understand and manage their climate-related risks and opportunities. A selection of our global clients is presented below.*



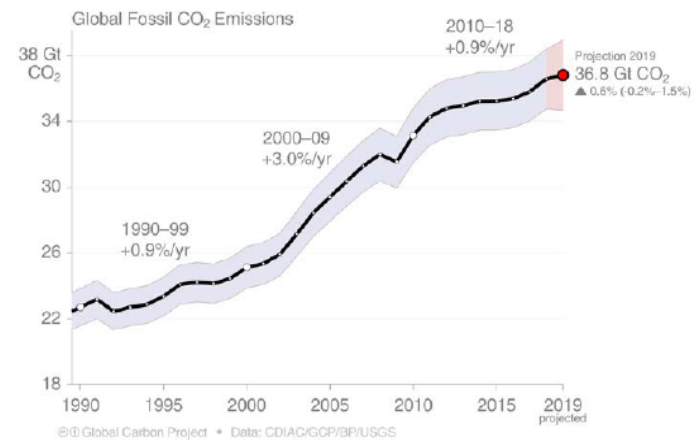
# 1. Basics of Climate Change

## 气候变化与碳排放、碳中和、碳交易概述

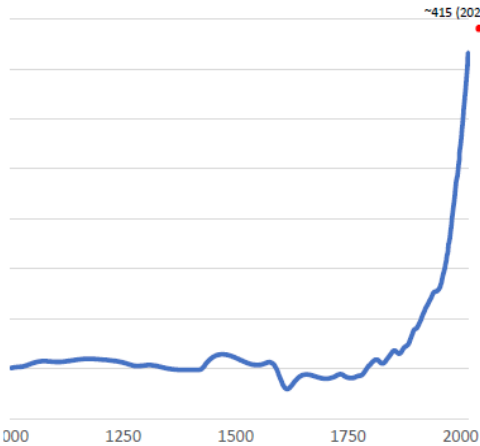
- 气候变化与温室气体排放
- 碳中和
- 碳交易

# Climate Change Risks are Highly Ranked 气候风险

Annual CO<sub>2</sub> Emissions from fossil fuels in giga tons



Long-term global CO<sub>2</sub> Emissions atmospheric concentration of carbon dioxide, in parts per million (ppm), (1000-2020)



**BlackRock** Go carbon neutral or get left behind, world's biggest money manager warns companies

## Impacts



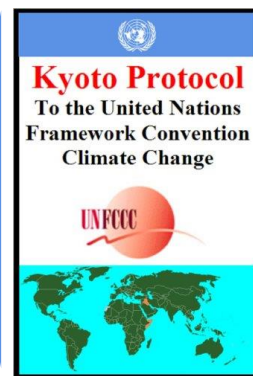
Source: World Economic Forum Risk Report 2021



# 国际气候治理

## 《京都议定书》

为39个发达国家规定了减排目标，确定了减排气体种类、时间、额度



## 《巴黎协定》

主要目标是将全球平均气温较前工业化时代上升幅度控制在2°C以内，并努力控制在1.5°C以内。全球将尽快实现温室气体排放达峰，本世纪下半叶实现温室气体净零排放。协议从2020年正式运作。



1994 ..... 1997 ..... 2009 ..... 2015 ..... 2019 ..... 2020 ..... 2021



United Nations  
Framework Convention on  
Climate Change

## 《联合国气候变化公约》

明确“共同但有区别的责任”，明确发达国家应率先减排并向发展中国家提供资金技术支持的义务

## 《哥本哈根协议》

提出全球气温升幅应限制在2°C以内，要求各国向联合国提出2020年减排目标



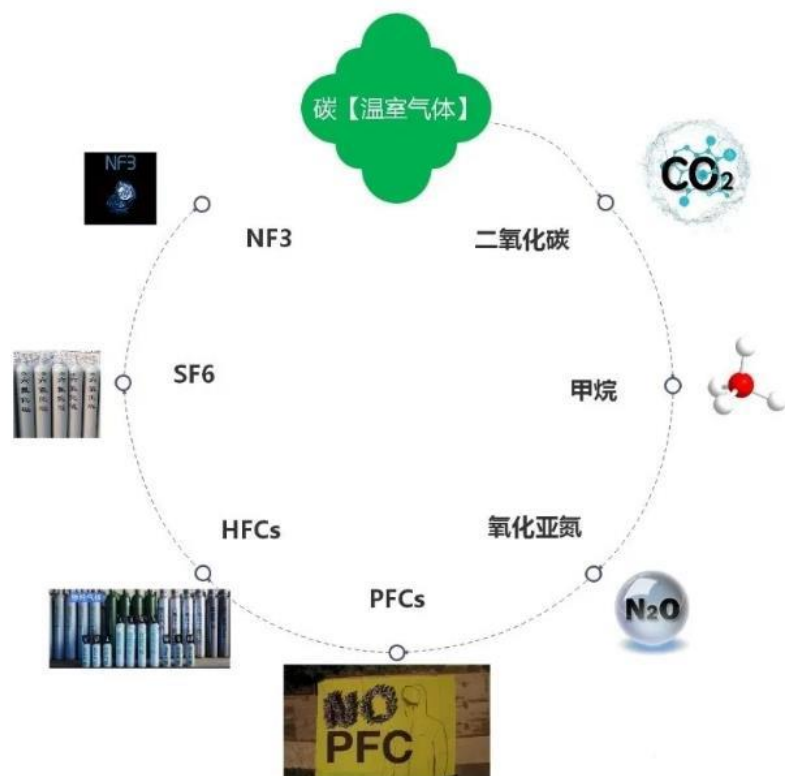
## 《格拉斯气候公约》

《巴黎协定》进入实施阶段以来的首次气候大会，公约要求维持巴黎协定要求把全球气温升高幅度控制在1.5摄氏度以内的目标以及逐步减少煤炭使用。

截至2021年，已有44个国家和地区宣布碳中和目标。

# GHG Emissions 温室气体与气候变化现状

**温室气体：**二氧化碳(CO<sub>2</sub>)、甲烷(CH<sub>4</sub>)、氧化亚氮(N<sub>2</sub>O)、氢氟碳化合物(HFCs)、全氟碳化合物(PFCs)、六氟化硫(SF<sub>6</sub>)、三氟化氮(NF<sub>3</sub>)。其中前六种温室气体在1997年《京都议定书》中被明确，三氟化氮气体在2008年《联合国气候变化框架公约》(UNFCCC)中被添加到监管的气体之列。我国现行国标《工业企业温室气体排放核算和报告通则 GB/T 32150-2015》规定，需要控制的温室气体有7种。



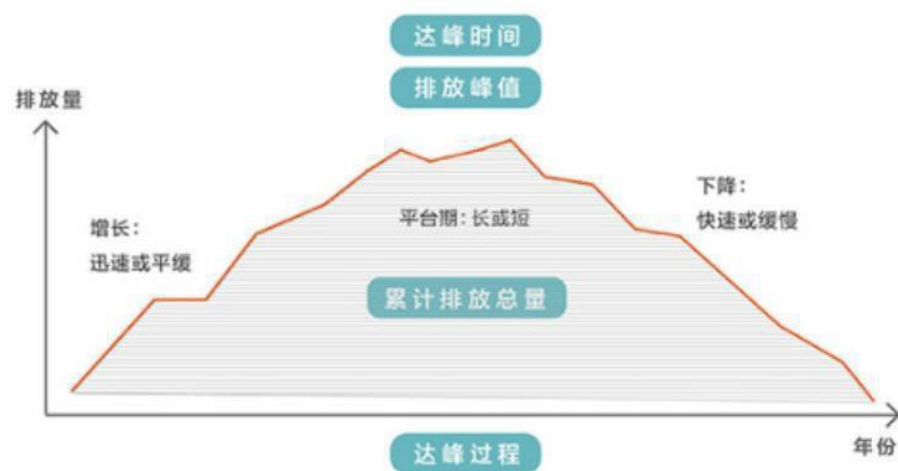
1. 二氧化碳 (CO<sub>2</sub>) - 主要是燃烧化石燃料时产生;
2. 甲烷 (CH<sub>4</sub>) - 主要由反刍动物 (如绵羊和母牛) 以及垃圾填埋场产生排放;
3. 一氧化二氮 (N<sub>2</sub>O) - 主要因为农作物的肥料使用和牲畜肥料使用过程排放;
4. 氢氟碳化合物 (HFC) - 主要来自冷气、制冷设备排放;
5. 全氟化碳 (PFC) - 主要是铝产业排放;
6. 六氟化硫 (SF<sub>6</sub>) - 主要由开关设备排放;
7. 三氟化氮 (NF<sub>3</sub>) - 主要在电脑製造过程中排放。

# Carbon Neutrality 碳中和

## 碳达峰 (Carbon Peak)

指某个地区或行业的与化石能源相关的温室气体排放量（以年为单位），在某个年份达到历史最高值，随后进入持续下降的过程，是**温室气体排放量由增转降的历史拐点**。

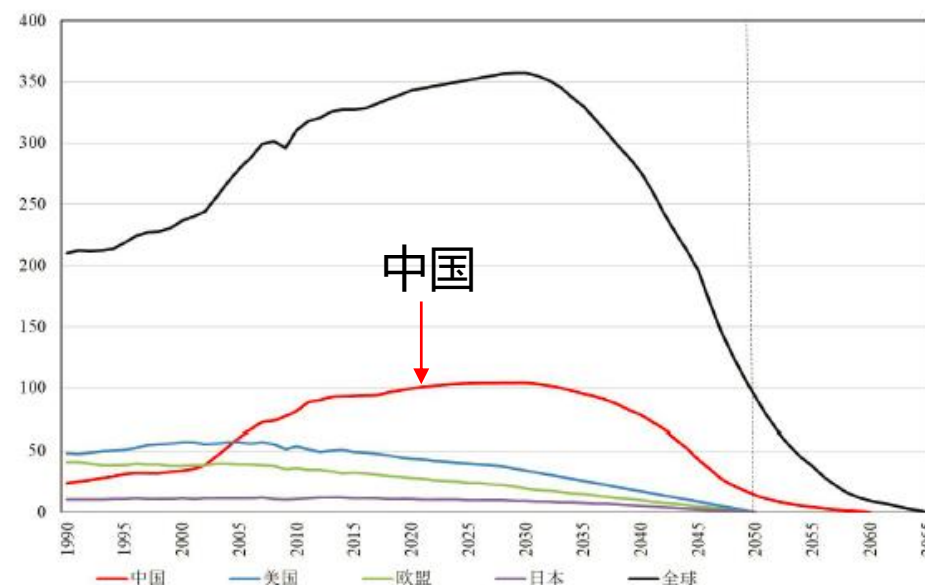
碳达峰两个要素：碳排放峰值、达峰年度。讨论碳达峰的意义是为了**判断一个国家或地区未来碳排放的趋势及经济社会低排放发展的实现路径**。



## 碳中和 (Carbon Neutral)

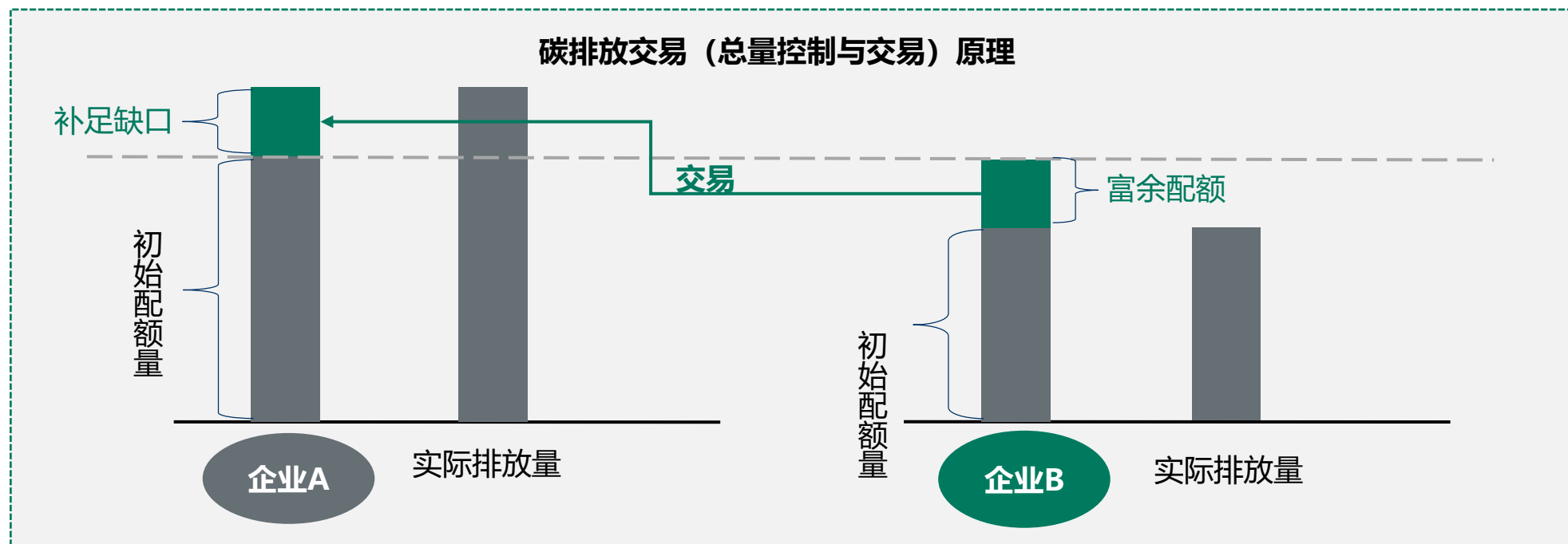
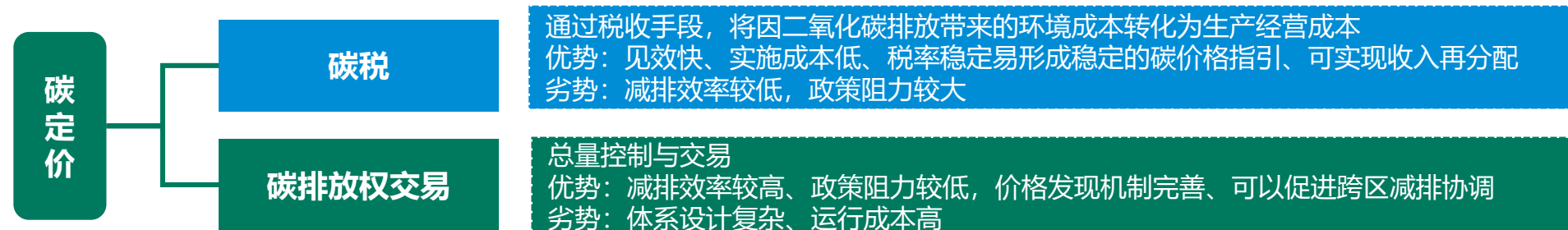
指**国家、企业、产品、活动或个人**在一定时间内直接或间接产生的温室气体排放总量，通过碳清除、碳储存等人为增加的吸收汇实现正负抵消，达到相对“零排放”。

全球及主要国家温室气体净排放（吨CO<sub>2</sub>e）



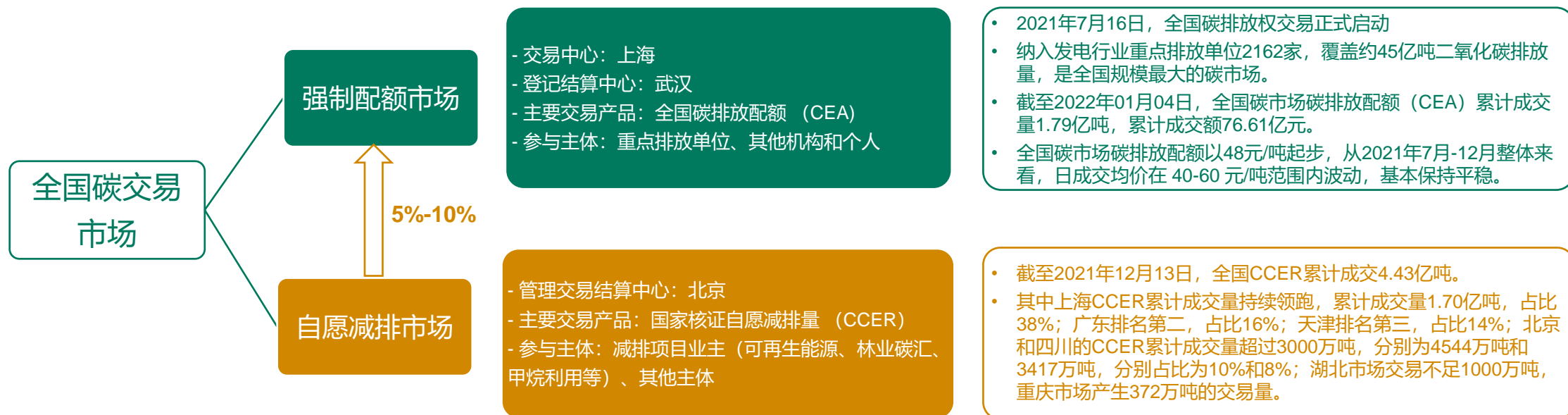
- 相关概念：净零(Net Zero)、气候中和(Climate Neutral)、负排放(Carbon Negative)、碳抵消(Carbon Offset)、碳移除(Carbon Removal)、碳汇(Carbon Sink)
  - 为何多数国家、企业都是设定2030或2050年为行动期限？

# Emission Trading 碳交易



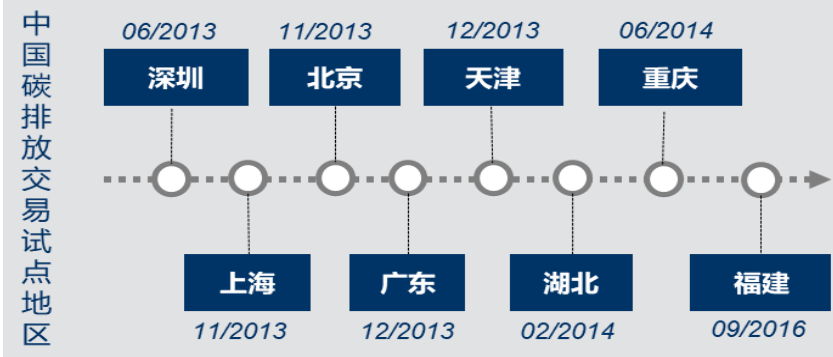
碳交易是一种碳定价的方式，允许企业间通过市场手段进行排放权交易以平衡各自的排放量，从而达到**低成本**控制排放总量的目的。

# 中国碳交易



环办气候函[2019]943号：

- ❑ 石化、化工、建材、钢铁、有色、造纸、电力、航空等重点排放行业中，2013至2019年任一年温室气体排放量达2.6万吨二氧化碳当量（综合能源消费量约1万吨标准煤）及以上的企业或其他经济组织。
- ❑ 温室气体排放符合上述条件的自备电厂（不限于以上行业），视同电力行业企业纳入工作范围。





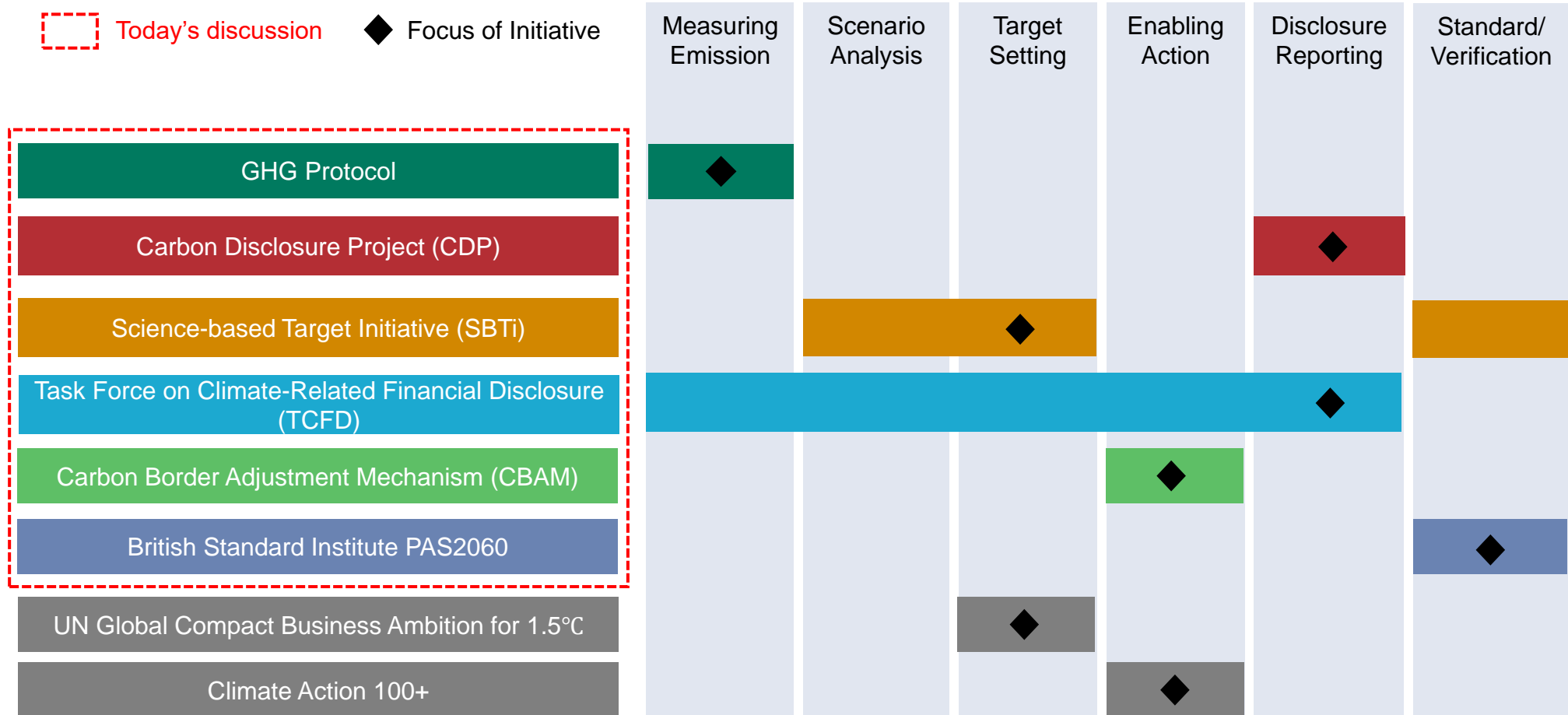
## 2. Carbon-Related Standards and Frameworks

### • 碳排放有关的国际准则和框架介绍

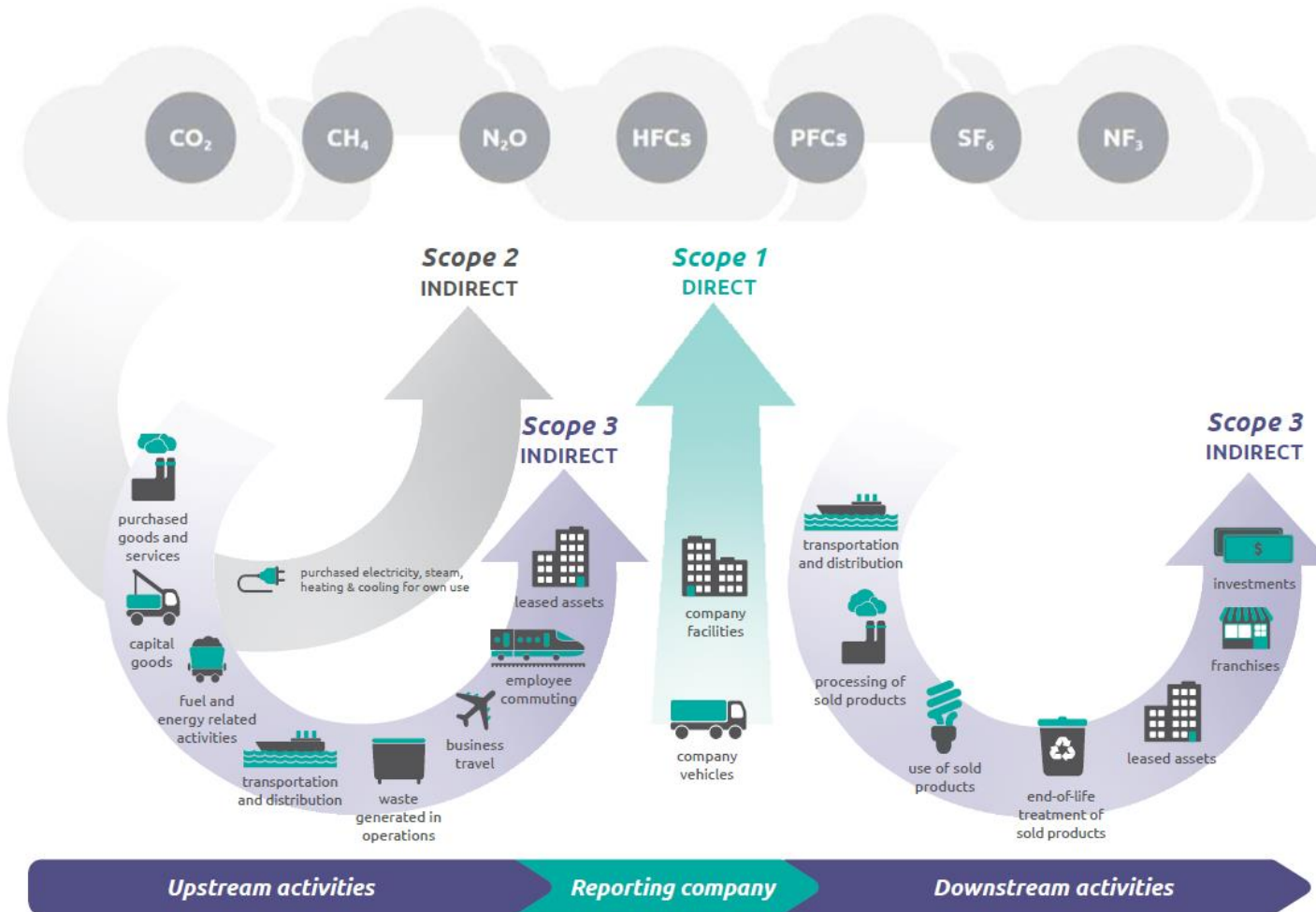
- ❑ 温室气体核算体系
- ❑ 环境信息披露
- ❑ 科学碳目标倡议
- ❑ 气候相关财务披露工作组
- ❑ 碳边境调节机制
- ❑ 碳中和标准

# Climate Initiative and Framework Overview

## 碳排放有关的国际准则和框架概览



# Greenhouse Gas (GHG) Protocol 温室气体核算体系



## Scope 1: Direct GHG emissions

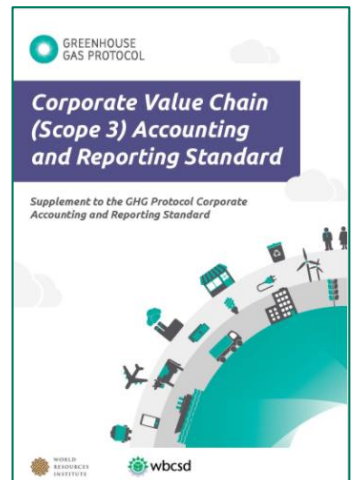
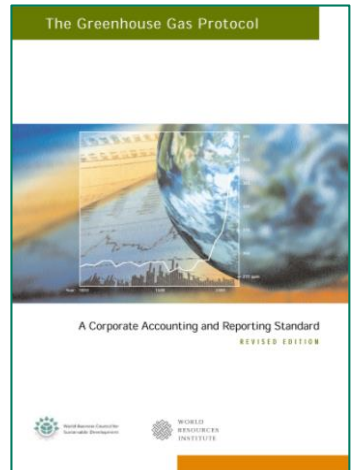
Direct GHG emissions occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment.

## Scope 2: Electricity indirect GHG emissions

Scope 2 accounts for GHG emissions from the generation of purchased electricity, steam, and heating/cooling consumed by the company.

## Scope 3: Other indirect GHG emissions

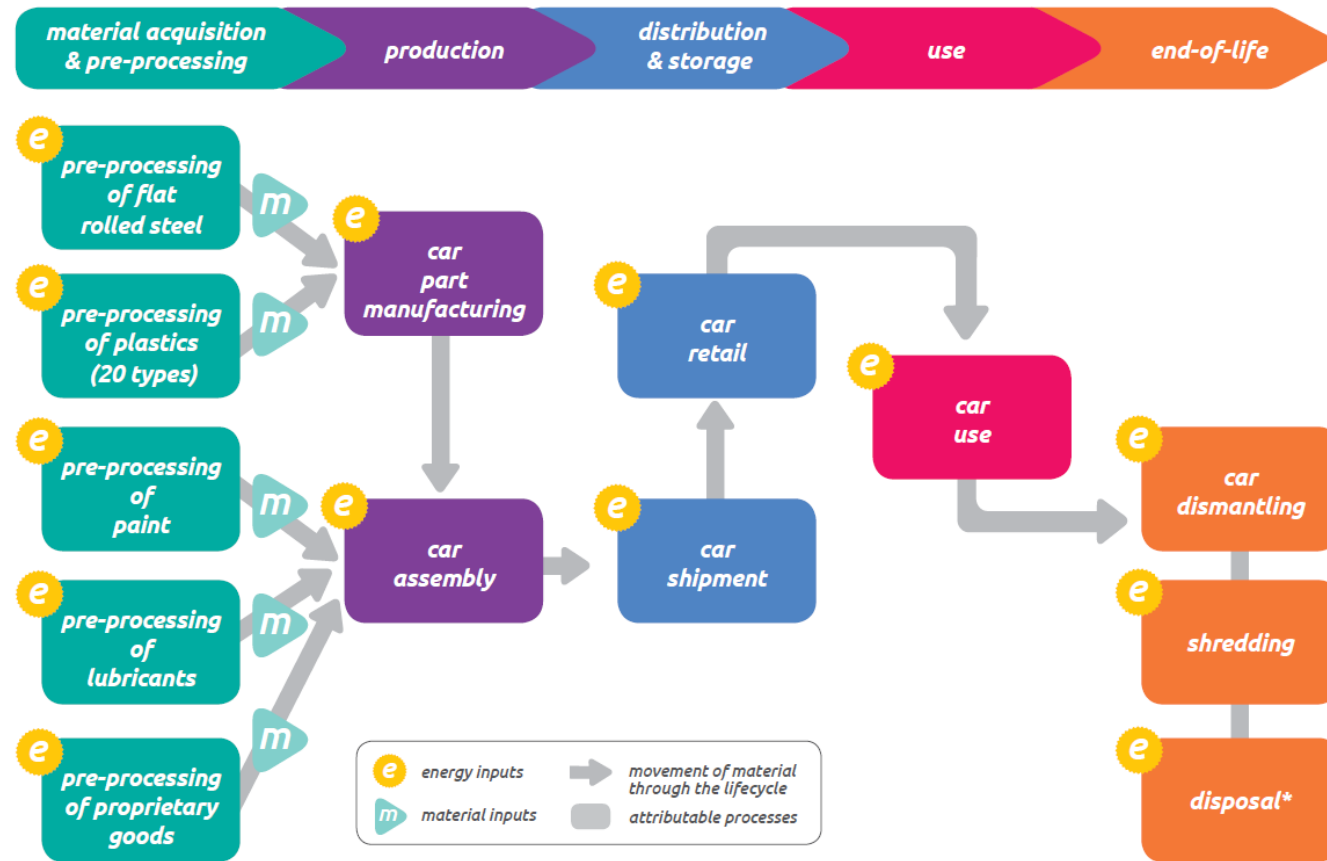
Scope 3 is an optional reporting category that allows for the treatment of all other indirect emissions produced by activities linked to the organization's value chain.



# Greenhouse Gas (GHG) Protocol 温室气体核算体系



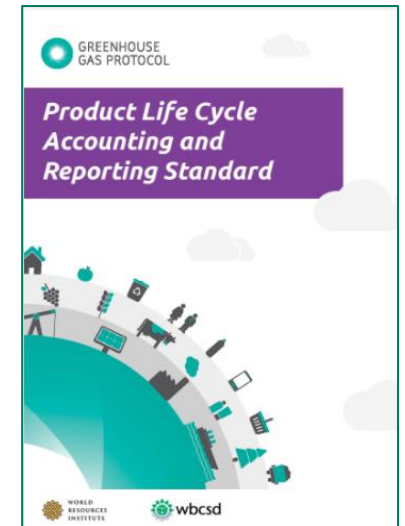
## Sample process map for a car (cradle-to-grave inventory)



\* Recycling of parts is not included in this simplified example

- The GHG Protocol Product Life Cycle Accounting and Reporting Standard (referred to as the Product Standard) provides requirements and guidance for companies and other organizations to quantify and publicly report an inventory of GHG emissions and removals associated with **a specific product**.
- The primary goal of this standard is to provide a general framework for companies to make informed choices to reduce greenhouse gas emissions from the products (goods or services) they design, manufacture, sell, purchase, or use.

- The sum of the life cycle emissions of each of a company's products, combined with additional scope 3 categories (e.g., **employee commuting, business travel, and investments**), should approximate the company's total corporate GHG emissions (i.e., scope 1 + scope 2 + scope 3).



# Sector carbon footprinting guidance: pharmaceutical products and medical devices

- No pre-existing guidelines that are specific to the sector
- Developed by the CSPM and launched in November 2012
- Internationally focused and freely available
- Support consistent quantification of the carbon footprint of pharmaceutical products and medical devices
- Reviewed by the GHG Protocol and gained accreditation as sector guidance 'Built on GHG Protocol' approved
- Freely available document and summary on the NHS SDU and the GHG Protocol websites



Charles Allison  
Partner  
ERM





# Setting Organizational and Operational Boundaries 设定组织和运营边界



## Setting Organizational Boundaries

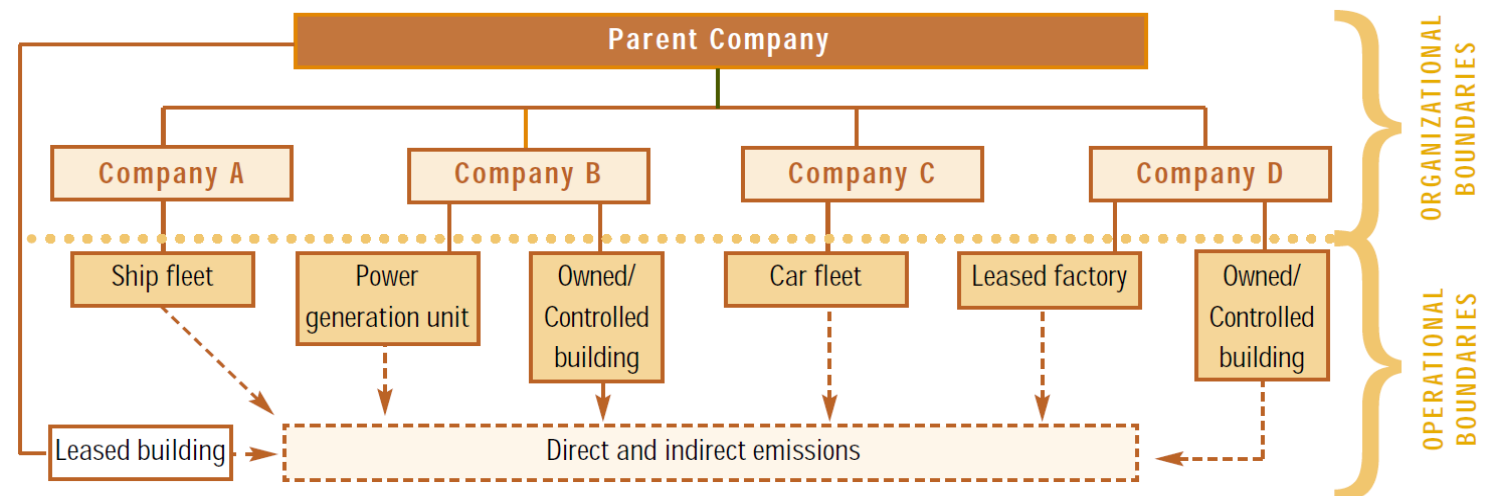
1. Equity Share Approach
2. Control Approach
  - a) Financial Control
  - b) Operational Control

## Setting Operational Boundaries

The operational boundary (scope 1, scope 2, scope 3) is decided at the corporate level after setting the organizational boundary.

- ❖ The *GHG Protocol Corporate Standard* **makes no recommendation** as to whether voluntary public GHG emissions reporting should be based on the equity share or any of the two control approaches, but encourages companies to account for their emissions applying the equity share and a control approach separately.
- ❖ Companies need to decide on the approach best suited to their business activities and GHG accounting and reporting requirements.

### Organizational and operational boundaries of a company



# ERM Case Study: Scope 3 Inventory

## Client Aims

Syngenta wanted to set for the first time corporate targets for carbon, waste and water, and to investigate the implications of Science Based Targets for its carbon footprint, having information on its Scope 1 and 2 emissions but not heretofore having examined its wider Scope 3 footprint.

## Our Solution

- Conducted an assessment of Syngenta's Purchased Goods and Services Scope 3 footprint using **hybrid techniques consistent with the GHG Protocol**.
- Developed estimates of all other Scope 3 categories to aggregate with Syngenta's own Scope 1 & 2 data in a full inventory.
- Prepared briefing materials for Syngenta on the Science Based Targets initiative methodological options & business implications, and authored internal FAQ-briefing on SBTi and Syngenta's standard operating procedures on inventory updates.
- Drafted the submission form to SBTi, providing clarifications prior to successful approval of the targets.
- ERM continues to provide support to Syngenta on the second iteration of its corporate footprint, reporting and related issues.

## Value for the Client

ERM developed Syngenta's supply chain greenhouse gas inventory, and subsequently estimated the **footprint of all its Scope 3 categories**, advised the business on **Science Based Targets** and prepared its successful submission of targets to the SBTi.



# ERM Case Study: GHG Emissions Inventory

Client: **Confidential Energy Company**

Location: **Indonesia**

Project: **GHG Emissions Inventory**

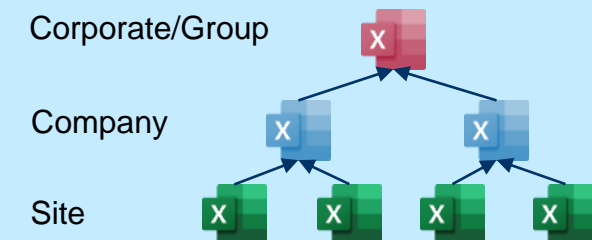
ERM developed a comprehensive Excel-based GHG inventory and accounting system for all upstream, downstream and infrastructure assets.

## Objectives and Services

- ▶ **GHG Standard:** establish a written guideline to ensure consistent definition, scope and measurement method for GHG emissions across all operations globally
- ▶ **GHG Calculation Tool:** develop a GHG tool and GHG Emissions Data Management Guideline to ensure consistency of calculations across all company's operations and minimize potential human errors in calculation, reporting and consolidation.
- ▶ **Understanding and Awareness:** provide relevant training and communication to its relevant personnel to ensure standardized understanding around climate change and GHG emissions quantification



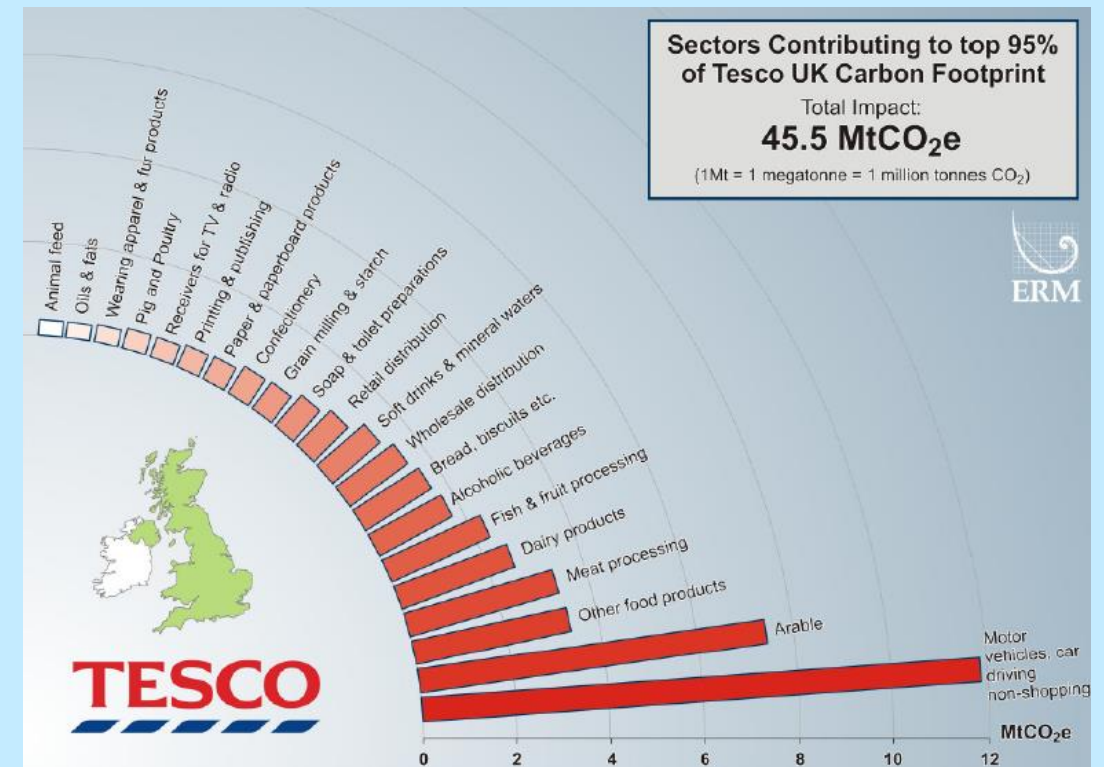
### Consolidation: Automatic Transfer of Excel Data



# ERM Case Study: Tesco Product and Scope 3 Carbon Footprinting

ERM has supported Tesco over the last 10 years as trusted adviser:

- ERM conducted LCA assessment for 1,000 Carbon Trust **certified labelled products in-store**, including:
  - ✓ Developing **PCF method**, in cooperation with government bodies
  - ✓ Working with suppliers to compile data sets
  - ✓ Working with Carbon Trust for certification
  - ✓ Advising on application of footprints going forward
- ERM conducted Scope 1 & 2 footprinting including freight and refrigerant leakage from stores & depots.
- ERM conducted a high-level EEIO for all procured products to develop Tesco's **Scope 3 footprint**.
- ERM developed carbon metrics and **KPI tracking software** to monitor progress versus targets.



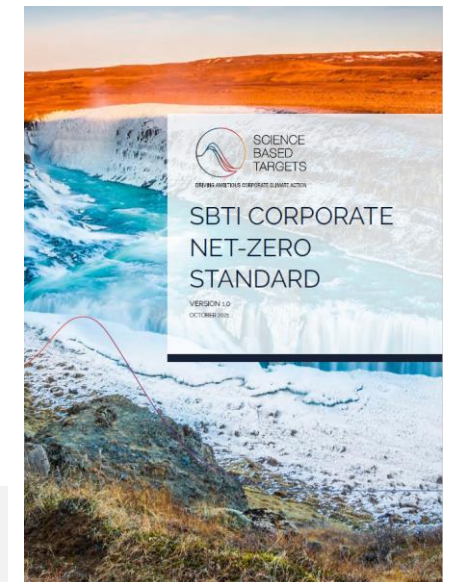
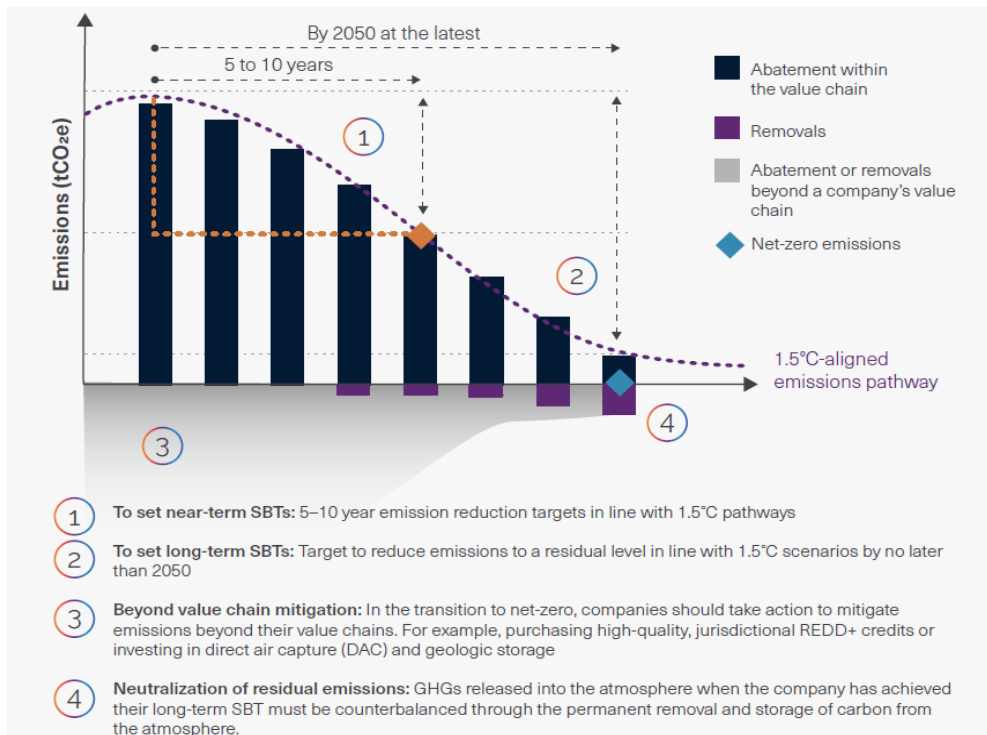


# Science Based Targets Initiative (SBTi)

## 科学碳目标倡议



- SBTi is an international collaboration between CDP, World Resources Institute (WRI), the World Wide Fund for Nature (WWF) and the United Nations' Global Compact (UNGC), **founded in 2015**.
- Targets are considered 'science-based' if they are in line with what the latest climate science deems necessary to **meet the goals of the Paris Agreement – limiting global warming to 1.5°C above pre-industrial levels**.



- To align with emerging best practices and science, the SBTi has been continually updating their criteria for target setting, which has increased target ambition and tightened the boundaries.

Source: <https://sciencebasedtargets.org/>



# Science Based Targets Initiative (SBTi)

## 科学碳目标倡议



### Target Scope



If **scope 3** emissions comprise **>40% of company emissions**, a scope 3 target must also be set.

The scope 3 target should collectively **cover at least 2/3 of total scope 3 emissions**.

### Target Ambition



Scope 3 targets must have a **minimum ambition** of aligning emissions reductions with a **2 degree trajectory** and preferable a 1.5 degree trajectory (4.2% absolute annual linear reduction).

### Target Type



**Absolute emissions** reduction targets.

**Emissions intensity** reduction targets (sector SDA).

Engagement targets to drive the **adoption of SBTi** by **suppliers** and/or **customers**.

- The use of **carbon credits must not be counted as emission reductions** toward the progress of companies' near-term science-based targets. Carbon credits may only be considered to be an option for neutralizing residual emissions or to finance additional climate mitigation beyond their science-based emission reduction targets.

# How to Set a Target 如何设定碳目标



## COMMIT

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

- [Register online](#) using the SBTi commitment process.
- Submit the [standard commitment letter](#).
- Once committed, the company has **24 months** to complete steps 2-4.



## DEVELOP

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

- Develop the target(s) in line with [science-based criteria](#).
- Some sectors have [sector-specific guidance and requirements](#). Companies have [24 months](#) from signing commitment letter to get target developed, validated and published.



## SUBMIT

Present your target to the SBTi for official validation

- Submit a completed [target submission form](#)
- Book validation:
- SBT technical experts will review the submission, validate it and communicate their decision with in-depth feedback in **30 working days**.
- Following approval, companies should disclose companies' emissions annually and monitor progress on reaching the target.



## COMMUNICATE

Announce your target and inform your stakeholders

- Once the SBTi approved the target, SBTi will publish on websites.
- The SBTi will publish targets one month after approval, unless otherwise instructed. Your target must be made public within six months of approval.
- Your company will receive a welcome pack with advice on how to communicate your new target.



## DISCLOSE

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

- Following approval, you should disclose your companies' emissions annually and monitor progress on reaching your target.
- Recommendations for reporting include [disclosure through CDP](#), annual reports, sustainability reports and your company's website.

# ERM Case Study: Novartis

## Project Scope:

- Novartis is one of the largest multinational **pharmaceutical** companies in the world.
- Novartis manufactures different drugs including Clozaril, Voltaren, Ritalin, Lamisil and others. Net sales to third parties from continuing operations for 2018 totaled \$51,900 m2. Novartis required assistance with **setting and submitting their SBT** to the SBTi.

## Approach:

- ERM advised on the SBTi process: based on past experience and contacts with SBTi, ERM advised Novartis on the target setting process, following the four required four steps:
  - Submit the commitment letter;
  - Develop a target;
  - Submit the target for validation;
  - Announce the target.
- ERM drafted the “Target Submission Form”: based on the previous tasks completed with Novartis, ERM filled in the form with all the information needed by the SBTi.

## Results:

- Defining the targets: Based on information received from Novartis, ERM modeled targets that were most sensible for Novartis and in line with the SBTi requirements.
- Responding to queries from the SBTi in conjunction with Novartis: ERM helped Novartis to answer further queries from SBTi once the form had been submitted.

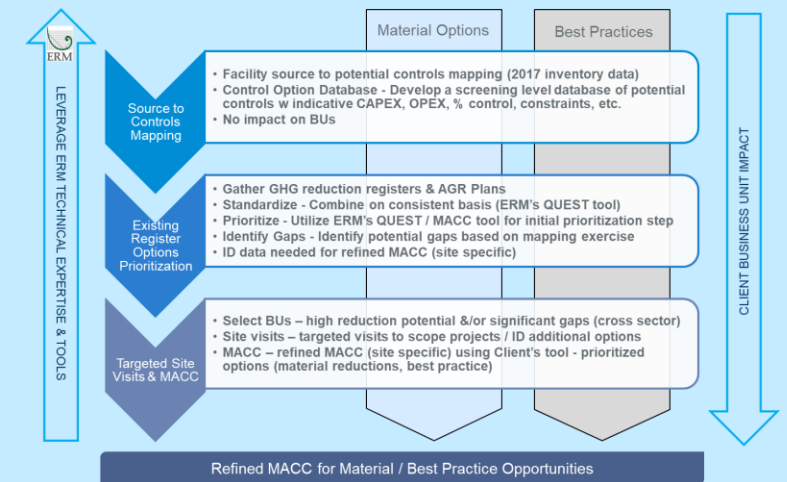
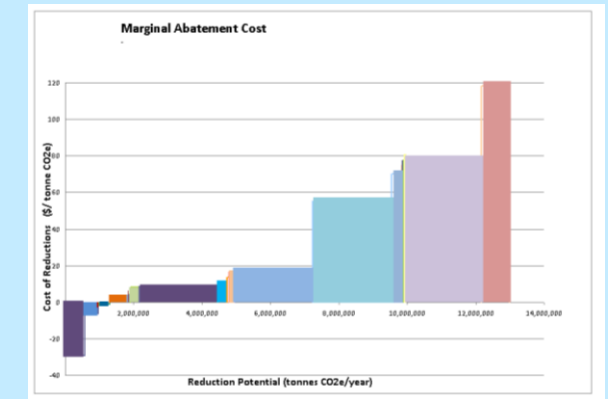
# ERM Case Study: Optimizing GHG Reductions using MACC to Inform Target Setting for a global oil & gas company

**Situation:** Global oil and gas major initiated corporate-wide program to identify, quantify and prioritize GHG emission reduction opportunities across their highest emitting global assets to inform corporate strategy and target setting.

**Approach:** ERM worked as an integral part of client's internal team as external technical experts to help shape a program to **support informed target setting** across the organization. Focus centered around 'needle moving' reductions across the highest emitting business units globally. The central team performed site visits to interview and work with local operations staff to review the process, identify as many opportunities as possible, and then screen them based on technical feasibility and reduction potential. **Engineering estimates of the reduction potential**, CAPEX, OPEX, resource recovery potential were assessed for the short list of screened opportunities. These opportunities were ranked using a **marginal abatement cost curve (MACC)** to provide the most cost effective reductions across all of the assets covered in the program.

**Value for the client:** The MACC outcomes across the largest business units inform strategic business decisions on level of ambition for **setting targets at the corporate level**. The approach, detailed analyses and prioritization using MACC provide insights on the financial impact associated with target level, as well as an **implementation plan** framework to achieve the target at the lowest cost. Alternatives evaluated ranged from renewable energy alternatives and battery storage, waste heat recovery, optimized spinning reserve, CCUS, etc

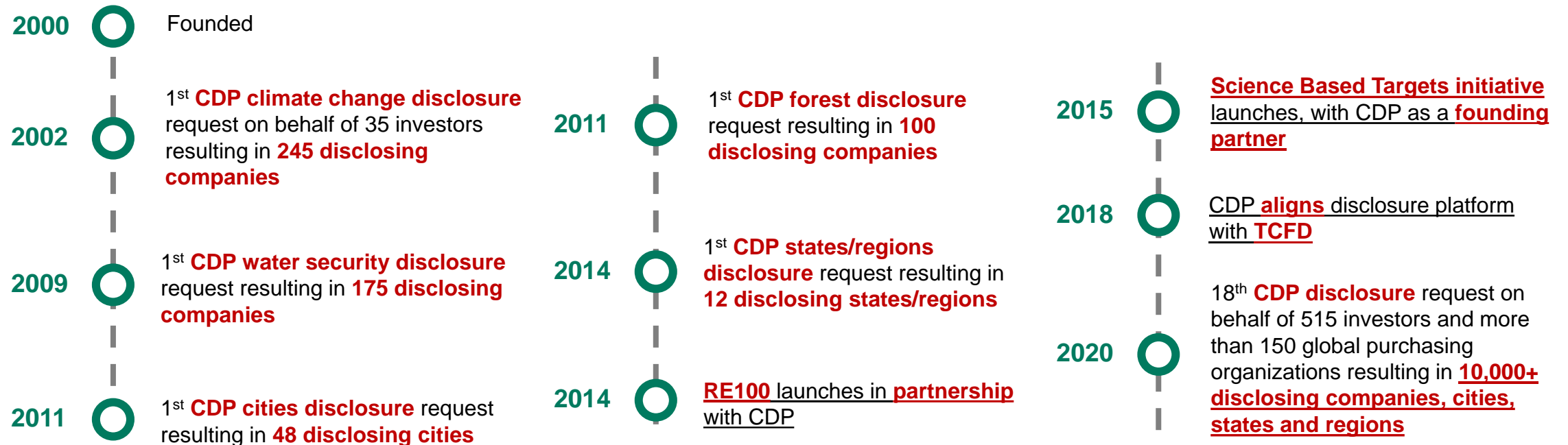
**The MACC outcome informed strategic business decisions on level of ambition for setting targets at the lowest / optimized cost to the business.**



# What Is CDP 环境信息披露



- CDP (formerly known as Carbon Disclosure Project) founded in 2000, is a non-profit which runs the global **environmental disclosure** system.
- CDP's world's **largest**, most comprehensive set of companies' environmental data, and is utilized by investors and purchasing organizations to make informed decisions, reward high-performing companies, and drive action.
- CDP supports thousands of companies, cities, states and regions to measure and manage their risks and opportunities on **climate change**, **water security** and **deforestation**.



Source: [https://cdn.cdp.net/cdp-production/comfy/cms/files/files/000/004/718/original/CDP\\_Disclosure\\_brochure\\_2021.pdf](https://cdn.cdp.net/cdp-production/comfy/cms/files/files/000/004/718/original/CDP_Disclosure_brochure_2021.pdf)



# Why CDP 为何要进行环境信息披露



Companies on A List 2021 –  
Climate change: 200; Forest 24; Water Security 118

Protect Your Reputation

Get ahead of Regulation

Boost Competitive Advantage

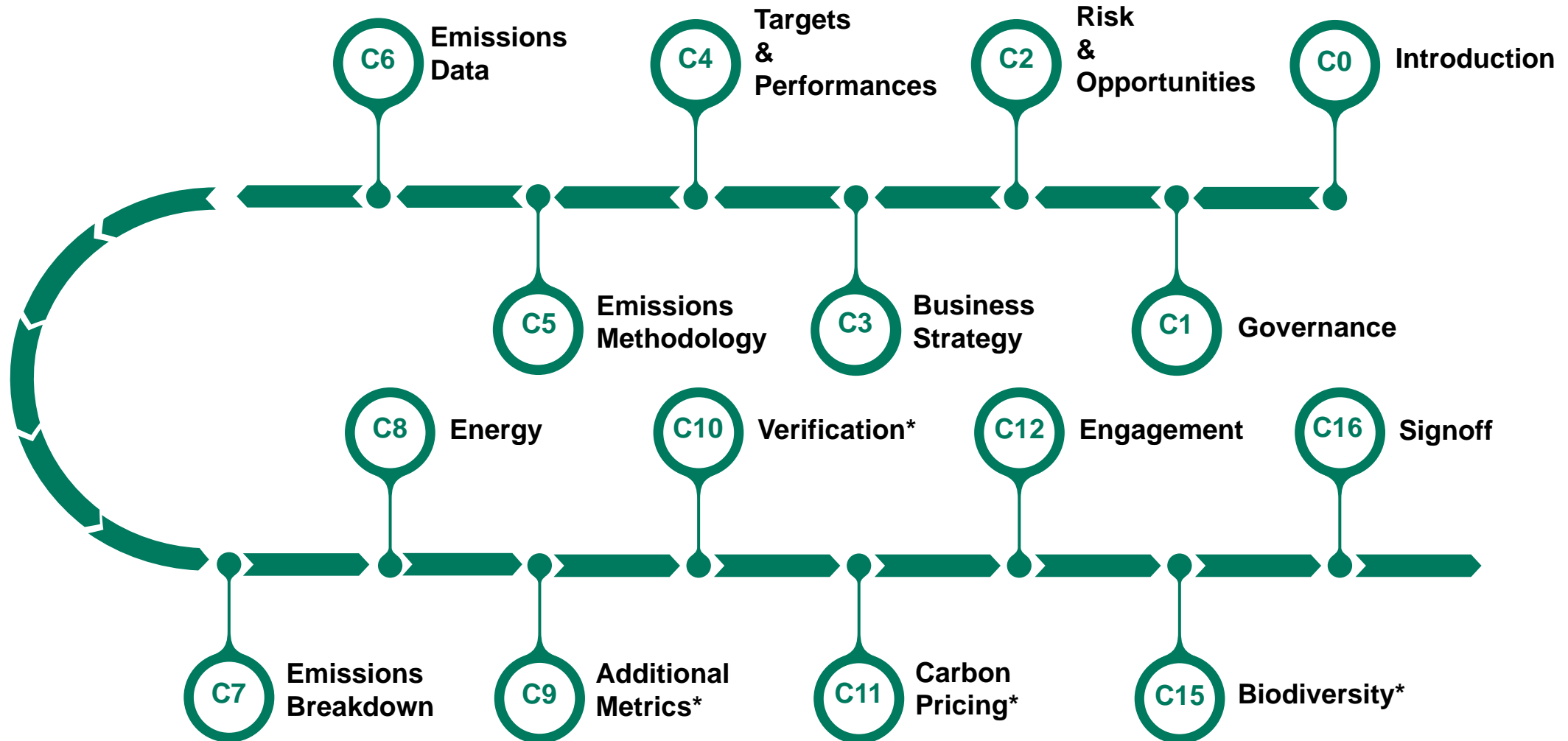
Identify Risks and Opportunities

Track and Benchmark

Source: [https://cdn.cdp.net/cdp-production/comfy/cms/files/files/000/004/718/original/CDP\\_Disclosure\\_brochure\\_2021.pdf](https://cdn.cdp.net/cdp-production/comfy/cms/files/files/000/004/718/original/CDP_Disclosure_brochure_2021.pdf)

# CDP Climate Change Questionnaire

## 气候变化披露调查问卷



\*Modules not included in Minimum version of the questionnaire

Source: CDP Climate Change 2022 Questionnaire

# Case Study: CDP Disclosure Support

Client: **Woolworths Group Limited**

Location: **Australia**

Year: **2020**

**ERM engaged with Woolworths' sustainability team and other key stakeholders to assess gaps in the company's previous year CDP submission.**

## Client's Demand

- ▶ Disclose to the CDP's 2020 Climate Change program. Woolworths Group Limited (Woolworths) received a **"B" score in the CDP's 2019** Climate Change program. In addition, the Client requested to harmonize the company's disclosures made through CDP and through its Sustainability Report.

## ERM'S Solution

- ▶ ERM conducted a **peer benchmarking review** and assessed Woolworths' current **climate change strategy**, the corporate's involvement in assessing and addressing **climate change risks** and opportunities and the company's Sustainability Report. After the **gap analysis** was conducted, ERM drafted the 2020 CDP submission, while engaging with our Client to improve the company's overall strategy in the short and long term.
- ▶ ERM's CDP expertise **helped Woolworths to earn a place on CDP's Climate Change 'A List'**. 'A List' companies are leading the market in corporate sustainability, tackling environmental risks and opportunities and integrating climate resilience into the business practices. There are brand benefits as it enhances perception and understanding among investment community.



# ERM Case Study: CDP

## Clients we supported in 2019 and corresponding score

(non-exhaustive list)

|                     | 2019 Score    | 2018 Score    |
|---------------------|---------------|---------------|
| Ameren              | B             | B-            |
| ENEL/Endesa         | A             | A             |
| Unilever plc        | A             | A             |
| SMUD                | Not available | Didn't submit |
| Confidential tech   | B             | C             |
| CP Rail             | B             | C             |
| Confidential Luxury | B             | Didn't submit |
| FMC                 | B             | C             |
| Del Monte           | Supply chain  |               |
| Assurant            | B             | B             |
| American Water      | B             | D             |
| Hess                | A-            | A-            |
| Greif               | A-            | A-            |
| Mondi               | A-            | A-            |
| Axalta              | B-            | B             |



# ERM Case Study: Science Based Target Setting and Scope 3 Assessment, CDP Support

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**Client:** PTT Global Chemical (GC)

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**Location:** Thailand

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**Year(s):** 2020

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## **Description of Project:**

- Supporting in achievement of CDP A List for Climate Change and Water questionnaires (achieved in 2021)
- Assessment of Scope 3 emissions for Science Based Target setting purpose
- Assessment of Science Based and related GHG target options, including circular economy aspects that could support value chain emissions reductions

## **Description of actual services provided by ERM within the assignment:**

- CDP: engaging with client and writing up CDP response in line with scoring methodology and data from client. Submitting CDP response and evaluating score gaps.
- Scope 3: Review current status of scope 3 emissions and developing process for GC to engage with suppliers and customers regarding their emissions and potential circular economy improvements that could reduce emissions.
- Science Based Target: Evaluating options for setting GHG target, including non-SBT methods such as carbon neutral/net zero. Proposed options to GC Management for further consideration.

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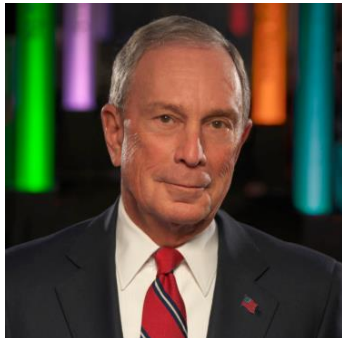
**Client could disclose its direct GHG emissions and energy indirect GHG emissions and other indirect GHG emissions in Greenhouse Gas Report and its website.**

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# TCFD Formed by Financial Stability Board 气候风险的财务披露工作组由G20金融稳定委员会设立

“The **Task Force on Climate-Related Financial Disclosures** (TCFD) was created in 2015 by the Financial Stability Board (FSB) to **develop consistent climate-related financial risk disclosures** for use by companies, banks, and investors in providing information to stakeholders. Increasing the amount of reliable information on financial institutions’ exposure to climate-related risks and opportunities will **strengthen the stability of the financial system**, contribute to greater understanding of climate risks and facilitate financing the transition to a more stable and sustainable economy.” – UNEP FI



Michael Bloomberg,  
Chairman of TCFD



# TCFD - quick recap / TCFD概览

*A consistent framework for disclosing a new set of climate-related financial risks and opportunities*

“The TCFD will develop voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to **investors, lenders, insurers, and other stakeholders**”.



ERM wrote the technical supplement on the use of scenario analysis in relation to climate-related financial risks and opportunities to determine strategic response options

# The evaluation and disclosure of climate-related risks and opportunities is quickly becoming standard practice

## Mandatory reporting of climate-related risks



HKEx tightened the ESG reporting guidelines to the listed issuers to include **mandatory climate related risk disclosure from 1 July 2020**.



Revision of EU Non-Financial Reporting Directive – Alignment to TCFD included in 2019 non-mandatory guidance. Revision of NFRD due 2020 (but expected 2021)



FCA Proposals to enhance climate-related disclosures by listed issuers. Consultation on mandatory reporting for UK pension schemes by the end of 2022.



Federal Government conducting test to define and pursue a Canadian approach to implementing TCFD



New Zealand government mandated TCFD disclosure for all companies



French government is considering mandatory reporting of TCFD



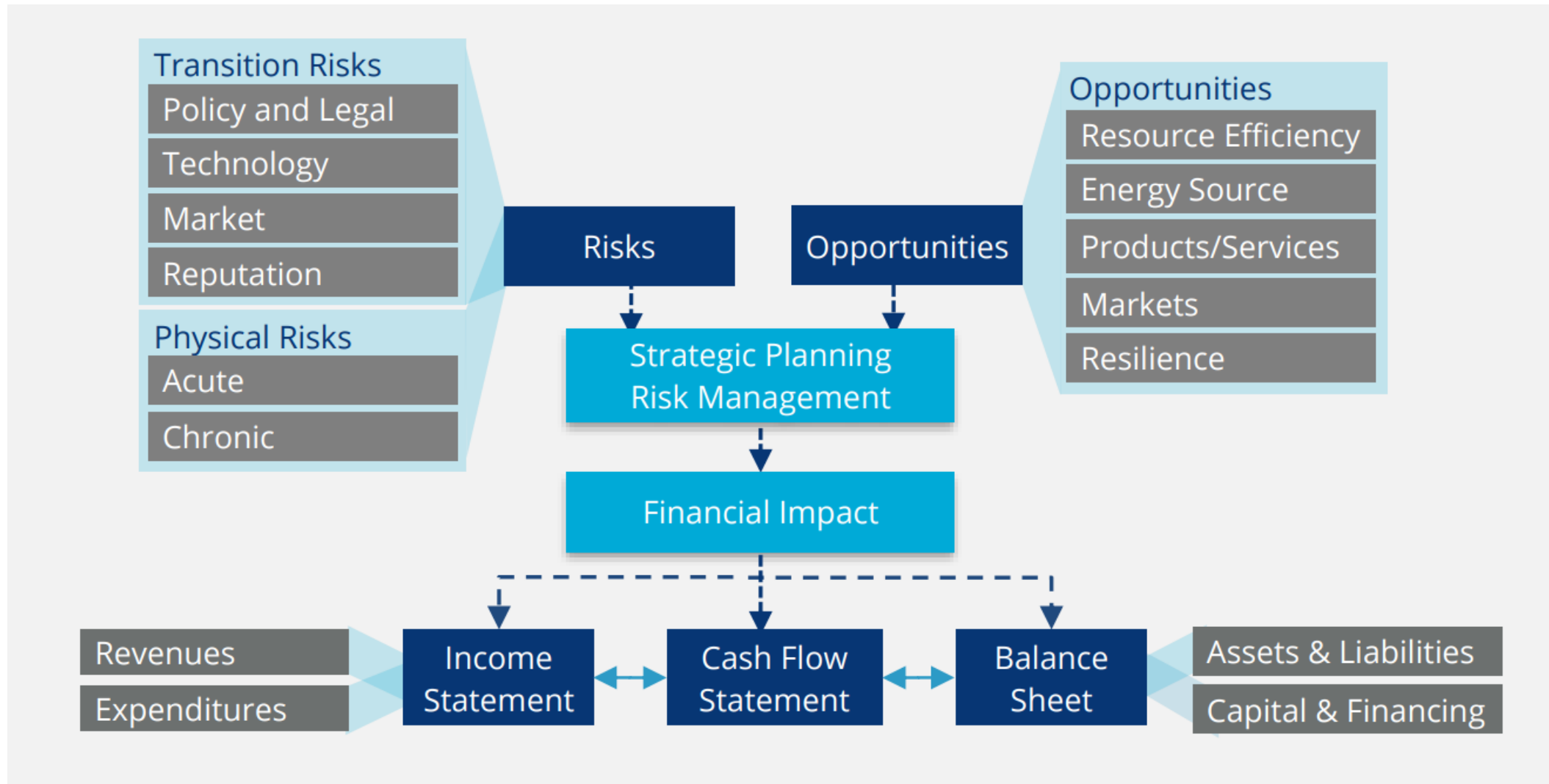
Japan government considering mandatory reporting of TCFD and held first corporate summit on climate-risk reporting in 2019



40 members including central banks from US, Canada, England, Germany, France, Japan and China warned financial risks of climate change: **“system-wide and potentially irreversible if not addressed”**



# Physical and Transition Climate Risks and Opportunities



# ERM Case Study: A Methodology to Measure Carbon Performance for JPMorgan

Global financial services firm, JPMorgan Chase & Co. is committed to helping its clients navigate the challenges and opportunities of transitioning to a low-carbon world. In 2020, the firm established its Paris-aligned financing commitment and created its Center for Carbon Transition for sustainability-focused financing, insights, and advisory solutions.

## Background

- JPMorgan Chase has initially set sector-specific portfolio targets, established against a 2019 baseline, for three sectors that represent a significant share of global GHG emissions: Auto Manufacturing, Electric Power, and Oil & Gas.
- It was important to establish an approach with a high level of integrity that could be functional based on today's science and yet ready to evolve in response to changes in climate scenarios and data availability and be extended to address additional sectors..

## Our Solution

- ERM's unique combination of deep technical and business expertise in the low-carbon energy transition, with our thorough understanding of these sectors, external stakeholders and the finance sector was highly beneficial to the process.
- The breadth of experience ensured a holistic approach that learns from and builds on existing frameworks and climate scenarios to meet the needs of JPMorgan Chase and their clients.



## Value for the Client

- ERM worked closely with JPMorgan Chase to create a practical and future-ready methodology for sectors
- By executing a consultation process across stakeholders, we were able to create a product with considerations of the current policy and science landscape, changing global regulations, and expectations within JPMorgan Chase and across the marketplace.



# ERM Case Study: Climate-related Risks and Opportunities for a Major Pension Fund

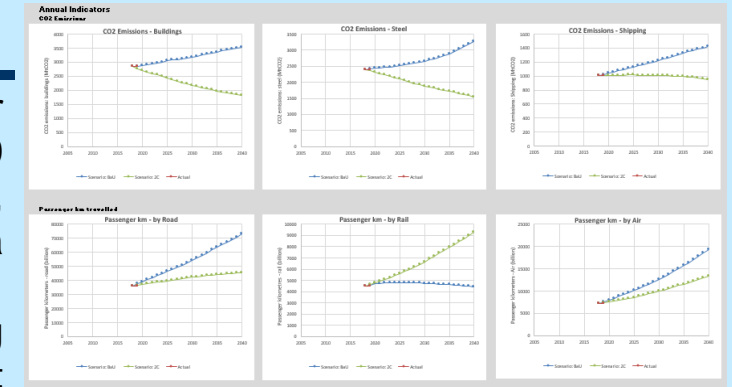
Conscious of the potential impacts of climate change on its business activities and eager to pro-actively manage risks and opportunities, the company (Financial services – pension fund) aimed to identify climate related risk and opportunity across its portfolio. This led to subsequent pieces of work to build a signpost dashboard to enable the client to monitor market trends and adjust its strategy to emerging risk/opportunity.

## Client's Aim

- To understand and quantify the relative climate-related risk & opportunity of sectors within its portfolio, driven by both internal and external stakeholder pressure
- To track the development of transition risk over time by monitoring key signpost indicators relevant to its portfolio

## Our Solution

- ERM performed a Climate Portfolio Screen for physical and transition exposure across 20 sectors of the client's investment portfolio, comparing a business as usual trajectory to a low carbon scenario
- A Signpost Dashboard was produced, allowing the client to consistently track the signpost indicators against the two scenarios, in order to understand emerging risk and opportunity and adjust strategies accordingly.



*Example signpost dashboard*

## Value for the Client

- Alignment with TCFD recommendations on scenario analysis of climate-related risk and opportunity, as an initial step towards full financial disclosure.
- Understanding where climate-related risk and opportunity may lie in its portfolio, in order to prioritise further analysis, risk management and monitoring.
- Ongoing tracking of development of climate-related risk and opportunity through the Signpost Dashboard
- Allowing the client to formulate a strategic response to these risks and opportunities in strategic asset allocation and portfolio management

# ERM's TCFD Experience



**Client:** Multinational energy, water and urban development utilities company

**Client issue:** Required development of climate change strategy.

**ERM response:** Conducted review of power generation portfolio to identify climate change risks and opportunities. Developed financial model quantifying the impact of climate change transition scenarios for highest risk power generation assets.



**Client:** Multinational oil company in Middle East

**Client Issue:** Strategic response to challenges posed by the low carbon transition in their markets of operation around the world.

**ERM Response:** Potential financial impacts from carbon pricing were calculated. Management frameworks developed and the client's internal team trained to more effectively manage risks and capture opportunities.



**Client:** Cross Sector Corporate

**Client Issue:** Requirement for a detailed assessment of the potential physical and regulatory impacts of climate change on global operations.

**ERM Response:** Developed a climate change risk and impact assessment model to assess the climate change physical risks and regulatory impact; and calculate in detail quantifiable impacts to the client's global assets, operations and supply chain.



**Client:** Major diversified mining company

**Client Issue:** Support responding to a shareholder resolution requesting enhanced business resilience and management response to risks/opportunities presented by transition to a lower carbon economy.

**ERM Response:** ERM assisted in review of climate change risk trends to 2030, and initial development of an enhanced risk management process.



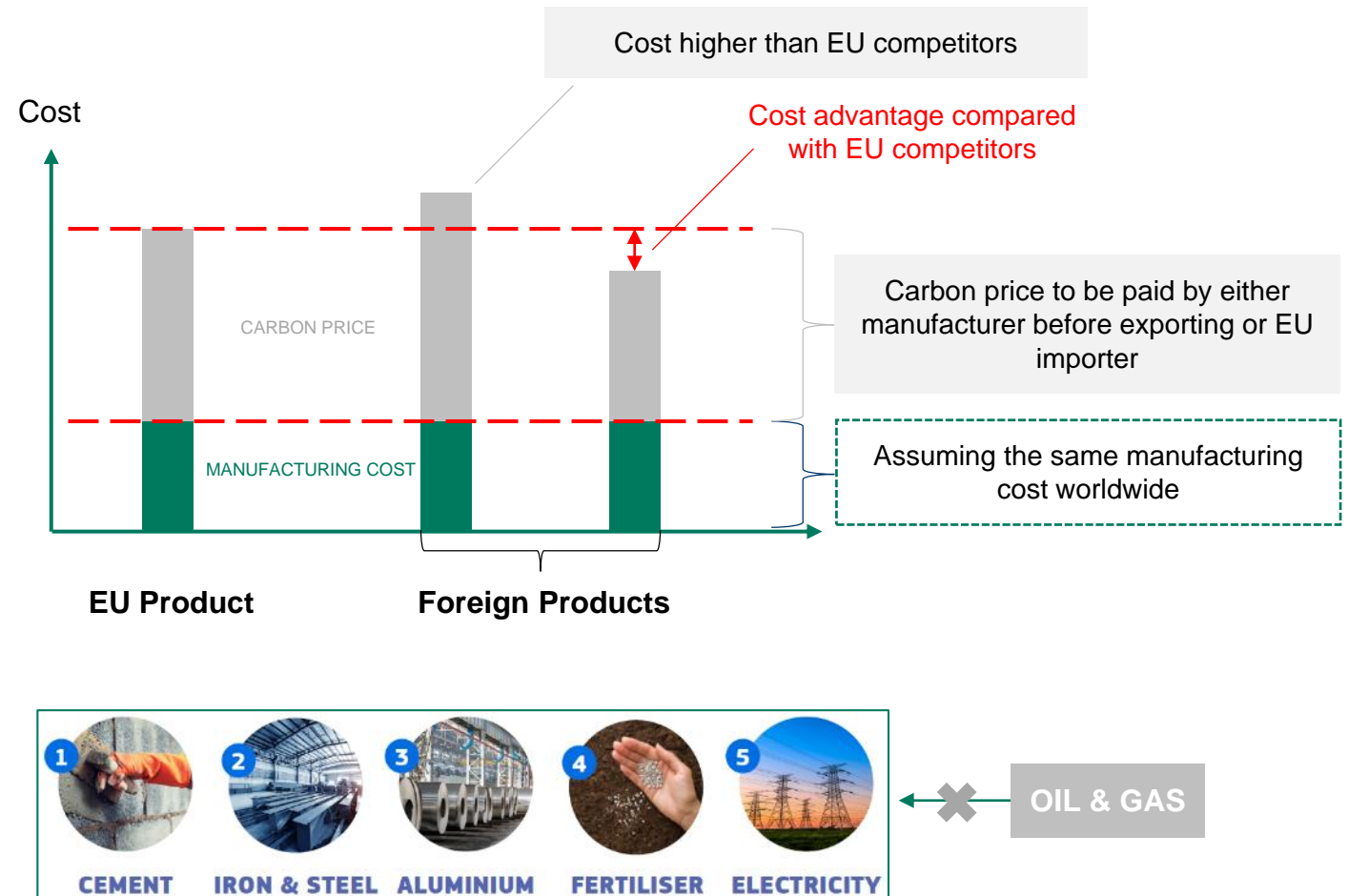
**Client:** Agriculture

**Client Issue:** Assessment required of the physical risks of climate change on global operations including increased costs of asset damage and business interruption.

**ERM Response:** ERM conducted a quantitative assessment of risks associated with historic impacts from extreme weather and of the impact of climate change on the value at stake.

# Carbon Border Adjustment Mechanism (CBAM)

- On 14 July 2021, the Commission adopted a proposal for a new Carbon Border Adjustment Mechanism which will **put a carbon price on imports of a targeted selection of products** so that ambitious climate action in Europe **does not lead to 'carbon leakage'**.
- EU importers will buy carbon certificates corresponding to the carbon price that would have been paid, had the goods been produced under the EU's carbon pricing rules. Certificates are priced based on weekly ETS allowances.
- Conversely, once a non-EU producer can show that they have already paid a price for the carbon used in the production of the imported goods in a third country, the corresponding cost can be fully deducted for the EU importer.
- Revenues from CBAM will contribute to the EU's budget.



[https://ec.europa.eu/taxation\\_customs/green-taxation-0/carbon-border-adjustment-mechanism\\_en](https://ec.europa.eu/taxation_customs/green-taxation-0/carbon-border-adjustment-mechanism_en)  
Source: CBAM, Full Draft of CBAM Proposal

# PAS2060 Background



PAS 2060



Sponsored by the Environmental Protection Administration, Executive Yuan, R.O.C.(Taiwan). Its development was facilitated by BSI Standards Limited and it was published under licence from The British Standards Institution

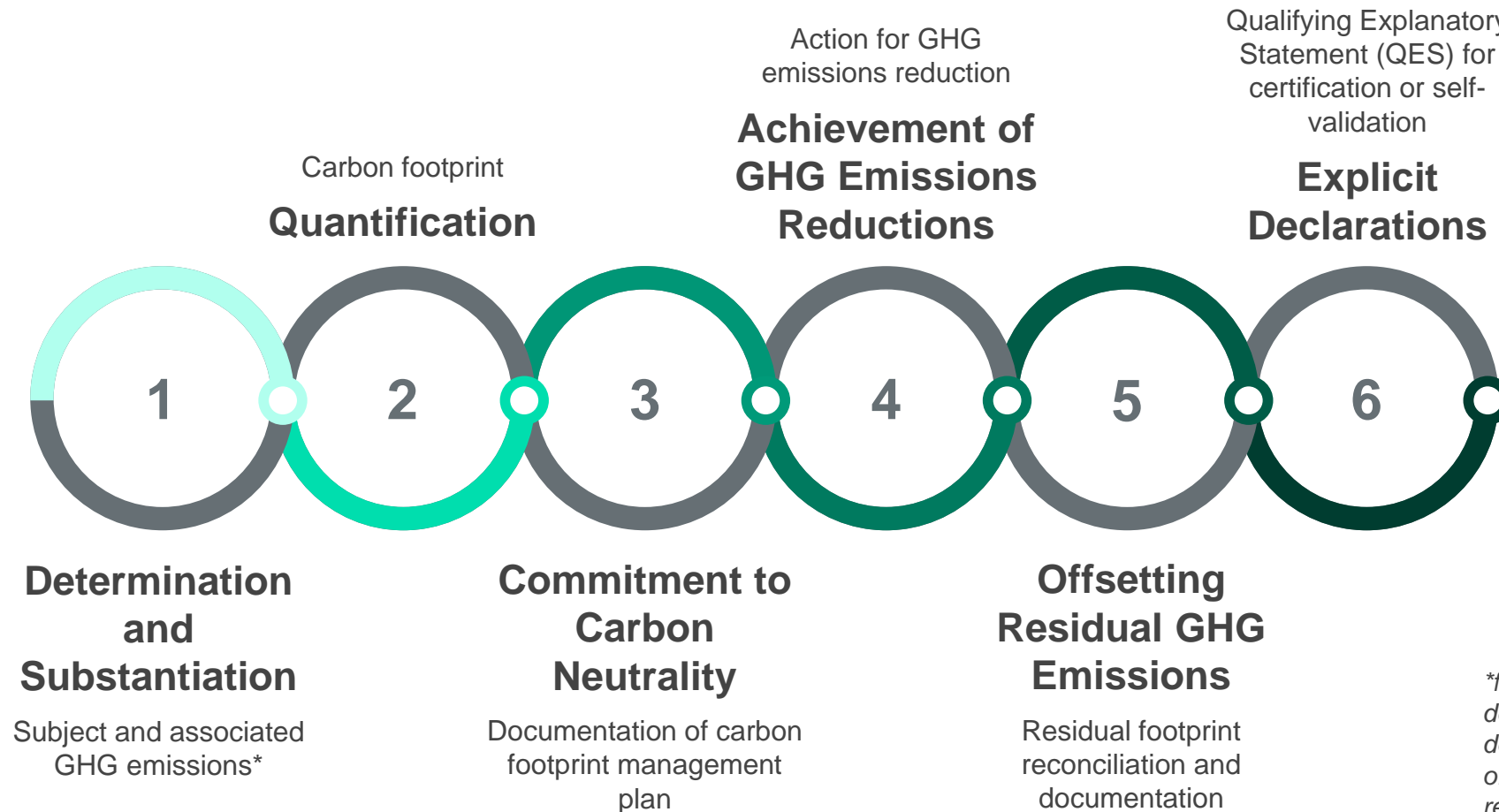
First launched in June 2010;  
Updated version in 2014

The primary reference at the moment for carbon neutral claims to a recognized standard, in line with general GHG accounting standards such as ISO 14067 and the GHG Protocol

Both self-declaration and third-party verification are allowed, as long as in line with the definitions and supporting data required in the Specification

# PAS2060 Determination and Verification Steps **bsi.**

PAS 2060



*\*for the first-time declaration, subject definition and recognition of permitted historic reduction are necessary during the determination stage*



# ERM Case Study: Certified 2017, 2018 and 2019 Carbon Neutrality for Evian, product approach

Client: **Evian**

Location: **USA and Canada**

Project: **Support for carbon neutrality**

ERM supported Evian in assessing GHG emissions associated with Evian's natural mineral water sold in the USA and Canada along the GHG Protocol Product Standard, and has further supported Evian to claim carbon neutrality along the **PAS 2060 Standard**.

- ERM supported Evian in particular in assessing the impact of downstream distribution and the use of its natural mineral water sold in the USA and Canada (in line with the GHG Protocol Product Standard);
- After having developed the qualifying explanatory statement, ERM provided support for the PAS 2060 certification by providing assistance during the review by an independent third party.

## Value for Evian

This project has allowed Evian to continue being a leader in sustainability in the food & beverage sector, and communicate around the carbon footprint and carbon neutrality of its products on the North American market. This has eventually made Evian the first company within Danone to be PAS 2060 carbon neutral certified with a commitment to maintain neutrality.

## Evian Achieves Carbon Neutrality in the U.S. and Canada

Press Release | Oct. 4, 2017 at 10:58 am



WHITE PLAINS, N.Y. (September 12, 2017) (**BUSINESS WIRE**) — Evian®, the number one premium global natural spring water brand, announced today that it has been audited and certified by the Carbon Trust as a carbon neutral brand in the U.S. and Canada. The Carbon Trust is an international non-profit that helps organizations and companies reduce their carbon emissions and become more resource efficient. This certification marks a major milestone in evian®'s journey to reach worldwide carbon neutrality by 2020, a commitment made by its corporate parent, Danone, at COP 21 where the Paris Agreement was signed in 2015. Evian® is on course to become Danone's first global carbon neutral brand. Bottles with the Carbon Trust certification seal will be available starting in January 2018.



# ERM Case Study: Carbon Neutrality Verification

Client: **Roush Fenway Racing**

Location: **USA**

Sector: **Automotive**

Year: **2021**

## Background

Roush Fenway Racing, LLC (“Roush Fenway”) is committed to reducing our greenhouse gas (GHG) emissions and offsetting the balance, with a goal of achieving carbon neutral emissions and diminishing our impact on climate change.

ERM Certification and Verification Services (ERM CVS) was engaged to provide assurance in relations to Roush Fenway Racing’s **PAS 2060 declaration** of carbon neutrality set out in its Carbon Neutrality Qualifying Explanatory Statement for 2020 (“QES”), including carbon inventories of 2019 and 2020.



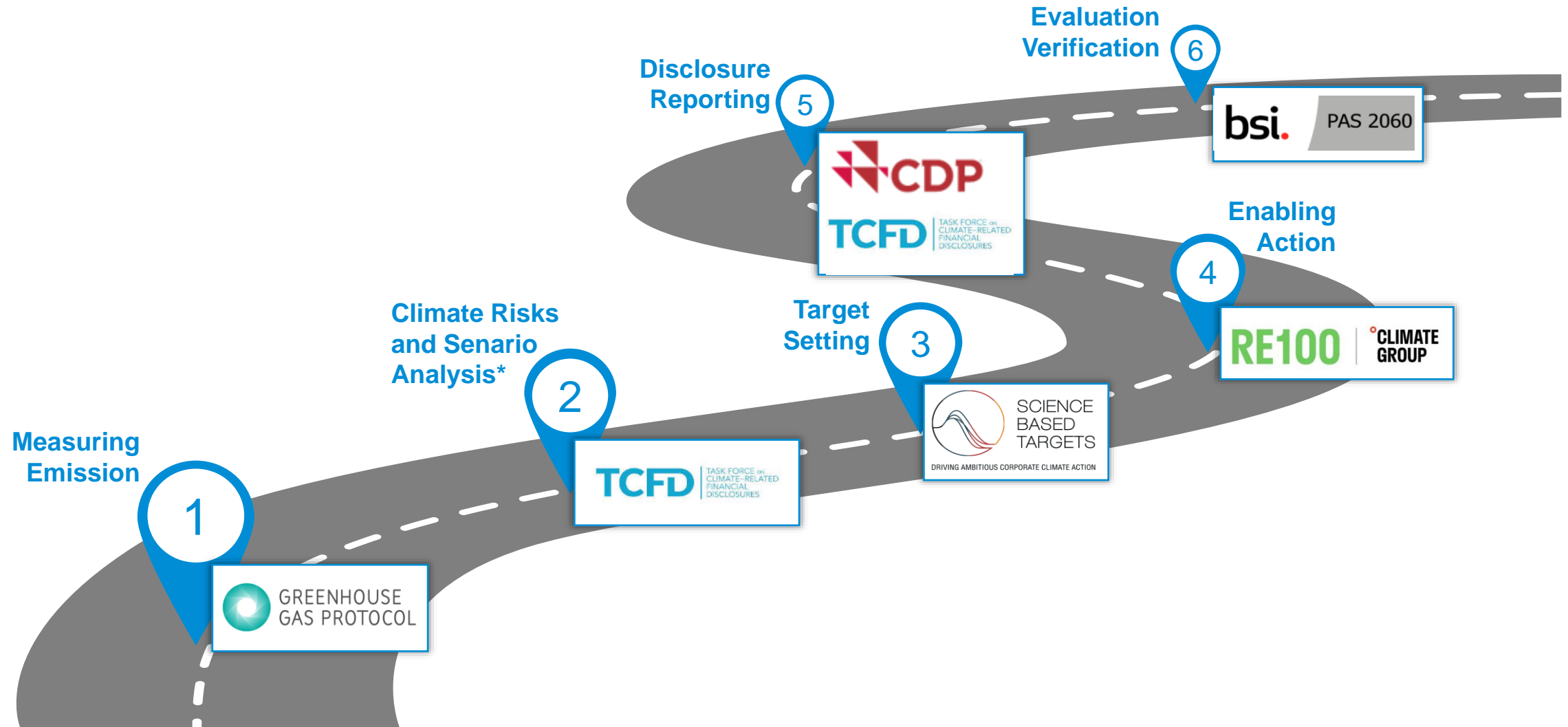
## ERM's Solution

Our approach to quantifying emissions was guided by the internationally recognized standards (the Greenhouse Gas Protocol) in order to minimize uncertainty and yield accurate, consistent and reproducible results.

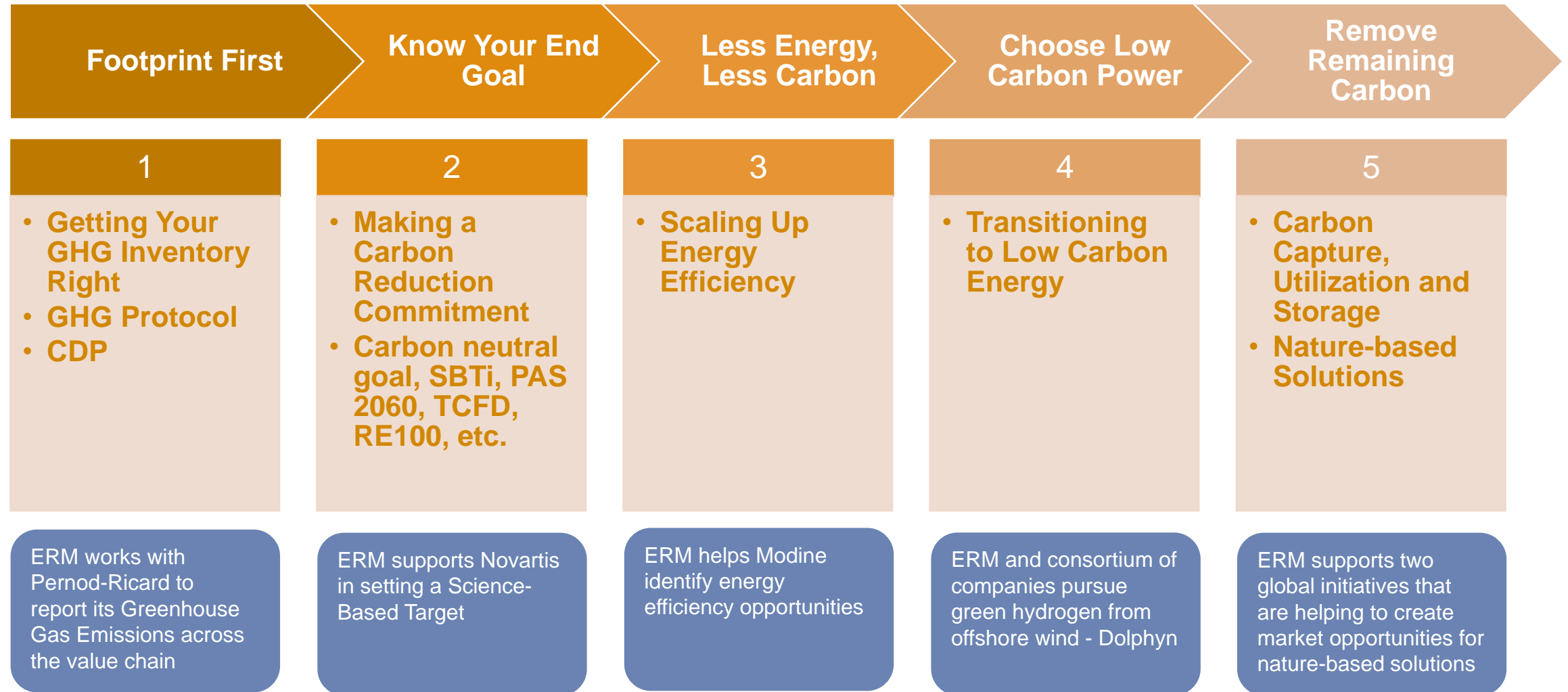
ERM CVS’s assurance methodology, based on the international Standard on Assurance Engagement ISAE 3000 (revised) and ISO14064:3.

Based on our activities, nothing has come to our attention to indicate that Roush Fenway Racing’s carbon neutrality declaration for the application period from January 1<sup>st</sup> 2020 to December 31<sup>st</sup> 2020, as presented in the QES, does not conform with the requirements of PAS 2060.

# Steps through Climate Journey 气候旅程的步骤



# Five Essential Steps for Every Company Aspiring to Net Zero



Source: ERM (2020) *Delivering Your Company's Net Zero Ambition*



### 3. Q&A

#### • 问答环节



# Thank you

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