



TOWARDS GHG MEASUREMENT

Preparing for the Inventorisation

The Greenhouse Gas Protocol (GHGP)

- The Greenhouse Gas Protocol was launched in 1998 by
- Multi-stakeholder partnership of businesses, NGOs, governments and others



WORLD
RESOURCES
INSTITUTE



World Business Council for
Sustainable Development

Mission

The Greenhouse Gas Protocol provides the foundation for more sustainable climate strategies and more efficient, resilient and profitable organizations. GHG Protocol standards are the most widely used accounting tools to measure, manage and report on greenhouse gas emissions.

Goals

- Simplify and reduce the burden of measurement and reporting
- Illuminate reduction opportunities and enable market based options
- Support management action and stakeholder reporting
- Enable credible, transparent and consistent information flow across multiple borders/jurisdictions

GHG Accounting and Reporting Principles

GENERALLY ACCEPTED GHG ACCOUNTING AND REPORTING PRINCIPLES

- Relevance
- Completeness
- Consistency
- Transparency
- Accuracy

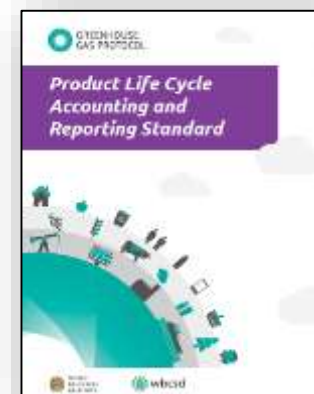
BUSINESS GOALS FOR COMPILING A GHG INVENTORY

- Managing GHG risks and identifying reduction opportunities
- Public reporting and participation in voluntary GHG programs
- Participating in mandatory reporting programs
- Participating in GHG markets
- Recognition for early voluntary action

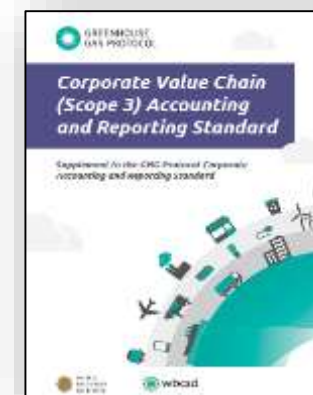
Corporate Standard



Product



Value Chain (scope 3) Standard



Project Protocol



UNDERTAKING GHG INVENTERISATION

SCOPE OF THE SESSION

Setting
Organizational
Boundaries
and
Operational
Boundaries

Tracking
Emissions over
time: Set Base
Year

Identifying
and
Calculating
GHG
Emissions

Data Roll-up,
Reporting &
Independent
Third Party
Verification

Developing Goals
& Strategies to
reduce emissions:
Setting GHG
Targets

Promoting profitable, sustainable
and competitive businesses.

SETTING UP BOUNDARIES

- One of the first and more critical steps in the development of a GHG emission inventory is the definition of the boundaries of the inventory.
- Boundaries refer to the coverage and extent that will be taken into account for the inventory process, they determine what is included and what is not.

ORGANIZATIONAL BOUNDARY

Organizational boundaries define the operations, facilities, and sources that are to be included in the inventory

OPERATIONAL BOUNDARY

Operational boundaries categorize the emissions resulting either directly or indirectly from the organization's operations, facilities, and sources

**What do we
include in the
inventory?**



ORGANIZATIONAL BOUNDARIES

Definition: In setting organizational boundaries, a company selects an approach for consolidating GHG emissions and consistently applies that approach to identify the businesses and operations that constitute the company for the purpose of accounting emissions.



The approach you choose can dramatically influence the results of your inventory so it is important to understand which selection will work best with your goals.

Once you've selected a method for defining your organization's boundaries, the method should be applied consistently throughout the inventory process.

Significance of an Organizational Boundary:

- Account complex business structures appropriately
- Measure emissions consistently throughout company

CONSOLIDATION APPROACHES

To consolidate GHG emissions from separate operations, GHG Protocol Corporate Standard provides 2 Consolidation Approaches

APPROACH	Equity Share Approach	Control Approach	
		Financial control	Operational control
DEFINITION	Percent ownership	Directs financial and operating policies to gain economic benefits	Authority to introduce and implement operating policies
GHG ACCOUNTING	% owned	If yes: 100% If no: 0%	If yes: 100% If no: 0%

EQUITY SHARE APPROACH

Equity Share Approach

- Account for emissions according to the company's equity share in the operation
- Independent of financial or operational control
- Basis is % of ownership; economic interest



CONTROL APPROACH

Control Approach

‘Control’ can be defined as:

a) Financial control

Report on 100% of
Emissions

b) Operational control

Report on 100% of
Emissions from
Operations it Control

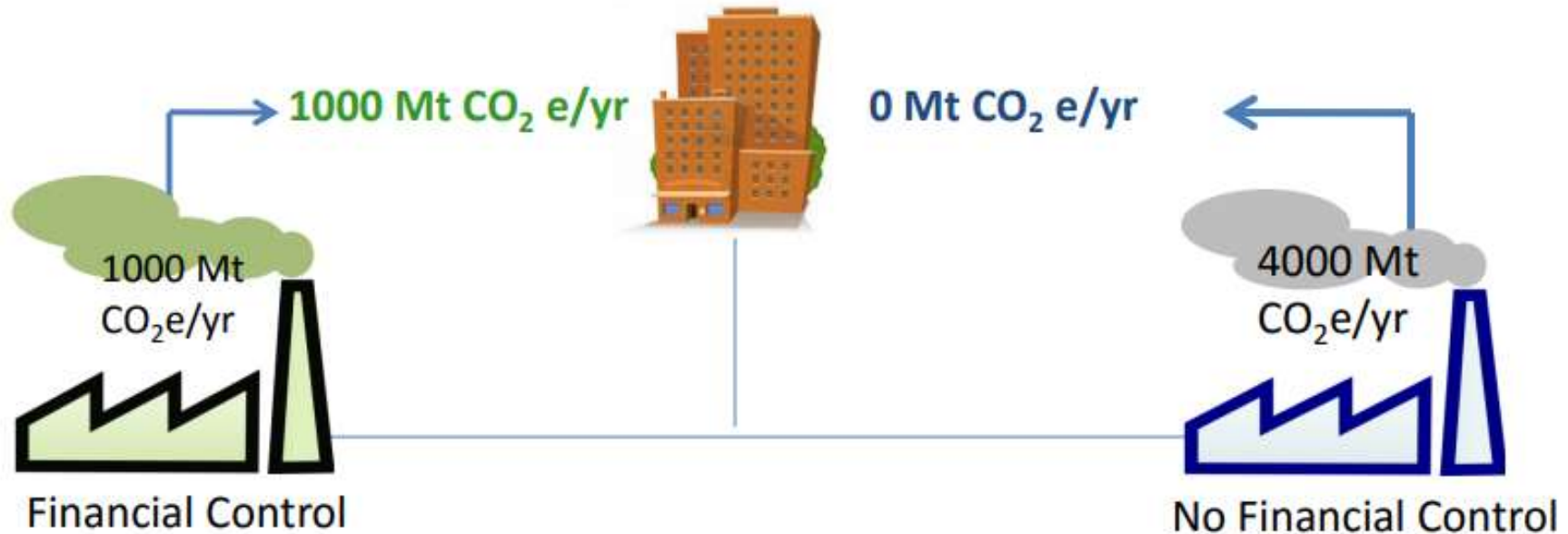
- Independent of equity share
- Account for 100% of emissions from operations under the company’s “control”

FINANACIAL CONTROL APPROACH

Financial Control

Financial Control : ability to direct an operation's financial and operational policies

- To determine, consider financial accounting status
- Account for 100% of emissions from each operation under financial control

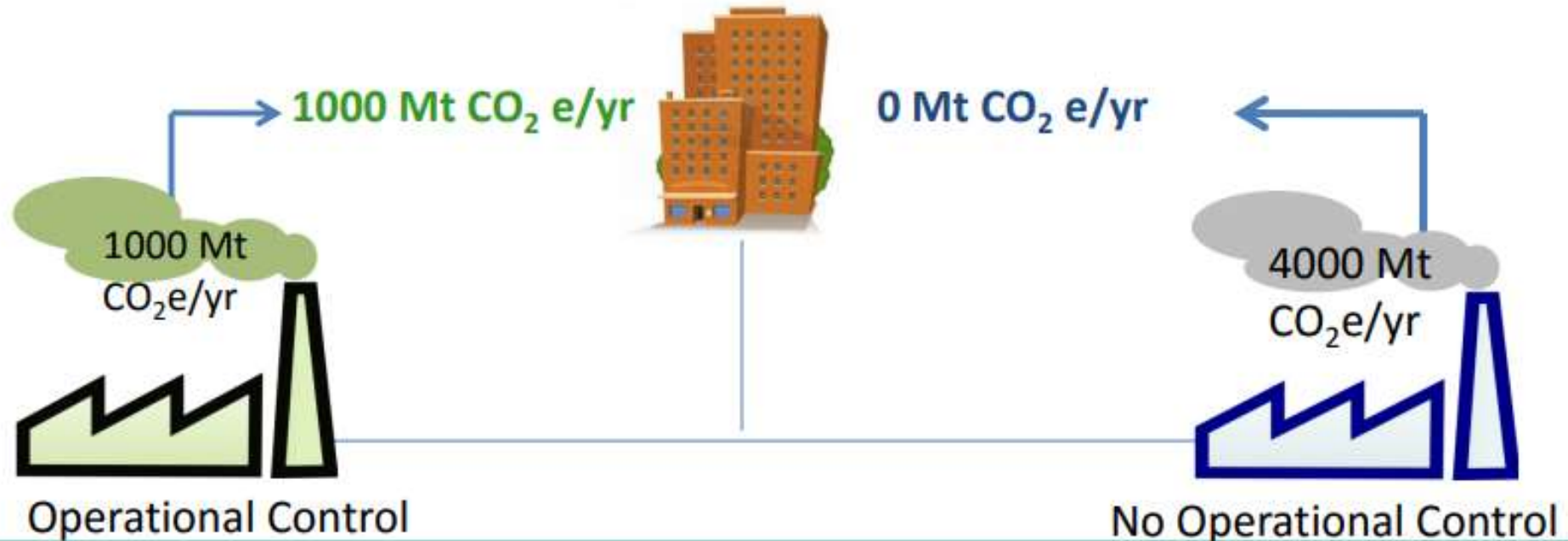


OPERATIONAL CONTROL APPROACH

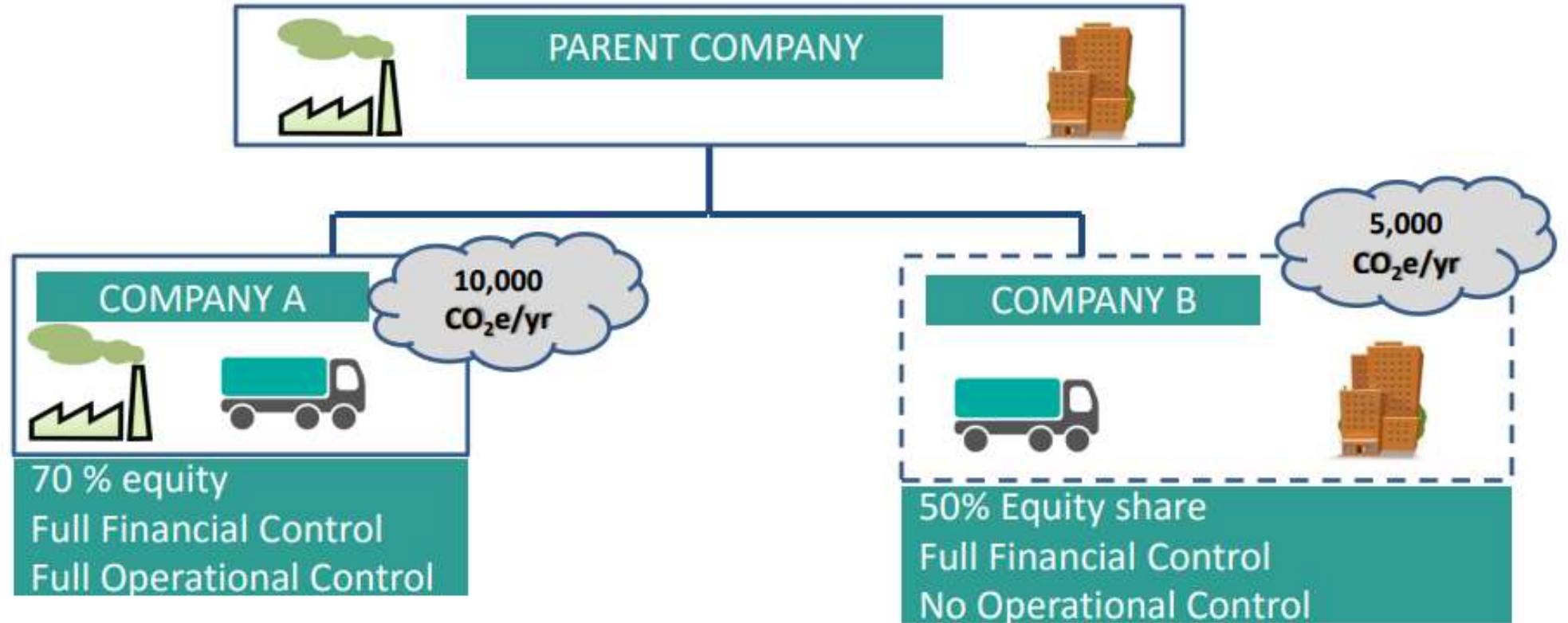
Operational Control

Operational Control: full authority to introduce and implement your operating policies at the operation

- To determine, consider ownership of operating permit
- Account for 100% of the emissions from each operation under operational control



EXAMPLE

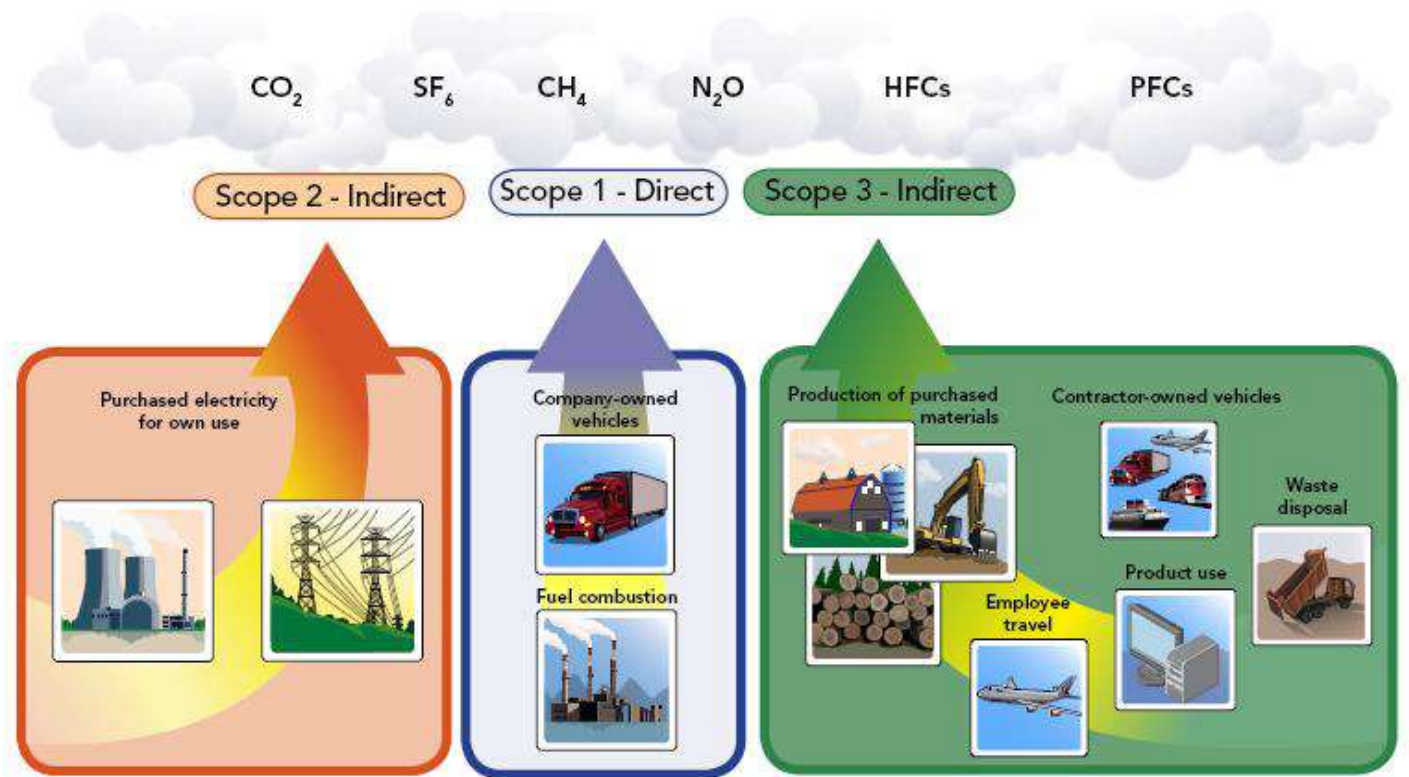
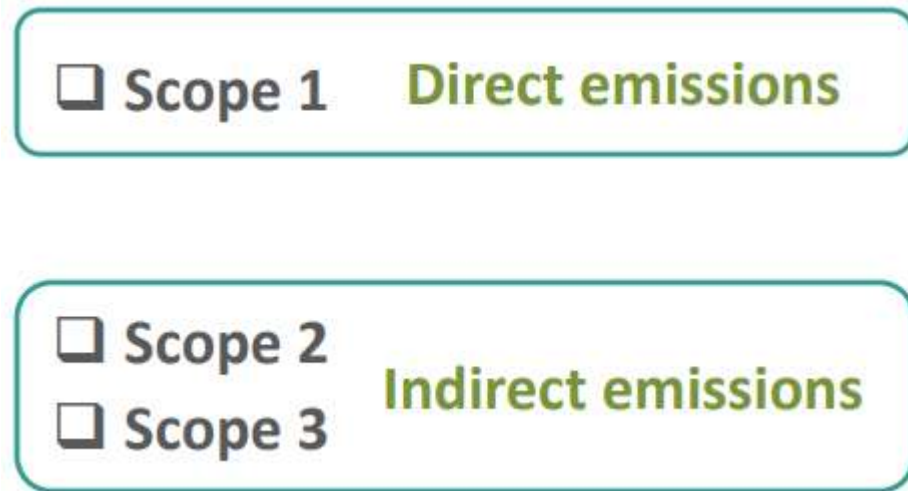


Consolidation Approach	Emissions (metric tons CO ₂ /year)
Equity Share	9,500
Financial Control	15,000
Operational Control	10,000

OPERATIONAL BOUNDARIES

Definition: Operational Boundary defines the scope of emissions for operations falling under the company's organizational boundary

- Identify emission sources and classify them as direct and indirect
- Categorize the “scope” of emissions



OPERATIONAL BOUNDARIES

Direct and Indirect Emissions

- **Direct:** Emissions from sources owned or controlled by the reporting company
- **Indirect:** Emissions that are a consequence of the activities of the reporting company but occur at sources owned or controlled by another company

SCOPE 1

SCOPE 1 Emissions:

Direct GHG emissions from sources a company owns or controls

Examples:

- Generation of electricity, heat, or steam
 - Through fuel combustion in stationary sources (e.g. boilers, furnaces, turbines)
- Physical or chemical processes
 - During manufacturing/processing of materials
- Transportation of materials, products, waste, and employees
 - Look at only company controlled/owned mobile sources (e.g. trucks, trains, cars, ships, busses, airplanes)
- Fugitive emissions
 - Venting, methane emissions from coal mines, leakages in equipment/transportation

Inclusion in GHG inventory: Required

SCOPE 2 Emissions:

Indirect emissions from purchased electricity, steam, heating and cooling

“Scope 2 accounts for GHG emissions from the generation of purchased electricity consumed by the company”

Why calculate scope 2?

“For many companies, purchased electricity represents one of the largest sources of GHG emissions and the most significant opportunity to reduce these emissions. Accounting for scope 2 allows companies to assess the risks and opportunities associated with changing electricity and GHG emissions costs.”

- For office-based businesses Scope 2 usually most significant

Inclusion in GHG inventory: Required

SCOPE 3

SCOPE 3 Emissions:

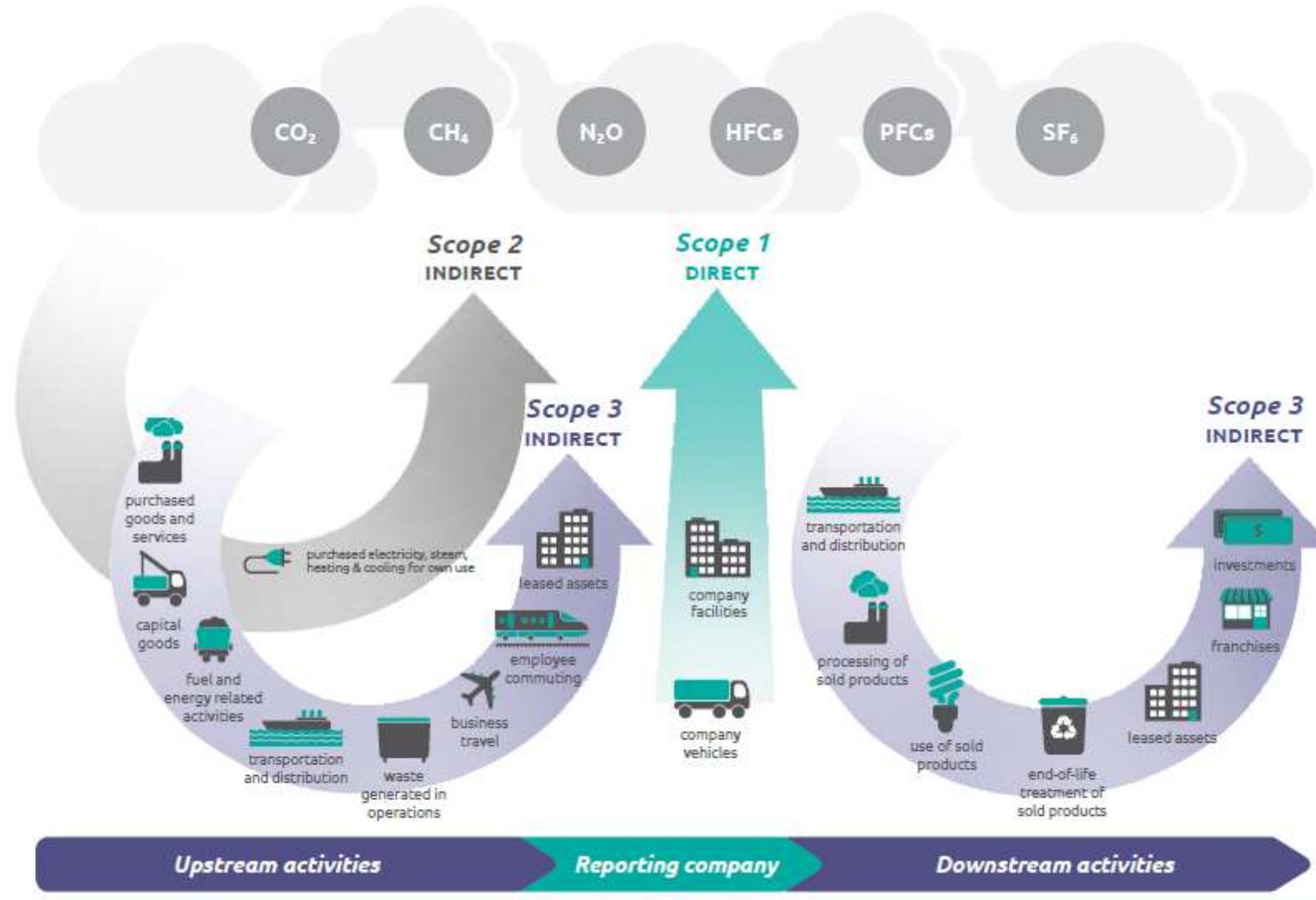
All other indirect emissions, both upstream and downstream activities

Examples:

- Transport in vehicles not owned/controlled by the company
- Energy consumed during customer use of company products

Inclusion in GHG inventory: Optional under Corporate Standard

SCOPES UNDER OPERATIONAL BOUNDARY



THANK YOU

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