



# TOWARDS GHG MEASUREMENT

Preparing for the Inventorisation

# GHG Accounting and Reporting Principles

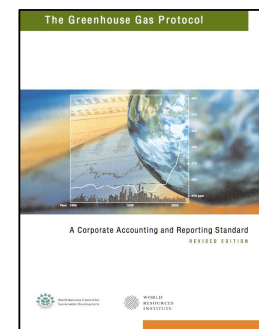
## GENERALLY ACCEPTED GHG ACCOUNTING AND REPORTING PRINCIPLES

- Relevance
- Completeness
- Consistency
- Transparency
- Accuracy

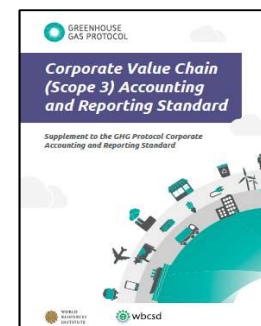
## BUSINESS GOALS FOR COMPILING A GHG INVENTORY

- 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

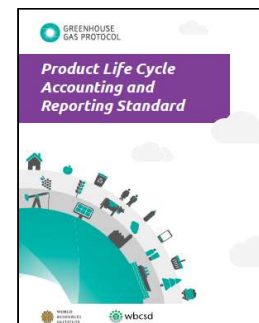
### Corporate Standard



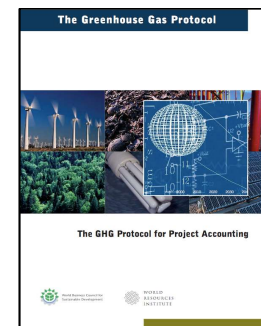
### Value Chain (scope 3) Standard



### Product



### 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

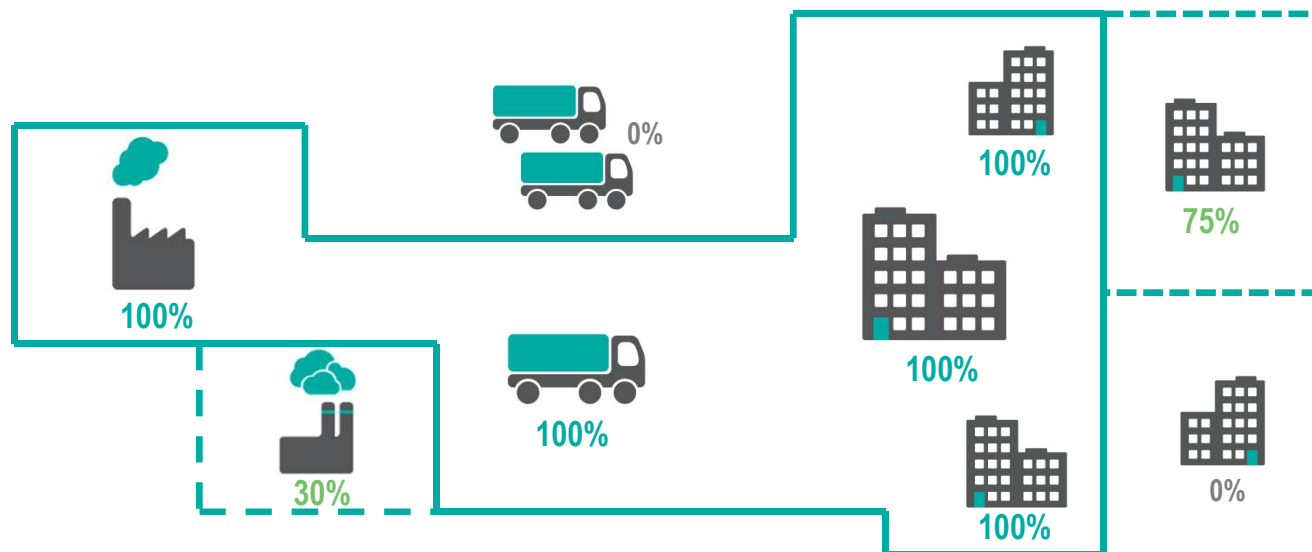
Operational boundaries categorize the emissions resulting either directly or indirectly from the organization's operations, facilities, and sources



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”

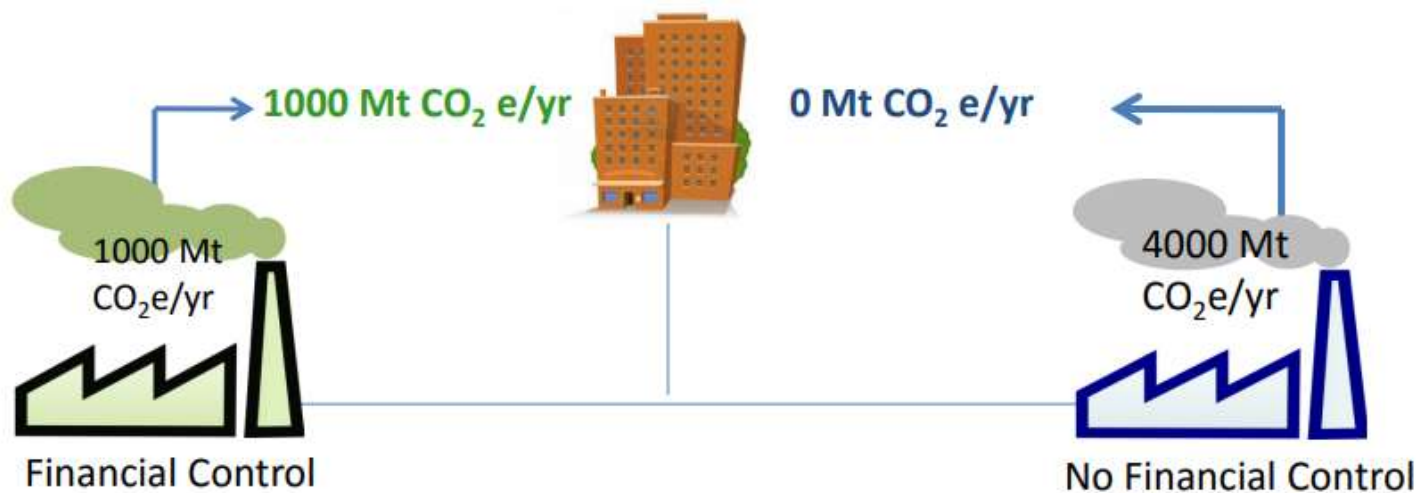


# FINANACIAL CONTROL APPROACH

## 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

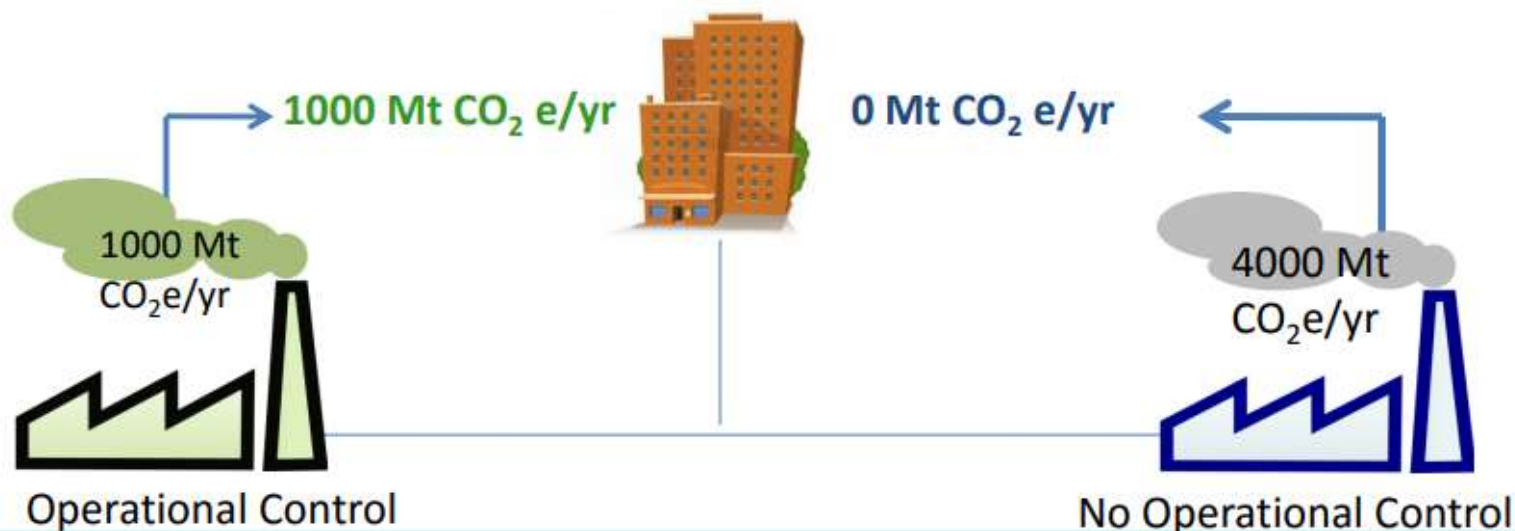


# OPERATIONAL CONTROL APPROACH

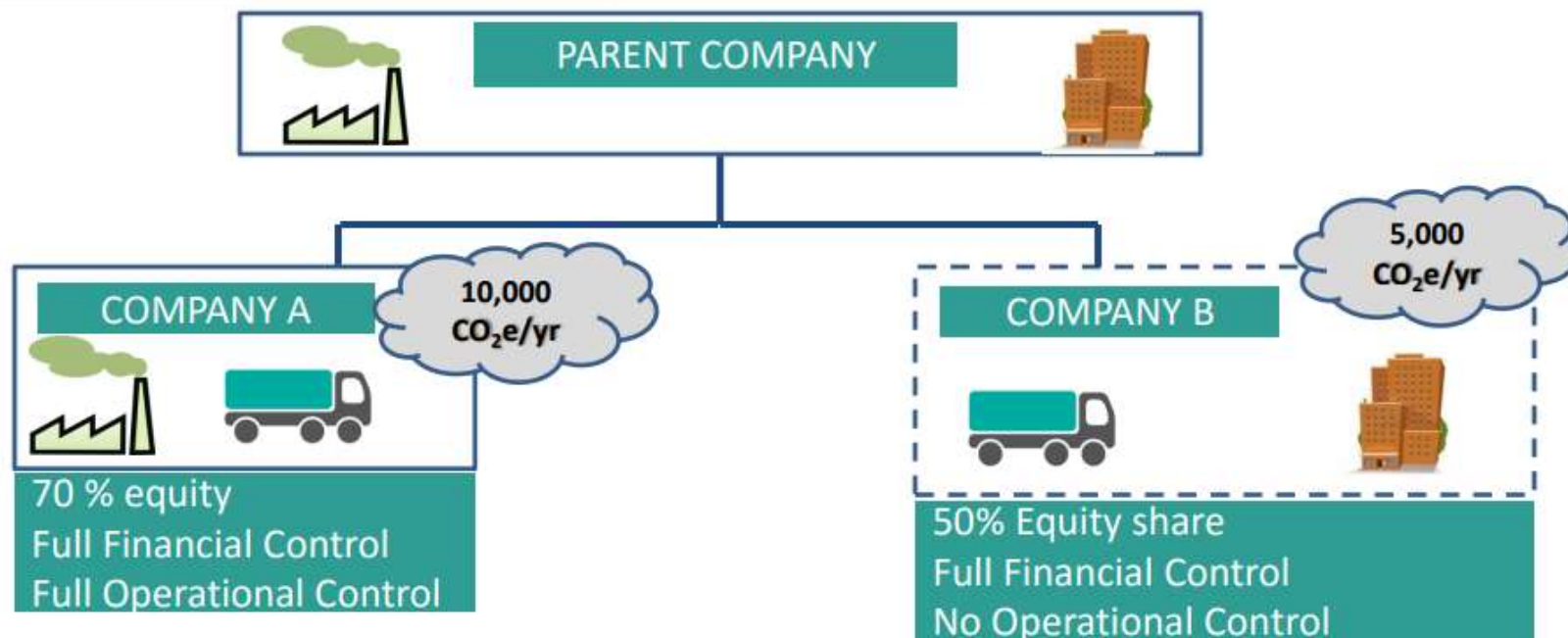
## Operational Control

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

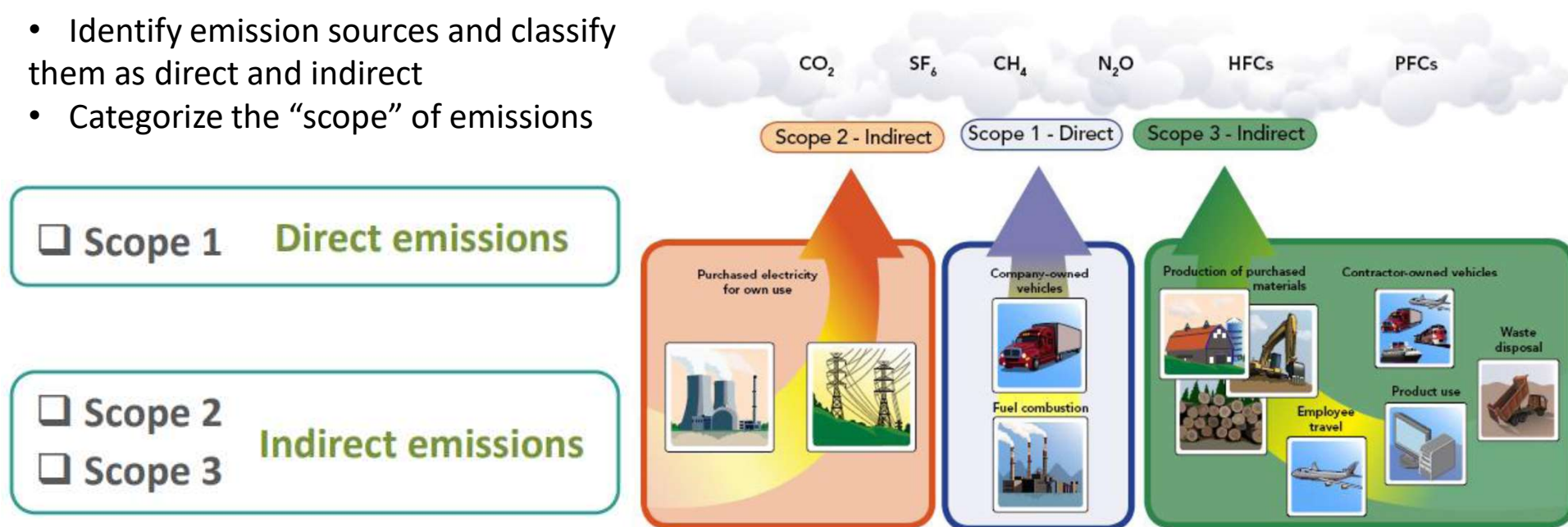


Consolidation Approach	Emissions (metric tons CO <sub>2</sub> /year)
Equity Share	9,500
Financial Control	15,000
Operational Control	10,000

# 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

## SCOPE 2 Emissions:

Indirect emissions from purchased electricity, steam, heating and cooling

- 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

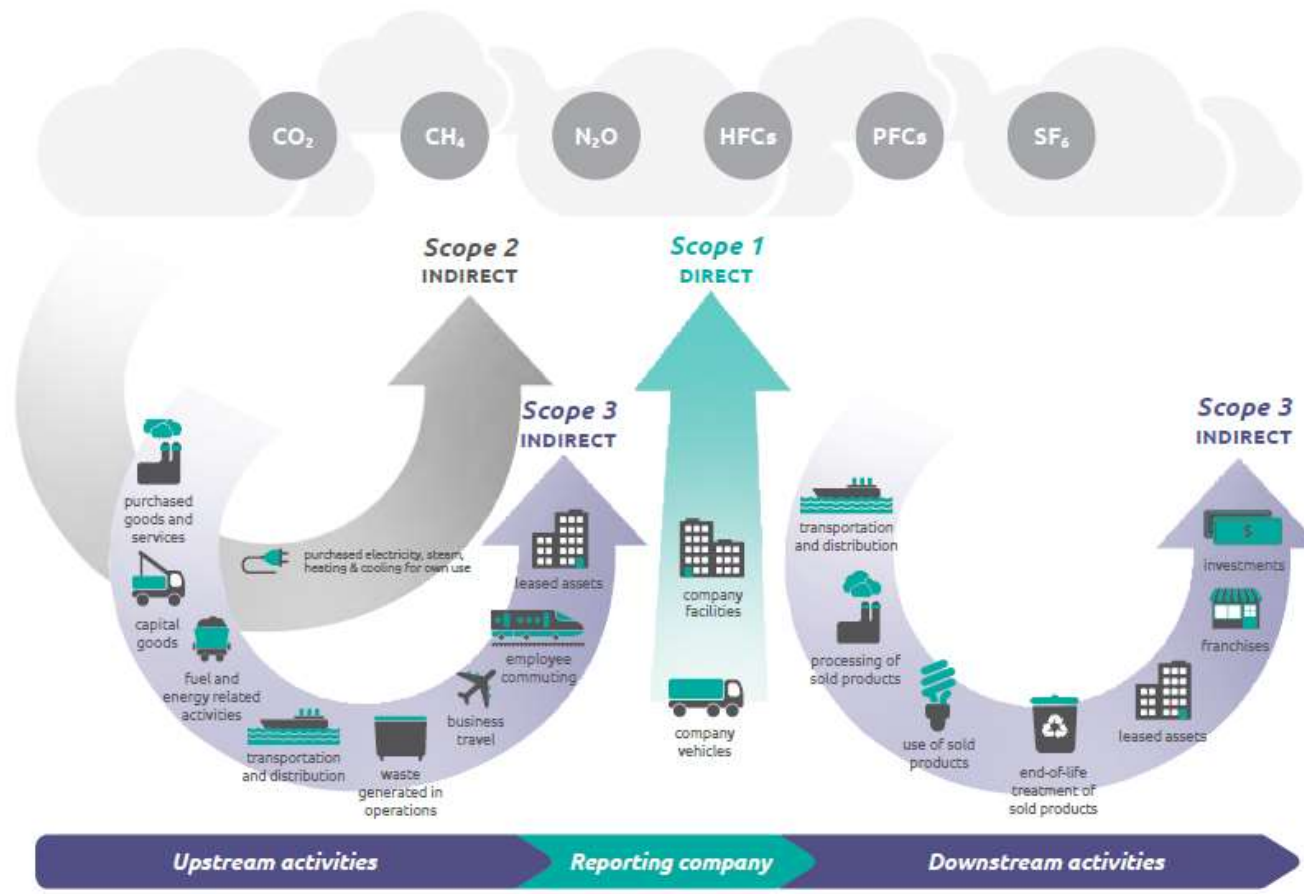
### Examples:

- 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