




		<h1>Using the GHG Protocol for the UN GHG Inventory</h1>	
			EMG Meeting June 25, 2007 World Bank
			Taryn Fransen, WRI
			 WORLD RESOURCES INSTITUTE

			
<h2>Overview</h2>			
<ul style="list-style-type: none"> <li>■ What is the GHG Protocol?</li> <li>■ How does the GHG Protocol relate to other GHG standards, programs, and methodologies?</li> <li>■ How can the UN use the GHG Protocol to develop a GHG inventory?</li> </ul>			
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# GHG Protocol

- Most widely used international accounting tool to understand and manage GHG emissions
- Convened by WRI and WBCSD in 1998
- Multi-stakeholder processes involving hundreds of businesses, NGOs, governments, academics, and others
- Provides accounting framework for almost every GHG program in the world, and for 100's of individual corporate GHG inventories

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# GHG Protocol Resources

## Corporate Standard

Usage: To create an inventory of a company's total GHG emissions (direct and indirect) and sources

## Hot Climate, Cool Commerce

Usage: Guidance for service sector companies/organizations

## Calculation Tools

Usage: Calculate emissions from transport, purchased electricity, etc.

The Greenhouse Gas Protocol	
WRI REPORT	
Facility / source description	A*
	Activity Data: Electricity, Heat, and/or Steam Purchase
	kWh
Facility / source 1	
Facility / source 2	
Facility / source 3	

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# Components of the Corporate Standard

## Standards

- Accounting principles
- Organizational Boundaries
- Operational Boundaries
- Tracking emissions over time
- Reporting GHG emissions

## Guidance

- Business goals
- Accounting for GHG reductions
- Identifying GHG sources
- Managing inventory quality
- Verifying GHG emissions
- Setting GHG targets

## Calculation tools

- Web-based, user-friendly, step-by-step guidance
- Based on IPCC methodologies & industry best practice
- Available at [ghgprotocol.org](http://ghgprotocol.org)

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# Selected Users of Corporate Standard

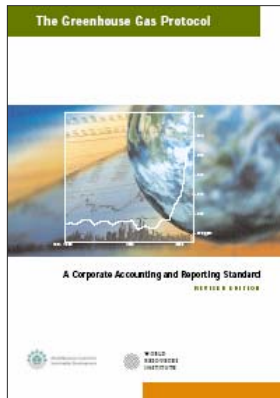


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## Programs Based on the Corporate Standard



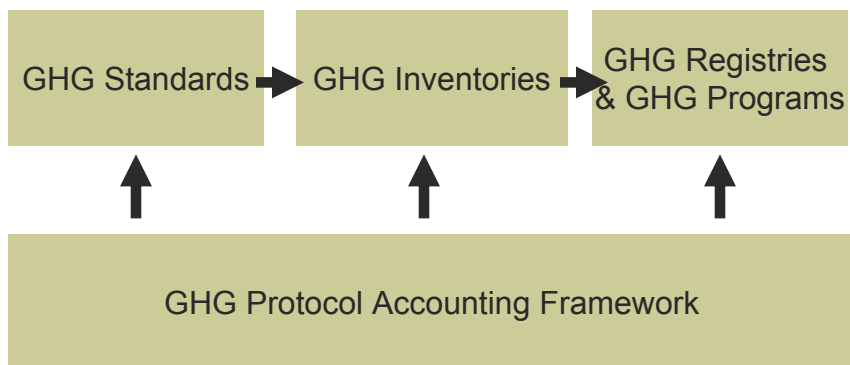
- Carbon Disclosure Project (CDP)
- California Climate Action Registry
- Chicago Climate Exchange
- Dow Jones Sustainability Index
- EU Emissions Trading Scheme
- French REGES Protocol
- Global Reporting Initiative
- METI, Japan
- Mexico GHG Program
- Respect Europe Business Leaders Initiative for Climate Change (BLICC)
- International Trade Associations (Aluminum, IPIECA, ICFPA, Cement, Iron and Steel)
- Regional Greenhouse Gas Initiative, Northeast U.S.
- UK Emissions Trading System
- U.S. EPA Climate Leaders Initiative
- World Wildlife Fund Climate Savers
- World Economic Forum Global GHG Registry
- ISO 14064 Part 1
- U.S. Department of Energy (1605b)

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## Terminology & Relationships



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## GHG Protocol Accounting Framework

- Defines principles to guide GHG accounting decisions
- Parallels financial accounting framework
- Determines what operations and sources should be included in the inventory

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## GHG Standards

- Two standards:
  - GHG Protocol Corporate Standard
  - ISO 14064-1
- ***Basically the same***
- GHGP provides more in-depth guidance
- ISO more focused on verifiability

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## GHG inventory

- A quantified list of a company's or organization's GHG emissions and sources
- At corporate / organizational level (not facility level)
- Includes all 6 GHGs
- Includes direct emissions, indirect from electricity, other indirect optional

Direct Greenhouse Gas Emissions (million metric tons of CO2 equivalents)

	Direct CO2	PFCs	SF6	Total
1990	31.3	17.0	2.2	50.5
2000	32.7	7.4	1.1	41.2
2001	32.5	4.2	0.7	37.4
2002	32.3	4.6	0.0	36.9
2003	33.6	4.0	0.0	37.6
2004	34.1	3.5	0.0	37.6

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## A corporate GHG inventory ...

... can:	... cannot:
Determine an organization's overall GHG emissions	Determine the reductions generated by a GHG project
Help identify organization-wide GHG reduction opportunities	Directly reduce GHG emissions
Help "ground truth" a national GHG inventory	Contribute directly to a national GHG inventory

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## GHG Registries

- Database for receiving and storing GHG data sets
- Inventories or reductions
- Usually verified by third party
- Examples:
  - California Climate Action Registry
  - World Economic Forum Register

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## GHG Program

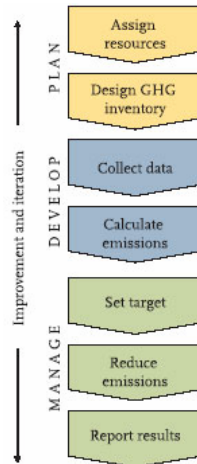
- Applies GHG inventories to:
  - Set GHG reduction targets
  - Enable trading in GHG credits
  - Make GHG information available to investors, other stakeholders
  - Etc.
- Examples:
  - EPA Climate Leaders
  - Carbon Disclosure Project
  - Chicago Climate Exchange

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# Creating a GHG Inventory

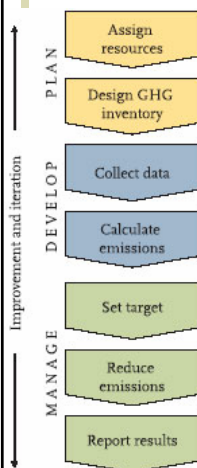


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# Plan: Assign Resources



- Secure management support
- Establish a team
- Prepare a budget

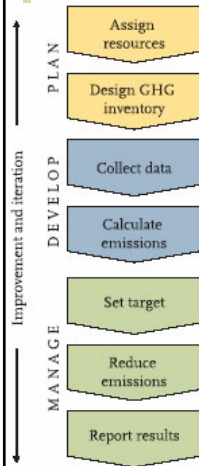
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## Plan: Design GHG inventory



- Consider guiding principles
- Define inventory boundary
- Determine sources of emissions
- Factor in emissions from leased assets

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## Guiding principles

- Relevance – Reflect organization's emissions and decision-making needs
- Completeness – Account for all sources and activities within boundary; justify exclusions
- Consistency – Allow comparison over time
- Transparency – Disclose assumptions; cite methodologies; leave an audit trail
- Accuracy – Provide reasonable assurance of information's integrity

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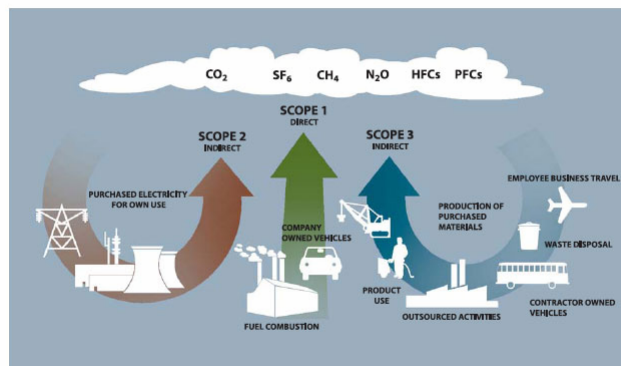
# Inventory boundaries

Company ALPHA Operations Emissions Accounted For and Reported by Organizational Boundary Approach

	Equity Share	Financial Control	Operational Control
<b>Operation A: 500 tCO<sub>2</sub></b> Equity Share: 100% Operational control: yes Financial control: yes	500 tons	500 tons	500 tons
<b>Operation B: 1,000 tCO<sub>2</sub></b> Equity Share: 51% Operational control: yes Financial control: yes	510 tons	1,000 tons	1,000 tons

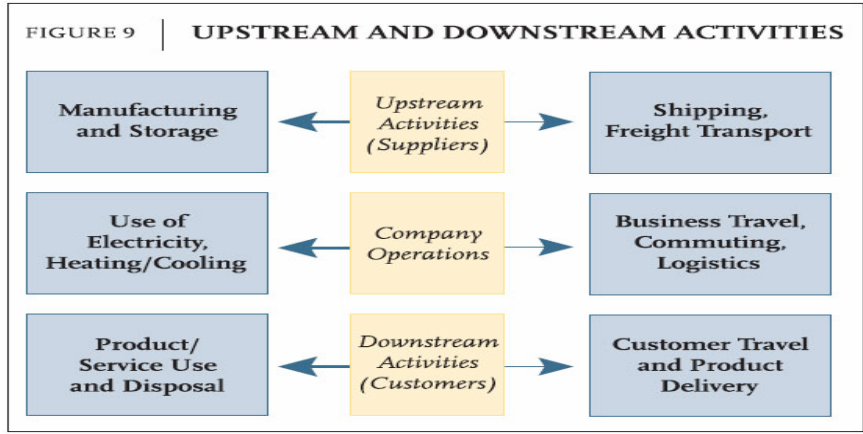
# Emission sources

FIGURE 5 | OPERATIONAL BOUNDARIES



Source: New Zealand Business Council for Sustainable Development.

# Indirect emissions

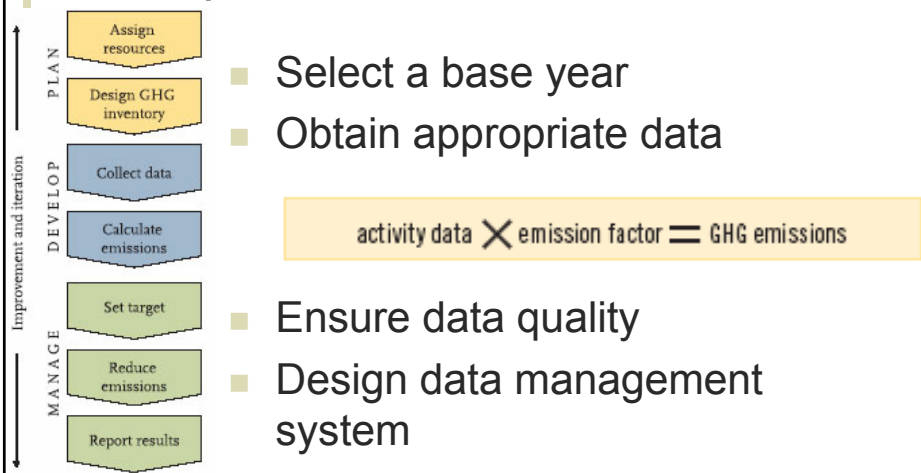


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# Develop: Collect data



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## Data Sources

### Activity Data

- Fuel receipts
- Utility bills
- Air travel records

### Emission Factors

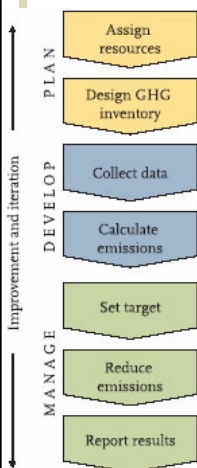
- IPCC
- IEA
- US DOE/EIA
- US EPA
- UK Defra
- UNEP
- BTS

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## Develop: Calculate emissions



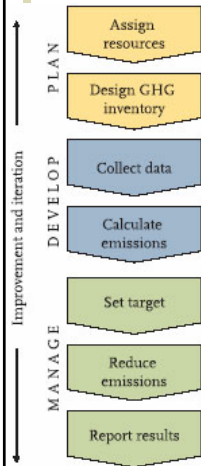
- Apply calculation tools
  - Fuel use in buildings
  - Purchased electricity
  - Business travel
  - Employee commuting
  - ≈12 sector-specific tools
- Guard against calculation errors

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## Manage: Set target



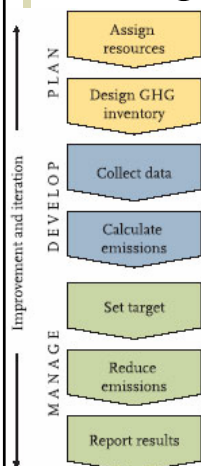
- Identify emission reduction opportunities
- Decide on target type
  - Absolute
  - Intensity
- Decide on target level

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## Manage: Reduce emissions



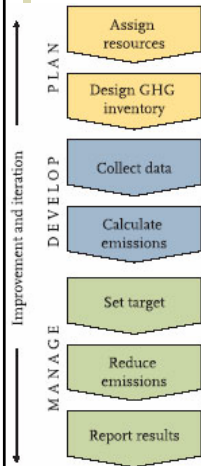
- Implement emission reduction activities
  - Energy efficiency (lighting, appliances, etc.)
  - Green power
  - Green building design
  - Reducing travel
  - Vehicle selection
  - Offsets

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## Manage: Report results



- Publicly report complete inventory information

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## Questions?

- Contact:
  - Taryn Fransen ([tfransen@wri.org](mailto:tfransen@wri.org))
- Visit GHG Protocol at [www.ghgprotocol.org](http://www.ghgprotocol.org)

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