



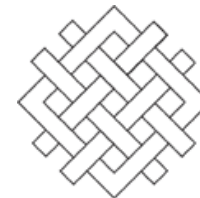
Methodologies for Measuring the Carbon Footprint

ICTs and Climate Change

International Symposium
BT Centre Auditorium, London
17-18th June 2008

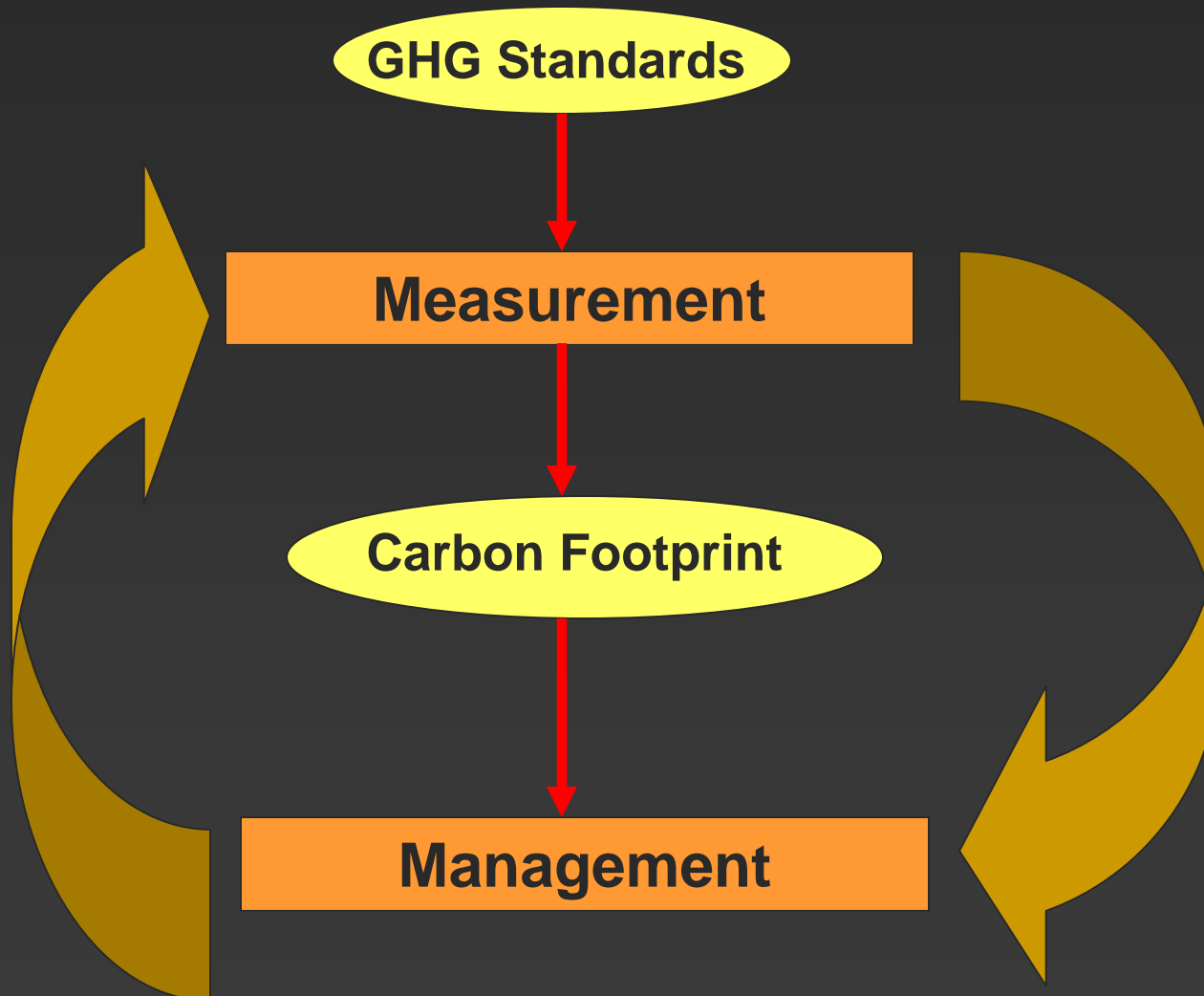


Pankaj Bhatia
Director
GHG Protocol Initiative



WORLD
RESOURCES
INSTITUTE

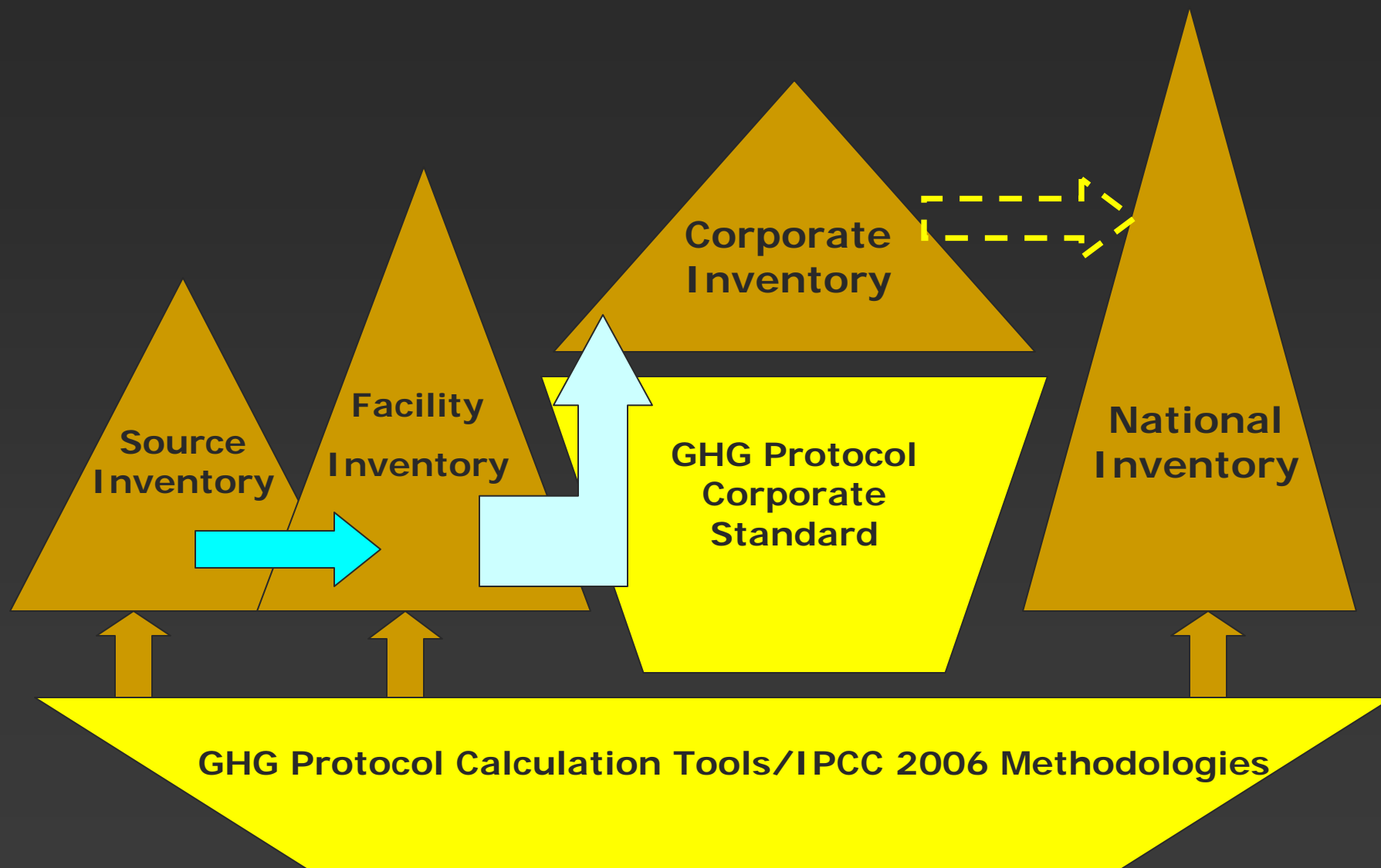
What you measure, you can manage
What you measure WELL, you can manage WELL



What is a Carbon Footprint?

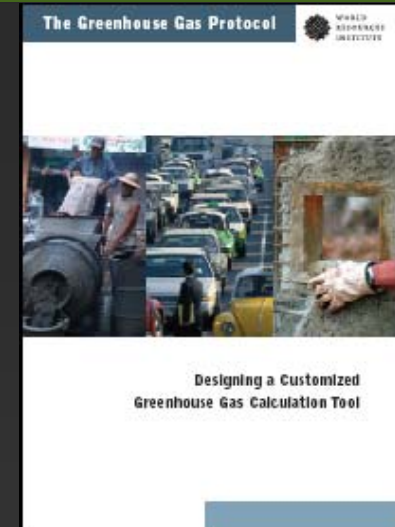
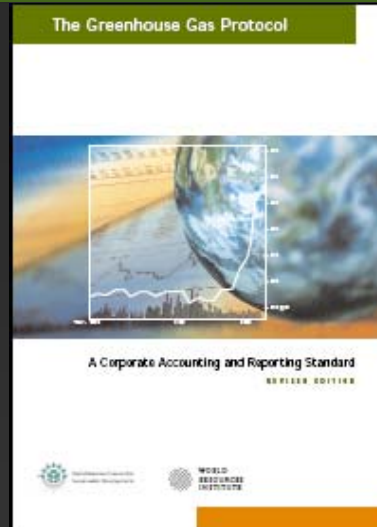
- Source Inventory
- Facility Inventory
- Corporate Inventory
- National Inventory

Relationship between Different Inventories

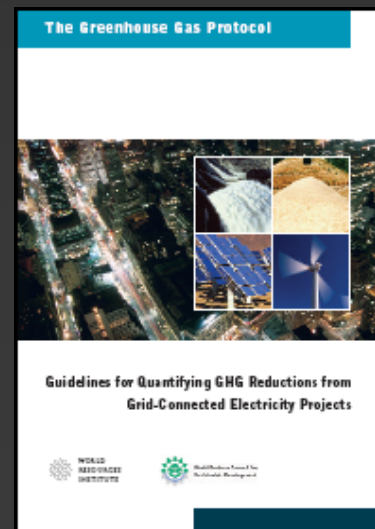


GHG Protocol Standards, Protocol, and Tools

Corporate Module

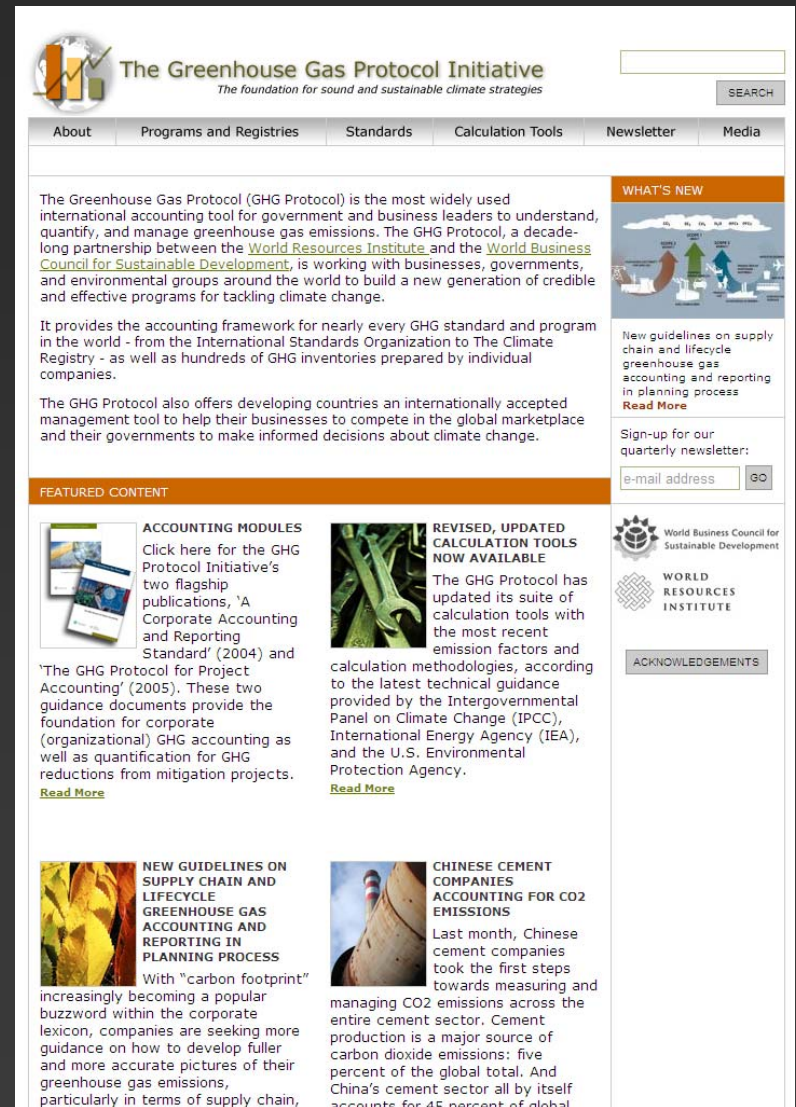


Project Module



GHGP Corporate Standard

The most widely used international accounting tool for government & business leaders to understand, quantify, and manage energy use & GHG emissions



The screenshot shows the homepage of The Greenhouse Gas Protocol Initiative. The header includes the logo and tagline "The foundation for sound and sustainable climate strategies". A navigation bar contains links for About, Programs and Registries, Standards, Calculation Tools, Newsletter, and Media. The main content area features a paragraph about the GHG Protocol's widespread use, followed by a section titled "FEATURED CONTENT" with three articles: "ACCOUNTING MODULES", "REVISED, UPDATED CALCULATION TOOLS NOW AVAILABLE", and "NEW GUIDELINES ON SUPPLY CHAIN AND LIFECYCLE GREENHOUSE GAS ACCOUNTING AND REPORTING IN PLANNING PROCESS". A sidebar on the right includes a "WHAT'S NEW" section with a diagram, a newsletter sign-up form, and logos for the World Business Council for Sustainable Development and the World Resources Institute.

The Greenhouse Gas Protocol Initiative
The foundation for sound and sustainable climate strategies

SEARCH

About Programs and Registries Standards Calculation Tools Newsletter Media

The Greenhouse Gas Protocol (GHG Protocol) is the most widely used international accounting tool for government and business leaders to understand, quantify, and manage greenhouse gas emissions. The GHG Protocol, a decade-long partnership between the [World Resources Institute](#) and the [World Business Council for Sustainable Development](#), is working with businesses, governments, and environmental groups around the world to build a new generation of credible and effective programs for tackling climate change.

It provides the accounting framework for nearly every GHG standard and program in the world - from the International Standards Organization to The Climate Registry - as well as hundreds of GHG inventories prepared by individual companies.

The GHG Protocol also offers developing countries an internationally accepted management tool to help their businesses to compete in the global marketplace and their governments to make informed decisions about climate change.

WHAT'S NEW

New guidelines on supply chain and lifecycle greenhouse gas accounting and reporting in planning process
[Read More](#)

Sign-up for our quarterly newsletter:
e-mail address

FEATURED CONTENT

ACCOUNTING MODULES
Click here for the GHG Protocol Initiative's two flagship publications, 'A Corporate Accounting and Reporting Standard' (2004) and 'The GHG Protocol for Project Accounting' (2005). These two guidance documents provide the foundation for corporate (organizational) GHG accounting as well as quantification for GHG reductions from mitigation projects.
[Read More](#)

REVISED, UPDATED CALCULATION TOOLS NOW AVAILABLE
The GHG Protocol has updated its suite of calculation tools with the most recent emission factors and calculation methodologies, according to the latest technical guidance provided by the Intergovernmental Panel on Climate Change (IPCC), International Energy Agency (IEA), and the U.S. Environmental Protection Agency.
[Read More](#)

NEW GUIDELINES ON SUPPLY CHAIN AND LIFECYCLE GREENHOUSE GAS ACCOUNTING AND REPORTING IN PLANNING PROCESS
With "carbon footprint" increasingly becoming a popular buzzword within the corporate lexicon, companies are seeking more guidance on how to develop fuller and more accurate pictures of their greenhouse gas emissions, particularly in terms of supply chain,
[Read More](#)

CHINESE CEMENT COMPANIES ACCOUNTING FOR CO2 EMISSIONS
Last month, Chinese cement companies took the first steps towards measuring and managing CO2 emissions across the entire cement sector. Cement production is a major source of carbon dioxide emissions: five percent of the global total. And China's cement sector all by itself accounts for 45 percent of global
[Read More](#)

World Business Council for Sustainable Development
WORLD RESOURCES INSTITUTE
ACKNOWLEDGEMENTS

Wide Adoption by National & International Initiatives - Examples

Voluntary Climate Initiatives

- ♦ U.S. EPA Climate Leaders Program
- ♦ Brazil GHG Protocol Program
- ♦ China Energy & GHG Management Program
- ♦ Mexico GHG Program
- ♦ Philippines GHG Accounting & Reporting Prog.
- ♦ Korea National GHG Registry
- ♦ South Africa NBI/BUSA-DEAT Initiative
- ♦ WWF Climate Savers Program

GHG Registries

- ♦ The Climate Registry
- ♦ California Climate Action Registry
- ♦ US DOE 1605b Registry
- ♦ WEF Global Registry

Multilateral Non-government Initiatives

- ♦ International Standards Organization (ISO)

Industry Initiatives

- ♦ WBCSD CSI Protocol
- ♦ International Forum of Forest & Paper Associations
- ♦ International Aluminium Institute

Market Initiatives

- ♦ AP 6 Initiative Cement Sector Protocol
- ♦ Carbon Disclosure Project
- ♦ Chicago Climate Exchange
- ♦ EU Emissions Trading Scheme
(informed by GHG Protocol calculation tools)

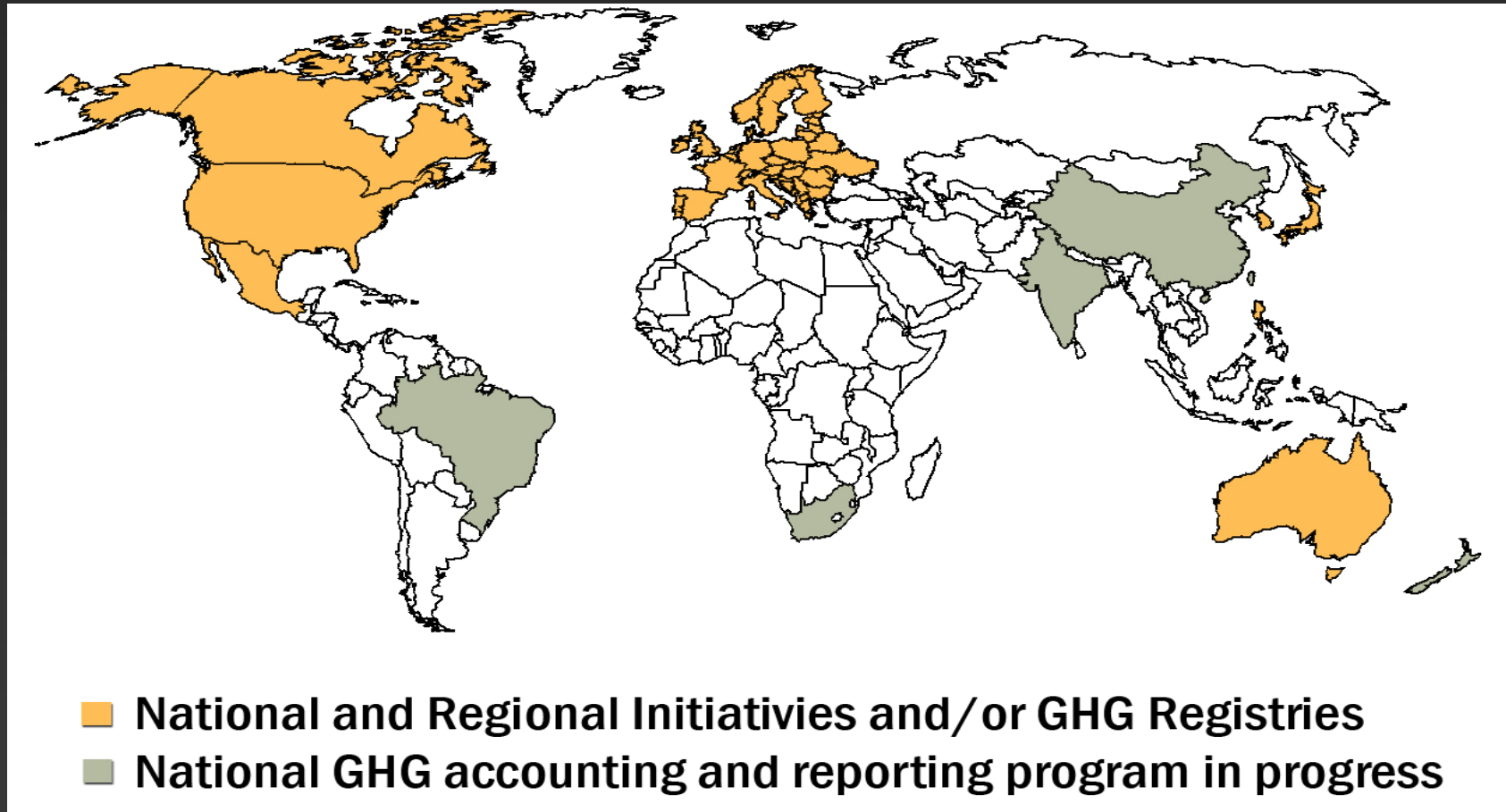
Wide Adoption by National & International Initiatives - Examples



CARBON DISCLOSURE PROJECT



The GHG Protocol – Global Adoption

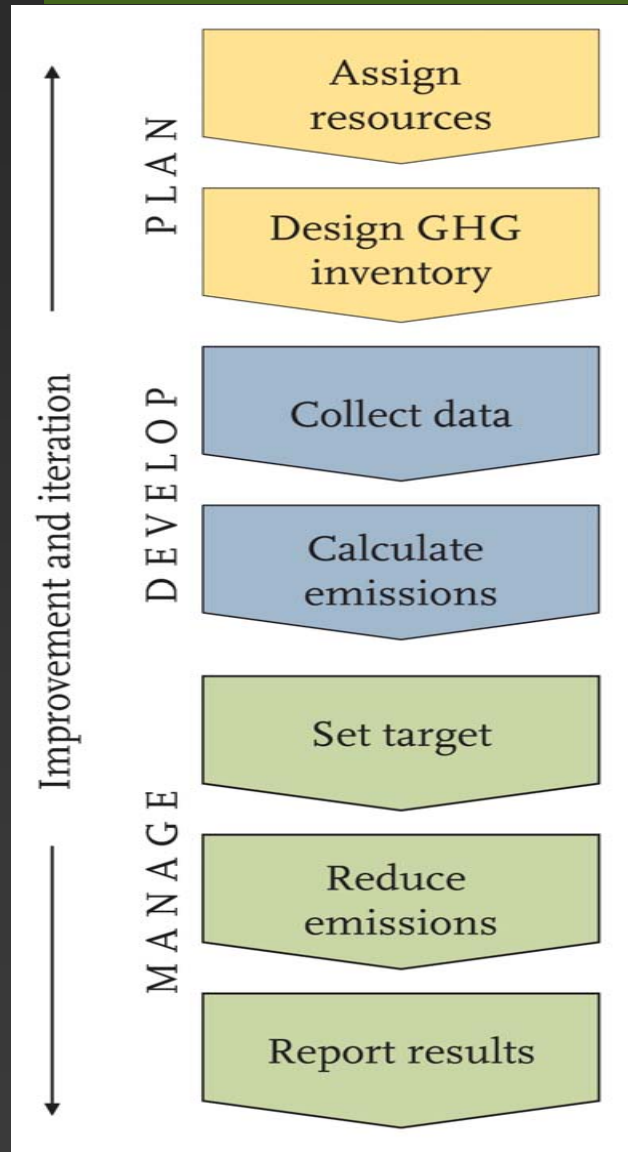


Out of the 335 Global FT500 companies studied, 63% aligned with the GHG Protocol ([The Corporate Climate Communications Report 2007](#))

Corporate Climate Strategy – Key Elements

- **Business Context and Goals**
- **Monitoring and Reporting**
- **Data Analysis & Interpretation**
- **Target-setting**
- **Emissions Reductions Measures**
 - Reduce energy intensity
 - Reduce emissions intensity
- **Tracking and Assessing Performance**
 - Emissions Assets Portfolio
 - Emissions Liability Portfolio

Stages



- ✓ secure management support
- ✓ establish a team & prepare budget
- ✓ define inventory boundary
- ✓ determine sources of emissions
- ✓ select base year
- ✓ design efficient data management system
- ✓ obtain appropriate data, ensure data quality
- ✓ apply calculation tools
- ✓ guard against calculation errors
- ✓ identify emission reduction opportunities
- ✓ decide on target type & level
- ✓ implement emission reduction activities
- ✓ publicly report complete inventory information

Corporate Accounting Standard

Standards

- Accounting Principles
- Organizational Boundaries
- Operational Boundaries
- Historic Datum
- Reporting GHG emissions

Guidance

- Business goals and inventory design
- Accounting for GHG reductions
- Identifying GHG sources
- Managing inventory quality
- Verification of GHG emissions
- Target Setting

Calculation tools

- Web-based, user-friendly, step-by-step guidance
- Build on IPCC methodologies & industry best practice
- Cross sector, e.g. mobile and stationary combustion
- Sector specific e.g. CSI Protocol

www.ghgprotocol.org

Why Measure a Carbon Footprint?

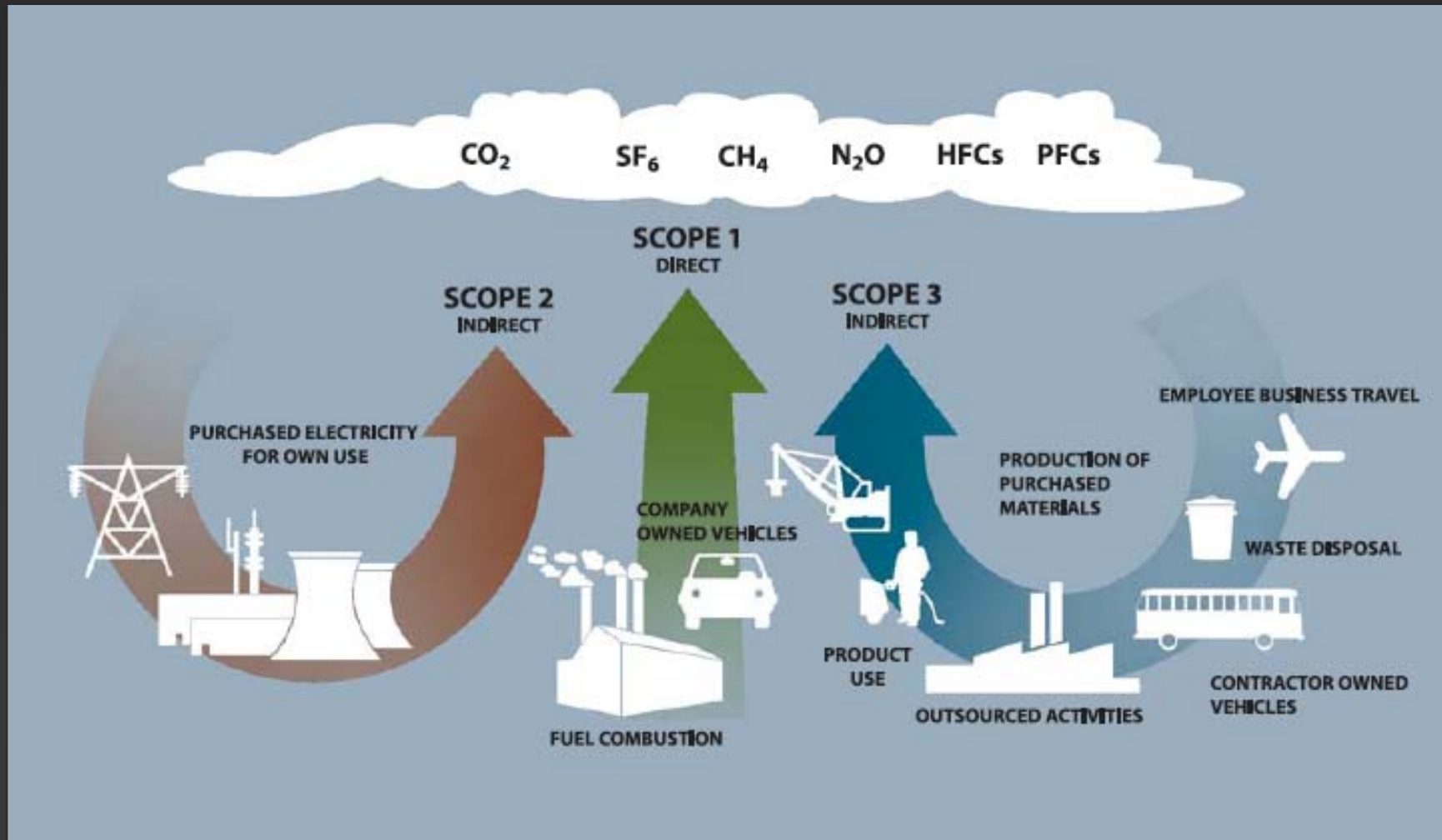
- Achieve corporate carbon management goals
- Identify opportunities to reduce energy or process costs
- Identify opportunities to enhance competitive advantage
- Participate in GHG markets
- Provide information to stakeholders
- Participate in GHG reporting programs

Footprint

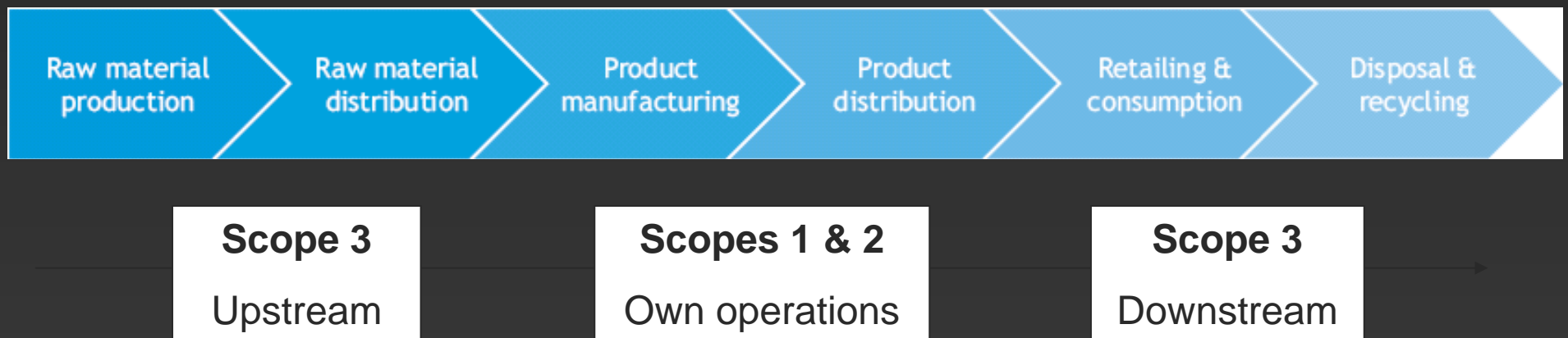
Questions that need to be considered include:

- What business units/facilities will be included in the inventory (organizational boundary)?
- What GHG sources and activities will be included (operational boundary)?
- What base year will selected?

Accounting Under GHG Protocol Corporate Standard



Scopes Across a Value Chain



GHG Protocol Calculation Tools

➤ Cross-sectoral

- Stationary combustion
- Mobile combustion
 - Business travel
 - Employee commuting
- Combined heat & power
- Purchased electricity, heat & steam

➤ Sector-specific

- Ammonia
- Cement
- Iron & steel
- Lime
- Pulp & paper
- Aluminum
- Wood products
- Adipic acid
- Nitric acid
- Semi-conductors
- HFCs, PFCs

Consistent with IPCC and IEA methodologies

Emissions and Tools for the ICT Sector

- Scope 1 emissions from stationary combustion & RAC equipment
- Scope 2 emissions from purchased electricity
- Scope 3 emissions from employee commuting, business travel, product transport, use, & disposal

Microsoft Excel - Fuel Use in Facilities_ServiceSector_v2.0_Final.xls

File Edit View Insert Format Tools Data Contributor Window Analyst Help Adobe PDF Type a question for help

A25

Direct CO₂ Emissions from Fuel Use in Facilities

Color Key: Standard label User entry cells Automatic calculation

Note: Grey colored cells are protected to prevent formulas being inadvertently deleted. To unprotect the worksheet, select Protection from the Tools menu followed by Unprotect Sheet. No password is required.

* Please ensure that emission factor units in column D are consistent with activity data units in column B.

Year: 2006

Source description	Fuel type	Quantity of fuel consumed	Unit	CO ₂ emission factor	kg CO ₂ / unit	CO ₂ emissions in kg	CO ₂ emissions in metric tons
						E=AxC	
						0.0	0.00
						0.0	0.00
						0.0	0.00
						0.0	0.00
						0.0	0.00
						0.0	0.00

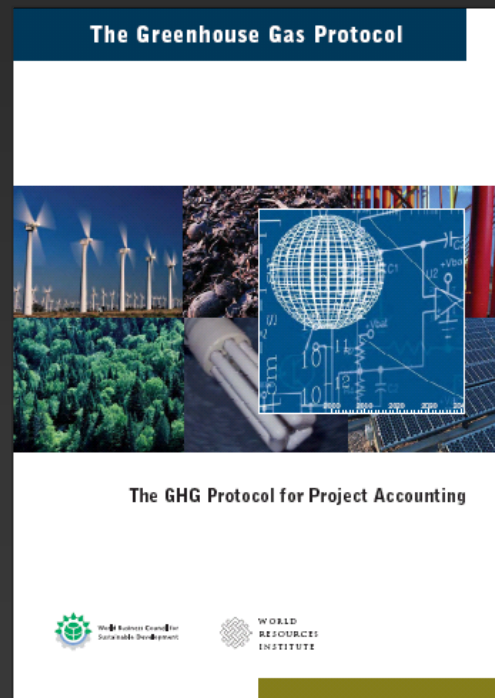
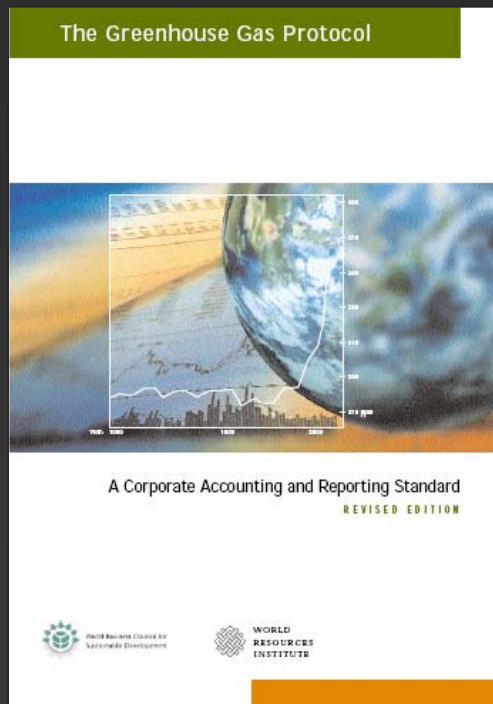
Step 4: Sum CO₂ emissions: 0.00

User agreement / Table of Contents / Fuel Use in Facilities / EFS_FI

Ready NUM

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New GHG Protocol Standard for Product & Supply Chain Accounting



New GHG Protocol Product & Supply Chain Standard

Scope, Objectives, Accounting Elements

Life
Cycle



Supply
Chain

Product Life Cycle

- Product labeling

Corporate Life Cycle

- Corporate carbon-neutrality labeling

Product Supply Chain

- Product supply chain performance
- Benchmarking
- Embodied carbon policies

Corporate Supply Chain

- Corporate supply chain performance
- Corporate procurement policies

Product



Corporate

Relevance to ICT Sector

- **Provide guidelines for supply chain and product footprinting**
 - How do you identify the most relevant/material activities?
 - How far back in the supply chain should you go?
 - Which of your suppliers' total emissions are associated with your company?
 - When should you use a particular method or level of accuracy?
- **Working in collaboration with ICT companies and initiatives to address ICT issues and challenges**
- **ICT-specific guidelines expected to follow general standard**

How to Partner and Participate

- Options
 1. Participate in technical working groups
 2. Participate as a general stakeholder
 3. Road test draft guidelines
- To participate, contact:
David Rich, drich@wri.org

Questions?

Contact:

Pankaj Bhatia

World Resources Institute

pankaj@wri.org

Visit GHG Protocol at

www.ghgprotocol.org