Overview

- What is the GHG Protocol?
- How does the GHG Protocol relate to other GHG standards, programs, and methodologies?
- How can the UN use the GHG Protocol to develop a GHG inventory?
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

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.
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

Selected Users of Corporate Standard
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)

Terminology & Relationships

GHG Standards → GHG Inventories → GHG Registries & GHG Programs

GHG Protocol Accounting Framework
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

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
**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)

<table>
<thead>
<tr>
<th>Year</th>
<th>Direct CO2</th>
<th>PFCs</th>
<th>SF6</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>31.3</td>
<td>17.0</td>
<td>2.2</td>
<td>50.5</td>
</tr>
<tr>
<td>2000</td>
<td>32.7</td>
<td>7.4</td>
<td>1.1</td>
<td>41.2</td>
</tr>
<tr>
<td>2001</td>
<td>32.5</td>
<td>4.2</td>
<td>0.7</td>
<td>37.4</td>
</tr>
<tr>
<td>2002</td>
<td>32.3</td>
<td>4.6</td>
<td>0.0</td>
<td>36.9</td>
</tr>
<tr>
<td>2003</td>
<td>33.6</td>
<td>4.0</td>
<td>0.0</td>
<td>37.6</td>
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<tr>
<td>2004</td>
<td>34.1</td>
<td>3.5</td>
<td>0.0</td>
<td>37.6</td>
</tr>
</tbody>
</table>

**A corporate GHG inventory …**

... **can:**
- Determine an organization’s overall GHG emissions
- Help identify organization-wide GHG reduction opportunities
- Help “ground truth” a national GHG inventory

... **cannot:**
- Determine the reductions generated by a GHG project
- Directly reduce GHG emissions
- Contribute directly to a national GHG inventory
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

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
Creating a GHG Inventory

Plan: Assign Resources

- Secure management support
- Establish a team
- Prepare a budget
Plan: Design GHG inventory

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

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
Inventory boundaries

<table>
<thead>
<tr>
<th>Company ALPHA Operations</th>
<th>Emissions Accounted For and Reported by Organizational Boundary Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operation A: 500 t CO₂</strong></td>
<td>Equity Share</td>
</tr>
<tr>
<td>Equity Share: 100%</td>
<td>500 tons</td>
</tr>
<tr>
<td>Operational control: yes</td>
<td></td>
</tr>
<tr>
<td><strong>Operation B: 1,000 t CO₂</strong></td>
<td>510 tons</td>
</tr>
<tr>
<td>Equity Share: 51%</td>
<td></td>
</tr>
<tr>
<td>Operational control: yes</td>
<td></td>
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</tbody>
</table>

16 July 2007

Emission sources
Indirect emissions

Develop: Collect data

- Select a base year
- Obtain appropriate data

Ensure data quality
- Design data management system

activity data \times\ emission factor = GHG emissions
Data Sources

Activity Data
- Fuel receipts
- Utility bills
- Air travel records

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

Develop: Calculate emissions
- Apply calculation tools
  - Fuel use in buildings
  - Purchased electricity
  - Business travel
  - Employee commuting
  - ≈12 sector-specific tools
- Guard against calculation errors
**Manage: Set target**

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

**Manage: Reduce emissions**

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

- Publicly report complete inventory information

Questions?

- Contact:
  - Taryn Fransen (tfransen@wri.org)

- Visit GHG Protocol at www.ghgprotocol.org