

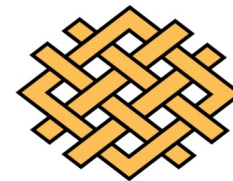
Workshop for Pilot Testers

GHG Calculation Tool and Reporting Template

Stephen Russell & Mary Sotos
UNEP-SBCI Annual Meeting
May 18, 2010






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WORLD
RESOURCES
INSTITUTE

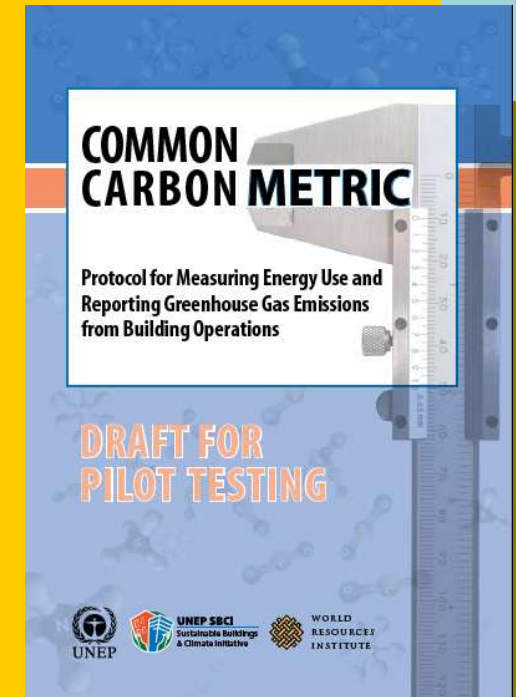
Overview of Workshop

-  Describe the objectives and structure of the pilot test
-  Explain CCM and demonstrate the tool
-  Highlight key areas for feedback



Objectives of the Pilot Test

- Two components
 - Calculation Tool and Reporting Template
 - Common Carbon Metric (CCM) protocol
- Gain critical feedback concerning:
 - the mechanics/design of tool
 - overall relevance for the sector
- Use pilot inventories as case studies/initial data
- Begin developing additional resources/ references



The screenshot shows a software interface for data entry. The main heading is "Enter data on fuel consumed by the vehicle". Below this is a table with columns for "Fuel Type", "Fuel Consumption", "Distance", "Vehicle", "Vehicle Registration", "Vehicle Type", "Vehicle Model", and "Vehicle Year". The table is divided into "Light Duty" and "Heavy Duty" sections. Below the main table is a smaller table titled "What percentage of these km were used in the different building component?". This table has columns for "Building Component", "Light Duty", "Heavy Duty", "Total", "Percentage", and "Total km".

Fuel Type	Fuel Consumption	Distance	Vehicle	Vehicle Registration	Vehicle Type	Vehicle Model	Vehicle Year
Gasoline	1000	1000	Toyota Camry	ABC123	Light Duty	2010	2010
Gasoline	2000	2000	Ford F150	DEF456	Heavy Duty	2010	2010
Gasoline	3000	3000	Toyota Camry	GHI789	Light Duty	2010	2010
Gasoline	4000	4000	Ford F150	JKL012	Heavy Duty	2010	2010
Gasoline	5000	5000	Toyota Camry	MNO345	Light Duty	2010	2010
Gasoline	6000	6000	Ford F150	PQR678	Heavy Duty	2010	2010
Gasoline	7000	7000	Toyota Camry	STU901	Light Duty	2010	2010
Gasoline	8000	8000	Ford F150	VWX234	Heavy Duty	2010	2010
Gasoline	9000	9000	Toyota Camry	YZA567	Light Duty	2010	2010
Gasoline	10000	10000	Ford F150	BCD890	Heavy Duty	2010	2010

Building Component	Light Duty	Heavy Duty	Total	Percentage	Total km
Office	1000	2000	3000	30%	10000
Warehouse	2000	4000	6000	60%	10000
Manufacturing	3000	6000	9000	90%	10000
Construction	4000	8000	12000	120%	10000
Other	5000	10000	15000	150%	10000



Structure of the Pilot Test

- Four main steps

- 1) Read through/review CCM guidance
- 2) Collect data
- 3) Enter data into the tool
- 4) Review tool's results and assess potential for structuring mitigation strategies.



- Outputs submitted to WRI and UNEP at end of pilot test

-Inventory

-Written review/feedback on CCM and tool



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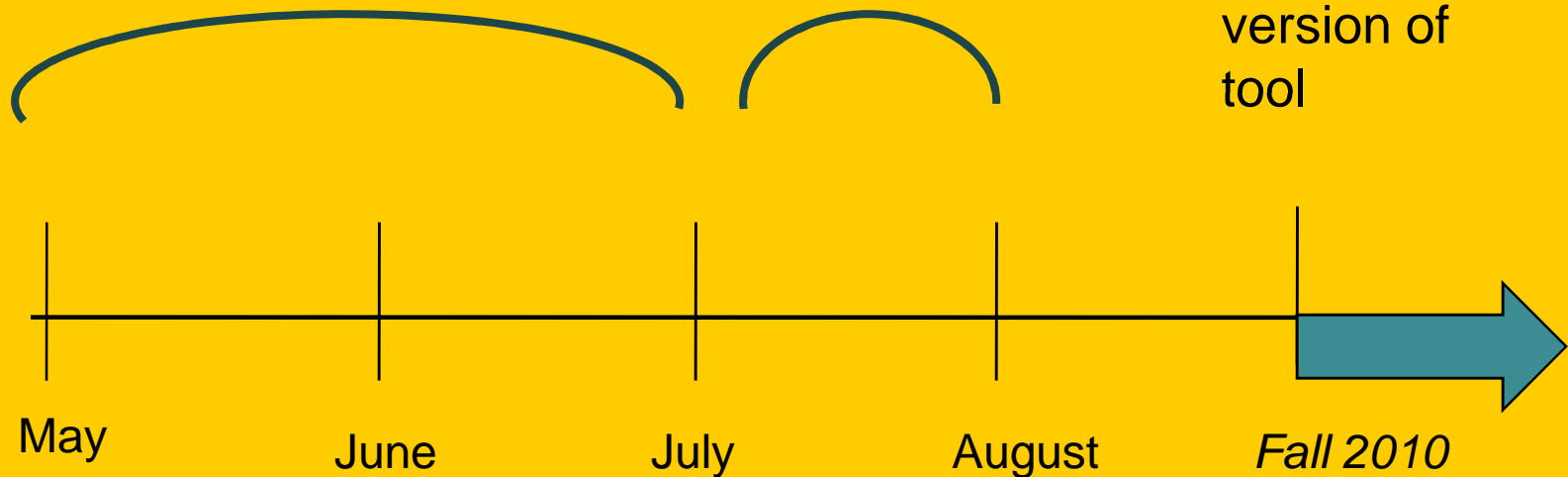
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Timeline of the Pilot Test

- Collect data/building info
- Enter data into tool

-Submit
inventory and
written
feedback

-WRI
produces
summary,
revised
version of
tool



Resources for the Pilot Test

- Website hosted by WRI

- Materials posted
- FAQ section
- Feedback/interaction with other pilot testers

- Contact

- WRI email/phone availability for tools-related questions
- UNEP contact for sector specifics



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Detail about the CCM

- Purpose

- Define boundaries, methods and performance metrics for a building sector GHG inventory
- Describe function of Calculation Tool and Reporting Template

- Structure

- The Metric
- The Protocol
- Appendices
 - Sample tool
 - Glossary
 - Emission factors
 - GWP values
 - Climate classification

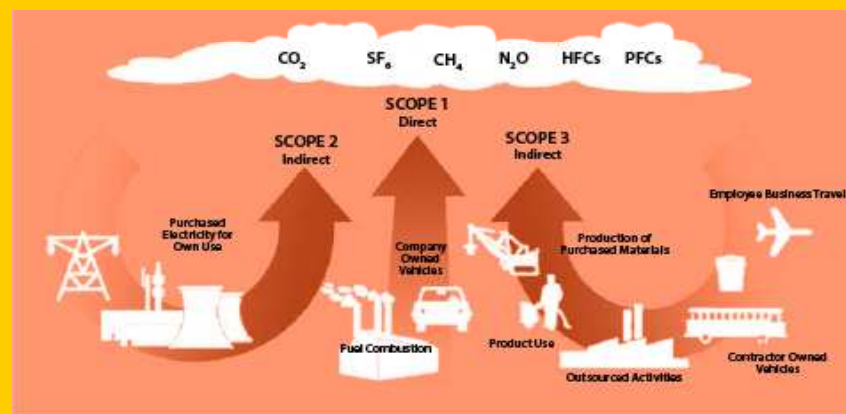


Figure 1: Scope of Emissions (Source: WRI-WBCSD Corporate Standard)



Detail about the Tool

- Two different approaches
- Benchmarking function

1. Top-down approach

Assess performance for entire groups of buildings based on high-level data



Performance baselines: -
tonnes CO₂e/m²
-tonnes CO₂/occupant

3. Benchmarking

- Quality check top-down data
- Estimate performance of Whole



2. Bottom-up approach

Assess performance of individual buildings



Emissions Sources from Buildings

- Operating phase energy sources
 - Stationary Combustion (“Scope 1”)
 - Purchased Electricity (“Scope 2”)
- Operating phase energy sources NOT included
 - Fugitives from refrigerants
 - CHP systems
- Scope 3?
 - Non-operational phase emissions
 - Production and transport of raw/building materials
 - Disposal of building waste
 - Electricity T&D losses
 - Commuting to the building



How emissions are calculated

Activity data X Emission factor = GHG emissions

Activity data: Amount of fuel or electricity consumed

Emission factor: coefficient that expresses how amount of GHGs emitted per unit activity

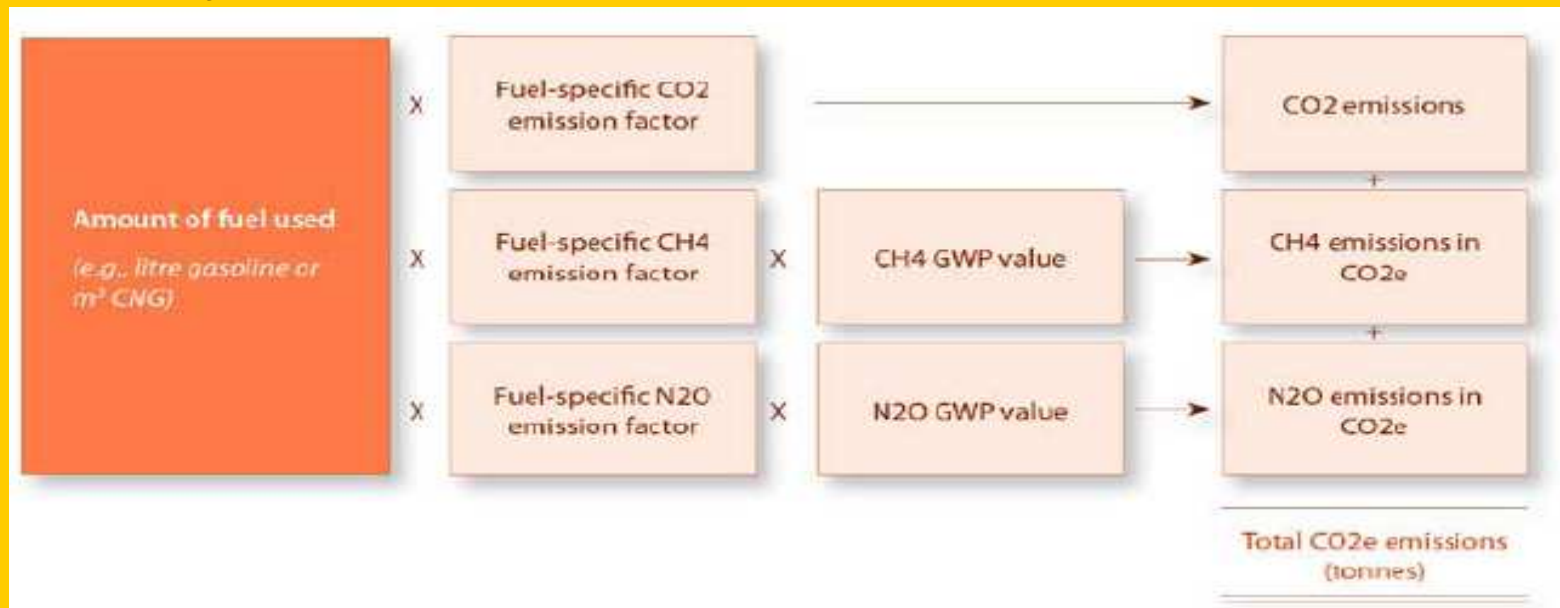
Example: *0.99 kg CO₂/kWh*
2.5 kg CO₂/litre of fuel

Global Warming Potential: The climate impact of a GHG expressed relative to that of CO₂

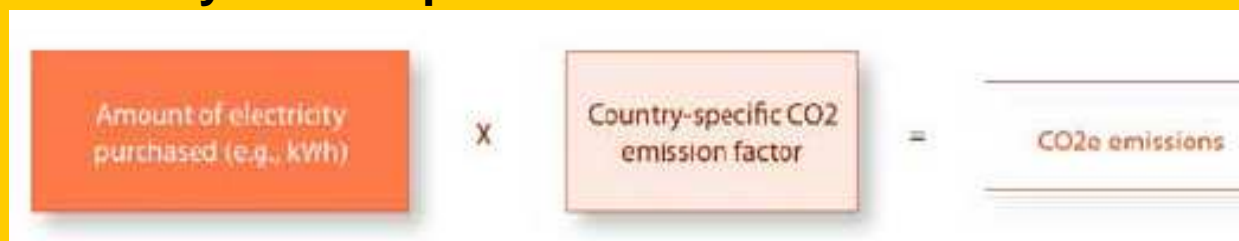


How emissions are calculated

Stationary Combustion:



Electricity consumption:



Note on Emission Factors

-Stationary Combustion Fuels:

- List of fuels common to buildings
- CO₂, N₂O and CH₄ factors from **IPCC**
- International averages

-Electricity consumption

- Only CO₂, given annually by **International Energy Agency**
- “2006” most recent year user can select; reflects delay in data availability



Tool demonstration

The tool is divided up into the following sections:

1. Introduction
2. Top down approach and results
3. Bottom up approach and results
4. Sampling requirements
5. Reference data



Data sources

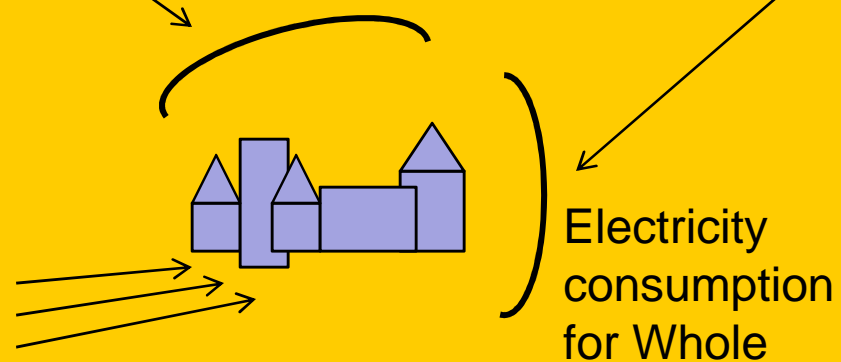
TOP-DOWN
APPROACH

City
records/
permits

Building area, types
+ occupancy

Survey fuel
sales/permits

Utility co.



BOTTOM-UP
APPROACH

Permits/measure

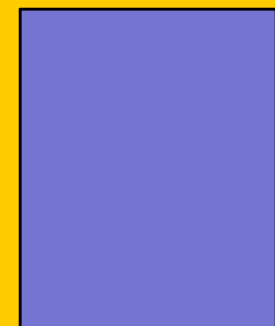
Building area, type, + occupancy

Fuel invoice

Fuel consumption

Utility bills.

Electricity consumption



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Bottom Up Building Information



<i>Property Record for Inventory</i>	
Reporter Identification	
Reporting Period	Drop-down Menu ↓
Building Type	Drop-down Menu ↓
Building Owner (optional)	
Street Address	
City	
Zip Code	
Country	Drop-down Menu ↓
Year Constructed	Drop-down Menu ↓
Building Area	
Total # of Full-Time Occupants	



Key Areas for Feedback

- Relevance for the sector
 - Performance metrics in tool best measure of performance?
 - Other emission sources to include?
- Mechanics/design of tool
 - Clear?
 - User-friendly?
- Additional resources/ references
 - Data availability
 - Country-specific defaults?
 - ICLEI, U.S. EPA Portfolio Manager
 - Existing case studies of other cities?



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Pilot testing website address TBA

General WRI GHG Protocol website:

<http://www.ghgprotocol.org>



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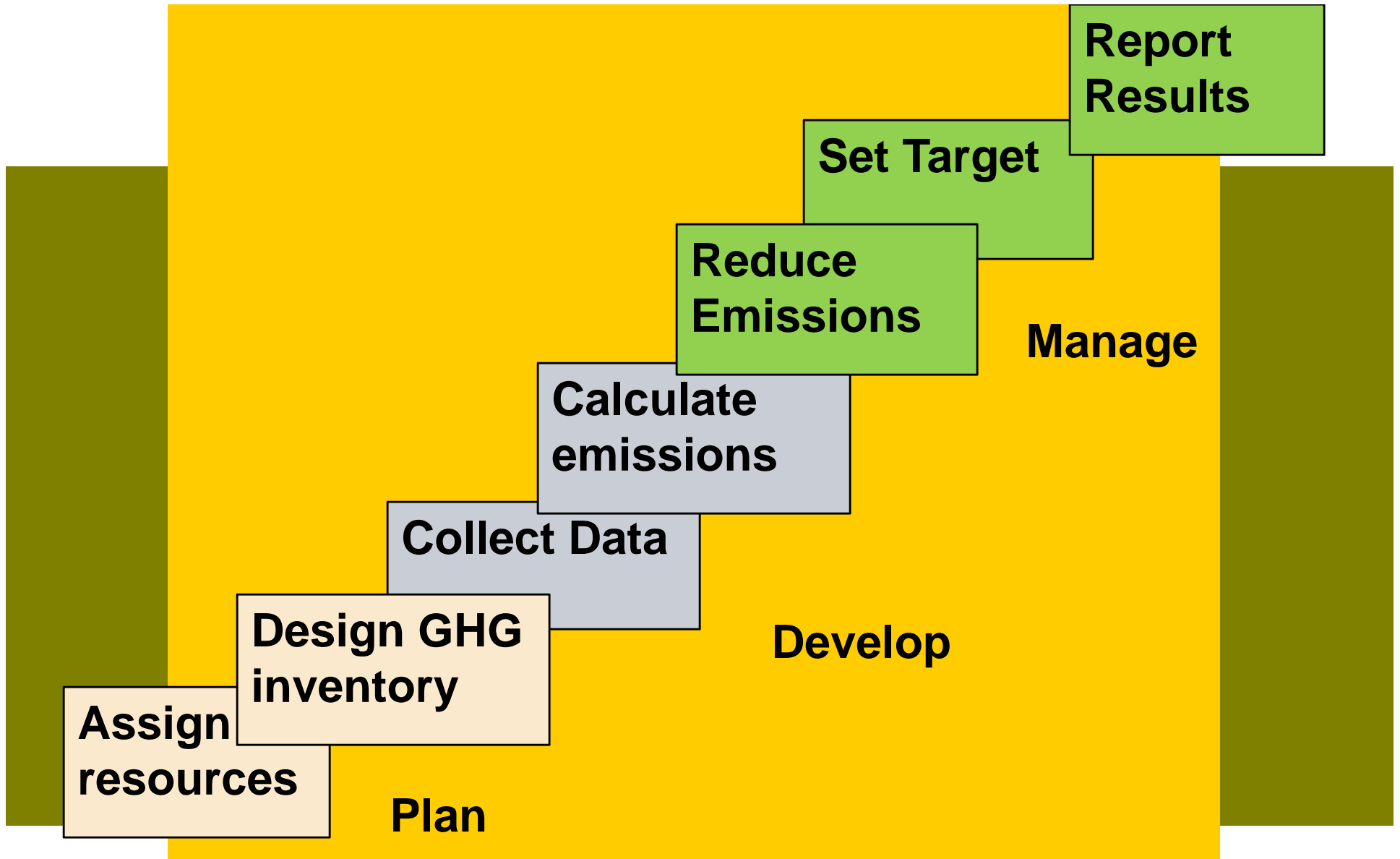
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Q & A



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Additional generic slides



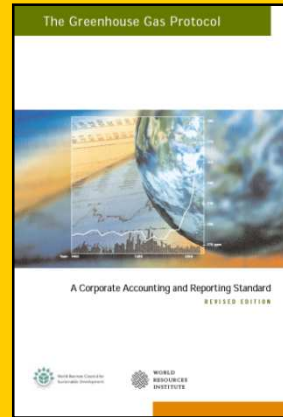
What Gets Measured Gets Managed



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Other Programs

WBCSD/WRI GHG Protocol



EPA Climate
Leaders
Guidance



ISO 14064
Standards



Public Sector
Standard



CCAR
Reporting
Protocol



The Climate
Registry
Protocol



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