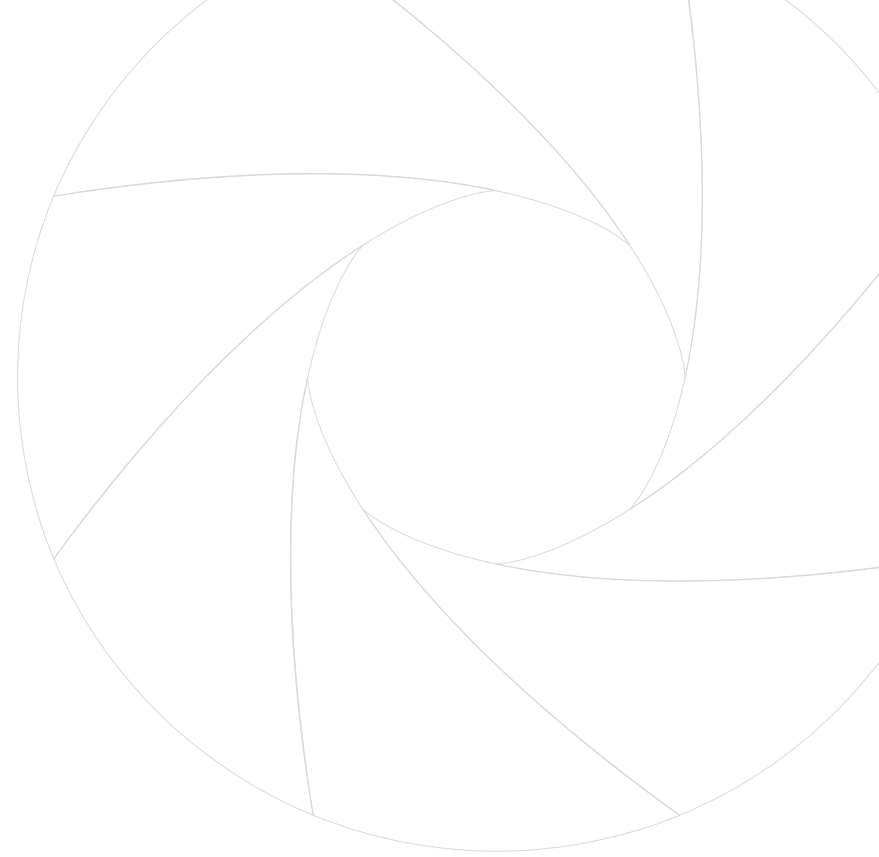


Overview of WRI GHG Protocol Mitigation Accounting Standards

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World Resources Institute

Agenda

- Introduction to WRI, GHG Protocol, and Mitigation Accounting Project
- Overview of GHG Protocol *Policy and Action Standard*
- Overview of GHG Protocol *Mitigation Goals Standard*
- Q & A



Introduction to WRI, GHG Protocol, and GHG Protocol Mitigation Accounting Project

The Greenhouse Gas Protocol

- The GHG Protocol was launched in 1998 by



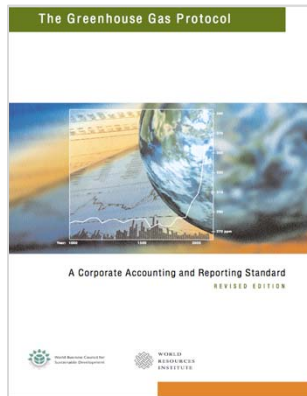
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World Business Council for
Sustainable Development

- Multi-stakeholder partnership of businesses, NGOs, governments and others
- Enable corporate and government measurement and management practices that lead to a low carbon economy

GHG Protocol standards to date



Corporate Standard



Project Protocol



Product Standard



Corporate Value Chain
(Scope 3) Standard

Two GHG Protocol standards under development

Policies and Actions Standard

- How to quantify GHG effects from specific policies and actions
- Examples: increased energy efficiency, increased renewable energy, efficiency standards, trading programs etc.

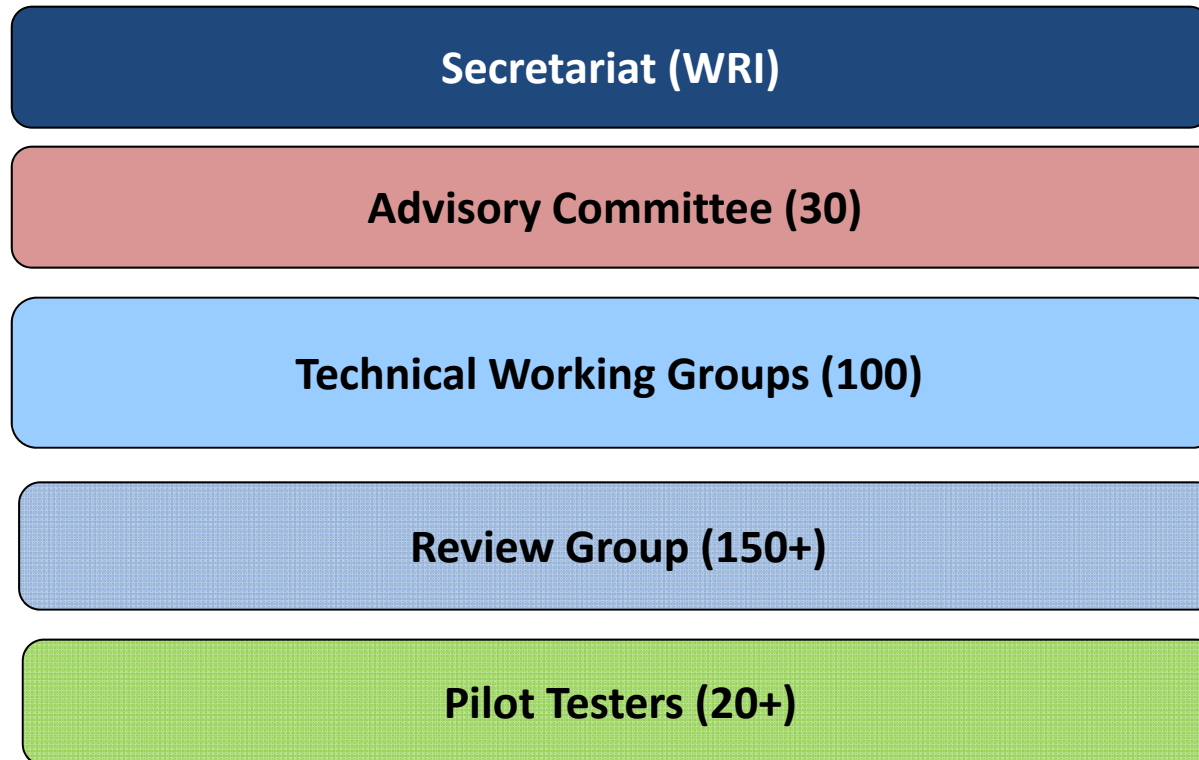
Mitigation Goals Standard

- How to track and report progress toward national or sub-national GHG reduction goals
- Examples: Reductions from a base year; Reductions from a baseline scenario; Reductions in emissions intensity; Reductions to a fixed level; carbon neutrality, etc.

Context

- New types of GHG reduction goals (intensity, BAU, carbon neutrality, etc.)
- Increasing need to quantify GHG effects of policies and actions (larger than projects)
 - Domestic policy design and tracking
 - NAMAs
 - New market-based mechanisms
- Lack of consistency and transparency
- Lack of capacity
- No international guidelines

Standard development process



Advisory Committee members

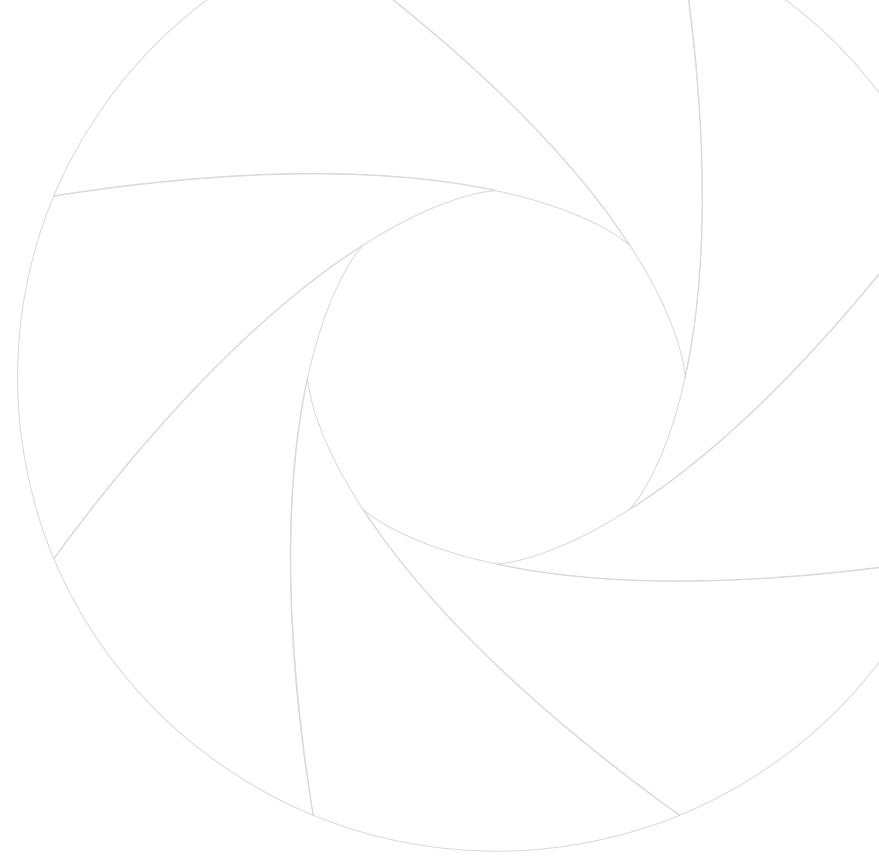
- Asian Development Bank
- Australia, Department of Climate Change and Energy Efficiency
- Brazil, Ministry of Environment
- California Air Resources Board
- CCAP
- Chile, Ministry of Environment
- China, NDRC
- Colombia, Ministry of Environment and Sustainable Development
- Costa Rican Institute of Electricity
- Ecofys
- Ethiopia, EPA
- European Commission
- Godrej & Boyce Mfg Co. Ltd., India
- India, BEE (TBC)
- Japan, Ministry of Environment
- Johnson Controls
- Maersk Group
- New York City, Mayor's Office
- OECD
- Siemens
- South Africa, Department of Environmental Affairs
- State of Rio de Janeiro
- Stockholm Environment Institute – US
- Thailand Greenhouse Gas Management Organization
- Tsinghua University
- UK DECC
- United Nations Climate Change Secretariat
- UNDP
- US EPA
- WBCSD
- World Bank

Timeline

Activities	2012				2013				2014			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Convene stakeholder groups	■	■										
Develop draft standards			■	■								
First drafts released				■								
Workshops (Doha, Washington, Beijing) and review period				■								
Revise draft standards					■	■						
Pilot test standards							■	■				
Public comment period								■				
Publish final standards									■	■		

Pilot testing

- Belgium – off-shore wind, roof insulation
- Brazil – city of Rio
- Brazil – state of Rio
- Colombia – national, transport policy
- Colombia – Medellin, transport policy
- Chile – national BAU goal
- Chile – energy sector NAMA
- China – national power sector policies
- Costa Rica – coffee sector NAMA
- Ethiopia – national goal
- Ethiopia – land use/forestry policy
- India – TBD
- Indonesia – TBD
- Israel – national goal
- Israel – energy policy
- Mexico – Mexico City - transport policy
- South Africa – Mining sector, information instruments
- US – Seattle, city goal
- Cities (C40) - TBD
- Tunisia- Solar PV
- Bangladesh- technology improvement



GHG Protocol *Policy and Action Standard*

Purpose of the *Policy and Action Standard*

- Provide standardized approaches and guidance on how to quantify GHG effects of policies and actions
- Guide users in answering the following questions:
 - Before implementation: What effect is a given policy or action likely to have on GHG emissions?
 - During implementation: How to track progress of a policy or action?
 - After implementation: What effect has a given policy or action had on GHG emissions?
- The focus is on attributing changes in GHG emissions to specific policies and actions, rather than other factors that affect emissions

Objectives of quantifying GHG effects of policies/actions

- Inform mitigation strategies based on expected GHG effects of policies/actions (ex-ante)
- Track effectiveness and performance of policies/actions (ex-post)
- Report on GHG effects of policies/actions
- Facilitate financial support for mitigation actions (e.g., NAMAs) based on quantification of GHG reductions

Intended users

- Governments (city, sub-national, national)
- Donor agencies and financial institutions
- Businesses
- NGOs/research institutions

Scope

- Voluntary
- Policy-neutral
- Internationally applicable
- General guidance applicable to all sectors and types of policies/actions (overarching principles, concepts, and procedures)
- Will include sector-specific and policy-specific examples and guidance (e.g., energy supply, buildings, transportation, AFOLU, waste)

Types of policies and actions

- Regulations and standards
- Taxes and charges
- Tradable permits
- Voluntary agreements
- Subsidies and incentives
- Information instruments
- R&D policies
- Public procurement policies
- Infrastructure programs
- Deployment of new products or technologies
- Financing and investment

Table of contents and sequence of steps

1. Introduction
2. Objectives
3. Key concepts, overview of steps, and summary of requirements
4. Accounting and reporting principles
5. Defining the policy or action
6. Mapping the causal chain
7. Defining the GHG assessment boundary
8. Quantifying baseline emissions
9. Quantifying GHG effects ex-ante
10. Quantifying GHG effects ex-post
11. Collecting data and monitoring performance over time
12. Assessing uncertainty
13. Verification
14. Reporting

Tiered approach

- The standard presents a range of methods depending on users' objectives

Tier	Level of accuracy/ completeness	GHG assessment boundary	Quantification method	Data sources
1	Lowest	Less complete	Less accurate methods (e.g., simplified approaches)	Less accurate data (e.g., global average data, estimated data)
2	Intermediate	Intermediate completeness	Intermediate accuracy	Mix of data sources and quality (e.g., country-specific data)
3	Highest	Most complete	Most accurate methods (e.g., complex approaches)	Most accurate data (e.g., source-specific data)

Mapping the causal chain

- Key step: identifying potential effects of the policy or action
- Types of effects to consider
 - Intended effects and unintended effects
 - In-jurisdiction effects and out-of-jurisdiction effects
 - Short-term effects and long-term effects
 - GHG-increasing effects and GHG-decreasing effects

Example- Types of effects

- Example: U.S. vehicle fuel efficiency standards
- Intended effects
 - CO₂/km ↓ so emissions ↓
- Unintended effects (e.g., rebound effects)
 - \$/km driven ↓ so km driven ↑ so emissions ↑
- In-boundary effects
 - Emissions in the U.S. ↓
- Out-of-boundary effects (e.g., leakage and spillover effects)
 - Emissions in Canada ↓
- Short-term effects
 - Cars more efficient, but using same technology
- Long-term effects
 - New vehicle technologies developed

Define the GHG assessment boundary

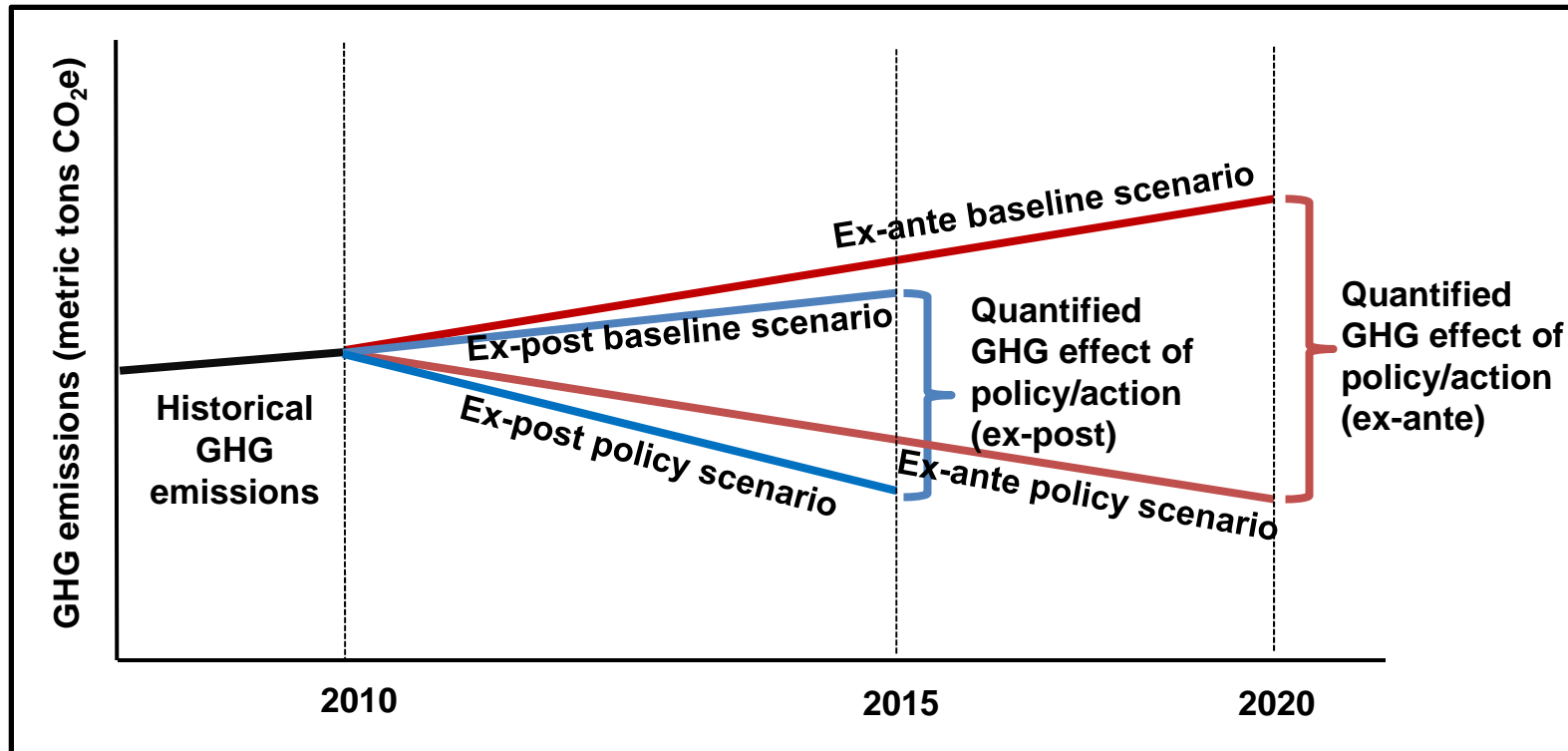
- Which GHG effects to include in the boundary?
 - Users shall include all significant effects in the boundary, consistent with the chosen tier
- Temporal boundary
 - Policy implementation period
 - Policy monitoring period
 - GHG assessment period

Example	Years							
	2005 – 2009	2010 - 2014	2015 - 2019	2020 - 2024	2025 - 2029	2030 - 2034	2035 - 2039	2040 - 2045
Policy implementation period								
Policy monitoring period								
GHG assessment period								

Quantify GHG effects of the policy or action

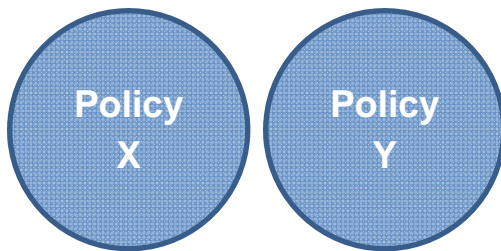
- Define the baseline scenario
 - For each effect, define baseline emissions based on underlying drivers
 - Other policies
 - non-policy drivers
- Define the policy scenario (ex-ante or ex-post)
 - Define emissions in the policy scenario based on what is expected to change as a result of the policy

Ex-ante and ex-post assessment



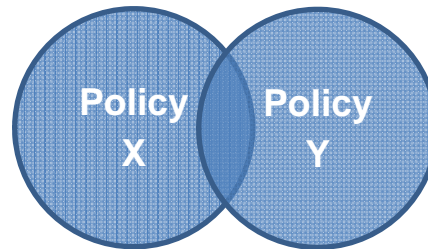
Policy interactions

Independent



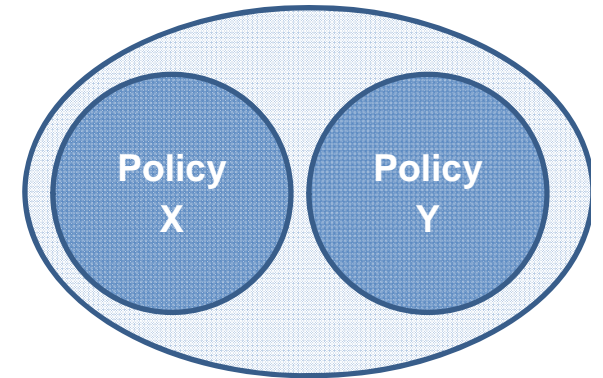
Combined effect = X + Y

Overlapping

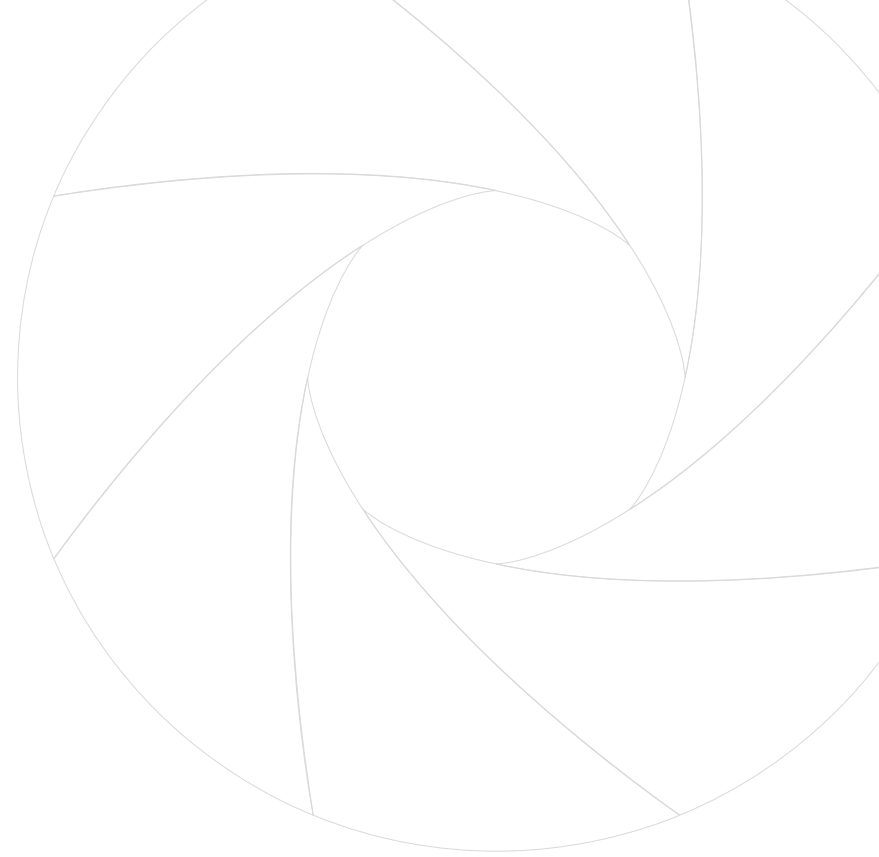


Combined effect < X + Y

Reinforcing



Combined effect > X + Y



GHG Protocol *Mitigation Goals Standard*

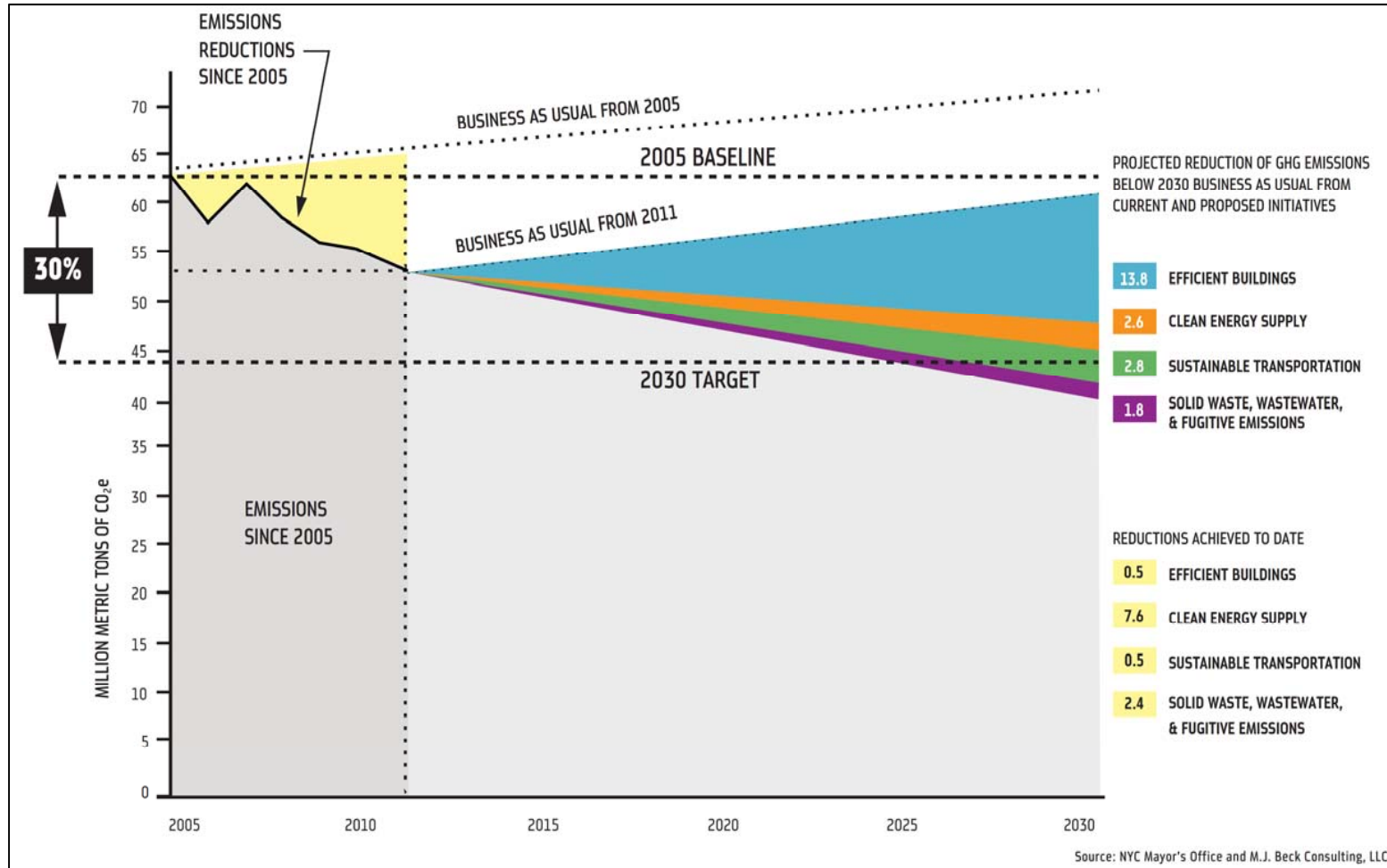
Purpose of *Mitigation Goals Standard*

- Provide standardized approaches and guidance
- How to quantify GHG reductions and track progress toward national and sub-national GHG mitigation goals
- Guide users in answering the following questions:
 - For jurisdictions that do not have a mitigation goal: Which factors to consider when developing a mitigation goal
 - Before the goal period: How to estimate future emission levels and GHG reductions associated with meeting the goal
 - During the goal period: How to track and report progress toward meeting the goal
 - After the goal period: How to evaluate and report whether the goal has been achieved

Examples of mitigation goals

- **Australia:** 80% reduction below 2000 levels by 2050
- **Brazil:** Between 36.1% and 38.9% below projected emissions in 2020
- **California:** reduce to 1990 levels by 2020
- **Chile:** 20% reduction below the BAU in 2020, as projected from 2007
- **China:** 40-45% reduction in CO₂ emissions per unit of GDP by 2020 compared with the 2005 level
- **Costa Rica:** Will implement a 'long-term economy-wide transformational effort to enable carbon-neutrality'
- **European Union:** 20-30% below 1990 levels by 2020
- **New York City:** 30% below 2005 levels by 2030
- **South Africa:** 34% deviation below BAU by 2020
- **United States:** In the range of 17% below 2005 levels by 2020

Example: Tracking progress toward NYC's 30% reduction goal



Source: City of New York, 2013

Scope

- Internationally applicable
- Applicable to all levels of government (municipal, subnational, national)
- Four types of mitigation goals
 - Reductions from a base year
 - Reductions from a baseline scenario
 - Reductions in emissions intensity
 - Reductions to a fixed level
- Economy-wide and sectoral goals

Regardless of pledge type, following steps need to take place to design a pledge

1. Develop a GHG inventory
2. Define geographic boundary
3. Choose sectors included
4. Decide on the treatment of the land use sector
5. Choose direct/indirect emissions included
6. Choose GHGs included
7. Choose mitigation goal type
8. Choose single or multi-year goal
9. Choose and estimate base year/baseline scenario emissions
10. Choose target year/period
11. Consider use of transferable emissions units
12. Define the goal level

After design of target

- Ex ante estimation
 - Tracking progress during the period
 - Ex post evaluation
-
- For each goal type, the GHG Protocol Mitigation Goals Standard provides calculations for:
 - Expected emissions level in the target year associated with meeting the target
 - Expected emissions reductions needed to meet the goal

After design of target

- Ex ante estimation
- Tracking progress during the period
- Ex post evaluation

- For each goal type, the GHG Protocol Mitigation Goals Standard provides calculations for:
 - Change in emissions since base year
 - Additional emissions reductions necessary to meet target
 - Including with adjustments for transferable emissions units and the land use sector

After design of target

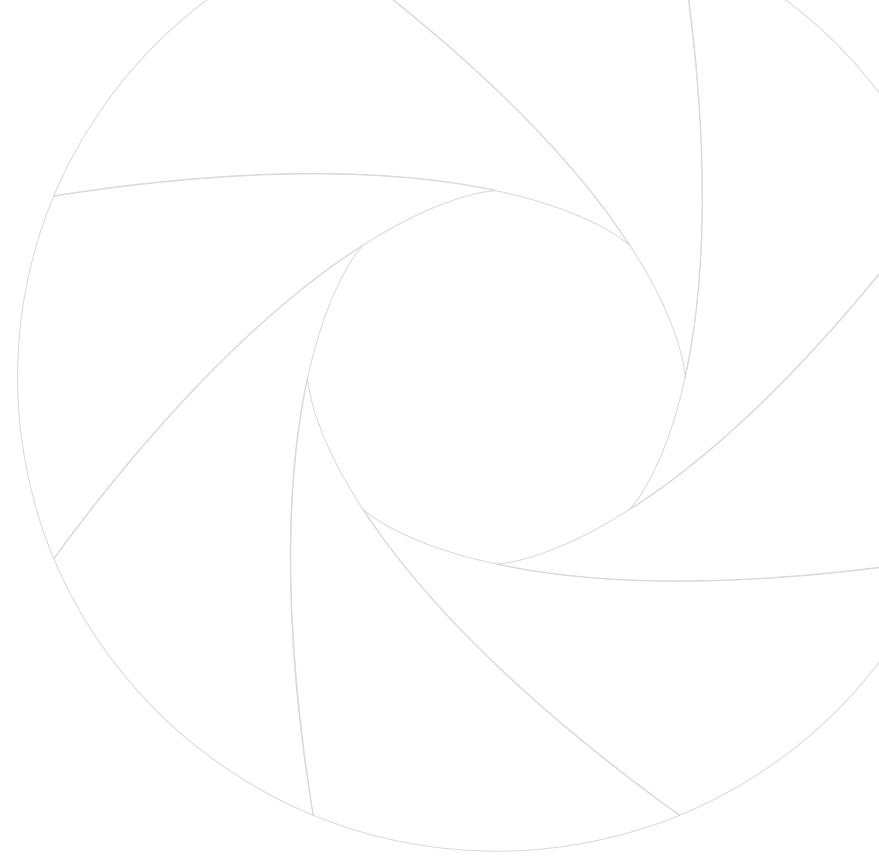
- Ex ante estimation
- Tracking progress during the period
- Ex post evaluation

- For each goal type, the GHG Protocol Mitigation Goals Standard provides calculations for:
 - Whether the goal has been achieved
 - Total emissions and removals in the target year/period
 - Cumulative changes over the goal period
 - Including with adjustments for transferable emissions units and the land use sector



To download the draft standards:

www.ghgprotocol.org/mitigation-accounting



Thank you

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www.ghgprotocol.org/mitigation-accounting