



Global Protocol for Community-Scale Greenhouse Gas Emissions (GPC)

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GHG Protocol
World Resources Institute

Core Partners:



Presentation outline

1. Global trend in city-scale inventories
2. Issues in the current and past GHG inventory practices
3. How will GPC address these issues?





1. Global trend in city-scale inventories

City-scale inventory is now a global trend



302

cities reported to cCCR
(as of March 2013)



73

cities reported to the
CDP Cities 2012 Global Report



2,788

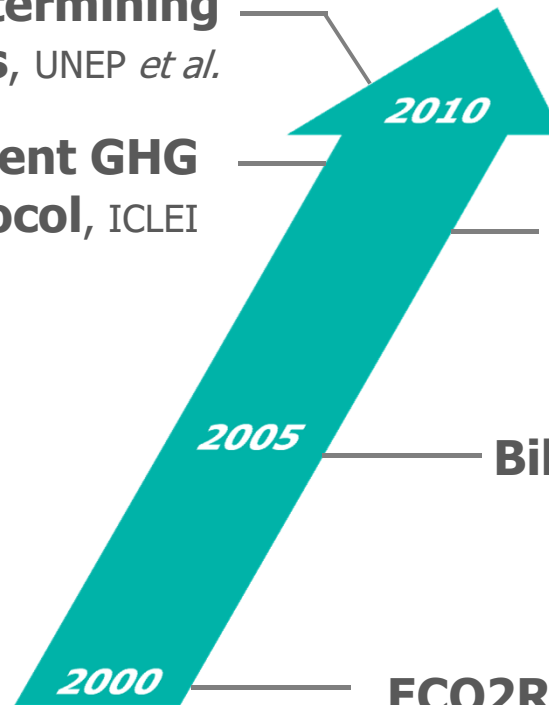
Municipalities submitted
GHG data*

- ❖ **China**
36 pilot low-carbon cities have either completed or are in the process of conducting GHG inventories
- ❖ **France**
municipalities with a population >50,000 are required to prepare GHG inventories*
- ❖ **World Bank, IADB, OECD...**
are requiring/supporting their partner cities to conduct GHG inventories

GHG tools developed over the last decade

**Int'l Standard for Determining
GHG Emissions for Cities**, UNEP *et al.*

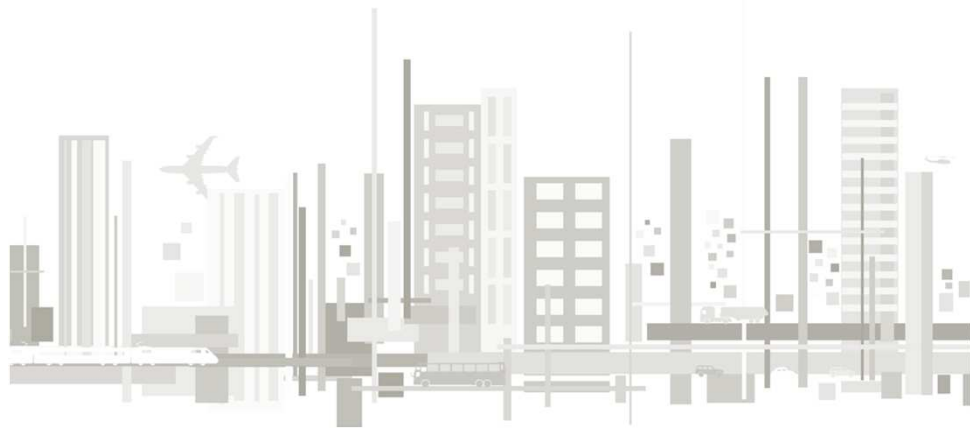
**Int'l Local Government GHG
Emissions Analysis Protocol**, ICLEI



The CO2 Calculator - Denmark

Bilan Carbone - France

ECO2Region - Switzerland, Germany, Italy
CO2 Grobbilanz & EMSIG - Austria
GRIP - UK



2. Issues in the current and past GHG inventory practices

Issues in the existing/past practices

- 1 Inconsistency**
- 2 Inconsistent and unclear boundary definition**
- 3 Incompleteness**
- 4 Double counting**
- 5 Transparency**

1) Inconsistency issue

Reporting framework

- Total emissions
- Categorization of emissions

Type of gases

- CO₂, 6 gases, 7 gases

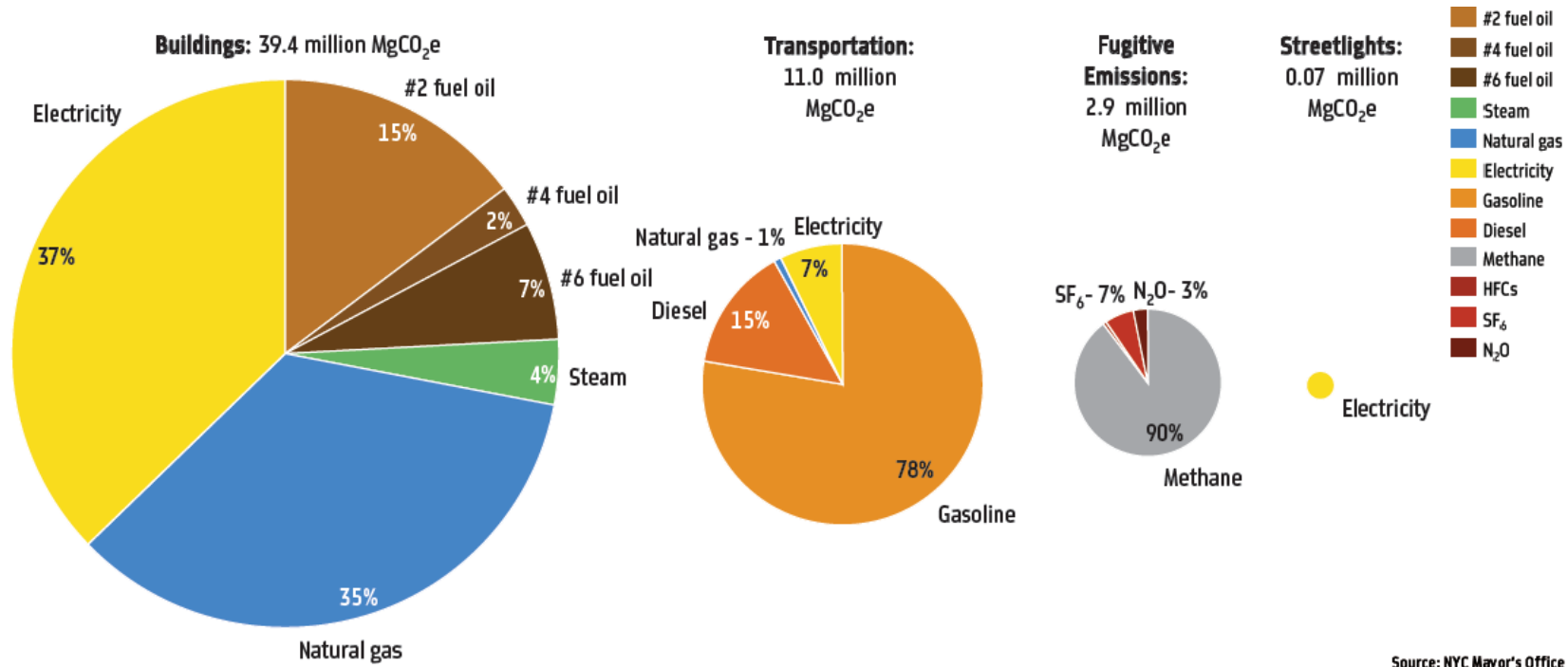
Boundary definition

- Direct and indirect emissions

Emission sources

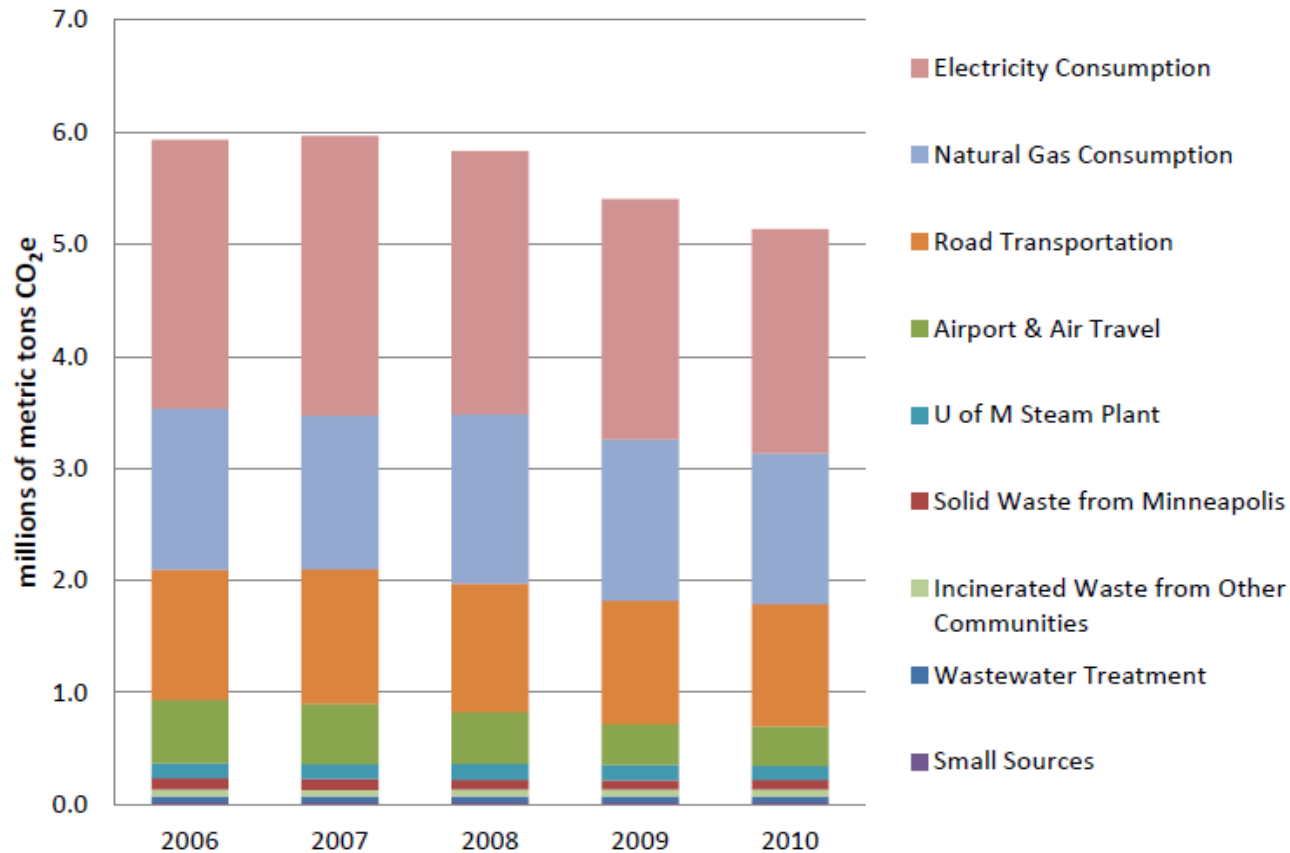
- Energy-related sources
- IPPU
- Agriculture, forestry, and land use change

1) Example 1 – New York City



Source: NYC Mayor's Office

1) Example 2 – City of Minneapolis



1) New York vs. Minneapolis

New York City

Sectors:

- Building
- Transportation
- Streetlights and traffic signals
- Fugitive and process emissions (including waste/wastewater)

Scope:

- Scope 1
- Scope 2
- Scope 3 (aviation)

City of Minneapolis

Sectors:

- Building energy
- Transportation
- Solid wastes
- Stationary, industrial and product use
- Wastewater
- Water
- Agriculture

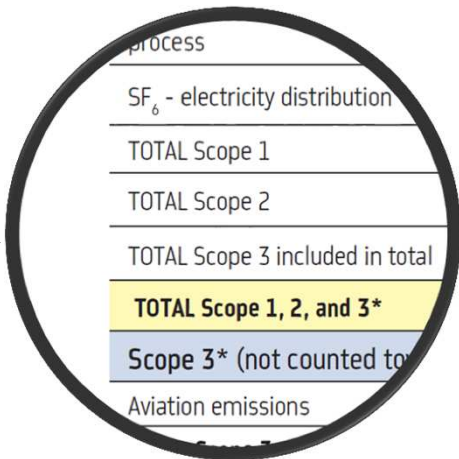
Scope:

- ??

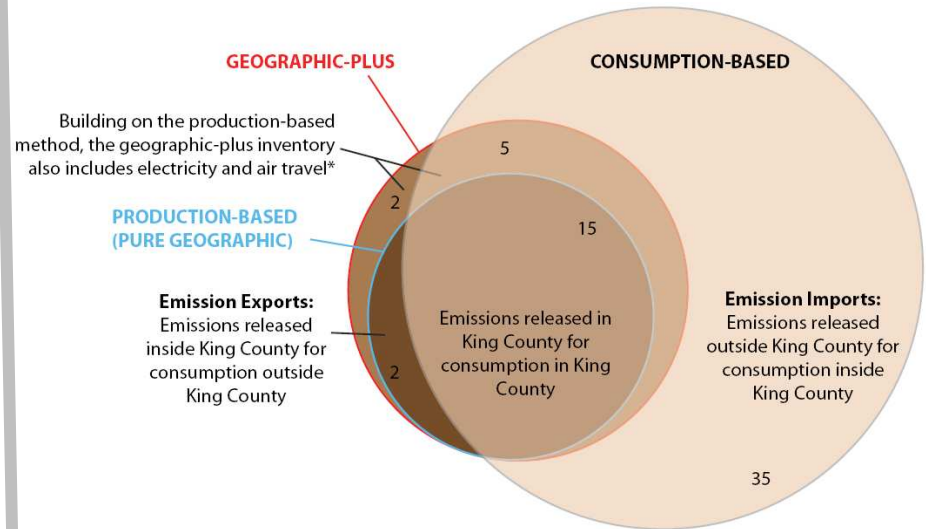
2) Boundary issue

New York City

	UNITS	2005		
		CONSUMED	MgCO ₂ e	Source GJ
TOTAL Scope 1			36,575,792	566,626,566
TOTAL Scope 2			24,799,409	580,130,132
TOTAL Scope 3 included in total			2,475,157	
TOTAL Scope 1, 2, and 3*			63,623,769	1,147,249,911
Scope 3* (not counted toward city total)				
Aviation emissions			14,345,894	
TOTAL Scope 3*			14,947,822	



King County (Seattle)



3) Incompleteness issue

The following are commonly NOT included in city inventories:

- ❖ **Agriculture, forestry, and land use change**
- ❖ **Industrial process emissions**
- ❖ **Non-energy emissions**
- ❖ **Non-CO2 gases**
- ❖ **Indirect emissions**

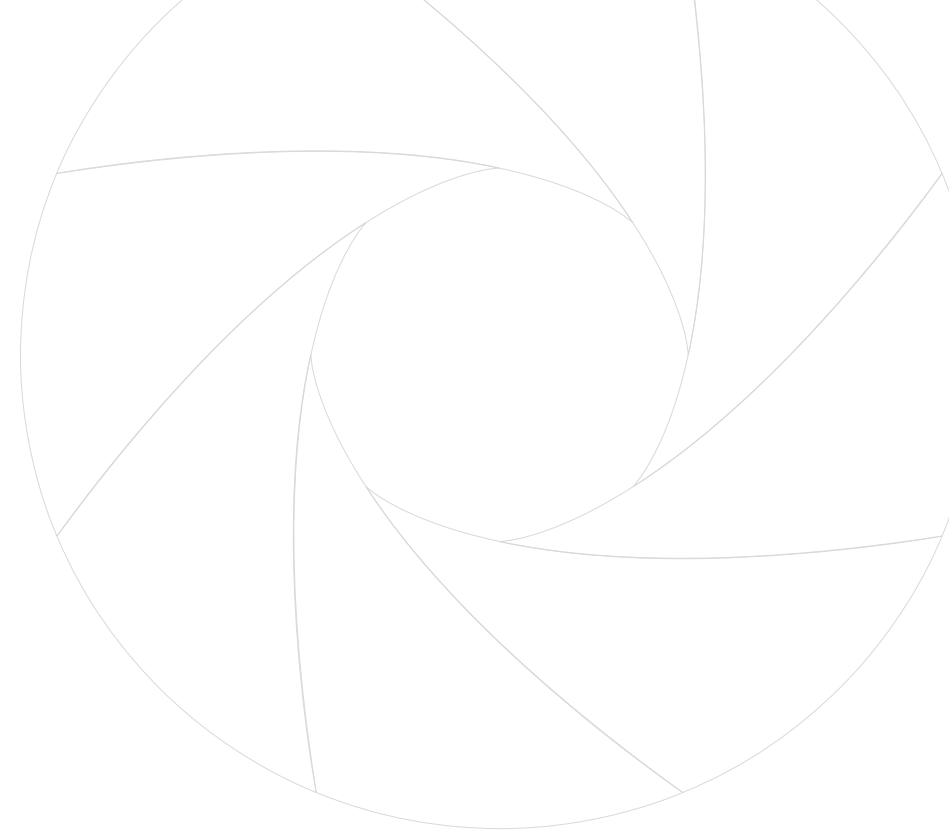
Example:

Covenant of Mayors requires cities to report only the following:

- ❖ Direct emissions due to fuel combustion in the buildings, equipment/facilities and transportation sectors
- ❖ Indirect emissions related to production of electricity, heat, or cold that are consumed in the territory

4) Double counting and transparency issues

- ❖ Double counting between direct and indirect emissions
- ❖ Methodologies and emission factors are not common disclosed

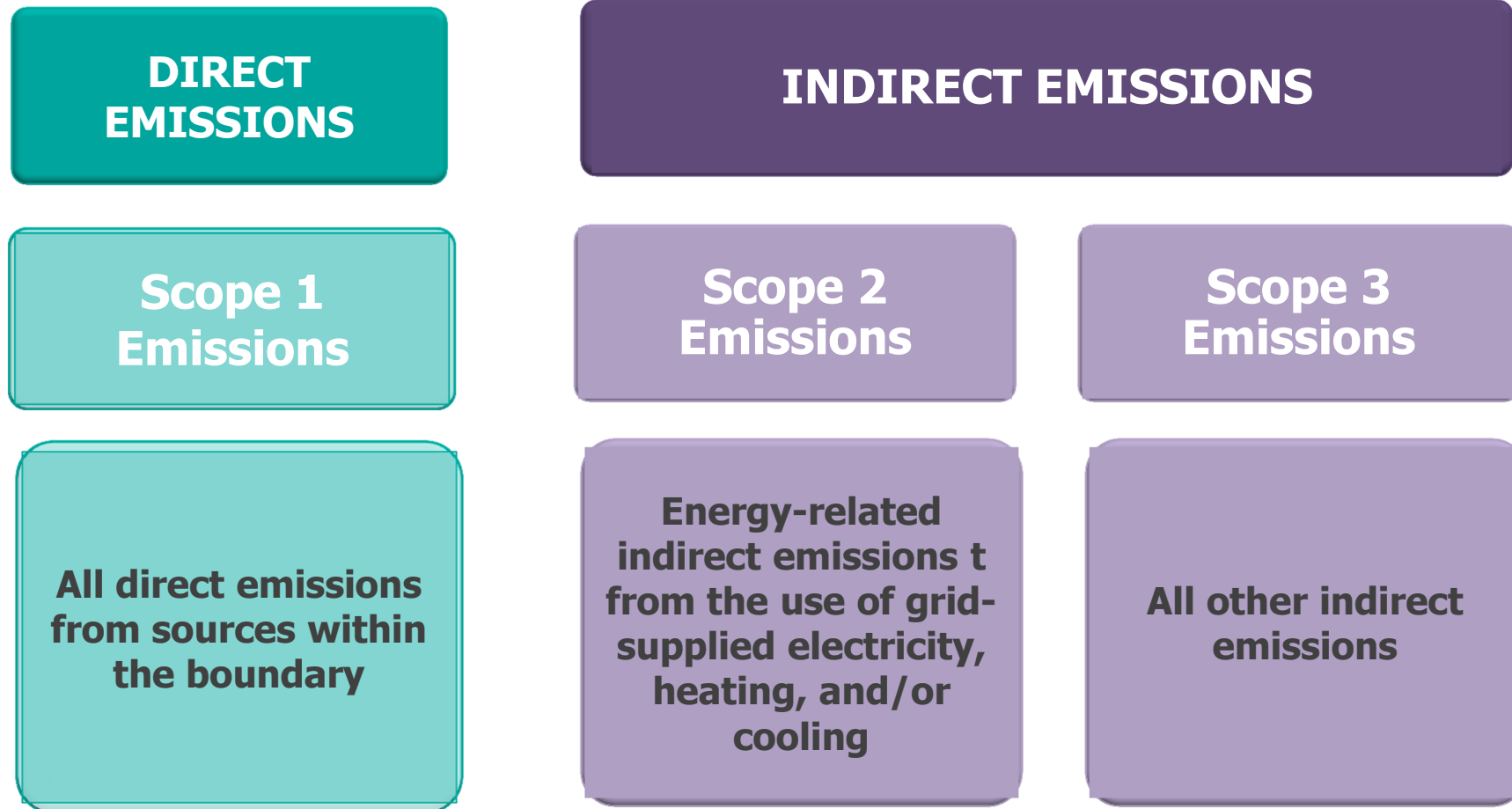


2. How will GPC address these issues?

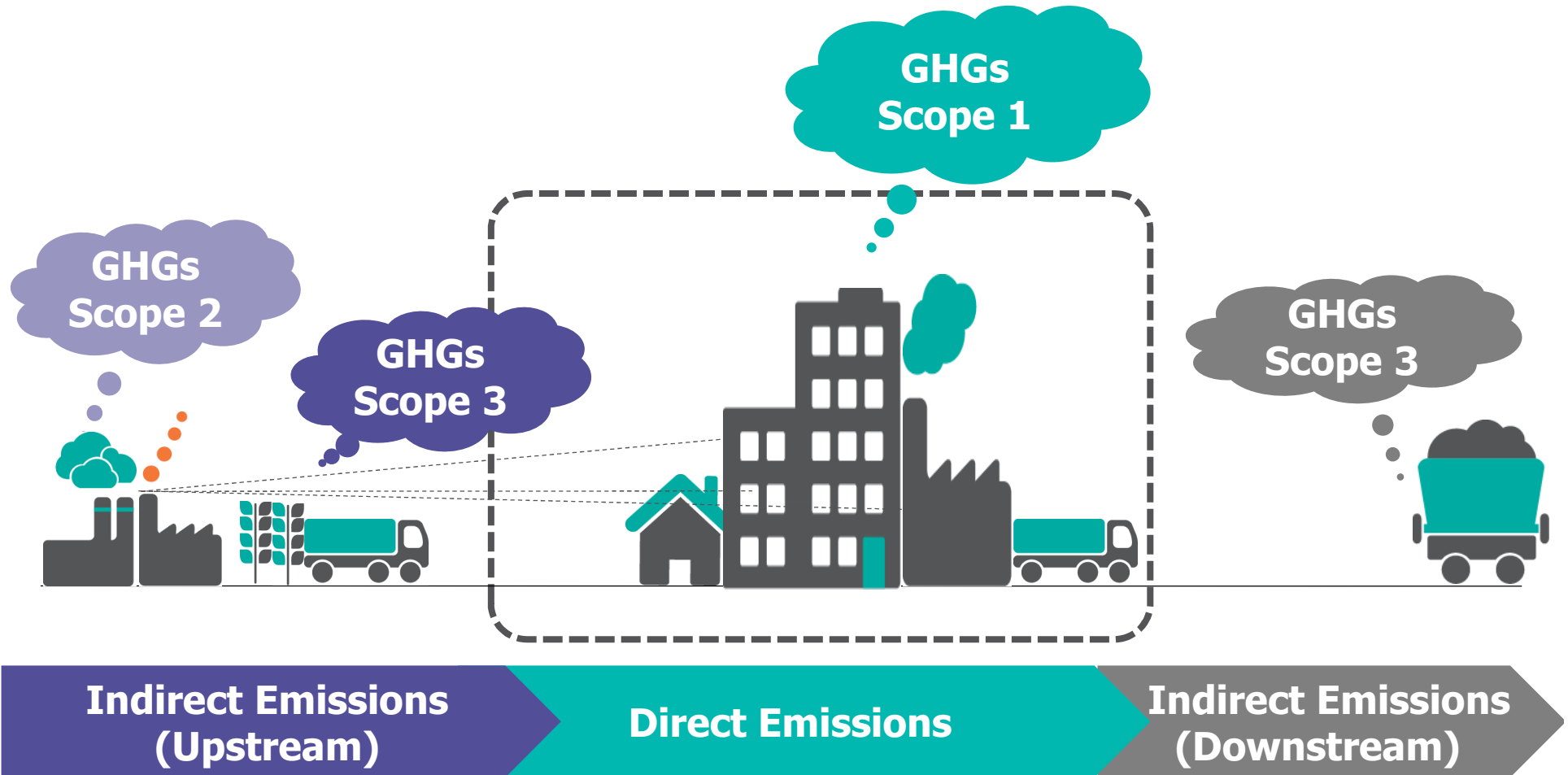
Accounting and Reporting Principles

RELEVANCE	COMPLETENESS	CONSISTENCY	TRANSPARENCY	ACCURACY
<ul style="list-style-type: none">• Reflect emissions occurring as a result of activities and consumption of the city• Relevance to decision-making needs	<ul style="list-style-type: none">• All sources• All Kyoto Protocol gases	<ul style="list-style-type: none">• Approach• Boundary• Methods	<ul style="list-style-type: none">• Activity data• Emission sources• Emission factors• Methods• Exclusions	<ul style="list-style-type: none">• Not systematically over or understate the emissions• Sufficient for decision-making

Boundary Setting



Emission "scopes"



Reporting Requirements

By Scopes

- Scopes 1, 2, 3

By Sectors

- Energy - Stationary Units, Energy - Mobile Units, Wastes, IPPU, AFOLU

By Gases

- CO₂, CH₄, N₂O, HFCs, PFCs, SF₆

Three Levels of Reporting

GPC Pilot Version 1.0

Basic

Scope 1

- Energy-Stationary
- Energy-Mobile
- Wastes
- IPPU

Scope 2

Scope 3

- Wastes

Basic+

Scope 1

- Energy-Stationary
- Energy-Mobile
- Wastes
- IPPU

- **AFOLU**

Scope 2

Scope 3

- Wastes

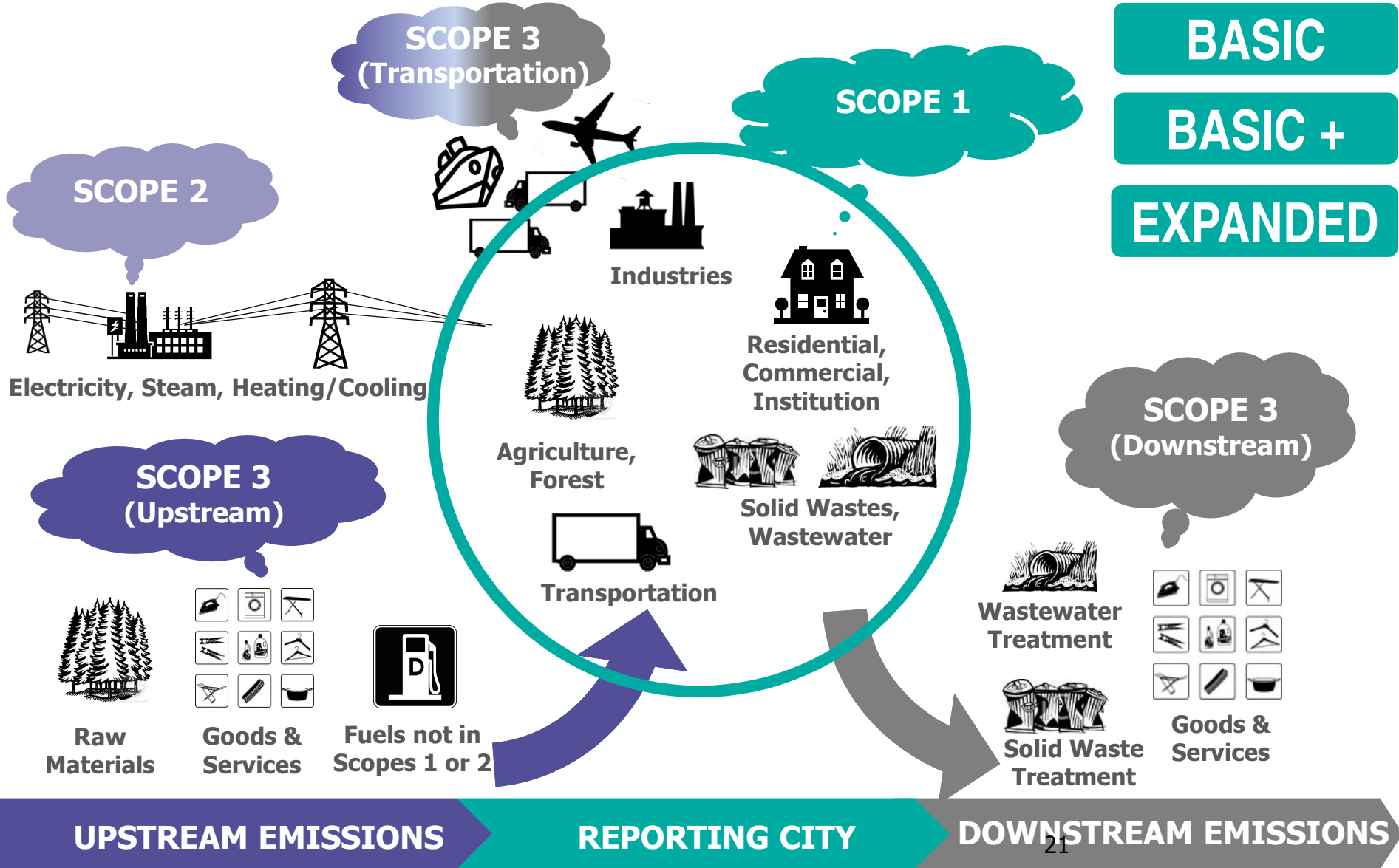
- **Energy-Mobile**

Expanded

Full coverage of
Scopes 1, 2, and 3

Illustration of Reporting Framework

- BASIC**
- BASIC +**
- EXPANDED**



Overview Reporting Framework

Sources	Scope 1	Scope 2	Scope 3		
	Basic		Basic+	Expanded	
STATIONARY UNITS					
Residential Buildings	X	X			
Commercial/Institutional Facilities	X	X			
Energy Generation*	X	X			
Industrial Energy Use	X	X			
Fugitive Emissions	X	X			
MOBILE UNITS					
On-Road Transportation	X	X		X	
Railways	X	X		X	
Water-Borne Navigation	X	X		X	
Aviation	X			X	
Off-Road	X	X			
WASTE					
Solid Waste Disposal	X		X		
Biological Treatment of Waste	X		X		
Incineration and open burning	X		X		
Wastewater Treatment and discharge	X		X		
INDUSTRIAL PROCESSES AND PRODUCT USE (IPPU)	X				
AGRICULTURE, FORESTRY, AND LAND USE (AFOLU)	X				
OTHER INDIRECT EMISSIONS					X
TOTAL BY SCOPE	SCOPE 1	SCOPE 2	SCOPE 3		
TOTAL BY SOURCE	BASIC				
	BASIC+				
	EXPANDED				

Thank You!

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