

City-level GHG Emissions accounting and reporting

IPCC Expert Meeting:

Application of 2006 IPCC Guidelines to Other Areas

1-3 July 2014, Sofia, Bulgaria


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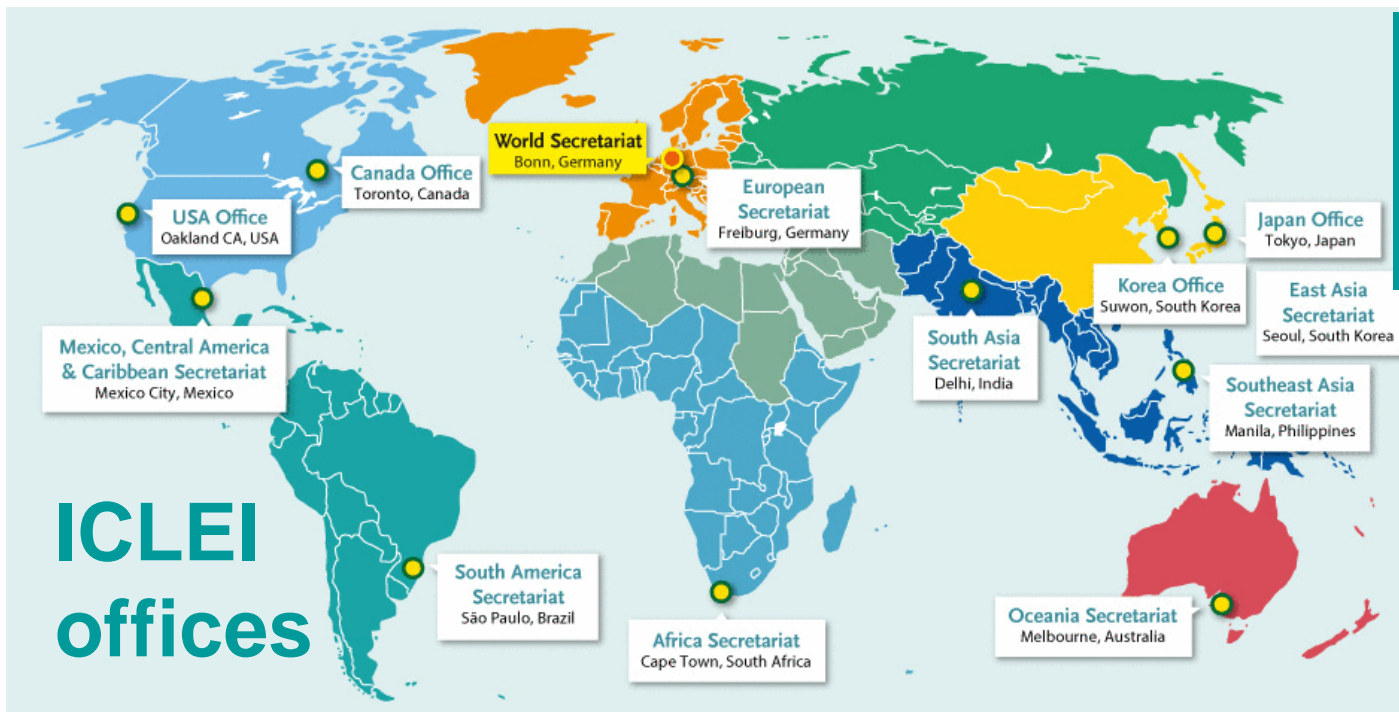
Contents

1. Introduction to Greenhouse Gas (GHG) Measurement, Reporting and Verification (MRV) by Local Governments (LGs)
 2. Typical deviations from IPCC guidelines at local level
 3. Resources available for local GHG MRV
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Introducing ICLEI

- International membership association of Local Governments (LGs)
- Established in 1990 in New York – for cities, by cities
- Thematic city network: technical guidance, peer-learning, exchange
- Focal Point for LGMA Constituency at the UNFCCC, and Observer

ICLEI members:
More than 1000 cities
in 86 countries
~660 million people



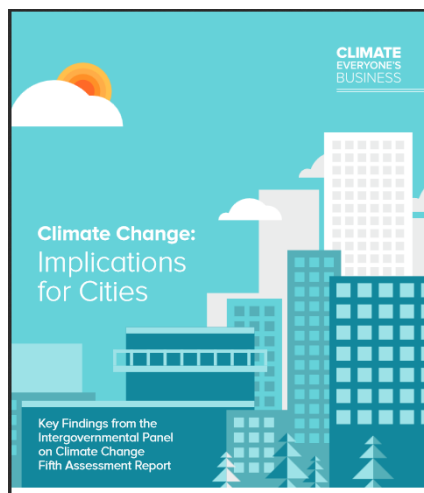
Introduction to Greenhouse Gas Measurement, Reporting and Verification by Local Governments

Introduction to GHG MRV by LGs



Drivers for local climate action

- Many risks of climate change concentrate in urban areas¹
- Existing pressures (environmental, social and economic)
- Potential benefits (jobs, health, energy security, etc.)
- Improve mandated service delivery
- National legislation, targets, and initiatives




ICLEI, European Climate Foundation
and University of Cambridge
Summarize AR5 implications for Cities

Source:
1. IPCC, AR5,
Summary for policy makers

Drivers for local GHG MRV

- Empower cities to identify opportunities and take action
- Improve performance of mandated service delivery
- Track policy impacts
- Transparency
- Credibility
- Improved access to finance

Voluntary mechanisms:

- Covenant of Mayors
 - cCCR / Mexico City Pact
 - Earth Hour City Challenge
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Relevance of community-scale GHG MRV to national governments

1. Typical LG mandates (cities worldwide):

- 75% have direct control over their transit system
- 80% have control over roads
- 80% control residential waste collection
- Most cities have control over building codes
- Many can mandate energy efficiency standards
- Procurement, taxes, fees, spatial development patterns, etc.

2. Most investments for mitigation and adaptation take place at the sub-national and local levels:

- 50 to 80% for mitigation
- up to 100% for adaptation

Sources:

1. V-NAMA, GIZ
2. UNDP

Benefits of LEDS vertical integration

- For National Governments (NGs):
 - More effective implementation of national policies
 - Contribution to achieve national targets
 - Risk avoidance
- For Local Governments (LGs):
 - Removal of political and institutional barriers
 - Improved access to finance
 - Better access to quality data, data in correct format

WIN-WIN
Why is it not common practice?

● One of the key barriers

Absence of a methodology for local & subnational GHG MRV which is:

- universally accepted and recognized
- compliant with national inventory requirements (IPCC guidelines)



Typical deviations from IPCC guidelines at local level

Technical issues



Typical deviations from IPCC guidelines at local level

Single-community inventory:

1. Boundary setting
(risk of double counting & incomplete counting)
2. Methodological limitations
3. Access to data / quality data

Typical deviations from IPCC guidelines at local level

1 – Boundary setting (i)

- Territorial boundary (IPCC guidelines)
- Community activity
(usually leading to overestimation & double counting)
 - Energy (stationary) – quantification at consumption, not at production; e.g.: no generation facilities in-boundary (consumption of grid energy: electricity/heating/cooling)
 - Energy (mobile) – e.g.: airport that serves city is located outside of its boundary
 - Waste – e.g.: no disposal/treatment facilities in-boundary
 - Energy/IPPU – e.g.: in-boundary facilities mostly export

Typical deviations from IPCC guidelines at local level

1 – Boundary setting (ii)

- LG degree of control (usually leading to underestimation)
 - National/regional infrastructures located in-boundary (e.g.: transport, energy, IPPU)
 - Other accounting schemes (e.g.: ETS)
 - „Non-urban“ activities (e.g. agriculture not included in Covenant of Mayors reporting)

Typical deviations from IPCC guidelines at local level

2 – Methodological limitations

- Transport
 - Fuel sales – difficulty in assessing transboundary trips
 - Transport models – not all cities have access
 - Different methodologies hinder comparison & benchmark
 - Waste
 - FOD – historical data may not exist; very data intensive (e.g.: in Indonesia nearly every variable needs to be modelled)
 - Facilities that process waste from several municipalities, characterize waste as a whole and not separately
-
- Indirect emissions of product consumption & use
 - Complex, difficult to replicate, with double counting risk

Typical deviations from IPCC guidelines at local level

3 – Access to data /quality data

- National statistical data are not made available with sufficient geographic disaggregation (energy, waste, AFOLU, etc.)
- No access or authorization to disclose data from individual private businesses (for competitive reasons)
- LG having no mandate, budget or staff for data collection for the purpose of GHG inventory

Difficulties encountered in aggregation of inventories

Derive mostly from boundary setting issues:

- Energy produced in one city and consumed in another (grid electricity/heating/cooling)
- Transboundary trips
- Solid waste/wastewater produced in one city and treated in another
- Indirect emissions due to consumption of imported products are direct emissions in other cities (energy, transport, IPPU)

Use of different methodologies impairs additionality.

Resources available for local Greenhouse Gas Measurement, Reporting and Verification

Resources available for local GHG MRV



Resources for local GHG MRV

GHG emissions, actions and commitments

Activity	Resource
LEDS	GreenClimateCities (GCC) methodology
Measure	<ul style="list-style-type: none"> - Global Protocol for Community-scale Emissions (GPC) - International LG GHG Emissions Analysis Protocol (IEAP) - Harmonized Emissions Analysis Tool plus (HEAT+), ICLEI - ClearPath, ICLEI USA
Report	carbonn Cities Climate Registry (cCCR)
Verify	<p>No widely accepted mechanisms (Basic verification at the level of the voluntary mech.)</p> <p>Urban-LEDS project is developing a process MRV for local climate action, linked to cCCR and used in GCC</p>

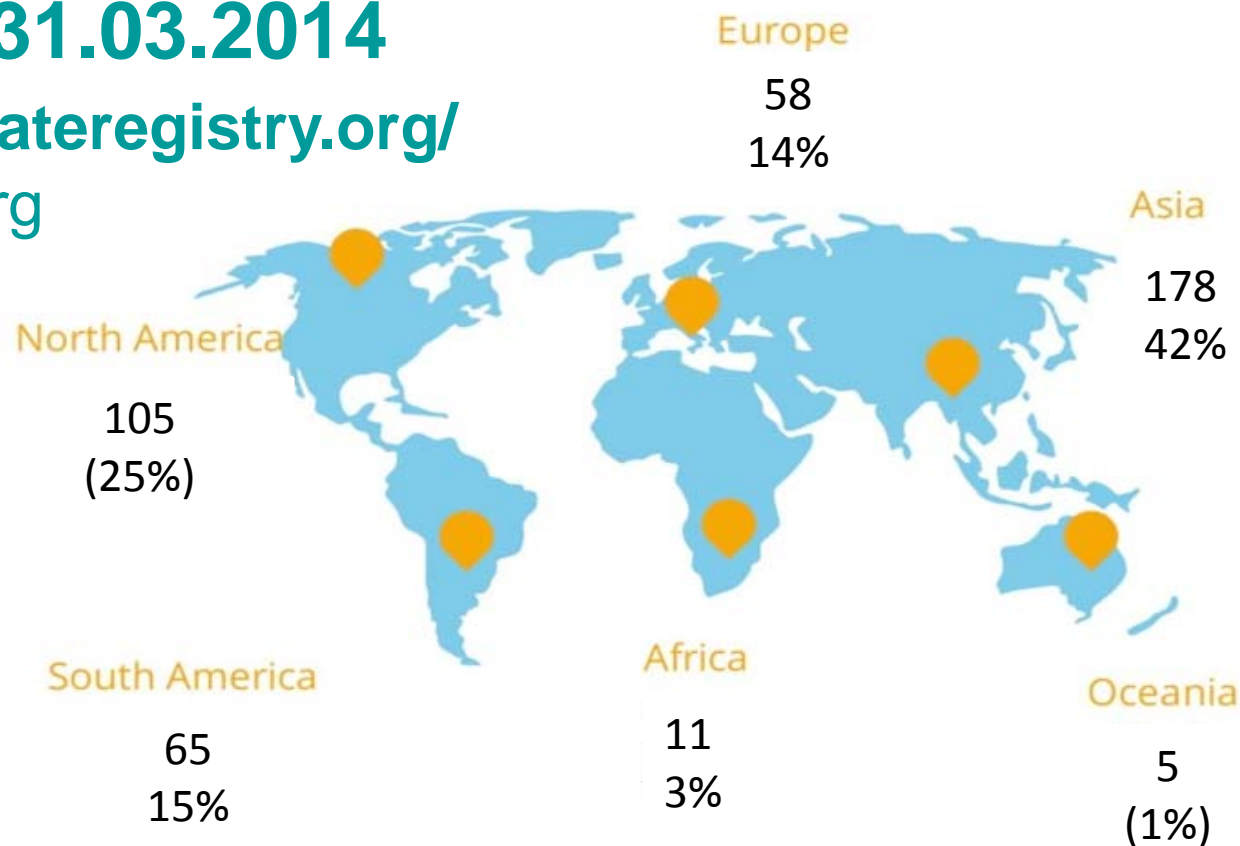
Introducing the carbonn Registry

- Free use by any local & subnational government
- Addresses climate change mitigation & adaptation
- Covers GHG inventories, actions and commitments
- Purpose: credibility, verification, recognition, inspiration
- Reporting can be done at any time
- Analyses made twice a year (used at climate negotiations)
- No automatic aggregation yet, to avoid double counting
- Operated by:



Status as of 31.03.2014

<http://citiesclimater registry.org/>
carbonn@iclei.org



Number of reporting cities & local governments



Countries



Population (million)



Climate & Energy Commitments

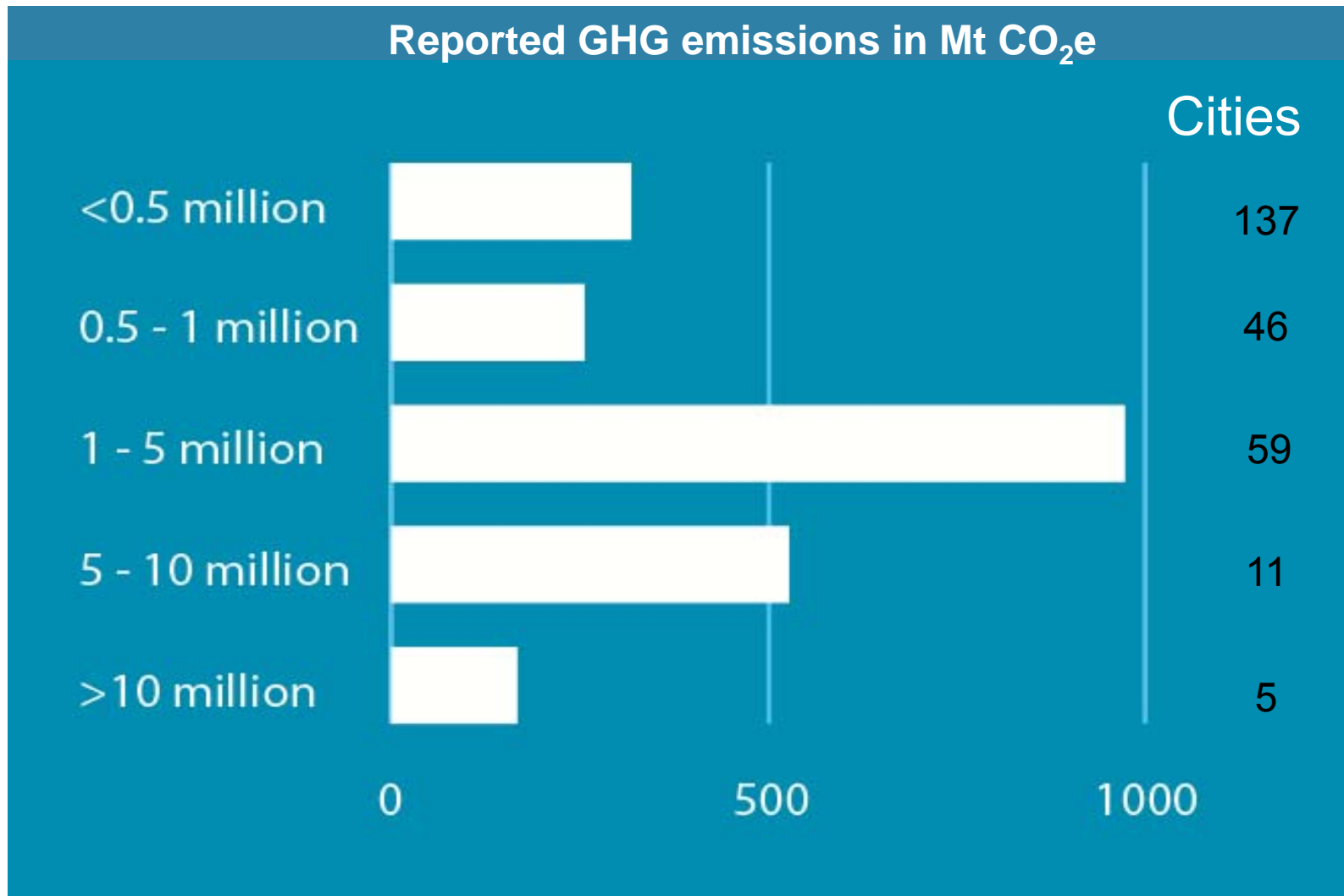


Mitigation and Adaptation Actions



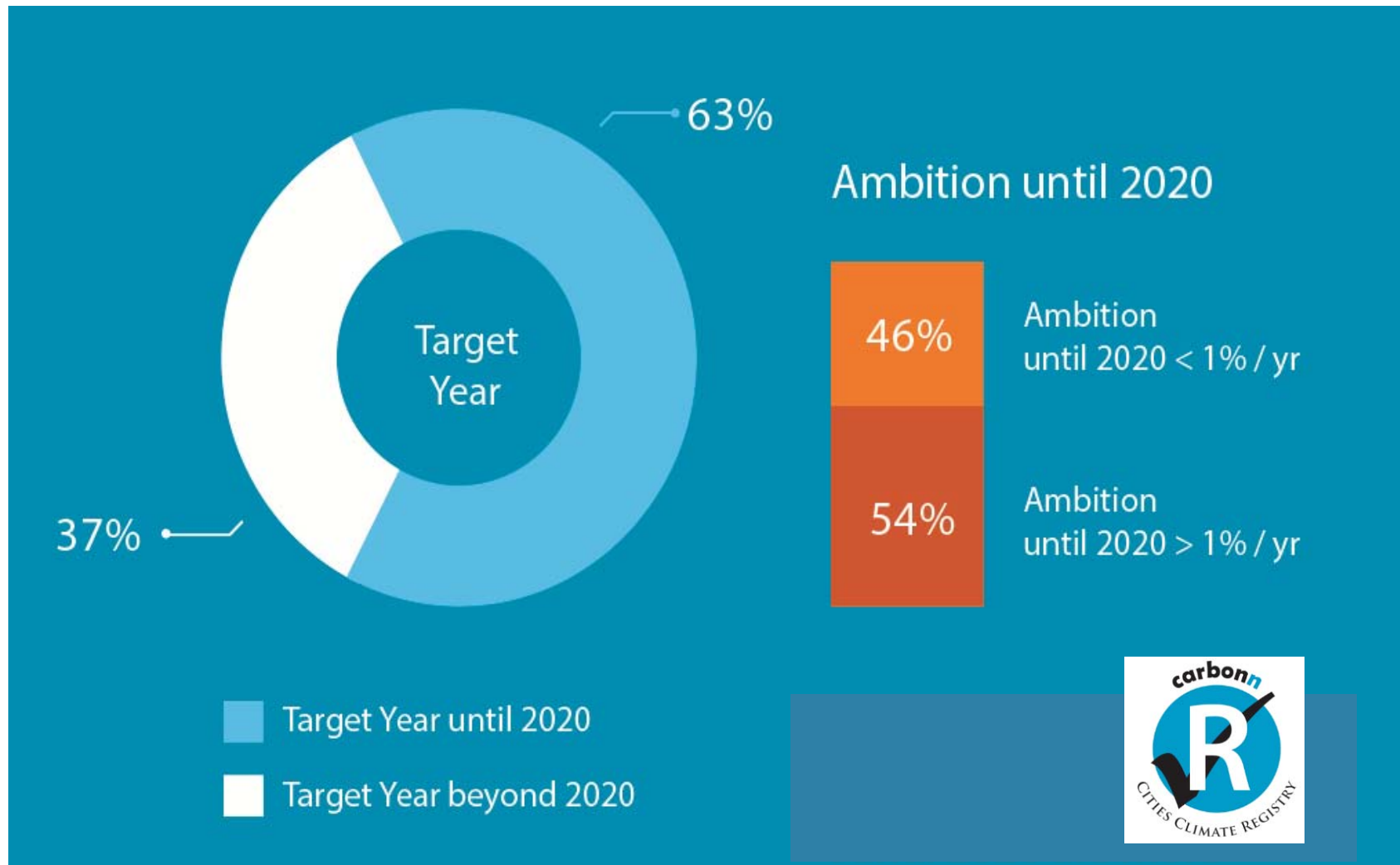
Reported GHG Emissions (GtCO₂e/yr)

GHG inventories



Disclaimer: non-verified data reported to the cCCR as of 31 March 2014.

Ambition of community commitments



Disclaimer: non-verified data reported to the cCCR as of 31 March 2014.

Protocols used for inventories

- 2006 IPCC guidelines for National GHG inventories (IPCC)
- International Local Government GHG Emissions Analysis Protocol (ICLEI)
- GHG Protocol standards (WRI/WBCSD)
- Global Protocol for Community-Scale GHG Emissions, GPC (WRI/ICLEI/C40)

- ...

**Combining efforts, aiming at a
universally accepted methodology
for subnational inventories**

● Concluding remarks

Guidelines for local GHG MRV should* ...

- Address cities' needs
- Provide a methodology to monitor, adjust and demonstrate progress, while solving current difficulties
- Require a reasonable level of effort from cities, considering typical LG capacity and constraints
- Be recognized by UNFCCC/IPCC as being compatible with IPCC 2006 guidelines.

* In other words, ICLEI's hope.



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Project examples

- **Urban-LEDS (www.urban-leds.org)**
 - “Promoting Low Emission Urban Development Strategies in Emerging Economy Countries“
 - International mitigation project funded by EC
 - Implementation partners: ICLEI & UN-Habitat
 - 37 cities (8 Europe, 29 from Brazil, India, Indonesia, South Africa)
- **V-NAMA**
 - “Involving sub-national actors in national mitigation strategies through vertically integrated NAMAs”
 - Implementation: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
 - Funding: German Federal Ministry for the Environment (BMU)
 - V-NAMA projects in Indonesia (waste), South Africa (buildings)