



NYC Mayor's Office of Sustainability

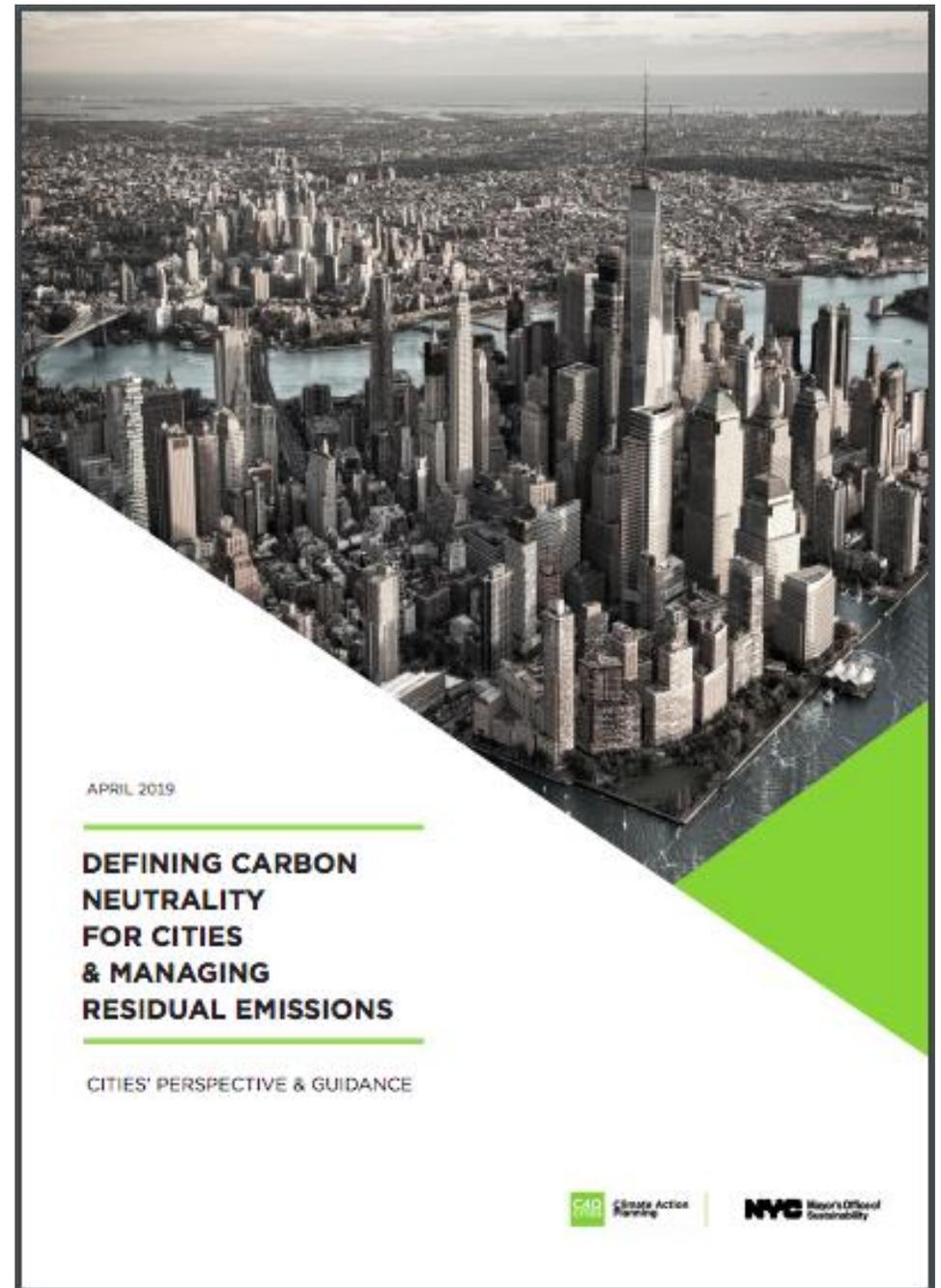
**CARBON
NEUTRALITY
FOR CITIES**



DEFINING CARBON NEUTRALITY FOR CITIES AND MANAGING RESIDUAL EMISSIONS:

CITIES' PERSPECTIVE AND GUIDANCE

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APRIL 2019

DEFINING CARBON NEUTRALITY FOR CITIES & MANAGING RESIDUAL EMISSIONS

CITIES' PERSPECTIVE & GUIDANCE



City engagement

C40 CAP Pilot Cities + Copenhagen and Stockholm + City Reviewers + C40 Regions



Organizations consulted



WORLD
RESOURCES
INSTITUTE

I.C.L.E.I
Local
Governments
for Sustainability



ipcc
INTERGOVERNMENTAL PANEL ON
climate change



CNCA



Ecosystem
Marketplace

CLIMATE
ACTION
RESERVE



Guidance Built on Collaboration

WORKING GROUP CITIES

- Boston
- Copenhagen
- Durban
- London
- Los Angeles
- Melbourne
- Mexico City
- New York City
- Paris
- Stockholm

REVIEWER CITIES

- Austin
- Cambridge
- Cape Town
- Edmonton
- Fort Collins
- Oakland
- Portland
- San Francisco
- Seattle
- Sydney

PARTNER ORGANIZATION

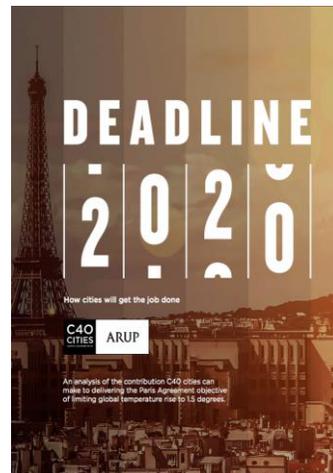
- C40 Cities Climate Leadership Group

ORGANIZATIONS CONSULTED

- CDP
- CNCA
- Cool Effect
- Climate Action Reserve
- Ecosystem Marketplace
- ICLEI
- Proyecto Mirador
- Solar One
- UNDP
- UNFCCC
- WRI

Why Carbon Neutrality Guidance for Cities?

- To deliver the Paris Agreement, cities need to reach emissions neutrality by 2050 at the latest.
- C40's Climate Action Planning Framework sets out the essential elements of climate action planning for the Paris Agreement, but does not provide guidance as to how cities can define carbon neutrality.
- Existing protocols reference 'carbon neutrality' and 'net zero' but have not clearly and consistently defined these terms or provided guidance tailored to cities.



Objectives of the Guidance

1. Establish a shared understanding of city carbon neutrality aligned with existing accounting protocols and emerging international consensus on carbon neutrality

2. Identify common principles:
 - Mechanisms for addressing residual emissions, and
 - Measuring and reporting both gross and net emissions in cities

3. Provide guidance:
 - Timing of strategies, recommended limits to residual emissions and offsetting, and transparency;
 - Residual emissions offsetting approaches (e.g. mechanisms, types of projects, roles for the city and partners, wider project benefits available to cities);
 - Environmental integrity principles for projects to cancel out residual emissions, and
 - Reporting on progress.

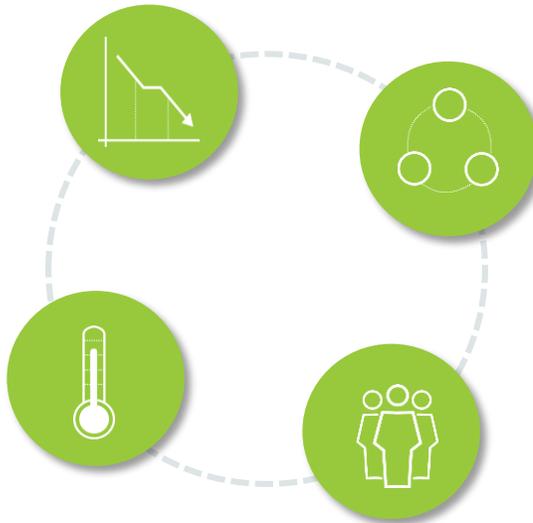
Key components of a Climate Action Plan

EMISSIONS NEUTRAL

Develop a pathway to deliver an emissions neutral city by 2050 at the latest and set an ambitious interim target and/or carbon budget

RESILIENCE TO CLIMATE HAZARDS

Demonstrate how the city will adapt and improve its resilience to the climate hazards that may impact the city now and in future climate change scenarios



GOVERNANCE & COLLABORATION

Detail the governance, powers and the partners who need to be engaged in order to accelerate the delivery of the city's mitigation targets and adaptation goals

INCLUSIVITY AND BENEFITS

Outline the social, environmental and economic benefits expected from implementing the plan, and improve the equitable distribution to the city's population

Defining Emissions Neutrality & Residual Emissions

Citywide Carbon Neutrality requires achieving:

- Zero net greenhouse gas emissions from fuel use in buildings, transport, and industry (scope 1)
- Zero net greenhouse gas emissions from grid-supplied energy (scope 2)
- Zero net greenhouse gas emissions from the treatment of waste generated within the city boundary (scope 1 and 3)
- Where a city accounts for additional sectoral emissions in their GHG accounting boundary, zero net greenhouse gas emissions from all additional sectors

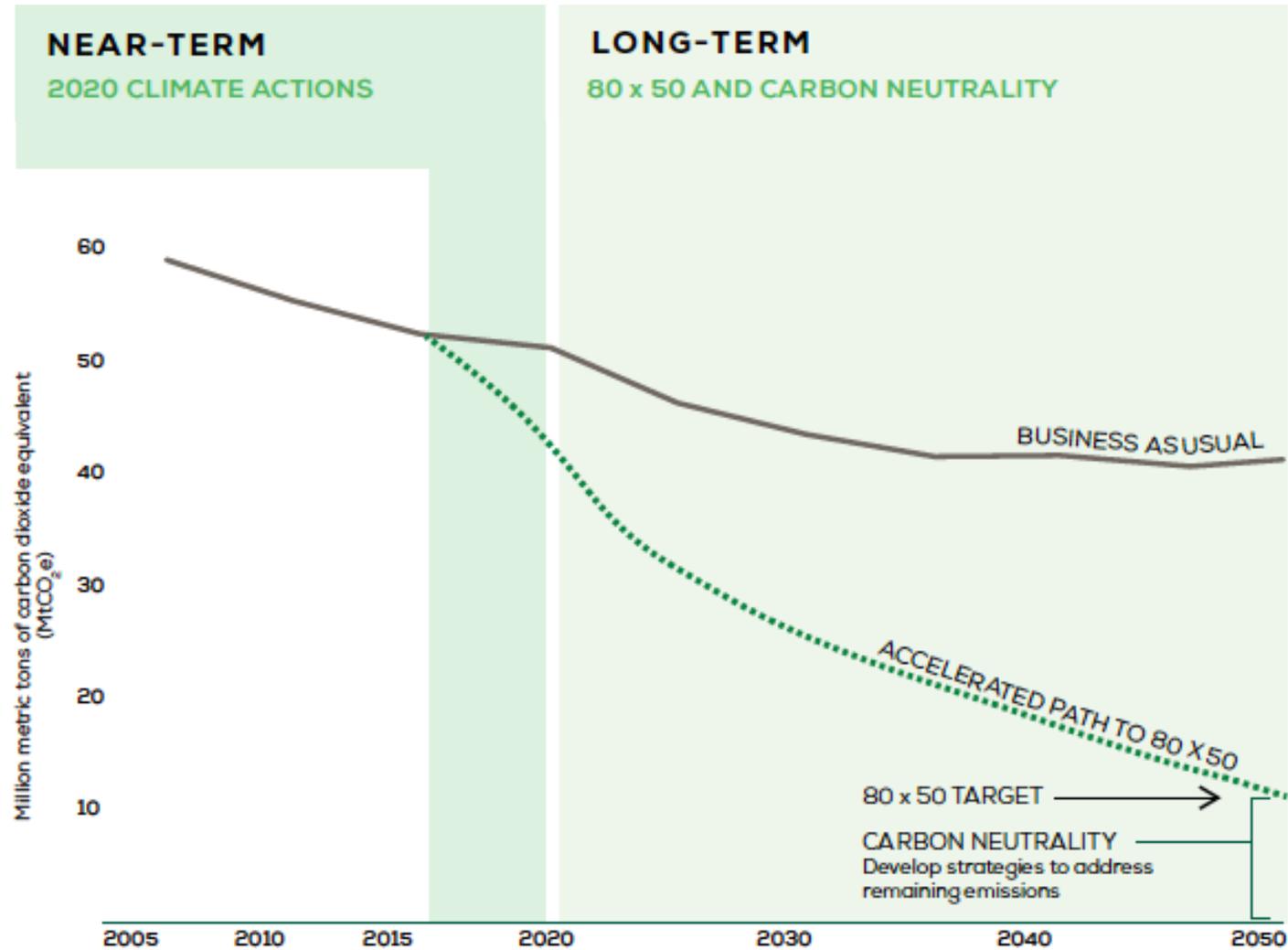
Alternatively, for cities that solely account for emissions using a consumption-based approach, a carbon neutral city will have achieved zero net emissions from all sectors in the accounting boundary.

Achieving Carbon Neutrality

High-level process for achieving carbon neutrality

- Develop a climate action plan informed by an evidence-based emissions inventory, robust modelling and climate risk assessment, setting the city on a pathway to meeting carbon neutrality by 2050 or sooner
 - Set ambitious interim targets
 - Prioritize and accelerate transformational climate actions in the city
 - Engage other government, business and communities in the planning and delivery of climate actions to ensure fairness, accessibility, and equitable distribution of benefits
- Establish, monitor, and update estimates of residual emissions over time
 - Reduce or compensate for residual emissions to achieve net-zero emissions

NYC EXAMPLE



Eliminating Residual Emissions

Potential approaches to addressing residual emissions

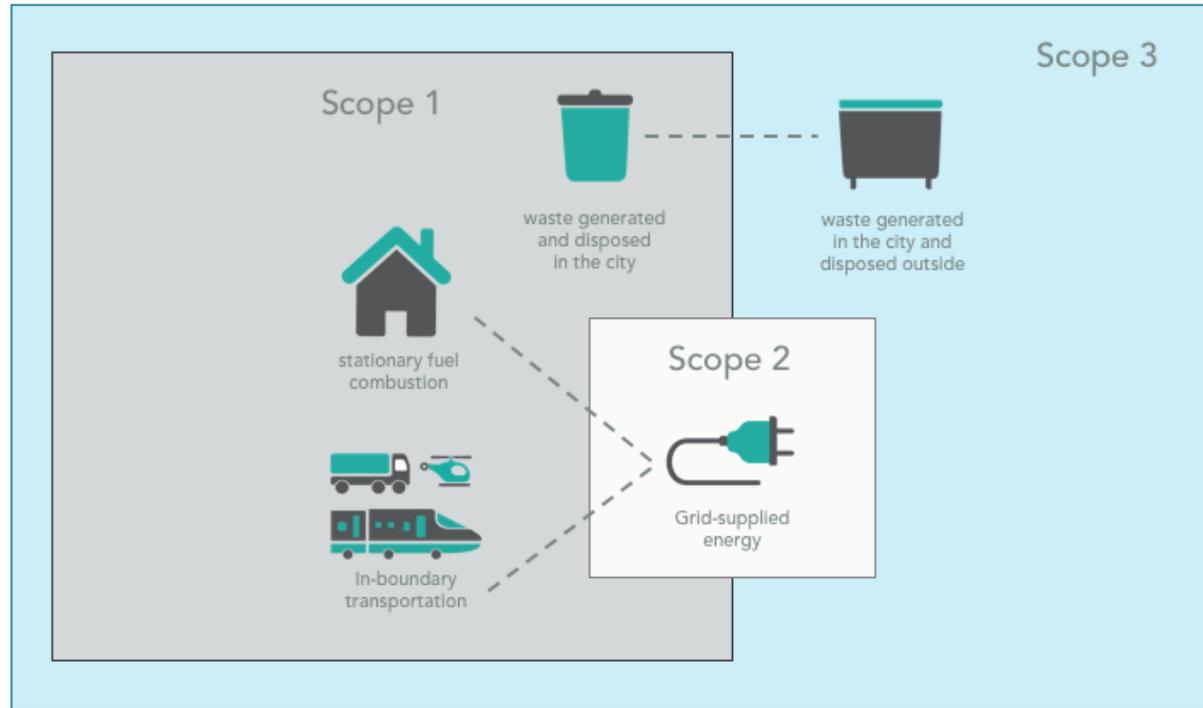


- Catalyze additional direct action
- Develop carbon credit projects
- Invest in carbon credit projects
- Purchase carbon credits
- Employ negative emissions technologies/CDR

Step One, Using GPC Basic

Citywide
Emissions

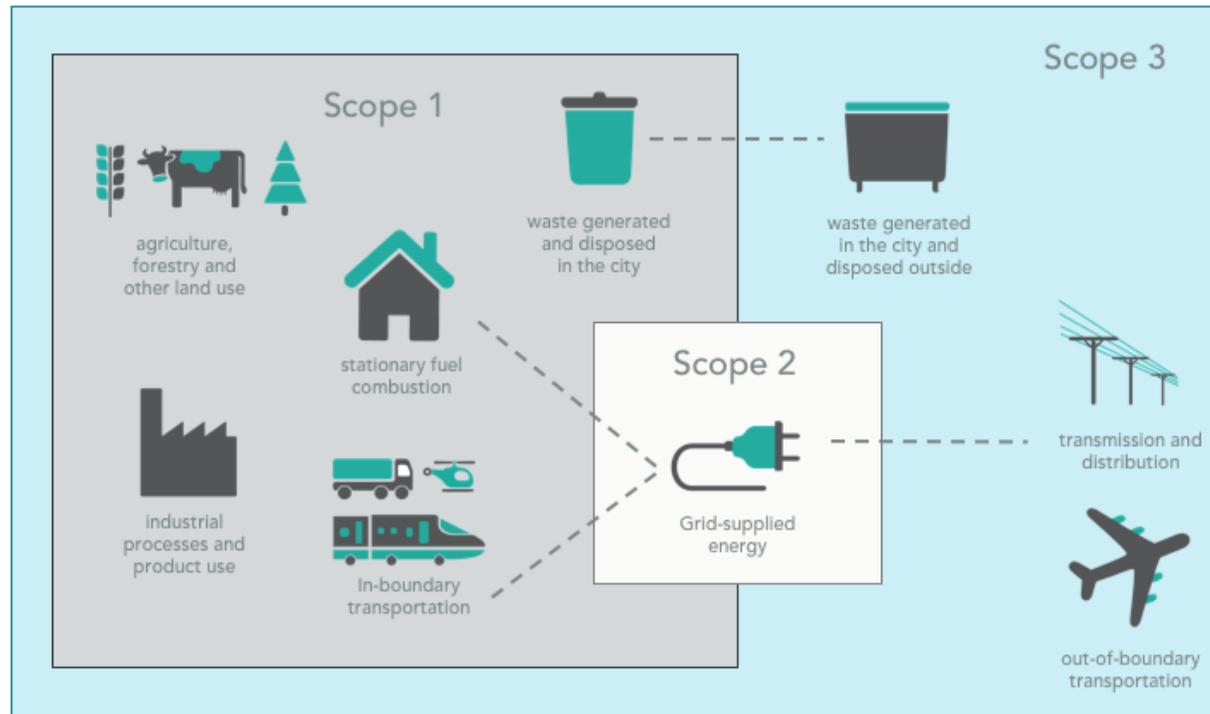
(GPC
Basic)



1

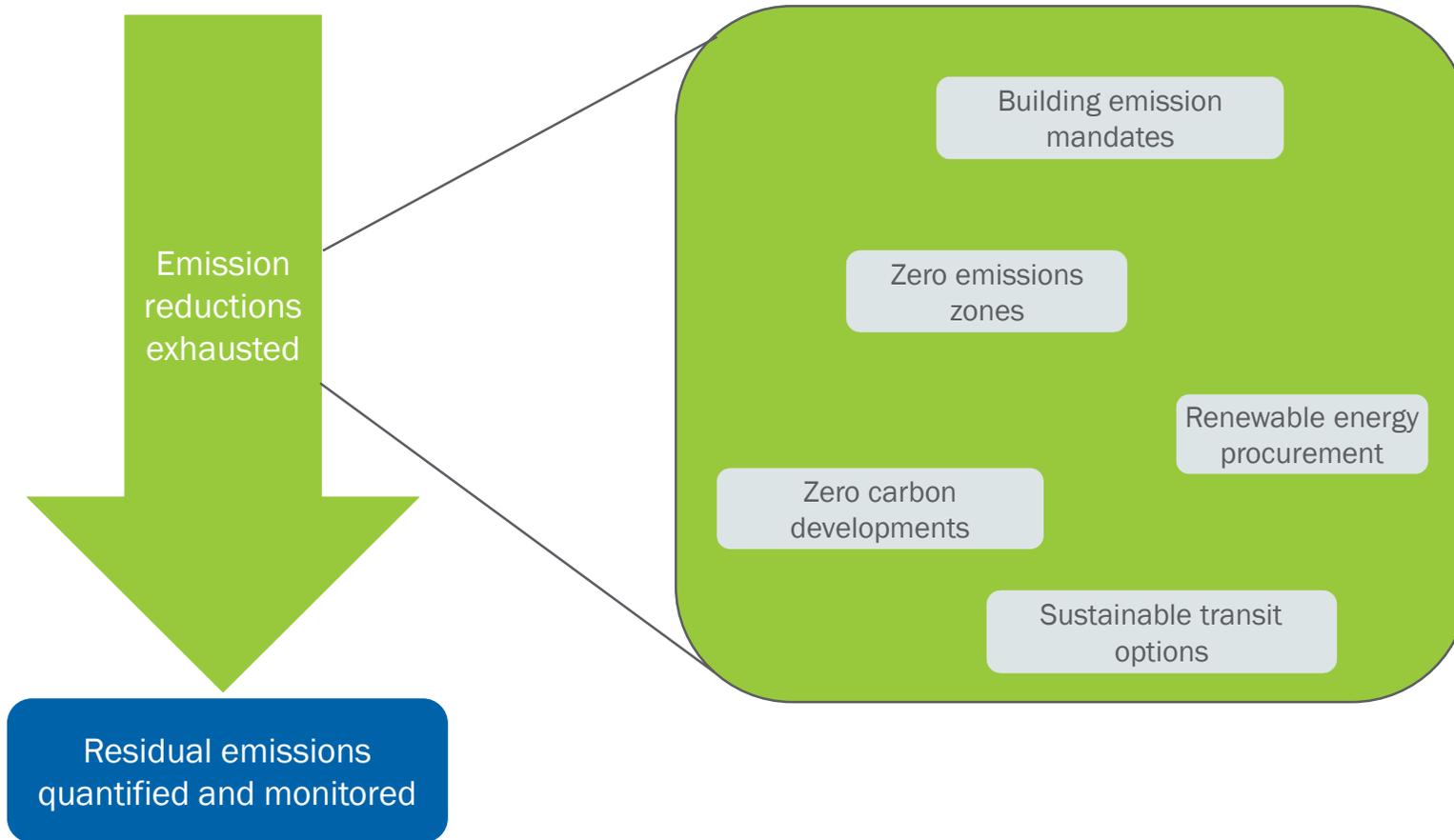
Step One, Using GPC Basic+

Citywide Emissions
(GPC Basic+)



1

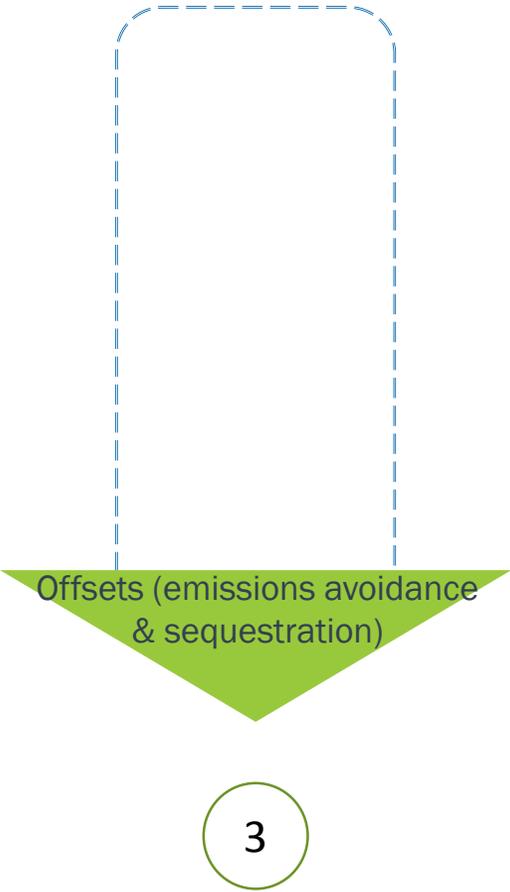
Step Two: Reducing Emissions



2

Step Three: Cancelling Out Residual Emissions

Offsetting is a mechanism for canceling out residual emissions by developing, funding, or financing projects that avoid or sequester CO₂ emissions outside of the city reporting boundary and exhibit the environmental integrity principles outlined in the guidance.



Offsets (emissions avoidance
& sequestration)

3

Step Three: Carbon Offsetting

GHG EMISSIONS AVOIDANCE

Avoidance includes the reduction of GHG emissions released into the atmosphere compared to a baseline. Avoidance may be through GHG reduction or destruction.

Types of Projects

- destruction of industrial pollutants or agricultural by-products, destruction of landfill methane
- destruction of ozone depleting substances and/or hydrofluorocarbons (HFCs)
- renewable energy (hydro, solar, tidal, wind, biomass, geothermal)
- energy efficiency

Step Three: Carbon Offsetting

GHG EMISSIONS SEQUESTRATION

Carbon sequestration is defined as the removal (or uptake) of GHG emissions from the atmosphere and long-term storage in carbon sinks (such as forests, soils, or materials) through physical or biological absorption or sequestration.

'Traditional' methods:	Negative Emissions Technologies
<ul style="list-style-type: none">• Afforestation• Reforestation• Agricultural management strategies increasing carbon storage;	<ul style="list-style-type: none">• Direct air capture and storage• Bioenergy with carbon capture and storage

Environmental Integrity Principles

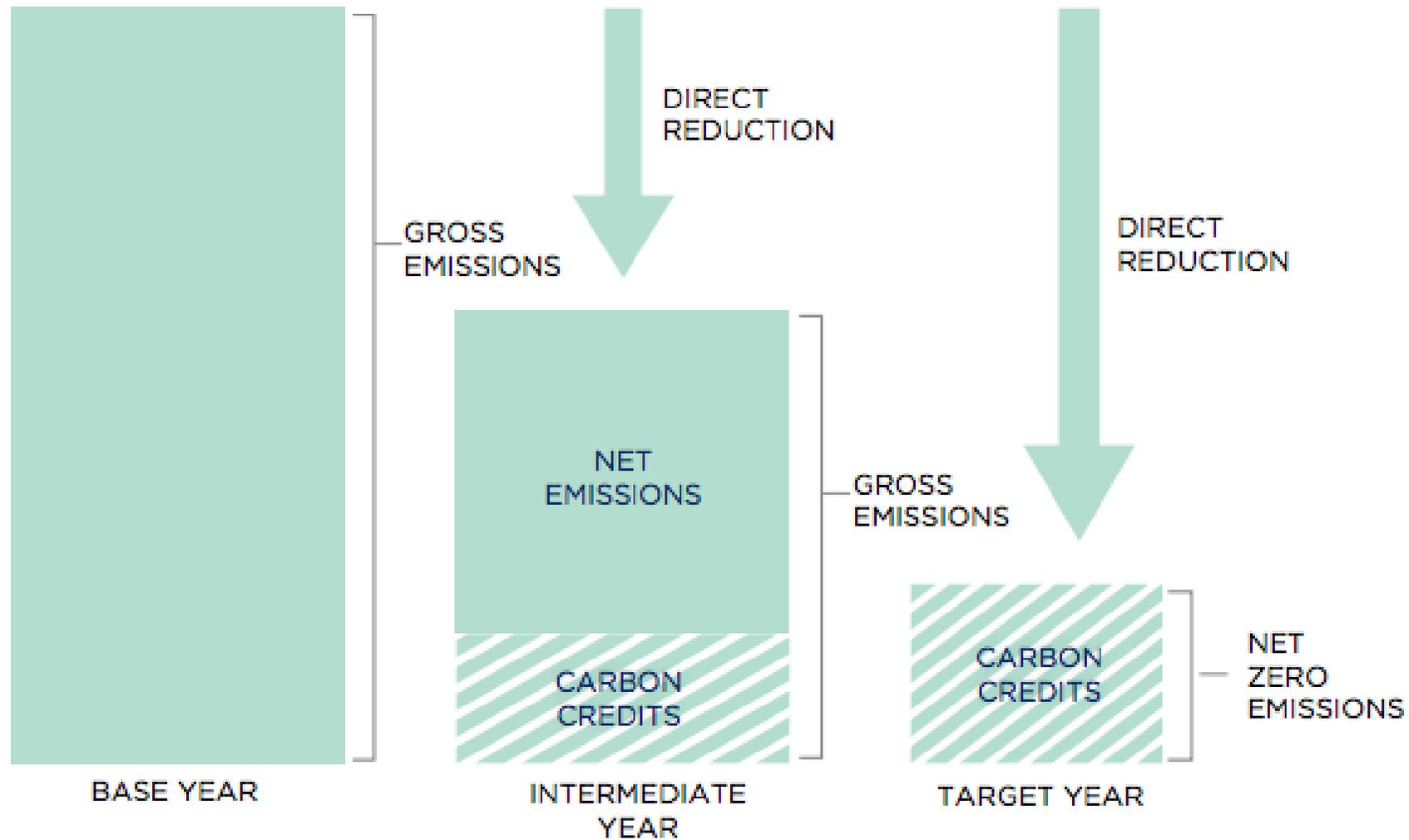
PRINCIPLE	DEFINITIONS (see Guidance for full text)
Real	Result in actual reductions
Additional	Carbon reductions would not be realized without the investment
Permanent	Projects should be irreversible and continuously monitored
Independently audited	Projects should be verified by qualified third-party verifiers
Measurable	Reductions must be quantifiable and verifiable
Transparent	Credits must be publicly registered
Address leakage	Projects should account for increases in emissions as result of implementation
Unambiguously owned	Credits must have clear documentation of ownership
Synchronous	Where possible, credits should be generated in same timeframe as emissions offset
Enforceable	Where possible, projects should be backed up by enforceable contracts

Benefits

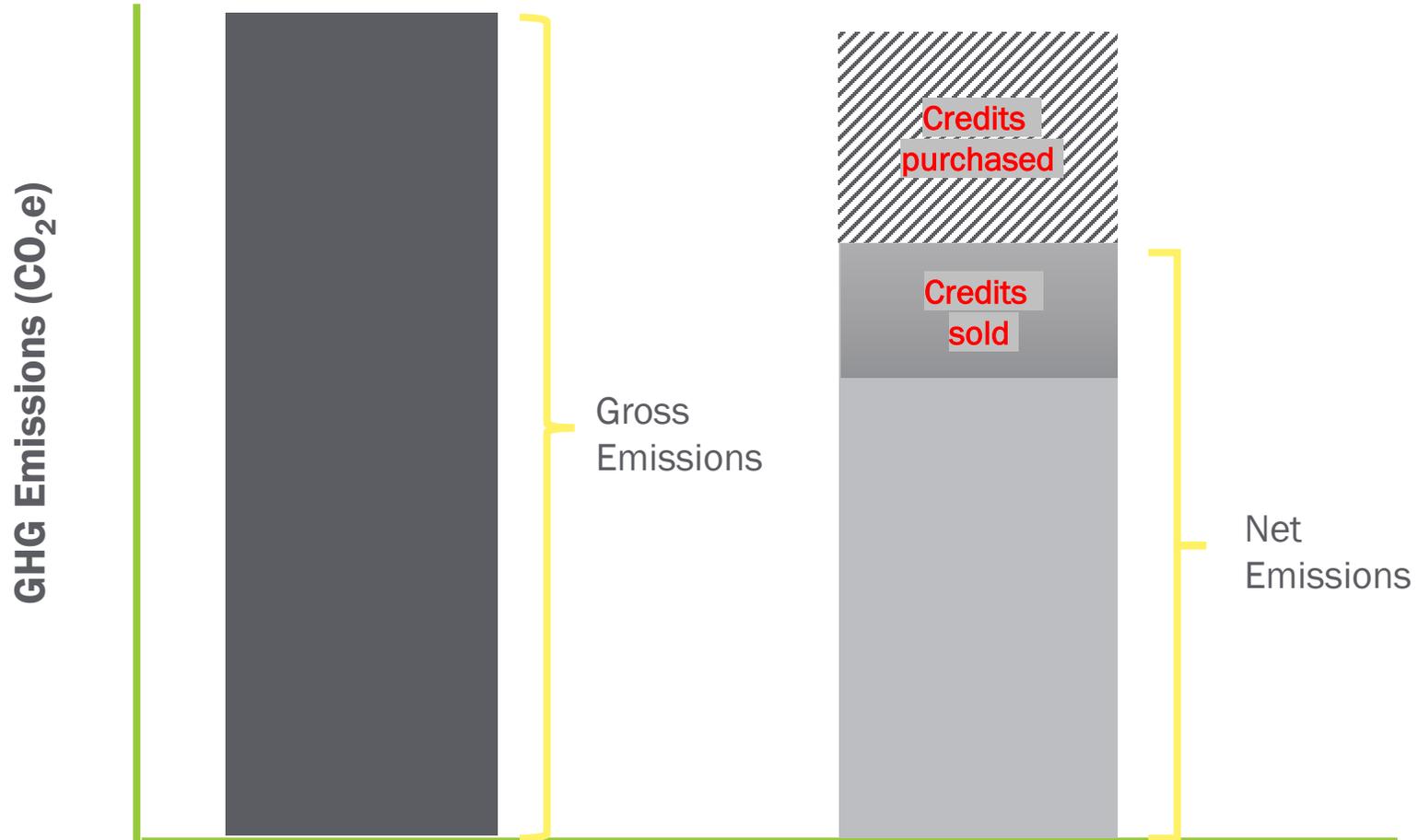
Cities may choose to prioritize:

- **Local projects (within the home region or country but outside the city's accounting boundary) that deliver local/regional jobs and other benefits such as improved resiliency, air quality, and health outcomes;**
- **Sustainable development projects in developing contexts in line with climate solidarity principles giving consideration to potential risks to local and indigenous populations; or**
- **Projects (independent of location) that provide carbon mitigation and additional benefits including improved equity, resilience, biodiversity and health outcomes.**

Timing



Reporting – Gross and Net Emissions

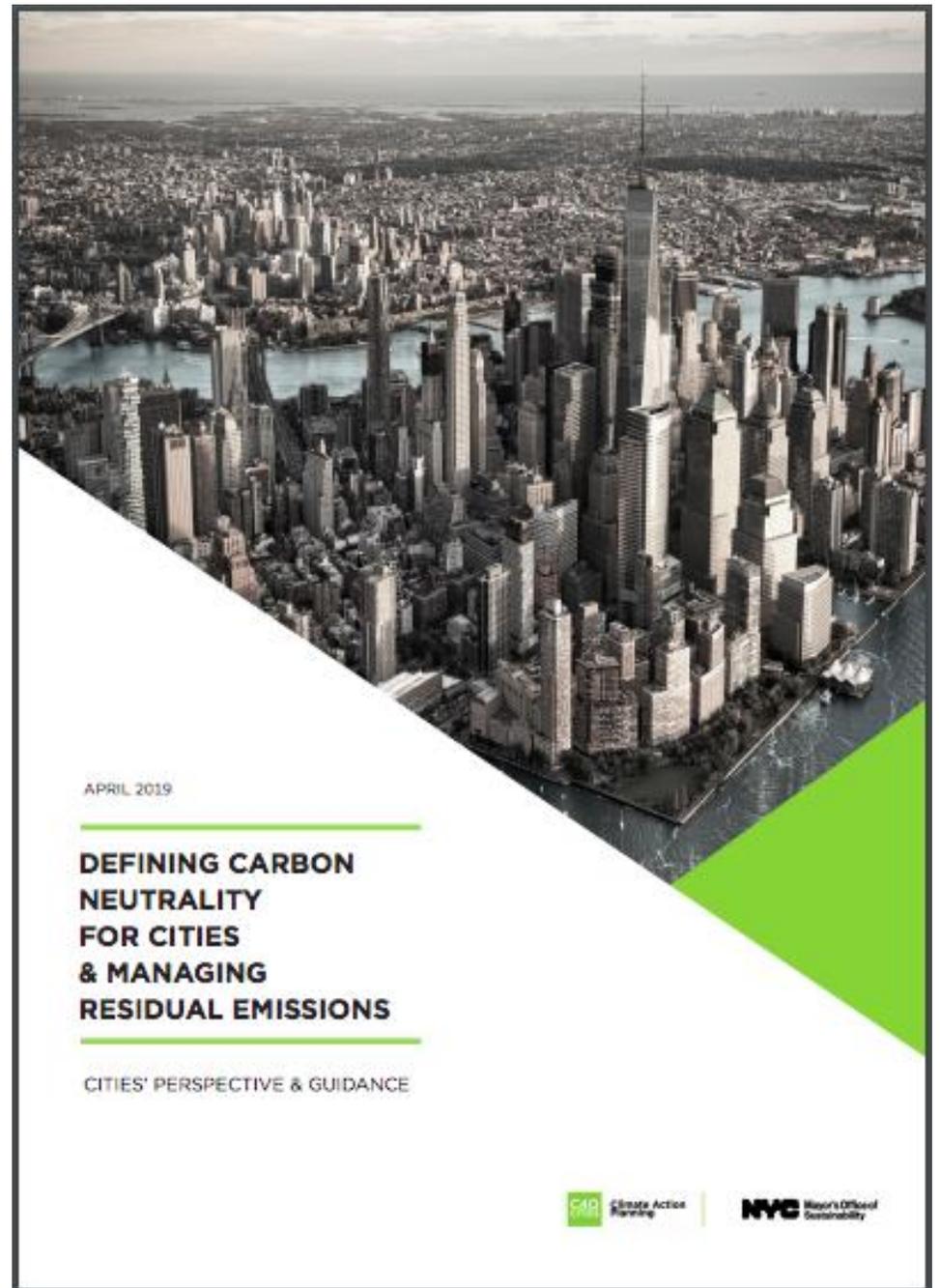


Outstanding Questions

- 1) Guidance on effective communications and stakeholder engagement**
- 2) A global registry**
- 3) Updates to current reporting that do not currently offer gross and net disclosure options.**
- 4) Additional information on the costs of carbon credits.**
- 5) Additional guidance on the ethical implications of different types of carbon credit projects.**
- 6) Additional guidance on sequestration with appropriate accounting methodologies, i.e. urban forests, and use of mass timber in construction.**
- 7) Ongoing research on best practices for alignment with emerging global mechanisms, e.g. Article 6 of the Paris Agreement.**

THANK YOU

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