

Cities Climate Action Report Card



A framework for assessing the transparency,
integrity, and leadership of city climate action

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1. Introduction

The urgent need to mitigate climate change was starkly highlighted in 2018 by the IPCC's Special Report on Global Warming of 1.5°C, which stressed that achieving net-zero global carbon dioxide emissions by 2050 is crucial to avoid the worst consequences of climate change and limit warming to 1.5°C (IPCC, 2018). Since this report was released, net-zero commitments from public and private sector actors have surged, including commitments from cities, regions, and businesses. By the end of 2022, nearly 600 subnational governments have established net zero targets (Song et al., 2024). As of 2024, over 1,700 national and regional governments, large publicly-listed companies, and local governments have committed to reducing their emissions to net-zero, including 271 cities with populations over 500,000 (Net Zero Tracker, 2024). The potential contribution of subnational actors to global climate goals is increasingly acknowledged in national and international climate processes, exemplified in the announcement of the Coalition for High Ambition Multilevel Partnerships (CHAMP) for Climate Action at COP 28 in Dubai. Through the CHAMP initiative, 73 countries have committed to enhancing cooperation with subnational governments and maximizing climate action at all levels, with the ultimate goal of limiting global warming to 1.5°C and improving adaptation and resilience. (Coalition for High Ambition Partnerships for Climate Action, 2023).

In response to the momentum in net-zero target setting from non-state actors and interest in the contribution of these actors to global mitigation goals, the United Nations convened a High Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities ("HLEG") to establish guidelines for net-zero commitments from non-state actors, including corporate actors, financial institutions, and local and regional governments. In 2021, this expert group released a report ("HLEG Integrity Matters") outlining a set of ten recommendations for ensuring the credibility of climate action from non-state entities, while acknowledging their diversity in needs and capabilities (HLEG, 2021). In 2023, an expert group convened by the Global Covenant of Mayors for Climate & Energy and WRI Ross Center for Sustainable Cities released a follow-up to the HLEG Integrity Matters report

("GCoM Integrity Matters"), which modified and specified the original HLEG recommendations for subnational governments (Global Covenant of Mayors for Climate and Energy and World Resources Institute, 2023). These two sets of recommendations represent the current gold standard in high-integrity climate action for subnational governments.

The Cities Climate Action Report Card (CCARC), presented here, uses these recommendations to create an evaluation framework that assesses the integrity and leadership of city pledges, plans, and implementation efforts aimed towards reducing emissions and ultimately reaching net zero emissions. Grounding the HLEG Integrity Matters and GCoM Integrity Matters reports as a starting point, the CCARC operationalizes these recommendations into a set of indicators to assess city climate mitigation action for transparent communication and alignment with high-integrity standards. The framework was tested across a set of 12 focus cities, representing different global regions, sizes, and governance structures. In this framework, we focus specifically on cities, acknowledging that even within subnational governments, there are substantial differences between city and regional governments in power and capacity. To ensure that the indicators are appropriate for a wide range of cities, we consulted city practitioners and networks (i.e., C40 Cities for Climate Leadership) through an iterative process based on the evaluation of the focus cities. In this report, we introduce the framework, discuss key findings from our evaluation, and present individual report cards. Moving from recommendations towards evaluation can benefit both cities and a broader range of stakeholders.

- For cities, this framework can help translate high-level recommendations for transparency and integrity into practice. It also enables cities to benchmark their performance against global standards and their peers, consider opportunities for implementing good practice actions, learn from other cities, and identify areas for improvement. This process can also encourage communication and shared learning across cities.
- For international, national, and research

climate audiences, this framework can enable comparison across cities and within cities over time, allowing evaluators to track progress and assess the contribution of cities to global climate goals. This framework can also help address the data gaps faced by evaluators of non-state climate action by encouraging consistency in the information reported by cities on their targets, plans, and implementation (Hsu and Schletz, 2023).

While this framework and report are not the first to evaluate city climate targets and plans, previous reports and studies have largely focused on descriptive analyses of city plans and pledges or examined specific components of climate mitigation action (Reckien et al. 2018, Kona et al, 2020, Song et al. 2024, Net Zero Tracker, 2024). Many have assessed a broader range of cities but tended to emphasize one element or analyzed only certain types of non-state actors or specific city subsets (Utrecht University and Data-Driven EnviroLab, 2023, Aboagye and Sharifi 2024). Some reports have conducted smaller-scale comparative analyses of subnational climate action but have focused on other types of non-state actors (New Climate Institute, 2023) or specific subsets of cities (World Bank, 2023, CDP, 2022). City-focused initiatives have also developed frameworks to guide their members towards high-integrity action based on international recommendations, such as the C40 Cities Climate Transition Framework and Global Covenant of Mayors (GCoM) Common Reporting Framework, although these initiatives do not report on the alignment of their members with these frameworks (C40, 2023, Global

Covenant of Mayors, 2023). We hope that the CCARC will complement the existing research and frameworks as a resource that can support and encourage any city, regardless of initiative participation, size, location, or capacity, to engage in transparent and high integrity climate action.

It is also important to acknowledge that cities already face high burdens to set ambitious climate targets, to plan and implement effective mitigation strategies, and to report on their targets, plans, and progress in great detail. Many cities, including the ones assessed in this report, are doing their best to meet these demands while also confronting significant barriers, such as capacity and budget constraints, competing policy priorities, and political or public opposition to climate action. Ultimately, the CCARC is designed to be a constructive tool for cities, supporting their climate action planning and implementation without placing additional burdens, while encouraging action that aligns with global goals to limit the impact of climate change throughout the world.

The rest of the report is structured as follows: first, we introduce the CCARC evaluation framework ("Methodology"). Then, we present the overall CCARC scoring across all 12 focus cities ("Overall Scoring") and discuss key findings across the focus cities, including the distribution of scores by actor type and highlights from specific indicators ("Key Results from Focus City Assessment"). Next, we present report cards for each of the twelve focus cities ("Individual City Scorecards").

2. Methodology

The CCARC assesses the transparency, integrity, and leadership of climate mitigation actions from cities that have established net zero goals across three broad elements: targets, plans, and implementation. To develop the framework, the CCARC team began by converting the mitigation-relevant recommendations from the HLEG Integrity Matters and GCoM Integrity Matters reports into evaluation criteria and indicators. Specifically, these included the 10 main "Main" recommendations and related "Detailed" recommendations from the HLEG Integrity Matters report and the five "sections" of the GCoM Integrity Matters report. More details on the specific language used to

develop each evaluation criterion is provided in Appendix B. The CCARC team then tested the initial framework against a set of 12 cities with diverse characteristics to ensure robustness and appropriateness. Based on this evaluation, the team made adjustments to ensure the evaluation criteria are relevant for cities specifically (compared to other types of non-state actors), that indicators apply appropriate levels of stringency, and that scoring guidelines reflect realistic levels of alignment for cities.

The rest of this section introduces the evaluation framework and discusses the selection of focus cities used in this report.

Evaluation Framework

The CCARC evaluation framework includes 63 indicators organized by indicator type (transparency, alignment) and category of climate action (targets, plans, implementation), evaluation criteria type (integrity, leadership) and category of climate action (targets, plans, implementation). Each indicator is assessed in relation to specific evaluation criteria related to either integrity or leadership - details on the 38 evaluation criteria are provided in Appendix B. Transparency indicators assess the extent to which a city provides the information necessary to fully understand their approaches to climate change mitigation and net zero in their public communications and materials. Alignment indicators reflect the extent to which city practices align with recommended practices. Alignment is assessed against specific scoring guidelines, representing different levels of

alignment for each evaluation criterion.

Integrity evaluation criteria address the components of targets, plans, and implementation reporting that are expected for all cities and assess the quality, credibility, and comprehensiveness of a city's approaches towards various aspects of mitigation and net zero. Leadership evaluation criteria assess the extent to which cities engage in activities that are considered to be ambitious or best practices, but are not expected or required for all cities. Cities receive Alignment scores on these criteria as recognition for engaging in leadership activities, but cannot receive a "LOW" Alignment score and we do not report Leadership scores on individual report cards, since we do not expect all cities to engage in these activities. Table 1 describes the possible scores for each indicator and criteria type:

Table 1: Scoring Overview

	Transparency Indicator	Alignment Indicator
Integrity Evaluation Criteria	HIGH - Information to evaluate this criterion is directly provided MEDIUM - Information to evaluate this criterion is not directly provided, but can be assumed or inferred LOW - There is not enough information to evaluate this criterion	HIGH - City actions fully align with the integrity evaluation criterion. MEDIUM - City actions partially align with the integrity evaluation criterion. Optional - some only have HIGH and LOW. LOW - City does not align with the integrity evaluation criterion or there is not enough information to assess.
Leadership Evaluation Criteria	N/A - Transparency must be at least HIGH or MEDIUM, but cities do not earn points for Transparency on Leadership criteria	HIGH - City actions fully align with the leadership evaluation criteria. MEDIUM - City actions partially align with the leadership evaluation criteria.

The Transparency assessment prioritizes public reporting oriented towards a general audience, such as the residents and stakeholders within each city. High scores are awarded for information that is explicitly stated within city-developed, public communications, reports, presentations, or documents. We also considered public reporting of cities to initiatives and reporting platforms such as CDP, the Global Covenant of Mayors, and the European Covenant of Mayors. However, these sources are considered to be secondary sources because city residents and stakeholders are not the primary audience of these data sources. The Transparency and

Integrity indicators work in tandem: Transparency evaluates whether the city provides enough information to assess the related Integrity or Leadership evaluation criterion. For Alignment indicators, cities are assessed against specific evaluation criteria related to a range of high integrity actions and practices across their targets, plans, and progress and the guidelines for "HIGH", "MEDIUM", and "LOW" scores are specific to each evaluation criteria. Details on the Alignment indicator scoring guidelines for all evaluation criteria are provided in Appendix B.

Alignment with Leadership criteria follows a similar format to Integrity criteria, except that cities cannot receive a “LOW” score on these indicators. Leadership criteria are not assessed on Transparency, but in order to score Alignment points cities must have at least achieved a “MEDIUM” level of Transparency. Many of these Leadership criteria relate to recommendations from the HLEG and GCoM Integrity Matters reports where the report used less stringent language to indicate suggested rather than required practices. The GCoM Integrity Matters report is clear on its use of terminology, with “shall” and “must” used to “indicate fundamental requirements for a city, state, or region to be recognized as net zero or net zero aligned”, while “should” is used “to indicate a recommendation, but not a requirement” (Global Covenant of Mayors for Climate and Energy and World Resources Institute, 2023, pg. 9). Some of these Leadership criteria relate to actions that are more recently established, such as those that focus on consumption-based emissions and reporting on implementation. Other Leadership criteria reflect strategies that are considered to be good practices but may not be well-suited to all cities, such as clean energy targets and strategies and compact

development strategies.

Each CCARC scorecard includes the individual scores awarded to the city for Transparency and Alignment indicators on Integrity evaluation criteria. We also include aggregated Integrity Alignment scores across three categories of climate action: targets, plans, and implementation. To aggregate across the individual indicators, “HIGH” scores receive 2 points, “MEDIUM” scores receive 1 point, and “LOW” scores receive 0 points. Aggregate scores are then calculated as the average Alignment score in each category (targets, plans, and implementation). Aggregate scores are then reported on a 5-point scale, as shown in Table 2.

Table 2: Aggregate Integrity Alignment Scoring

Aggregate Score	Minimum Average Category Score
Very Low	0-0.4
Low	0.4-0.8
Moderate	0.8-1.2
High	1.2-1.6
Very High	1.6-2

Selection and Assessment of Focus Cities

The final version of the CCARC framework was developed through an iterative process, based on the in-depth, qualitative assessment of climate action for a set of 12 focus cities. To select these cities, the CCARC team identified a set of 133 potential cities, based on publicly available databases on city climate action and other city characteristics. The CCARC team then verified which of the potential cities have pledged to achieve “net zero,” “carbon neutrality” or other pledges using equivalent terminology¹ and have released a publicly available climate action plan since establishing their pledge, which narrowed our selection to 105 eligible cities. The 12 focus cities were then selected from the final set of eligible cities to reflect a wide range of characteristics, including size, development status, global region, and national governance

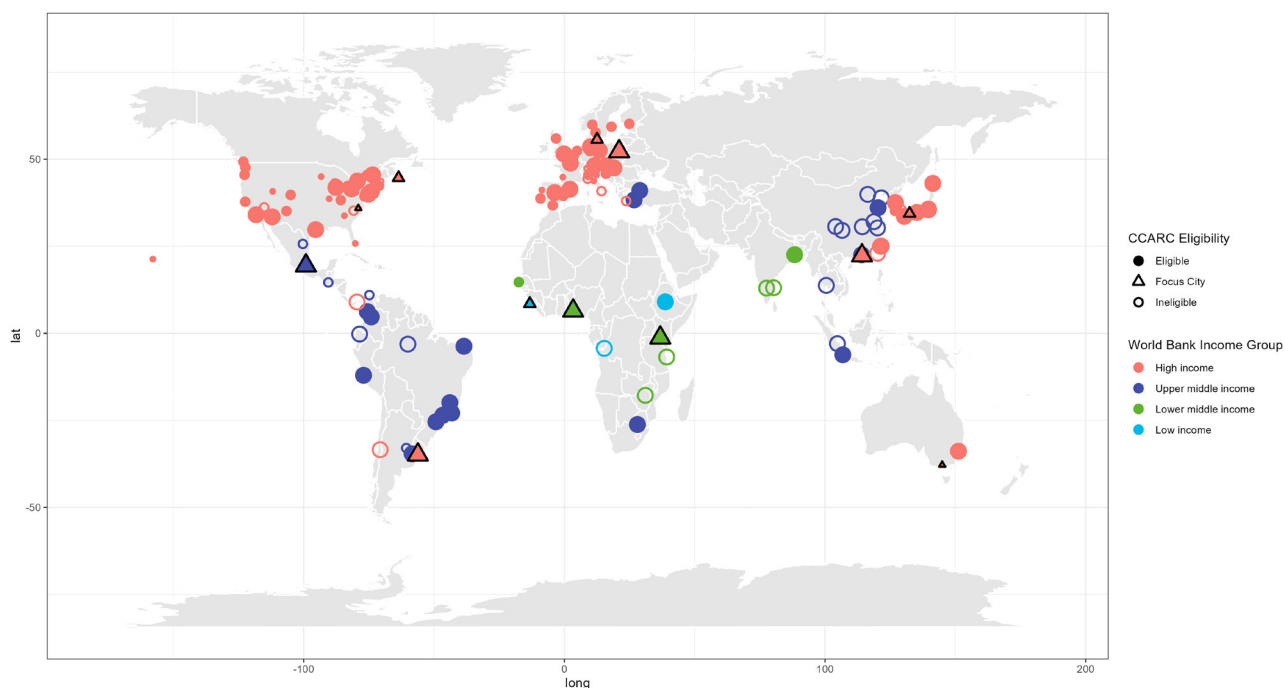
structure.

Figure 1 shows the potential cities, eligible cities, and final set of 12 focus cities used in the analysis. According to our eligibility criteria, city climate commitments and net-zero actions are most prevalent in North America, Europe, and East Asia and the Pacific, a trend consistent with other reports on subnational climate action (Net Zero Tracker, 2024,Utrecht University and Data-Driven EnviroLab, 2023). Climate action is far more common in large cities (with populations of 1,500,000+) and medium cities (500,000 - 1,500,000 population), compared to small cities (50,000-500,000).² Large cities represent 53% of all potential cities, while small cities only account for 13%. This distribution also varies by region, with small and medium size cities predominantly concentrated in North America and Europe and

1 While these terms can have different technical meanings, in practice, we find that cities tend to use these terms interchangeably and define them loosely. For eligibility, we consider any targets and pledges using terms such as “net zero”, “carbon neutral”, “climate neutral”, “zero-carbon”, “net-negative”, “carbon positive”, “climate positive”, “emissions free”, etc. We use the term “net zero” when referring to these pledges and targets generally, but when referring to specific city targets, we will employ the term they use.

2 Population is defined based on the city boundary or municipal government jurisdiction only and not the metropolitan area, to align more closely with the area to which city policy applies.

Figure 1: Map of Potential Cities, Eligible Cities, and Focus Cities



large cities dominating action in East Asia and the Pacific, Latin America and the Caribbean, and Africa. Climate action in Latin America, Africa, Eastern Europe and Central Asia, and South Asia is far more sparse. Over 90% of potential cities are within “High income” or “Upper middle income” countries, based on the World Bank classification using gross national income (GNI) per capita.

The final set of 12 focus cities is shown in Table 3. The final set of cities includes 2-3 cities from every global region and is intended to represent the distribution of size, national income level, and leadership status in the population of potential cities. They vary in terms of municipal capacity, national governance structure, and municipal governance structure. The focus cities include seven cities from high income countries, two from upper middle income countries, two from lower middle income countries, and one from a low income country. City sizes also broadly represent the distribution of sizes in the population of potential cities, with 2 two small cities, five medium cities, and five large cities. We were not able to identify any cities with populations less than 1 million from “low income” or “lower middle income” countries that met the eligibility criteria for the analysis. Ten of the 12 focus cities are recognized as climate leaders through their participation in climate leadership initiatives or recognition by climate organizations: eight cities are members of the C40 Cities Climate Leadership Group and four cities included on the 2022 CDP Cities A-List

(2 cities included on both). Three cities (Chapel Hill, NC, Halifax, NS, and Melbourne) are located within countries with federal governments, while the remaining nine cities are located in countries with unitary government structures (Lansford, 2019). Five of the cities are classified as having a “special city jurisdiction”, meaning that they have greater jurisdictional powers or greater degree of autonomy compared to other cities within their country. They include Nairobi and Warsaw (whose municipal governments are also “county” governments) Lagos (which is administered by the state government), Mexico City (the Federal District of Mexico), and Hong Kong (a Special Administrative Region of China).

The CCARC framework can be used for any city, regardless of their level of climate action, although it is likely more useful for cities that are already engaging or plan to engage in climate mitigation action. The original HLEG Integrity Matters and GCoM Integrity Matters reports were intended as a guide for cities that have or are considering adopting net zero commitments and to prevent greenwashing or window-dressing from cities that are taking action. Our eligibility criteria for focus cities also requires cities to have at least a net zero target and climate action plan. Thus, it is important to acknowledge that all potential cities, eligible cities, and focus cities included in this report represent cities on the higher end of the spectrum of climate engagement. This selection is supported by the recognition of many of these cities as leaders through their membership in C40 or inclusion on

Table 3: CCARC Focus Cities

	Small (50,000 - 499,999)	Medium (500,000 - 1,499,999)	Large (1,500,000+)
Asia and the Pacific	AUS City of Melbourne	JPN Hiroshima City	Hong Kong
Europe and Central Asia		DNK Copenhagen	POL Warsaw
Latin America and Caribbean		URY Montevideo	MEX Mexico City
North America	USA Chapel Hill, NC	CAN Halifax	
Africa and the Middle East		SLE Freetown	NGA Lagos KEN Nairobi

the CDP Cities A-List (2022). The results for the focus cities in this analysis represent the upper range of scores and reflect the variations among cities that are already leading in climate action towards global net-zero goals.

The evaluation team collected publicly available data on the targets, plans, and progress of each focus city and assessed them using the CCARC evaluation framework. The key findings and

report cards included in this report are based on the assessment of each city against the final evaluation framework presented in this section. The CCARC team also collected contextual data for each city and information on the proposed mitigation strategies for each city. The data collection workbooks used for the assessment are made available as part of the supplementary information for the report.

3. Overall Scoring

Integrity

The average scores for individual indicators and aggregate Alignment scores across all twelve focus cities for each evaluation criteria are shown in Table 4. The cities performed consistently well on average, collectively earning a “High” aggregate score across all three categories. However, performance varies across individual Transparency and Alignment indicators. Most cities are providing sufficient information to assess the integrity of their climate action, earning “High” or “Very High” scores for all but one transparency indicator related to carbon credit usage reporting. We also find that many cities do not directly report the greenhouse gas and scope coverage (i.e., Scope 1 direct, Scope 2 indirect, and Scope 3 supply chain) of their net-zero targets, which is key for assessing progress against those targets.

In terms of Integrity Alignment, we find that cities scored highest in target setting, followed by planning and then implementation. In target

setting, we find that nearly all cities are exceeding the ambition of national targets, while global alignment with goals to limit warming to 1.5°C and below is inconsistent. In their climate action plans, cities are reporting detailed information about their planned mitigation strategies, but are often missing key details related to implementation, such as funding and financing strategies, expected impacts, and processes for monitoring, evaluation, reporting, and revision. For implementation, cities predominantly report city-wide greenhouse gas emissions inventories. The vast majority are using standard frameworks, such as the Common Reporting Framework and Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories. Nearly all cities have reduced emissions since their baseline year, but are not on track towards their carbon neutrality or net zero targets. Details on the methodology used to assess target alignment and progress is included in Appendix A.

Table 4: Overview of average city transparency and alignment scores on Integrity evaluation criteria for 12 focus cities

Category	Integrity Criteria	Transparency	Alignment
Target	Formal Target Status	1.58	1.33
	Interim Targets	2.00	1.08
	Target Methodology	1.83	1.33
	Target GHG Coverage	1.25	1.75
	Target Scope Coverage	1.42	1.00
	Target Global Alignment	2.00	0.92
	Target National Alignment	2.00	2.00
Plan	Update Frequency	1.92	1.83
	Baseline Assessment	1.75	1.58
	Mitigation Strategies	2.00	1.83
	Authority to Implement	1.50	1.25
	Timeline	1.42	1.17
	Milestones and Performance Indicators	1.50	1.33
	Impacts and Benefits	2.00	1.00
	Funding and Financing	1.25	0.75
	Monitoring and Evaluation	1.83	1.00
	Barriers to Action	1.25	0.91
	Community Engagement	1.92	1.58
Implementation	Frequency of Progress	1.667	1.167
	Timeliness of Progress Tracking	1.75	1.50
	Standardized Progress Reporting	1.833	2.00
	Carbon Credit Usage Reporting	0.917	1.167
	Inventory Scope Coverage	1.75	1.33
	Inventory GHG Coverage	1.75	1.67
	Target Achievement	1.42	1.08

Aggregate Integrity Scores

Category	Transparency Score	Alignment Score
Target	Very High (1.73)	High (1.34)
Plan	Very High (1.65)	High (1.33)
Progress	High (1.58)	High (1.41)

Leadership

Leadership criteria capture practices that reflect ambitious climate action, which may not be expected or suitable for all cities, as they may be more ambitious than practices included in integrity indicators or not well suited for each city's context. Table 5 shows the number of city scoring points for each indicator and the average leadership score (among those scoring points). Note that cities can only score "Medium" (1 point) or "High" (2 points) for Alignment indicators on Leadership criteria.

We find substantial variation in leadership scoring across the twelve focus cities. Nearly all cities are setting specific targets for clean and renewable energy and planning actions to promote the adoption of clean and renewable energy, whether or not the city has authority over their energy systems. Across the focus cities, we find limited action related to Scope 3 emissions beyond waste and consumption-based emissions, both in target setting and planning. However, more cities are addressing consumption based emissions within government operations, with 5 cities establishing strategies related to green procurement within municipal operations compared to only one (Hong Kong) that addressed the topic of city-wide consumption-based emissions in their plan. None of the focus cities have planned specific actions to address city-wide consumption based emissions. Half

of the focus cities are considering compact development in relation to their mitigation efforts, with three cities addressing the topic generally and three cities establishing specific strategies related to compact development. We find that compact development is not relevant for all contexts - particularly for cities that are already very dense.

Three-quarters of the focus cities have planned mitigation strategies related to land use and development, although not all are promoting densification. For example, one planned strategy from Nairobi aims to reduce greenhouse gas emissions and improve transportation safety and accessibility and air quality through decentralization. Measuring progress towards planned actions and sector-specific targets will become increasingly important as more cities move out of the planning phase and into implementation. Because there is currently no standard process for reporting implementation progress, these actions are assessed through leadership indicators. We find that more cities are reporting progress towards their planned actions than their sector-specific targets, but the style and level of detail in reporting is mixed. In the "Progress and Implementation" subsection below, we provide additional insights on progress reporting from cities.

4. Key Results from Focus Cities

Distribution of Results Across City Types

- We find that across all Integrity Alignment indicators, average scores do not systematically differ between cities above and below the median GNI per capita and those above and below the median city budget per capita.
- However, we find that cities from higher income countries and those with higher capacity do tend to engage in more

Leadership activities.

The CCARC aims to strike a balance between two conflicting priorities: encouraging consistent and high integrity action from all cities and ensuring that the evaluation framework is appropriate for a wide range of city contexts, which can vary in many ways, including their level of development, size, capacity, and governance structures. A key concern is that

Table 5: Overview of Alignment scores on Leadership criteria for 12 focus cities

Category	Leadership Evaluation Criteria	Average Alignment Score	# of Cities Scoring Points	Chapel Hill	Copenhagen	Freetown	Halifax	Hiroshima	Hong Kong	Lagos	Melbourne	Mexico City	Montevideo	Nairobi	Warsaw
Target	Clean Energy Targets	1.8	11	2	2	2	2	2	2	1	2		2	1	2
Target	Target Extended Scope Coverage	1.3	6		2		2	1	1		1		1		
Target	Consumption Based Emissions Targets	1.0	2				1		1						
Target	Sectoral Targets	1.7	11	2	2	2	1	2	2	2	1	2	2		1
Plan	Government Engagement	1.5	10	1			1	2	2	2	2	2	1	1	1
Plan	Compact Development Strategies	1.5	6	2				1	1		2	1			2
Plan	Scope 3 and Consumption-Based Emissions	1.0	1				1		1						
Plan	Renewable/Clean Energy Strategies	2.0	11	2	2	2	2	2	2	2	2	2		2	2
Plan	Green Procurement Strategies	2.0	5		2			2			2	2			2
Plan	Integration of Mitigation and Adaptation	1.9	11	2		2	2	2	2	2	2	2	2	2	1
Plan	Use of Offsets, Insets, Removals, and Credits	1.0	4		1	1					1			1	
Progress	Implementation Progress	1.4	8	1	1		2	2	1		1	2			1
Progress	Sectoral Target Progress	1.8	5	2	2			2	1			2			1

cities with lower levels of development or capacity will score systematically worse, due to a more limited ability to engage in the actions assessed through this framework. To validate the final evaluation framework, we assessed the distribution of individual and aggregate scores across key contextual variables: national income, municipal capacity, and special city jurisdiction. A table summarizing these variables for all cities is included in Appendix A.

We use gross national income (GNI) per capita for 2023 as a measure of national income and proxy for economic and institutional development (World Bank, 2016). While national context is often indicative of a city's context, the financial and technical circumstances of a city can vary widely within countries as well. We estimate municipal capacity as the city's budget per capita, using the most recent budget information available for the administrative government of each city. For both measures, we classify the cities into two groups for those above and below the median value of national income and municipal capacity. Only two cities are classified as "Above Median" in one indicator and "Below Median" in another. Chapel Hill, NC is above the median value for GNI per capita and below the median value for municipal capacity per capita, while Mexico City is above the median value for municipal capacity and below the median for GNI per capita. Cities are defined as having "special city jurisdiction" if they are given additional authority compared to other municipalities in the country. For example, a city is considered to have "special city jurisdiction" if their municipal government is combined with a higher level government (e.g., county) or if the city is administered at the state level. We also consider the distribution of scores based on city capacity, defined as city budget per capita, using the most recent budget information available for each city.

We use paired t-tests and visuals (box plots, bar graphs) to compare aggregate integrity scores across the all categories and the three categories separately (targets, plans, implementation), average city scores across the indicator types, evaluation criteria, and individual integrity indicator scores. The small sample size does not allow for an in-depth statistical analysis of scores - rather, we use this process to signal any potentially systematic differences in scoring

based on development status, city capacity, and city jurisdiction. The results of the t-tests are reported in Appendix A.

Average integrity scores across all categories do not appear to be determined by national income level or city capacity. Within categories, we find that cities below the median GNI per capita score slightly lower on target and progress indicators, although this difference is not significant, and score significantly higher on plan indicators compared to those above the median GNI per capita. This pattern largely remains when cities are stratified by median budget per capita. We do find that cities below the median GNI per capita and budget per capita score significantly lower on leadership indicators, suggesting that these more ambitious recommendations may not be feasible for all cities and providing evidence that cities should not be compared on these indicators. We also find that cities with special governance status received significantly higher integrity scores across all categories, due to high integrity scores on planning indicators. At the indicator level, it appears that cities with special statuses include greater detail on components of their implementation plan for mitigation strategies compared to those without special status. Collectively, this analysis suggests that cities with lower city capacity or in lower income country contexts do not score systematically worse on the CCARC evaluation framework overall, although there may be differences in which areas of climate action cities focus on - with higher income and higher capacity cities scoring slightly better on integrity for their targets and implementation and significantly better on leadership indicators, while lower income and lower capacity cities scored significantly better on integrity indicators for planning. The discrepancies in scores due to special jurisdiction status do not raise the same equity concerns as national income context or city capacity, but do indicate that governance and power play a key role in city climate action. Due to the small sample size these findings should not be generalized to all cities. The focus cities are most representative of the population of potential cities with net zero targets and climate action plans, which tend to be larger and are concentrated in high income countries. More detailed results from this assessment are included in the Supplementary Information.

Target Ambition

- We find cities' interim target ambition is lagging, despite near universal net-zero target setting aligned with global goals.
- We find that many cities are taking national climate action into account when setting their targets - all focus cities have set interim and net zero targets at least as ambitious as their national counterparts.

The alignment of subnational climate targets with national targets and global climate goals is a key area of interest. Previous research indicates that subnational targets can help fill the ambition gap between national targets and global goals (Kuramochi et al. 2020). The HLEG and GCoM Integrity Matters reports also put great emphasis on the issue of target ambition. Both reports require cities to set targets aligning with global pathways to limiting warming to 1.5°C with no or limited overshoot, with the GCoM recommendations specifically requiring subnational governments to set targets that represent their “fair share of the global mitigation effort necessary” to meet these goals (Global Covenant of Mayors, 2023, pg. 11). Both sets of recommendations require subnational governments to align with or exceed the ambition of national targets and timelines.

We assess the alignment of interim and net zero targets with national and global climate

goals using the “pro-rated” emissions reduction framework (Hsu et al. 2020). Because there is no universally accepted and standardized “fair shares approach” for subnational governments, we apply the same standard to all cities with lenient assumptions, although future iterations of the framework could take fair shares approaches into account. For cities with “conditional” and “unconditional” targets,³ we use the conditional targets in assessing global and national target alignment. If cities do not define the percentage reduction associated with their net zero target, we assume 100%. In some cases, the greenhouse gas coverage of carbon neutrality targets was unclear (Copenhagen, Montevideo) and we assumed the more ambitious case (more gases covered). All targets are converted to the format of an absolute emissions target from the baseline year to enable comparison. To assess global alignment, we compare target emissions reductions with the global emissions reductions from 2019 to 2030 and 2050 required to align with IPCC scenarios to limit warming to 1.5°C with no or limited overshoot (IPCC AR6 WGIII TS, Table TS.2). We use required reductions for CO₂ only or GHG as appropriate based on the greenhouse gas coverage of each city's targets. More details on the assessment of target alignment are available in the Appendix.

Target Global Alignment

Within the set of 12 focus cities, we find two cities with all targets aligned with global goals (“HIGH” integrity), seven cities with at least one target aligned with global goals (“MEDIUM” integrity), and three cities with no targets aligned with global goals (“LOW” integrity). However, we find more similarities than differences in target setting across the focus cities. All focus cities are targeting GHG gas emissions beyond CO₂, covering at least carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O).⁴ Eleven of the 12 cities have also set “net zero” or “carbon neutrality” targets for 2050. All six cities receiving a “MEDIUM” score achieved this

rating because they have set a net zero target for 2050 for GHGs beyond CO₂, which exceeds IPCC global pathways for GHGs.

Within the set of 12 focus cities, we find two cities with all targets aligned with global goals (“HIGH” integrity), seven cities with at least one target aligned with global goals (“MEDIUM” integrity), and three cities with no targets aligned with global goals (“LOW” integrity). However, we find more similarities than differences in target setting across the focus cities. All focus cities are targeting GHG gas emissions beyond CO₂, covering at least carbon dioxide

³ Some cities have set “conditional” and “unconditional” targets, following the format of some NDCs where the achievement of “conditional” targets is dependent on external financing and support, while “unconditional” targets are not dependent on external support.

⁴ We find that the greenhouse gas coverage of “carbon neutrality” targets is inconsistent with the standard definition (covering CO₂ only) or ambiguous. In some cases, targets were referred to as “carbon neutrality” targets, but specifically covered greenhouse gases beyond just CO₂. In two cases, the cities' have set interim targets covered greenhouse gases and “carbon neutrality” targets with ambiguous gas coverage, making it unclear if these longer term targets were CO₂ only or also aligned with the gases covered

(CO₂), methane (CH₄), and nitrous oxide (N₂O). Eleven of the 12 cities have also set “net zero” or “carbon neutrality” targets for 2050. All six cities receiving a “MEDIUM” score achieved this rating because they have set a net zero target for 2050 for GHGs beyond CO₂, which exceeds IPCC global pathways for GHGs.

For the vast majority of cities, the percentage reduction associated with net zero or carbon neutrality was not defined and we employed the assumption of 100% emissions reductions. Concerningly, only one of the focus cities has set interim targets aligned with global goals. The two cities receiving “HIGH” scores received this mark because of their interim targets. Copenhagen received a “HIGH” score, since they only have one target aiming for “carbon neutrality” in 2025. This is the only city to have a net zero or carbon neutrality target set for a year other than 2050. The second city earning

a “HIGH” score was Halifax, who has an interim target to reduce city-wide GHG emissions 75% from 2016 levels by 2030 - the most ambitious interim target of all focus cities - and specifically defines the percentage reduction aimed for with their net zero target (100%). The four cities receiving “LOW” scores include three cities, Chapel Hill, NC, Hiroshima, and Hong Kong who also have net zero targets for 2050, but with older baseline years (2005), making them relatively less ambitious than IPCC pathways which are based on reductions from 2019, although these baseline years are chosen in line with baseline years used by their national governments. The final city receiving a “LOW” score in global alignment was Melbourne, whose “net zero” target is only slightly less ambitious than the pace of reductions required to align with global pathways, aiming to reduce GHG emissions 90% from 2015 levels by 2050.

Target National Alignment

All focus cities have set both interim and net zero targets aligning with or exceeding targets set by their national governments. To assess alignment with national targets, we use data on Nationally Determined Contributions (NDCs) and any additional commitments made outside of the NDCs. We compare city targets to the most similar national target, based on target year and conditional or unconditional status. See Appendix A for more details on the assumptions and methodology used for this assessment. Eleven of 12 cities have set more ambitious

targets than their national counterparts, with just one city - Hiroshima - setting targets exactly aligned with national targets in terms of targeted percentage reductions, timelines, and greenhouse gas coverage. Three cities have set net zero targets within countries that have not committed to net zero: Montevideo, Nairobi, and Warsaw. Many cities included a discussion of national climate action within their public plans and other communications, indicating that national ambition is an important consideration in city target setting.

Interim and Net Zero Targets

The findings across the focus cities indicate that cities are outpacing their national counterparts in target ambition, but there is more variation between the focus cities in their alignment with global goals. Most cities are aiming to align with global goals in the long term through net zero targets, but are setting less ambitious interim targets that lag behind the rate of reductions required to align with global goals. The focus cities are also defining interim and net zero targets differently. Interim targets tend to be more explicitly defined and are more likely to be selected based on fair shares methodologies or emissions modeling of planned actions. Only a small handful of cities use external methodologies to inform target setting, such as the WWF One Planet Challenge (Chapel Hill, NC) or the C40 Pathways-AQ tool (Freetown,

Nairobi), but these approaches were used for interim target setting rather than net zero targets. This was the case regardless of whether or not the net zero goal was considered to be achievable based on modeling exercises. The absence of clear definitions for “net zero” and “carbon neutrality” targets in most cities, along with the widespread inclusion of greenhouse gases beyond CO₂ combined with a 2050 target year, suggests that cities are setting these long-term targets based on general momentum towards achieving “net zero by 2050”, without considering when, how, and if they will get there in the same level of detail as they do for interim targets. This gap indicates the need for more detailed discussion from the climate community on what is expected for subnational governments to “align with global goals”.

Progress and Implementation

- All cities that have reported updated emissions inventories have reduced city-wide greenhouse gas emissions since their baseline years, although few are on track towards their next targets.
- Cities from lower-income countries are setting different types of targets than those in high-income countries, but progress tracking indicates that city-specific characteristics are more influential than national context in determining city climate action
- Most focus cities are already reporting on the implementation of their planned actions and progress towards their sector-specific targets, although the format and content of this reporting varies across cities.

Target Progress

For implementation, we assess cities' progress towards their city-wide emissions reduction targets as an integrity indicator, and evaluate other progress reporting on mitigation plan implementation and sector-specific targets as leadership indicators. Figure 2 shows the targeted emissions reduction pathways for each city, as well as current progress based on their most recent updated emissions inventory, if available.⁵ Ten of the 12 focus cities have reported updated greenhouse gas emissions inventories since their baseline year to enable us to assess target achievement, using the same "prorated" emissions reduction methodology that is used to assess target ambition (see Appendix for more details). This method compares the achieved annualized rate of emissions reductions to the

annualized rates required to meet each target. All of the ten cities that have reported updated greenhouse gas emissions inventories have reduced their emissions in their most recent inventory year compared to the baseline year. Only three of these cities, Hiroshima, Lagos, and Mexico City, are on track towards their next targets and only Hiroshima and Mexico City are on track towards their net zero targets. Copenhagen has reduced emissions the most, with a 67.3% reduction in GHG emissions from their baseline year of 2005 to 2022. They also have reduced emissions at the fastest pace (based on annualized reductions), followed by Mexico City and Hiroshima. However, they are not on track to achieve their net zero target by 2025.

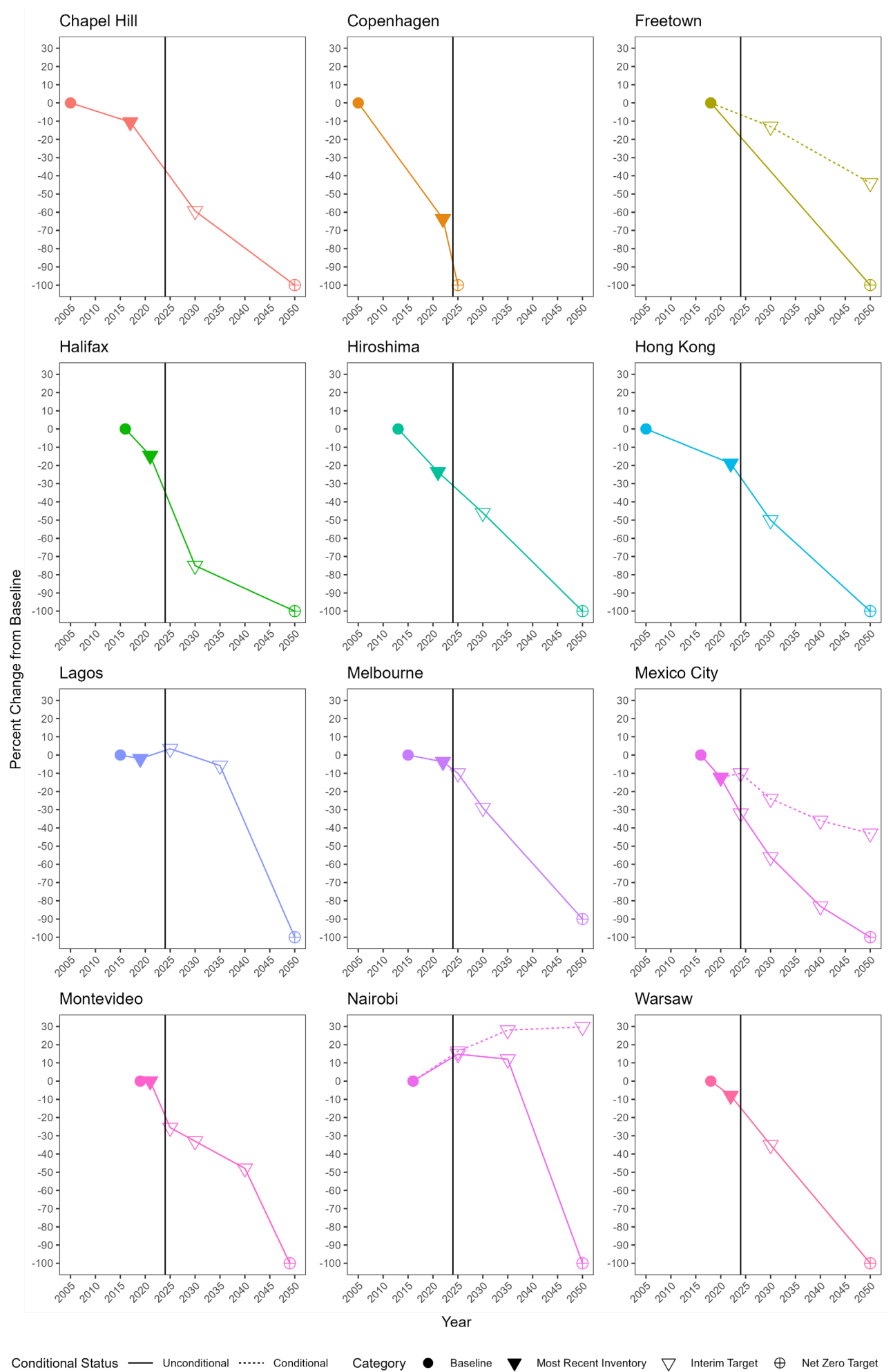
Targets and Progress by National Income Level

We acknowledge that cities in developing and lower income country contexts are under-represented in our set of focus cities and among cities engaging in climate action towards net zero ("potential cities"). We do find some interesting patterns in target setting and achievement across the four focus cities from low, lower middle, and upper middle income countries: Freetown, Lagos, Mexico City, and Nairobi. Freetown, Mexico City, and Nairobi were the only cities to set conditional and unconditional targets, while Lagos and Nairobi are the only two cities that have set interim targets that would effectively increase emissions from the baseline year, through baseline scenario targets. On the progress tracking side, we find that Mexico City and Lagos have achieved emissions reductions since their baseline year, while Freetown and Nairobi are missing updated greenhouse gas emissions inventories. Mexico City in particular is far outpacing their unconditional targets and

has already achieved the unconditional target set for 2024 based on their 2020 inventory. However, the circumstances for Mexico City are quite different from the three African cities. Mexico City is below the median for national GNI per capita among the focus cities, but above the median in terms of city budget per capita, while all three African cities all below the median in GNI per capita and were the lowest in city budget per capita. The two cities with updated inventories, Mexico City and Lagos, also have special governmental jurisdictions, where their governments have county and state powers, respectively, while Freetown and Nairobi do not. While the findings from Mexico City and Lagos are encouraging, there is not sufficient evidence to make any generalizations to other cities, particularly considering the lack of progress tracking data from Freetown and Nairobi. These findings also highlight the importance of considering city context beyond the standard

⁵ We include an alternative version of the figure showing all reported inventories from cities that have reported more than one in Appendix A.

Figure 2: Achieved and Targeted Emissions Reductions by Focus City



demarcations of “Global North” and “Global South” and provide further evidence that city-specific characteristics, such as capacity and

governance arrangements, are more important than national circumstances in relation to city climate action.

Implementation Reporting Beyond Inventories

As cities move from target setting and planning into the implementation phase of climate action, progress tracking beyond just greenhouse gas emissions inventory is becoming increasingly important. However, since there is currently no standard practice for reporting on planned actions or sector-specific goals, we include these in the CCARC framework as leadership indicators. For a “HIGH” score, we require cities to report on progress towards their planned mitigation strategies or sector-specific goals in a detailed and systematic format, using processes and/or performance indicators. We award a “MEDIUM” score to cities that report on progress generally, but lack detail and/or do not follow previously established processes.

We find that over half of the cities are reporting on progress towards their planned mitigation strategies in some form, with three cities receiving a “HIGH” score and five cities receiving a “MEDIUM” score. Since this is a Leadership criteria, no cities receive a “LOW” score. Fewer cities are reporting on progress towards sector-specific targets and goals, with four receiving a “HIGH” score and one receiving a “MEDIUM” score on this indicator. However, the cities that did report on progress towards sectoral goals were more likely to report

using previously identified key performance indicators within each sector. Two cities, Mexico City and Hiroshima, received a high score in both categories. The format of this progress reporting varies across cities. In several cases, cities receiving a “MEDIUM” score described progress towards planned actions and sector-specific goals generally and in narrative format. This format is well-suited for updating citizens and local stakeholders on a city’s progress towards their plans, but not as well-suited for assessment. Others receiving “MEDIUM” scores did report in a systematic format, but with limited detail. Cities receiving “HIGH” scores reported in detail in a format that would enable readers to assess progress towards and achievement of the city’s plans and goals. For example, Hiroshima reported against their established performance indicators for each of their planned actions and sector-specific targets. The reporting includes a description of the performance indicator and the baseline and current value for each performance indicator. Chapel Hill, NC Halifax, Mexico City, and Warsaw have publicly released detailed “implementation” or “progress” reports that are separate from their GHG emissions inventories and include reporting on performance indicators and implementation status.

Conceptualizing Net Zero in Cities

- The focus cities appear to be aligned in their general conceptualization of “net zero” and “carbon neutrality,” but the definitions and treatments of technical terms across cities are inconsistent.
- While most cities appear to be prioritizing direct emissions reductions and not currently using offsets or insets, cities are not communicating clearly about their current and future planned use of these strategies.

Defining Net Zero

Among the focus cities, five use the term “net zero” when describing their commitment, five use the term “carbon neutrality,” and two cities primarily use other terms (“virtually zero emissions,” “climate neutrality”). Eight of the focus cities provide specific definitions of the terms they use. For the most part, all of these definitions describe a “balance” or “equilibrium” between emissions and removals, with five of these specifically stating that this will require remaining emissions to be “offset.” We

find that many cities are using multiple terms within their plans and other communications interchangeably, such as “carbon neutrality,” “net zero,” “emissions neutrality,” “zero emissions.” Some cities state in their definitions that the terms they use can be used interchangeably, such as Chapel Hill, NC and Melbourne. Only Freetown includes a specific differentiation between terms, stating “Although ‘carbon neutrality’ is often used interchangeably with ‘net zero emissions,’ the two are not the

same.” Additionally, some cities refer to “carbon neutrality,” but specifically define this term in relation to greenhouse gas emissions beyond CO₂, leading to more ambiguity in what is meant by cities in terms of greenhouse gas coverage. While definitions agree at a high level, the discrepancies in technical terms between cities

and ambiguity on greenhouse gas coverage may create challenges of comparability between cities or lead to the misrepresentation of city commitments. Additionally, evaluators and researchers should be aware that cities are not necessarily choosing their terminology with a specific technical definition in mind.

Current and Future Use of Offsets

We find that most cities are not currently using carbon credits, offsets, removals, or insets, but very few are directly reporting on their use of these mechanisms or plans to use them in the future. Our findings align closely with recent research that indicates that most cities have yet to decide if they will use offsets to achieve their targets. (Chappell et al., in review). We include two indicators related to the use of carbon credits, offsets, removals, and insets (for brevity, we will refer to these collectively as “offsets” in this section, although we acknowledge that they are different mechanisms). In the progress section, we include an integrity indicator requiring cities to clearly report on their current use of offsets. We find that most cities are not currently using offsets, but the vast majority of these are only communicating this through secondary sources (CDP surveys, inventories reporting to C40), rather than communicating this in their publicly available documents and resources. Only two focus cities, Copenhagen and Melbourne, are currently using offsets and are providing detailed reporting on them in their public documents.

None of the cities that are not currently using offsets reported this explicitly. In the plan section, we included a leadership indicator to

acknowledge cities that are planning ahead for how they will address residual emissions once all opportunities for direct emissions reductions are exhausted. Despite the fact that many of the focus cities acknowledged the need to “balance” or “offset” emissions to achieve their net zero goal in their definitions, the vast majority of cities are not yet planning for how this will take place. Specifically, we are looking for cities to estimate residual emissions, set a limit to the use of offsets, and describe where they will acquire offsets and how they will ensure the quality of them, based on recommendations from a recent study (Chappell et al., in review). We only find four cities that partially address the use of offsets in their plans (earning a “MEDIUM”) score. These four cities - Melbourne, Copenhagen, Nairobi, and Freetown - discuss the issue of residual emissions, but do not include any specific plans for addressing them, putting this off to be covered in future plans. Two additional cities, Chapel Hill, NC and Lagos, provide specific estimates of the emissions reductions they expected to achieve through currently planned actions, but do not refer to these as residual emissions and suggest that they would consider additional direct emissions reductions in the future to reduce these.

Mitigation Strategies

- Despite the differences across focus cities, nearly all of the cities in our analysis are implementing the same kinds of mitigation strategies, focusing on reducing waste, promoting clean and alternative modes of transportation, promoting the installation of renewable energy, and encouraging energy and resource efficiency within the built environment.
 - Consistent with findings on the use of offsets, most cities are focusing on reducing emissions within their boundaries and very few are considering consumption-based emissions.
 - Most of the focus cities are actively integrating their action on climate mitigation and adaptation.
- As part of the analysis of the focus cities, we collected and classified data on types of mitigation strategies planned by the focus cities, using the categories defined in Burley Farr et al. (2023). For each focus city, we assessed if the city has at least one planned action within each mitigation strategy and mitigation strategy category - cities could have more than one planned action within each classification or have a single action that counted for multiple categories. Our findings indicate that nearly all

the focus cities are relying on the same kinds of mitigation strategies, despite the wide variation in city contexts. We find that all cities are planning actions within the mitigation strategy categories “alternative transportation modes” and “waste and water treatment practices.” “Clean vehicle transportation,” “clean energy generation,” “building construction and improvement,” and “building energy and heat systems” are also popular, with 11 of 12 cities planning actions within these strategies. These findings align closely with recent research, which finds that “waste and water treatment practices” were the most common strategy category for cities and transportation strategies generally were the most common planned strategies among all subnational governments (Burley Farr et al. 2023). Very few of the focus cities are planning strategies related to the operation of the energy system, the industrial sector, or market-based policies (emissions trading, carbon taxes) and none of the focus cities have planned any strategies related to agriculture.

These findings are consistent with typical city responsibilities, where most cities have relatively high authority over emitting sources such as waste systems, public transportation, and the built environment, but limited powers over the operation of their energy systems and industry, even though these areas may have the greatest sources of emissions. While it is encouraging to see that cities are focusing on areas where they have the greatest influence over direct emissions reductions, it appears that consumption-based

emissions are a blindspot for most of the focus cities, even though consumption-based emissions can be up to 5-10 times greater than a city’s direct emissions (Data-Driven EnviroLab, 2024). We only find two cities that address consumption-based emissions in their public communications, Hong Kong and Halifax, and in both cases mentions of consumption-based emissions are brief. None of the cities have set targets to address consumption-based emissions or put forward any plans on how they will address these emissions.

Although the CCARC framework focuses on climate mitigation action from cities, it is becoming increasingly important for actors at all levels to consider their mitigation and adaptation goals in tandem. Eleven of the 12 focus cities are actively integrating their climate action on mitigation and adaptation, with many cities addressing both mitigation and adaptation within the same climate action plan or listing specific anticipated adaptation co-benefits of planned mitigation strategies (and vice versa - mitigation co-benefits of planned adaptation strategies). Yet opportunities remain for greater integration - most cities still organized their planned strategies as primarily focused on either mitigation or adaptation. Exactly half of the focus cities are considering nature-based solutions, such as afforestation and greening, as a mitigation strategy, with several more cities including these in their plans exclusively as adaptation strategies.

5. Individual City Scorecards

In this section, we include the individual report cards for each focus city. In each report card, we include key contextual information, scores for individual indicators on Integrity evaluation criteria, aggregate Integrity Alignment scores for

each category (targets, plans, implementation). We also include a “good practice” from each city, highlighting an element of climate action that the city excelled at, and an “improvement area.”

United States of America CHAPEL HILL, NC



Net Zero
Target Year
2050



Achieved Emissions
Reductions
10.54%



Country Income
Group
High Income



Population
61,690



Emissions
Per Capita
**15.1 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$1,370/capita

GOOD PRACTICE

Chapel Hill's Climate Action Plan includes a transparent discussion of the city's limited authority over key emissions sources and how the city is planning to address emissions from sources within and outside of their vcontrol.

IMPROVEMENT AREA

Chapel Hill's most recent emissions inventory, completed in 2020 for the year 2017, is the oldest among all focus cities, hindering insight into its current progress towards emission targets.

CATEGORY

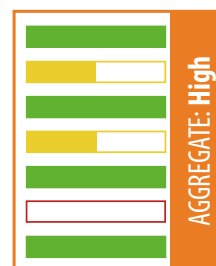
INTEGRITY CRITERIA

TRANSPARENCY

ALIGNMENT

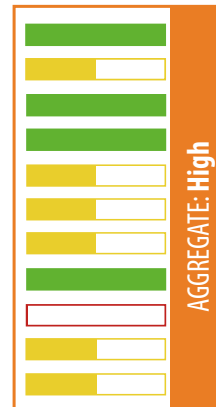
TARGET

Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



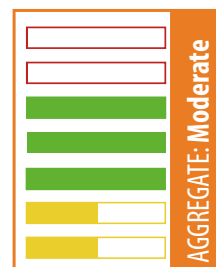
PLAN

Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:



Denmark COPENHAGEN



Net Zero
Target Year
2025



Achieved Emissions
Reductions
63.64%



Country Income
Group
High Income



Population
660,842



Emissions
Per Capita
**1.23 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$9,467.09/capita

GOOD PRACTICE

Since their baseline year, Copenhagen has reduced greenhouse gas emissions more than any other focus city.

IMPROVEMENT AREA

Copenhagen was the only city that reported no community engagement in their climate action plan development or the integration of adaptation and mitigation efforts.

CATEGORY

INTEGRITY CRITERIA

TRANSPARENCY

ALIGNMENT

TARGET

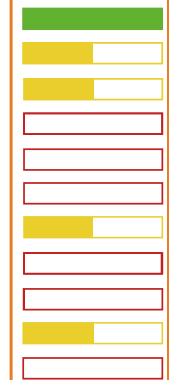
Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



AGGREGATE: High

PLAN

Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



AGGREGATE: Low

IMPLEMENTATION

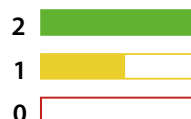
Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



AGGREGATE: Very High

Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:



Sierra Leone FREETOWN



Net Zero
Target Year
2050



Achieved Emissions
Reductions
N/A



Country Income
Group
Low Income



Population
1,347,559



Emissions
Per Capita
**0.953 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$2.57/capita

GOOD PRACTICE

Freetown addresses mitigation and adaptation efforts in tandem throughout its Climate Action Strategy and uses integrated resilience and emissions reduction potential as a key factor in selecting climate actions.

IMPROVEMENT AREA

Freetown has not yet released an updated emissions inventory since the 2018 baseline inventory was established in its 2022 Climate Action Plan.

CATEGORY INTEGRITY CRITERIA TRANSPARENCY ALIGNMENT

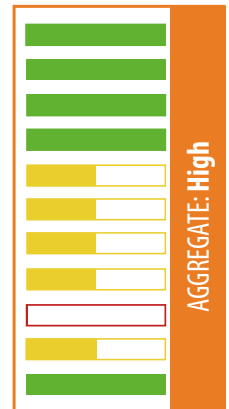
TARGET

Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



PLAN

Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:





Net Zero
Target Year
2050



Achieved Emissions
Reductions
14.62%



Country Income
Group
High Income



Population
439,819



Emissions
Per Capita
**11.23 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$2,141.15/capita

GOOD PRACTICE

Halifax was the only city with both net zero and interim targets aligned with global goals to limit warming below 1.5°C.

IMPROVEMENT AREA

Halifax's climate plan lacks several key implementation elements, such as funding plans for each action, the identification of implementing authorities and relevant stakeholders, and a process for monitoring, evaluation, and revision.

CATEGORY

INTEGRITY CRITERIA

TRANSPARENCY

ALIGNMENT

TARGET

Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



AGGREGATE: Very High

PLAN

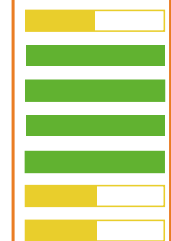
Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



AGGREGATE: Moderate

IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



AGGREGATE: High

Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information on the Cities Climate Action Report Card, please visit:



Japan HIROSHIMA



Net Zero
Target Year
2050



Achieved Emissions
Reductions
23.52%



Country Income
Group
High Income



Population
1,200,754



Emissions
Per Capita
**5.60 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$3,117.17/capita

GOOD PRACTICE

Hiroshima has planned for a wider range of mitigation strategies compared to all other focus cities, including strategies to address land use and industrial emissions.

IMPROVEMENT AREA

Hiroshima was the only city that did not report on the scope coverage of their targets and inventory, since they use a custom emissions accounting framework and do not report to any data reporting platforms or city initiatives.

CATEGORY INTEGRITY CRITERIA TRANSPARENCY ALIGNMENT

TARGET

Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



PLAN

Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:



China HONG KONG



Net Zero
Target Year
2050



Achieved Emissions
Reductions
18.89%



Country Income
Group
High Income (HKG)



Population
7,503,100



Emissions
Per Capita
**4.46 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$13,060.35/capita

GOOD PRACTICE

Hong Kong is one of only a handful of focus cities that adhere to an annual emissions reporting schedule, with annual emissions inventories dating back to 1990. They also make this information easily accessible on a dedicated website tracking their efforts towards carbon neutrality.

IMPROVEMENT AREA

Hong Kong's latest climate action plan lacks details on implementation, including details on timelines, performance indicators, anticipated impacts, funding, and monitoring and evaluation of planned mitigation strategies.

CATEGORY

INTEGRITY CRITERIA

TRANSPARENCY

ALIGNMENT

TARGET

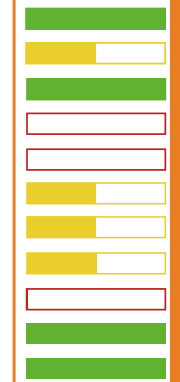
Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



AGGREGATE: Moderate

PLAN

Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



AGGREGATE: Moderate

IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



AGGREGATE: High

Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:



Nigeria LAGOS



Net Zero
Target Year
2050



Achieved Emissions
Reductions
1.99%



Country Income
Group
Lower Middle Income



Population
16,437,435



Emissions
Per Capita
**1.57 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$105.26/capita

GOOD PRACTICE

Lagos' Climate Action Plan provides a detailed strategy for each action in priority emission sectors, specifying lead agencies, relevant stakeholders, timeframes, policy alignment, key performance indicators, and co-benefits.

IMPROVEMENT AREA

Lagos' latest greenhouse gas emissions inventory is relatively outdated (2019) and there are inconsistencies between the inventory in their climate action plan and those reported to C40.

CATEGORY

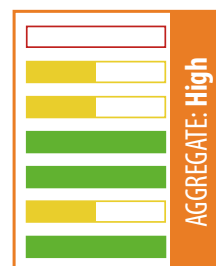
INTEGRITY CRITERIA

TRANSPARENCY

ALIGNMENT

TARGET

Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



PLAN

Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:



Australia MELBOURNE



Net Zero
Target Year
2050



Achieved Emissions
Reductions
3.72%



Country Income
Group
High Income



Population
149,615



Emissions
Per Capita
**30.11 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$3,763.14/capita

GOOD PRACTICE

Melbourne leads by example through their focus on addressing emissions from municipal government operations - they have been net neutral in emissions from government operations since 2012, prioritizing direct emissions reductions and offsetting remaining emissions.

IMPROVEMENT AREA

Despite high transparency in most areas, information on Melbourne's interim targets was difficult to find and inconsistently reported throughout their Climate Change Mitigation Strategy.

CATEGORY

INTEGRITY CRITERIA

TRANSPARENCY

ALIGNMENT

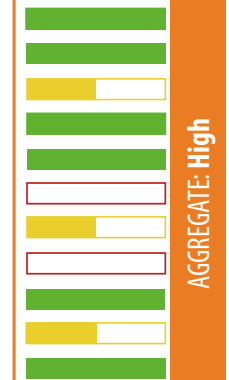
TARGET

Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



PLAN

Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:



Mexico MEXICO CITY



Net Zero
Target Year
2050



Achieved Emissions
Reductions
12.35%



Country Income
Group
Upper Middle Income



Population
9,209,944



Emissions
Per Capita
**2.60 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$1,562.59/capita

GOOD PRACTICE

Mexico City has excelled in Implementation, achieving emissions reductions that put them on track towards their targets and reporting regularly on their emissions inventories and progress towards their planned actions.

IMPROVEMENT AREA

Although Mexico City's emissions inventory follows the GPC framework for BASIC+ reporting, its targets specifically only cover direct and indirect (Scope 1 and 2) emissions and excludes all out of boundary (Scope 3) emissions.

CATEGORY INTEGRITY CRITERIA TRANSPARENCY ALIGNMENT

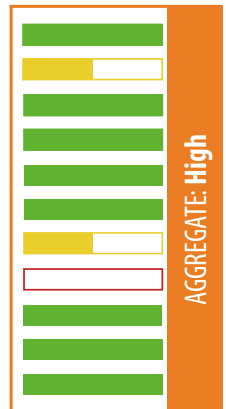
TARGET

Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



PLAN

Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:



Uruguay MONTEVIDEO



Net Zero
Target Year
2049



Achieved Emissions
Reductions
0.05%



Country Income
Group
High Income



Population
1,318,185



Emissions
Per Capita
**2.03 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$575.82/capita

GOOD PRACTICE

Montevideo recently released an updated greenhouse gas inventory, featuring annual data from 2006-2021 and detailed methodology on emissions trends by gas and sector.

IMPROVEMENT AREA

The coverage of Montevideo's targets and emissions inventories is limited, covering only direct (Scope 1) emissions.

CATEGORY

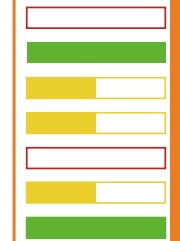
INTEGRITY CRITERIA

TRANSPARENCY

ALIGNMENT

TARGET

Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



AGGREGATE: Moderate

PLAN

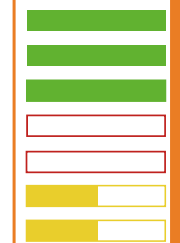
Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



AGGREGATE: Moderate

IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



AGGREGATE: Moderate

Aggregate
Score

Average Integrity
Score Range

Very Low

0 - 0.4

Low

0.4 - 0.8

Moderate

0.8 - 1.2

High

1.2 - 1.6

Very High

1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:



Kenya NAIROBI



Net Zero
Target Year
2050



Achieved Emissions
Reductions
N/A



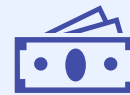
Country Income
Group
Lower Middle Income



Population
4,397,000



Emissions
Per Capita
**0.57 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$71.87/capita

GOOD PRACTICE

Nairobi excelled on Plan evaluation criteria with a transparent and organized climate mitigation plan that addresses the implementation of planned mitigation strategies in detail.

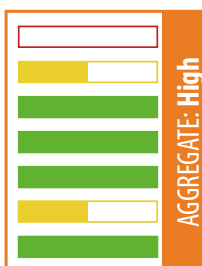
IMPROVEMENT AREA

Nairobi's 2016 baseline inventory and updated 2019 inventory are not comparable due to different underlying data sources and methodologies, limiting progress tracking towards Nairobi's targets.

CATEGORY INTEGRITY CRITERIA TRANSPARENCY ALIGNMENT

TARGET

Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



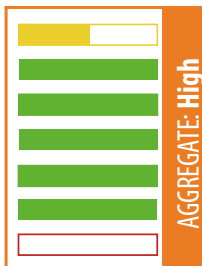
PLAN

Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
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Barriers to Action
Community Engagement



IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:



Poland WARSAW



Net Zero
Target Year
2050



Achieved Emissions
Reductions
7.94%



Country Income
Group
High Income



Population
1,799,000



Emissions
Per Capita
**6.15 tonnes
CO2e/capita**



City Budget
Per Capita (USD)
\$473.26/capita

GOOD PRACTICE

Warsaw's climate strategy was shaped by a high level of community input, involving a multi-year stakeholder engagement process to represent diverse voices and a participatory approach to renewable energy and energy efficiency strategies through the Warsaw Climate Panel.

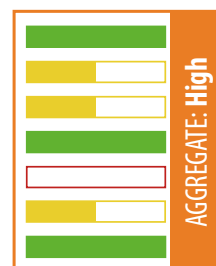
IMPROVEMENT AREA

Warsaw's targets and plans focus only on emissions within their control, excluding out-of-boundary (Scope 3) emissions, though these are included in their inventory.

CATEGORY INTEGRITY CRITERIA TRANSPARENCY ALIGNMENT

TARGET

Formal Target Status
Interim Targets
Target Methodology
Target GHG Coverage
Target Scope Coverage
Target Global Alignment
Target National Alignment



PLAN

Update Frequency
Baseline Assessment
Mitigation Strategies
Authority to Implement
Timeline
Performance Indicators
Impacts and Benefits
Funding and Financing
Monitoring and Evaluation
Barriers to Action
Community Engagement



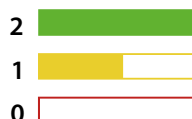
IMPLEMENTATION

Frequency of Progress Tracking
Timelines of Progress Tracking
Standardized Progress Reporting
Carbon Credit Usage Reporting
Inventory Scope Coverage
Inventory GHG Coverage
Target Achievement



Aggregate Score	Average Integrity Score Range
Very Low	0 - 0.4
Low	0.4 - 0.8
Moderate	0.8 - 1.2
High	1.2 - 1.6
Very High	1.6 - 2.0

Indicator Scores



For more information
on the Cities Climate
Action Report Card,
please visit:



6. Conclusion and Recommendations

Overall, the 12 focus cities included in the assessment demonstrated relatively high integrity in their climate mitigation action based on their alignment with international recommendations for subnational actors. All cities scored at least “Moderate” in their average Integrity Alignment scores across all categories and most scored at least “Moderate” in average Integrity Alignment scores within each category. However, cities vary in their level of Transparency and Alignment on Integrity criteria across different categories of climate action - target setting, planning, and progress tracking - with only two cities, Lagos and Montevideo, receiving the same grade across all three categories. We find that cities from relatively lower income countries and with lower city capacity (in terms of budget per capita), do not score systematically worse under this framework in terms of transparency and integrity, but do score significantly lower on leadership indicators. We acknowledge that although the framework was developed based on global recommendations for all cities, this framework represents just one normative view of what comprises “high integrity” climate action towards net zero for cities, which may not be appropriate for all cities and contexts. We expand on this challenge and other limitations of the framework in Appendix A. Additional details on the methodology are available in Appendices A and B.

When interpreting the results of the assessment of the CCARC across the 12 focus cities, it is important to acknowledge that our set of focus cities is not representative of all cities, but rather representative of cities that are already engaging in climate action at a high level. The focus cities included in the assessment all have a net zero target and some level of climate mitigation planning and implementation reporting. Based on the results of this analysis, cities that are engaged in climate action are generally aligning with high-integrity practices, although there are a few key areas of improvement for all cities.

- All of the focus cities are setting mitigation targets that are at least as ambitious, and in many cases more ambitious, than their country’s mitigation targets. However, target alignment with global goals to limit warming to 1.5°C with no or limited overshoot reveals a more complicated picture. Cities are treating interim and net zero goals

differently, with interim targets defined in much greater specificity compared to net zero or carbon neutrality targets and high inconsistency in the use of terms like “net zero” and “neutrality” both within and between cities. Cities, along with the networks and organizations supporting urban climate mitigation action, must work towards a clearer and more widely shared understanding of what neutrality or net zero means in the urban context.

- Although it is encouraging to find that most cities are prioritizing direct emissions reductions, cities will need to begin planning for how they will achieve their net zero goal once all opportunities for direct emissions reductions are expended. Most cities indicate more comprehensive mitigation strategies will be considered in future plans and we encourage cities to address this issue sooner than later in the next iteration of their plans. Cities could start by estimating residual emissions, emissions that are dependent on other actors, and emissions remaining after current planned actions are implemented. Coordination between city, regional, and national governments through initiatives like CHAMP can help cities address residual emissions remaining after all opportunities for direct emissions reductions are expended.
- As the implementation of city climate action plans takes center stage, cities can complement their greenhouse gas emissions inventories with systematic progress reporting on planned actions. The findings from cities that are already reporting on implementation can inform this process. For example, cities that have not done so should have a process for monitoring, evaluating, reporting, and revision and publicly report following this process. We recommend that cities establish at least one key performance indicator related to each planned mitigation strategy and report progress against this performance indicator as well as reporting estimated greenhouse gas emissions reductions achieved. The process is customizable depending on the city’s planned actions but can also enable comparability across cities with similar planned strategies and performance indicators.

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