



Pilot Cities Programme Indicator Framework

Deliverable D2.15

Authors: Hans-Martin Neumann, Ciarán O'Sullivan, Ghazal Etminan (AIT Austrian Institute of Technology)

Co-Authors: Nikhil Chaudhary (Climate-KIC)

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Contents

1	Introduction	5
1.1	Background.....	5
1.2	Objective of Pilot City Programme Indicators	5
1.3	Scope and link to Mission Indicators	5
2	Methodology and Drafting Process of the Pilot Cities Programme Indicator Set.....	10
2.1	First Draft	10
2.2	Revision and Feedback	10
2.3	Indicator Flexibility	10
2.4	Supporting Workshops	11
2.5	Impact Data Application.....	11
2.6	Quantitative Data	12
2.7	Qualitative Data	12
3	Indicator Metrics and Impact Pathway Processes.....	14
	Direct Benefit – Green House Gas Indicators	14
3.1	Indicator Set.....	15
3.2	Co-Benefit / Co-Risk Indicators	16
3.2.1	Public Health & Environment.....	16
3.2.1.1	Indicator Set.....	16
3.2.2	Social Inclusion, Innovation, Democracy and Cultural Impact	16
3.2.2.1	Indicator Set.....	16
3.2.3	Digitalisation and Smart Urban Technology	17
3.2.3.1	Indicator Set.....	17
3.2.4	Economy	17
3.2.4.1	Indicator Set.....	17
3.2.5	Finance and Investment	18
3.2.5.1	Indicator Set.....	18
3.2.6	Resource Efficiency	18
3.2.6.1	Indicator Set.....	18
3.2.7	Biodiversity	19
3.2.7.1	Indicator Set.....	19
3.3	Pilot City Impact Pathways	19
3.3.1	Collective Sensemaking – A Supportive Process for Reflexive Learning s	20
4	Pilot Cities Programme Reporting Process and Related Data Management.....	22
5	Conclusion	24
	Bibliography	25
	Appendix A: NZC Pilot Cities Indicator Set	26
	Appendix B: Proposal Refinement Document: Indicators and Outcomes for Monitoring, Evaluation and Learning (MEL).....	31

Appendix C: Proposal Refinement Document: Indicators and Outcomes for Monitoring, Evaluation and Learning (MEL).....	32
Direct Impacts & Indicators for Reporting.....	36
Long-term GHG Impacts (Standardised).....	36
Long-term non-GHG Impacts (Customised according to city/project)	37
Indirect Impacts and Indicators for Reporting.....	39
Co-benefits (Standardised).....	39
Co-benefits (Customised according to city/project).....	40
Outcomes for Sensemaking & Qualitative Insights Reporting	41
Early Outcome (Customised according to city/project)	41
Appendix C: Proposal Refinement Document: Indicators and Outcomes for Monitoring, Evaluation and Learning (MEL).....	43
6 Review of City Submission and Project Description.....	46
7 Alignment with NZC Indicator System	47
7.1 GHG Impacts and Indicators	47
8 Conclusions and Recommendations	48
Appendix D Learning and Insights Report Template	49
Key Outcomes of your Pilot	51
Strategic Lessons & Insights from your pilot journey	59

List of figures

<i>Figure 1 Systemic Levers and Impact Logic (Source: NetZeroCities).....</i>	<i>6</i>
<i>Figure 2 Periodic Technical Report Sections (Source: NetZeroCities)</i>	<i>23</i>

List of tables

<i>Table 1 Direct Benefit Greenhouse Gas Emission Indicator Set.....</i>	<i>15</i>
<i>Table 2 Public Health & Environment Indicator Set</i>	<i>16</i>
<i>Table 3 Social Inclusion, Innovation, Democracy and Cultural Impact Indicator set.....</i>	<i>16</i>
<i>Table 4 Digitalisation and Smart Urban Technology Indicator Set</i>	<i>17</i>
<i>Table 5 Economy Indicator Set.....</i>	<i>17</i>
<i>Table 6 Finance and Investment Indicator Set</i>	<i>18</i>
<i>Table 7 Resource Efficiency Indicator Set.....</i>	<i>18</i>
<i>Table 8 Biodiversity Indicator Set.....</i>	<i>19</i>



Abbreviations and acronyms

Acronym	Description
AFOLU	Agriculture, Forestry and Other Land Use
CCC AP/IP	Climate City Contract Action and Investment Plan
GHG	Green House Gas(es)
IPPU	Industrial Processes and Product Use
JRC	Joint Research Centre for the European Commission
MEL	Monitoring, Evaluation and Learning
NZC	NetZeroCities
PCP	Pilot Cities Programme
TOC	Theory of Change

Summary

This document, D2.15 'Pilot Cities Programme Indicator Framework' is considered an additional, yet recommended deliverable. It presents and details the indicators designed for the purposes of monitoring the impact of the NZC Pilot Cities.

The initial sections of the document provide the relevant background context and detail relating to the development process and methodology of the indicator system itself. It identifies the synergies and links to Mission City Indicator System, whilst also highlighting key and necessary differences implemented for the purposes of supporting and monitoring the impact of the NZC Pilot Cities. The latter half of the document presents the Pilot City Programme indicators themselves, related metrics, and the intended logic of Pilot Cities Impact Pathways.

Furthermore, the document provides a supporting rationale for established standards related to Pilot Cities monitoring, and related conclusions made with respect to the design of the PCP Indicator System. Additional relevant materials that help to illustrate the PCP monitoring process are found within the appendices.

Keywords

Co-Benefits, Greenhouse-Gas Emission, Impact Pathways, Monitoring, Evaluation and Learning, Pilot Cities, Pilot Cities Programme, Pilot Cities, Portfolio of Solutions, Testing, Theory of Change.



1 Introduction

1.1 Background

The NetZeroCities (NZC) Pilot Cities Programme (PCP) supports large scale piloting activities to exploit, deploy, and scale R&I and systemic solutions combining social, cultural, technological, nature-based, regulatory, and financial innovation, as well as new business and governance models to underpin the climate transition. As such, the NZC Pilot Cities Programme and its subgrant-funded activities are an opportunity for Mission Cities to put into practise elements of their developing and/or finalised Climate City Contracts and the plans contained in them and learn by doing so in the process.

The PCP will run for a period of two years per cohort and the PCP Monitoring Evaluation and Learning Impact Framework is intended to quantitatively and/or qualitatively monitor the impact of the solutions developed and implemented as part of each of the pilot cities.

This document is considered a complementary deliverable and builds on the Mission City Indicator Framework described in D2.4.2 'Comprehensive Indicator Framework' (Neumann et al, 2024). It outlines the scope of the PCP Indicator System and its link to that of the Mission Cities. This document does not repeat information or explanations already provided within D2.4.2 but rather highlights key differences between the PCP Indicator set and that designed for Climate City Contract Action and Investment Plan (CCC AP/IP) reporting. Therefore, the reader may refer to D2.15 for a more comprehensive reference list which ultimately informed the development of both indicator systems, as well as detail regarding definitions of subdomains, related indicators, and use case examples.

The document also sheds light on the process, methodology and considerations taken into account and specific to developing the PCP Indicator set, as well as the intended process for reporting. For the purposes of clarity, it is intended that this document outlines how the PCP MEL Impact Indicator Framework can be applied in connection with the related reporting process prescribed to same.

This document is considered an internal and recommended document developed as a guide to support the achievement of the above outlined endeavour of supporting pilot cities and their related pilot cities towards carbon neutrality goals.

1.2 Objective of Pilot City Programme Indicators

The aim the Pilot Cities Programme is to explore and test pathways to accelerate change towards 2030 climate neutrality goals. The process should be considerate of a city's key emission domains whilst promoting accelerated learning that can inform subsequent replication and scaling efforts within the city itself but also more broadly, across other European cities. Significantly, Cities should aim to achieve breakthroughs in overcoming systemic barriers in emissions reduction and work towards achieving "tipping points" in deploying a range of solutions relevant to the local context.

As detailed within the NZC Pilot Cities Programme Guidebook (NZC Consortium, 2024) the programme aims to explore systemic solutions relating to exploiting R&I outcomes, combining social, cultural, technological, nature-based, regulatory, and financial innovation, new business, and governance models to underpin the climate transition.

With the above in mind, the Pilot City Programme Indicators intend to track the progress of the various pilot city projects and related portfolios of proposed solutions.

1.3 Scope and link to Mission Indicators

The PCP Indicator Framework is founded on the same logic as the Mission City Monitoring Evaluation and Learning (MEL) Indicator Framework in that it is based on a general Theory of Change (TOC).



However, it is important to note that each of the Pilot cities is expected to develop a specific TOC based on their local context, and therefore will require an indicator set specific to their monitoring needs.

NetZeroCities Impact Logic and pilot city-specific Impact Frameworks

The NetZeroCities impact logic (also known as the 'Theory of Change') is illustrated in the Figure below. It outlines the overall process of a Pilot City's transformation, and its interconnected activities directed towards intended outcomes and impacts. The starting points for this model are the key emission domains critical for climate-neutrality targeted by each Pilot City, and as outlined in their proposals.

Aligning with the Mission's intent of harnessing systemic innovation and a portfolio approach, the NZC impact logic is centred on cities acting on multiple levers of transformative change. These systemic levers are transversal areas that cut across all GHG emission domains crucial for achieving a Pilot City's climate-neutrality goals and overcoming the key barriers and challenges within critical emission domains.

There are six levers identified for the impact logic, namely – 1) Technological innovation and infrastructure, 2) Finance and funding, 3) Social innovation, 4) Democracy and participation, 5) Governance innovation, and 6) Learning, capacities and capabilities building. Within the impact model, these systemic levers link the emission domains together as a coherent portfolio, act as entry points into larger systems-wide transformations and support the co-design and implementation of a Pilot City's activities.

The systemic levers amplify and enable early and later-stage outcomes and long-term impacts, as well as lend purpose, coherence, and directionality to a city's impact pathways. These transition pathways progress across short-term, medium-term (within the pilot's 2-year duration) and long-term (beyond the pilot duration) timelines towards 2030 climate-neutrality targets. These expected changes include direct impacts (like sectoral GHG reduction), as well as a wide range of co-benefits produced or influenced through pilot activities.

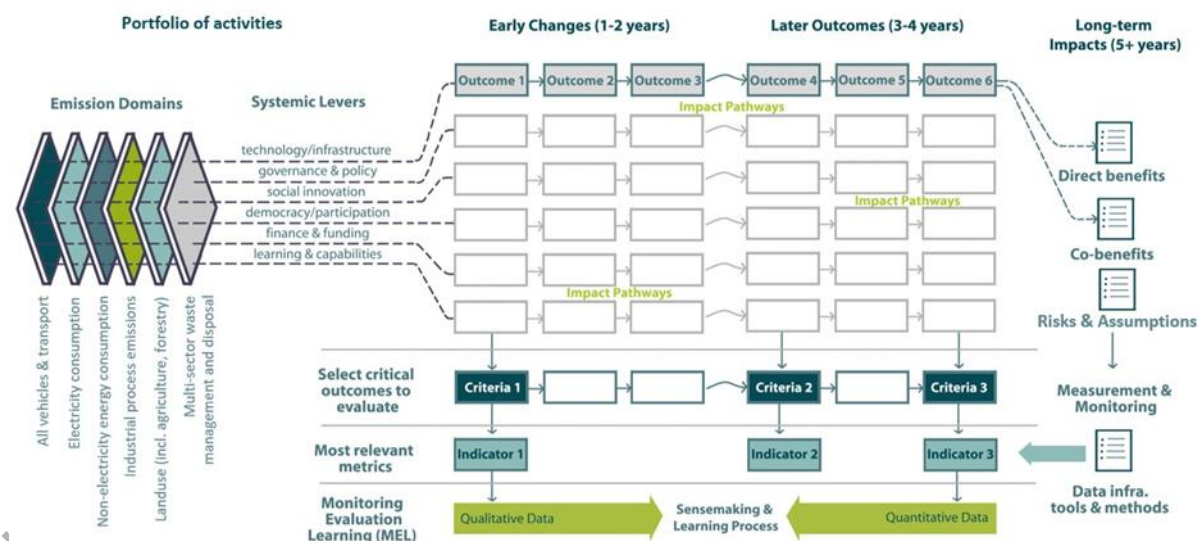


Figure 1 Systemic Levers and Impact Logic (Source: NetZeroCities)

As illustrated in the figure above, each of the levers translate into a sequenced hierarchy of changes or outcomes, culminating into long-term impacts and co-benefits for a Pilot City. These sequential and interconnected causal chains, also known as "Impact Pathways", outline the fundamental mechanisms through which larger and more complex long-term systems change is envisioned. This impact model has been presented and disseminated across all the selected Pilot Cities cohorts during as well as after their application and selection processes by the NZC Consortium partners supporting PCP MEL.

City-specific Impact Logic Framework:

A bespoke template submitted by every Pilot City during their application stage helps them frame contextualised and specific Impact Logic based on their pilot activities (see Appendix B). The questions and tables outlined in this template are based on the overall structure and basic elements of the NZC Impact Framework. The information captured here is designed to help each Pilot City highlight the multi-dimensional progress their Pilot activities are expected to achieve, and to help the city gain strategic learnings and insights from their transformative journey through the NZC Pilot Cities Programme (PCP). The contents of this template can be amended in the subsequent stages of the Programme for Monitoring, Evaluation & Learning (MEL) purposes, a city has selected to be a part of PCP.

The indicators/outcomes requested in this template are classified into **three main categories** based on the type of impacts and allowing for ample options for each city to communicate to the evaluators how your Pilot activities envision and define progress (“what does success look like?”). Once selected, this information will help chosen Pilot Cities assess their evidence needs, baseline/target values, and data sources for specific indicators/outcomes at a later stage of the PCP MEL process. These impact categories include:

1. **Direct Impacts** are the long-term quantified effects produced by the project activities/interventions related to the GHG mitigation/reduction in one or more emission domains for the city.
2. **Indirect Impacts or Co-benefits** expected to be produced during or after the project duration (either qualitative or quantitative) because of the Pilot activities/interventions. These also include long-term non-GHG impacts, if any.
3. **Intermediate Outcomes** are the qualitative and observable changes/insights related to the process of implementing the portfolio, produced either early (short-term) or later (medium-term) during the project timeline. Some of these effects may potentially occur beyond the direct scope of Pilot activities (for e.g., wider capacities built, or citizens engaged). These changes also relate a project’s **Impact Logic or Impact Pathways** that link short-term or medium-term outcomes to long-term direct/indirect impacts – to support meaningful connections and better coordination between individual activities. In essence, these outcomes will change the enabling conditions beyond the direct scope of the Pilot activities, to advance a city in its pathways to climate-neutrality. These **qualitative outcomes** will also be useful to better collect and frame a project/city’s strategic learnings and insights during implementation, as well as productively participate in the Collective Sensemaking process with other peer Pilot Cities in the cohort.

The first two indicator categories for Direct and Indirect Impact above are further sub-divided into two sub-categories, to allow for greater flexibility and choice for indicator selection, data reporting and offering MEL guidance: These indicator sub-categories include:

- a. **Standardised Indicators** are the ones Pilot Cities are requested to select from the **NZC PCP Indicator Set** (available in the application pack). This set includes a catalogue of **45 indicators (12 GHG Indicators and 33 Co-benefits)** presented in this Deliverable, as recommended indicators aligned with each proposal. These indicators are also compatible with the climate reporting platforms cities currently use (such as, CDP/ICLEI Track or MyCovenant), which can help Pilot Cities identify their relevant data sources at a later reporting stage. This indicator sub-category data helps the NZC Consortium offer further MEL and impact assessment guidance to selected Pilot Cities, allow for quantitative data comparability/aggregation between all Pilot Cities in the cohort, and enable capacity building within the PCP cohort.
- b. **Customised Indicators** are specific and most suited to your project based on your intended impacts and city’s context. These non-standardised or contextual indicators can be included to measure progress and assess impacts that are not explicitly covered in the NZC PCP Indicator Set provided. Pilot Cities are free to describe them based on their pilot activities and voluntarily report data based on them.



- c. Similarly, the information to be provided in the **third main category of qualitative Outcomes** is also contextual as descriptive text. They are classified as 'Early' or 'Later' Outcomes based on when they are expected to be produced i.e., whether in the short-term or medium-term. This section is especially relevant for cities to visualise and frame their individual Impact Logic and its underlying Impact Pathways.

An excerpt of a city-specific impact logic from one of the selected Pilot Cities is presented below. This city focuses on co-creating a climate-neutral building and construction ecosystem in an innovation district through their pilot activities.

Activity or Intervention name	Select relevant Lever(s) of Change	Describe an Early Outcome related to this activity or intervention.	Describe a Later Outcome related to this activity or intervention, beyond the direct scope of the activity.
Please add as applicable	Select one or more as applicable – - Technology and infrastructure - Governance and policy - Financing and funding - Social innovation - Democracy and participation - Capacities and capabilities - Data and digitalisation - Procurement	Please describe as applicable	Please describe as applicable
Implementation of Decarbonisation Plan for the built urban development	Technology and infrastructure	Driving the local and regional building and construction industry to develop new process and techniques to reach the goal with climate neutral buildings.	The building and construction have turned the business to become more circular and using climate smart solution. New climate smart technologies have emerged, and the overall building industry has adopted the climate-smart technologies.
Implementation of Decarbonisation Plan for the built urban development	Governance and policy	Building knowledge on how cities can organise, ensure investments build with a minimum of climate impact. Our governance perspective has a strong stakeholder engagement component.	Affecting policy and regulation, setting new standards for procurement, building and construction.
Implementation of Decarbonisation Plan for the built urban development	Democracy and participation	Increase the co-creation and collaboration with different stakeholder in the planning process will engage the stakeholders,	The engagement of the public and stakeholders will increase the awareness of the community to find new way of living and businesses that are crucial to combat the environmental challenges and



		communities, and citizens.	achieve the overall climate goals for the city.
Implementation of Decarbonisation Plan for the built urban development	Procurement	This is one of the most important tools for the city to drive change in the building and business sector. With right requirement it's possible to drive climate-neutral inventions.	The city administration has developed strategies and procurement policies that promote and support the building and construction industry to offer solutions that are in line with the municipality's climate goals.

Mission City indicators are strategic high-level indicators and are aligned with EU Mission documents, such as the Info Kit for Cities (European Commission, 2021a) and the Implementation Plan (European Commission, 2021b). They are linked to the climate neutrality action plans of the cities. A Climate City Contract Action Plan (CCC AP) or a Climate City Contract Investment Plan (CCC IP) of the City will describe the long-term urban development at city scale, providing strategic oversight of such intended development. These documents require strategic monitoring up to a 2030 timeline. Pilot City activities and related monitoring require a different approach, as Pilot Cities typically have a lifetime of 2 years. Although pilot actions should be in support of the Climate Neutrality Goal, they are different in the sense that actions implemented are intended to deliver tangible and measurable results and outcomes within 2 years. Therefore, the PCP Indicator System should reflect this and provide a means of monitoring the impact of such implementation. In other words, the pilot city actions have a strong implementation focus and are not considered as strategic as the Mission City Indicators. The PCP is implementation orientated, it is about facilitating action on the ground and making things happen at the local scale, which needs to be captured appropriately within the design of the PCP Indicator Framework.

Furthermore, a key difference between the CCC AP/IP Monitoring Indicator Framework and the PCP Monitoring Framework, is simply related to scale. In most cases pilot cities will not operate on a city level and will require indicators capable of monitoring projects on a neighbourhood scale or demonstration site(s) for instance. Or it may be the case that what is required is an indicator set that is capable of monitoring and providing useful feedback on a specific set of and/or combination of portfolio solutions. This emphasises the need for Pilot Cities to develop their own TOC and MEL Framework specific to the needs of the project.

Nonetheless, the PCP Indicator Framework described herein follows the same structural logic as the CCC AP/IP Monitoring Framework, in that it is composed of Domains and Subdomains, within the following categories:

- Direct Benefits – GHG related sector monitoring.
- Co Benefits/ Co Risks – Indirect Impact related monitoring.



2 Methodology and Drafting Process of the Pilot Cities Programme Indicator Set

The indicator set for the pilot cities is based on the Integrated Indicator Framework for the Mission Cities. The underlying methodological considerations and the steps taken in the development process for the Integrated Indicator Framework are extensively described in D2.4.2.

To meet the specific needs of the Pilot Cities, the Mission City indicator system was modified. The principal rationale is that each project should only need to report on indicators that are relevant to the project and its related objectives. For instance, should the focus of the project be electro-mobility, the city should not have to report on indicators related to industrial processes. Ultimately, with respect to the Pilot Cities, the objective is not to present and report on the entire emission profile of the city, as that is what the CCC AP/IP seeks, but rather the focus should be on reporting on those indicators that would support specifics of the project and its work programme.

The modification of the indicator was carried out in an iterative process.

2.1 First Draft

As detailed within the Pilot Cities Programme Guidebook, the programme is intended to support European cities to test and implement innovative approaches to rapid decarbonisation, working across thematic areas and functional silos in support of systemic transformation. A first cohort of Pilot Cities (2022) have already embarked on their two-year journey towards climate neutrality within the Pilot Cities Programme, implementing innovative approaches, solutions, and services, to reduce carbon emissions and initiate transformational change.

In line with the launch of the first cohort of Pilot Cities Projects, a first indicator system was developed and launched in line with same. As detailed above, the first set of indicators adopted the same overall structure as the Mission City indicator set. This provided opportunity for the pilot cities to identify those indicators most appropriate to their project goals. Furthermore, it provided an opportunity to carry out a first analysis of the indicators selected per project and provide written and constructive feedback on same.

2.2 Revision and Feedback

The key steps and related materials required for carrying out this review processes was as follows:

- **Step 1:** The Pilot Cities fills in the project description template in line with application requirements of the programme .
- **Step 2:** The Pilot Cities fills in the indicator template identifying and selecting the indicators most relevant considered most relevant for tracking the progress of the project (See Appendix B: Proposal Refinement Document: Indicators and Outcomes for Monitoring, Evaluation and Learning).
- **Step 3:** NZC reviewed the project description documents alongside the filed in templates and provided constructive written feedback to each of the projects. Learnings from same also allowed for the consideration of whether the Indicator set itself was fit for purpose (See Appendix C: Project Review Document: Indicators and Outcomes for Monitoring, Evaluation and Learning).

2.3 Indicator Flexibility

The process gave cities the opportunity to define indicators that capture the very specific focus of their project as well as add additional indicators that reflect the scope of their project objectives. The pilot indicator set provides a 'Standardised' indicator per relevant domain, however, pilot cities may only use the standardised indicators that are relevant for the project, and they also have the option to add their own customised indicators.



Following the analysis, it was observed that the focus areas of the pilot cities themselves were very different. Some work on climate finance, other cities work on how citizen engagement can lead to climate neutrality, others focus on refurbishment of older housing stock, some work on mobility, and so on. Given the range and diversity of the projects themselves, it was determined that the Pilot City Indicators needed to be far more flexible than those intended to function at a city scale, and this also needed to be reflected within the indicator system. The selection of Pilot Cities will result in multiple pilot-activity-types, each of which generates a different test of change and diverse types of impact pathways.

It was therefore considered that rather than applying one generic set of indicators across the board, it would be far more appropriate to allow pilot activities to adapt the indicators provided or indeed design their own custom indicators, provided it was accompanied by a relevant definition and unit of measurement to allow for the calculation of results. Thus, the feedback provided, offered advice as to how to do this.

In summary, a process was established whereby cities could make suggestions for an indicator selection, which was followed by an analysis and feedback process carried out by the NZC consortium. This allowed for suggestions and recommendations to be made with respect to applying relevant indicators to each project. The focus was to support cities in developing a small set of straight forward and easy to use indicators that should be highly relevant for the project.. Nonetheless, it is 'required' to report on GHG emissions and savings, and for this the indicators of the PCP indicator system are to be used. However, only the emissions and savings of the domains relevant to the specific project are to be reported.

2.4 Supporting Workshops

During the drafting process, the Pilot Cities Programme Indicator Set was presented and discussed in several workshops with city representatives. For example, it was reviewed at the French Mission Cities workshop on April 5, 2023. Additionally, it was discussed at the Polish Network of Cities – Mission City workshop on November 7, 2023, and the CapaCITIES Workshop – Mission City workshop on October 25, 2023. The feedback gathered from city stakeholders during these workshops was incorporated into the revision of the indicator framework.

There were numerous MEL and Sensemaking Info-sessions delivered by the NZC Consortium during the PCP Call application phase for all the three cohorts. During these sessions the NZC Impact Logic (Theory of Change) and the concept of Impact Pathways was presented to interested cities, along with the introduction to the PCP Indicator Set. These sessions were aimed at helping applicant cities select the most relevant indicators for direct & indirect impacts and frame their impact logic and pathways as part of the proposal development. The Impact Framework template was also showcased in detail during these sessions, and the relevance of each of the sections was elaborated. The dates of these sessions are 8 September 2022 (cohort 1); 19 September 2023 (Cohort 2); and 13 February 2024 (Cohort 3).

For the selected Cohort 1 Pilot Cities reporting their MEL data, there has been one Reporting Info-session organised so far on April 10, 2024. This session highlighted the data reporting process as well as completeness check and evaluation criteria useful for cities during their data collection, analysis and reporting.

2.5 Impact Data Application

With respect to selecting appropriate indicators and applying related monitoring data, the PCP indicator system endeavours to monitor the impact following the implementation of the pilot activities themselves. In other words, and with reference to the NZC Pilot Cities Programme Guidebook (NZC Consortium, 2024), NZC will assess:

- the expected direct impacts and indicators proposed by the city/district for measuring change/impact; and
- the expected indirect impact(s) and co-benefits/co-risks.



As previously mentioned, Pilot activities can select indicators from the standardised list of indicators and/or, where required, develop bespoke 'customised' indicators suited to the pilot activities' intended direct impact and co-benefits.

Significantly, quantitative indicators will need to identify a metric and/or unit of measurement and consider the formula and means by which to calculate the indicator. All standardised quantitative indicators within the PCP Indicator set are accompanied by an applicable unit of measurement and information relating to how to calculate the indicator. Thus, pilot cities should adopt the same approach when developing their own bespoke indicators.

Furthermore, the pilot activities should consider the availability of the input data required to measure and monitor the indicator selection. The quality and reliability of a monitoring system is directly related to the quality of input data, and therefore, it should be recommended to use primary data where possible, as this facilitates robust calculation of indicators and related criteria. This in turn facilitates the basis for the pilot activities and related cities to define data-driven policies as data can be used as the founding basis required to identify priority sectors and develop locally based climate neutrality actions in response. In addition, it is also important to consider the proposed approach to governance and learning, and prospects for transfer, replication, and scaling, as well as risk management.

2.6 Quantitative Data

Quantitative data can be used to measure both direct impact and indirect impact alike. Pilot activities should consider both, the objective of which can be summarised as follows:

- Direct impact: relates to the calculation of GHG emissions in t CO₂ equivalents per year.
- Indirect impact or co-benefits/co-risks: relates to a wide range of pilot activities of which the impact may be beyond the scope of direct implementation. Here, the method of calculation and unit of measurement will vary across domains and indicators applied. For example, within the domain of Economy and the subdomain of Local Entrepreneurship and Local Businesses, a project may select the 'Creation of Start-ups' indicator which would be measured by counting the total number of start-ups created during the lifetime of the project.

It is important to note that given the ultimate endeavour of the NZC mission is to achieve climate neutrality, all pilot activities are required to measure direct impacts and thus emissions as part of the pilot project development and execution in some way.

As alluded to previously pilot activities should also consider data availability that would thus allow the calculation of the indicator in the first place. For example, as a means to measuring the reduction to emissions within the mobility sector, should a project wish to measure changes in modal split they may need to have access to data accounting for the number of cars deregistered.

2.7 Qualitative Data

Qualitative data is also a valuable means for calculating an indicator and often, qualitative data can be used to help better understand quantitative results. Qualitative data may prove particularly relevant to co-benefit/co-risk type indicators. For instance, social innovation type indicators may use a Likert scale as a means to assess a population's attitude to a given topic. Should a project wish to assess the extent to which disparate social groups within a city are engaged in the pilot activities and/or the wider development of a Climate City Contract Action Plan and Investment Plan, qualitative data obtained through a rated and qualified points system may be appropriate and prove useful.

Process monitoring according to a pilot project's portfolio and impact pathways may also make valuable use of qualitative data and results. Process monitoring uses qualitative data to measure and support a project on its climate neutrality journey or the progress being made with respect to their specific local needs. In other words, it is a useful means to identifying short-term and/or long-term outcomes and changes of circumstances. The process may also be coupled with outlining targeted co-benefits within their impact pathways with the endeavour to support a pilot project in assessing the most critical evidence gaps while generating learning from real-time evaluation with respect to project portfolio implementation. An impact pathway is derived at by, logically connecting one or more

activities/interventions to a systemic lever, defining either a early outcome or later outcome and by substantiating the qualitative means or methodology of assessment and calculation in order demonstrate the result and related impact.

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3 Indicator Metrics and Impact Pathway Processes

Direct Benefit – Green House Gas Indicators

Direct Benefit Indicators are related to the calculation of Green House Gas (GHG) emissions. These GHG emissions related indicators as presented and further detailed below have taken account not only of the Mission City indicators but have also have maintained an alignment with the sectors as defined in the Info Kit for Cities (European Commission, 2021), which provides the Mission's definition of Climate Neutrality. The key sectors are as follows:

- Stationary Energy
- Transport and Mobility
- Waste and Wastewater
- Industrial Processes and Product Use
- Agriculture, Forestry, and Other Land uses

Indicators are also provided under the following additional sub domains:

- Grid Supplied Energy
- Energy Consumption
- Energy Efficiency
- Share of Renewable Energies
- Carbon Removal and Residual Emissions
- GHG Emissions

More detail related to the definition of the above sub domains is provided in D2.4.2 'Comprehensive Indicator Framework' (Neumann et al, 2024) for most cases. Newly added subdomains include:

- Energy Consumption
- Energy Efficiency
- Share of Renewable Energies
- GHG Emissions

These additional subdomains and related indicators offer the pilot activities further guidance, whereby the result of calculating related indicators will offer a greater understanding of the energy and emission profile of the chosen study area, throughout the lifetime of the project.

A number of these indicators seek the total emissions in t CO₂ equivalents per year. The rationale supporting this is that it will offer pilot activities flexibility in terms of how they gather and apply related data sets. Existing data sets and reports that have already been generated may also be used to avoid double reporting. Nonetheless, pilot activities are invited to report as much emission data as considered useful, potentially highlighting each step within the calculation process, and demonstrating the entire calculation chain and related conclusions.

Not only are GHG indicators considered critical for tracking progress towards climate neutrality but from a scientific perspective, reporting on GHG indicators can result in the identification of valuable insights, as the calculation process may highlight areas or factors that significantly influence the emission profile of a city or study area. This in turn facilitates the basis for local governments to define data-driven policies and programmes, as well as the founding basis required to identify priority sectors and develop locally based climate neutrality actions in response.

It should be noted however, that should providing detailed emissions calculations prove complex and resource intensive, or if a city does not want to publish such detailed workings, there is no obligation to do so. In summary, the projects are expected to report the totals but not necessarily the workings of the calculations.

The direct benefit GHG subdomains and related indicators are provided below.



3.1 Indicator Set

Table 1 Direct Benefit Greenhouse Gas Emission Indicator Set

Subdomain	Indicator	Suggested Units of Measurement
Total GHG Emissions	Total Greenhouse gas emissions per year	t CO2 equivalents / year
Stationary Energy	GHG emission per year from stationary energy per year	t CO2 equivalents / year
Transport	GHG emission from transport per year	t CO2 equivalents / year
Waste	GHG emission from waste per year	t CO2 equivalents / year
Industrial processes and product use	GHG emission from industrial processes and product use per year	t CO2 equivalents / year
Agriculture, forestry and land use (AFOLU)	GHG emission from agriculture, forestry, and land use per year	t CO2 equivalents / year
Grid supplied energy	GHG emission from grid supplied energy per year	t CO2 equivalents / year
Energy Consumption	Change in the total energy consumption per year	kWh/year
Energy Efficiency	Change in energy efficiency over the lifetime of the project	%
Share of Renewable Energies	Change in the energy mix over the lifetime of the project	%
Carbon Removal and Residual Emissions	Amount of permanent sequestration of GHG within city boundary	t CO2 equivalents / year
GHG emissions	Change of the greenhouse gas emissions per sector during the lifetime of the project	t CO2 equivalents / year



3.2 Co-Benefit / Co-Risk Indicators

In the context of the pilot activities, co-benefits or indirect impacts are the additional impacts or positive effects of, and integral to, the direct impacts, i.e., GHG reductions. Co-benefits should be reflective of expected short, medium, or long-term impacts intended by a pilot project's experimentation ambition and related portfolio of solutions. At the same time, some climate actions could also lead to negative effects or trade-offs to be avoided, in other words 'co-risks'.

It should be observed that Co-benefits are not only related Climate Neutrality, but also other policies related to sustainable development. Such indicators can provide more detail and a better understanding of what is happening within a study area. For instance, when considering indirect impacts related to Public Health, one would expect there to be co-benefits related to improved air quality or reduced noise pollution. Indirect impacts will very much depend on the activities of the pilot activities themselves and therefore are context specific, and respondent to local policy objectives, spatial conditions, and the desired method of implementation. Co-benefit indicators can be seen as a catalogue or menu of indicators by which pilot activities can choose from. NZC does not impose any particular indicators in this regard, the supporting logic being that a pilot project should select indicators based on their priorities of work.

The indirect benefit subdomains and related indicators are provided below. It should be noted that more detail related to the definition of the below sub domains is provided in D2.4.2 'Comprehensive Indicator Framework' (Neumann et al, 2024).

3.2.1 Public Health & Environment

3.2.1.1 Indicator Set

Table 2 Public Health & Environment Indicator Set

Subdomain	Indicator	Suggested Unit of Measurement
Air Quality	Improved air quality	Highest annual mean of PM2.5 concentration recorded [$\mu\text{g PM}_{2.5} / \text{m}^3$]
Noise	Reduction of noise pollution	% of population exposed to avg. LDEN > 55dB (annual average)
Health	Improved physical and mental wellbeing	Likert scale; 5 scales to be determined in local survey
Quality of life	Perceived change in the quality of life	Likert scale; 5 scales to be determined in local survey

3.2.2 Social Inclusion, Innovation, Democracy and Cultural Impact

3.2.2.1 Indicator Set

Table 3 Social Inclusion, Innovation, Democracy and Cultural Impact Indicator set

Subdomain	Indicator	Suggested Unit of Measurement
Citizen and Communities Participation	Improved citizen participation	# of citizens engaged through the Pilot activities
Capacity of the public administration	Improvement in skills and awareness	# of public officers trained through the Pilot activities
Social cohesion	Affordability of housing and energy	% of disposable household income spent on housing and energy



Subdomain	Indicator	Suggested Unit of Measurement
Digitalisation	Improvement acceptance of digital solutions	Total #of users per digital solution
Social Innovation	Number of participative activities implemented per stakeholder group	Total # of counselled activities
Scientific or Communication Outreach of the project	Scientific publications, social campaigns etc	Total # of scientific publications
Upscaling & Replication	Number of follow-up projects or districts	Total # of follow-up projects

3.2.3 Digitalisation and Smart Urban Technology

3.2.3.1 Indicator Set

Table 4 Digitalisation and Smart Urban Technology Indicator Set

Subdomain	Indicator	Suggested Unit of Measurement
Green ICT and Smart Metering	% of households and buildings with reduced energy consumption as a consequence of installing smart energy metres	% of households
Green ICT and smart Metering	% of households and buildings with reduced water consumption as a consequence of installing smart water meters	% of households
Green ICT and Smart Metering	% of municipal buildings equipped with building energy management systems	% of public buildings
EGovernment	% of city services available online	% of total services
Access to Information	Business-to-government (B2G) data sharing	# of Private Datasets Shared with the City/Local Authority
Urban Data Platforms and Data Spaces	Usage of Urban Data Platforms	# Users / Day

3.2.4 Economy

3.2.4.1 Indicator Set

Table 5 Economy Indicator Set

Subdomain	Indicator	Suggested Unit of Measurement
Investment in R&I	Improved investments in climate change action	€ invested over the lifetime of the pilot project
Skilled Jobs & Employment	Newly created sustainable jobs	Total # of newly created jobs
Technological readiness	Number of solutions suggested for implementation in local strategies	Total # of implemented solutions over the lifetime of the project



Subdomain	Indicator	Suggested Unit of Measurement
Local Entrepreneurship & Local Businesses	Creation of Start-ups, accelerators or tech innovation	Total # of start ups created during the lifetime of the project
Increase in Efficiency	Savings in working time achieved	Working hours / per year saved
Revenues generated	Revenues generated by the project	Total € during the lifetime of the project excluding funding

3.2.5 Finance and Investment

3.2.5.1 Indicator Set

Table 6 Finance and Investment Indicator Set

Subdomain	Indicator	Suggested Unit of Measurement
Public Spending	Capital Invested in Climate Action Projects per Capita	EUR thousand
External Financing	Capital Invested in Climate Action Projects from External Finance	EUR Million
Capital Efficiency	Emission Return on Invested Capital	EUR m

3.2.6 Resource Efficiency

3.2.6.1 Indicator Set

Table 7 Resource Efficiency Indicator Set

Subdomain	Indicator	Suggested Unit of Measurement
Waste management and efficiency	Urban waste reduction; Biowaste recovery	% of recycled domestic waste of the total domestic waste generation
Circular Economy	Re-use of material during construction or renovation	% of recycled construction material of the total construction material used in the process
Water Management	Improved water management	Household water consumption [l / capita / day]
Land use management	Improved land use management practices (e.g., urban greening)	m ² of public green space / inhabitant



3.2.7 Biodiversity

3.2.7.1 Indicator Set

Table 8 Biodiversity Indicator Set

Subdomain	Indicator	Suggested Unit of Measurement
Urban Forestry Plantation and Improved Plant Health	Percentage of tree canopy within the city	% of the municipal area
Non-Invasive species and Pollinators	Change in the number of species of birds in built-up areas	% of change in species
Ecological Habitat Connection	Structural connectivity of green spaces	Degree of physical ("structural") connectivity between natural environments within a defined urban area

3.3 Pilot City Impact Pathways

The purpose of developing Impact Pathways toward climate-neutrality is to offer pilot activities and related cities the opportunity to strategically plan their actions and consider how they might enable long-term change, beyond the scope of the project. Long-term thinking also facilitates scope for enabling citizen engagement, social innovation, and improved governance and decision-making processes. In addition, the process should further consider 'levers of change' intended to result in interim short-term and medium-term impacts, as stepping stones towards the larger long-term goal.

This strategic 'sensemaking' process will require pilot activities to dedicate sufficient resources and capacity necessary to deliver the end goal. Sound data governance and management practices should also be put in place. In practice, this will require pilot activities to develop robust baselines, acquire an in-depth understanding of existing reporting practices and available data sets, and awareness of data sources that will need to be developed or acquired throughout the course of the project. This then should be designed into a data governance strategy, intended to support the success of the pilot project.

Systematic procedures and strategic thinking will allow pilot activities and related cities to clearly articulate their impact pathways i.e., early and later outcomes as a result of the planned pilot activities. The process may involve scoping of key issues or emission domains, followed by the development of bespoke evaluation criteria based on same to facilitate a means towards measuring envisioned impacts. Ultimately, this process will support in determining the most-relevant indicator sets, assessing evidence gaps, and how these gaps could potentially be addressed through MEL processes. The intention is that continuous stock-taking and reflection processes, i.e., 'sensemaking', shall accelerate the learning/knowledge creation from the testing of systemic innovation solutions and relevant capacity building activities.

It should be highlighted that the Impact Pathway model is intended to capture qualitative results. Qualitative results can particularly take the form of co-benefits of decarbonisation. Nonetheless, qualitative methods should prove applicable and relevant to stakeholders engaged in the process, as qualitative methods and related results can often prove hard to define and hard to measure, suggesting subjectivity based on the end user, however, when designed correctly, results can prove exceptionally valuable for decision making purposes. Therefore, the Impact Pathway process allows for the consideration of such critical criteria when defining related pilot activities.

Building cities' understanding and clarity on their expected Impact Pathways as an evolving process will help cities to effectively operationalise their MEL processes through both quantitative and qualitative indicators.

3.3.1 Collective Sensemaking – A Supportive Process for Reflexive Learning s

The Collective Sensemaking activities for the Pilot Cities Programme imply a facilitated and periodic process of observation and synthesis to generate real-time insights from Pilot activities as they are implemented. For systemic interventions where there are no predetermined single sector solutions to a challenge, such as it is the goal for PCP, it is necessary to design and operationalise processes that generate rapid and tangible insights. As the NZC PCP progresses, some changes will emerge that were not possible to predict up-front. Therefore, a process of continuous learning, stocktaking and reflection is needed to reflect new knowledge and understanding as Pilot activities mature and develop over time.

A Sensemaking cycle also enables 'reflexive governance' (also known as adaptive management) to help cities understand and act upon which solutions or interventions are working or not, in what contexts, for whom and why. In the long-term, these peer learning workshops will help build trust and synergies towards a safe learning environment in which cities feel empowered to exchange insights on barriers and failures and encourage necessary course correction of their respective pathways.

As learning does not merely occur at a single point in time, the Sensemaking process requires a long-term approach to building trust and deepening relationships amongst peer cities within the cohorts. Collective Sensemaking is, therefore, an ongoing, periodical, and structured process of accompaniment, rather than a single isolated capacity building event.

The insights and findings gathered from the collective sessions are methodically captured, codified, and communicated – not only for the benefit of cities using them to inform their strategies and constant improvement, but also for the overall peer-to-peer learning and capability development of the Pilot Cities and Twin Cities cohorts. These sessions also consolidate qualitative evidence and knowledge on the scalability and transferability of NZC interventions across critical emission domains, systemic levers of change, and city or multi-city contexts.

Collective Sensemaking process and timeline:

During the 2-years of the Pilot Cities Programme (PCP) timeline, Pilot City (and their corresponding Twin City) representatives from each cohort are invited to participate in up to four Rounds of online Sensemaking sessions (up to 3 hours each) within a learning group (hereafter referred to as a 'cluster').

Each cluster is made up of up to six Pilot Cities or multi-city Pilot activities from a single cohort, as well as an equivalent and corresponding number of Twin Cities. The NZC Consortium organises and facilitates these Collective Sensemaking sessions with a regular cadence of one session per cluster every six months, and closely aligned with the Pilot Cities' MEL and Reporting processes for PCP.

The learning groups are clustered based on criteria such as: the thematic areas of intervention of the Pilot Cities (e.g., behavioural change, citizen engagement, energy systems, building retrofit, etc.), their transversal levers of change (e.g.: governance, social innovation, finance, etc.), potential direct and indirect impacts/outcomes or co-benefits, qualitative outcomes, scope of actions as city-wide or place-based, impacts pathways identified etc. As Pilot Cities present their implementation progress, insights, and barriers (in their role of 'storytellers'), their Twin Cities (in their role of active observers or listeners) have the opportunity to learn from the Pilot Cities' presentations, followed by facilitated discussions, Q&A, and feedback.

Additionally, the NZC Consortium also organises periodic 'All-Cluster' webinars at the scale of the PCP and Twinning Learning Programme cohorts once every six months, following each Round of cluster-level Collective Sensemaking sessions, where Pilot Cities can connect with and learn from Pilot Cities and Twin Cities not directly part of their own cluster.

The strategic insights, lessons learnt and findings, generated through the periodic Collective Sensemaking sessions will be collated and summarised by the NZC Consortium through 'PCP Insights Reports', both at the level of the overall Pilot Cities' Cohort and at the level of individual learning clusters.



The reports are made widely available on the NZC Portal, while also making sure no sensitive or discrete information shared in the Sensemaking sessions is shared outside the trust-based circle of the cluster.

The progress updates (also referred to as “Storytelling” presentations) from Pilot Cities and insight reports generated from the two Rounds of sessions, delivered so far, can be accessed on the “Pilot Cities Programme Group” on the NetZeroCities Portal here: <https://netzerocities.app/group-pilotcitiesprogrammegroup>. The relevant content can be found in the 'Files' tab > Cohort 1 > PCP cohort 1 Collective Sensemaking Round 1 (Oct-Nov 2023) and Round 2 (Feb-June 2024).

The Sensemaking process is closely also connected to the MEL and Reporting processes of the Pilot Cities Programme. Pilot Cities can iteratively capture their own project’s qualitative or descriptive insights presented by them during the Sensemaking sessions. Such qualitative outcomes and learning are reported by each pilot during their annual reporting process in a template specifically designed to elaborate on these lessons and findings (see [Appendix D: Learning & Insights Report template](#)).



4 Pilot Cities Programme Reporting Process and Related Data Management

For all Pilot Cities, Periodic Reporting takes place annually during their 2-Year project duration. The Periodic Reporting Template consists of a Word document divided into two sections. The first section is the Periodic Technical Report, which comprises 11 narrative-based questions and requires the attachment of 4 corresponding templates. The second part of the document is the Periodic Financial Report, which consists of one narrative-based question and the attachment of a cost reporting template. For this Deliverable, the most relevant templates are as follows:

- **Indicators Reporting Excel template (see Annex A):** Pilot Cities are expected to utilise the Excel sheet 'Indicator Reporting Excel' to report on the quantitative and qualitative indicators related to their Pilot activities. This template also corresponds to the 'Indicators' section of the Narrative Report, and the justifications regarding any changes and explanations regarding these Indicators is captured there.

In the excel spreadsheet, Pilot Cities report the values of the indicators based on their revised MEL/impact framework. Both these indicators and the list of indicators in the Framework are checked for uniformity by the evaluators. The spreadsheet also includes the full list of standardised indicators for reference. There are optional input fields which cities can provide: baseline value, baseline year, data sources, emission factors used and any additional comments. This template forms the basis for all quantitative data reporting requirements.

- **Outcomes, Learning and Insights Report (see Annex C):** This Word template captures the observations, stock-taking and reflection on a Pilot's progress and learning so far. Specifically, it addresses each Pilot's "Early and Later Outcomes" achieved (or not) in Year 1 and Year 2, as originally indicated in each Pilot's Impact Framework. For cities, it is recommended to focus on the Outcomes that are the most important and relevant for the Pilot at this point in their two-year journey.

The Outcomes and Insights Report is also a space to capture cities' insights from their own Sensemaking – both with peer cities and within their own Pilot team, consortium, stakeholders, in terms of: What worked well or not so well, for whom and why? The information expected in this report is qualitative, textual and descriptive and rooted in each Pilot's specific context and experience. The template also provides a wide range of Guiding Questions as a starting point; however, cities are encouraged to frame their own narrative as it best suits the Pilot activities.

This qualitative report complements the quantitative data reporting in order to present a well-rounded perspective on a pilot's yearly progress, especially considering the shortcomings and barriers for the collection and availability of precise data.

- **Revised MEL & Impact Framework (see Annex B):** During the Year-1 Annual Reporting period, Pilot Cities are recommended to revisit their original Impact Framework (see Section 1.3 on Theory of Change) and the impacts, outcomes and indicators outlined therein and revise them based on the latest findings and outlook. This practice aims at helping cities a flexible MEL approach to choose, add or remove indicators based on their actual relevance to the pilot activities' status of implementation, and the modality of presenting evidence of change. This is not a mandatory reporting requirement.

To minimise reporting efforts, cities are suggested reworking on their original templates and revise them based on past one year's experience. They are also think ahead about Year 2 reporting – consistency between Y1 and Y2 is important to understand the trend of a pilot's data and outcomes. Cities also suggested to ensure the indicators reporting in excel reporting template are same and consistent with their Revised Impact Framework Word document.



Periodic Technical Report Sections:

- Project summary
- Progress towards intended milestones, objectives, outcomes, impact, and learning
- Evolution of implementation
- Risks
- Communication & Dissemination



Figure 2 Periodic Technical Report Sections (Source: NetZeroCities)

All the aforementioned templates are downloaded (blank versions) and uploaded (completed versions) by Pilot Cities in the same Online Portal called 'Amp-Impact' used for managing and processing the PCP Call applications. The organisational and logistical steps that comprise the PCP Annual Reporting process are outlined below:

5 Conclusion

The progress towards climate neutrality can be assessed in both quantitative as well as qualitative terms. As with the Mission City Impact Indicator Framework, the PCP Impact Indicator Framework consists of several components including its theoretical foundation, the so-called “Theory of Change”, that describes different impact pathways a city needs to take to become climate neutral, and an Integrated Indicator Framework provides cities with a set of validated indicators allowing them to track their progress towards climate neutrality.

However, due to the experimental nature, the varying scopes and the different local contexts of the pilot activities themselves, it is envisioned that each pilot project will develop its own TOC, applicable for applying suitable impact pathways for testing related solution portfolios. A further key difference relates to the flexibility of the PCP Indicator System, as although a small set of ‘Standardised’ and easy to use indicators are offered per relevant subdomain, it was determined that it would be far more appropriate to allow pilot activities to adapt the indicators provided, on a need be basis or indeed design their own custom indicators, in response to projects’ proposed solutions and intended impact. Furthermore, Mission Cities indicator set is comprised of both ‘Required’ and ‘Recommended’ indicators, this not is not the case with respect to the PCP System, to facilitate the desired flexibility as alluded to.

As described the in the NZC Pilot Programme Guidebook, the NZC PCP invites Mission Cities to apply to become Pilot Cities to test and implement innovative approaches, exploiting R&I towards rapid decarbonisation over a two-year pilot programme, working across thematic areas and functional silos in support of transforming systems. The expected results of the NZC PCP are:

- innovative solutions or groups of solutions tested and implemented at city or district level over the duration of the Pilot Cities Programme,
- explicit lessons learnt from the innovative trajectories, with knowledge, capacity and capabilities developed at city level; and
- a clear set of innovative solutions identified and ready to be implemented by the end of the Programme, which could include a new business model, policy initiative, governance innovation, funding or financing model, and EU-level replication or scaling strategy.

(NZC Consortium, 2024)

The PCP Impact Indicator Framework described and presented herein has been developed in order to support pilot activities and related cities in tracking the progress towards these stated objectives.



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Appendix A: NZC Pilot Cities Indicator Set

	Emission/Impact Domain	Subdomain	Indicator	Suggested Unit of Measurement
1	Greenhouse Gas Emissions (GHG)	Total GHG emissions	Total greenhouse gas emissions per year	t CO2 equivalents / year
2	Greenhouse Gas Emissions (GHG)	Stationary energy	GHG emission per year from stationary energy per year	t CO2 equivalents / year
3	Greenhouse Gas Emissions (GHG)	Transport	GHG emission from transport per year	t CO2 equivalents / year
4	Greenhouse Gas Emissions (GHG)	Waste	GHG emission from waste per year	t CO2 equivalents / year
5	Greenhouse Gas Emissions (GHG)	Industrial processes and product use	GHG emission from industrial processes and product use per year	t CO2 equivalents / year
6	Greenhouse Gas Emissions (GHG)	Agriculture, forestry and land use (AFOLU)	GHG emission from agriculture, forestry and land use per year	t CO2 equivalents / year
7	Greenhouse Gas Emissions (GHG)	Grid supplied energy	GHG emission from grid supplied energy per year	t CO2 equivalents / year
8	Greenhouse Gas Emissions (GHG)	Energy Consumption	Change in the total energy consumption per year	kWh/year
9	Greenhouse Gas Emissions (GHG)	Energy Efficiency	Change in energy efficiency over the lifetime of the project	%
10	Greenhouse Gas Emissions (GHG)	Share of Renewable Energies	Change in the energy mix over the lifetime of the project	%
11	Greenhouse Gas Emissions (GHG)	Carbon capture and residual emissions	Amount of permanent sequestration of GHG within city boundary	t CO2 equivalents / year
12	Greenhouse Gas Emissions (GHG)	GHG emissions	Change of the greenhouse gas emissions per sector during the lifetime of the project	t CO2 equivalents / year

	Emission/Impact Domain	Subdomain	Indicator	Suggested Unit of Measurement
1 3	Public Health & Environment	Air quality	Improved air quality	Highest annual mean of PM2.5 concentration recorded [$\mu\text{g PM}_{2.5} / \text{m}^3$]
1 4	Public Health & Environment	Noise	Reduction of noise pollution	% of population exposed to avg. LDEN > 55dB (annual average)
1 5	Public Health & Environment	Health	Improved physical and mental wellbeing	Likert scale; 5 scales to be determined in local survey
1 6	Public Health & Environment	Quality of life	Perceived change in the quality of life	Likert scale; 5 scales to be determined in local survey
1 7	Social Inclusion, Innovation, Democracy and Cultural Impact	Citizen & Communities Participation	Improved citizen participation	# of citizens engaged through the Pilot activities
1 8	Social Inclusion, Innovation, Democracy and Cultural Impact	Capacity of the public administration	Improvement in skills and awareness	# of public officers trained through the Pilot activities
1 9	Social Inclusion, Innovation, Democracy and Cultural Impact	Social cohesion	Affordability of housing and energy	% of disposable household income spent on housing and energy
2 0	Social Inclusion, Innovation, Democracy and Cultural Impact	Digitalisation	Improved acceptance of digital solutions	total # of users per digital solution
2 1	Social Inclusion, Innovation, Democracy and Cultural Impact	Social Innovation	Number of participative activities implemented per stakeholder group	total # of counseled activities
2 2	Social Inclusion, Innovation, Democracy and Cultural Impact	Scientific or Communication Outreach of the project	Scientific publications, social campaigns etc	total # of scientific publications

	Emission/Impact Domain	Subdomain	Indicator	Suggested Unit of Measurement
2 3	Social Inclusion, Innovation, Democracy and Cultural Impact	Upscaling & Replication	Number of follow-up projects or districts	total # of follow-up projects
2 4	Economy	Investment in R&I	Improved investments in climate change action	€ invested over the lifetime of the pilot project
2 5	Economy	Skilled Jobs & Employment	Newly created sustainable jobs	total # of newly created jobs
2 6	Economy	Technological readiness	Number of solutions suggested for implementation in local strategies	total # of implemented solutions over the lifetime of the project
2 7	Economy	Local Entrepreneurship & Local Businesses	Creation of Start-ups, accelerators or tech innovation	total # of start ups created during the lifetime of the project
2 8	Economy	Increase in Efficiency	Savings in working time achieved	Working hours / per year saved
2 9	Economy	Revenues generated	Revenues generated by the project	total € during the lifetime of the project excluding funding
3 0	Resource Efficiency	Waste management and efficiency	Urban waste reduction; Biowaste recovery	% of recycled domestic waste of the total domestic waste generation
3 1	Resource Efficiency	Circular Economy	Re-use of material during construction or renovation	% of recycled construction material of the total construction material used in the process
3 2	Resource Efficiency	Water Management	Improved water management	Household water consumption [l/capita/day]
3 3	Resource Efficiency	Land use management	Improved land use management practices (e.g. urban greening)	m ² of public green space / inhabitant
3 4	Biodiversity	Urban Forestry Plantation and Improved Plant Health	Percentage of tree canopy within the city	% of the municipal area
3 5	Biodiversity	Non-Invasive Species and Pollinators	Change in the number of species of birds in built-up areas	% of change in species

	Emission/Impact Domain	Subdomain	Indicator	Suggested Unit of Measurement
3 6	Biodiversity	Ecological Habitat Connection	Structural connectivity of green spaces	Degree of physical ("structural") connectivity between natural environments within a defined urban area.
3 7	Finance and Investment	Public Spending	Capital Invested in Climate Action Projects	EUR Million
3 8	Finance and Investment	Public Spending	Budget Assigned to Climate Action Projects	% of City Budget
3 9	Finance and Investment	Public Spending	Capital Invested in Climate Action Projects per Capita	EUR thousand
4 0	Finance and Investment	External Financing	Capital Invested in Climate Action Projects	EUR Million
4 1	Finance and Investment	External Financing	Coverage of Climate Finance Gap	% of Capital Deficit Covered
4 2	Finance and Investment	Capital Efficiency	Emission Return on Invested Capital	EUR m
4 3	Finance and Investment	Fiscal Responsibility	Cost Coverage	% of Costs Covered
4 4	Digitalisation and Smart Urban Technology	Green ICT and Smart Metering	% of households and buildings with reduced energy consumption as a consequence of installing smart energy metres	% of households
4 5	Digitalisation and Smart Urban Technology	Green ICT and Smart Metering	% of households and buildings with reduced water consumption as a consequence of installing smart water meters	% of households
4 6	Digitalisation and Smart Urban Technology	Green ICT and Smart Metering	% of municipal buildings equipped with building energy management systems	% of public buildings
4 7	Digitalisation and Smart Urban Technology	EGovernment	% of city services available online	% of total services
4 8	Digitalisation and Smart Urban Technology	EGovernment	Improvement in online government services	Likert Scale

	Emission/Impact Domain	Subdomain	Indicator	Suggested Unit of Measurement
49	Digitalisation and Smart Urban Technology	Access to Information	Business-to-Government (B2G) data sharing	# of Private Datasets Shared with the City / Local Authority
50	Digitalisation and Smart Urban Technology	Urban Data Platforms and Data Spaces	Usage of Urban Data Platforms	# Users / Day
51	Digitalisation and Smart Urban Technology	Urban Data Platforms and Data Spaces	User Satisfaction with Urban Data Platforms	User Satisfaction Score (Likert Scale)

Appendix B: Proposal Refinement Document: Indicators and Outcomes for Monitoring, Evaluation and Learning (MEL)

AWAITING APPROVAL BY THE EUROPEAN COMMISSION



Pilot Cities Programme

Proposal Refinement Document: Indicators & Outcomes for Monitoring, Evaluation & Learning (MEL)

Name of Project/City

This document covers applications for funding under Horizon 2020, Grant Agreement number: 101036519 — NetZero Cities — H2020-LC-GD-2020 / H2020-LC-GD-2020-2.

Call ID: NZC-H2020-202209

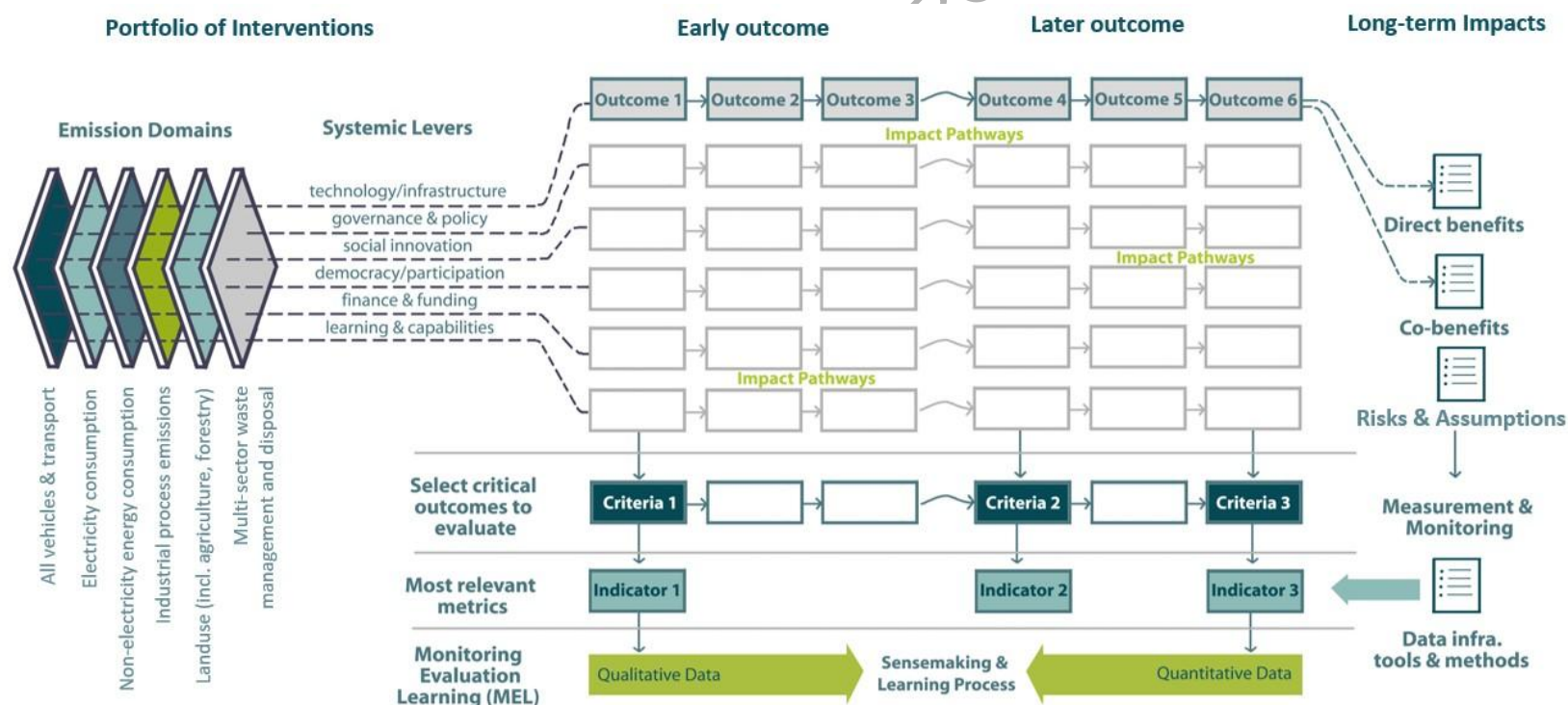
Publication Date: 03 May 2023



Introduction to NZC PCP Impact Framework Template

Introduction and guidance (please go through this section before filling the template):

- The template outlined in this Proposal Refinement Process document is based on the structure and basic elements of the NZC Impact Framework (see diagram below). The information requested here is designed to help your project/city document, keep track of progress, and learn from your transformative journey through NZC PCP, as well as help the NZC Consortium support this work through MEL activities.
- Most of the information requested here is already filled by your project/city during the successful application phase. Please revisit and refer your project's Impact Framework data (sent as an excel file), to select the most relevant indicators and outcomes – to report on an annual basis and actively use these data/insights to participate in regular Collective Sensemaking with other Pilot Cities. Please feel free to revise the original Impact Framework information/data in any way that best aligns with the current stage, future outlook, and work-plan for your project.
- The NZC Consortium will use this template's data/information to build and activate an online reporting system on the NZC Portal, which will be used for all PCP reporting activities across the two-year project duration.



- The indicators/outcomes requested in this template are classified into **three main categories** based on the type of impacts and allowing for flexibility and focus for reporting and sensemaking. This information will help cities assess their evidence needs, baseline/target values, and data sources for specific indicators/outcomes at a later stage of the MEL process. These categories include:
 1. **Direct Impacts** are the long-term quantified effects produced by the project activities/interventions – related to either GHG mitigation/reduction in one or more emission domains, or non-GHG impacts for one or more cross-cutting levers, such as governance, finance, participation etc.
 2. **Indirect Impacts or Co-benefits** produced by the activities/interventions during or after the project duration (either qualitative or quantitative).
 3. **Intermediate Outcomes** are the qualitative and observable changes/insights related to the process or portfolio implementation, produced either early (short-term) or later (medium-term) during the project timeline. These changes also relate your project's **Impact Logic or Impact Pathways** that link outcomes to direct/indirect impacts – to support meaningful connections and better coordination between individual activities/interventions. These **qualitative outcomes** will also be useful to better frame your project/city's broader strategic learning objectives, as well as productively participate in the Collective Sensemaking process with your peer Pilot Cities.
- The first two indicator categories for Direct and Indirect Impact above are further sub-divided into two sub-categories, to allow for greater flexibility and choice for indicator selection, data reporting and offering MEL guidance: These indicator sub-categories include:
 - a. **Standardised Indicators** are the ones you are requested to select from the **NZC PCP Indicator Set** (also sent to you as an excel file). This set includes a catalogue of **45 indicators** (12 GHG Indicators and 33 Co-benefits) compiled by the NZC Consortium, as recommended indicators based on selected Pilot Cities' proposals and project data. These indicators are also compatible with the climate reporting platforms cities currently use (such as, CDP/ICLEI Track or MyCovenant), which can help Pilot Cities identify their relevant data sources at a later reporting stage. This indicator sub-category data will help us offer further MEL and impact assessment guidance to Pilot Cities, allow for quantitative data comparability/aggregation between all Pilot Cities, and enable knowledge exchange within PCP. We aim to offer methodological support and capacity building from the NZC Consortium on these indicators to Pilot Cities during the next stages of PCP.
 - b. **Customised Indicators** are specific and most suited to your project based on your intended impacts. The project/city can include these non-standardised or contextual indicators to measure progress and assess impacts that are not explicitly covered in the NZC PCP Indicator Set provided. Cities are free to frame/describe them based on their existing Impact Framework data and voluntarily report data based on them.
 - c. Similarly, the information to be provided in the **third main category of qualitative Outcomes** is also contextual as descriptive text. It is also derived from your existing Impact Framework data. For further guidance on how to better frame these outcomes per lever or selected Impact Pathways, please refer to the **NZC Theory of Change** document. Cities will receive further guidance on refining or co-creating these outcomes/pathways during the Collective Sensemaking and peer-to-peer learning sessions during the next stages of PCP.
- Lastly, both the quantitative and qualitative indicators or outcome supplied in this template are not finalised or frozen in the MEL process, but rather a starting point for our collective MEL and Sensemaking journey for PCP. Cities will have a chance to edit, refine or revise this information when the online reporting system is activated, and particularly **during the Grant Agreement amendment stage** after the first year of implementation. At this

stage, we recommend making an informed choice of a few key indicators and outcomes that will best suit your city/project's envisioned impact (based on your existing Impact Framework) and best respond to your specific needs on MEL and data reporting. Good to remember: less is more.

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Direct Impacts & Indicators for Reporting

Please use this section to capture the GHG and non-GHG long-term impacts of your Pilot activities or interventions.

Long-term GHG Impacts (Standardised)

Please use this section to capture the GHG and non-GHG long-term impacts of your Pilot activities or interventions and refer to [NZC PCP Indicator Set](#) for further details.

Activity or Intervention name	GHG Emission Domain	Emission Sub-domain	Quantitative indicator	Metric/unit of measurement (How is this impact measured?)
Please add as applicable	Select one or more from – - All vehicles and transport (mobile energy) - Consumption of electricity generated for buildings, facilities, & infrastructure - Consumption of non-electricity energy for thermal uses in buildings & facilities - Land use (including agriculture, forestry, and other land uses) - Multi-sector waste management and disposal - Industrial process emissions	Select from as applicable – - Total GHG emissions - Stationary energy - Transport - Waste - Industrial processes and product use - Agriculture, forestry, and land use (AFOLU) - Grid supplied energy - Energy Consumption - Energy Efficiency - Share of Renewable Energies - Carbon capture and residual emissions - GHG emissions	Select from the suggested list of 12 indicators in NZC PCP Indicator Set as applicable	Select from suggested list of units in NZC PCP Indicator Set or add your own as applicable
Please add/remove rows as applicable				

Long-term GHG Impacts (Customised according to city/project)

Please use this section to capture the quantitative GHG impacts of your Pilot activities or interventions (those not included in NZC PCP Indicator Set).

Activity or Intervention name	GHG Emission Domain	Emission Sub-domain	Quantitative indicator	Metric/unit of measurement (How is this impact measured?)
Please add as applicable	Select one or more from – ▪ All vehicles and transport (mobile energy) ▪ Consumption of electricity generated for buildings, facilities, & infrastructure ▪ Consumption of non-electricity energy for thermal uses in buildings & facilities ▪ Land use (including agriculture, forestry, and other land uses) ▪ Multi-sector waste management and disposal ▪ Industrial process emissions	Please add your own as applicable	Please add your own as applicable	Please add your own as applicable
Please add/remove rows as applicable				

Long-term non-GHG Impacts (Customised according to city/project)

Please use this section to capture the quantitative non-GHG long-term impacts intended for your Pilot activities or interventions.

Activity or Intervention name	Impact related to this activity or intervention	Emission Domain(s)	Lever(s)	Custom quantitative or qualitative indicator	Custom metric/unit of measurement
Please add as applicable	Please add your own as applicable	Select one or more as applicable – ▪ All vehicles and transport (mobile energy) ▪ Consumption of electricity generated for buildings, facilities, & infrastructure ▪ Consumption of non-electricity energy for thermal uses in buildings & facilities ▪ Land use (including agriculture, forestry, and other land uses) ▪ Multi-sector waste management and disposal ▪ Industrial process emissions	Select one or more as applicable – ▪ Technology and infrastructure ▪ Governance and policy ▪ Financing and funding ▪ Social innovation ▪ Democracy and participation ▪ Learning and capabilities	Please add your own as applicable	Please add your own as applicable
Please add/remove rows as applicable					

Indirect Impacts and Indicators for Reporting

Please use this section to capture the Co-benefits of your Pilot activities.

Co-benefits (Standardised)

Please use this section to capture the co-benefits of your Pilot activities or interventions and refer to [NZC PCP Indicator Set](#) for further details.

Activity or Intervention Name	Domain	Sub-domain	Quantitative or qualitative indicator	Metric/unit of measurement
Please add as applicable	Select from as applicable – - Public Health and environment - Social Inclusion, Innovation, Democracy and Cultural Impact - Economy - Resource efficiency - Biodiversity	Select from 24 recommended Co-benefit Sub-domains from the NZC PCP Indicator Set	Select from the suggested list 24 of indicators in NZC PCP Indicator Set or add your own as applicable	Select from suggested list of units in NZC PCP Indicator Set or add your own as applicable
Please add/remove rows as applicable				

Co-benefits (Customised according to city/project)

Please use this section to capture the Co-benefits of your Pilot activities or interventions (those not included in NZC PCP Indicator Set).

Activity or Intervention name	Describe Co-benefit related to this activity or intervention	Emission Domain(s)	Lever(s)	Custom quantitative or qualitative indicator	Custom metric/unit of measurement
Please add as applicable	Please add your own as applicable	Select one or more as applicable – ▪ All vehicles and transport (mobile energy) ▪ Consumption of electricity generated for buildings, facilities, & infrastructure ▪ Consumption of non-electricity energy for thermal uses in buildings & facilities ▪ Land use (including agriculture, forestry, and other land uses) ▪ Multi-sector waste management and disposal ▪ Industrial process emissions	Select one or more as applicable – ▪ Technology and infrastructure ▪ Governance and policy ▪ Financing and funding ▪ Social innovation ▪ Democracy and participation ▪ Learning and capabilities	Please add your own as applicable	Please add your own as applicable
Please add/remove rows as applicable					

Outcomes for Sensemaking & Qualitative Insights Reporting

Please use this section to select/edit from the suggested list of outcomes in NZC Theory of Change per systemic lever or add your own based on your city/project's Impact Logic. For detailed explanation of Impact Pathways and Early (short-term) or Later (medium-term) Outcomes, please refer to the NZC Theory of Change or previous webinars on the topic on the NZC Portal.

Early Outcome (Customised according to city/project)

Activity or Intervention name	Describe Early Outcome related to this activity or intervention	Lever(s)	Describe Impact Pathway(s) (How is this Outcome logically connected to one or more activities or interventions?)
Please add as applicable	Please add your own as applicable	Select one or more as applicable – - Technology and infrastructure - Governance and policy - Financing and funding - Social innovation - Democracy and participation - Learning and capabilities	Please add as applicable
Please add/remove rows as applicable			

5.1 Later Outcome (Customised according to city/project)

Activity or Intervention name	Describe Later Outcome related to this activity or intervention	Lever(s)	Describe Impact Pathway(s) (How is this Outcome logically connected to one or more Early Outcomes or long-term impacts?)
Please add as applicable	Please add your own as applicable	Select one or more as applicable – - Technology and infrastructure - Governance and policy - Financing and funding - Social innovation - Democracy and participation - Learning and capabilities	Please add as applicable
Please add/remove rows as applicable			

Appendix C: Proposal Refinement Document: Indicators and Outcomes for Monitoring, Evaluation and Learning (MEL)

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Pilot Cities Programme

Pilot Project Review Document: Indicators & Outcomes for Monitoring, Evaluation & Learning (MEL)

Internal Document Template

netzerocities.eu



Table of Contents

1	Review of City Submission and Project Description.....	46
2	Alignment with NZC Indicator System	47
2.1	GHG Impacts and Indicators	47
2.2	Indirect Impacts, Co-Benefits and Co-Risk Indicators.....	47
3	Conclusions and Recommendations	48

Instructions

- Instructions for filling in this template document are provided under the relevant headings in **red text** below.
- Keep points short, – your project review and summary should not be more than 1.5 page.

Where to find Pilot Project Descriptions:

- You will find the relevant filled in PCP MEL indicator templates here: [PCP Proposal Refinement Process MEL-Indicators templates FILLED 16-05-2023](#) - **Here you will find the document you need to review. Please search for your relevant City/Pilot Project.**
- You will find additional information in relation to project descriptions here: [Pilots Description](#)– please search for your City and project of relevance.
- You will also find relevant information on Notion here: <https://www.notion.so/darkmatterlabs/Pilot-Cities-database-Bootcamp-Pilot-Information-sharing-72e93ffa947c478f9312719072f3c6c6>



1 Review of City Submission and Project Description

- Summarise key points from project proposal. (This is for evaluator to understand the project objective)
- Begin to consider whether City Indicators capture project objectives using the sections below.

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2 Alignment with NZC Indicator System

- Check to see what level their proposed indicators align with our indicators or is a customised approach required.
- The more alignment the better, however, there should be a certain level of flexibility afforded to the city.

2.1 GHG Impacts and Indicators

- Check if they capture GHG emissions - many Cities do not include GHG related indicators.

2.2 Indirect Impacts, Co-Benefits and Co-Risk Indicators

- Review proposed indicators and consider whether those included sufficiently capture project objectives.
- Potentially make recommendations for changes/additions to Co-Benefit/Co Risk indicators – again these should only cover co-benefits relevant to their projects. There is no need to include Co Benefit/Co Risk Indicators that have no relevance to the project.

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3 Conclusions and Recommendations

- Summarise key points from review.
- Focus on whether proposed indicators sufficiently cover and are adequate for measuring the intended impacts of the projects.
- Summarise to what extent proposed indicators align with the D2.4.2 Indicator Set.
- Highlight any proposed amendments and/or inclusion/replacement of indicators.

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Appendix D Learning and Insights Report Template

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Pilot Cities Programme Outcomes & Insights Report

Qualitative impacts and lessons from your Pilot journey

‘Accelerate’ Phase of Collective Sensemaking

(Prepare → Act → Accelerate)

Name of the Pilot	
Pilot City or Cities involved	
Reported by -- Name(s) of MEL & Sensemaking Lead for Pilot	
Co-authors or Organisations who contributed to this Report	
Final Reporting Year	Year 2 (2025)



Key Outcomes of your Pilot

Key Outcome No. 1

Insert text here: Headline or brief title of the Outcome

a. Outcome Description

What observable change occurred directly or indirectly because of the pilot? Please describe the specific change you observed focusing on whose behaviour changed, when the change happened, and where it took place.

Text: Please write your text/narrative description in this blank space

Systemic levers related to above Outcome (tick all that apply)

- ☐ Technology & infrastructure
- ☐ Data & Digitalisation
- ☐ Finance & funding
- ☐ Social innovation
- ☐ Participation & engagement
- ☐ Governance, policy & regulation
- ☐ Capacity & capability building
- ☐ Procurement

The Outcome was...

- ☒ Expected
- ☐ Unexpected

Type of change (tick all that apply)

- ☐ Knowledge gained and/or awareness raised
- ☐ Attitude, mindsets, behaviour shifted
- ☐ Technical expertise or skills developed
- ☐ New practices and actions adopted
- ☐ Solutions implemented/adopted
- ☐ New agreements, partnerships, networks or platforms formed
- ☐ Funds raised or investment secured
- ☐ New policies, guidelines, strategies, laws, regulations etc.
- ☐ Others (please specify)

The change became observable in...

- ☐ Year 1
- ☐ Year 2

b. Beneficiaries of this Outcome Which stakeholders benefitted directly or indirectly from this Outcome?

Please specify individuals, groups, organisations or communities.

Text: List all relevant stakeholders/actors here	Type of stakeholder/s (tick all that apply)
	☐ Local government (city councils, municipal departments, climate agencies, politicians etc.) ☐ Regional government ☐ National government ☐ Public-private partnerships ☐ Private sector (businesses, SMEs etc.) ☐ Civil society, community orgs or NGOs ☐ Academia/Research Institutions ☐ Funders /investors/financial institutions ☐ Citizens/Residents ☐ Peer or partner city ☐ Other (please specify) _____
c. Importance of this Outcome <i>Why is the change significant in your city's context? You may consider the city's long-term impact pathways to climate-neutrality beyond the pilot duration.</i>	
Please write your text/narrative in this blank space	
d. Evidence for this Outcome (if available) <i>Is there any supporting evidence (e.g. stories, testimonials, qualitative survey findings, documents, links etc.) for this outcome? If yes, please describe or provide examples. You may also refer to your quantitative indicator data.</i>	
Please write your text/narrative in this blank space	
e. Pilot Activities' Contribution to this Outcome <i>How have one or more pilot activities specifically contributed to the observed change? Please provide details of the Pilot's role in directly or indirectly influencing this outcome. How was the implementation of the Pilot effective?</i>	
Please write your text/narrative description in this blank space	



Type of pilot activities' contribution to this Outcome (Tick all that apply)	At which scale was the Outcome observed? (tick all that apply)
☐ Capacity building (e.g. providing training, resources etc.) ☐ Advocacy, media & campaigning (e.g. influencing opinions, policies, behaviours) ☐ Facilitating dialogue/collaboration/networking among stakeholders or other cities ☐ Providing technical expertise or support ☐ Knowledge sharing or producing scientific research ☐ Data collection, dissemination, access & management ☐ Recommendations or advisory (toolkits, guidelines etc.) ☐ Citizen engagement, informing & educating (e.g. awareness raising, participatory decision-making etc.) ☐ Financial, funding & investment support ☐ Other (please specify) _____	☐ District and community-level ☐ City-wide level ☒ Regional level ☐ National level ☐ Other (please specify) _____ _____

Key Outcome No. 2
Insert text here: Headline or brief title of the Outcome
a. Outcome Description <i>What observable change occurred directly or indirectly because of the pilot? Please describe the specific change you observed focusing on whose behaviour changed, when the change happened, and where it took place.</i>
Text: Please write your text/narrative description in this blank space

Systemic levers related to above Outcome (tick all that apply)		The Outcome was...	Type of change (tick all that apply)
☐ Technology & infrastructure ☐ Data & Digitalisation ☐ Finance & funding ☐ Social innovation ☐ Participation & engagement ☐ Governance, policy & regulation ☐ Capacity & capability building ☐ Procurement		☐ Expected ☐ Unexpected	☐ Knowledge gained and/or awareness raised ☐ Attitude, mindsets, behaviour shifted ☐ Technical expertise or skills developed ☐ New practices and actions adopted ☐ Solutions implemented/adopted ☐ New agreements, partnerships, networks or platforms formed ☐ Funds raised or investment secured ☐ New policies, guidelines, strategies, laws, regulations etc. ☐ Others (please specify) _____
	The change became observable in...		
	☐ Year 1 ☐ Year 2		
b. Beneficiaries of this Outcome Which stakeholders benefitted directly or indirectly from this Outcome? Please specify individuals, groups, organisations or communities.			
Text: List all relevant stakeholders/actors here		Type of stakeholder/s (tick all that apply)	
		☐ Local government (city councils, municipal departments, climate agencies, politicians etc.) ☐ Regional government ☐ National government ☐ Public-private partnerships ☐ Private sector (businesses, SMEs etc.) ☐ Civil society, community orgs or NGOs ☐ Academia/Research Institutions ☐ Funders /investors/financial institutions ☐ Citizens/Residents ☐ Peer or partner city ☐ Other (please specify) _____	



c. Importance of this Outcome

Why is the change significant in your city's context? You may consider the city's long-term impact pathways to climate-neutrality beyond the pilot duration.

Please write your text/narrative in this blank space

d. Evidence for this Outcome (if available)

Is there any supporting evidence (e.g. stories, testimonials, qualitative survey findings, documents, links etc.) for this outcome? If yes, please describe or provide examples. You may also refer to your quantitative indicator data.

Please write your text/narrative in this blank space

e. Pilot Activities' Contribution to this Outcome

How have one or more pilot activities specifically contributed to the observed change? Please provide details of the Pilot's role in directly or indirectly influencing this outcome. How was the implementation of the Pilot effective?

Please write your text/narrative description in this blank space

Type of pilot activities' contribution to this Outcome (Tick all that apply)

- ☐ Capacity building (e.g. providing training, resources etc.)
- ☐ Advocacy, media & campaigning (e.g. influencing opinions, policies, behaviours)
- ☐ Facilitating dialogue/collaboration/networking among stakeholders or other cities
- ☐ Providing technical expertise or support

At which scale was the Outcome observed? (tick all that apply)

- ☐ District and community-level
- ☐ City-wide level
- ☐ Regional level
- ☐ National level
- ☐ Other (please specify) _____

☐ Knowledge sharing or producing scientific research ☐ Data collection, dissemination, access & management ☐ Recommendations or advisory (toolkits, guidelines etc.) ☐ Citizen engagement, informing & educating (e.g. awareness raising, participatory decision-making etc.) ☐ Financial, funding & investment support ☐ Other (please specify) _____	
---	--

Key Outcome No. 3

Insert text here: Headline or brief title of the Outcome

a. Outcome Description

What observable change occurred directly or indirectly because of the pilot? Please describe the specific change you observed focusing on whose behaviour changed, when the change happened, and where it took place.

Text: Please write your text/narrative description in this blank space

Systemic levers related to above Outcome (tick all that apply)	The Outcome was...	Type of change (tick all that apply)
☐ Technology & infrastructure ☐ Data & Digitalisation ☐ Finance & funding ☐ Social innovation ☐ Participation & engagement ☐ Governance, policy & regulation ☐ Capacity & capability building ☐ Procurement	☐ Expected ☐ Unexpected	☐ Knowledge gained and/or awareness raised ☐ Attitude, mindsets, behaviour shifted ☐ Technical expertise or skills developed ☐ Solutions implemented/adopted ☐ New agreements, partnerships, networks or platforms formed ☐ Funds raised or investment secured
	The change became observable in...	



	☐ Year 1 ☐ Year 2	☐ New policies, guidelines, strategies, laws, regulations etc. ☐ Others (<i>please specify</i>) _____
b. Beneficiaries of this Outcome Which stakeholders benefitted directly or indirectly from this Outcome? <i>Please specify individuals, groups, organisations or communities.</i>		
Text: List all relevant stakeholders/actors here		Type of stakeholder/s (tick all that apply)
		☐ Local government (city councils, municipal departments, climate agencies, politicians etc.) ☐ Regional government ☐ National government ☐ Public-private partnerships ☐ Private sector (businesses, SMEs etc.) ☐ Civil society, community orgs or NGOs ☐ Academia/Research Institutions ☐ Funders /investors/financial institutions ☐ Citizens/Residents ☐ Peer or partner city ☐ Other (<i>please specify</i>) _____
c. Importance of this Outcome <i>Why is the change significant in your city's context? You may consider the city's long-term impact pathways to climate-neutrality beyond the pilot duration.</i>		
Please write your text/narrative in this blank space		
d. Evidence for this Outcome (if available) <i>Is there any supporting evidence (e.g. stories, testimonials, qualitative survey findings, documents, links etc.) for this outcome? If yes, please describe or provide examples. You may also refer to your quantitative indicator data.</i>		
Please write your text/narrative in this blank space		

e. Pilot Activities' Contribution to this Outcome <i>How have one or more pilot activities specifically contributed to the observed change? Please provide details of the Pilot's role in directly or indirectly influencing this outcome. How was the implementation of the Pilot effective?</i>	
Please write your text/narrative description in this blank space	
Type of pilot activities' contribution to this Outcome (Tick all that apply)	At which scale was the Outcome observed? (tick all that apply)
☐ Capacity building (e.g. providing training, resources etc.) ☐ Advocacy, media & campaigning (e.g. influencing opinions, policies, behaviours) ☐ Facilitating dialogue/collaboration/networking among stakeholders or other cities ☐ Providing technical expertise or support ☐ Knowledge sharing or producing scientific research ☐ Data collection, dissemination, access & management ☐ Recommendations or advisory (toolkits, guidelines etc.) ☐ Citizen engagement, informing & educating (e.g. awareness raising, participatory decision-making etc.) ☐ Financial, funding & investment support ☐ Other (please specify) _____	☐ District and community-level ☐ City-wide level ☐ Regional level ☐ National level ☐ Other (please specify) _____

Please add more tables below for additional Outcomes in this section as needed



Strategic Lessons & Insights from your pilot journey

Outcome No. 1	Related Pilot Activity or Activities
Your text: Headline or brief title of Outcome	Your text
Lessons and Insights for the Pilot <i>What are the learnings in relation to this specific outcome and/or related to this pilot activity's implementation or delivery? Please check prompt questions in the Guidance Note Annex accompanying this template.</i>	
Please write your text/narrative description in this blank space	

Outcome No. 2	Related Pilot Activity or Activities
Your text: Headline or brief title of Outcome	Your text
Lessons and Insights for the Pilot <i>What are the learnings in relation to this specific outcome and/or related to this pilot activity's implementation or delivery? Please check prompt questions in the Guidance Note Annex accompanying this template.</i>	
Please write your text/narrative description in this blank space	

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Outcome No. 3	Related Pilot Activity or Activities
Your text: Headline or brief title of Outcome	Your text

Lessons and Insights for the Pilot

What are the learnings in relation to this specific outcome and/or related to this pilot activity's implementation or delivery? Please check prompt questions in the Guidance Note Annex accompanying this template.

Please write your text/narrative description in this blank space

Please add more tables below for additional Insights in this section as needed

a. Cross-cutting Insights for the Pilot in Year 2

Please use the following space to outline any broader lessons from implementing multiple pilot activities, or related to several outcomes, impact pathways or levers in your pilot's portfolio. You may also highlight here any additional insights that you did not have the chance to illustrate elsewhere.

(Please check prompt questions in the Guidance note accompanying this template.)

Please write your text/narrative description in this blank space



b. Reflection on Systemic Barriers

Please reflect on the key structural, financial or institutional barriers encountered throughout the implementation of your programme. How have they impacted the delivery of your pilot activities and what strategies or adjustments were made to overcome them? How might these barriers influence future efforts to replicate or expand the pilot activities in your city or others? What solutions do you see as most effective for addressing the national and EU level barriers encountered during your Pilot? (Please also check prompt questions in the Guidance note accompanying this template.)

Please write your text/narrative description in this blank space