

# NET ZERO CITIES



**EU MISSION PLATFORM**

**CLIMATE NEUTRAL AND SMART CITIES**



NetZeroCities has received funding from the H2020 Research and Innovation Programme under grant agreement n°101036519.



# CCC learnings

summary of EC feedback on CCCs that received the Mission Label

April 2024



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## IMPORTANT DISCLAIMER

This presentation describes potential improvements to the CCCs suggested by the EC review team.

All of the analysed CCCs have been awarded the Mission Label.





# Mission Label

- By April 2024, **33 cities received the Mission Label** (10 in Window 1 and 23 in Window 2).
- The European Commission **provided each awarded city with a detailed feedback on their CCC**; for W2 it's much more detailed and the expectations are higher than for W1.
- This presentation pulls together **key learnings from the EC feedback**:
  - General observations about the EC assessment;
  - The structure of the assessment;
  - Key findings: areas of interest, most commonly addressed issues.





# General observations on the feedback

The EC is looking for **confidence** your plan is going to work.





# General observations on the feedback

- The feedback is based on a **very thorough analysis of the CCC**: numbers - recalculated, data – compared (e.g. to avoid double counting), discrepancies - noted, BAU - recalculated to the regular NZC emission gap, inventories – checked against national averages to spot deviations.
- The EC pays attention to the **credibility of methodology**.
- The EC pays attention to a **complete coherent narrative** (no cliffhangers!) that addresses the **[INFO KIT](#)**.
- The EC is aware of cities **current involvement with the EU**, e.g. participation in other initiatives like LGDs (build synergies!) or infringement cases (don't avoid mentioning difficult topics!).
- The CCC is expected as a **realistic assessment** of city, not a PR document.





# Structure of the EC assessment

1. Recommended areas for further support
2. The city's climate neutrality ambition
3. Quantification of emissions and planned reduction
4. Status quo analysis
5. Overall strategy
6. Pathways and action portfolio
7. Horizontal topics (*digitalisation and smart city, air quality, social aspects, citizen engagement and participation*)
8. Monitoring/ iterations
9. Investment planning



# 1. Recommended areas for further support

/6 most common gaps to be addressed in future iterations

- 1. DETAIL and quantification:** increase the level of detail in climate interventions, specifying project-level information and quantifying impacts; quantify climate funding, annual allocations, and future capital needs; refine investment plans with detailed breakdowns;
- 2. Risk management:** develop comprehensive risk management frameworks for investment plan implementation, including de-risking measures and clarity on roles and responsibilities.
- 3. Sectors:** cover all sectors, include actions targeting waste management, circular economy, and energy efficiency measures.





# 1. Recommended areas for further support

/6 most common gaps to be addressed in future iterations

4. **Monitoring:** develop robust monitoring systems for effective progress tracking.
5. **Engagement and collaboration:** engaging diverse stakeholders, exploring synergies with other programs, and enhancing citizen engagement.
6. **Gases:** clarify inclusion of gases in emissions targets.





## 2. The city's climate neutrality ambition

- Include **clear statement** on reaching the climate neutrality objective, that is **at least 80% reduction** of GHG emissions as compared to the baseline/ Business as Usual scenario (Economic Model).
- Provide accurate description of the **geographical boundaries** (including maps is recommended).
- Any exclusions in the CCC **must** be aligned with the Expression of Interest.
- Present the GHG inventory covering **all sectors, required scopes and gases** (refer to Info Kit) - and if not, explain any exclusions. Common gaps: missing data of AFOLU and IPPU sectors, scope 3 emissions, F-gases and airports/ ports.





## 2. The city's climate neutrality ambition

- **Harmonise data to the required baseline and reduction target:** different reporting systems (eg based on climate budgeting), several inventories/ data sources used *(example: the city also provides GHG inventory data for the year 2019 from different sources. If compared to those 2019 levels, the GHG emissions reduction envisaged by the CCC would become -69.6%)*
- **The results of the economic model** will be checked against the emission inventory/ies to see if target would still reach 80%.
- **Describe the methodology**, i.e., input data, demographic projections, the Economic Model.
- Clarify whether the **SECAP** or actions coming from other plans were incorporated in the CCC. Which are “old actions” vs. “new (CCC) actions”?
- Provide robust strategy for **offsetting residual emissions**.





# 3. Quantification of emissions and planned reduction

- Present a **clear, robust and credible quantification of the reduction of emissions** resulting from the Action Plan (emissions gap); robust assumptions and methodologies.
- Include **dynamics of population** data, and its expected evolution to 2030.
- Include the approach to **F-gases** and the definition of **CO2-eq.**
- Provide a **credible quantification and timeline for residual emissions strategy** supported with analysis that proves the residual emissions truly are ‘unavoidable’ - and are not a result of target-setting procedure.
- Present strategies for offsetting that consider **cost analysis**, technological and other challenges.





# 3. Quantification of emissions and planned reduction

## COMMON GAPS

- **Discrepancies** were noted between baseline inventory tables, emissions reductions per action, and emissions gap table totals. Cities should be extremely clear about what is covered by the target and that there is coherence between quantified reductions from action plan and inventory.
- **Scope 2 emissions** were often **wrongly attributed** to IPPU and AFOLU, while they pertain to Stationary Energy.
- **Offsets/ Residual Emissions** were not presented in line with definitions included in the Info Kit.
- **Net biogenic carbon sinks** were not calculated in line with the Info Kit.
- *Good example– Florence*





## 4. Status quo analysis

- Provide **comprehensive data considering** building performance levels, power plants, existing RES generation and future potential, waste heat potential, modal shares, fleet characteristics, waste/wastewater generation and management, population structure and vulnerable groups, digitalisation, air quality and circular economy.
- Present **detailed data on each sector**, incl. AFOLU and IPPU (this is a frequent mistake when using the Economic Model),
- Include information about **what went wrong/ is not working**, especially whenever a promising policy has failed, there has been a lot of backlash or there is an ongoing legal procedure for lack of implementation.
- Inclusion of very **precise and quantified** targets is much appreciated (*e.g., A city aims at “95% of citizens to have at least one cycle lane within 300 meters of their homes and to have 308 km of cycle lanes by 2018”*).



# 5. Overall strategy/ strengths



- Include **various action types** (technical, urban spaces, NBS, governance/ regulation, social innovation, digital transformation, adaptation, gender, culture).
- Provide **detailed description of actions** (e.g., number of PV plants, number of EVs, length of new transport infrastructure, number and type of stakeholders that will be trained) with quantitative and qualitative approach, including plans for targeting residual emissions.
- Tackle the **big emission gaps**. *For example: an impressive 10 solar energy plants are planned until the end of 2024 in Izmir, a massive replacement of fossil-fuel vehicles with e-vehicles is anticipated in Izmir (e.g. 400 e-buses will be purchased by 2024 for a total of over 1,400 by 2030), bold transport plan in Barcelona.*
- Address **often ignored sectors**. *For example: inspirational plan in the AFOLU sector in Izmir, reduction of Scope 3 emissions in Barcelona, Heidelberg, Ioannina, Leuven, and Lahti*
- Address **hard-to-abate emission sources**. *For example: port operations and maritime transport in Marseille.*



# 5. Overall strategy/ strengths



- Present **very stable** governance structure and strong mandate.
- Focus on **climate justice** and commitment to ensuring a **fair transition** with equitable distribution of benefits. *For example, Izmir: “the Cittaslow Neighbourhood Program, a transformative approach promoting a slower-paced daily life, ii) the Emergency Solution Team, set out to identify service deficiencies from the citizens' perspective in the underdeveloped areas of the city, and iii) the Young Sustainability Ambassadors program aimed at mobilizing young people to contribute to sustainable development goals and capacity building”.*
- Include strong **participation aspect**. *For example, the creation of the “Citizen engagement Network” in Espoo for city employees with best practices, challenges and experiences on issues related to citizen engagement and the ambition in the implementation of the approach: "from consultation to partnership" to strengthen collaboration and co-creation & bringing climate issues to participatory structures already in place in the city. Or Malmo having almost 200 signed up organisations to cooperate in the building sector.*
- Provide good **evidence for comprehensive stakeholder involvement** during the plan preparation.





# 5. Overall strategy/ strengths



- **Include pilots** (districts or projects) to test solutions. *For example: Renewable Energy Communities (CER) in Parma; pilot project in Pecs to develop a green space inventory and a green register, which will form the basis for the implementation of the carbon-offset strategy; District C in Guimaraes will be used as a testbed for interventions and then adapted to be expandable and replicable in the city.*
- **Propose continuous monitoring** of the CCC implementation and co-benefits. *For example: Guimarães intends to revise and update the CCC on a yearly basis, Barcelona is particularly commended for the inclusions of 6 different indicators dedicated to climate justice, social inclusion, fair access to energy and energy poverty, as well as vulnerabilities across population group, Tampere will analyse Climate Budgets on a yearly basis, Florence considers costs of air pollution in the economic model taking into account impacts (costs) of local air pollution on health, crop losses, material and building damage, and biodiversity loss.*



# 5. Overall strategy/ aspects to consider/ further improve



- Include **proactive** risk management and strategies to cope with **crises**.
- Pay attention to **high – impact actions!** Assess risks on the target. *(e.g., interventions on the infrastructure networks while there is the risk that citizens and private parties may decide to disconnect from/not reconnect to the network)*
- **Align** city energy requirements (e.g. population increase!) and expected CO2 reductions.
- Present **realistic level of ambition** and funding towards actions.
- Tackle the use of **private cars**, especially in highly congested cities, also urban freight and civil aviation, incorporate smart and digital solutions in transport planning.



# 5. Overall strategy/ aspects to consider/ further improve



- Include a **variety** of CCC signatories/ stakeholders.
- Include potential **setbacks** to likely unpopular actions.
- Quantify **early and late outcomes** associated with the impact pathways.
- Include [monitoring indicators](#) beyond stationary energy and renewable energy.
- Address **energy poverty** and **affordable housing** issues.





# 5. Overall strategy/ barrier removal/ enabling environment

- Identify **barriers in different aspects** (financial, political, social, technical etc), and **sectors**, (AFOLU and IPPU, heating and cooling, RES, related to digital transition, waste and stationary energy sector etc.).
- **Lay out a detailed process** on how/when the barriers will be addressed and effectively removed - or your plan to approach this process.
- *For example: Regarding incentives schemes, the city increased the national incentive (+10%) for the replacement of the boilers and the renovation of the facades. An internal risk is that the municipal structure could be undersized to follow the additional work needed for the implementation of the plan and to manage large amounts of funds and responsibilities.*





# 5. Overall strategy/ governance

- Present governance structure **aligned to the climate-neutrality purpose.**
- Include a **clear description** of the internal governance structure, existing gaps and how those are addressed, including any possible internal governance changes to be implemented (e.g. Transition teams, working groups, task forces)
- Assess the economic and human **resources** needed to **maintain** the (new) governance structures and internal municipal functioning.
- Seek to identify **synergies with national programmes** and ensure coordination of different governance levels and municipal departments.
- Developing **linkages with peri-urban and rural areas** is recommended.





# 5. Overall strategy/ integration

- Include **multi-stakeholder** and **multilevel** collaboration and co-creation.
- Identify **multidimensional impacts** of the actions portfolio.
- Present an **integrated** approach.



# 6. Pathways and action portfolio/ maturity



- Provide enough **detail in the actions** as to be implementable and to give confidence that emissions gap can be closed by 2030 - **credibility**.
- Provide **quantitative/measurable description of the actions** including short and medium term targets, roles and responsibilities at different levels, as well as a quantification of the expected impact besides the estimated emission reduction to support the overall goal of closing the emissions gap.
- Positively noted when cities **distinguish between more mature and less mature actions** in their portfolio.
- Include analysis of **trade-offs** entailed in their actions.
- Develop **impact pathways covering all sectors**, including IPPU and AFOLU.
- Use **systemic levers**.





## 6. Pathways and action portfolio/ balance

- Include actions **responding to major emission** generating activities (solutions not always fully developed and do not always consider all available technical options).
- Propose a portfolio of actions **balanced between all sectors** (IPPU&AFOLU).
- Prove **credibility of planned actions** - evidence-based approach, risk assessment / risk mitigation.
- Provide **balance in the field of financing actions**, without focusing on one sector in the IP; cost effectiveness of actions sometimes called into question (e.g. when the investment required by an action is disproportionately high relative to its emission reduction).







# 6. Pathways and action portfolio

## Observations at sector level - evaluation criteria:

- Sufficient detail on current emissions, including breakout by source (e.g., Built Environment broken out by building type, ownership type, etc.)
- Deep enough description of main barriers and clear plan for addressing them
- Consideration of all appropriate technology options available in each sector
- Consideration of all main policy areas for intervention
- Sufficient detail on proposed actions and their emission reductions to allow for their assessment in terms of suitability and feasibility.
- Alignment between areas with most investment and current share of emissions





## 6. Pathways and action portfolio/ sector – stationary energy + H&C

- Develop a comprehensive approach to decarbonising **heating and cooling** in buildings sector.
- Clearly **increase ambition** against the status quo and take all relevant technology options into account (e.g. heat pumps).
- Provide a well-balanced set of **demand reduction side** (e.g. building renovation, deep retrofits), **supply side** (thermal networks, integration of RES) and **integrated measures** (creation of energy communities).
- Evaluate the potential for enhancing the district heating system by **reducing its flow temperatures**; greater utilisation of renewable energy sources and waste heat is recommended.
- Address **cultural heritage**.





# 6. Pathways and action portfolio/ sector – stationary energy + H&C

## Best practices:

- Leuven: Interesting action is the collective renovation, which includes energetic renovations and investments in renewable energy in specific neighbourhood. This action is supported by creation of neighbourhood renovation cooperative.
- Pecs: An impressively detailed description of building stock and thermal systems, including useful maps; description of building performance; number of gas boilers, heat pumps, and district heating customers.
- Barcelona: Planned network in La Sagrera, where heat and cold will be produced by means of high-efficiency heat pumps using groundwater from river and solar energy. Impressive 85% of energy needed for heating, cooling, and domestic hot water will be self-generated from renewables





# 6. Pathways and action portfolio/ sector – renewable energy sources

- PV - considered by nearly all cities.
- Solar thermal, wind, geothermal - considered by many cities.
- District heating, biomethane from waste, and hydrogen for storage - considered by some cities.
- More information needed on the **availability of land** and supporting **infrastructure needs** such as upgrading grid and storage potential.
- Consider organizational arrangements (eg. energy communities) and integration of RES in mobility.
- Assess the individual capacity of planned **individual** RES installations.
- Consider **energy storage**.





## 6. Pathways and action portfolio/ sector - transport

- Include **specific measures addressing the reduction of the need for motorized transport**, for modal shift and for shared transport;
- Assess **impacts beyond CO2 emissions** on changes in mobility for individual actions (i.e. on energy use or transport activity), to allow for an evaluation of the actual targets;
- Address emissions from **private cars, urban freight, airports**.
- Incorporate **innovative measures** (e.g., waterborne transport, cable car)
- Explore the **digitalization potential** and leveraging new data sources to enhance their transport planning.





# 6. Pathways and action portfolio/ sector - transport

## Common areas for improvement:

- Holistic approach and neglect of certain measures: Some cities demonstrate awareness of stakeholder collaboration, emphasizing private, public, and academic involvement. However, gaps remain in addressing Low Emission Zones, Urban Vehicle Access Regulations and digital integrations.
- Emphasis on electrification is common but optimizing and shifting demand through sustainable modes (e.g. active mobility) and logistics improvements are often overlooked.
- Lack of detail.
- Monitoring.



# 6. Pathways and action portfolio/ sector - transport



## Best practices:

- Leuven shows comprehensive planning, including realistic implementation strategies and stakeholder engagement and acknowledges the importance of alliances with various stakeholders.
- Pecs demonstrates a broad range of planned actions, covering areas like park & ride, modal shift, and public transport promotion.
- Parma clearly assigns actions to stakeholders with associated investment requirements, providing a transparent roadmap for emissions reduction.



# 6. Pathways and action portfolio/ sector - waste



- Provide emissions **data** on waste composition, generation, separation and management; breakdown on emissions per sub-sector.
- Address waste prevention, waste management, wastewater, sludge recycling and reuse, management of biodegradable waste and stormwater, waste and heat recovery, waste to energy, circular economy and waste-to-x (alternative waste treatment technologies).
- **Link all the stakeholders** involved in further alignment of the emission reduction effort.
- Provide detail.





# 6. Pathways and action portfolio/ sector - waste



## Best practices:

- Ioannina: Plan is very ambitious; very promising proposal for food waste management that includes private sector and some associations
- Izmir: Several Circular Economy ideas are planned, in particular the development of policies for Construction & Demolition waste recycling and reuse, food waste reduction and smart waste metering.
- Barcelona: Ambitious industrial decarbonisation programme focused on key sectors relevant to waste management and emissions reduction. Initiatives focused on food, textiles, and fashion industry look promising.





## 6. Pathways and action portfolio/ sector – AFOLU + NBS

- Provide full detail on the emissions/ a breakdown by **agriculture**, urea application, **livestock**, **other land uses** or other activities such as biomass burning without energy recovery liming, indirect N<sub>2</sub>O or harvested wood products.
- Include actions that **address the full AFOLU sector**, not only NBS or other singular components.
- Assess **risks related to NBS** like space availability, emissions related to maintenance, or climate hazards should be addressed.
- Provide detailed analysis of the current and future **carbon sequestration potential** of natural sinks within the city boundaries.





# 6. Pathways and action portfolio/ sector – AFOLU + NBS

## Best practices:

- Leuven – comprehensively address AFOLU sector and NBS
- Izmir – particular focus on tackling agriculture and livestock emissions
- Marseille - strong emphasis on co-benefits, including access to nature, healthy and eco-friendly food, adaptation, social housing, job creation
- Barcelona – several innovative NBS measures



# 6. Pathways and action portfolio/ sector – IPPU



- Include **city-level actions** to reduce emissions, refined assessment of emissions from the sector, creating - even small - virtuous mechanisms and positive engagement.
- IPPU sector is most often **underdeveloped**, including omission of the sector from the emissions inventory and underdeveloped action portfolios.



# 6. Pathways and action portfolio/ sector – IPPU



## Best practices:

- Ioannina: Businesses Energy-Saving Program that finances subsidies for energy efficiency upgrades, program of seminars and workshops.
- Leuven: A pathway and action portfolio focusing on Energy-Efficient and Green Energy Industrial Processes. Plan thoroughly addresses industrial sector transition, includes all key stakeholders relevant to implementation.
- Izmir: A dedicated “Green industry” Working Group that will prepare action and investment plans to promote sustainable production methods, green industry projects.





# 7. Horizontal topics – digitalisation

- Provide more **details** on digital innovation/ transformation strategy, smart city strategy, including: the timeline for implementation, assessment of the dependencies with other actions in the plan and cost-benefit analysis for the most complex initiatives.
- Cover **data governance aspects** / ecosystem of data in the city with interoperability, transparency and reusability are the core, inclusion of georeferenced data is very useful in urban matters.
- Good example: Ioannina





# 7. Horizontal topics – air quality

- Provide an **assessment of the status quo**.
- Evaluate the potential **co-benefits of actions or risks in terms of air quality** (e.g. Is the use of biomass-burning for energy impacting indoor air quality?)
- Highlight synergies across actions with air quality indicators in portfolio - linking actions and pathways to expected air quality improvements.
- Explain how **air quality monitoring, evaluation and governance** will be considered and integrated in the implementation of the CCC.





# 7. Horizontal topics – social aspects

- Provide the analysis of **positive and negative impacts from the implementation** of actions, especially on vulnerable and marginalised groups), e.g. the impact on jobs from the reduction of activity on carbon intensive sectors, the housing market, ongoing gentrification.
- Provide a **plan to mitigate** those negative impacts.
- Consider **skills bottlenecks**.
- Provide **detail**, propose **monitoring** frameworks and indicators for social dimensions (e.g. fair access to energy, access to public transport, green area quality and accessibility).





# 7. Horizontal topics – citizen engagement and participation



- Reflect **population structure** in city participatory instruments, use appropriate strategies for the selection of participants incl. **vulnerable and marginalized groups**.
- Present details on **appropriate and effective engagement strategies** (per stakeholder type).
- Take **co-creation** approach!
- Present the **influence** of citizen engagement on decision-making and policy, portfolio of actions, and governance improvements. Cities are asked to provide specific examples!
- Provide detail, especially in the role of stakeholders.





# 8. Monitoring

- Present a **clearly defined monitoring system** and methodological approach, incl. baselines for all indicators, timeline/future iterations (how often will the city measure its progress?) and governance (who will aggregate all this data into a narrative). Good approaches from Leuven, Lisbon, and Bergamo.
- **Clearly describe indicators** (quantitatively and qualitatively) measuring actual progress in all sectors, related directly to actions and co-benefits.
- **Align** indicators included in different sections of the CCC (AP + IP).
- Specific indicators related **to social cohesion and just transition** elements are much appreciated. *For example: Proportion of the population with a climatic refuge space within 10 minutes walking distance from their home in Barcelona.*





# 9. Investment planning

- Provide an appropriate **balance** between the **financing** of activities and their **impact** on emissions.
- Clarify **methodological aspects**, including scope 3 targets and economic models.
- Refine descriptions of actions by quantifying impacts and indicating specific timelines.
- Propose a detailed strategy for **promoting private sector investments** and implementing a **monitoring** system for effective **risk management**.





# 9. Investment planning

- Provide more **background on past actions** and targeted allocations per field, along with establishing clearer KPIs and milestones, especially in energy systems and transport.
- Describe the link between the **policies** and the **climate neutrality**.
- Describe **policies that target the private sector** and key stakeholders.
- Implement **additional policy options** for transport and increased energy efficiency measures in private buildings, focusing on waste management actions to align with the carbon-neutral water services goal.





# 9. Investment planning

- Explore ways to **increase funding levels** and effectively mobilize funds from various sources, bundling investments to address ticket size requirements and conducting.
- Link investments with clear climate goals and **explore innovative financing sources**, ensuring political support for confirmation and exploring national and EU grant support.
- Refine **monitoring indicators** with detailed financial metrics, enhance risk assessment and clarity on the budgeting framework, prioritizing capital formation, and providing more detail on key fields like decarbonization and transport reduction.





# EC feedback review team:

Anna Sokolowska – Presentation and review of feedback

David Brito – Impact pathways and action portfolios

Mira Conci – areas for further support, emissions, horizontal topics

Irene Vivas Lalinde – ambition, status quo, strengths, barriers, monitoring

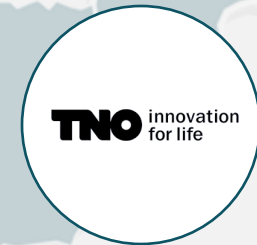
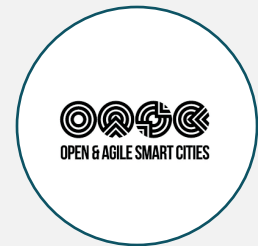
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# Get in touch with NetZeroCities!



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# BONUS: Tips for citizen participation and engagement in the CCC/ Democratic Society



## **Inclusivity: Define vulnerabilities**

- Risk of self-selection if “everyone is invited”
- Who is particularly vulnerable in your city? How can you intentionally target and include these groups?

## **Move from information/consultation to co-creation**

- What is the objective of citizen engagement?

## **Connect participation to accountability**

- Be clear: What would you like to learn from citizens?
- How do you ensure that citizens’ input will be heard and integrated?

## **Work on a Participation Strategy: moving beyond one-off engagement**

- How will you ensure that citizens know what happens with their input?
- How will you involve or inform them on later stages of the process? (e.g. MEL?)

