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.

Impact Pathways and Indicators
for your City's Climate-neutrality Transition

NZC Winter School Budapest

24th November 2023

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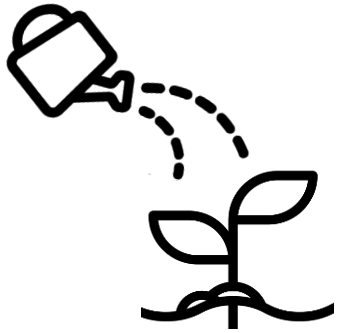
Cities gardening for systemic impacts

Sowing

2023

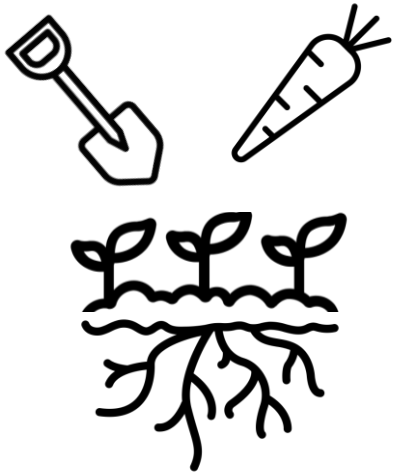
Portfolio of Actions



Watering / Sprouting

2025

Short-term Changes



Rooting / Tending

2027

Mid-term Changes

Thriving

2030 & beyond

Long-term Impacts Direct & Co-benefits

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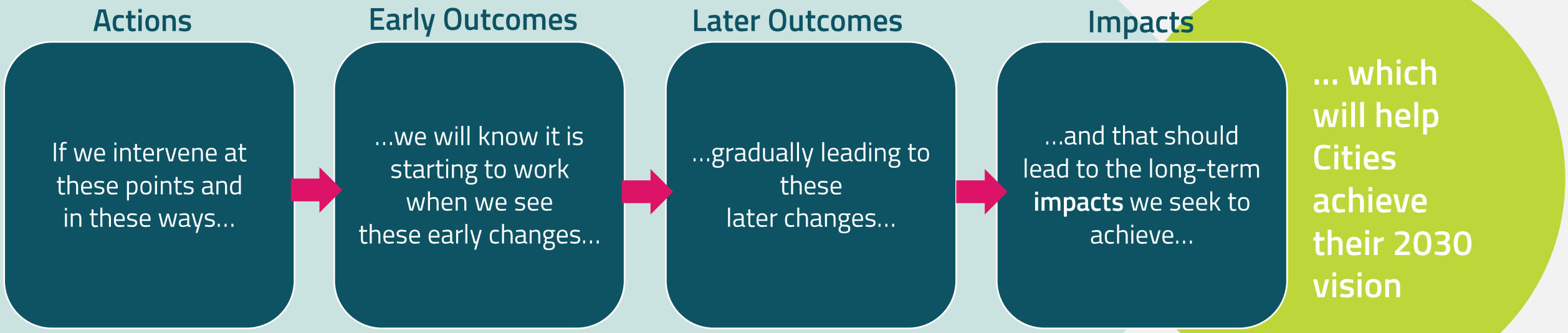
‘Impact Pathways’ tell a story about how systemic transformation is expected to unfold…

Fundamental and connected mechanisms through which complex long-term systems transition is envisioned and managed



… while considering the most important assumptions and risks

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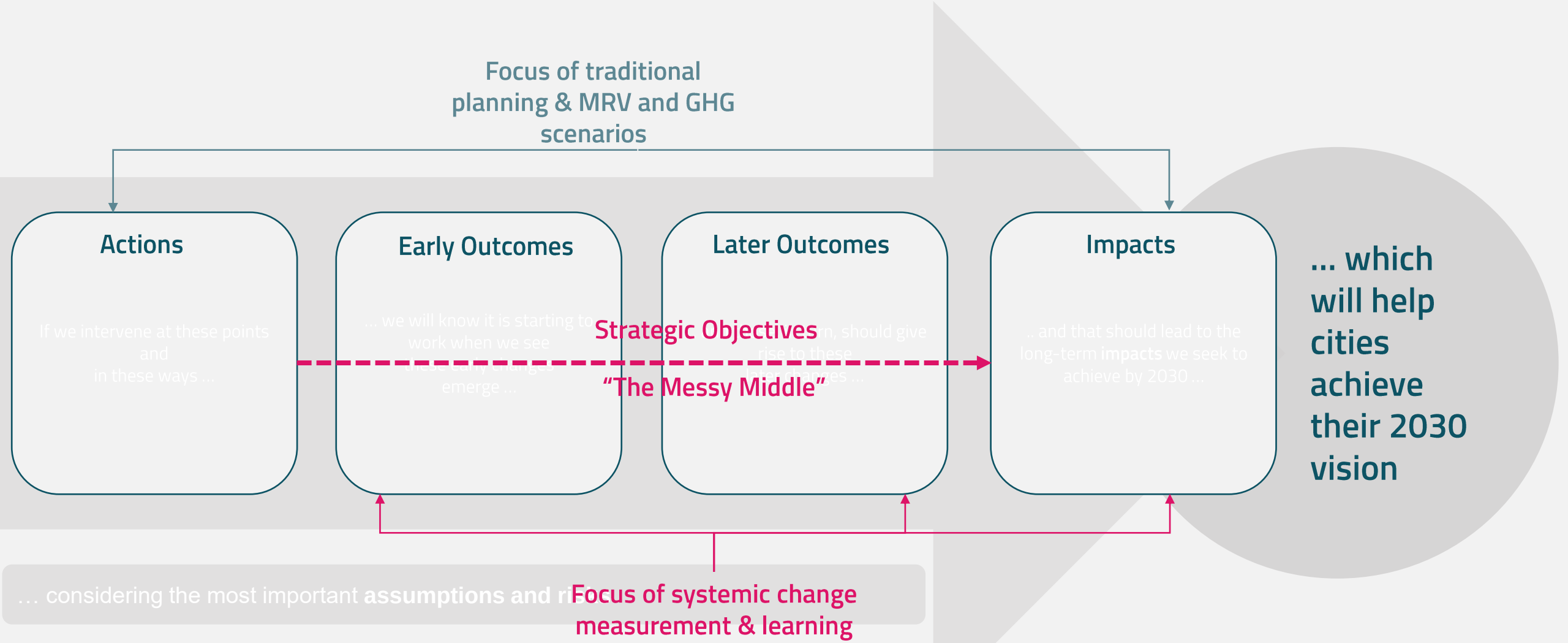
…to allow us to evaluate outcomes as they happen, not only whether the final target was (or wasn't) achieved



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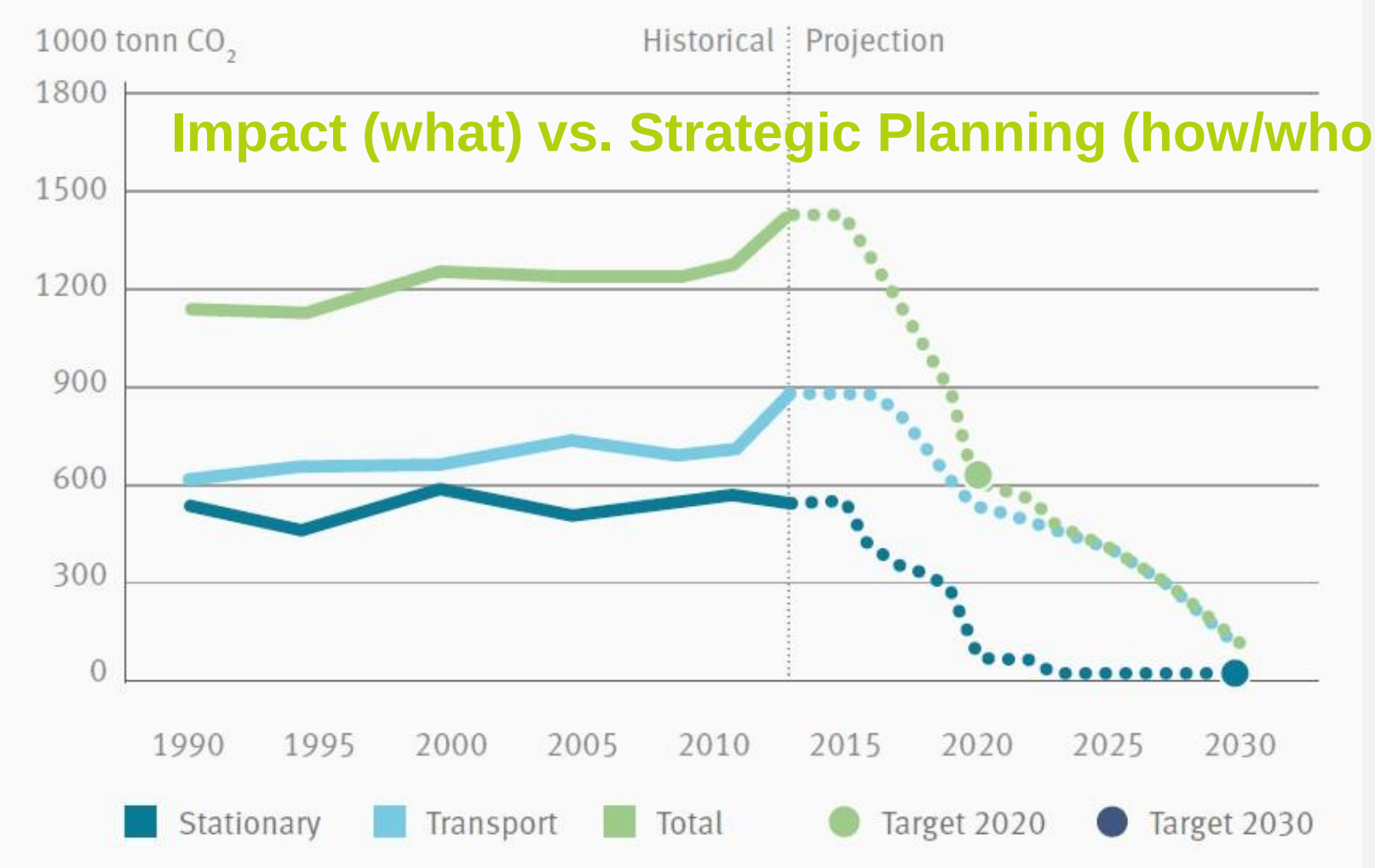

Impact (what) vs. Strategic Planning (how/who?)

*Illustrative graph only (Source: City of Oslo, 2016)

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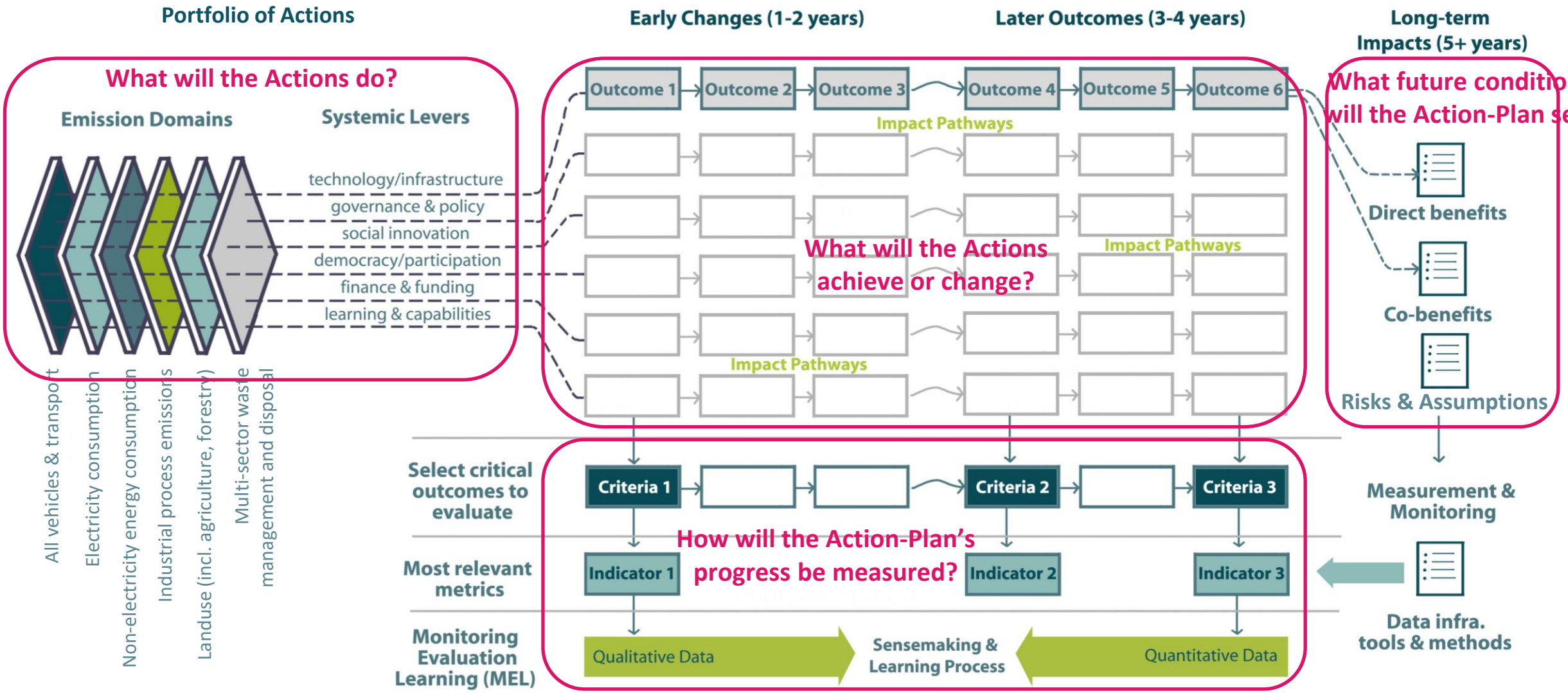
NZC Impact Framework



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Most relevant AP template Modules

A1 Emission Baseline & Gap (targets)

A2 Current Policies and Strategies

A3 Systemic Barriers/opportunities

4.1 Module B-1 Climate Neutrality Scenarios and Impact Pathways

Module B-1 "Climate Neutrality Scenarios and Impact Pathways" should list impact pathways, early and late outcomes and direct and indirect impacts (co-benefits) according to and adapted from the NZC Theory of Change and the AP Guidance – clustered by fields of action.

B-1.1: Impact Pathways

Fields of action	Systemic levers	Early changes (1-2 years)	Late outcomes (3-4 years)	Direct impacts (Emission reductions	Indirect impacts (co-benefits)
Energy systems	(Lever #1)	(Early change #1)	(Late outcome #1)	(Direct impact #1)	(Indirect impact #1)
		(Early change #2)	(Late Outcome #2)		
		(List more changes as needed)	(List more late outcomes as needed)	(List more direct impacts as needed)	(List more indirect impacts as needed)
	(List more levers as needed)	...	...	...	...
(Apply structure above for each emission domain)					
Mobility & transport					
Waste & circular economy					
Green infrastructure & nature-based solutions					

B2 Portfolio of Actions

B3 Indicators for MEL

Economic Model Annexes

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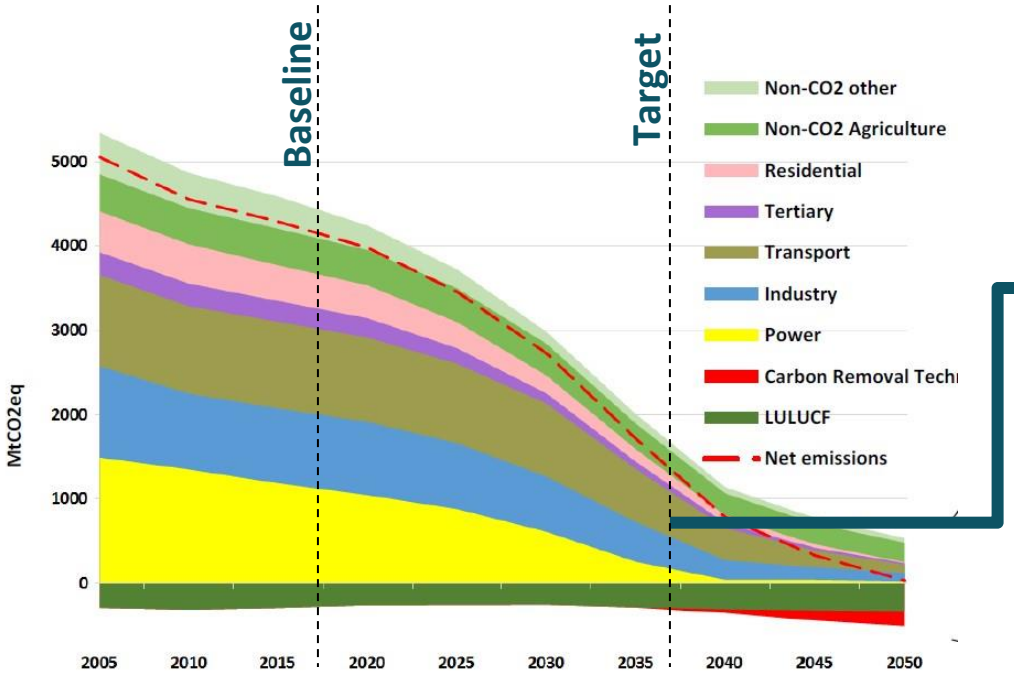
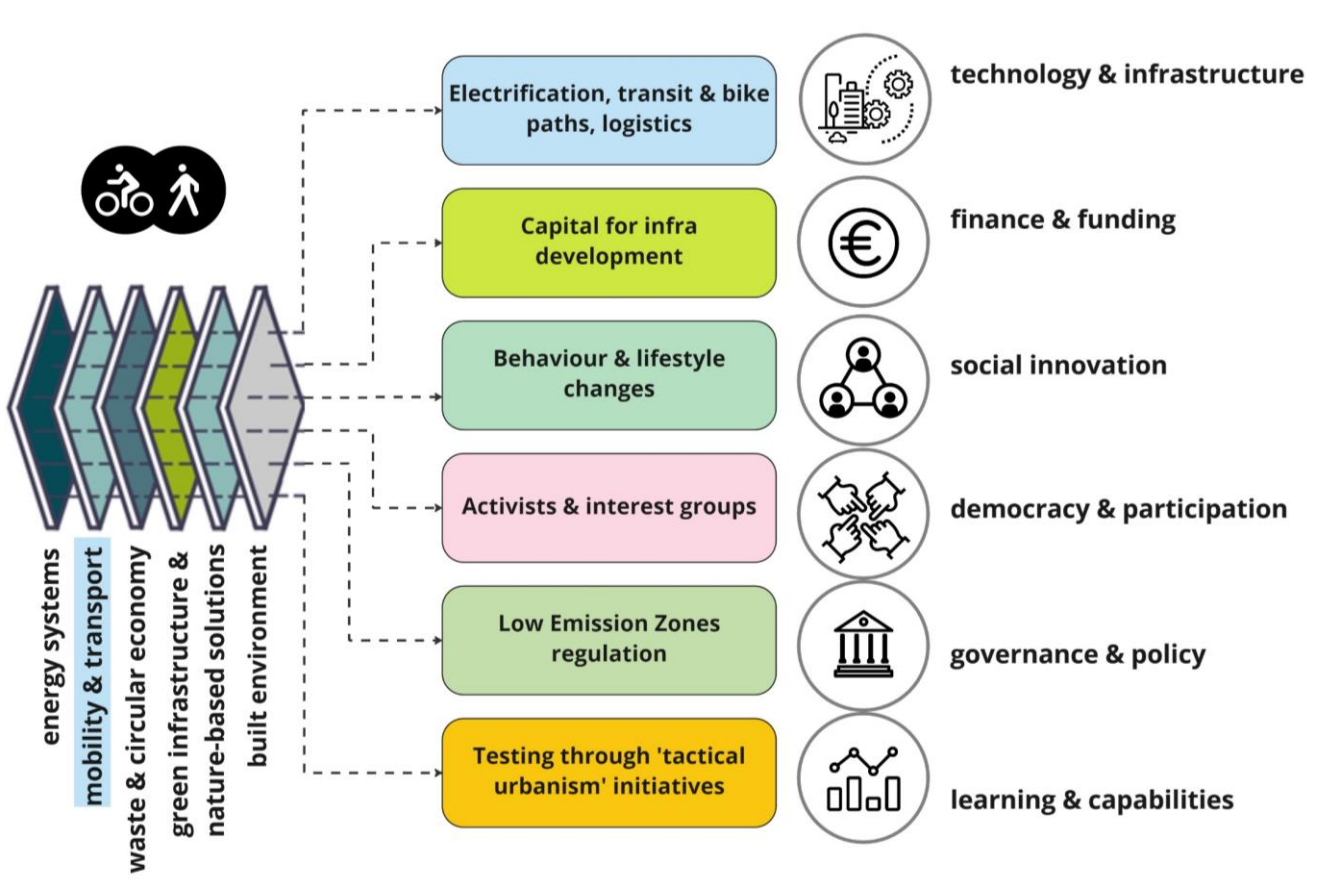
What's a good way to start?





GHG Inventory / Scenario

Field of Action: Mobility / Transport

Selected Actions (sub-sectors)

Selected Levers

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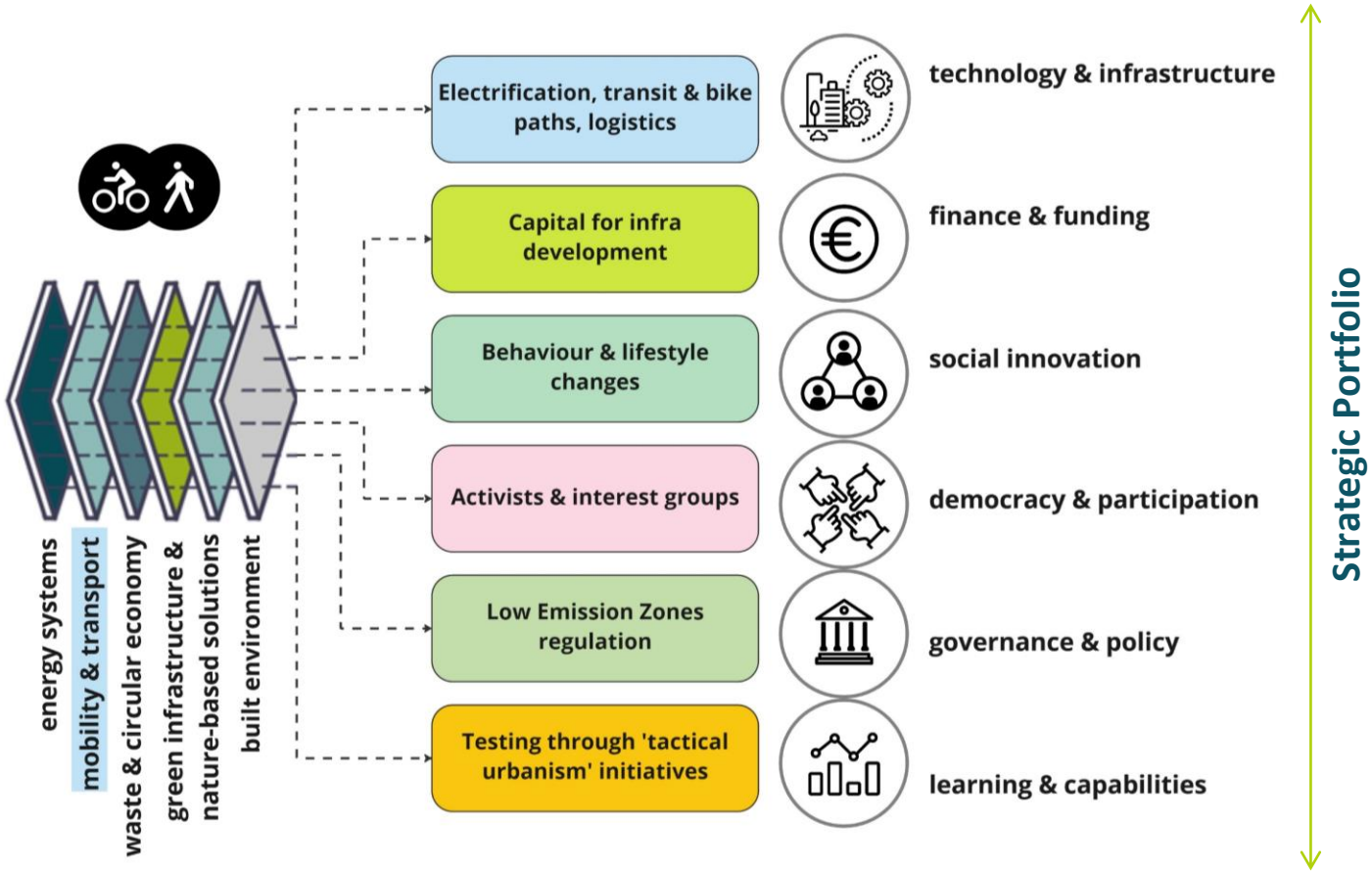
Systemic levers as an entry points



Quantified / Qualitative indirect impacts

Quantified GHG reduction

- X % emission reduction in transport sector by 2030
- Car traffic reduced by X % by 2030, compared with 2015
- X km of high-quality bike lanes constructed by 2030

- Air quality improvement
- Reduction in traffic fatalities
- Improved physical activity & public health
- Urban greening
- Flood risk reduced
- Access to jobs & economic growth

Field of Action: Transport / Mobility | **Actions** | **Levers** | **Direct Impacts** | **Co-benefits**

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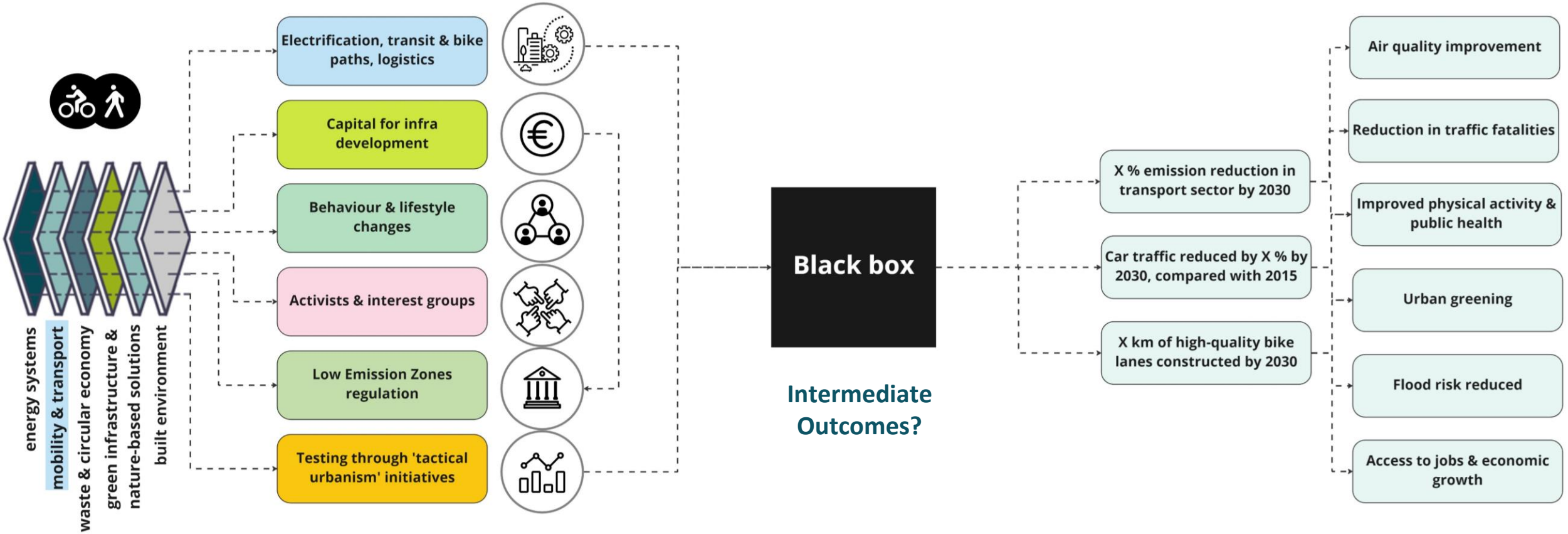
The black box (or messy middle) of strategic planning!



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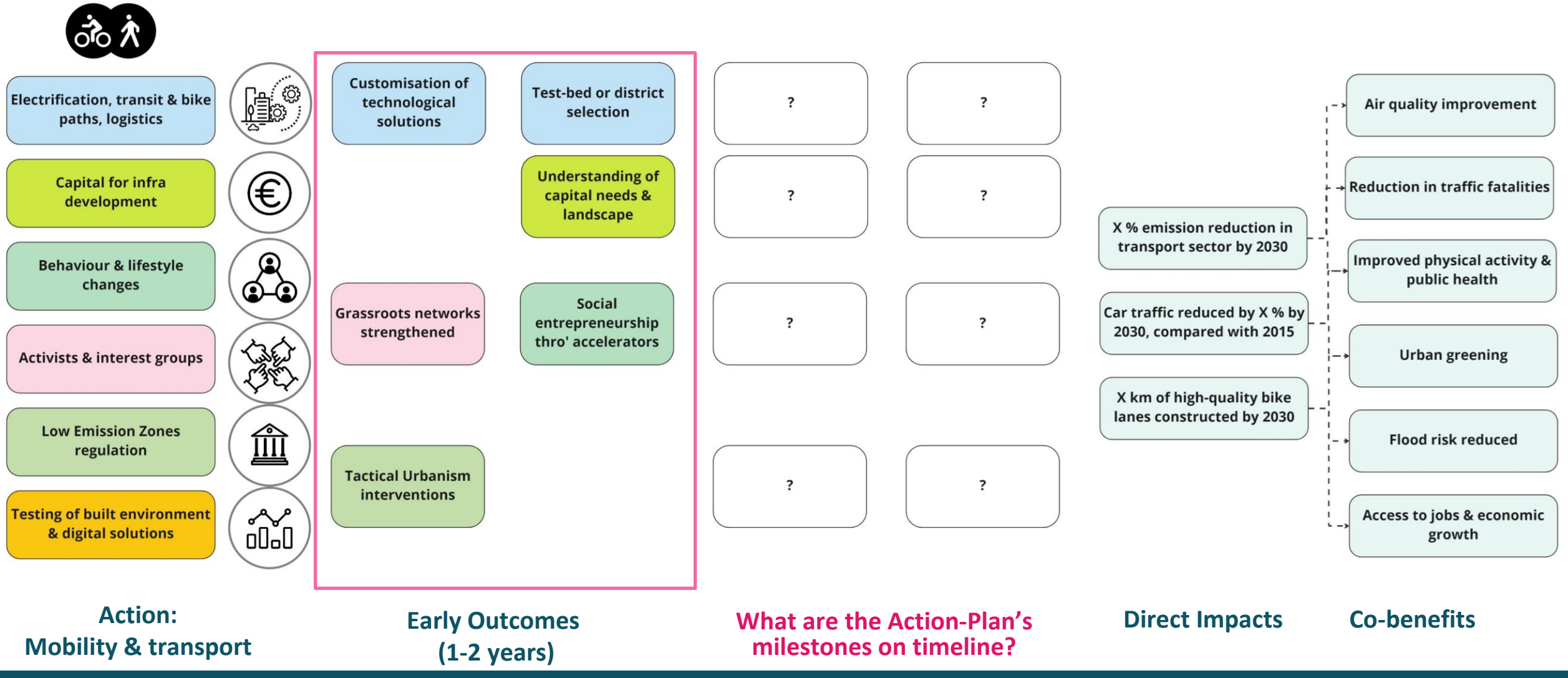
What are the Action Plan's Early Changes?



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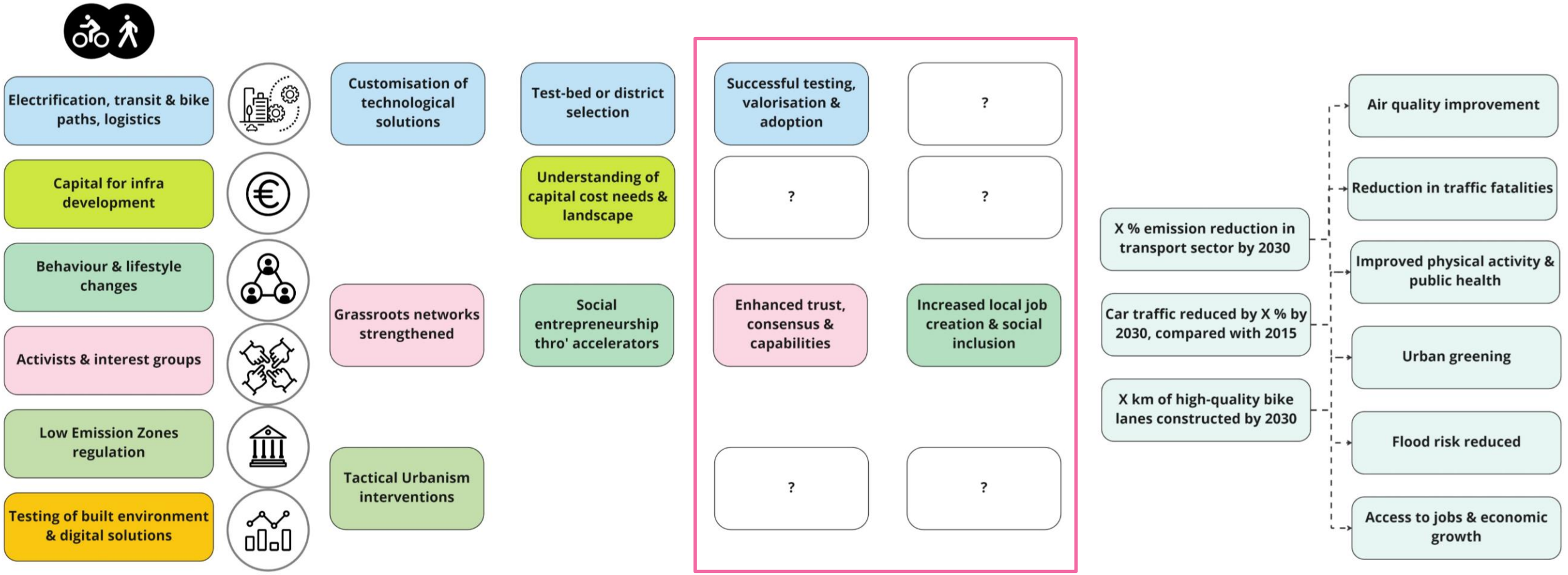
What are the Action Plan's Later Outcomes?



Action: Mobility & transport

Early Outcomes (1-2 years)

Late Outcomes (3-4 years)

Direct Impacts

Co-benefits

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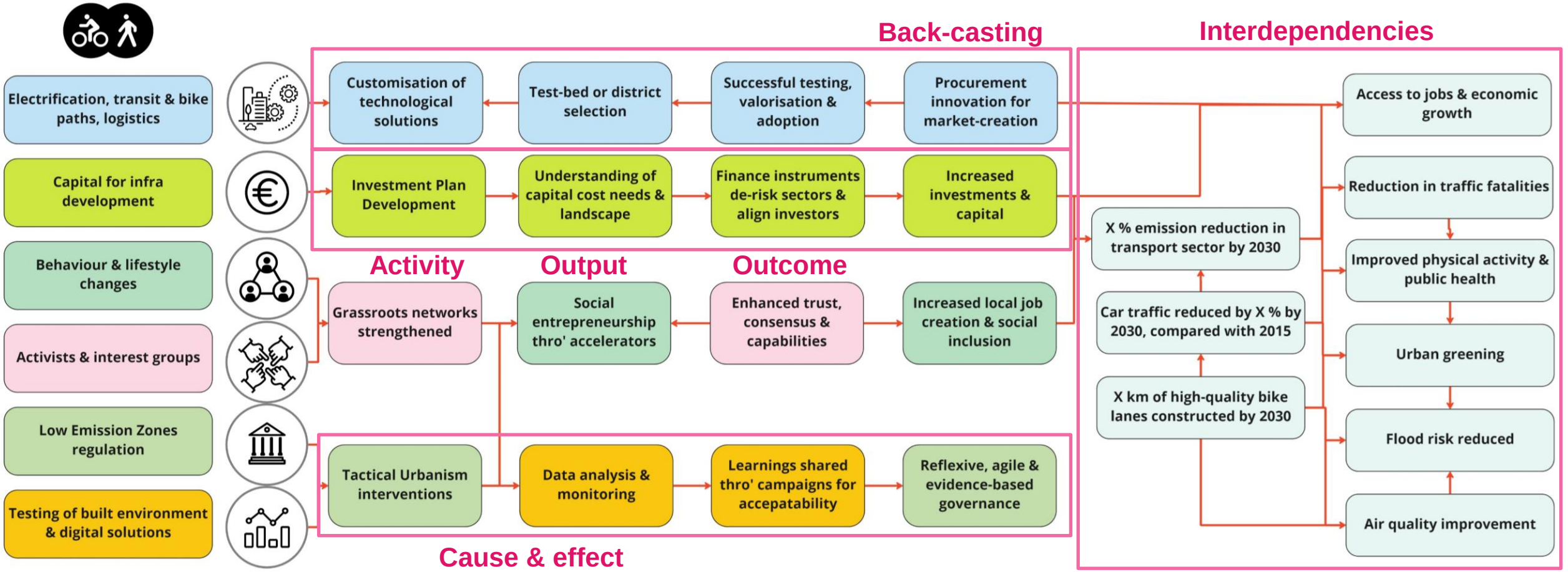
How are actions/impacts connected through pathways?



Action: Mobility & transport

Early Outcomes (1-2 years)

Late Outcomes (3-4 years)

Direct Impacts

Co-benefits

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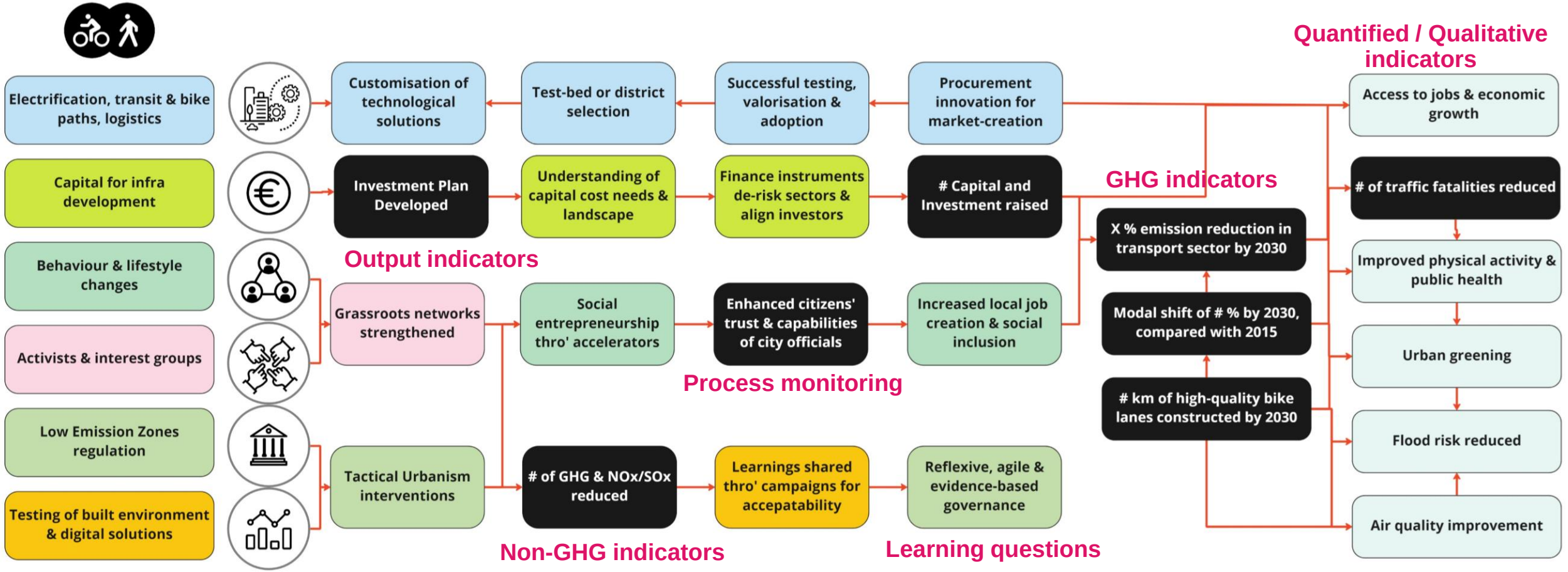
Measuring progress along pathways through indicators



Actions: Mobility & transport | **Early Outcomes (1-2 years)** | **Late Outcomes (3-4 years)** | **Direct Impacts** | **Co-benefits**

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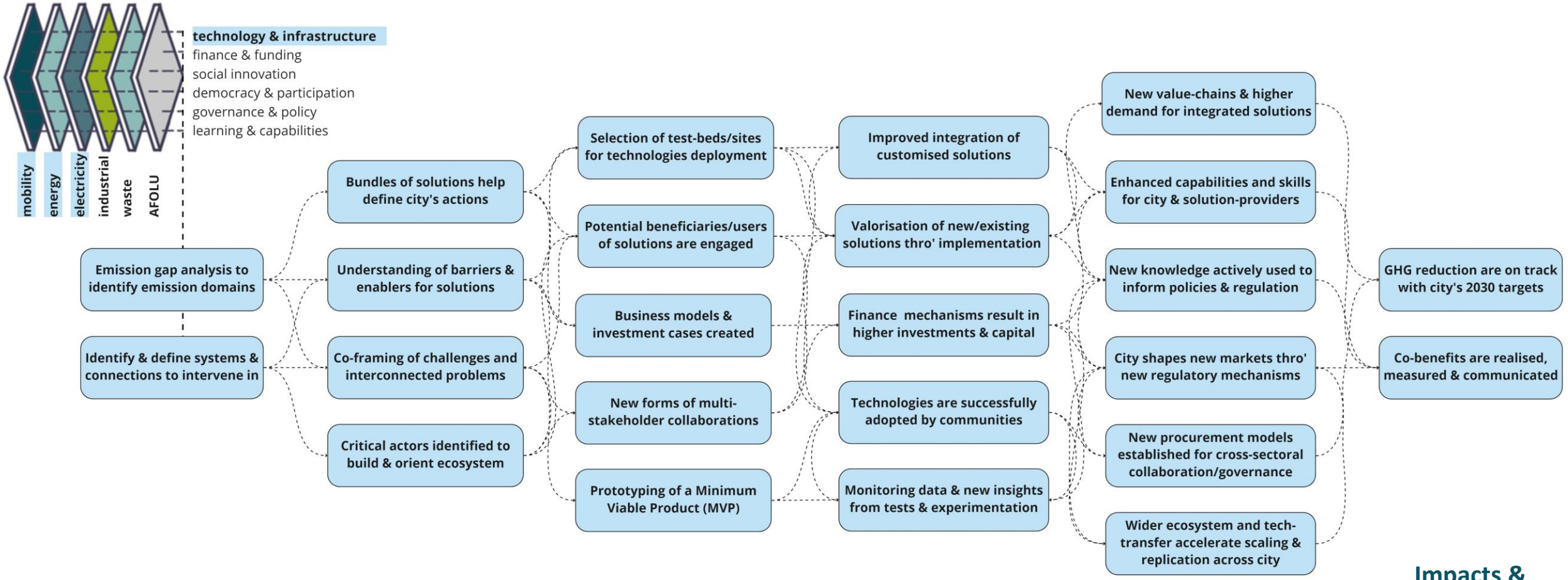
Impact Pathways example – Technological innovation & infra.



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Outcome		Impact
Shared understanding of success	⟷	Objective targets of success
How is change happening?	⟷	Measure change ex-post
Short-term / medium-term	⟷	Long-term
Process: How / Who / Where / Why?	⟷	Indicators: What?
Manage risks / uncertainty	⟷	Accountability / Compliance
Backstories	⟷	Success stories
Improve and adapt	⟷	Build evidence / report results
Qualitative insights	⟷	Quantitative data

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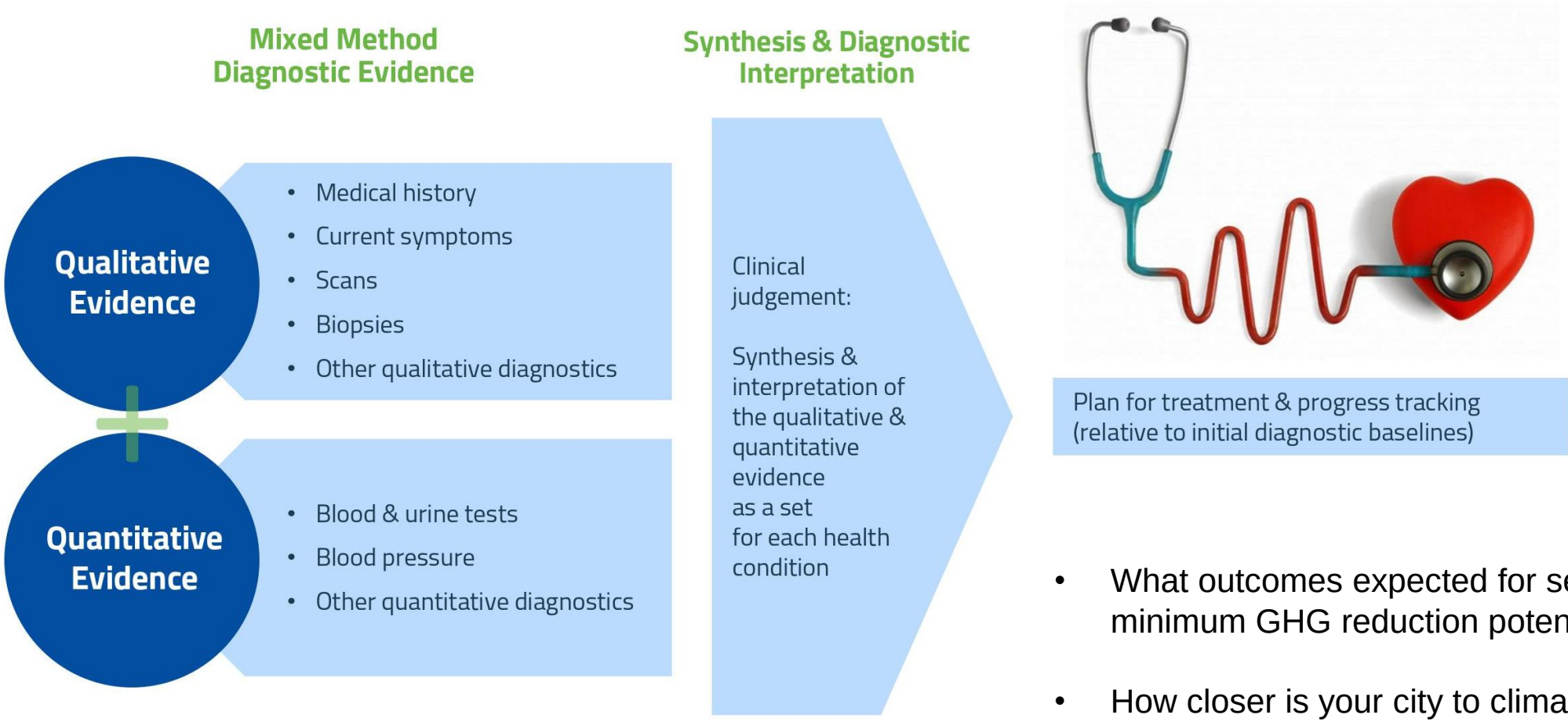
Mixed methods to measure and learn…



- What outcomes expected for sectors with minimum GHG reduction potential?
- How closer is your city to climate-neutrality?
- How will change become visible?

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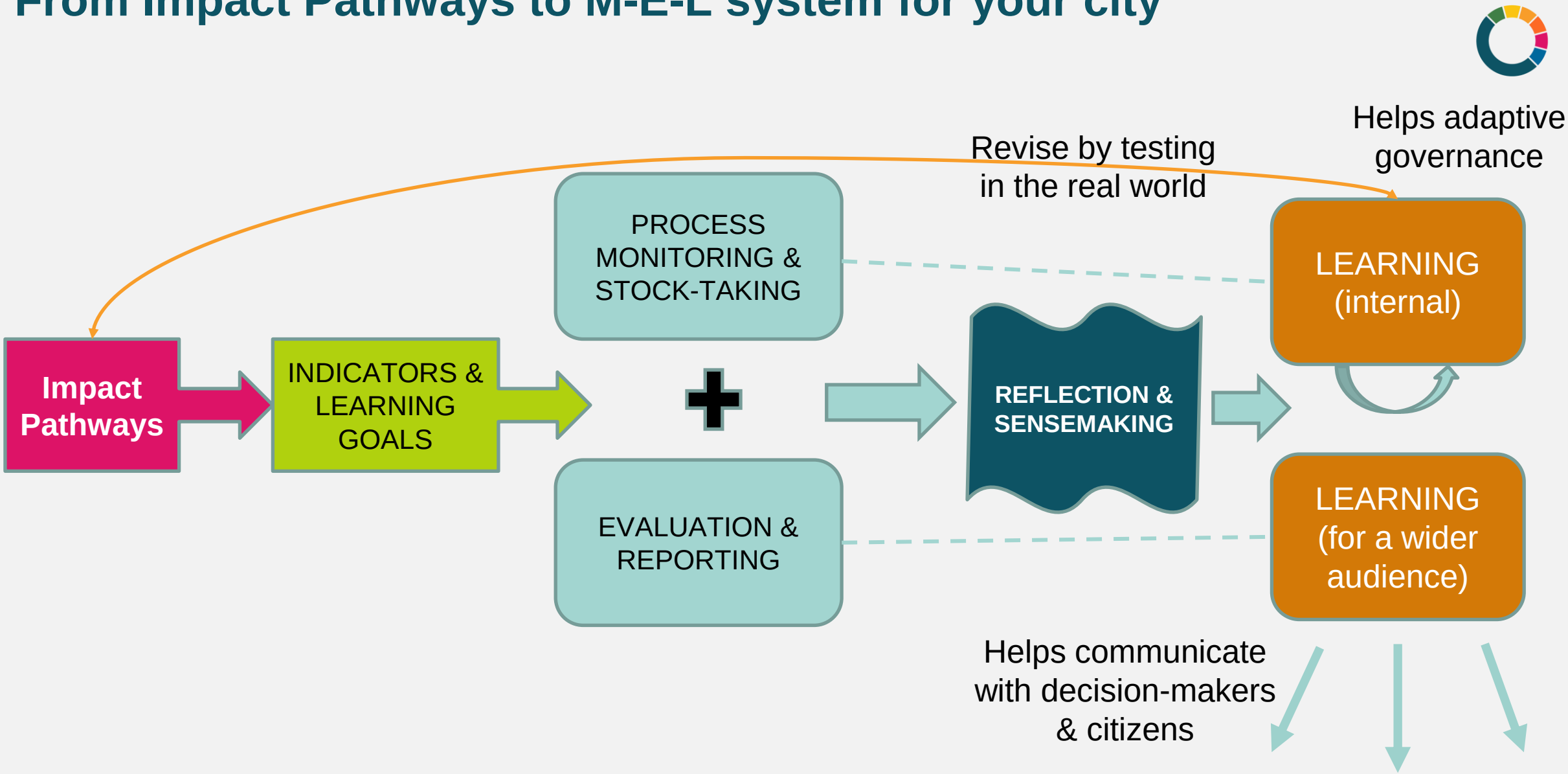
From Impact Pathways to M-E-L system for your city



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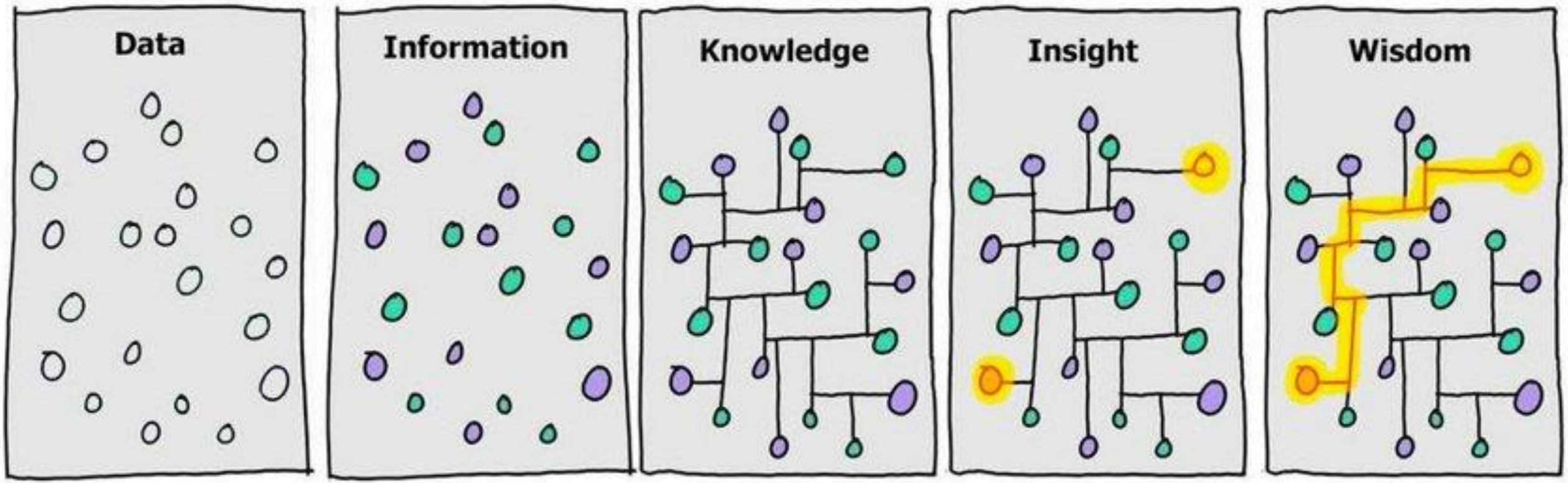
…to move from data to useable insights and wisdom



Cartoon by David Somerville

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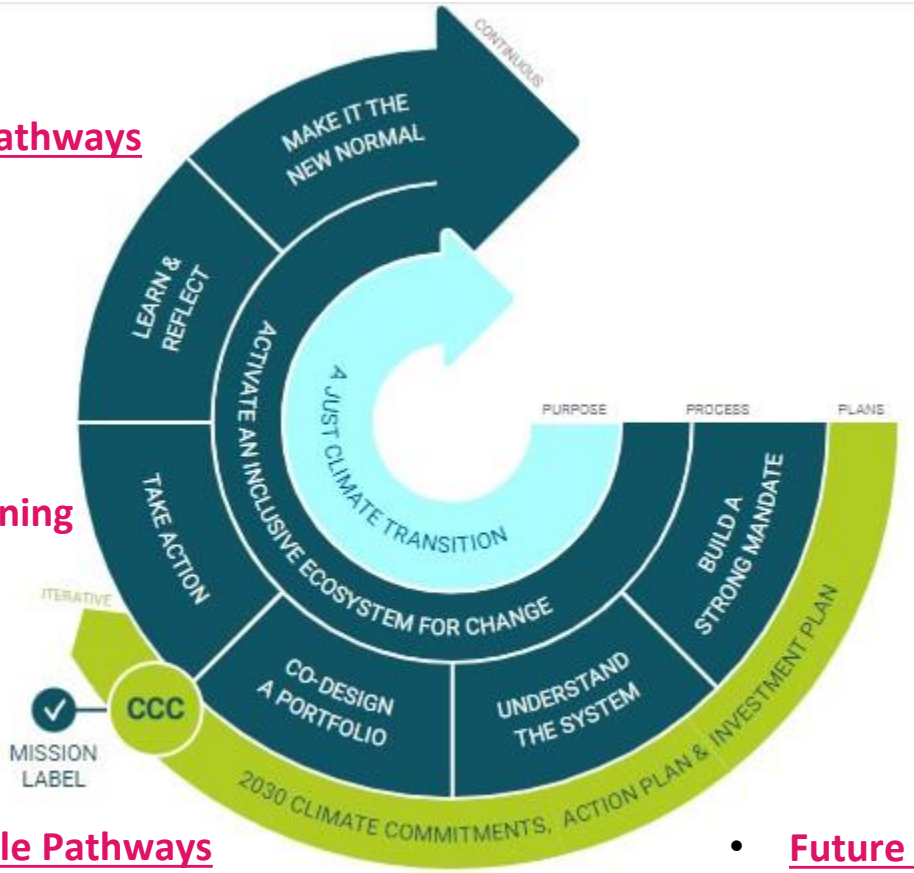
Impact Pathways/MEL within Transition Map

- Adjust Goals & Pathways
- Revise portfolios
- Sensemaking

- Operational Planning
- Track Progress
- Link Actions



- Explore Actionable Pathways
- Connect Actions to Impact
- Select Indicators

- Future Scenarios
- Selection of Levers
- Connections & Relationships

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Questions or comments?

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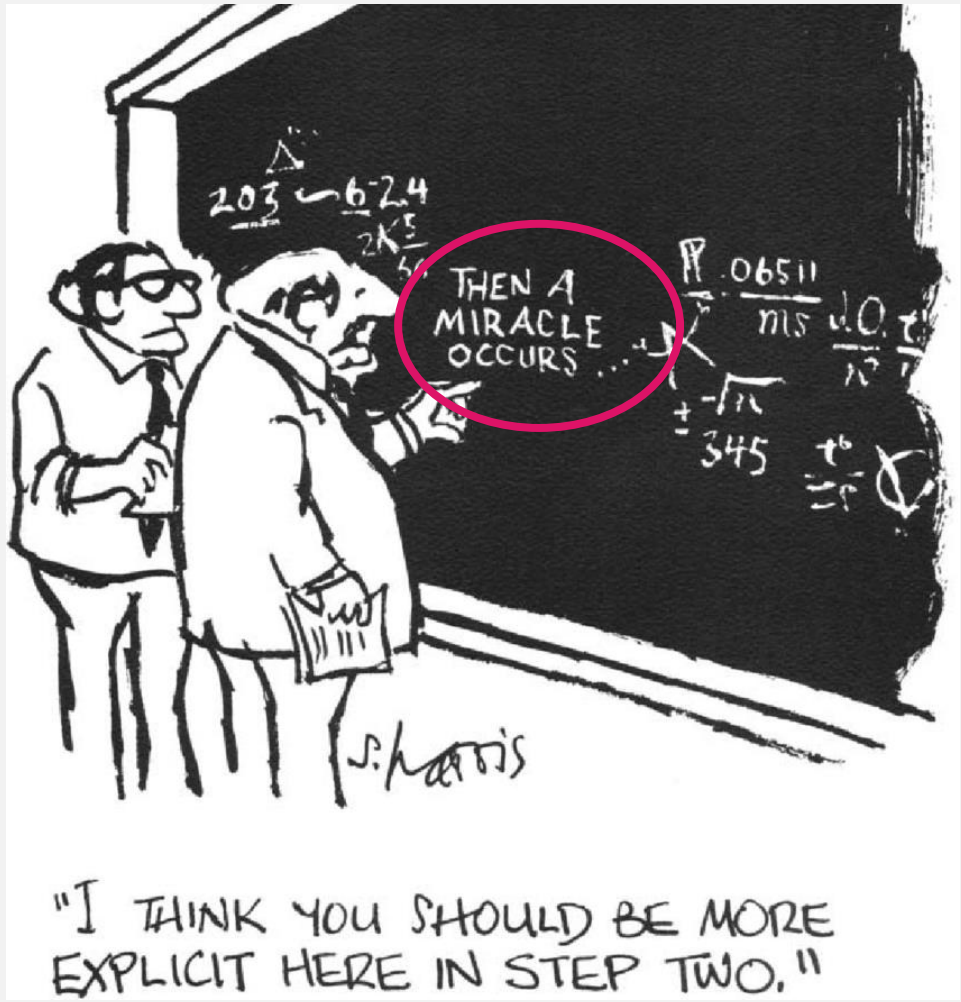
The 7-step co-creation for today

- **STEP 1:** Identify Emission Domains
- **STEP 2:** Identify Systemic Levers of Change
- **STEP 3:** Identify Early Outcomes
- **STEP 4:** Identify Later Outcomes
- **STEP 5:** Identify and Classify Impacts (Direct Impacts & Co-benefits)
- **STEP 6:** Find purpose/use of Data & Insights for MEL
- **STEP 7:** Select Indicators to measure impacts



Cartoon by Sydney Harris Inc.

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Flow of the session today

- **Short presentation:** Intro to the Overall NZC Impact Framework and Impact Pathways (15 mins)
- **STEP 1:** Identify Emission Domains (5 mins)
- **STEP 2:** Identify Systemic Levers of Change (5 mins)
- **STEP 3:** Identify Early Outcomes (10 mins)
- **STEP 4:** Identify Later Outcomes (10 mins)
- **Short presentation:** Intro to the NZC Indicators, MEL and Data Management (15 mins)
- **STEP 5:** Identify and Classify Impacts (Direct Impacts & Co-benefits) (10 mins)
- **STEP 6:** Find purpose/use of Data & Insights for MEL (10 mins)
- **STEP 7:** Select Indicators to Measure impacts (10 mins)
- **Reflections & playback from groups** (15 mins)

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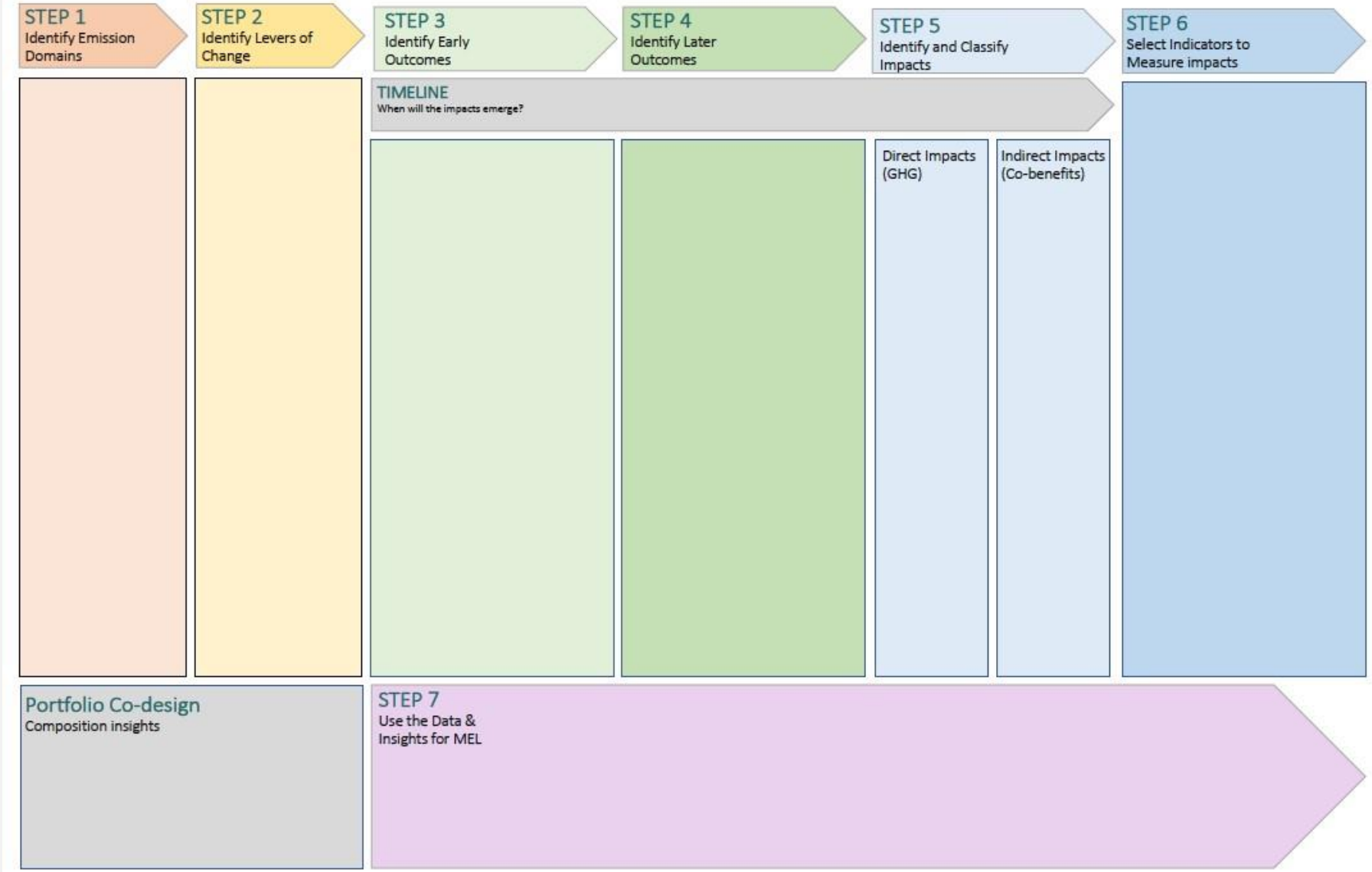
NET ZERO CITIES

Impact Pathways and Indicators for your City's Climate-neutrality Transition: A 7-Step Process

Connecting the CCC Action-planning with strategic objectives and MEL



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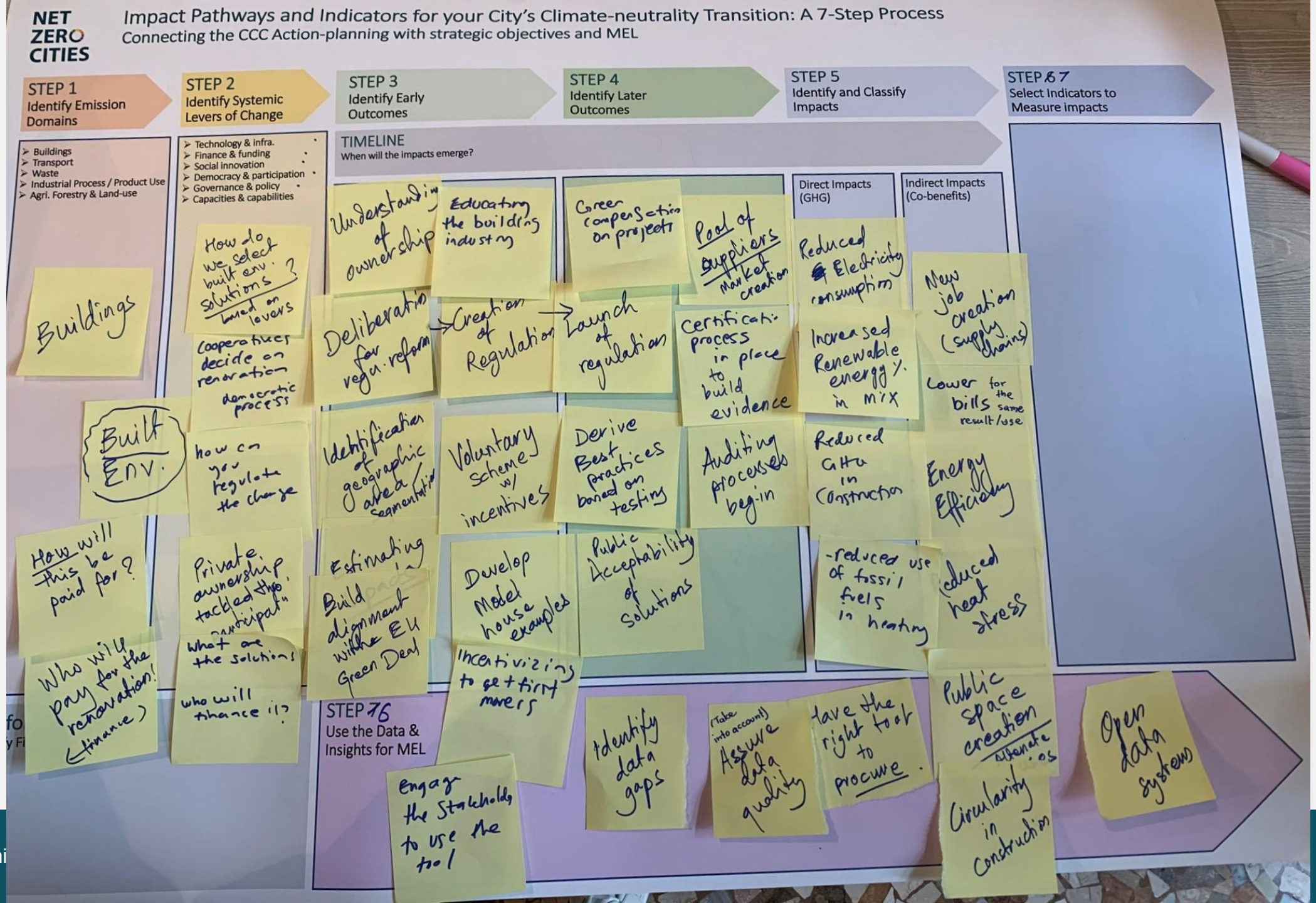
NET ZERO CITIES
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STEP 1 Identify Emission Domains
STEP 2 Identify Systemic Levers of Change
STEP 3 Identify Early Outcomes
STEP 4 Identify Later Outcomes
STEP 5 Identify and Classify Impacts
STEP 6&7 Select Indicators to Measure impacts
TIMELINE
When will the impacts emerge?
Buildings
Transport
Waste
Industrial Process / Product Use
Agri. Forestry & Land-use
Technology & infra.
Finance & funding
Social innovation
Democracy & participation
Governance & policy
Capacities & capabilities
Direct Impacts (GHG)
Indirect Impacts (Co-benefits)
STEP 6 Use the Data & Insights for MEL

Interactive Exercise 1 (30 mins)

NZC Winter School Budapest

24th November 2023

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STEP 1: Identify Emission Domains

- Has my city prepared an inventory in the last 5 years/reported a GHG emission inventory in MyCovenant or CDP-ICLEI Track based on the accounting year 2018 or more recent?
- Are there any other inventories being developed by your city? Are separate inventories being used for reporting vs. action planning internally?
- How has your city identified the most critical emissions domains (how was this focus reached?) (Largest emitters, Science-based Targets, policy/political conditions etc.)
- How could this larger Emission Domain be further reframed as a specific sub-sector or specific actions at the city-level?

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STEP 2: Identify Systemic Levers of Change

- How is your city balancing the city-wide needs in terms of emission reduction through place-based interventions with citizens and communities?
- Do the selected actions show the **interdependence of problems** across multiple types of levers in the city-wide context?
- Do the actions identify **opportunities for synergistic actions** in the city-wide context? (Which are the cross-cutting actions that apply across all the Emission Domains identified?)
- Where are the **gaps or barriers** for each Lever of Change? Which Levers are **less developed** and need the most efforts to address?

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STEP 3: Identify Early Outcomes

- Which are the **quick wins or long-hanging fruits** gained from the implementation?
- Which necessary and short-term outcomes are within the **direct mandate of the city**? (Which changes relate with “transformation inside” the municipality?
- Does the city **adequate capacity, policies or organisational set up** to implement this activity? What could negatively affect this capacity or which capacities are needed to be newly developed?
- Early Outcomes describe **who is affected** by your intervention. For whom is your intervention designed? How much does your target group need to change – or who are the **missing actors** that need to be reached?
- Which outputs will your city produce along the way? Early Outcomes could also describe physical, digital, or knowledge-based infrastructure that are made along the way.

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STEP 4: Identify Later Outcomes

- What are the Early Outcomes going to lead to or result in? What effect are they going to have at the city-wide scale?
- What is **a realistic timeline** for these results to become visible?
- What is the transformation outside the city's mandate that starts emerging as a result of Early Outcomes?
- What are the target outcomes around which you can define **possible success** based on the actions identified in the portfolio?
- Later Outcomes should be **specific and measurable** and can be tracked through activity monitoring to signal progress. Can you identify these for your city?

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Starting points for co-creating Impact Pathways

- What are the specific **changes** (outcomes) is the Action Plan seeking?
- How are the outcomes related to your city's **climate-neutrality vision**? (What is the **threshold of 'success'**?)
- Which **co-benefits/impacts** is the Action Plan aiming to achieve?
- When does the Action Plan expect to achieve these changes (timeline - **earlier or later**)?
- Where and under what **conditions/contexts** is this going to happen? What are the **necessary preconditions** for the later outcomes?
- **Who** will be affected from the Actions and how? (or who might benefit?)
- How do you think **implementation will work in practice** and how will one change **lead to** another?
- Which direct impacts and co-benefits occur **during** the changes begin to happen?
- What will your city and stakeholders and other partners **do** to make the changes happen (**activities or actions**)?
- Are there any **barriers** that may prevent making these changes happen? **(risks & assumptions)**

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Check-list for finalising Impact Pathways within the template

- Does this set of outcomes sufficiently capture the ***intent or goal*** of the Action Plan? If not, what's missing?
- Are the outcomes clearly and ***specifically*** defined? (i.e., one outcome statement)
- Are there any ***gaps*** in the impact pathways? (e.g., is there an intermediate outcome that needs to be included)
- Are the causal links as ***mechanisms*** for change clear? Can they be explained **as a story**?
- What's the ***evidence*** that supports the links between the various Impact Pathway elements? Any existing evidence or data sources? If not, what are the ***evidence gaps***?
- How do the planned ***activities/outputs*** connect and contribute to the outcomes?
- Which are the common outcomes ***across multiple levers and fields of action***?
- How could similar outcomes be ***clustered or combined*** as bold strategic objectives for coordinated actions?

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NZC Indicators, Monitoring Evaluation and Learning (MEL)

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Indicator domains for CCC AP/IP

Direct

Indirect

Greenhouse Gas Emissions (GHG)	Public Health & Environment	Social Inclusion, Innovation, Democracy and Cultural Impact Co Benefits	Economy	Resource Efficiency	Biodiversity
					

Mandatory/ optional indicators
(see indicator name)

- **Required – Black Text**
- **Recommended – White Text**

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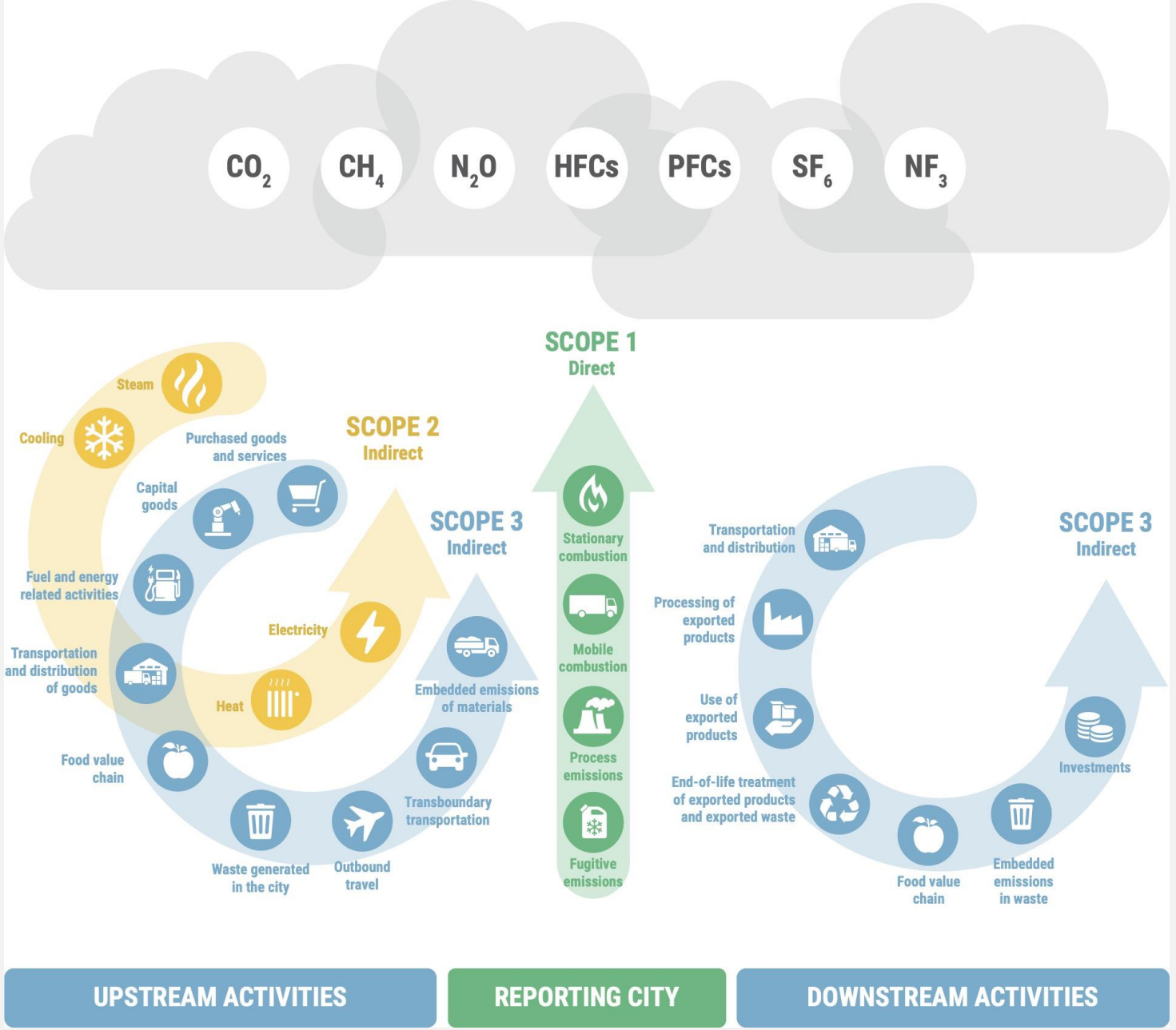
GHG Emission Scopes



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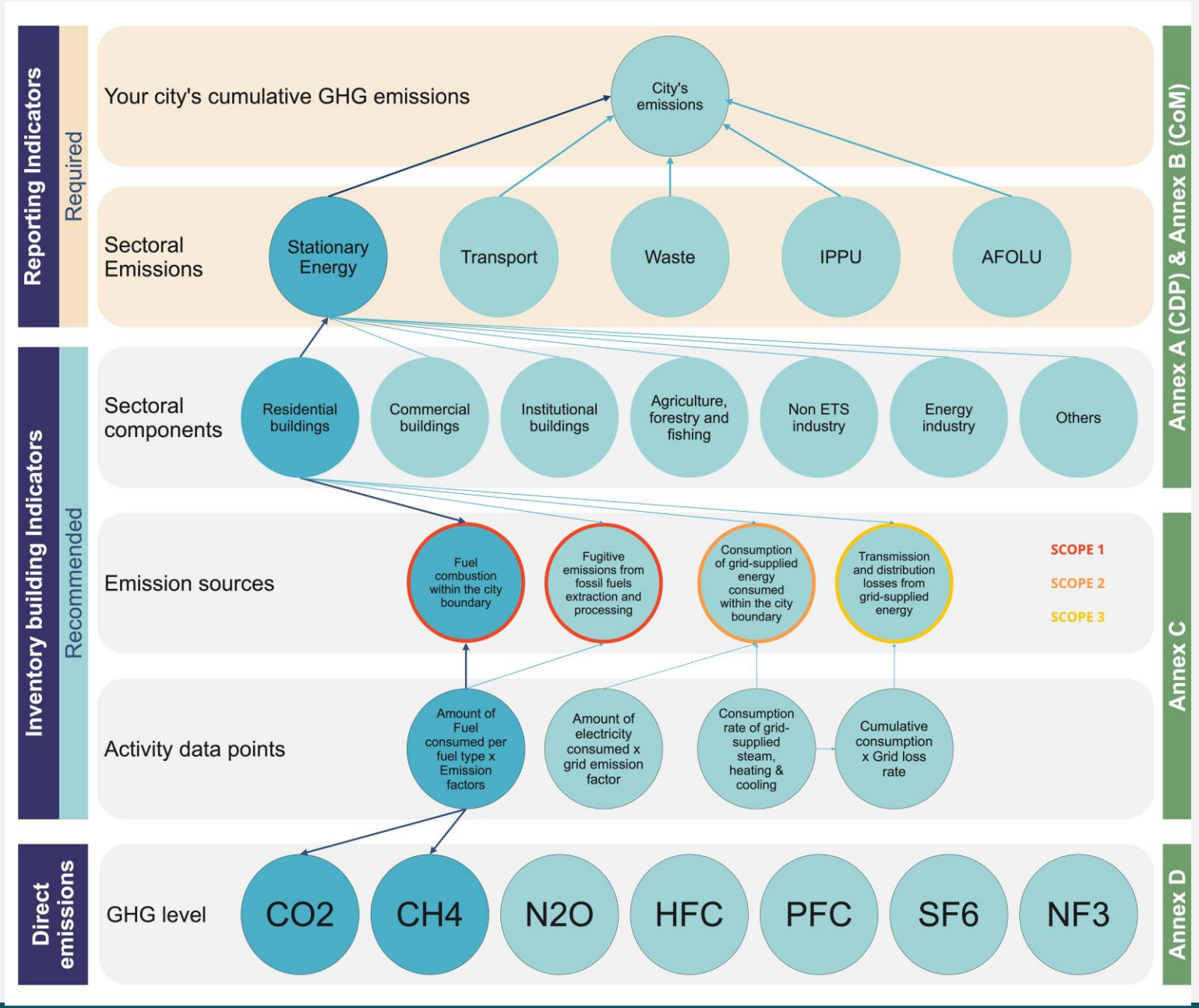
Connecting emission domains to activities



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Direct

Indirect

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Mandatory/ optional indicators
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GHG Indicators

DOMAIN	SUBDOMAIN	INDICATOR NAME	UNIT OF MEASUREMENT
Greenhouse Gas Emissions (GHG)	Stationary Energy	GHG emission from stationary energy	t CO2 equivalent
		Energy use by fuel/energy type within city boundary	MWh/year
	Transport	GHG emission from transport	t CO2 equivalent
		Fuel consumption for in-boundary transportation per fuel type	MJ/kg/kWh
	Waste	GHG emission from waste	t CO2 equivalent
		Mass of waste processed per end-of-life treatement type within city boundary	t
		Mass of waste processed per end-of-life treatement type outside city boundary	t
	Industrial Processes and Product Use (IPPU)	GHG emission from IPPU	t CO2 equivalent
		Emission generation potential per unit of input/output for industrial processes within the city	CO2 equivalent per kg of production
		Emissions from non-energy product use	T CO2 equivalent
	Agriculture, Foresty and other Land Use (AFOLU)	GHG emission from AFOLU	t CO2 equivalent
		Net annual rate of change in carbon stocks per hectare of land	t CO2/ha
	Energy	Energy (In)Dependence	%
		Local renewable energy production	% in kWh
	Grid-supplied energy (electricity, heat, steam or cooling)	GHG emission from grid supplied energy	t CO2 equivalent
		Grid specific emission factor	tCO2 eq/MWh
		Grid loss factor	
	Carbon Capture and Residual Emissions	Amount of permanent sequestration of GHG within city boundary	t CO2 equivalent
		Negative emissions through natural sinks	t CO2 equivalent
		Residual emissions	%

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Indicator domains for CCC AP/IP

Direct

Greenhouse Gas Emissions (GHG)

Indirect

Public Health & Environment

Social Inclusion, Innovation, Democracy and Cultural Impact Co Benefits

Economy

Resource Efficiency

Biodiversity

Mandatory/ optional indicators
(see indicator name)

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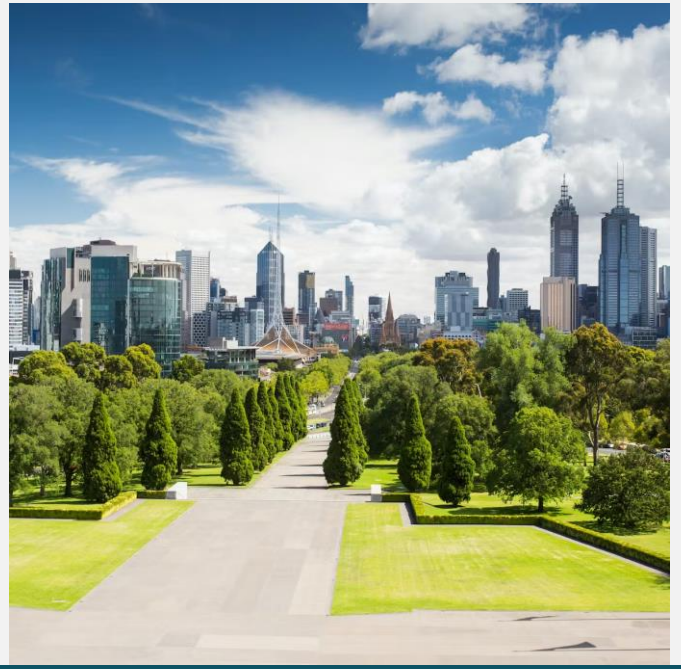
Public Health & Environment

DOMAIN	SUBDOMAIN	INDICATOR NAME	UNIT OF MEASUREMENT
Public Health & Environment	Air quality	PM2.5 concentration levels	µg/ m3
		PM10 concentration levels	# of days
		NO2 concentration levels	µg/ m3
	Noise pollution	% of adult population with High Sleep Disturbance	%
		% of population exposed to night-time noise (Lnight) >= 50 dB	%
		% of population exposed to avg. LDEN >= 55dB	%
	Road safety road safety	Road Deaths	# of deaths / 100,000
		Traffic safety active modes	# of deaths / 1000,000,000of trips
	Urban Heat Island (UHI) effect Temperature Increase and Heatwave Incidence	Urban Heat Island (UHI) Effect	°C UHImax
		Mean value of daily maximum temperature (TXX)	°C TXX
		Mean value of daily minimum temperature (TNN)	°C TNN
		Heatwave (HW) incidence	# of HW in summer
	Physical and mental well being	Wellbeing of citizens (questionnaire)	Likert scale
	Liveability, attractiveness & aesthetics of the built environment	Green Spaces	hectares / 100,000
		Quality of public spaces	#
	Equitable & affordable access to housing	Affordabilty of Housing	% of households
		Fuel poverty	% of households



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Social Inclusion, Social Innovation, Democracy and Cultural Co-benefits

DOMAIN	SUBDOMAIN	INDICATOR NAME	UNIT OF MEASUREMENT
Social Inclusion, Innovation, Democracy and Cultural Impact Co Benefits	Citizen & communities' participation	Openness of public participation processes	% of processes
	City capacities for participation / engagement	Policy support for promoting climate neutrality	# Number
		Active engagement of citizens in decision-making	%
		Citizen involvement in co-creation/co-design of climate neutrality actions	# Number
	Improved social justice	GINI coefficient	#
	Social cohesion, gender, equality & equity	Inclusion of different social groups	Likert (number)
	Functioning of democratic institutions	Voter participation	% of people
	Access to information	Open data sets	# of OGD data sets on climate neutrality shared
		Online government services	Likert scale
	Social Innovation	Skills and Capacity Building – Social Innovation Experts	# Number
		Skills and Capacity Building - Social Innovation skills development activities	# Number
		Empowerment and Inclusion – Inclusion and Collaboration	# Number
		Regulation and support - Funds for Social Innovation	# Number
		General - Social Innovation impact on climate neutrality	Open Text
	Behavior change towards low carbon lifestyle and practice	Modal share of green transport modes and public transport)	%
		Modal share of green transport modes and public transport)	%

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Economy

DOMAIN	SUBDOMAIN	INDICATOR NAME	UNIT OF MEASUREMENT
Economy	Investment in R&I	Research intensity	%
	Number of skilled jobs & rate of employment	Green jobs	% of jobs
		Youth umemployment rate	% of people
	Economic thriving	Gross Domestic Product	€/cap
	Technological readiness & rate of adoption	Adoption rate of key climate neutral technologies	%
	Local entrepreurship & local businesses / ventures	Climate-Neutral City Start-ups	#/100.000
		New businesses registered	#/100.000
		Surviving number of new companies registered after year 3	#/100.000

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Resource Efficiency

DOMAIN	SUBDOMAIN	INDICATOR NAME	UNIT OF MEASUREMENT
Resource Efficiency	Waste management and efficiency	Recycling rate of municipal waste	%
	Deployment of material cycles & circular economy	Domestic material consumption	t
		Recycling rate for specific material streams	%
		Circular Material Use Rate (CMU)	%
	Water management	Household water consumption	litres/capita/day
		% of urban wastewater meeting the UWWTD requirements	%
	Sustainable food production	Local food production	%
		Food waste volume	t/cap
		Food Waste Index	Tonnes
	Land use management practice	Growth rate of urbanized land	m²/capita/year
		Brownfield use	% of km2

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Biodiversity

DOMAIN	SUBDOMAIN	INDICATOR NAME	UNIT OF MEASUREMENT
Biodiversity	Urban Forestry, Plantation & Improved Plant Health	Percentage of tree canopy within the city	% of the municipal area
	Non-invasive species & polinators	Change in the number of species of birds in built-up areas in the city	% of change in species
	Ecological awareness	Citizen's awareness regarding sustainabilty and the environment	Likert scale
		Pro-environmental identity	Likert scale
		Mindfulness	Likert scale
	Ecological habitat connection	Structural connectivity of green spaces	ha
	Nature restauration	Percentage of protected natural areas	%
		Percentage of restored and naturalised areas on public land within the city	%

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Required

DOMAIN	SUBDOMAIN	INDICATOR NAME	UNIT OF MEASUREMENT
Greenhouse Gas Emissions (GHG)	Stationary Energy	GHG emission from stationary energy	t CO2 equivalent
		Energy use by fuel/energy type within city boundary	MWh/year
	Transport	GHG emission from transport	t CO2 equivalent
		Fuel consumption for in-boundary transportation per fuel type	MJ/kg/kWh
	Waste	GHG emission from waste	t CO2 equivalent
		Mass of waste processed per end-of-life treatement type within city boundary	t
		Mass of waste processed per end-of-life treatement type outside city boundary	t
	Industrial Processes and Product Use (IPPU)	GHG emission from IPPU	t CO2 equivalent
		Emission generation potential per unit of input/output for industrial processes within the city	CO2 equivalent per kg of production
		Emissions from non-energy product use	T CO2 equivalent
	Agriculture, Foresty and other Land Use (AFOLU)	GHG emission from AFOLU	t CO2 equivalent
		Net annual rate of change in carbon stocks per hectare of land	t CO2/ha
	Energy	Energy (In)Dependence	%
		Local renewable energy production	% in kWh
	Grid-supplied energy (electricity, heat, steam or cooling)	GHG emission from grid supplied energy	t CO2 equivalent
		Grid specific emission factor	tCO2 eq/MWh
		Grid loss factor	
	Carbon Capture and Residual Emissions	Amount of permanent sequestration of GHG within city boundary	t CO2 equivalent
		Negative emissions through natural sinks	t CO2 equivalent
		Residual emissions	%

Recommended

DOMAIN	SUBDOMAIN	INDICATOR NAME	UNIT OF MEASUREMENT
Public Health & Environment	Air quality	PM10 concentration levels	# of days
		NO2 concentration levels	µg/ m3
	Noise pollution	% of adult population with High Sleep Disturbance	%
		% of population exposed to night-time noise (Lnight) >= 50 dB	%
		% of population exposed to avg. LDEN >= 55dB	%
	Road safety road safety	Road Deaths	# of deaths / 100,000
		Traffic safety active modes	# of deaths / 1000,000,000of trips
	Urban Heat Island (UHI) effect Temperature Increase and Heatwave Incidence	Urban Heat Island (UHI) Effect	°C UHImax
		Mean value of daily maximum temperature (TXX)	°C TXX
		Mean value of daily minimum temperature (TNN)	°C TNN
		Heatwave (HW) incidence	# of HW in summer
	Physical and mental well being	Wellbeing of citizens (questionnaire)	Likert scale
	Liveability, attractiveness & aesthetics of the built environment	Green Spaces	hectares / 100,000
		Quality of public spaces	#
	Equitable & affordable access to housing	Affordabilty of Housing	% of households
		Fuel poverty	% of households
Social Inclusion, Innovation, Democracy and Cultural Impact Co Benefits	Citizen & communities' participation	Openness of public participation processes	% of processes
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DOMAIN	SUBDOMAIN	INDICATOR NAME	UNIT OF MEASUREMENT
Economy	Investment in R&I	Research intensity	%
	Number of skilled jobs & rate of employment	Green jobs	% of jobs
		Youth umemployment rate	% of people
	Economic thriving GDP	Gross Domestic Product	€/cap
	Technological readiness & rate of adoption	Adoption rate of key climate neutral technologies	%
	Local entrepreurship & local businesses / ventures	Climate-Neutral City Start-ups	#/100.000
		New businesses registered	#/100.000
		Surviving number of new companies registered after year 3	#/100.000
Resource Efficiency	Waste management and efficiency	Recycling rate of municipal waste	%
	Deployment of material cycles & circular economy	Domestic material consumption	t
		Recycling rate for specific material streams	%
		Circular Material Use Rate (CMU)	%
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		Food waste volume	t/cap
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	Ecological awareness	Citizen's awareness regarding sustainabilty and the environment	Likert scale
		Pro-environmental identity	Likert scale
		Mindfulness	Likert scale
	Ecological habitat connection	Structural connectivity of green spaces	ha
	Nature restauration	Percentage of protected natural areas	%
		Percentage of restored and naturalised areas on public land within the city	%

[Mandatory/ optional indicators](#)
(see indicator name)

Required – Black Text

Recommended – White Text

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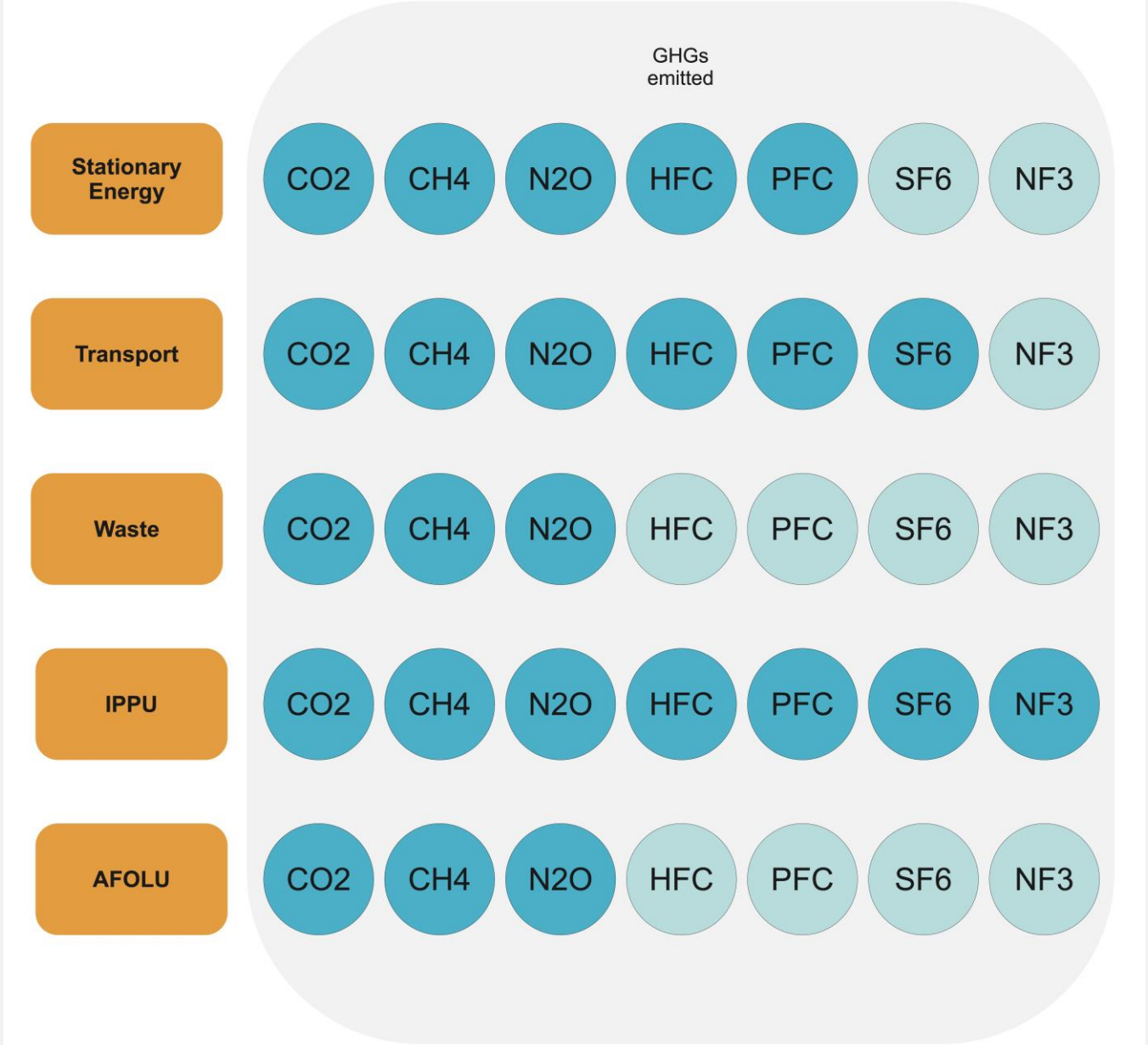
Covering all GHGs



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Additional sub-domains

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Finance & Digitalisation

DOMAIN	SUBDOMAIN	INDICATOR NAME	UNIT OF MEASUREMENT
Finance and Investment	Public Spending	Capital Invested in Climate Action Projects	EUR million
		Budget Assigned to Climate Action Projects	% of City Budget
		Capital Invested in Climate Action Projects per Capita	EUR thousand
	External Spending	Capital Invested in Climate Action Projects	EUR million
		Coverage of Climate Finance Gap	% of Capital Deficit Covered
	Capital Efficiency	Emission Return on Invested Capital	EUR million
	Fiscal Responsibility	Cost Coverage	% of Costs Covered
Digitalisation and Smart Urban Technology	Green ICT and Smart Metering	% of households and buildings with reduced energy	% of households
		% of households and buildings with reduces water consumption as a consequence of installing smart water meters	% of households
		% of municipal buildings equipped with building energy management systems	% of public buildings
	EGovernment	% of city services available online	% of total services
		Improvement in online government services	Likert Scale
	Access to information	Business-to-government (B2G) data sharing	# of Private Datasets Shared with the City / Local Authority
	Urban Data Platforms	Usage of Urban Data Platforms	# Users /Day
		User Satisfaction with Urban Data Platforms	User Satisfaction Score (Likert Scale)

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Menti.com - 1363 4247

What issues do you encounter in gathering GHG related data within your city region?

Results

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CITIES IN THE CENTRE

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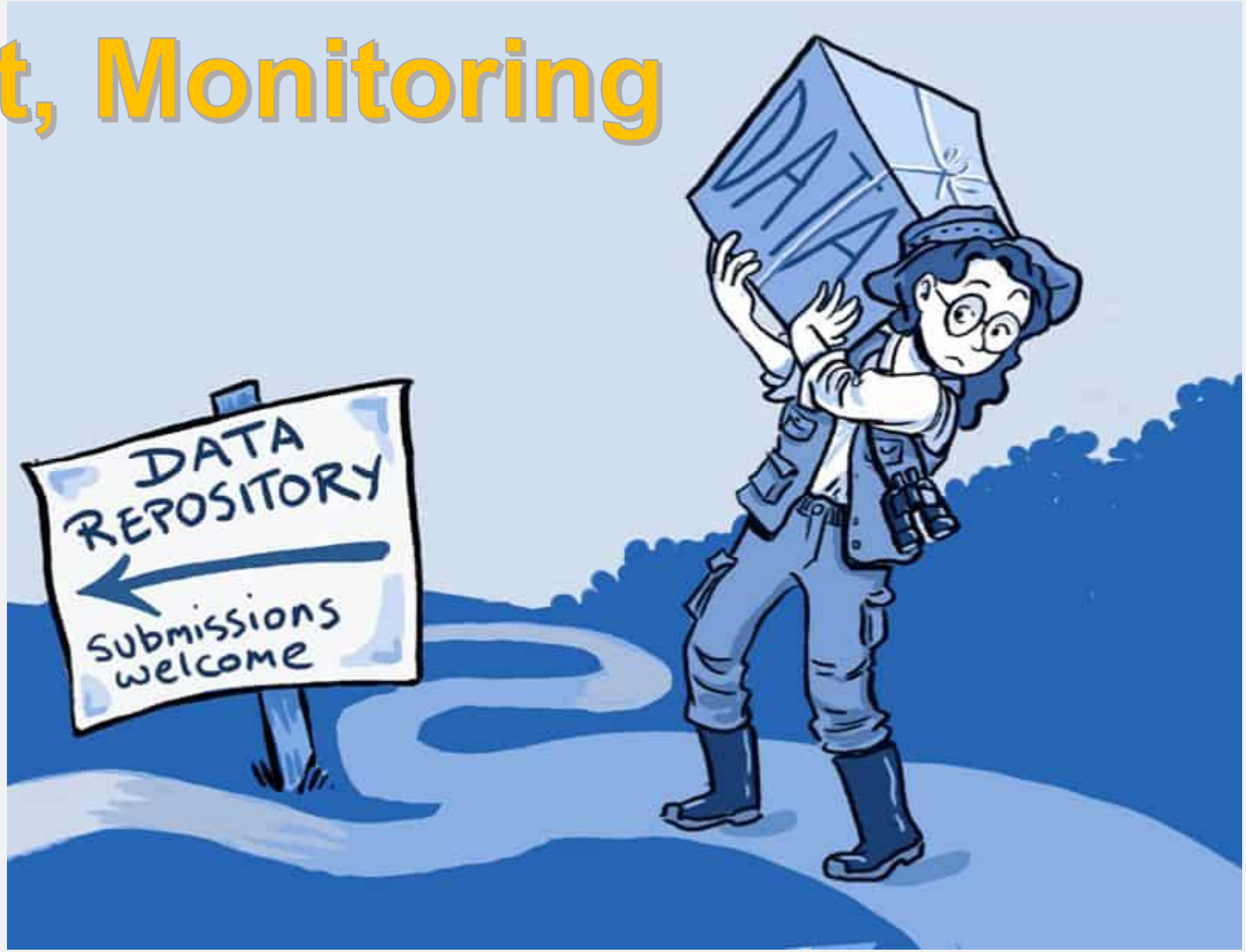
DATA Impact, Monitoring



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DATA Journey for your city

Measurement

Collection

Reporting (Visualisation and engagement)

Verification (Linking to National platforms)

Setting targets through **Action planning**

Investment planning

Portfolio planning and Implementation

My City is Net Zero

the cycle continues for the next measurement period…..

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“If you can measure it, you can manage it!”

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Direct	Indirect				
Greenhouse Gas Emissions (GHG)	Public Health & Environment	Social Inclusion, Innovation, Democracy and Cultural Impact Co Benefits	Economy	Resource Efficiency	Biodiversity

What are we measuring?

Mandatory vs. recommended (Ghg mandatory, non Ghg?)

(Mitigation vs. Adaptation)

Starting point (Our city versus Standard formats)

Indicators

Action

Where are we involving people??

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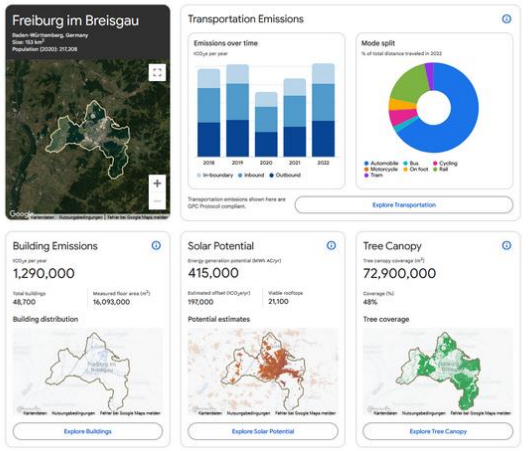
ClimateView

Platform Cities Resources Company Get Started EN

Join the community of cities on ClimateOS

Get Started

Google EIE Overview



EIE data serves insights across key areas:

01 Building emissions
02 Transportation emissions
03 Rooftop solar potential
04 New data pilots (Tree Canopy & AQ)

View EIE at https://insights.sustainability.google/

ClimateOS
Impact Intelligence

USE CASES
Improve your plan

RES
Insights

About

Login

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Linking Data to Net Zero Journey 2030

Connecting to

Place,
People,
Practice

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Where are we reporting?

Indicator selection from the perspective of resources, capacities and potential

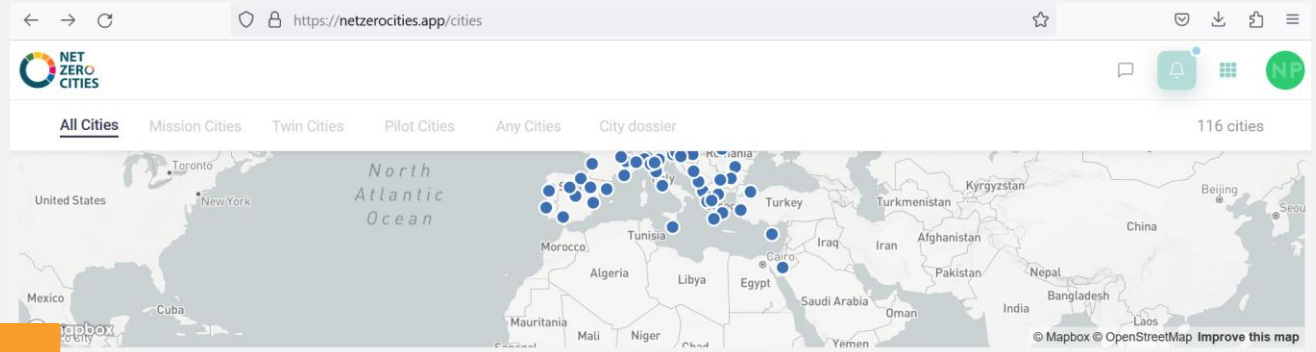
MyCovenant, the private space of the European Covenant of Mayors Community

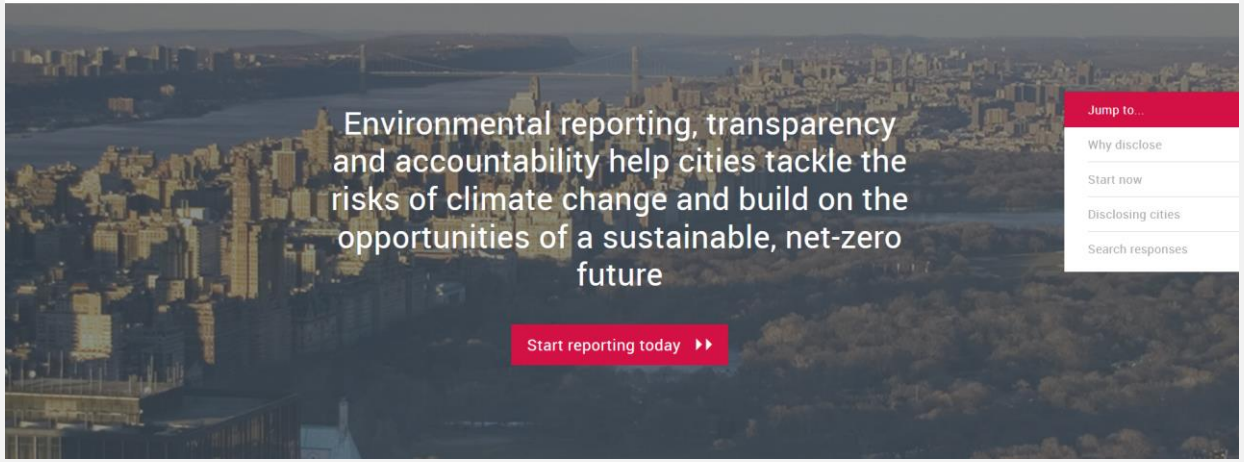
Once signed in, you will be able to:

- update your contact information
- fill in and submit your action plan
- monitor progress towards your target
- and access the capacity-sharing corner.

If you haven't registered yet, please check your eligibility and register here.
If you don't remember your user email, please contact our helpdesk

The Cities Energy Saving Sprint





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Impact Indicator Selection

Indicator selection from the perspective of:

- **Requirements**
- **Needs**
- **Expectations**
- **...**

1

Indicator selection from the perspective of their roles / functions:

- **To educate**
- **To inform**
- **To signal**
- **...**

2

Indicator selection from the perspective of:

- **Resources**
- **Capacities**
- **Potential**

3

How to make data and indicators work for your city?

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How to make data and indicators work for your city?

Its time dear city to write your story! In this new language of data!

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Questions or comments?

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Interactive Exercise 2 (30 mins)

NZC Winter School Budapest

24th November 2023

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STEP 5: Identify and Classify Impacts

- Where in the **GHG emissions inventory** do you see **change happening** based on selected activities?
- Which **scope of emissions** do you see getting **impacted**?
- What potential **changes** in the **current practice** of climate neutrality action **identification** and **classification** are needed in your city to meet requirements of the 2030 Climate Action Plan better?
- In addition to GHG reduction, which are the **tangible or visible impacts** that can signal positive change in the lives of citizens and communities? (How can regular citizen start seeing and experiencing climate-neutrality in their day-to-day lives?)

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STEP 6: Use the Data & Insights for MEL

- How could you describe the **current state** of the climate neutrality performance **data availability** in your city? What are the **key characteristics** of the currently available climate neutrality performance data?

- How could you describe the **current practice** and **system** of the climate neutrality performance **data management** in your city? What are the **key characteristics** of the current climate neutrality performance data management system?

- What potential **changes** in the **current practice** of climate performance **data management system** do you foresee needed in your city to meet requirements of the 2030 Climate Neutrality Action Plan better?

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STEP 6: Use the Data & Insights for MEL

Goal of data management and indicators

- What kind of climate neutrality action data does your city already have?
- What are the most important parts of your city's climate neutrality action system you want to monitor?
- How could you define the goal of your city´s climate neutrality action monitoring system you want to achieve?
- How would you like to use the climate neutrality action monitoring system and data in your city day-to-day activities and strategic decision-making?

Selection and refinement of KPIs

- What data points can you use to measure this change?
- Is the city able to address all gases as defined by the mission through these changes?
- Which stakeholders do you need for the monitoring of this KPI?
- Do you see the relevance of this KPI across different stakeholder groups involved in the city transition?
- Is this KPI realistic to monitor regularly (annually/once every two years) for the city?

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STEP 7: Select Indicators to Measure impacts

Relevance of Sub-Domains for Measuring Impact (NZC Indicator Set)

- Which NZC Sub-Domains are the most relevant for measuring the Impact of your CCC Action Plan?

Relevance of Indicators for Measuring Impact

- Do you expect that the indicators presented in the NZC Indicator Set will adequately measure the Impact of your CCC Action Plan?

Accessibility and Availability of Data Sources

- Do you expect to have the necessary data sources easily available/accessible to your city in order to apply the proposed indicators?

Calculation of Indicators

- Once your city has acquired the relevant data to apply the indicator, how easy or difficult do you consider it will be to calculate the indicator?

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STEP 7: Select Indicators to Measure impacts

Connecting activities and direct impacts to co-benefits

- What intended or unintended changes do you foresee happening based on selected activities?
- Which aspect of indirect impacts do you see changing? For example, biodiversity, economy, environmental/public health, resource efficiency and social inclusion.
- What activity relates to these changes?

Selection and refinement of indicators

- Is this indicator realistic to monitor regularly (annually/once every two years) for the city?
- Which stakeholders do you need for the monitoring of this key performance indicator?
- Do you see the relevance of this key performance indicator across different stakeholder groups involved in the city transition?

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STEP 7: Select Indicators to Measure Impacts

- How could you describe the **current practice** of **monitoring** and **evaluation** of the climate neutrality performance in your city? What are the **key characteristics** of the current practice?

- How could you describe the **current practice** of climate neutrality performance **indicator selection** in your city? What are the **key characteristics** of the current practice?

- What potential **changes** in the **current practice** of climate neutrality action **monitoring, evaluation**, and **indicator selection** do you foresee needed in your city to meet requirements of the 2030 Climate Neutrality Action Plan better?

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Thank you!

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Climate Alliance
CARTIF
Cerema
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