

# Building adaptive climate action in cities

Anticipatory Climate Governance

# Front matter

Produced as part of **NetZeroCities**, which supports the **EU's Mission of "100 Climate-Neutral and Smart Cities by 2030"**

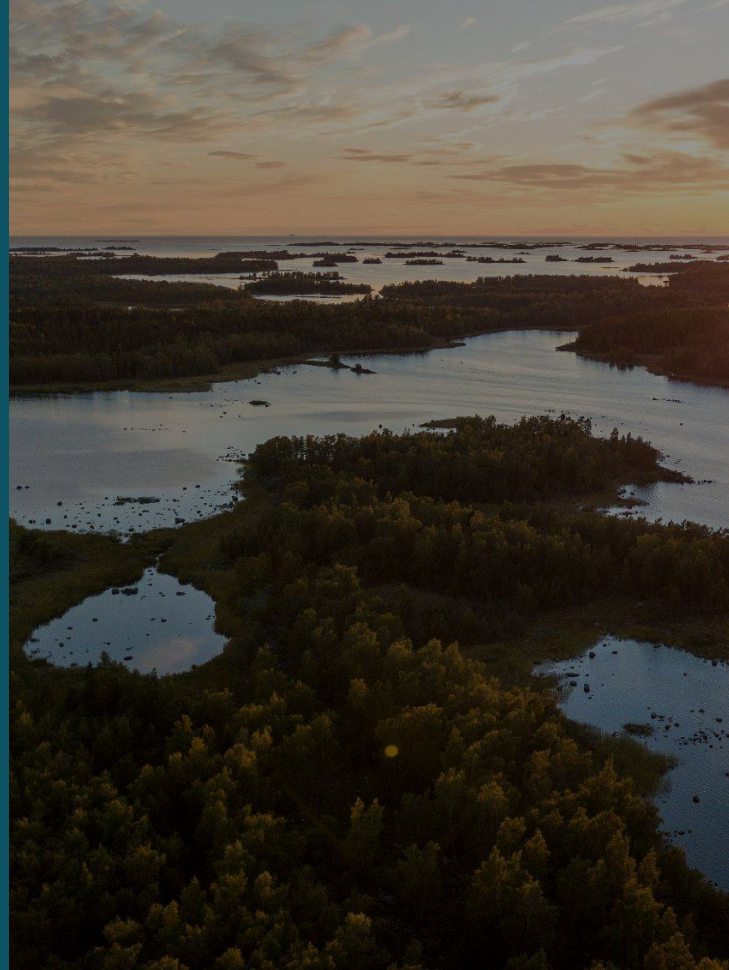
This was created by Demos Helsinki as a resource for cities.

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# What this guide gives you

This guide aims to help cities to explore and apply future-oriented methods towards their climate goals, and ultimately develop their ability to **steer towards a desirable future for their city and residents**, adapting over time to different trends and dynamics.

This is captured through the approach of '**Anticipatory Climate Governance**' including its value to cities and their climate action; how this goes beyond methods and isolates use cases. It offers **practical insights and actions** for both experienced cities and those new to futures thinking, aiming to enhance their capacity for long-term, adaptive, and transformative climate planning. It contains...



## 6 Functions for foresight

To identify which areas of your city's work and climate action would most benefit.



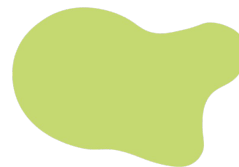
## 6 Tools and methods

To show how they can support your climate work and what it means to use them.



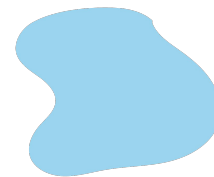
## 4 Use Cases

Which capture concrete and impactful ways these methods can be used in your climate action.



## 5 'Everyday' practices

To show examples of how using this doesn't need to be complex or resource intensive.



## 5 Reflection questions

To take to your team today to discuss how this can support your work.

&

**Overall guidance and explanation** of the value this brings for you, how these elements connect, and the opportunities it opens up for transforming your city's approach.



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# Introduction



# Introduction

Cities are the homes of over 70% of the EU's residents and account for more than 70% of global CO2 emissions. They are the governance level closest to most people's daily lives, yet they also must act in interaction with national and European level policy, financial structures, and regulations. This makes tackling energy use, carbon emissions, and overall sustainability a complex challenge involving not only the city itself.

**Climate ambitions of cities require tackling multiple crises simultaneously and systemically:** ecological crisis and biodiversity loss, pandemics, mental and physical health challenges, new trade realities and fragile supply chains, migration and changing population demographics, technological development, and economic uncertainty.

In this rapidly changing societal environment, it has become more essential than ever to not become trapped reacting to short-term crises which continuously draw focus and resources away from root causes and **steering towards rather than only away from**. This requires understanding the future, how you can use it, and different potential futures pathways.

Climate change and its causes, effects, and solutions happen in interaction with the surrounding society, as part of and alongside other societal, economic, cultural and environmental changes. It requires the ability to convene, align, and steer actors towards collective goals.





## Foresight and anticipation approaches help cities to navigate the complexity and uncertainty in climate transition.

**Cities are anticipatory at heart.** They try to reach goals and prevent risks from realising. However, anticipation often remains on the level of fragmented risk-mitigation and isolated interventions rather than holistic approach for steering towards desirable futures. Too often, **resources, complexity, overwhelm, or a feeling of acting alone** get in the way of positive changes.

This guide aims to equip cities to use foresight and develop Anticipatory Climate Governance to help ensure that impactful climate policies and actions can be planned, implemented, and adapted to **steer towards goals, despite inevitable changes in operating environments.**

The purpose of Anticipatory Climate Governance is to equip governments with **the means to address unexpected shifts and immediate needs within the scope of long-term goals**, securing a persistent focus on the aimed future for each city and their climate and nature. This requires embedding foresight in structures, processes, culture, practices and capabilities including to help connect actors across the city ecosystem to buy-in and collaborate towards a shared future.



## For cities, foresight connects to many daily questions and pain points for climate transition:



“How do we take a **holistic and systemic** perspective, and understand the potential implications of current phenomena on our city’s climate transition?”



“How do we **raise ambition** and expand the **scope of imagination** on what is possible to push our city further, and find new opportunities or potential solutions?”



“How do we recognise what is beyond our direct control, but for which we could **advocate in partnership** with others?”



“How do we create **commitment** within and beyond the administration to **realistic** pathways to the future we want? How do we identify timely **opportunities in the present** to steer towards them?”



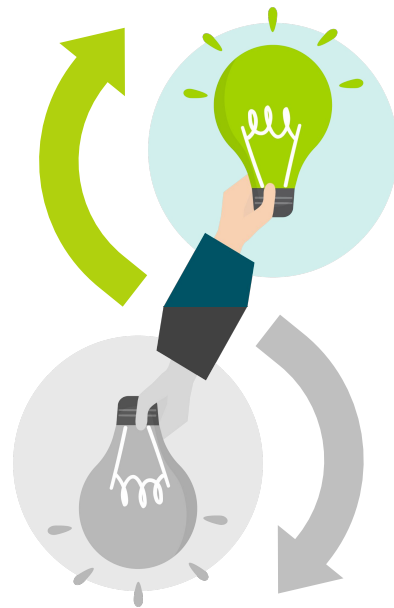
“How do we use the knowledge and wisdom of many actors to create powerful **shared positions**, and ensure buy-in to act together for our city’s transition?”

## In cities' climate work, future-orientedness is unevenly distributed.

- In **adaptation** work, future-oriented approaches are **inherently present** as cities are constantly preparing for the consequences of the changing climate. For example, cities have developed established practices and expertise in assessing climate risks, conducting vulnerability assessments and building adaptation strategies.
- However, in **mitigation** work, future-oriented approaches and tools are **less present**. Although cities' climate roadmaps typically describe pathways towards carbon neutrality which can involve scenario work, these roadmaps tend to be descriptions of pathways for reaching maximum emission reductions in an optimal situations, rather than connecting closely to actions today. The assumptions behind pathways, and the related uncertainties, are in many cases not scrutinised in detail. Technical, political, economic, societal and other enabling conditions and the uncertainty related with all of them may receive little attention.

Applying an anticipatory approach in your city's climate work is about both the '**steering from**' (adaptation) as well as the '**steering towards**' (mitigation). Each requires different tools and mindsets, but both benefit from using foresight.

Crucially, **anticipation should not be seen solely as an analytical exercise**, but as a strategic orientation that enables cities to connect long-term goals with present-day action, even in the face of uncertainty.



# Sneak peek: going beyond methods

This guide connects foresight and anticipation to **real processes** involved in the cycle of cities climate action. To help connect foresight methods to your reality, four concrete use cases with examples are included. Section 3 contains more details, but here is an overview:

## Vision-setting

For cities wanting to align the city around a common vision and goals.



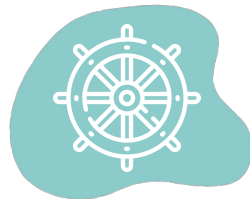
## Foresight-driven roadmaps

For cities wanting to ensure actions will steer towards long-term goals.



## Adaptive planning

For cities wanting to understand how to steer action over time.



## Citizen Co-creation and Storytelling

For cities wanting to ensure their residents are part of the transition.







# Section 1: Anticipation and foresight

What is it?



# The Evolution of Futures Thinking

While humans have always speculated about the future, the formalisation of futures thinking as a discipline **emerged in the mid-20th century**, particularly in the context of post-war technological and geopolitical uncertainty.

It has since developed an **academic grounding**, making futures thinking a recognised field of inquiry that employs rigorous methodologies. It has also moved beyond its early association with elite institutions and large corporations, and is now **routinely used** by national governments, international organisations, and at the local level.

**Now, it draws on and connects several disciplines, such as:**

- Foresight and futures studies
- Political science
- Military planning
- Complexity science
- Design Studies

## Early development for military and corporate strategic planning

by the RAND Corporation in the US and Shell in Europe to test assumptions and navigate complexity.



## Early stage integration of foresight methods

- 1968:** South Korea establishes the Year 2000 Committee, introducing foresight concepts
- 1972:** The Netherlands establishes the Scientific Council for Government Policy (WRR) for foresight studies

## Academic traction in the 1960s and 1970s

- Dedicated institutes such as the Institute for the Future (1968), World Futures Studies Federation (1973)
- University programmes like at the University of Turku in Finland
- Peer-reviewed journals such as Futures and Technological Forecasting and Social Change.



## Term 'Anticipatory Governance' coined (1990s)

Introduced in response to traditional predict-and-plan approaches. Initially, closely associated with new public management and neoliberal ideas.

## Shift from forecasting to readiness (Early 2000s)

Focus shifts increasingly from forecasting to building readiness for multiple possible futures. Emphasis on integrating foresight practices into governance processes

## Early attempts connecting governance with foresight

- 1993:** Finland establishes the parliamentary Committee for the Future
- 1994:** UK implements the Foresight Programme
- 1999:** South Korea establishes the National Foresight Center

## Global recognition for use in complex, rapidly changing environments

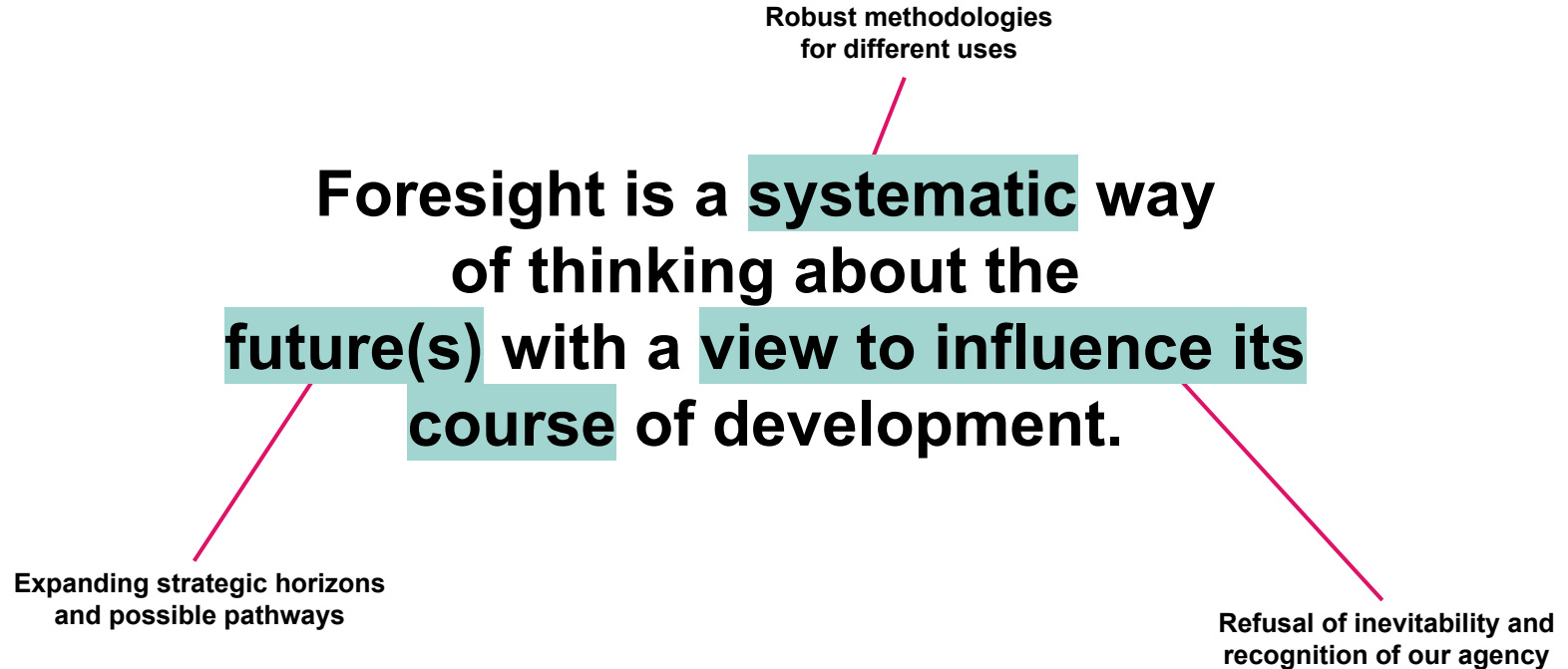
e.g. UK's Horizon Scanning Programme; Singapore's Centre for Strategic Futures (CSF); European Union's European Strategy and Policy Analysis System (ESPAS)

## Established global applications (2010s)

Strong use by international organisations  
e.g. the **OECD's Observatory of Public Sector Innovation** (est. 2013) and the **UNDP** (e.g. 2018 Foresight Manual; 60 Accelerator Labs worldwide), and in **Prime Minister's Offices**.  
A growing global community also built to exchange resources and practices.



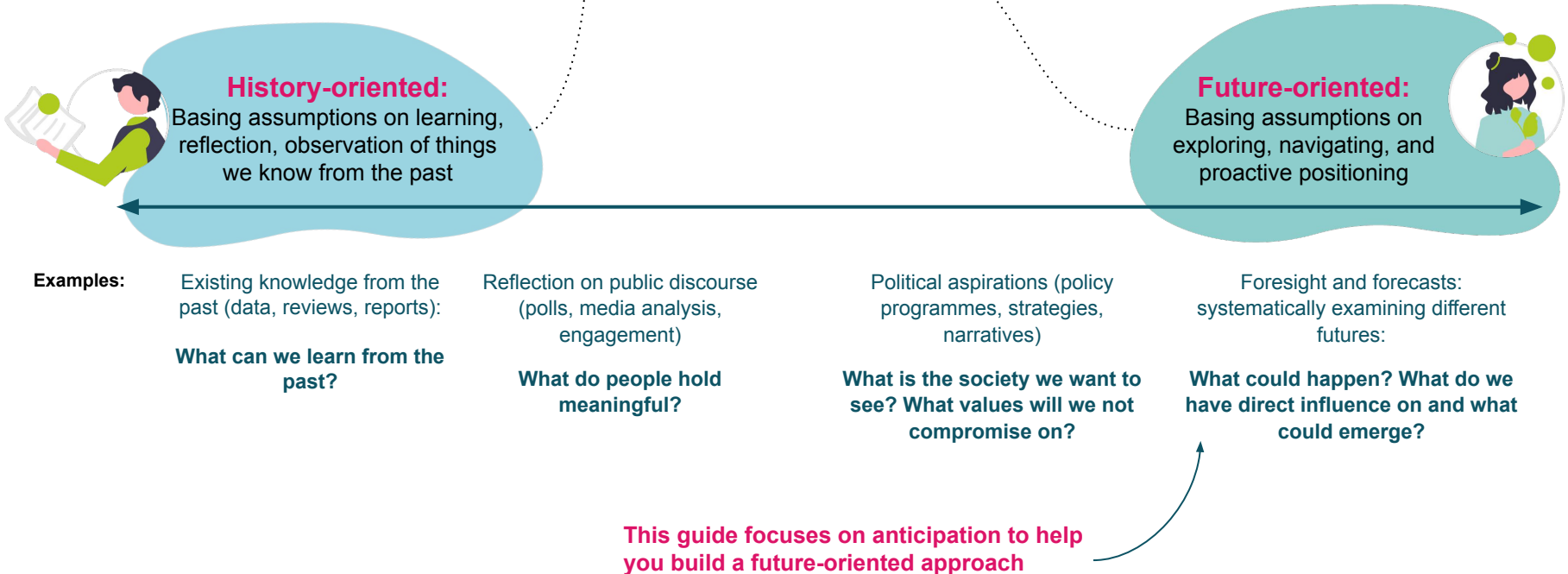
Often we put strong focus on learning from the past, but it doesn't contain all of the answers for complex current day challenges like climate. For cities to build the ability to adapt and steer climate action successfully over time, **they cannot only rely on the 'history-oriented' lessons of the past, but also utilise the 'future-oriented' compass of the future.** This is the role of foresight:





# All actions and policies in a city are based on assumptions

We assume that the action or policy will have a certain effect on the future: whether those are of securing elements of the present or working towards a change. These assumptions are drawn from **different places and use different methods**. Governments typically have a strong ability to draw on 'history-oriented' analysis, but 'future-oriented' capabilities are less widespread and deep:

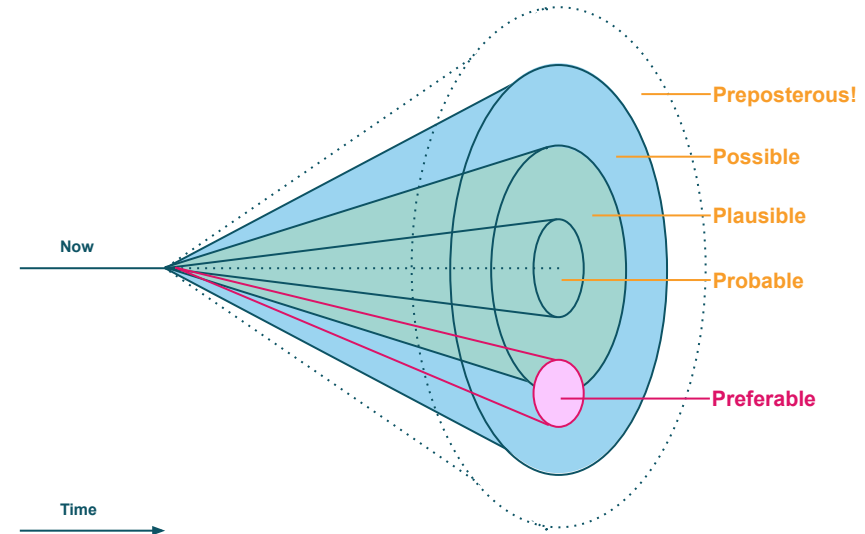


# Zooming in: What is foresight?

In everyday language, discussing the future often refers either to forecasting - trying to predict what will happen, e.g. with weather or economics - or unrealistic, sci-fi utopias and dystopias. However, when we talk about being 'futures thinking', we are referring to a specific concept.

The 'futures cone' (Voros, 2017) is a useful conceptualisation for this.

- **Preposterous** sci-fi futures aren't useful to us today as they are beyond the realms of scientific possibility.
- Focusing on the most **probable** futures narrows our perspective and assumes present trends will continue on their present course, which history tells us is rarely (or never) true.
- Exploring **plausible** and **possible** futures can be useful to stress-test how our actions, strategies, or goals today would fare in those futures. However, this still limits our imagination and role in the future unfolding.
- Forming strong understanding of what a **preferable** future looks like to us helps to distil our collective goals, reflect on whether they are shared or divergent, and positions us to consider and plan how we may try to act to bring this future about. This is the core focus of anticipation in this context.



(Adapted from Voros, 2017)

# Zooming in: Three types of Foresight

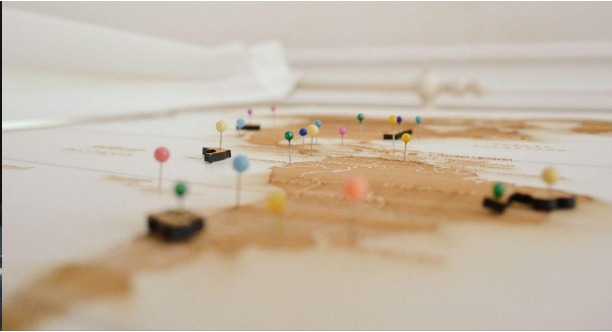
In the context of government, foresight typically can have three purposes:



## Predictive:

*"What will probably happen next?"*

e.g. economic forecasting, forecasting extreme weather, flood modelling



## Exploratory:

*"What might happen next?"*

e.g. crisis/disaster modelling and stress testing, benchmarking research of other cities



## Visionary:

*"What should happen next?"*

e.g. strategy for the city and/or specific neighbourhoods, domains, or industries.

All are useful - but when looking to address complex societal challenges which are interconnected, many aspects of prediction and modelling are uncertain as there is not always the knowledge there. Furthermore, even with these uses, **having a clear understanding of overall aims and goals and how to steer towards them is the best position for agency over the future.**



# Zooming in: What is anticipation?

**Anticipation is making use of foresight.** Positioning ourselves as having influence over the future involves a **mindset shift**:

Accepting what we can't  
change and focusing on the  
**uncertainty** of the future

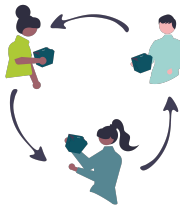


Embracing the **agency** we have to  
navigate complexity through  
understanding the **connection of our  
present actions with the future.**

This recognises that:



The future does not yet  
exist but **people's hopes  
and plans shape future  
outcomes**



The world seems inherently random  
but **some changes follow  
predictable patterns** (e.g.,  
demographics, traditions) and **nature  
shows cyclical and linear trends**



Current beliefs, ideas, and  
priorities seem set but **new  
information influences and  
changes people's beliefs,  
attitudes, and behaviors**



We cannot guarantee or  
prevent a particular future  
but **without visions of the  
future, our action is  
diluted to reaction**

Systematically thinking about the future(s) with a view to influence its course of development

Overarching need to ensure human societies live within planetary boundaries and as part of ecosystems. Includes issues related to decarbonisation, biodiversity, pollution, adaptation, and mitigation

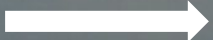
The set of processes, structures, and institutions that guide (and restrain) the collective action of a set of stakeholders, at an organisational or societal level. Can be described as an 'invisible infrastructure' (Demos Helsinki, 2023, p.14)

“

# Anticipatory Climate Governance

refers to the **governance system** - structures, processes, methods, capacities, cultures, mindsets, strategies - that are used in a certain context (e.g. a city government or ecosystem) to **steer and act towards a desired future for the climate** and nature, including the ability to do so **adaptively over time**

”

Moving From  To

Traditional Governance	Anticipatory Climate Governance
<p><b>Climate and broader goals are difficult to translate and connect to actions</b>, and don't always demonstrate a clear vision or trajectory to guide action over time.</p>	<p><b>Shared visions</b> that align short- and long-term climate priorities, draw on societal perspectives, and connect broader goals with sub-goals which can be used as a basis for action today.</p>
<p><b>Rigid structures within government</b> have institutional silos and <b>habitual thinking</b> which limit collaboration and exchange, neglecting the systemic nature of climate issues.</p>	<p><b>Structures that foster collaboration</b> across domains and <b>departments within government</b>, with mutual accountability in actions towards shared climate goals.</p>
<p><b>Reactive decision making processes</b> often <b>struggle to balance long and short term societal needs</b>, including due to the political cycle or existing processes for e.g. climate roadmaps.</p>	<p><b>Planning that integrates future visions and diverse input</b> into today's choices provides <b>thin consensus over the long-term direction</b> that can be sustained and used for proactive action.</p>
<p><b>Risk-averse mindsets and culture</b> avoid uncertainty and don't encourage civil servants to try new approaches and ideas.</p>	<p><b>Culture of learning and experimentalism</b> in which leadership adapts strategically and supports all to try new things and learn from them.</p>
<p><b>Unsustainable collaboration</b> with the public, private sector, academia, and civil society is <b>often based on unequal top-down or bottom-up models</b> and is limited by time or narrow scope.</p>	<p><b>Broad-based mobilisation</b>, where public, private, and civic actors <b>share goals, roles, and responsibility towards common goals</b>, with the government acting as an ecosystem leader.</p>
<p><b>Fragmented discourse and language</b> around climate, sustainability, and justice is stagnant, technocratic, or often becomes polarised.</p>	<p><b>Narratives, words, and symbols</b> are used strategically and form a <b>shared language and meaning</b> which can articulate common purposes, goals, and drive change.</p>





# Section 2: Six Tools and Methods

How to use it?



# Strategically using foresight methods

Methodologies are only useful if it is clear **how they can contribute to aims**. For cities and other governments pursuing ambitious climate action, there are various purposes or 'functions' foresight can provide, captured below. Most likely, you need multiple and, although interconnected, they can be approached from different starting points, rather than a step-by-step development of foresight use.



## QUESTION CITIES HAVE

*"What could happen in the future?"*

*"What would we like to happen in the future?"*

*"What are the consequences of our actions (for our city)?"*

*"How can we get to our desired future?"*

*"What does this mean for the long-term?"*

*"How can we prepare for the unexpected and stay on our path?"*

## UNDERLYING NEED

To voice and look beyond implicit assumptions on future developments.

To define our desired direction, role, and agency in influencing future outcomes.

To create understanding on actions which need to be adapted or initiated towards your aims, and which actors in your city need to do them.

To cast realistic and resilient pathways and roadmaps for your city.

To embrace uncertainty over what could be and build ways to manage new information.

To create future-readiness in your city's operations so you can steer with intent as you learn from implementation and new events occur.

## "FUNCTION" OF FORESIGHT IN HELPING THIS NEED



Understanding alternative futures



Defining your city's direction



Building alignment on needed direction and action



Planning actions and roles for actors



Identifying opportunities and risks to your long-term direction



Supporting adaptive learning systems over time

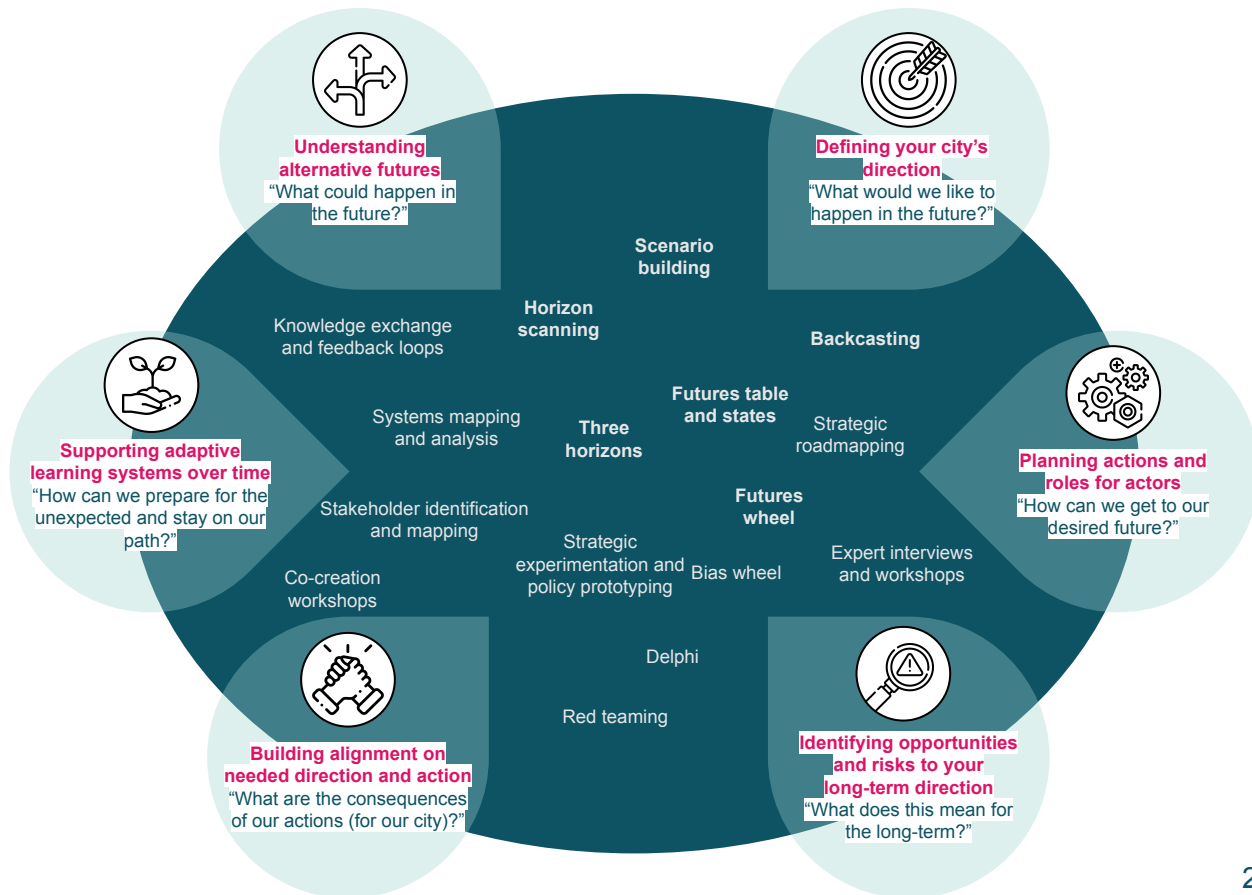


# Overview of foresight methods

Futures thinking contains numerous different methodologies which can be applied towards these different functions.

What is most important when using these or other methods your city's transition is to have a **clear purpose and understanding of what these methods will help you to do.**

Here you can see a range of methods roughly mapped to the six functions. The six that will be explained in more detail are highlighted in bold.

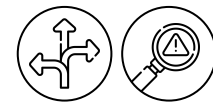


# Introducing 6 foresight methods

The following slides contain a **small selection of some of the most commonly used foresight methods** to provide you with more insight into how they can be used. From the previous diagram, you can see that some methods more strongly support certain functions however they can support multiple in different ways. On each slide, the method is labelled with different **icons** to demonstrate which of the 6 functions for foresight it is supporting. Here is an overview of the methods themselves:

Method	What is it?
Horizon scanning	Analyses change phenomena like trends
Futures table	Exploring different possibilities based on how change phenomena may combine
Scenario building	Builds visions of potential or desirable futures
Backcasting	Building a pathway from today to a desired state
Three Horizons	A tool for exploring needed changes and transitional innovations to create a new future.
Futures wheel	A tool for detailing causalities of a trend/event





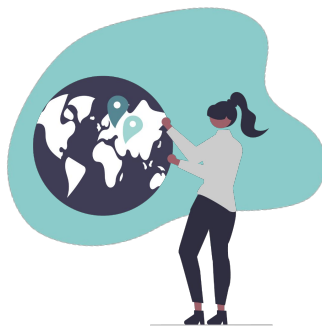
# 1. Horizon Scanning

## What is it?

Horizon scanning helps us to identify and analyse different change phenomena that impact the topic we are studying, enabling a more **holistic understanding of uncertainties, tensions, and opportunities**. This can help to build a comprehensive understanding of the dimensions of change, and align teams' assumptions and hypotheses about the future.

## When could you use it?

Horizon scanning is used to gain an informed understanding of what trends and developments which may happen in the future, based on **trends** and **weak signals**. By gaining an understanding of what the horizon may look like, you can reflect on the impacts on your city's aims, **test current assumptions and plans**, and prepare for how they may need to be strengthened to better deal with potential risks and changes.



## How do you do it?

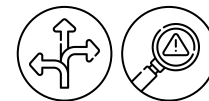
Concretely, it is helpful to structure your analysis as follows:

- **Choose your sources.** For example, media (newspapers, podcasts, social media), desktop research, expert interviews, stakeholder engagement, workshops and focus groups, surveys and polls, data analysis.
- **Gather your analysis.** This can identify: **megatrends** (global, macro-level phenomena that are expected to have long-term impacts on society), **trends** (a noticeable general tendency or direction of a development or change over time), **uncertainties** (and tensions they may bring), **weak signals** (an early or emerging sign of a new issue), and **wild cards** (a change which is unlikely but highly impactful if it occurs)
- **Reflect on the implications.** Prioritise which trends or parts of the analysis are most important for you to address or monitor; what their implications would be; and how they relate to your current strengths and weaknesses to act.
- **Define next steps.** Based on this, how will you move forward?

## Where can you learn more?

You can find a step-by-step guide to Horizon Scanning [here \(p. 34\)](#). As part of your analysis, you might want to use the [PESTEL framework](#) to avoid blind spots.

## 2. Futures Table



### What is it?

The futures table is a structured tool for **generating possible future** states or scenarios: snapshots that describe how different factors might evolve over time. By imagining potential change, we can **explore key uncertainties**. By design, it is polarised — **intentionally presenting contrasting options** — to support discussions about alternative development paths.

### When could you use it?

The method was developed to explore solutions to complex, multidimensional problems that can't be easily quantified. The futures table enables **systematic exploration of different possibilities across several variables**, making it especially useful for navigating complexity and uncertainty.

It helps us reflect on why and how potential future states may come about. This makes it a valuable tool for considering **how your city transition may be affected by future developments**, and identify current actions to monitor or influence developments.



### How do you do it?

The futures table shows the **key tensions and uncertainties (variables)** of our topic that we want to explore and their possible, **alternative development directions (values)**. We create future states by:

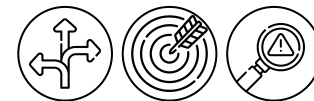
- Selecting one value from each variable. This can be based on different logics (e.g. best-case, worst-case, middle-ground, exploratory, normative)
- Combining these to a description of that future state.

VARIABLE 1	VARIABLE 2	VARIABLE 3	VARIABLE 4
VALUE A	VALUE A	VALUE A	VALUE A
VALUE B	VALUE B	VALUE B	VALUE B
	VALUE C		

### Where can you learn more?

You can access a step-by-step breakdown of how to create future states through the futures tables [in this resource](#) on the NetZeroCities Portal.

# 3. Scenario Building

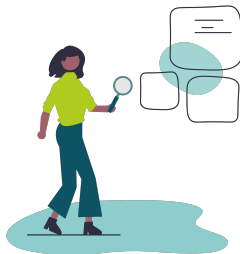


## What is it?

Creating scenarios is essentially **creating narratives about how a future state could come about..** They help people to understand why possible futures may emerge via a combination of events and casualties; and reflect on what they would or wouldn't like to happen. They can be used to **challenge our current course of action** and refine the future it works towards to be more desirable.

## When could you use it?

Scenario building is especially valuable in situations marked by **uncertainty, complexity, or long time horizons**. It lays a strong foundation for further methods like **backcasting**, where you define desirable futures and then work backward to identify the steps needed to get there via interventions. Scenarios help map out **plausible future pathways so that informed, resilient, and forward-looking strategies can be developed** in your city.



## How do you do it?

An example process could be:

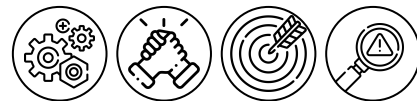
- **Define the focus and time horizon** (e.g. climate neutrality in 2050)
- **Map key forces shaping the future** (e.g. via Horizon Scanning).
- **Construct scenario framework** - Different approaches can be used (e.g. futures table, Dator Framework, 2x2 matrix). For a 2x2 matrix, select the top two uncertainties related to your topic, and place the uncertainties and their alternatives on a matrix's axis.
- **Develop scenario narratives** - Describe each scenario (in this case, matrix quadrant) as a plausible story: what the city is like, how systems behave, and what climate action looks like.
- **Analyse implications** - Test strategies against each scenario to find robust actions, surface risks, and reveal gaps or opportunities.
- **Engage stakeholders** - Use the scenarios to spark discussion and shared understanding across departments, sectors, or communities.

## Where can you learn more?

You can find a step-by-step guide to scenario building [here \(p. 61\)](#).



# 4. Backcasting

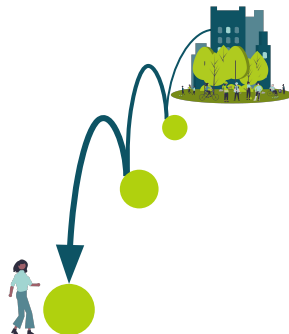


## What is it?

Backcasting is used to identify **key actions, processes, strategic decisions, structures and cultures** that need to change in order to reach a certain future. It describes the path “backwards” from the future state until today so can be used to understand how multiple possible futures may come about, surfacing key factors to **monitor** over time. It also can be used to identify **how a desirable future could be steered towards**, forming a clear idea of must-wins and priorities, and build collective agency over the future via asking “*what can we do?*”

## When could you use it?

As an **explorative planning** tool: it won't identify a perfect plan as the future will continue to change, but it can show the key dimensions to influence and monitor, and the must-win battles. In order to backcast, you need to have a minimum of one **described vision/future state**. For your city, one of the most impactful uses would be to backcast from a desirable future state.



## How do you do it?

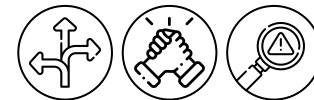
Backcasting works in the following steps:

- **Clarify the future vision** or future state (e.g. what is the ideal version of your city in 2050).
- Move backwards along the timeline and **describe what has happened**. Think on different levels and use probes (e.g. news headline in 2040, key project in 2038). It can help to break down key milestones and take each time period in turn to show how casualties may develop. For example, if you have a future state in 2050, asking what will happen in 2045, 2040, 2035, 2030, 2027 etc.
- **Identify priority areas** - What are the key events that must happen or must not happen? Which factors seem critical to success?
- **Identify responsibilities** for the priority areas - Who could/should make the moves? How can you monitor developments over time and adapt actions?

## Where can you learn more?

You can access a step-by-step breakdown of how to do backcasting [in this resource](#) on the NetZeroCities Portal.

# 5. Three Horizons



## What is it?

The Three Horizons method helps cities and organisations **explore change over time by mapping three overlapping "horizons"**:

- *Horizon 1: The current system* — today's dominant practices and structures, which may be effective now but increasingly unsuited to emerging challenges (e.g. legacy energy systems or planning processes).
- *Horizon 2: Transitional innovations* — emerging ideas, policies, or technologies that are disruptive or experimental, often bridging between present and future.
- *Horizon 3: The transformative future* — a visionary long-term state shaped by different values, systems, or paradigms (e.g. a regenerative, net-zero city).

## When could you use it?

The method supports **strategic conversations** about how to manage decline, nurture innovation, and accelerate transformation, often in complex areas like climate transition. It is especially helpful to simplify discussions on the future and identify what we'd need to phase out and in over time, and through which means.

## How do you do it?

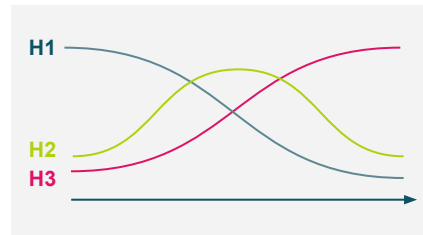
The Three Horizons method can be used alongside other methods:

- **Use Horizon Scanning** to populate the three horizons by identifying signals of change, emerging trends (H2), and stresses to the current system (H1).
- **Use Scenario Building** to imagine how different futures might emerge across the three horizons and exploring pathways between them.
- **Reflect on what we can learn from this:** how do current practices, cultures, processes, and structures within your city support or constrain the different horizons moving forward. Are there skills or approaches you need to build to support the transformative future emerging? Do you have sufficient support for transitional innovations and using the learnings from them?

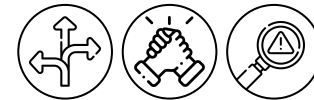
## Where can you learn more?

You can find more information on Three Horizons [here \(p. 42\)](#).

More information, including an introduction video, can be found by Future Stewards [here](#).



# 6. Futures Wheel



## What is it?

The Futures Wheel is a structured visual method for exploring the **consequences of change**. It starts with a central idea, event, or trend (e.g. widespread adoption of heat pumps), and radiates outward in layers to map its:

- First-order impacts: **Direct consequences**
- Second-order impacts: **Indirect or knock-on effects**
- Third-order impacts: **Systemic, long-range implications**

It can be used to breakdown potential changes in a simple way.

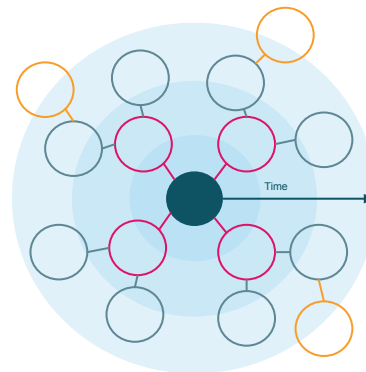
## When could you use it?

This helps cities move **beyond linear thinking** and better understand the ripple effects of policy choices, actions, or emerging trends. This makes it a useful tool for climate action, innovation planning, or stress-testing strategies.

If you struggle to move directly from trends (gathered via Horizon Scanning) to connected future states or scenarios, this is a useful way to **break down or more closely investigate potential implications** and how they may connect with each other.

## How do you do it?

- **Define central trend or event** - this could be a key change (e.g. new climate policy) or something you identified in your horizon scanning.
- **Identify** first-order impacts, then progress to second-order and third-order impacts. Consider impacts in different areas and on different groups.
- **Analyse patterns and feedback** - Spot risks, opportunities, and unexpected connections for you and your aims.
- You can use the results in various ways: to enrich and support scenario building, to conduct deeper backcasting, to engage diverse stakeholders in conversations on the future, to inform changes in action, and more.



## Where can you learn more?

You can find more information on the Futures Wheel [here \(p. 75\)](#).

# Futures thinking & NetZeroCities

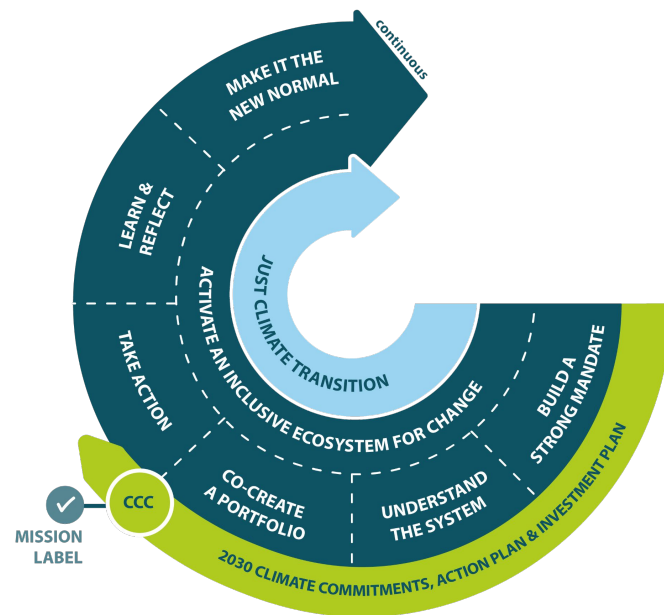
## Climate Transition Map

For cities in the EU Cities Mission, the [Climate Transition Map](#) steers cities' journey towards climate neutrality.

Futures thinking offers new viewpoints, insights and tools which have the **potential to be used in the different stages of the journey**. For example:

- In building a strong mandate and maintaining it over time, the ability to define the city's direction, and get actors on board in the development and implementation of this is important.
- Understanding the system requires drawing on diverse knowledge and perspectives which are both history- and future-oriented.
- To provide a clear lens for continuous learning and reflecting, your city needs a well-defined long-term direction and understanding of the different factors that are key to achieving it via adaptive action over time.
- Anticipatory Governance focuses on how to turn foresight from individual activities into a new normal.

These are some examples, but it would be valuable for Mission Cities to reflect on where foresight could bring most value to their journey and its current challenges. Sections 3 and 4 can aid this.





# Section 3: Four Use Cases in Cities' Climate Action

Where to use it?





# Applying methods via use cases

To help see how individual methods like these can be applied impactfully to key areas of your city's climate actions, we have included four archetypical use cases. These aim to demonstrate **how foresight can be channeled towards different purposes and link closely to your current work**, enabling you to ensure it is both in alignment with your city's long-term goals and capable of being adapted as the future evolves. On each slide, the use case is labelled with different icons to demonstrate which of the 6 functions for foresight it is supporting. Here is an overview of the use cases themselves:

## Vision-setting

For cities wanting to align the city around a common vision and goals.



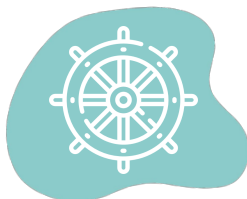
## Foresight-driven roadmaps

For cities wanting to ensure actions will steer towards long-term goals.



## Adaptive planning

For cities wanting to understand how to steer action over time.

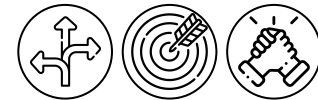


## Citizen Co-creation and Storytelling

For cities wanting to ensure their residents are part of the transition.



# Use Case: Vision-setting



**Vision-setting is the process of articulating a shared, long-term direction for the city.** All cities and governments have some form of strategic documentation of what they are trying to achieve. It can be valuable to explicitly use futures methods to strengthen this.

A future-oriented approach doesn't just extrapolate from the present — it uses structured foresight tools to imagine multiple plausible futures and build a compelling, inclusive narrative about what the city could become. This involves engaging with uncertainty, challenging assumptions, and actively shaping desired outcomes.

→ **A strong vision is the foundation for action planning among actors.**

## How is it useful for your city?

This helps cities move **beyond linear thinking** and better understand the ripple effects of policy choices, actions, or emerging trends. This makes it a useful tool for climate action, innovation planning, or stress-testing strategies.

If you struggle to move directly from trends (gathered via Horizon Scanning) to connected future states or scenarios, this is a useful way to **break down or more closely investigate potential implications** and how they may connect with each other.



## Methods that can be used for this:

- Horizon scanning
- Scenario building
- Three Horizons

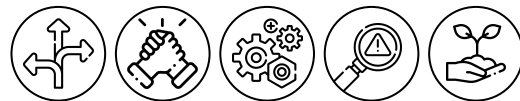
## Example: The Espoo Story

Espoo (Finland) has laid out its [climate goals](#) as part of their overall strategy, the Espoo Story, and based on their Sustainable Energy and Climate Action Plan (SECAP).

This vision wasn't only created by those working within the city, but also involved **engagement with residents** of Espoo. For example through a diverse resident group whose discussions are brought to the steering group of Sustainable Espoo. Citizens have co-designed ideas for how they could support climate work more, and the citizen group co-created a vision map of the kind of Espoo they would like to see in 2050.

This connects to Espoo's view that climate neutrality as a goal should be integrated in all interactions between the city administration and citizens as a shared goal. Read more in [Espoo's Climate City Contract here \(e.g. p. 36\)](#).

# Use Case: Foresight-driven roadmaps



**Foresight-driven roadmapping is about designing structured pathways to navigate uncertainty** and move intentionally toward a desired future. Unlike traditional roadmaps which often assume linear progress from the present, this approach uses foresight to first explore what the future might look like, and then build dynamic plans that can adapt as the context evolves.

It combines backcasting with other futures tools—scenario building, horizon scanning, and futures tables—to create more robust, flexible and responsive roadmaps. Foresight-driven roadmaps can be used to **build adaptability** and steer towards desired futures over time.

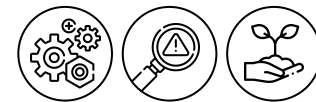


## How is it useful for your city?

Roadmaps can lead to rigidity: encouraging us to break them down into KPIs and set causal pathways. Foresight-driven roadmaps help cities go beyond compliance and target-chasing. It enables **strategic thinking** that can anticipate disruption, surface weak signals, and explore policy **trade-offs** before they become urgent. The added value lies in linking long-term visioning to **concrete decisions**—helping cities balance aspiration with feasibility, and innovation with political and operational realities.

Imagine a city aiming to become climate neutral by 2040, a simple process using foresight methods might look like this:

1. **Horizon scanning** is used to gather early signals of change (emerging technologies, regulatory shifts, climate risks) that could impact the pathway to resilience. This provides an evidence base and challenge to business-as-usual thinking.
2. **Scenario building** generates several plausible future contexts (e.g. fragmented governance vs. empowered localism; rapid innovation vs. constrained transitions). These scenarios highlight different risks and opportunities that shape the roadmap.
3. **Futures tables** are then used in stakeholder workshops to explore trade-offs across sectors and time (e.g. what does affordable housing look like under different climate scenarios?). This promotes systems thinking and helps prioritise interventions. You can also use the **Futures Wheel** here.
4. **Backcasting** from a preferred scenario (e.g. a just, climate neutral city) helps define key actions, policy shifts, and investments needed now and in the medium term. These milestones feed into a formal roadmap and monitoring plan which still remains ‘living’ or non-rigid to learnings that emerge. If desired, you can compare this roadmap using the **Three Horizons**.
5. Developing the **mechanisms to adjust** the roadmap over time, based on new information, trend monitoring, and learning from implementation.

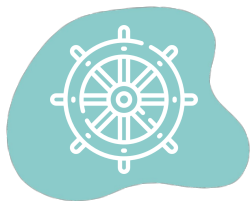


# Use Case: Adaptive planning

**Adaptive planning** refers to the government's ability to adapt plans and actions based on changing conditions. This includes making plans and planning *flexible* and *adaptable* to future uncertainties, by testing our scenarios and updating plans and decisions based on (continuous) monitoring of changes in the world around us.

## How is it useful for your city?

By acknowledging the **uncertainties** related with the planned climate actions (e.g., in climate roadmaps and action plans) and scrutinizing the underlying assumptions behind the emission reduction pathways, cities can implement **adaptive**, **resilient**, and **robust** climate action.



### Methods that can be used for this:

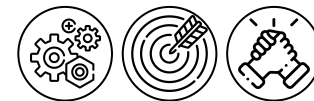
- Futures wheel
- Futures table
- Backcasting
- A strong vision to orient decision making, based on horizon scanning and scenario building

Several approaches and frameworks have been developed for adaptive and reflexive planning. These include:

- **Assumption-based planning (ABP)** helps organisations identify when plans need to be updated. It analyses the background assumptions of the plan and what would happen if the background assumptions are not met
- The **Robust decision-making (RDM)** framework is based on modelling of the future and aims to lead leading to a plan assessed as "good enough" in many alternative futures, but not necessarily optimal in any single case. The plan is expected to avoid most situations where the plan would not achieve its main objectives.
- **Dynamic Adaptive Policy Pathways (DAPP)** is a framework aiming to identify objectives, obstacles and uncertainties and using them to build a range of possible pathways towards the set goals. DAPP makes use of the identification of trigger points, which define the moments when additional policy measures are necessary to reach the desired outcomes. DAPP has been utilised in climate change adaptation in New Zealand and in reducing emissions of the construction in the UK.

Each of these could be looked at from the perspective of **how a future-oriented approach and methods could support their design and implementation.**

# Use Case: Citizen Co-creation and Storytelling



**Citizen engagement in climate transitions is a dual process: participation and sense-making.** It's both about asking people what they think, and helping them imagine what change might actually feel like: what daily life in a decarbonised, resilient city could look like, and how it connects to their own values, concerns, and aspirations. Future-oriented citizen engagement blends traditional methods (e.g. citizens' assemblies or panels) with **narrative foresight**: the use of scenarios, speculative storytelling, immersive workshops, or visual artefacts (futures maps, personas, timelines) to make abstract futures tangible and relatable. This helps communities contribute to transition planning, and understand and take agency over the journey.

## How is it useful for your city?

Climate transition can be politically and emotionally fraught. Engaging citizens through **foresight-based storytelling** helps surface latent hopes and fears, uncover local knowledge, and build legitimacy. It reduces polarisation by shifting focus from polarising policies to shared futures, and it gives diverse communities tools to imagine themselves as co-creators of tomorrow's city. It strengthens **democratic dialogue**, supports behaviour change, and provides planners with nuanced, grounded insights that static surveys or top-down modelling miss.



## Example: Camden Council's ongoing Missions work

[We Make Camden](#) exemplifies how a city can integrate futures thinking, citizen co-creation, and storytelling into both vision-setting and mission implementation. Here are some key elements:

- **Co-Creation of a Shared Vision:** Building upon the Camden 2025 strategy, *We Make Camden* was developed through extensive engagement with residents, partners, and community leaders.
- The initiative adopts a **mission-oriented approach**, with shared via partnerships between the council, citizens, and local organisations, creating collective purpose and accountability.
- Recognising the power of narratives, *We Make Camden leverages storytelling* to make complex policies relatable. By sharing stories of local initiatives and personal experiences, the program helps residents connect to strategic goals.
- The *We Make Camden Kit* offers small grants to **community-led projects** that align with the borough's missions. Funding decisions are made by panels comprising Camden residents, ensuring that resource allocation reflects community priorities and encourages grassroots innovation.
- The We Make Camden Summit serves as an annual platform for citizens, organisations, and council representatives to review progress, share successes, and plan future actions. These gatherings reinforce the **collaborative ethos of the initiative** and provide opportunities for continuous learning and adaptation.





# Section 4: Anticipatory Governance

How to institutionalise it?



# Moving beyond methods and isolated use cases

As mentioned in the beginning, Anticipatory Climate Governance refers to the governance system - structures, processes, methods, capacities, cultures, mindsets, strategies - that are used in a certain context (e.g. a city government or ecosystem) to steer and act towards a desired future for the climate and nature, including the ability to do so adaptively over time.

It is about turning foresight into action for future-ready decisions in your city.

**Anticipatory Climate Governance is a decision-making approach that uses foresight to proactively guide current actions in policymaking, strategy, and budgeting.** It involves:

- Anticipating future challenges and opportunities
- Imagining futures worth striving for
- Systematically creating and applying foresight knowledge
- Making assumptions, plans, and attitudes toward the future explicit for critical examination
- Enhancing organisational capacity to address complex, emerging situations



# This is a journey

Anticipatory Climate Governance recognises that the most impactful use of foresight is **beyond methods and isolated use cases**.

A city that has embraced an anticipatory approach to its climate work doesn't only utilise it in a single project, process, initiative, or engagement. Instead, it weaves anticipation methods, culture, and mindsets throughout its work and structure, **creating a city that can adapt in the present to steer towards the future**.

However, this kind of city isn't built in a day. And many cities are already practicing anticipation - whether it is called that or is being used only in some places. Although Anticipatory Climate Governance is an opportunity beyond only using a single specific method, this is often a starting point for getting to grips with applying foresight in reality. We suggest that this should then **lead to investigating other aspects** of an anticipatory approach in climate work.

The following section aims to indicate **the journey** of moving beyond foresight as methods or isolated use cases. For your city, this can be used to reflect and discuss what your ultimate aim is.



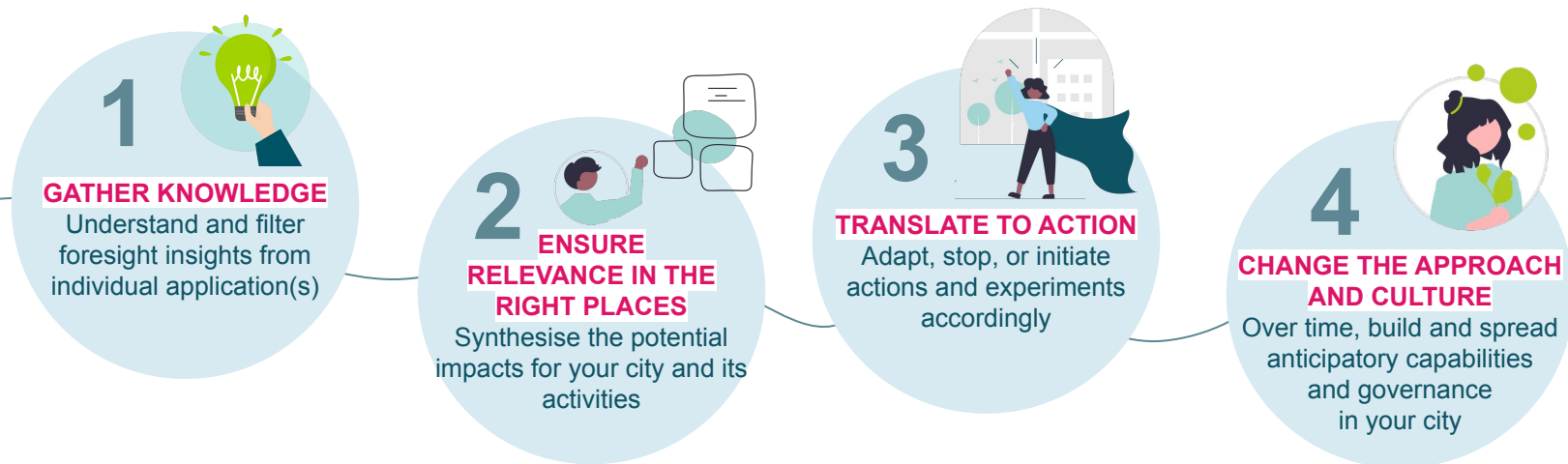
# Addressing the ‘impact gap’

A key leverage for this journey is finding ways to overcome the ‘impact gap’.

**The impact gap** refers to the challenge of taking the insights of foresight work and managing to translate them into the systems of decision making and action already existing within your city. Put simply, making sure they influence and change something rather than remaining ‘good analysis’ in a drawer.

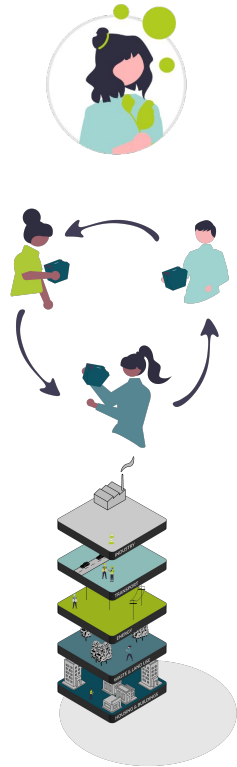
In addition being able to use futures thinking, addressing the impact gap requires **looking at the broader systems around you** - knowledge use, project planning and evaluation, policy steering mechanisms (strategic, budgetary and legal), engagement and partnership approaches, formal and informal power structures, skills, narratives, and more. These are all part of what we call **governance**.

Therefore, beyond using methods, building Anticipatory Governance and capabilities in your city requires the ability to:





# Building Anticipatory Climate Governance means...



The individual

The system

Embedding future-readiness and sustainability throughout...

- **skills and capabilities** to identify and pursue goals
- **leadership, culture, and mindsets** to enable action
- **roles and responsibilities** within and beyond government
- **learning**, monitoring, and evaluation
- **processes** for developing goals, policy, and making decisions
- **resource** prioritisation
- **knowledge management and exchange** among actors
- **structures and institutions** for organising action
- **goals and the narratives** that are used for them

# Foresight is an opportunity for collaboration

It is important to recognise that futures reflect their creators. We all have different ideas of what could or should happen in the future. Futures work is most effective when it reflects the diverse perspectives, needs, and aspirations of the people it seeks to serve. Cities are complex systems shaped not just by policy, but by lived experience, social dynamics, and local knowledge.

Involving different actors—residents, businesses, community groups, experts, and institutions—brings in a **richer understanding** of emerging challenges and opportunities. It also **surfaces blind spots, tests assumptions, and builds legitimacy for long-term thinking**. Without this diversity of input, futures exercises risk becoming technocratic or detached from reality.

City governments are uniquely placed to lead this process—not as sole decision-makers, but as convenors and stewards of inclusive dialogue. Their role is to create space, structure, and continuity for futures thinking, ensuring it connects across sectors and time horizons. Although not all futures work needs to include all stakeholders, it is valuable to reflect at the start of initiating it on **who should be involved in the process, when, and with which roles**.

By embedding **participatory foresight** into your city's climate approach, you can shape futures that are not only visionary but also grounded, equitable, and collectively owned.







# Learning from Mission Cities

The NetZeroCities project conducted a **study of four European cities** on how they use foresight and anticipation in their cities' climate change mitigation and what **barriers and opportunities** they identified in adopting foresight-oriented approaches. The cities analysed were Tampere (Finland), Umeå (Sweden), Valencia (Spain), and Parma (Italy). The research of the four case study cities was conducted in 2024–2025.

## Takeaways

- Application of anticipatory governance in **city level planning** is emerging as an important area of development and capacity building.
- However, these **approaches are not institutionalised**, and cities were in the process of establishing or grounding anticipatory climate governance practices in their work.
- Anticipatory governance has the potential to assist cities in better **navigating and preparing for potential challenges** and disruptions while planning future development.
- The cities express interest in developing and implementing **more sophisticated** adaptive planning methods and tools to enhance their climate work.
- The cities highlighted **constraints in human, financial, and time resources** as barriers to implementing anticipatory governance effectively.

You can read the case study report [here](#).



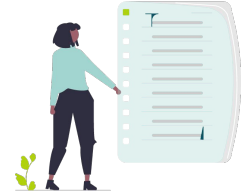


# Starting today...





# Starting today: everyday foresight



When we look at the broad opportunity of Anticipatory Climate Governance, it can seem overwhelming, like it would take lots of resources, or like it doesn't link to your daily work and challenges in your city. In actual fact, Anticipatory Climate Governance is exactly about weaving future-oriented capabilities and culture throughout your city, concretely linked to making an impact where it matters at the core of your work.

To show how you can begin to harness this, we have suggested **simple ways to start to engage with making your work more future-oriented** and giving you the opportunity to identify where it is most useful. You can choose from these or take inspiration for how anticipation can become part of the 'everyday'.

## What if you started by...

- Adding a **10 minute agenda item** to your team's monthly meeting where you would discuss long-term goals and whether you see any barriers or opportunities for them in your current work. You could start with each sharing "what would I like to our city to be like in 2050?" (this can be more specific e.g. mobility, space)
- Holding a **1 hour 'Foresight coffee sharing'** where people across departments can share how they are currently using foresight and learn from each other.
- Identifying **one member of your team** who could start to learn about foresight and suggest ways it could be used in your work.
- Each member of your team sharing **one 'weak signal of change'** (e.g. an article, video, podcast) they are curious about and think could affect your climate work or city in the future.
- Gathering 'weak signals of change' on a **monthly basis** to monitor factors that may affect your work over time.



# Starting today: 5 reflection questions to take to your team



Sparking your thinking on the use of foresight and Anticipatory Climate Governance can begin with a conversation. To support this, we have gathered five initial questions you can take to your team's next meeting to build a first internal diagnosis or assessment of where you may best utilise the opportunity of anticipation.

- 1. Do we already know how futures thinking or anticipatory governance is currently being used** within the city government? This can go beyond climate-specific work.
- 2. What are key instruments of our city's climate work**, and how could foresight methods be applied in them?
- 3. Which processes are currently not working as well as they could**, and how could a future-oriented approach help us to bring it to another level?
- 4. Do we know which non-governmental actors in the city are using foresight** (e.g. academia, companies)? Could there be an opportunity to map who we think should be involved, and draw on their skills and knowledge?
- 5. Looking at our goals and projects for the next 6-12 months**, can we see any where we need to broaden our awareness of how they may be impacted by different factors? Could we take a 'futures perspective' to our roadmaps to reflect on if there are any potential opportunities we aren't currently aware of?

# Five steps forward today



1.

**Sharing your reflections on this guide with your team**

What seems useful? What connects to your current work?



2.

**Discussing the five reflection questions together**

Where are you currently?  
Where could there be opportunities?



3.

**Identifying one 'everyday' practice to test at a low threshold**

What would be an easy way to start to discuss the future? Draw inspiration from the examples!



4.

**Choosing 1-2 team members to investigate further**

Which available materials or open courses could help build understanding?



5.

**Learning from other cities' examples and practices**

What can you learn from existing case examples online or at events?



# Conclusions





# Final thoughts

Cities today face a complex interplay of challenges and shifting dynamics, yet they also hold **a unique position to lead meaningful climate action** that is both grounded in the present and oriented towards the future.

This guide aims to support cities in building the **capacity to steer climate action more deliberately, adaptively, and collectively**. It acts as a starting point for pinpointing the purpose of foresight in supporting your climate journey, and diving deeper into how to realise that.

Futures thinking and Anticipatory Climate Governance are not abstract ideals; they are **practical, strategic approaches** that can be embedded in city systems to help navigate uncertainty, engage diverse actors, and link today's decisions with tomorrow's goals. They go beyond setting vision to also inform implementation over the course of time.

By applying these tools thoughtfully - whether to set visions, build roadmaps, or engage and tell the story of climate transition to and with citizens— - cities can better align their climate ambitions with the broader societal transformations already underway.

The opportunity lies not in predicting the future of your city and the wider world, but rather in recognising and acting upon **our agency to shape it**, deliberately, inclusively, and with purpose.



# Resources and References

Demos Helsinki, 2023 'Towards Experimentalist R&I Funding: How research and innovation funders can drive societal transformation in the 21st century', Formas, [ISBN 978-91-540-6198-3](#)

Voros, J 2017, 'Big History and anticipation: Using Big History as a framework for global foresight', in R Poli (ed.) Handbook of anticipation: Theoretical and applied aspects of the use of future in decision making, Springer International, Cham. doi:10.1007/978-3-319-31737-3\_95-1,

## Resources mentioned:

- [NetZeroCities Knowledge Repository](#)
- [Governance Innovation and Implementation in the Cities Mission: Anticipatory Governance in City Climate Planning and Policy](#)
- [Futures toolkit for policymakers and analysts - UK Government Office for Science](#)
- [More on Anticipatory Governance](#) with some examples from the national level

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