



# LUND UNIVERSITY

## Cities, Climate and Change: Pathways and Opportunities

Mccormick, Kes; Wickenberg, Björn; Vanhuysse, Fedra ; Holmberg, Lena; Shabb, Katherine

2023

### Document Version:

Publisher's PDF, also known as Version of record

[Link to publication](#)

### Citation for published version (APA):

Mccormick, K. (Ed.), Wickenberg, B., Vanhuysse, F., Holmberg, L., & Shabb, K. (2023). *Cities, Climate and Change: Pathways and Opportunities*. Lund University.

### Total number of authors:

5

### General rights

Unless other specific re-use rights are stated the following general rights apply:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

### Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117  
221 00 Lund  
+46 46-222 00 00

# CITIES, CLIMATE AND CHANGE

## Pathways and Opportunities

Insights on how to design, create and achieve  
climate neutral and sustainable cities



# Preface

---

We are facing a climate and ecological emergency. On all levels in society and the economy, there is a need to work towards climate neutrality and sustainable development.

A key way to address global and local complex challenges is through cities. But how can we design, create and achieve climate neutral and sustainable cities?

This compendium focuses on how to support individuals and organisations in developing transformative skills and capacities for climate action in cities.

Join our online course and community that address this question.

Enrole here: [www.coursera.org/learn/cities-climate-and-change](https://www.coursera.org/learn/cities-climate-and-change)

---

**Title:** Cities, Climate and Change: Pathways and Opportunities

**Editor:** Kes McCormick

**Contributors:** Björn Wickenberg, Fedra Vanhuyse, Lena Holmberg, Katherine Shabb

**Designer:** Charlotte Leire

---

© You may use the contents of the IIIEE publications for informational purposes only. You may not copy, lend, hire, transmit or redistribute these materials for commercial purposes or for compensation of any kind without written permission from IIIEE. When using IIIEE material you must include the following copyright notice: 'Copyright ©*author's name*, IIIEE, Lund University. All rights reserved' in any copy that you make in a clearly visible position. You may not modify the materials without the permission of the author.

Published in 2023 by IIIEE, Lund University, P.O. Box 196, S-221 00 LUND, Sweden,  
Tel: +46 46 222 02 00, e-mail: [iiiiee@iiiiee.lu.se](mailto:iiiiee@iiiiee.lu.se).

Publication design and layout: Charlotte Leire, IIIEE, Lund University.

Photographs and images from Shutterstock, Pixabay, IStock Photos, as well as private photos offered by Charlotte Leire and Håkan Rodhe.

# 1

## Visions and Plans

IN THIS CHAPTER, WE BEGIN WITH LOOKING AT VISIONS FOR CLIMATE ACTION IN CITIES AND THE PLANS ON HOW TO ACHIEVE AMBITIOUS GOALS.

# 2

## Data and Tools

IN THIS CHAPTER, WE EXPLORE TOOLS FOR CLIMATE ACTION AND CREATING BOTH IMMEDIATE AND LONG-LASTING IMPACTS IN CITIES.

# 3

## Finance and Partnerships

IN THIS CHAPTER, WE TACKLE THE KEY CHALLENGE OF FINANCING CLIMATE ACTION IN CITIES AND THE VITAL ROLE OF PARTNERSHIPS.

# 4

## Engagement and Action

IN THIS CHAPTER, WE DELVE INTO COMMUNITY AND CITIZEN ENGAGEMENT IN CITIES AND HOW IT UNDERPINS CLIMATE ACTION.

# 5

## Research and Innovation

IN THIS CHAPTER, WE CONNECT CLIMATE ACTION IN CITIES TO ONGOING RESEARCH, EVALUATION AND INNOVATION.



## WELCOME AND INTRODUCTION

This compendium explores how we can design, create and achieve climate neutral and sustainable cities. We embrace the “mission to the moon” approach for tackling greenhouse gas emissions from cities putting an emphasis on pathways and opportunities. We utilise insights and inspiration from Sweden, Europe and around the world.

Climate neutrality refers to the idea of achieving net zero greenhouse gas emissions by balancing emissions, so they are equal (or less than) the emissions that are removed through natural absorption and processes. In this compendium, we interpret climate neutrality for cities as rapid decarbonisation.

Through this compendium, we target how to support individuals and organisations in developing transformative skills and capacities for climate action in cities. We focus on mitigation in connection to adaptation, resilience, social justice and sustainable development in the context of cities, climate and change.

It is critical to connect efforts on climate neutrality with sustainable development. This compendium addresses not only what we need to do in our cities but also how we can do it. It is organised around five themes of visions and plans, data and tools, finance and partnerships, engagement and action, and research and innovation.

## Embracing The Ten Tools For Systems Change

We start this compendium by exploring the “Ten tools for systems change to a zero carbon world” created by Future Stewards – a partnership set up to help drive systems change. The tools provide practical methods and entry points for embarking on actions towards climate neutral and sustainable cities. Further details about these tools are dispersed throughout the compendium.

The table below shows the five key activities we use in this compendium to learn about how to design, create and achieve climate neutral and sustainable cities, and the relationship to the ten tools.

ACTIVITIES	TOOLS
<b>Visions and plans</b>	1. Working with the future 2. Three Horizons
<b>Data and tools</b>	3. Regenerative worldview 4. System maps
<b>Finance and partnerships</b>	5. Accelerating transitions framework 6. Causal loops
<b>Engagement and action</b>	7. Exponential goals 8. Tipping points and cascades
<b>Research and innovation</b>	9. Ambition loop 10. The power of convening



## Creating Climate Neutral and Sustainable Cities

**Viable Cities** is a Swedish strategic innovation program on climate neutral and sustainable cities. Together with local municipalities, business, academia, civil society, and national government agencies, Viable Cities are working to create climate neutral and sustainable cities with thriving communities, that are good for the economy, and that are also good for the climate and our society.

A key initiative of Viable Cities is called – **Climate Neutral Cities 2030** – it brings together 23 Swedish municipalities accounting for 40% of the Swedish population and five national government agencies. Five central approaches behind this initiative are innovation teams, climate city contracts, climate investment plans, system demonstrators and transformative portfolios. Further details about these activities are dispersed throughout the compendium.

The table below shows the five key activities we use in this compendium to learn about how to design, create and achieve climate neutral and sustainable cities, and the relationship to the five approaches that underpin the work of Viable Cities.

ACTIVITIES	APPROACHES
<b>Visions and plans</b>	Innovation teams
<b>Data and tools</b>	Climate city contracts
<b>Finance and partnerships</b>	Climate investment plans
<b>Engagement and action</b>	System demonstrators
<b>Research and innovation</b>	Transformative portfolios

The European Commission has launched a mission for 100 climate neutral cities by 2030 to pursue ambitious goals, reduce emissions rapidly, and experiment with innovative approaches with citizens and urban stakeholders. The selected cities are developing strategies, which include overall plans for climate neutrality across a diversity of sectors including energy, buildings, waste management and transport, together with related mechanisms for financing and partnering.

A significant challenge is the lack of capacity to bring urban stakeholders together in concerted action, using financial resources and technological innovations in order to catalyse transformation. The City of Malmö is part of the mission for 100 climate neutral cities in Europe, and the Swedish efforts on climate neutral cities coordinated by Viable Cities. It is a pioneer and provides valuable insights and lessons. Further details about these lessons are dispersed throughout the compendium.





## Developing Transformative Skills and Capacities

A skill is an ability to perform an activity or task in a competent manner. There are a diversity of ways to classify skills related to both personal and professional life. A skill can be considered transferable and functional, or based on personal traits, or connected to knowledge. Transferable and functional skills allow you to perform a task and transfer the skills to different situations and activities. Personal traits are characteristics that contribute or underpin performing tasks. While knowledge of specific subjects, procedures, and information can be important to successfully completing tasks.

We can also talk about technical skills and people skills. Technical skills refer to specialized knowledge and expertise required to perform specific tasks and use specific tools. People skills capture the ability to communicate with people in a way that builds trust, understanding and action. Furthermore, we can identify a collection of skills often considered important in work, including: critical thinking and problem solving; teamwork and collaboration; professionalism and work ethic; oral and written communications; leadership qualities; and analytical and quantitative abilities.

While specialised skills are essential to our work and undertaking tasks, transformative skills and capacities are increasingly needed to address complex challenges and reshape our organisations and societies to respond to climate change and engage with sustainable development. The Inner Development Goals highlight the role of inner capacities for transformation and the need to link inner and outer transformation. Building from the Inner Development Goals of **BEING, THINKING, RELATING, COLLABORATING** and **ACTING**, we propose a fundamental and interconnected set of transformative skills and capacities.



## STARTING WITH THE INNER DEVELOPMENT GOALS

## DEVELOPING TRANSFORMATIVE SKILLS AND CAPACITIES

### BEING

Cultivating our inner life and developing and deepening our relationship to our thoughts, feelings and body help us be present, intentional and non-reactive when we face complexity.

### LEARNING MINDSET

A key for embracing change is a learning mindset at both individual and collective levels. It involves a combination of experiences, reflection, re-thinking and trying out new ideas and new approaches.

### THINKING

Developing our cognitive skills by taking different perspectives, evaluating information and making sense of the world as an interconnected whole, is essential for wise decision-making.

### CRITICAL SYSTEMS THINKING

Critical systems thinking involves understanding the complex causal relationships and feedback loops within and between systems, including understanding actor relationships.

### RELATING

Appreciating, caring for and feeling connected to others, such as neighbours, future generations or the biosphere, helps us create more just and sustainable systems and societies for everyone.

### DEEP LISTENING

Deep listening relates to deep learning (as opposed to surface learning), and involves connecting beyond facts and information. Opening up to different perspectives and approaches is key.

### COLLABORATING

To make progress on shared concerns, we need to develop our abilities to include, hold space and communicate with stakeholders with different values, skills and competencies.

### COCREATING ABILITIES

Cocreating abilities involves communication skills and the capacity to facilitate inclusive processes of trust and managing diverse values, interests and knowledge perspectives as well as team building.

### ACTING

Qualities such as courage, perseverance and optimism help us acquire true agency, break old patterns, generate original ideas and act with persistence in uncertain and challenging times.

### EMBRACING EXPERIMENTATION

Collaborative action through embracing experimentation involves deliberate testing of future configurations and learning for structural and systemic change, which is a key for transformation.

## TRANSFORMATIVE LEARNING

The perspective of inner capacities for transformation and the need to link inner and outer transformation, requires that we – as individuals and as organisations – need to “re-learn” how to live within the carrying capacity of the planet and natural ecosystems, and without compromising the prospects of future generations. In other words, there is an increased need for people and society to “learn how to learn” for undertaking systems change. This type of learning can be called transformative learning.

Transformative learning involves reflection on worldviews and established orders that can disrupt paradigms and open up for systems change. It can lead to “seeing things” and “doing things” in substantially different ways and bringing together dispersed interests and initiatives. Transformative learning encompasses institutional structures, social practices and conflict perspectives, and it is central for understanding and amplifying processes driving systems change.

As suggested, developing transformative skills and capacities is a learning process in which we need to combine different types of knowledge including cognitive, normative and practical. Cognitive knowledge relates to facts and understanding, normative knowledge relates to values and experiences, while practical knowledge relates to taking action and learning. As with knowledge, transformative skills and capacities can be reflexive, cognitive, relational, collaborative, and operational.

In other words – and by connecting to the Inner Development Goals – we need to focus on developing transformative skills and capacities that build from **BEING, THINKING, RELATING, COLLABORATING** and **ACTING**. Transformative learning plays a key role for individuals in parallel with organisations, which centres around collective and systemic learning for systems change. Overall, we need transformative skills and capacities that can help solve real and pressing challenges.





# Visions and Plans



## Introduction

Data and tools play a key role in underpinning and accelerating climate action in cities, where leaders and administrators in local municipalities face complex decisions, multiple priorities, and a range of urban stakeholders to engage. Demographic shifts, climate change, technological transformation, budgetary constraints, and the unprecedented impacts of the pandemic are increasing uncertainty and placing pressure on local municipalities to make better, faster, and more integrated decisions. The ambition for climate neutral cities demands a dedicated approach to data and tools to support climate action as well as working with incomplete data and uncertainty.

## Innovation teams

A key foundation for developing visions and plans on transformative change in cities is collaboration. Innovation teams are designed around three core ideas. First, they recognise the need to go beyond the borders of local municipalities and engage with diverse urban stakeholders. Second, they are designed to continuously interact and engage with local citizens and communities. Third, they recognise the importance to organise activities, processes and events that break away from business-as-usual and bring in the viewpoints of a mix of organisations and individuals.

“

*“There are several areas where our community needs to reduce its climate emissions, which are beyond the control of the municipal organization. Uppsala needs collaborations in order to achieve our climate goals. We have an ambitious climate policy, but we cannot do everything ourselves.”*

- Mayor, Uppsala



## Lessons from Malmö: Developing visions and plans

*The City of Malmö is part of the mission for 100 climate neutral cities in Europe, and the Swedish efforts on climate neutral cities coordinated by Viable Cities.*

The environmental programme at the City of Malmö, underpins efforts on climate neutrality and the 1.5 degree goal of the Paris Agreement, and it outlines visions and plans to 2030. The environmental programme is Malmö's strategy for the ecological dimension of Agenda 2030 and the Sustainable Development Goals, and therefore indicates the direction of the city's environmental and climate work. The environmental programme governs the city's committees and companies and it also aims to support and inspire Malmö residents and actors in the private and public sector.

The environmental programme consists of twelve goals divided into three areas: A Malmö with the least possible climate impact; A Malmö with a good living environment; and A Malmö with rich and healthy nature. The overall climate target covers reducing emissions of greenhouse gases in Malmö as a geographical area by 70 percent as well as striving for Malmö being supplied with 100 percent renewable and recycled energy.

For the city of Malmö, the entire organisation has a joint responsibility for achieving the goals in the environmental programme. Each committee and company board is expected to integrate the content of the environmental programme into their business planning. This means that each committee and company board is responsible for identifying which goals their activities can contribute to and deciding on the measures that lead to the greatest environmental effect and societal benefit.

PHOTO: ANNA HÅLLAMS



# WORKING WITH THE FUTURE

1

## SUMMARY

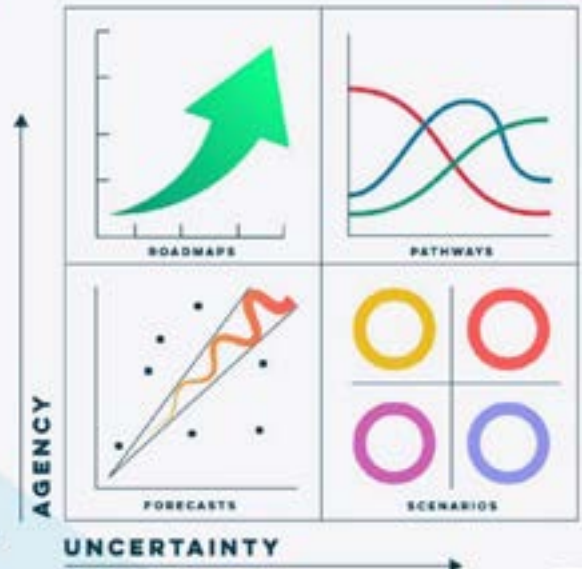
Futures practices help us take action in complex situations where the past is not a good guide to the future. This is typically the case when we want to bring about systems change. Choosing the right approach allows us to combine our ability to act with an appreciation of uncertainty.

## WHEN TO USE IT?

To help you choose the most appropriate futures tool for what you are doing. Pathways approaches are needed for most work which involves convening many stakeholders to bring about systems change.

## BENEFITS - HOW DOES THIS HELP?

- Forecasts are based on extrapolation and work well where the past is a good guide to the future
- Roadmaps bring people together for shared action and are good for shaping technology evolution
- Scenarios tell stories of the uncertain future we might face, and are useful ways to test our plans
- Pathways enable flexible navigation towards a visionary goal, whilst leaving adaptive and transformative moves open to deal with emergent and unexpected conditions



# THREE HORIZONS

2

## SUMMARY

A simple and intuitive way to map patterns of change:

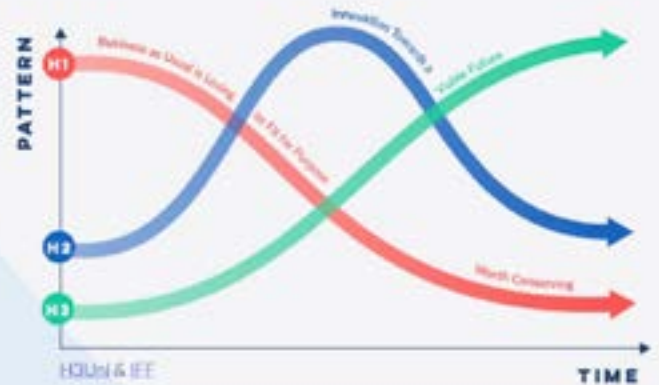
- Horizon 1** is the dominant way things are done now, which shows signs of strain and lack of fit to the future.
- Horizon 3** is how we want things to be in the future (the vision we're working towards).
- Horizon 2** is an arena of transition, where innovations get established to help make our desired future a reality.

## WHEN TO USE IT?

To bring different stakeholders onto the same page, to create a map of your area of concern that includes the current challenges you face (H1), your vision(s) of the future (H3) and the innovation and action you can focus on to get there (H2).

## BENEFITS - HOW DOES THIS HELP?

- Helps a group make sense of any situation demanding systemic change, and sets up the use of System Maps (see tool)
- Gives people a shared language and map for understanding the problems they are facing
- Distinguishes between innovation that sustains the current system (H2-) from transformative innovation (H2+)
- Creates a template for constructive dialogue between people who are responsible for the way things are and those who want change
- Helps teams get into action





## **International initiative: The Race To Zero**

The Race to Zero is a global campaign to rally leadership and support from business, cities, regions, and investors for a healthy, resilient, zero carbon recovery that prevents future threats, creates decent jobs, and unlocks inclusive, sustainable growth. The Cities Race to Zero is an initiative of the Race to Zero for cities only, where cities are uniting to demonstrate their support for inclusive climate action in line with the goals of the Paris Agreement.

International city networks are working together to recruit 1,000 cities to the Race to Zero. The collaboration between local municipalities and global platforms ensures that cities are aligned on the science-based targets required to achieve a net-zero future and provides robust support to cities signing onto the campaign. This partnership also ensures that the Cities Race to Zero commitment is embraced by international city networks.

Through their commitments to the Paris Agreement, cities around the world are working towards the goals of the Race to Zero. Signing onto the Cities Race to Zero is a powerful signal to national governments and business that cities are willing to collaborate to reach climate ambitions. Overall, the Cities Race to Zero represents an unprecedented coalition of cities committed to setting and collaborating on science-based targets.

**Find out more about the Race to Zero here:**

**[www.c40.org/what-we-do/building-a-movement/cities-race-to-zero/](http://www.c40.org/what-we-do/building-a-movement/cities-race-to-zero/)**



## The mission approach – Part 1: Conceptualisation

Inspired by the mission to the moon, the European Commission has adopted a mission approach to guide the Horizon Europe research and innovation framework program. Horizon Europe aims to deliver on five main missions to solve some of the most significant challenges facing our world: adapting to climate change, cleaning up oceans, fighting cancer, ensuring soil health and food, and creating climate neutral and smart cities. Combined, these missions hope to push Europe forward on the European Green Deal and the Sustainable Development Goals.

Due to the novelty of the mission approach, dynamic conversations are occurring in diverse forums and a variety of publications are emerging. A key report in setting the foundations for the mission approach is called – “Governing Missions in the European Union” – by Mariana Mazzucato. It provides the leading definition for the mission approach in the European context based on three key dimensions: public sector capabilities, financing mechanisms, and citizen engagement.

This report states that missions require putting innovation and outcomes at the center of how we think about the economy. “This requires new thinking in (1) the tools of government—from procurement to prize schemes—to drive goal-oriented experimentation; (2) the ways that public financing can crowd-in and galvanize forms of investment; and (3) the ways to harness social movements and citizen participation in a creative, open and empowering process of challenge-led innovation.”

Five criteria are presented in this report for developing missions. These include that missions should: “Be bold, inspirational, and with wide societal relevance; Have a clear direction and be targeted, measurable, and time-bound; Be ambitious but realistic research and innovation actions; Be cross-disciplinary, cross-sectoral, and cross-actor innovation; and Drive multiple, bottom-up solutions.”

In addition, Mariana Mazzucato argues that missions should be supported by mission-oriented policies that are “systemic public policies that draw on frontier knowledge to attain specific goals” or to put it another way – “big science deployed to meet big problems.” These characteristics lay out the basic conceptual understanding of the mission approach but leave considerable work to undertake missions in practice.

Source: Shabb, K., McCormick, K., Mujkic, S., Anderberg, S., Palm, J., & Carlsson, A. (2022). Launching the Mission for 100 Climate Neutral Cities in Europe: Characteristics, Critiques, and Challenges. *Frontiers in Sustainable Cities*.



## PODCAST ALERT

### Missions and Cities: Spotlight on Europe – Talking Transformations

#### Matthew Baldwin (European Commission)

The mission to the moon – an extraordinary achievement by humanity. But can we take that mission approach and apply it to cities? In this episode, we discuss the mission for 100 climate neutral cities in Europe by 2030. We interview Matthew Baldwin from the European Commission and the inaugural Mission Manager for the Mission on 100 Climate Neutral Cities. He gives a glimpse into the thinking behind the mission and how cities can harness collaborations, innovation and financing.

Listen to the Podcast here: [talkingtransformations.transistor.fm/episodes/missions-and-cities-spotlight-on-europe-talking-transformations-with-matthew-baldwin-european-commission](https://talkingtransformations.transistor.fm/episodes/missions-and-cities-spotlight-on-europe-talking-transformations-with-matthew-baldwin-european-commission)

## Coffee Break with Cities

### Simon Chrisander, Deputy Mayor - Malmö, Sweden

- Malmö is taking the lead on working with climate action. The city has worked with sustainability and climate issues for decades.
- Collaboration is key. Malmö is working with Copenhagen and region to share and learn.
- Malmö is working significantly with “renewable energy” to respond to its most pressing challenge related to climate, which is emissions from transport and energy. Waste to energy is used by Malmö to heat homes and provide electricity. Carbon capture and storage is on the agenda, and geothermal energy is being explored as an alternative to burning waste.
- Freiburg in Germany is an inspiration – it has a massive solar park and there are hopes that Malmö can do more on solar.
- Message to national policy-makers – “We need the national government to fix the legislation to support renewable energy.”



View the video here: [www.youtube.com/watch?v=8bMxqWolst8](https://www.youtube.com/watch?v=8bMxqWolst8)

## STARTING WITH THE INNER DEVELOPMENT GOALS

### BEING

*Cultivating our inner life and developing and deepening our relationship to our thoughts, feelings and body help us be present, intentional and non-reactive when we face complexity.*

#### **Inner compass**

Having a deeply felt sense of responsibility and commitment to values and purposes relating to the good of the whole.

#### **Integrity and Authenticity**

A commitment and ability to act with sincerity, honesty and integrity.  
Openness and Learning mindset  
Having a basic mindset of curiosity and a willingness to be vulnerable and embrace change and grow.

#### **Self-awareness**

Ability to be in reflective contact with own thoughts, feelings and desires; having a realistic self-image and ability to regulate oneself.

#### **Presence**

Ability to be in the here and now, without judgement and in a state of open-ended presence.

## DEVELOPING TRANSFORMATIVE SKILLS AND CAPACITIES

### LEARNING MINDSET

*A key for embracing change is a learning mindset at both individual and collective levels. It involves a combination of experiences, reflection, re-thinking and trying out new ideas and new approaches.*

BEING as a pathway to innovation and change, requires openness, a LEARNING MINDSET, self-awareness and the ability to reflect about how to embrace and encourage change deep and long-lasting processes.

Learning is a key for embracing change as it can take place at both individual and collective levels, and it involves a combination of experiences, reflection, re-thinking and trying out new ideas and new approaches.

Transformative learning can contribute to processes of change where individuals and organisations learn how to see and operate differently, which can ultimately lead to both wider and deeper changes in a myriad of ways.

## KEY MESSAGES



- *We need visions and plans to provide both foundations and direction towards designing, developing and achieving climate neutral cities.*
- *We need processes of creating visions and plans that challenge business-as-usual practices and thinking as well as create buy-in from diverse stakeholders.*
- *We need to be prepared for uncomfortable conversations on barriers, tensions and different interests.*



# 2

## Data and Tools



## Introduction

Visions and plans provide a foundation for moving towards climate neutral cities by setting out a target or ambition, and planning steps towards reaching that goal. But the process of thinking about the future and how to shape it can be far more powerful. It can draw attention to barriers, tensions and conflicting interests. It can be a process of both reflection and negotiation with a mix of urban stakeholders and citizens. In essence, working with visions and plans for climate action needs to embrace re-imagining the future and how to re-design the present to achieve transformative change. It is both a challenging and vital process that sets the foundation for collaboration, action, investment, and ultimately, impact.

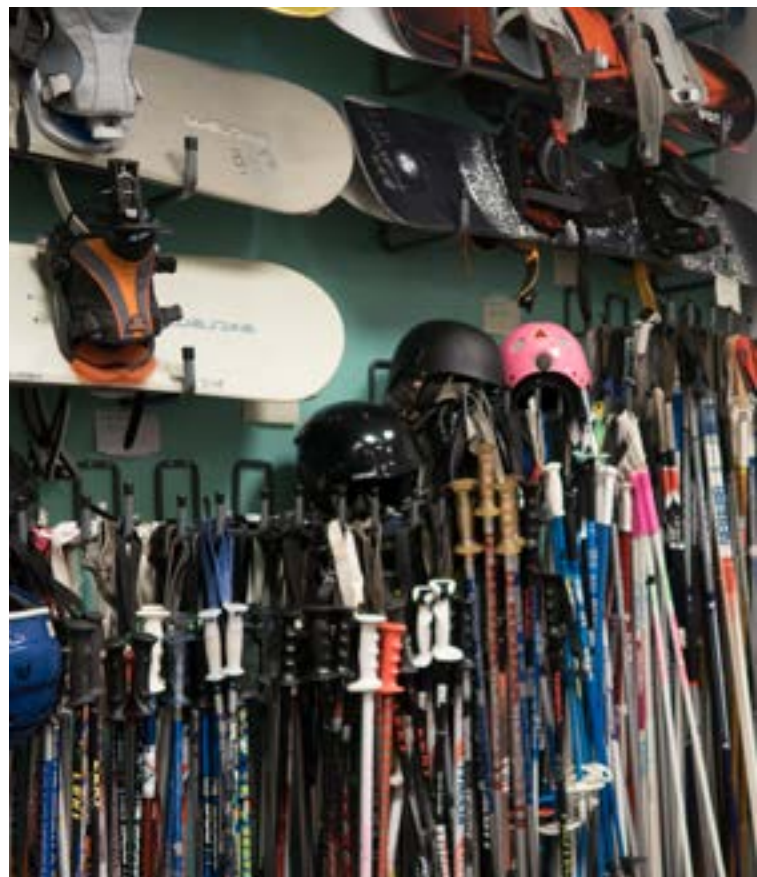
### Climate city contracts

Making the transition to climate neutral cities demands significant cooperation between citizens, politicians, business and civil servants. National, regional and local levels need to work in new ways, in the same direction and together. Climate city contracts are an approach to help achieve the goal of climate neutral cities. They are a long-term commitment that ensures cooperation between cities and the national government. They are also a process involving **data and tools** to inform decision-making and strategies – rather than a bureaucratic document that is signed and filed away.

“

*“Around the world, cities are at the forefront of the green transition. Through the Climate City Contract, we are hooking arms with the state to gear up decades of successful work locally on the environment and climate, while at the same time focusing on creating an inclusive and equal Malmö.”*

- Mayor, Malmö



## Lessons from Malmö: Using data and tools

*The City of Malmö is part of the mission for 100 climate neutral cities in Europe, and the Swedish efforts on climate neutral cities coordinated by Viable Cities.*

In the context of climate neutrality, digitalisation is less about technological development and more related to how to utilise data and tools to inform action. A key for the City of Malmö is to take advantage of digitalisation to facilitate learning, decision-making and integration of dispersed activities. The City of Malmö plans to work with a range of digital tools for follow-up, analysis and scenario planning.

The work to accelerate and achieve climate neutrality requires action across a diversity of transition areas, including the construction sector, energy production, heating, mobility and consumption. To understand the baseline (Horizon 1) and the climate impact of transition areas and to explore pathways (Horizon 2) to reach the targets (Horizon 3), the City of Malmö is in the process of mapping transition areas and identifying gaps where further actions are needed to reach climate neutrality.

The City of Malmö is collaborating with ClimateView (a software developer) and it is testing ClimateOS as a tool to map transition areas and climate impacts. The tool aims to gather data support decision-making through simplifying the complexity of climate neutrality. The aim of using the tool is to support the development of a roadmap for climate neutrality and the Climate Investment Plan.

PHOTO: SYSAV



# REGENERATIVE WORLDVIEW

## SUMMARY

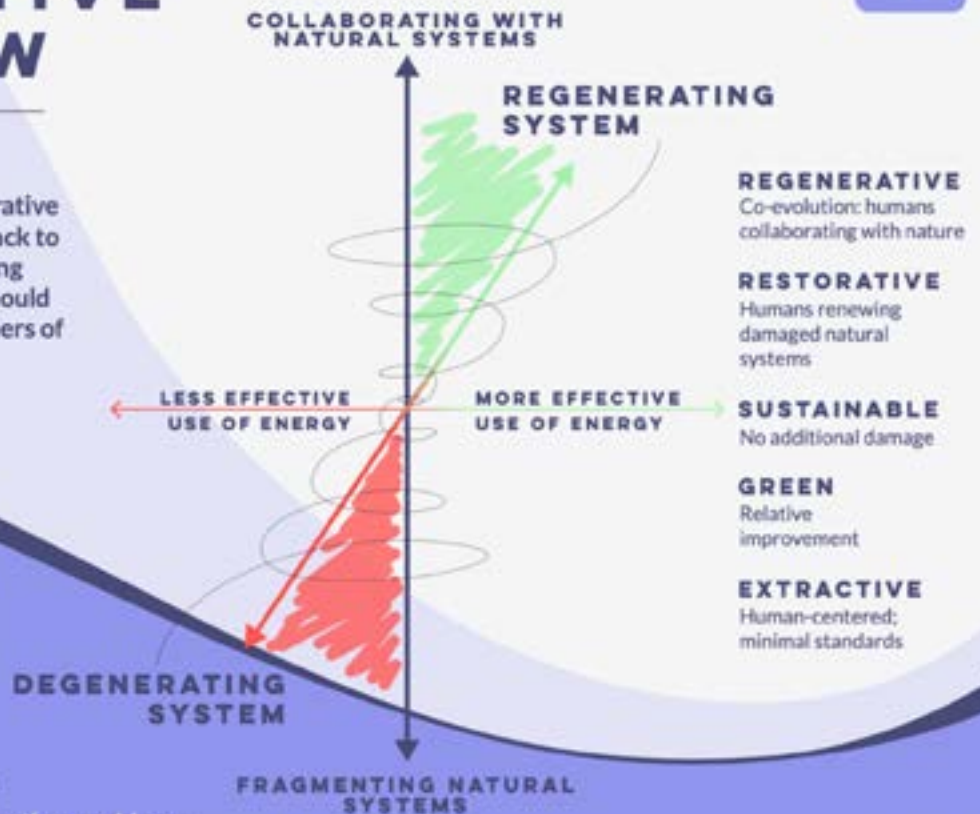
The climate crisis is part of a larger imperative for humankind to bring patterns of life back to a positive relationship to the planet. Doing less harm is not enough. Every system should aim to have positive effects on all the others of which it is a part.

## WHEN TO USE IT?

To reframe long-term ambition towards the abundance of regenerative futures that serve people, planet and prosperity (rather than a competition between economy and environment).

## BENEFITS - HOW DOES THIS HELP?

- Orients change towards potential, rather than problems
- Aims for regenerative systems so we can harness positive returns for change
- Unifies thinking across social and ecological systems
- Frames vision and ambition for Horizon 3, when using Three Horizons



# SYSTEM MAPS

## SUMMARY

A system is a set of dynamic relationships that leads to a repeatable and recognisable pattern. To reach a zero carbon world, we have to create new patterns. We use system maps to indicate the actors involved in the process of change, and the relationships between them.

## WHEN TO USE IT?

To identify who matters to a transition, how they can be part of the new pattern, and where campaigns can be focused.

## BENEFITS - HOW DOES THIS HELP?

- Enables everyone to see how they are part of the change
- Identifies potential for reinforcing ambition loops between the actors within and across national boundaries
- Provides focal points for Climate Champions' campaigns to enrol people into the shared pathways of action







## **International initiative: City Climate Intelligence**

Cities face a critical information gap for addressing the climate crisis and achieving net-zero emissions. The City Climate Intelligence platform is an action-oriented, greenhouse gas emissions monitoring platform for cities. It aims to unleash the transformative capacity of high-resolution, near real-time emission monitoring to increase citizen buy-in, support decision-making, and drive emissions reduction investments within cities.

Cities often lack actionable data about how, where, and when greenhouse gas emissions are emitted in their communities. Access to more frequent, localized, and cost-effective emissions data along with targeted emissions reduction insights can provide vital support to climate action planning and decision-making, and also provide citizens with a tool for holding their governments accountable to climate commitments.

The City Climate Intelligence plans aims to accelerate climate action in three ways. First, estimates of greenhouse gas emissions in cities. Second, actionable information maps for managers at local municipalities and citizens to transform current practices through action-oriented mapping service delivery. Third, unlocking climate finance and new business models through delivering accurate and verifiable emissions data.

**Find out more about City Climate Intelligence here:**

**[www.rmi.org/our-work/urban-transformation/city-climate-intelligence/](http://www.rmi.org/our-work/urban-transformation/city-climate-intelligence/)**

## The mission approach – Part 2: Characteristics

To better understand the mission approach, it is important to recognize its close connection with innovation policy. In general, innovation policy has focused on economic development and growth but it has evolved over time to engage with solving grand economic, social, and environmental challenges. Here are six key characteristics for the mission approach in the context of innovation policy.

1. **Putting wicked problems at the core of innovation:** The mission approach is presented as a “significant tool to frame innovation to solve critical and complex problems” and provide innovation policy with a clear direction on how to respond to interconnected social, economic and environmental challenges.
2. **Creating and shaping rather than fixing markets:** The mission approach encourages policy-makers to be active in creating and shaping new markets as opposed to fixing existing markets and system failures. The role of the public sector is “not just about de-risking, and levelling the playing field, but tilting the playing field in the direction of the desired goals”.
3. **De-siloing governance structures:** The mission approach intends to generate collaboration and planning across actors, sectors and governance scales. Therefore, “public administration needs to evolve from traditional silo-based working culture and organization to a more strategic, cross-cutting, integrated, citizen-driven way of working”.
4. **Prioritizing participatory and bottom-up approaches:** The mission approach is based on inclusive and participatory processes for citizens and stakeholders but also encourages bottom-up experimentation and learning. So “missions require consensus building in civil society, combining the need to set directions from above with processes of bottom-up experimentation from below”.
5. **Positioning the state as entrepreneurial:** The mission approach pushes the state and its governmental agencies to adopt an entrepreneurial approach to trigger innovation and innovative policy-making. The state is expected to shape markets, invest along the entire value chain, have equal distribution of risk and reward as the private sector as well as discover and experiment. Most importantly, an entrepreneurial state must “think big”.
6. **Focusing on innovation processes:** The mission approach does not comprise a single innovation project, but a portfolio of multiple projects and initiatives. It is about “creating systems which allow new knowledge and understanding to diffuse across the economy and create transformative change”.

Source: Shabb, K., McCormick, K., Mujkic, S., Anderberg, S., Palm, J., & Carlsson, A. (2022). Launching the Mission for 100



## PODCAST ALERT

### Innovation and Cities – Talking Transformations

#### Rogier Van den Berg (WRI Ross Centre for Sustainable Cities)

Medals at the Olympics, the Oscars in Hollywood, Nobel Prizes for scientists – but what about an award for cities working with sustainability? In this episode, we discuss the ‘Prize for Cities’ recognising transformative projects in cities around the world that are igniting innovation on sustainability and climate action. We interview Rogier Vandenberg – the Global Director for the Ross Centre for Sustainable Cities at the World Resources Institute (WRI). He provides a host of insights into the purpose, ambitions and impact of the ‘Prize for Cities’.

Listen to the Podcast here: [talkingtransformations.transistor.fm/episodes/innovation-and-cities-talking-transformations-with-rogier-vandenberg-wri-ross-centre-for-sustainable-cities](https://talkingtransformations.transistor.fm/episodes/innovation-and-cities-talking-transformations-with-rogier-vandenberg-wri-ross-centre-for-sustainable-cities)

## Coffee Break with Cities

### Katja Dörner, Mayor - Bonn, Germany

- Bonn has a history of working on climate issues since the 1990s. It is a UN city and hub for sustainability. It is also home to the ICLEI global office. All of which creates a motivation to deliver ambitious results.
- City council decisions include a sustainability strategy with focus on climate and energy, declaration of a climate emergency, and an ambition for climate neutrality by 2035.
- Collaboration with civil society is a key and Bonn has started an activity called “[Bonn4Future](#)”.
- Barcelona in Spain as an inspiration – it is leading on working with “superblocks” to reduce mobility/traffic and increase liveability.



View the video here: [www.youtube.com/watch?v=7s40JAO6Wb8](https://www.youtube.com/watch?v=7s40JAO6Wb8)

## STARTING WITH THE INNER DEVELOPMENT GOALS

### THINKING

*Developing our cognitive skills by taking different perspectives, evaluating information and making sense of the world as an interconnected whole, is essential for wise decision-making*

#### **Critical thinking**

Skills in critically reviewing the validity of views, evidence and plans.

#### **Complexity awareness**

Understanding of and skills in working with complex and systemic conditions and causalities.

#### **Perspective skills**

Skills in seeking, understanding and actively making use of insights from contrasting perspectives.

#### **Sense-making**

Skills in seeing patterns, structuring the unknown and being able to consciously create stories.

#### **Long-term orientation and Visioning**

Long-term orientation and ability to formulate and sustain commitment to visions relating to the larger context.

## DEVELOPING TRANSFORMATIVE SKILLS AND CAPACITIES

### CRITICAL SYSTEMS THINKING

*While specialised knowledge is absolutely essential to solving sustainability challenges, individual and collective skills and capacities are increasingly needed to address grand challenges and transform our organisations and societies*

THINKING as a pathway to change and innovation requires CRITICAL SYSTEMS THINKING and understanding the complex causal relationships and feedback loops within and between systems, including understanding actor relationships.

Systems thinking demands a critical perspective and questioning of the current societal structures and norms that lead to unsustainable practices, including the ability to think critically about behaviours and lifestyles.

A critical perspective requires skills to navigate information and scrutinise its credibility, and to combine insights from different fields of knowledge and practice when consciously creating new narratives for change.

## KEY MESSAGES



- *We need to utilise data and tools to navigate complex decisions with a range of urban stakeholders.*
- *We need to make more integrated decisions based on diverse data but at the same time apply critical thinking about the impacts of different strategies and actions.*
- *We need to be prepared to work with incomplete data and iterative processes, and take difficult decisions.*



3

# Finance and Partnerships



## Introduction

A critical barrier to climate neutral and sustainable cities as well as the implementation of the Paris Agreement is insufficient access to finance for projects and infrastructure in cities. This is often called the “urban finance gap”. We need innovative, scalable and replicable financing solutions that can unlock investment in climate action and sustainable development in cities. A key pathway to financing and investment is through robust partnerships between local municipalities, urban stakeholders and financial institutions. Equipping key individuals and organisations with skills and systems to facilitate partnerships and relationships with financial institutions is vitally important.

### Climate investment plans

Climate investment plans bring together finance and partnerships. They provide a way to develop roadmaps for cities that include a socio-economic perspective on measures and investments. They are about giving an overall picture of the municipal, regional, state and private measures and investments that are needed to achieve the goals set. At the same time, they can show how new or growing markets are being created for companies that can deliver sustainable buildings, energy systems, mobility solutions, recycling systems and supporting digital systems.

“

*“Enköping represents all of Sweden’s smaller municipalities and we must take the lead and show that transition is a priority when we build and develop a growing municipality. We will involve our young people, develop a climate investment plan and digital tools to take greater steps in the green transition in the coming years.”*

- Mayor, Enköping



## Lessons from Malmö: Connecting finance and partnerships

*The City of Malmö is part of the mission for 100 climate neutral cities in Europe, and the Swedish efforts on climate neutral cities coordinated by Viable Cities.*

Collaborations are a key to unlocking financing for climate neutrality. A restructuring is required of administrations and companies in order to find innovative working methods and solutions to common challenges that connect finance and partnerships. An exchange of knowledge, expertise, technology and financial resources are important components for achieving the goals of the City of Malmö.

The City of Malmö has initiated Climate Transition Malmö, a gathering of forces to mobilise urban stakeholders in Malmö to deliver on the ambitions to drastically reduce greenhouse gas emissions. Climate Transition Malmö organisationally consists of a group responsible for leading the overall progress of activities, a process management approach that has its focus on preparation and coordination, and a set of identified focus areas or topics, which independently allow the implementation of measures.

A priority at the City of Malmö is to create supportive and complementary structures that can motivate and further strengthen the culture of collaboration. Through frequent contacts with key people involved, both externally and internally at different levels, information can be disseminated within the organization. When communication and collaboration is lifted up then decision-making on complex issues can also be facilitated.

PHOTO: ANNA HÅLLAMS





# ACCELERATING TRANSITIONS FRAMEWORK

## SUMMARY

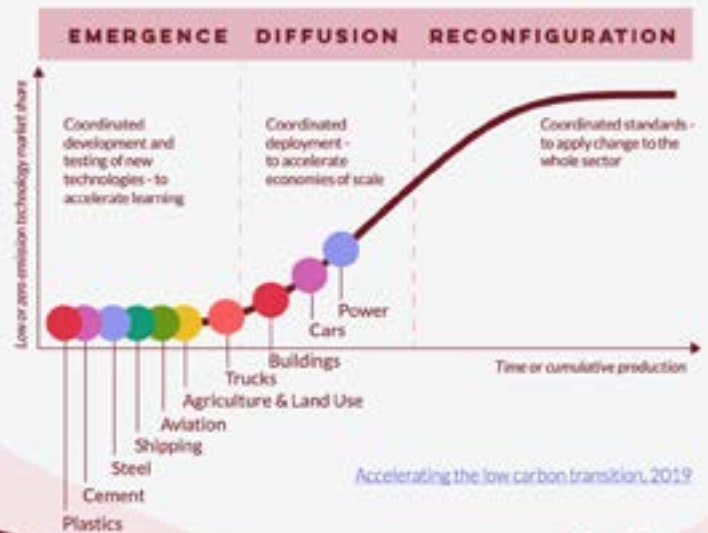
System transitions generally happen in three stages: emergence, diffusion and reconfiguration. At each stage, different policies, and different kinds of international cooperation, are likely to be effective in accelerating the transition.

## WHEN TO USE IT?

To identify the form of national action and international cooperation most likely to be effective in any given sector appropriate to the stage of transition that it has reached.

## BENEFITS - HOW DOES THIS HELP?

- Helps identify which actors can cooperate, in which ways, to accelerate the transition in a given sector at a given time.
- Focuses national policy and international coordination on joint action (rather than negotiating targets).
- Organises cooperation into stages that can grow in strength over time. At the beginning of a transition, we do not need consensus among all actors on the entirety of the solution. It can be more achievable, and more effective, to coordinate among a small group on the next steps to be taken. As progress is made, this can pave the way for deeper agreements among larger sets of actors.



# CAUSAL LOOPS

## SUMMARY

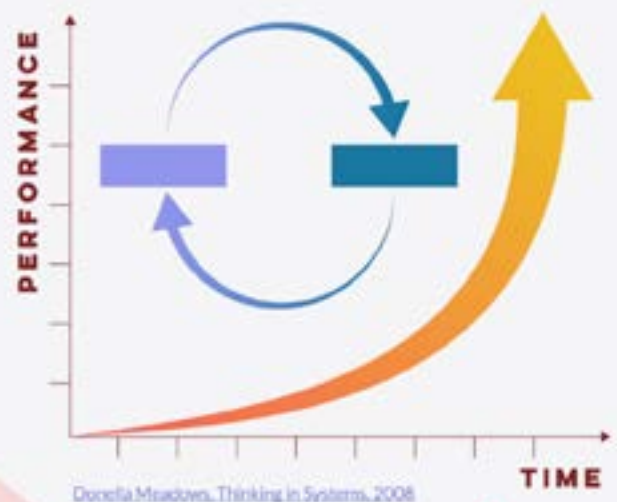
Modeling a situation with causal loops helps us see how it behaves over time. For example, how effects become causes, how some things are reinforced over time and others are weakened. This helps us understand the dynamic effect of policies, and see what interventions might be most effective.

## WHEN TO USE IT?

To bring about rapid change; to see how a reinforcing loop starts to draw actors and resources into new solutions; to see what will act to balance or oppose the change.

## BENEFITS - HOW DOES THIS HELP?

- Identify interventions that are self-propelling / self-amplifying
- Avoid interventions that are self-defeating / self-limiting
- Plan a range of interventions so that their effect is more than the sum of their parts (not less than)
- Identify points of leverage for systems change, i.e. places where there is a high return on effort
- Use as a modelling tool for ambition loops and system maps





## **International initiative: The Gap Fund**

Cities are key to creating a climate-smart future. Over 50% of the globe lives in cities, generating 80% of its total economic output and accounting for 70 percent of global greenhouse gas emissions. The City Climate Finance Gap Fund (or the Gap Fund) helps cities in developing and emerging countries realize their climate ambitions, turning low-carbon, climate-resilient ideas into strategies and finance-ready projects.

In an environment where resources and expertise are limited, the Gap Fund supports cities and local municipalities in preparing and prioritizing climate-smart plans and investments with the goal of attracting financing and support for implementation. The Gap Fund is targeting at least 100 million Euros in overall funding – funding that can leverage more than 4 billion Euros in investment for urban climate action.

The Gap Fund address four needs. First, providing city planners with upstream technical assistance and tools to enhance low-carbon planning and resilience efforts. Second, helping city leaders build a pipeline of high-quality, climate-smart urban investments. Third, facilitating the connection between cities and financing partners. Fourth, leveraging international collaboration and partnerships to learn and standardize approaches.

**Find out more about the the Gap Fund here:**

**[www.citygapfund.org/](http://www.citygapfund.org/)**

## The mission approach – Part 3: Critiques

The development of the Horizon Europe research and innovation framework program has provoked debate concerning the mission approach. The critique of the mission approach focuses particularly on limitations in the perspectives in recognizing and handling the complexities of societal change processes. Here are six main critiques about the mission approach.

1. **Challenges of reaching consensus:** The time required to reach consensus on how to develop and implement a mission across multiple levels of government is underestimated. In addition, the challenges of trade-offs and competing interests is under-played.
2. **Overestimating the role of the state:** The focus on the state to lead the market transition is criticized because the role of government can be considered more of an enabler than a leader. Governance (or the act and process of governing), rather than government, is presented as fundamental to societal change.
3. **No fundamental shifting in governance:** A government can adopt a mission but tackle it with traditional policy measures by simply re-labelling policies and initiatives. In that sense, missions do not necessarily require fundamentally shifting governance processes.
4. **Lack of a consistent systems thinking perspective:** Missions can be divided into disconnected projects and actions to be managed, which can lead to a risk of losing oversight of the overall picture and limiting the prospects of reaching ambitious goals and targets.
5. **Limited understanding of complexity:** The mission approach appears to suggest a one-size-fits-all solution that disregards the complexity of interconnected challenges and does not appear to recognize that societal issues can often be different in type, nature, and size.
6. **Simplifying participatory approaches:** There appears to be insufficient understanding of the challenges and complexity of participatory engagement of citizens and stakeholders in the mission approach, and the need to navigating conflicting interests and tensions between sectors and organisations.

Source: Shabb, K., McCormick, K., Mujkic, S., Anderberg, S., Palm, J., & Carlsson, A. (2022). Launching the Mission for 100 Climate Neutral Cities in Europe: Characteristics, Critiques, and Challenges. *Frontiers in Sustainable Cities*.



## PODCAST ALERT

### Nature and Cities: Spotlight on Africa – Talking Transformations

#### Ingrid Coetzee (ICLEI Africa)

It's time for Africa. A continent that is home to 1.2 billion people. But how are cities and communities responding to a changing climate and building resilience? In this episode, we discuss how cities in Africa are working with nature and biodiversity. We interview Ingrid Coetzee who is the Director of Biodiversity, Nature and Health at ICLEI Africa and the ICLEI Cities Biodiversity Center. She talks about a host of initiatives in Africa and lessons on how to connect biodiversity, nature, cities and communities.

Listen to the Podcast here: [talkingtransformations.transistor.fm/episodes/nature-and-cities-spotlight-on-africa-talking-transformations-with-ingrid-coetzee-iclei-africa](https://talkingtransformations.transistor.fm/episodes/nature-and-cities-spotlight-on-africa-talking-transformations-with-ingrid-coetzee-iclei-africa)

## Coffee Break with Cities

### Emmanuel Serunjoji, Mayor - Kampala, Uganda

- Kampala is the capital city of Uganda and works with both the city and region on climate change.
- Shifting mindsets is a pivotal challenge for local governments when it comes to climate and environmental action.
- Kampala has a “climate change action plan” in place with an independent committee to work with conservation and climate.
- Vitoria in Spain is an inspiration for action – the waste management system is impressive and sets the world standard to benchmark against.
- Message to national policy-makers – “We need funds available to cities and local government to manage waste and pollution and work with environmental protection.”



View the video here: [www.youtube.com/watch?v=XtcX3y1zYvk](https://www.youtube.com/watch?v=XtcX3y1zYvk)

## STARTING WITH THE INNER DEVELOPMENT GOALS

## DEVELOPING TRANSFORMATIVE SKILLS AND CAPACITIES

### RELATING

*Appreciating, caring for and feeling connected to others, such as neighbours, future generations or the biosphere, helps us create more just and sustainable systems and societies for everyone.*

#### **Appreciation**

Relating to others and to the world with a basic sense of appreciation, gratitude and joy.

#### **Connectedness**

Having a keen sense of being connected with and/or being a part of a larger whole, such as a community, humanity or global ecosystem.

#### **Humility**

Being able to act in accordance with the needs of the situation without concern for one's own importance.

#### **Empathy and Compassion**

Ability to relate to others, oneself and nature with kindness, empathy and compassion and address related suffering.

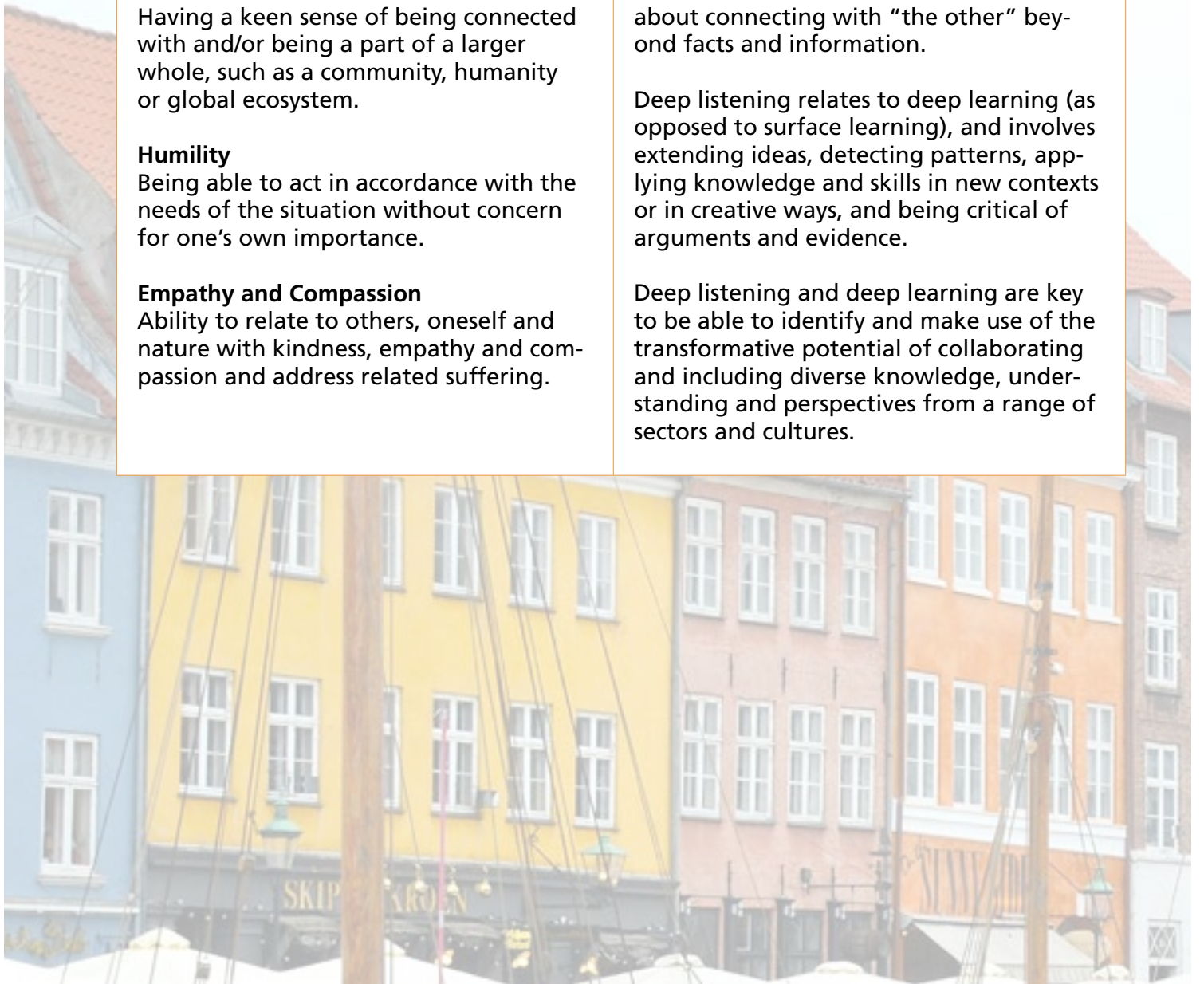
### DEEP LISTENING

*While specialised knowledge is absolutely essential to solving sustainability challenges, individual and collective skills and capacities are increasingly needed to address grand challenges and transform our organisations and societies*

RELATING as a pathway to change and innovation requires patience, compassion, empathy, understanding and learning from "the other". DEEP LISTENING is about connecting with "the other" beyond facts and information.

Deep listening relates to deep learning (as opposed to surface learning), and involves extending ideas, detecting patterns, applying knowledge and skills in new contexts or in creative ways, and being critical of arguments and evidence.

Deep listening and deep learning are key to be able to identify and make use of the transformative potential of collaborating and including diverse knowledge, understanding and perspectives from a range of sectors and cultures.



## KEY MESSAGES



- *We need to enhance the capacity of local municipalities to prepare proposals and comply with requirements of financial institutions to realise ambitious climate action.*
- *We need to address how financial institutions can support projects and infrastructure put forward by cities without detailed project preparation and business cases in place.*
- *We need to overcome the “urban finance gap” for climate neutral and sustainable cities through innovative, scalable and replicable financing solutions.*



# 4

## Engagement and Action



## Introduction

Engagement of citizens and urban stakeholders is crucial for working towards climate neutral cities. It can increase understanding of challenges and possibilities, empower communities and organisations, create a sense of ownership, enhance urban citizenship and belonging, and help to tackle social exclusion. Engagement coupled with action is also key to inclusive governance and to the promotion of social justice that is vital to climate action. To reap the full benefits of engagement for achieving climate neutral cities, local municipalities can use a range of tools and methods. These need to be fine-tuned to the specifics of different contexts and to different values, interests and needs.

## System demonstrators

Achieving the mission of climate neutral cities demands a fundamental transformation of complex systems and involving diverse communities through engagement and action. We need to work in new ways and find solutions that encompass policies and regulations, business models, behaviour of citizens and organisations, and technology and infrastructure. System demonstrators are helpful and powerful approach to design, test and evaluate social and technical innovation in real environments. They bring together and mobilise a mix of actors to co-create, learn and implement by making the city a test-bed for experimentation.

“

*“We need new cooperations as well as new innovations, in order to achieve our goal of a fossil fuel free and climate positive Stockholm in 2040. Stockholm will be the test-bed for climate smart solutions – solutions that can be scaled up to become a natural part of everyday life.”*

- Mayor, Stockholm





## Lessons from Malmö: Initiating engagement and action

*The City of Malmö is part of the mission for 100 climate neutral cities in Europe, and the Swedish efforts on climate neutral cities coordinated by Viable Cities.*

The City of Malmö has committed to gathering all the players in the city around specific challenges and opportunities in Malmö to live a good life within the 1.5 degree goal of the Paris Agreement. This requires developing conditions for engagement and action to encourage a societal transition with citizens and stakeholders who live, work and operate in Malmö.

Different living conditions give different climate footprints and therefore the City of Malmö needs to build up support and knowledge from several players. Commitment of industry, associations and civil society plays a crucial role if Malmö is to succeed in bringing all the power into the transition through a common focus on the choices that individuals and organisations in Malmö make in regards to housing, food, energy, consumption and mobility.

The climate action being inspired and orchestrated by the City of Malmö will be developed into a digital platform and a network for all of Malmö to co-create climate benefits and reduce climate impact in line with Malmö's environmental and climate goals. With tools, knowledge and ideas, residents and business in Malmö will be able to explore the effects of their lifestyle and choices through the digital platform.

PHOTO: ANNA HÅLLAMS



# EXPONENTIAL GOALS

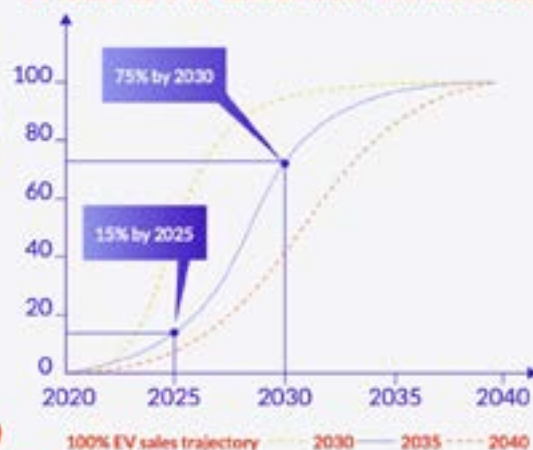
## SUMMARY

Changes can happen rapidly when everyone settles on one approach. We can then move along an 'S-curve' of exponential change, where new technology improves its performance, causing lower costs and increasing adoption by society.

ZERO EMISSION LIGHT DUTY VEHICLES

100% zero emission light vehicles sales by 2035 will require reaching 15% by 2025 and 75% by 2030

EV SALES AS % OF GLOBAL LIGHT VEHICLE SALES



Climate Action Pathway, Transport, Action Table, 2021

## WHEN TO USE IT?

To focus attention on technologies consistent with a zero emission future, and what can be done to help them develop and spread rapidly through markets and society.

## BENEFITS - HOW DOES THIS HELP?

- Directs attention to the new zero emission solutions and how to bring them into being (Horizon 3 innovation) instead of incremental change to existing solutions (Horizon 1 improvement)
- Encourages focus on solutions with high potential for improvement from learning and deployment
- Helps us appreciate the potential for rapid change and set ambitious goals beyond current performance of new technologies

FUTURE STEWARDS

# TIPPING POINTS AND CASCADES

## SUMMARY

A tipping point is a place where a small intervention can trigger a large response, sending a system into a qualitatively different future state. In transitions, tipping points can exist where a new solution becomes more affordable, accessible, profitable, attractive, socially acceptable, or higher performing than old solutions.

Once a critical mass of actors has adopted a new technology or practice this can prompt the rest to follow, triggering a rapid system-wide cascade of change throughout the sector.

## WHEN TO USE IT?

To identify the level of effort, or extent of an intervention, that could lead to disproportionately large results and can therefore serve as a policy or international cooperation goal.

## BENEFITS - HOW DOES THIS HELP?

- Helps identify opportunities to greatly accelerate the pace of change, making the transition self-propelling
- Provides a positive goal for everyone to aim for: the point where a new way of doing things becomes cheaper, better, more accessible, more profitable or otherwise more attractive than the old
- Provides clarity of objectives in the midst of complexity

FUTURE STEWARDS



## **International initiative: One Planet Cities Challenge**

One Planet Cities is a program coordinated by WWF with a vision to enable all people to thrive within the ecological limits of our one and only planet. One Planet Cities share a commitment to work toward the Paris Agreement – to keep our global temperatures below a 1.5 degrees. To achieve this goal, cities need to make clear plans, learn from successes, and adopt the most innovative solutions.

The One Planet Cities Challenge is a friendly competition to celebrate national and global frontrunners. WWF review climate actions and ambitions by cities and assess whether they align with the goals set out in the Paris Agreement. WWF supports cities in accelerating their climate transformation and showcases best practices from around the world. Over the past ten years, more than 700 cities from nearly 70 countries have participated in the competition.

Benefits to cities include support in setting science-based targets that reflect Paris Agreement goals; customized feedback on alignment with the Paris Agreement and assessment of climate work; collaboration with leading city networks; recognition of achievements on WWF communications channels; and a toolbox with guidance on design of a climate action package and educational materials aimed at increasing public participation and involvement.

**Find out more about the One Planet Cities Challenge here:**

**[www.panda.org/projects/one\\_planet\\_cities/](http://www.panda.org/projects/one_planet_cities/)**

## The mission approach – Part 4: Cases

In 2019, the European Commission formed mission boards for each mission area. The objective was to advise the European Commission on the identification and implementation of missions in Horizon Europe. Mission boards were created as the result of an open call for expressions of interest, and they are expected to consult and engage with stakeholders and citizens in the process of mission design and implementation.

In 2021, the European Commission appointed mission managers to each mission to lead and coordinate activities on the missions. The mission board for the climate neutral and smart cities mission suggested that the European Commission should establish a goal that supports and promotes over 100 cities in their systemic transformation toward climate neutrality by 2030.

The period timeline of the 100 climate neutral and smart cities mission consists of an early delivery phase where countries and cities set the foundations for their missions between 2020 and 2022, and the main implementation phase between 2022 and 2030. The European Commission will support the financing of the mission. Local municipalities and urban stakeholders, in parallel, are expected by the mission board to develop robust Climate Investment Plans, but also to take on a new role for innovation, experimentation and learning where system innovation is at the core.

Engaging citizens in the governance of cities as key stakeholders is particularly stressed as a prerequisite for the success of the mission. In their capacities as—“users, producers, consumers or owners of building and transport means”—they are considered to have the agency to transform and innovate elements of cities. A main obstacle, however, is the traditional approach to the governance of cities, characterized by sectoral division.

As a solution, three core principles of governance are identified. These include: a holistic approach to foster innovation and development leading to integrated planning; multi-level governance where local, regional, national and European stakeholders can take part in the negotiation and networking processes around the mission; and a deep and continuous collaboration between all stakeholders facilitated through inclusive and co-creation processes.

By also taking part in the mission, local municipalities are expected to create and sign Climate City Contracts, which includes goals and targets, a strategy and action plan for transformation, with the involvement of stakeholders and their responsibilities. The Climate City Contracts are intended to be dynamic and living documents that will trigger innovation and unlock five main driving forces for transformation: new forms of participatory and innovative governance; a new economic and funding model; integrated urban planning; digital technologies; and innovation management.

Source: Shabb, K., McCormick, K., Mujkic, S., Anderberg, S., Palm, J., & Carlsson, A. (2022). Launching the Mission for 100 Climate Neutral Cities in Europe: Characteristics, Critiques, and Challenges. *Frontiers in Sustainable Cities*.



## PODCAST ALERT

### Resilience and Cities: Spotlight on USA – Talking Transformations

#### Angie Fyfe (ICLEI USA)

The ‘Race to Zero’ emissions is here, where cities around the world have recognised the need to reduce greenhouse gas emissions and increase resilience to the impacts of climate change. In this episode, we focus on cities within the USA, and the ‘Race to Zero’ as well as the ‘Race to Resilience’. We interview Angie Fyfe, the Executive Director of ICLEI USA. She provides insights into how cities in the USA are combating climate change and building resilience, and she talks about the type of leadership needed for transformation.

Listen to the Podcast here: [talkingtransformations.transistor.fm/episodes/resilience-and-cities-spotlight-on-usa-talking-transformations-with-angie-fyfe-iclei-usa](https://talkingtransformations.transistor.fm/episodes/resilience-and-cities-spotlight-on-usa-talking-transformations-with-angie-fyfe-iclei-usa)

## Coffee Break with Cities

### Jeni Arndt, Mayor - Fort Collins, Colorado, USA

- Fort Collins is a city on the forefront on climate action since 1990s. The city has worked across a diversity of activities.
- Retrofitting homes for resilience and energy efficiency through the “[Epic Homes Program](#)” is a leading activity by the city.
- Key collaborations in Fort Collins include working regionally and across a group of cities to form a consortium for a public utility.
- Malmö in Sweden is an inspiration – it has provided the opportunity for collaboration at the ICLEI World Congress in Malmö to learn and share with cities around the world and in particular how to support the most vulnerable in our cities and communities.
- Message to national policy-makers – “We need national government to not get in the way of local government action, not leave anyone behind and not



View the video here: [www.youtube.com/watch?v=Muz3DSkC1aI](https://www.youtube.com/watch?v=Muz3DSkC1aI)

## STARTING WITH THE INNER DEVELOPMENT GOALS

### COLLABORATING

*To make progress on shared concerns, we need to develop our abilities to include, hold space and communicate with stakeholders with different values, skills and competencies.*

#### Communication skills

Ability to really listen to others, to foster genuine dialogue, to advocate own views skillfully, to manage conflicts constructively and to adapt communication to diverse groups.

#### Co-creation skills

Skills and motivation to build, develop and facilitate collaborative relationships with diverse stakeholders, characterized by psychological safety and genuine co-creation.  
Inclusive mindset and intercultural competence

**Willingness and competence to embrace diversity** and include people and collectives with different views and backgrounds.

#### Trust

Ability to show trust and to create and maintain trusting relationships.

#### Mobilization skills

Skills in inspiring and mobilizing others to engage in shared purposes.

## DEVELOPING TRANSFORMATIVE SKILLS AND CAPACITIES

### COCREATING ABILITIES

*While specialised knowledge is absolutely essential to solving sustainability challenges, individual and collective skills and capacities are increasingly needed to address grand challenges and transform our organisations and societies.*

COLLABORATING as a pathway to change and innovation focuses on interaction, cross-boundary learning, and knowledge diversity, to find synergies and understanding conflicting views or practices.

COCREATING ABILITIES involves communication skills and the ability to facilitate inclusive processes of trust and managing diverse values, interests and knowledge perspectives as well as team building.

Facilitators of co-creation processes need skills (and methods) to build, develop and maintain collaborative relationships and motivate diverse stakeholders to work towards shared goals and navigate differences of approaches and opinions.

## KEY MESSAGES



- *We need to prioritise engaging citizens and urban stakeholders to boost social inclusion and cohesion, connect to context, and generate stewardship for climate neutral cities.*
- *We need to connect up collaboration, communication, and engagement leading to action and impact.*
- *We need engagement to lead to concrete actions and impacts that reconcile different views and opinions, showing to citizens and communities that their participation is valuable.*



5

# Research and Innovation





## Introduction

Cities of different sizes and capabilities need to be empowered to accelerate climate action and to work collectively to achieve ambitious objectives. In addition, the gap between mitigation commitments and efforts at the national level and the Paris Agreement goals highlights the need for improved evidence and support for climate action planning at the city level. Research and innovation is critical to drive systems change. For cities, there are a range of areas and sectors where research and innovation is key, including to support innovative strategies for financing climate action and generating city scale data. Moving towards climate neutral cities demands dedicated research and innovation for and by local municipalities.

### Transformative portfolios

Working towards climate neutral cities entails a mix of projects and activities as well as research and innovation. However, these initiatives often remain disconnected and fragmented. Transformative portfolios focus on making connections and linking up projects, events, methods and tools to generate holistic perspectives and synergistic outcomes. They are an approach to stimulate systems thinking and continuously engage leaders and participants in projects in co-creating overall visions, processes and outcomes. Transformative portfolios are a direct attempt to work across boundaries of projects and silos.

“

*“The Climate City Contract shows that Lund Municipality wants to continue to lead the way on the climate issue through innovation and increased cooperation with more actors in our society. This challenge requires new ways of working and Lund wants to provide a test-bed for future climate solutions.”*

- Mayor, Lund



## Lessons from Malmö: Connecting research and innovation

*The City of Malmö is part of the mission for 100 climate neutral cities in Europe, and the Swedish efforts on climate neutral cities coordinated by Viable Cities.*

The challenges Malmö faces are not unique. Many cities in Europe and around the world have similar challenges and issues to resolve. By working together, participating in research processes, and sharing experiences, the City of Malmö believes it can accelerate the climate transition. Recognising the immense value of **research and innovation** underpins this thinking in Malmö.

The City of Malmö regularly and continuously shares its experiences and lessons with Swedish and European cities in areas including climate investment plans, the organisation of climate roadmaps, citizen commitment and involvement, and digitalisation. The City of Malmö is committed to act as an innovation hub – locally, regionally, nationally and internationally. In this respect, the City of Malmö can also influence issues and initiatives beyond the city.

Through a number of international networks, the City of Malmö has access to knowledge and experience exchanges with cities in Europe and around the world. Malmö participates for example with ICLEI – Local Governments for Sustainability and the Global Covenant of Mayors for Climate and Energy. These networks and organisations are also used to generate project ideas and find collaboration partners – and position Malmö as an innovation hub.

PHOTO: SYSAV



# AMBITION LOOPS

9

## SUMMARY

Societal change involves those who govern, those who produce and invest in making things, and all of us as citizens and users. Ambition loops help us explore how we all come together to create and sustain bold action, and create rapid, self-reinforcing change.



## WHEN TO USE IT?

Use with system maps to explore where leadership for change can originate, and how to link up actors in positive reinforcing loops.

## BENEFITS - HOW DOES THIS HELP?

- Encourages reinforcing action towards change amongst all the actors in society
- Draws attention to understanding policy as a dynamic, systemic, process which changes the landscape
- Develops approaches for collaboration that can move the whole system to exponential improvements and tipping points
- Supports the use of the Accelerating Transitions Framework

See: [ambitionloops.org](http://ambitionloops.org)



# THE POWER OF CONVENING

10

## SUMMARY

Expert teams with the best frameworks may still experience blockers and breakdowns if they haven't considered how to bring together stakeholders thoughtfully. Convening diverse groups enables divergent perspectives to be heard, creating the space for shared problem solving and action.

## WHEN TO USE IT?

To bring together a group (of any size) to address your chosen topic. From a meeting to a full-scale strategy process, thinking through who is in your process and how you bring them together is key.

## BENEFITS - HOW DOES THIS HELP?

- It reminds us to turn up as whole people (with all the concerns we carry) and to recognise the same in others
- Treats your area of concern as a human system, with all the usual dynamics of collaboration, competition and power
- Ensures all appropriate voices are included
- Gets people involved in your process in an engaged way that sparks radical collaboration





## **International initiative: Climate Neutrality Framework**

In response to the global climate emergency, ICLEI launched a Climate Neutrality Framework, calling for significant ambitions, innovative solutions and daring leadership in all cities around the world. Climate neutrality in the context of cities is defined by ICLEI as the targeted reduction of greenhouse gas emissions and avoidance in operations and across the community in all sectors to an absolute net-zero level by 2050.

As a part of the GreenClimateCities Program, the Climate Neutrality Framework supports local municipalities to accelerate climate action. It is based on three pillars of action to achieve climate neutrality: Drastically reduce and sequester greenhouse gas emissions; Divest, repurpose and reinvest; and Offset and compensate any greenhouse gas emissions that can not immediately be removed, reduced or avoided.

The GreenClimateCities Program outlines three phases – Analyze, Act, Accelerate – which unfold into multiple steps. It supports local municipalities to set and achieve targets, whether they are starting off or they are advanced on climate action. The process methodology also guides local municipalities step-by-step to tackle climate change, addressing integrated climate action – adaptation and mitigation – as well as connecting to innovation and research.

**Find out more about the Climate Neutrality Framework here:**

**[www.iclei.org/climate\\_neutrality/](http://www.iclei.org/climate_neutrality/)**

## The mission approach – Part 5: Challenges

The report – “100 Climate Neutral Cities by 2030 – by and for the citizens” – is intended to outline an ambitious plan on how to achieve the mission by 2030. It describes how the mission can be accomplished with particular emphasis on the topics of governance, funding, planning, and participation. However, there are several ambiguities and challenges within the report, which open up discussions on future directions to achieving 100 climate neutral cities in Europe and beyond.

A systems and holistic approach to planning is stressed in the report as the key for integrated planning and finding efficient solutions, opportunities, and synergies. Some guidance is provided on what a multi-level governance framework could look like, however, further guidance on how to implement that in practice is needed. The call for a holistic approach and systemic transformation is welcomed but it demands a stronger and greater focus on how to work with climate neutrality in this way.

The report allows for different delimitations of geographical areas as the primary focus but also stresses multi-level governance and vertical integration. The geographic boundaries of cities are particularly stressed in connection with the monitoring of greenhouse gas emissions. An overview and continuous monitoring of emissions is not only of significant importance for evaluating progress that is primarily stressed in the report but should also be stressed as central for developing strategies and actions while making priorities for investments. However, to develop efficient strategies, municipalities also need sufficient knowledge and understanding of the context of different greenhouse gas emissions, and which actors that can influence these and how.

The mission report refers to the binding nature of the Climate City Contracts. It states that it is “not meant to be a closed document that only binds a city legally to a course of action up to 2030” and then again that the Climate City Contracts will be politically binding documents. Therefore, it is not clear whether the Climate City Contracts are legally or politically binding and to what extent. This ambiguity around the binding nature can have implications on the credibility of the process. It is critical that the Climate City Contracts are an instrument that can define the objectives, how success toward targets can be tracked, and provide a mechanism to ensure the necessary political and financial support.

Overall, the mission for 100 climate neutral cities in Europe is a timely choice for a critical mission. It is connected to the European Green Deal and the Sustainable Development Goals. Many cities in Europe and around the world have not only declared ambitious goals but also developed climate initiatives. The mission for 100 climate neutral cities can provide a new force, legitimacy and inspiration to these ongoing processes and build further on the activities and experiences of many cities. The focus on the city-level also contributes to giving the mission a context for “cross-disciplinary, cross-sectoral, and cross-actor innovation” and possibilities for driving transformative change.

Source: Shabb, K., McCormick, K., Mujkic, S., Anderberg, S., Palm, J., & Carlsson, A. (2022). Launching the Mission for 100



## PODCAST ALERT

### Collaboration and Cities – Talking Transformations

#### Pourya Salehi (ICLEI Research)

We don't just need action, we need informed action. That's the ambition behind the global research and action agenda for cities. In this episode, we discuss collaborative urban research and what co-creating means in practice. We interview Pourya Salehi who is the Head of the Urban Research Team at ICLEI. He discusses the importance of informed decision-making, genuinely engaging cities in research processes, and the role of research for transformative climate action in cities.

Listen to the Podcast here: [talkingtransformations.transistor.fm/episodes/collaboration-and-cities-talking-transformations-with-pourya-salehi-iclei-research](https://talkingtransformations.transistor.fm/episodes/collaboration-and-cities-talking-transformations-with-pourya-salehi-iclei-research)

## Coffee Break with Cities

### Amanda Stone, Former Mayor and Council Member - Yarra, Australia

- Yarra is a city that has been out in front on climate action for decades. The city has declared a climate emergency as a foundation to climate action planning.
- The council operations are in fact carbon neutral and the focus has shifted to making the city or community also meet this ambition.
- The “[Yarra Energy Foundation](#)” has a role to facilitate collaborations and act as hub to pull together disparate groups and organisations to work on a zero carbon future.
- Malmö in Sweden is an inspiration – with its people-centred focus and creating local neighbourhoods that are walkable and good for people and the planet.
- Message to national policy-makers – “We need a seat at the table with the national government on discussions and agreements on climate targets and actions.”



View the video here: [www.youtube.com/watch?v=psKmTgpwa\\_g](https://www.youtube.com/watch?v=psKmTgpwa_g)

## STARTING WITH THE INNER DEVELOPMENT GOALS

### ACTING

*Qualities such as courage and optimism help us acquire true agency, break old patterns, generate original ideas and act with persistence in uncertain times.*

#### ACTING

Qualities such as courage and optimism help us acquire true agency, break old patterns, generate original ideas and act with persistence in uncertain times.

#### Courage

Ability to stand up for values, make decisions, take decisive action and, if need be, challenge and disrupt existing structures and views.

#### Creativity

Ability to generate and develop original ideas, innovate and being willing to disrupt conventional patterns.

#### Optimism

Ability to sustain and communicate a sense of hope, positive attitude and confidence in the possibility of meaningful change.

#### Perseverance

Ability to sustain engagement and remain determined and patient even when efforts take a long time to bear fruit.

## DEVELOPING TRANSFORMATIVE SKILLS AND CAPACITIES

### EMBRACING EXPERIMENTATION

*While specialised knowledge is absolutely essential to solving sustainability challenges, individual and collective skills and capacities are increasingly needed to address grand challenges and transform our organisations and societies.*

ACTING as a pathway to change and innovation focuses on EMBRACING EXPERIMENTATION, “learning-by-doing”, and co-creating knowledge to foster change. Engaging diverse stakeholders and perspectives is also key.

Collaborative action through experimentation involves deliberate testing of future configurations, joint reflection, and learning for structural and systemic change and is a key driver for building collective transformative capacity.

Embracing experimentation requires creative and optimistic thinking, courage to go against conventional habits, and the ability to take decisive action. Perseverance to design, undertake and evaluate experimentation is a foundation.

## KEY MESSAGES



- *We need research, evidence and innovation to underpin and accelerate climate action planning in cities.*
- *We need to support cities with research and innovation on innovative strategies for financing climate action and generating city scale data.*
- *We need to empower local municipalities to integrate research and innovation into driving ambitious climate action.*





## We are facing a climate and ecological emergency

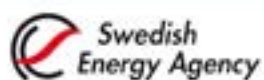
On all levels in society and the economy, there is a need to work towards climate neutrality and sustainable development. A key question is how we can develop transformative skills and capacities to achieve climate neutral and sustainable cities?

Join our online course and community that address this question.

Enrole here: [www.coursera.org/learn/cities-climate-and-change](http://www.coursera.org/learn/cities-climate-and-change)



With support from:



STRATEGIC  
INNOVATION  
PROGRAMMES

