Drift
Dutch Research Institute for Transitions

REPORT

Transition management in five European cities – an evaluation

Five European cities have applied transition management, a governance approach aimed at creating space for new paradigms and practices, to address climate change at the local level. This report introduces their experiences, discusses the outcomes and draws lessons for the application of transition management in the urban context and, in a broader sense, for the governance of urban sustainability transitions.

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mitigation in urban areas

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Transition management in five European cities – an evaluation

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Contents

Executive summary

Transition management in urban context

Cities seem a promising intervention level for decisive local action to address sustainability challenges. However, city officials are confronted with the limitations of the policy instruments available to them, which prove insufficient to deal with the complexity of the challenges at hand. Different actors across domains and scale-levels however have daily practice that can contribute to a sustainable future of the city piece by piece. How can city officials tap into this potential? As aiming for a sustainable future requires searching for fundamentally new ways of thinking, working, planning and organizing, 'command and control' intervention is an impossibility. How can city officials, moving beyond old ways of governance, trigger and influence social dynamics aiming for sustainability?

This report is about five cities that aim to address climate change at the local level and struggle with answering these questions. The cities, Aberdeen (UK), Montreuil (FR), Ghent (BE), Ludwigsburg (DE) and Rotterdam (NL), used the transition management approach as a framework for thinking about and working on urban sustainability transitions. The table below provides a brief overview of the key characteristics of the cities involved. Their experiences provide a rich empirical basis to reflect on the benefits and challenges of this approach, and to draw lessons from and for its application in the urban context. More broadly, they can inform debates on urban sustainability governance.

The transition management approach can be used to influence the direction and pace of societal change dynamics oriented towards sustainable pathways. Rather than focusing on tight management, the approach is about creating space (physical and mental) to go beyond the status quo by searching, learning and experimenting in a joint process. A central instrument in this approach is the transition arena, a setting that provides an informal, well-structured space to a small group of change-agents with diverse perspectives. Following the transition management approach, the five cities each organized a series of arena meetings in which the invited group of change-agents subsequently worked on structuring the transition challenge, drafting visionary images, developing transition pathways and formulating a transition agenda that includes short-term actions for a low-carbon future of the city. The ideas, connections and energy that emerged during the processes, provide a fertile ground for furthering strategies, initiatives and collaborations aimed at a sustainable future of the city.

	Aberdeen, Scotland	Ghent, Belgium	Ludwigsburg, Germany	Montreuil, France	Rotterdam, The Netherlands
Context					
Population	210,000	240,000	86,000	103,000	612,000
Key characteristics	- Basis for offshore oil & gas industry in the North Sea	- Third biggest port in Belgium - Rich cultural heritage	- Prosperous city Stuttgart region - Former garrison town	- Agricultural and industrial history - 3rd biggest suburb of Paris	- Largest port in Europe - Modern architecture
Context: - General climate ambition - Key challenge for MUSIC - Positioning of transition management process.	- CO_2 reduction - Create culture of energy efficiency among public and private actors - TM as separate project, linked to other policy efforts	- Climate neutral in 2050 - Involve wider urban society in climate ambition - TM as separate project, strongly linked to the 'climate alliance'.	- Sustainable energy - Further develop energy concept with urban actors - TM embedded in preparation of Future Conference.	- CO_2 reduction - Create a culture of efficiency for a 'positive energy strategy' - TM as separate project, linked to other policy efforts	- 50% CO_2 reduction by 2025 - Create strategy for dense & green inner city - TM embedded in larger envisioning exercise.

Reflection

In this report, we reflect on the transition management processes and their outcomes following five mechanisms that the approach presents for addressing sustainability challenges:

- Participants and the policy officials involved in the process gain a <u>better understanding of the complexity</u> and societal context of the low-carbon challenge. The systems analysis and subsequent discussions make it possible to move beyond a focus on energy or climate mitigation per se to include other relevant domains of urban policy making on the way to a low-carbon future, and gain a shared understanding. In Montreuil, a transition team member stated that "[transition management] allowed us to remove the institutional perspective of looking at things" and "replaced our 'business-as-usual' for looking more to the long-term". One arena participant in Aberdeen framed it as follows: "in order to own the problem, you have to be part of the problem definition and I think that was done quite well".

- The participants developed a <u>shared narrative</u> (i.e. understanding) about the past, the present and the future of the city. This was published in a transition agenda, consolidating the problem framing, visionary images, pathways, and ideas for short-term actions. The agendas were considered by some as vital, as "not everyone is hot for sustainability" and these agendas enable diverse people to relate to a sustainable future. Others disputed the usefulness of such future-oriented agendas. A participant in Montreuil stated that "[…] reality is different […] I think it is good to start with a utopia. But I don't see concrete actions coming out of [this transition agenda]". The wider effects of these narratives cannot be simply pinpointed, although clear indications for such effects exist. The city of Ghent provides the clearest example: three political parties incorporated insights from the transition arena into their political programs, which ultimately contributed to a broad range of climate-related measures in the agreement of the newly-established council. In other cities, the narrative also evidently resonates within their administrations, influencing climate and energy policy, as well as policy plans from departments such as spatial planning, mobility and economy. Some of the arena participants indicated that the narrative serves them as an anchor point, helping them to orient their professional and personal actions and choices.

- Another mechanism of the transition management process is the <u>emergence of new networks and constellations</u>. The establishment of new contacts during the transition arena meetings were highly valued by the arena participants and transition team members: "most valuable was the dynamic atmosphere of people who want to be the change". By inviting additional participants to backcasting workshops in the later transition arena meetings and through events, more actors became involved. In Aberdeen, Ghent and Montreuil, several civic project groups started as follow-up to the arena-trajectory, in order to work on more specific themes and concrete project ideas. These groups worked on themes ranging from education to sustainable transportation, from mobilisation of consumers to valorisation of sewage water. In Ghent, moreover, two new arena trajectories were initiated (focussing on a sustainable university and sustainable mobility), which led to further spin-off initiatives.

- Through a common learning journey, actors from different backgrounds search for <u>new roles and relations</u> necessary for working towards a shared future vision. As put by a transition team member in Aberdeen: "[…] through the transition management process what we are really trying to infuse is a sense of responsibility and a sense of urgency amongst our

population". The process step at which the structured transition arena setting was dissolved, was a critical moment:. what roles would the actors involved take up for themselves? Many of the arena participants in the five cities indicated that the process strengthened their capacities and motivation to play a role in the transition to a low-carbon city. Some of the arena participants committed to a role in project group after the arena, which also attracted additional actors, including people who would normally not be triggered by the issue of a low-carbon city. Within the city administrations, policy officers from diverse domains discovered the linkages with and the relevance of climate and energy ambitions for their own work. According to a policy official in Ghent, "transition management helps to get climate neutrality on the agenda in every department".

- The search for new roles and relations also belongs to the shifting of views on participation within local governments: rather than citizens or businesses participating in a municipal decision making process, transition management is about <u>co-production in a societal learning process</u>. "I was amazed how much vigour such a group can have", a transition team member from Ghent expressed, and her colleague in Aberdeen remarked that "one output from MUSIC was an increase in partnership working […] [and] an opportunity to recognise what was already happening and see how partners could work together". The new mode of working, focusing on social and institutional learning and creating opportunities for change agents, is in part translated into the daily work of the city administration. As a policy officers from Montreuil stated, "transition management is not just another participatory process, it is about transforming from inside". At the same time, these processes also showed that it is difficult for both sides, citizens and administration, to overcome the ingrained role patterns that they have cultivated for a long time. In spite of the acknowledgement that a strong outward orientation is needed, a city officer in Ghent noted that "it will take a while before the governments feels comfortable with that and discovers its new role".

Lessons learned

We can draw a number of lessons based on the experiences in the five cities:

- Lessons for the governance of urban sustainability transitions:
  - playing into local dynamics has clear benefits;
  - city administrations should acknowledge that they do not have full control;
  - the creation of mental and organizational space is crucial in the application of transition management or similar 'open' and reflexive approaches;
  - dealing with accountability is a delicate issue, as effects are intangible, indirect and long-term; a reflexive monitoring approach with appropriate indicators should be used.
- Generic lessons for transition management in the urban context:
  - a facilitation role is also a demanding role;
  - cities should not overstretch expectations for arena participants to engage in specific actions;
  - a tension exists between the general understanding of 'power' and 'impact' versus the ambition to go beyond the status quo and beyond 'business as usual'.

- Practical lessons for applying transition management in the urban context:
    - making an informed selection of a diverse group of change-agents is key;
    - balancing between 'steering' and 'following' the dynamics of the process is delicate;
    - great attention to atmosphere and facilitation methods is needed;
    - sharply consolidating the concepts that arise in the transition arena is a condition for the further take-up of these ideas.

Concluding reflections

In all five cities, the application of the transition management approach has proved to be a productive but challenging journey. The cities' experiences make it possible to clearly articulate the potential outcomes of transition management for urban climate governance:

- A guiding perspective that provides a sense of direction regarding the fundamental changes needed to reach a sustainable future**;**
- An impulse for local change; inspiring new and enhancing existing initiatives that contribute to the envisioned future;
- Collective empowerment enabling actors in the city to more effectively build upon opportunities and tackle challenges in working towards a sustainable city.

The organization of the transition arena gave the cities a concrete starting point to play into societal dynamics. Moreover, it stimulates them to continue to create space for new developments, strengthen initiatives that contribute to the sketched guiding perspective, and challenge actors to take part in the transition.

How is that for other cities in Europe? The last years have seen a growing debate around 'big society' and new forms of governance, as well as a broader recognition that (local) governments cannot address sustainability challenges on their own. The need for transition management and similar approaches is thus increasingly being acknowledged. This development could reinforce (and be reinforced by) the further 'transitioning' of institutions: changing structures (e.g. further breaking the silos and altering regulations), cultures (e.g. embracing complexity and becoming more prone to co-creation) and practices (e.g. adjusting financing schemes to foster sustainable measures and building capacities for transition). This will again prove to be an intensive struggle and learning experience.

1. Introduction

1.1 The MUSIC project

Cities seem a promising intervention level for decisive local action – in terms of policy and societal action – to address sustainability challenges. Therefore, many cities have adopted ambitious targets and agendas. This report is about five cities, which recognized that incremental improvements are insufficient to reach their targets and which seek to foster transitions, i.e. fundamental long-term changes in structures, cultures and practices.

These cities, Aberdeen (UK), Montreuil (FR), Ghent (BE), Ludwigsburg (DE) and Rotterdam (NL) (figure 1), have been using transition management as an innovative framework for thinking about and working on urban sustainability transitions. Their experiences provide a rich empirical basis to reflect on the benefits and challenges of this approach, and to draw lessons from and for its application in the urban context. More broadly, they can inform debates on the governance of urban sustainability transitions.

The adaptation of transition management to the urban context and its transnational application constitute important aspects of MUSIC (Mitigation in Urban Context, Solutions for Innovative Cities), a European project funded by Interreg taking place between 2010 and 2015. The five cities listed above and two research institutes (DRIFT, Erasmus University Rotterdam, Netherlands and CRP Henri Tudor, Luxembourg) actively co-operate on this project.

The overall aim of MUSIC is to catalyse and mainstream carbon and energy reduction in urban policies, activities and the build environment. DRIFT assists the project cities in applying transition management, in order for them to achieve their carbon and energy reduction ambitions. The key activities of this approach are: building a network of change-agents, jointly drafting a systemic change perspective, and empowering diverse actors to employ and learn from initiatives that contribute to a sustainable future. CRP Henri Tudor is involved in developing a Geospatial Urban Energy Information and Support System in close collaboration with the five cities. This system enables urban planning to understand and address energy-issues. Each city also develops pilot projects that put energy reduction measures into practice.

Figure 1: Cities in the MUSIC project

1.2 This report

This report was prepared with multiple target audiences in mind. City officials and other interested professionals can learn from its examples, gain a better understanding of the transition management approach and apply its lessons to the challenges they face. The scientific community studying sustainability transitions can benefit from its empirical case-study material. For Interreg IVB (the co-funder of the MUSIC-project), it provides (together with the half-yearly project reports) essential insight into the impact of their funding. It also helps the partner cities to legitimize the investments they have made as part of the project. Finally, for all directly involved, the partner cities and ourselves (DRIFT), this report offers the opportunity to reflect on processes and outcomes, enabled mutual learning and a more explicit formulation of the 'promises' of transition management.

The following chapters introduce the transition management approach (chapter 2), the evaluation methodology (chapter 3) and the cities' experiences (chapter 4). The subsequent chapters discuss the outcomes (chapter 5), draw lessons (chapter 6) and offer concluding remarks (chapter 7).

2. Transition management in urban context

2.1 Sustainability transitions on urban scale

With more than half of the world's population living in cities, it is safe to say that cities have a deep impact on our world's sustainability. In Europe, this proportion exceeds 70%, and impacts can be felt in terms of resource consumption (e.g. energy, primary resources), food security, greenhouse gas emissions and environmental degradation. However, cities also offer opportunities for decisive local action to address these issues, in terms of policy and societal action. Alternatives can emerge and be nurtured – they can be inspiring to others, or be transposed to other governance scales (e.g. national, international). Actions at the urban level can thus have a global impact: this affirms the role of cities as critical arenas for addressing sustainability issues.

Many cities recognise this and have adopted ambitious sustainability targets and agendas. City officials implementing these are often confronted with the limitations of available policy instruments, which leave them little leeway in dealing with the complexity of sustainability issues. Far from clear-cut, these can best be regarded as persistent problems: deeply embedded in society, involving a myriad of interrelated actors, domains and scales, with no obvious starting point. To address them, we need fundamental shifts in structures, mind-sets and practices– in other words, sustainability transitions.

Fortunately, local governments do not stand alone in their desire to realise structural change toward sustainability. Many citizens, companies and non-governmental organizations (NGOs) have set up initiatives to contribute to a sustainable future. Even if they do not explicitly aim to contribute to a sustainable future, still they make decisions that influence this future every day. How can city officials working towards a sustainable future tap into this potential? How can they get a feeling for the dynamics of societal change in their city? How might they identify, access and engage with these dynamics to strengthen, connect or streamline emerging sustainability initiatives, or create conditions for the emergence of others?

To assist city officials who struggle with these questions and seek ways to foster a sustainable future for their city, the Dutch Research Institute For Transitions (DRIFT, Erasmus University Rotterdam) has developed the transition management approach, which is based on insights from complex systems, governance and sociological theories.

2.2 Transition management

The transition management approach aims at influencing the direction and pace of societal change dynamics oriented towards sustainability. Rather than about 'managing', it is about creating space for going beyond the status quo by searching, learning and experimenting.

The approach has been broadly applied in socio-technical systems such as energy and water, often at the national level. It is increasingly being used to influence sustainability transitions in regions, cities and neighbourhoods. Transition management holds that transitions, rather than being managed, can be initiated, supported and accelerated by playing into existing dynamics and embracing complexity and uncertainty as opportunities. Basic tenets for influencing transitions include:

- <u>Insight into the system.</u> The complexity of the challenges must be fully acknowledged. Acquiring an insight into the dynamics and interlinkages of multiple domains, actors and scales is essential for identifying opportunities to address challenges integrally. Challenges are thoroughly examined by questioning assumptions, problem perceptions and dominant solutions.

- <u>System innovation in incremental steps</u>. The aim is to go beyond system improvements and optimisation to system innovation. This becomes feasible by taking small but radical steps guided by a long-term perspective, as well as by questioning mind-sets and enabling ideas and actions that go against the current.

- <u>Diversity and flexibility</u>. The future can neither be predicted nor planned, so it is essential to keep options open by exploring multiple pathways when working on strategies and actions. One should therefore anticipate resistance and barriers, and moreover involve diverse perspectives to enable cross-fertilisation and prevent a tunnel vision.

- <u>Co-creation</u>. Neither local government nor any other single actor can address sustainability challenges on its own: different kinds of people and organisations make decisions that influence the future on a daily basis. Multiple stakeholders must therefore be engaged in the process, beyond simply providing input – as everyone can be considered a decision-maker, contributing from the own position and perspective.

- <u>Creating opportunities for change agents</u>. Achieving ambitious targets is difficult when vested interests and positions are taken as a starting point. Actors who are already adopting new or alternative ways of thinking and doing (change agents) should therefore be found, as they can be influential in mediating transitions. Actively engaging and empowering them will give them the resources and opportunities needed for systems innovation.

- <u>Social and institutional learning</u>. Learning is essential in societal change processes. Opening up to actors from other backgrounds makes it possible to gain better insights into challenges and opportunities. Short-term action that is in line with a long-term vision can lead to learning about new or alternative practices and current constraints. Further conditions to support the learning process include: time for reflection, mutual trust and openness to each other's perspectives.

2.3 Putting transition management into practice

These principles form the basis for a joint societal searching and learning process towards sustainability. They have been operationalized into an iterative governance framework, the transition management cycle (see figure 2). It distinguishes a number of governance activities at different levels, namely strategic (problem structuring, envisioning), tactical (agenda setting, coalition forming), operational (experimenting) and reflexive (monitoring, learning).
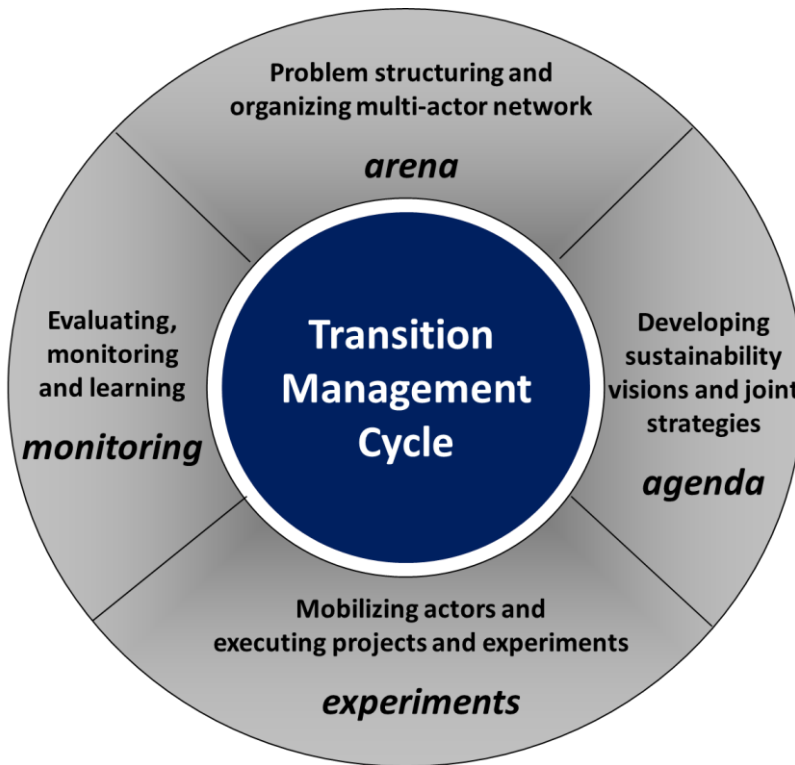
Figure 2: Transition management cycle (Loorbach 2010)

A central instrument in this approach is the transition arena, a setting that provides an informal but well-structured space to a small group of change-agents with diverse perspectives (businesses, government, research institutes, civil society). The arena aims to provide a space for shared societal learning, where the group questions and goes beyond the status quo, existing interests and daily routines. The group engages in a series of meetings to jointly develop a new and shared visionary story, which they can directly link to their everyday practice. The arena group is of a temporary character and subsequently works on structuring the transition challenge, drafting visionary images, developing transition pathways and formulating a transition agenda that includes short-term actions. This process combines the search for long-term strategies to transform existing structures, cultures and practices, with immediate action to realize new projects, collaborations and experiments.

Transition management aims to create a new interface between various societal actors: policy, civil society, business and knowledge institutes. It is complementary to official decision making bodies; it influences but does not replace them. Outcomes can, for example, serve as inspiration for strategic planning and the formulation of regulation. For local governments, these are also learning processes, which offer the opportunity to work with the transformative capacity of citizens, businesses, institutions and other organisations. Other actors, in first instance the arena participants, are provided with mental and physical space, as well as an opportunity to think and work beyond 'business as usual'. They are stimulated to take co-ownership for the ambition of a sustainable city.

2.4. Operationalizing transition management in the MUSIC cities

By the start of the MUSIC-project, DRIFT had translated transition management's principles into a process design tailored to the urban context and the ambitions of the project.

The five cities were assisted in the application of the approach by DRIFT – both as a group and individually. The principles and process design of transition management were unfamiliar to the cities (with Ghent as an exception as it had been starting a transition management process just before the MUSIC project initiated). During the MUSIC kick-off meeting in November 2010, the cities attended presentations and received a first hand-out (Roorda *et al.* 2010), followed by a more elaborate step-by-step guidance manual, which was distributed during a second meeting in April 2011 (Roorda *et al.* 2011).

Phases of Urban Transition Management		
	Key activities	**Key output**
1. Preparation & Exploration	A. Transition Team formation B. Process design C. Systems analysis D. Actor analysis (long-list and short-list of relevant actors) incl. interviews E. Set up Monitoring framework	A. Transition Team B. UTM-process plan C. Insightful view on major issues/tensions to focus on D. Actor identification and categorisation E. Monitoring framework
2. Problem structuring & Envisioning	A. Transition Arena formation B. Participatory problem structuring* C. Selection of key priorities* D. Participatory vision building*	A. Frontrunner network B. Shared problem perceptions and change-topics C. Guiding sustainability principles D. Shared vision
3. Backcasting, Pathways & Agenda Building	A. Participatory backcasting* & definition of transition paths B. Formulation agenda and specific actions*	A. Backcasting analysis & transition paths B. Transition agenda and formation of possible sub-groups
4. Experimenting & Implementing	A. Dissemination of visions, pathways and agenda (transition narrative) B. Coalition forming & broadening the network C. Conduct transition experiments & implementation in regular policy and projects	A. Broader public awareness & extended involvement B. Change agents network & experiment portfolio C. Learning & implementation
5. Monitoring & Evaluation	A. Participatory evaluation of method and content (process)* B. Reflection on vision & strategy C. Monitoring interviews	A. Adaptation of methodological framework and lessons learned for local and EU context B. Adaptations of strategy C. Learning & process feedback

* meeting

Table 1: Overview of the process design, as included in the second version of the transition management manual of the MUSIC project (Roorda et al. 2011).

Half-yearly project meetings provided the partners with the opportunity to reflect on progress in each city, to tackle questions with regard to the approach and to learn from one another. In-between meetings, the cities were first coached and later monitored by DRIFT staff regarding their application

of transition management. The aim was to contextualise the transition management process design to the individual cities, as well as to monitor the processes so as to draw conclusions for a more integrated version of the approach. In November 2012, for the mid-term conference in Gent, a new version of the transition management manual was published (Roorda *et al.* 2013). It integrated intermediate insights from the five cities, for example, emphasizing the need to contextualize and position transition management in relation to local policy efforts and to strategies building upon results from the arenas. A final version is currently in preparation (Roorda *et al.* forthcoming), and will also into account the lessons from this evaluation

3. Evaluation approach

In evaluating the implementation of the transition management approach in the five MUSIC cities, we addressed a number of methodological questions and made related choices – for example, for which target group and what purpose we evaluate, against which baseline, and how. We outline these in this chapter.

This evaluation report is intended for several audiences, as outlined in section 1.2. Its two main purposes are: (i) to communicate, reflect and learn about the transition management processes and their outcomes in the five cities (taking stock); and (ii) to refine the transition management approach for cities (moving forward).

With regard to the baseline of the evaluation, the question arises: against which aims are the processes evaluated? We can consider three, in part overlapping, aims:

- The overall aim of the *MUSIC project*, which is "to catalyze and mainstream carbon and energy reduction in urban policies, activities and the built environment". More specifically, the objectives of the MUSIC project with regard to the transition management approach are to develop "a transnationally applicable transition management strategy" and, by applying this in the five partner cities, mobilize "stakeholders to take action towards CO_2 reduction".
- The aims of the individuals involved, including the *policy officials* from the partner cities, as well as other *stakeholders* who became engaged in the transition management processes. The aims of the policy officials were formulated in city-specific process plans; individuals were not without their own motivations. These evolved throughout the process, in response to changing perspectives on the city and its challenges.
- The aims of the *transition management approach*, which can be derived from the founding scientific articles of this approach. The guidance manuals developed throughout the MUSIC project did not, however, spell these out explicitly[1]. The final version of the manual will detail these in a more specific manner (Roorda *et al.* forthcoming).

In this evaluation report, we take the aims of the MUSIC project as a starting point, while integrating it with the city-specific aims. We follow a two-part evaluation strategy. In the first, we describe the processes and outcomes for each city in their own right. The narrative format allows comparisons by outlining the context, the process and then the outcomes (chapter 4). In the second, we deepen the understanding of processes and outcomes by discussing these along five mechanisms of transition management (chapter 5), namely: understanding of complexity; shared narrative; new networks and constellations; new roles and relations; and co-production. These have been distilled from the transition management literature, and from extensive discussions with practitioners from the partner cities.

This report is based on a number of different sources. Desk research included the review and analysis of city-specific documents, such as policy documents, meeting minutes and official output

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[1] The guiding manual used by the partner cities only mentioned that the approach can aid policy-makers and practitioners in a number of ways, namely: in applying systems thinking to make an integrated analysis of the cities' sustainability challenges; in formulating an inspiring vision using a participatory approach; in developing a shared agenda and discourse to guide short-term action, while building a network of change agents; in implementing a transition agenda and starting up transition experiments; and in learning from developments and bringing lessons to a higher level.

documents (e.g. vision documents, press releases), as well as MUSIC project-related documentation (e.g. MUSIC progress reports) and two Master thesis (Hölscher 2013, Maas 2012). Transition team members (governmental officials or external facilitators) and arena participants were also interviewed (over 40 interviews). In addition, the authors and their colleagues at DRIFT were involved as transition coaches throughout the process, which allowed for informal talk and interviews, as well as observations in countless settings (e.g. the transition arena meetings, preparatory meetings). Fieldnotes from and formal and informal interviews with all the transition coaches further complemented the picture. Lastly, we draw on discussions with city representatives from the regular transnational project meetings, especially the June 2013 special session that focused on the evaluation of the transition management process.

4. Experiences in the five cities

4.1 The five cities at a glance

The five cities involved in the MUSIC project used the transition management approach as a common methodological basis. Rather than a cookbook, transition management is based on a number of tenets that can help guide the governance of a city, but should be adapted to the local context. Therefore, the application of the approach took its own course in all cities.

The divergences mainly stem from differences in the initial motivation for applying the approach. In both Ghent and Ludwigsburg, the approach was seen as an innovative way to tap into the potential of local actors (citizens, businesses and others) for contributing to the future of the city – in Ghent the MUSIC project reinforced a transition management process that was already planned, and in Ludwigsburg it complemented a larger stakeholder engagement effort by specifically involving change-agents. In Rotterdam, the use of the approach was more limited, as a way to involve stakeholders in drafting a policy agenda, in the context of a larger envisioning exercise. In Aberdeen and Montreuil, the approach was seen as an answer to the generally felt need for a new governance approach to work on the ambitious climate and energy agenda; the transition management approach was not embedded in ongoing policy initiatives, but initiated as a separate project.

The initial issue focus also differed slightly: ranging from a climate-neutral city (Ghent), the future of energy in the city (Ludwigsburg, Aberdeen and Montreuil) to the greening and densification of the inner city (Rotterdam). Additionally, some boundary conditions varied, such as the size of the city, the cultural context, political and societal support for the sustainability ambitions. The influence of these factors is not specifically assessed in this evaluation report. Some of the key characteristics are listed in table 2, below.

	Aberdeen, Scotland	Ghent, Belgium	Ludwigsburg, Germany	Montreuil, France	Rotterdam, The Netherlands
Context					
Population	210,400	240,000	86,000	103,000	612,000
Surface	184.46 km²	156.18 km²	43.33 km²	8.92 km²	319 km²
Key characteristics	- Basis for offshore oil & gas industry in the North Sea	- Home to third biggest port in Belgium - Many cultural heritage protected buildings	- Economically prosperous city in the Stuttgart region - Former garrison town	- Former agricultural and industrial city - Third most populous suburb of Paris	- Home to the largest port in Europe - Modern architecture
General climate ambition and key challenge for MUSIC project	- CO_2 reduction - Create a culture of energy efficiency among public and private actors	- Ambition to become climate neutral in 2050 - Start of 'climate alliance', a network of diverse committed actors	- Sustainable energy provision - Further develop energy concept with other urban actors	- CO_2 reduction - Create a culture of efficiency for a 'positive energy strategy'	- Reduction of CO_2 emissions by 50% in 2025 - Densify inner city in a sustainable way

Table 2: Five cities at a glance

In the subsequent paragraphs we introduce the experiences of each city through the following categories: local context, process and outcome.

4.2 Transition management in Aberdeen

Context

Aberdeen is the third largest city of Scotland, home to over 210.000 inhabitants. Industrial activity was historically characterised by the fishing, paper, ship-building and textile industries, and currently revolves around the activities of the North Sea oil and gas industry: it is the oil & gas capital of Europe. The city is also known for being the 'Granite City', with the majority of it buildings being made from granite sourced from local quarries.

The Aberdeen City Council aims to reduce its CO_2 emissions by 42% by 2020 (relative to 2008). Between 2011 and 2015, participation in the MUSIC project gave Aberdeen the opportunity to work on a climate agenda together with change-agents from the city. A transition management approach was implemented in tandem with other policy efforts, such as the implementation of a carbon management plan, an adaptation plan and a sustainable energy action plan.

Figure 3: Scenery of Aberdeen

Process

In May 2011, a project team was formed, consisting of three officials from the environmental policy department and an external transitions expert from DRIFT. At the offset the team worked extensively on a systems analysis: collecting data from existing policy documents and plans, performing an actor analysis and conducting interviews with potential process participants. Subsequently, the team analysed the data they had collected, in order to draft a historical analysis and an overview of the challenges at hand. While working on this, they shifted perspectives: from aiming to anchor the oil-industry for the city's prosperity, towards seeking possibilities to maintain and expand the city's prosperity beyond oil dependency.

Informed by the actor analysis and subsequent interviews, the project team invited participants from the city to form the 'arena group' that would play a central role in the transition management process. The selection was based on whether the potential participants fulfilled all or most of the

following criteria: (1) affected by or strongly affect the energy transition (2) able to provide information, resources & expertise (3) can control & influence implementation (4) can provide innovative ideas and activities (5) can potentially play a role in the energy transition. At the first two arena meetings in June and September 2011, participants were asked to reflect on the systems analysis and to identify principles for guiding action and co-operation towards a sustainable Aberdeen. The discussions acknowledged the need to decouple the city's growth from carbon growth. Some participants questioned whether "oil rules the city" and argued for building a new socio-economic fabric extending beyond the current linkage of urban growth with the fossil fuel based energy industry. Mobility was also introduced as a major topic for discussion. After the first meeting, the project team reconsidered the composition of the arena group for two reasons: doubts were raised whether the participants fitted to the profile of change-agents, as the selection had a bias towards actors already strongly involved in the energy sector; and policy officials and academic actors were overrepresented. Therefore, efforts were made before the second and subsequent meetings to invite new and more diverse participants.

The guiding principles were revised and enriched in the third and fourth arena meetings that took place in October 2011 and May 2012. The arena group identified two time horizons: 2030 to increase the urgency for possible actions, and 2050 to imagine the era when the oil industry has left Aberdeen. The group agreed upon five principles: Aberdeen as an opportunity city; Aberdeen as an attractive city to visit and live in; Aberdeen as a learning city; Aberdeen as an accessible city; Aberdeen as an energy efficient and resilient city. For each guiding principle, a narrative was created from a synthesis of statements, ideas and arguments from the arena group, which together embody a vision that described the practices, lifestyle and features of a sustainable Aberdeen in 2050.
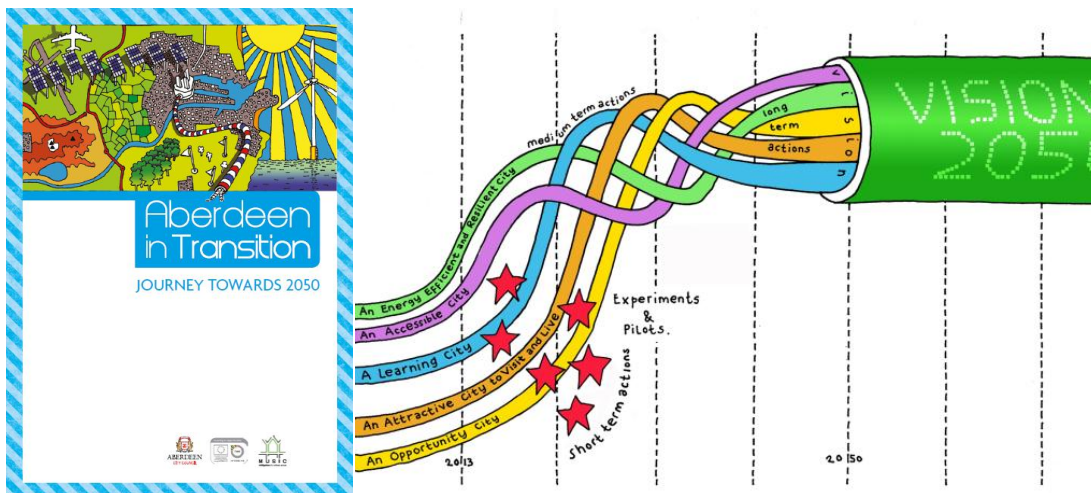
Figure 4: Visualisations used in the Aberdeen 2050 vision

By the end of 2011, a number of changes had taken place in the project team. The project leader left and was initially replaced by a substitute; it was only by the end of 2012 that a new one was appointed. At the same time, the transitions expert was replaced by a colleague and an additional external process facilitator from Robert Gordon University Aberdeen was hired. The modified team then took up the process by working on agenda-setting and further engagement.

Three subsequent arena meetings used the backcasting methodology to identify, select and elaborate pathways that bridge the envisioned future to the present. In May 2013, an agenda-setting

meeting marked the shift from development to implementation. The meeting involved 20 additional actors invited by the arena participants. Using the pathways as a starting point, a portfolio of 52 ideas for transition experiments was compiled, six of which were taken forward by project groups (see outcomes).

Between May and August of 2013, each of the project groups met to further develop their respective transition experiments, ahead of a joint project group meeting (September 2013). Furthermore, a steering group was set up to oversee the future progress of the Aberdeen MUSIC project, consisting of 5 arena participants and 5 members of the Environmental Policy team from the Aberdeen City Council. This group also performed a mapping exercise to recognise what projects, organisations and strategies were active across Aberdeen, and to which ones the process could be linked.

In December 2013, the 'Sustainable Aberdeen Summit' was organised to present the work from the Aberdeen MUSIC project. This event brought together over 50 stakeholders from different backgrounds – business and transport through to policy and education. The aim of the summit was to share the project's vision and guiding principles, and to communicate the underlying narrative and philosophy – inspiring people in their own work, setting up networks and forming new projects, and contributing to transition experiments brought forward by the arena group. The Summit also saw the launch of the magazine publication, 'Aberdeen In Transition: Journey Towards 2050', which summarizes the problem definition, vision and the portfolio of the transition experiments that had been developed.
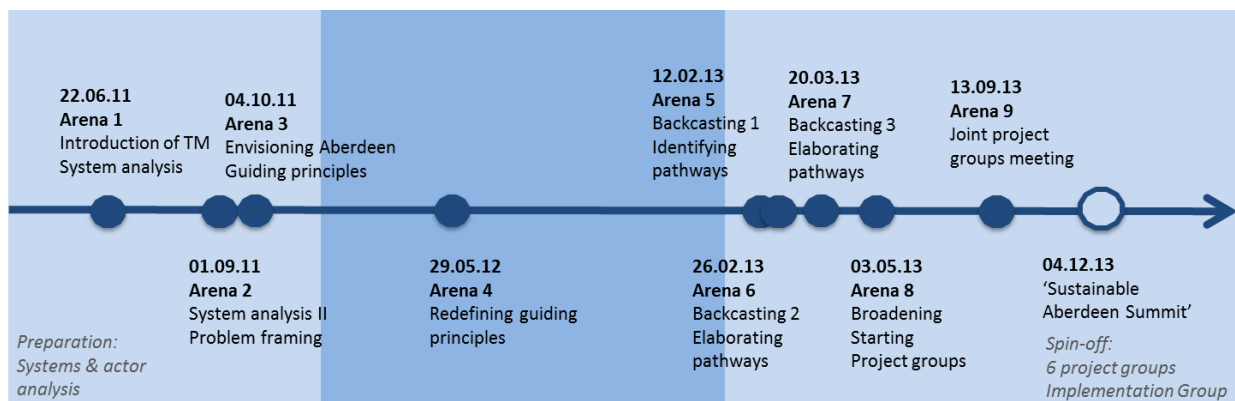
Figure 5: Timeline of arena meetings in Aberdeen

Outcomes

The transition management process in Aberdeen has laid the foundations for new partnerships and initiatives. By the end of 2013, it had engendered six project groups, each of which aims to elaborate one of the transition experiments that had been prioritised in the agenda setting meeting. These groups involve arena participants and newly engaged actors, and are facilitated to a limited extent by the city administration, which stays in contact with participants, provides space for meetings, suggests relevant contacts and organizes inter-group exchanges by means of a newsletter and joint meetings.

Three of these project groups focus on education: one on primary education (developing an education package for primary school pupils on energy and sustainability), one on secondary

education (assisting high school students and their families to monitor and ultimately decrease their energy use), and one for secondary school and higher education (promoting sustainable living for students). The other three project groups work on a 'remote working hub' (a series of trial days testing the concept of remote working hubs), 'transport' (developing an e-forum on sustainable transport), and 'celebrate the streets' (developing an event on low carbon transport and alternative uses for streets).

Figure 6: 'Celebrate the streets'-activity in Aberdeen

The participants dubbed 2014 the 'implementation year', and it is expected to show more tangible outcomes. In spite of the loss of momentum in 2012 and the doubts raised by the arena group about the lack of resources (time, capacities) for implementation, the process has spurred spin-off projects and brought together a (still growing) network of committed actors to realize these.

The transition management process has led to a new way of thinking about the sustainable future of Aberdeen, both within the city administration and among the participants. Increasingly, others join in reflections that go "beyond the era of the fossil energy industry". While the main focus is the reduction of carbon emissions, this holistic approach also considers the social and economic aspects of sustainability. This thinking features in the emergent vision of Aberdeen in 2050[2] as well as in the projects. The project groups and the magazine 'Aberdeen In Transition: Journey Towards 2050' (online and hard-copy) inspired others to take part in working towards a sustainable future in Aberdeen.

A final outcome from the transition management process is the opening of a dialogue between policy makers, change agents from the city, scientists and community representatives to rethink current and future pathways for Aberdeen. The project nurtured partnerships and new connections between participants and the city administration that will remain in place. If this mode of dialogue persists, it can foster the engagement needed for realizing a sustainable Aberdeen. The new process design for the Strategic Energy Action Plan (SEAP) does suggest the persistence of this mode of dialogue: a policy official stated that they now enter "this process with a genuine open mind" such that "people are involved from the beginning and feel that they can really contribute".

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[2] Available online at http://www.aberdeencity.gov.uk/nmsruntime/saveasdialog.asp?lID=54190&sID=22343

4.3 Transition management in Ghent

Context

Ghent is the second-largest city in Flanders, the northern region of Belgium, and home to over 247.000 inhabitants. It is characterised by an impressive historical centre, a big and lively student community, rich cultural life and significant harbour activities.

Ghent has been active in urban climate governance in various ways. In 1996, it joined the Climate Alliance and from 1998 onwards the city regularly drafted environmental and energy policy plans. Ghent signed the European Covenant of Mayors in 2009, thereby agreeing to curb its CO_2 emissions even beyond the 20% reduction target set by the EU for 2020 and those of both the national and Flemish governments. Moreover, already in 2007, the city council of Ghent expressed its ambition to become climate neutral by 2050.

A specific team was set up within the environmental department, which became strongly oriented towards climate challenges. This move was underlined by two ambitious policy plans regarding energy and climate in 2008. The team's strategy was twofold: "to study" and "to involve/activate". Regarding the latter, the city administration immediately acknowledged that the ambition to become climate neutral could only be achieved by decisive action from all actors in the city. Therefore, in 2009, the Ghent Climate Alliance ('Gents Klimaatverbond') was set up.

In order to explore what a climate neutral future would actually mean and to enable the engagement of a diverse group of actors from the city, Ghent embraced the transition management approach and began a 'climate arena' under the umbrella of the Climate Alliance. This involved seventeen change-agents who were challenged to think and work beyond 'business as usual' and stimulated to take ownership for the ambition of a climate neutral city.

Figure 7: View of Ghent city centre (photo: municipality of Ghent)

Process

At the end of 2010, a project group was constituted to steer and facilitate the implementation of the transition management approach. The team consisted of two officials from the city's environmental department, two transition management experts (from the DRIFT and VITO research institutes) and an external facilitator. The process followed a rather tightly planned schedule: it had to be finished before the city council elections in autumn 2012.

The first months of 2011 were dedicated to the systems analysis, data gathering, interviews, system definition and data structuring. The systems analysis was conducted in considerable detail, taking into account a broad range of sources and making use of several techniques, such as an assessment of social, ecological and economic aspects, a historical sketch and a trend analysis. The analysis identified problem areas and city trumps that could be used for future scenarios, and highlighted interlinkages between environmental, economic and social themes.

At the same time, an actor analysis was performed to identify interviewees for the systems analysis and potential participants for the climate arena. This resulted in the selection of a core arena group of seventeen members. People concerned with the future of their city, who either held innovative ideas or were open to innovative ideas and could reinforce these, were selected, with a wide variety in terms of age, gender and backgrounds – for example, a social youth worker, an environmental scientist, a nature conservation NGO member, actors from the cultural sector, students and staff members from Ghent University (UGent), SME entrepreneurs, and a harbour administrator.

Insights from the interviews and desk research were presented during the first arena meeting in May 2011. The discussion about the current 'state of Ghent' and its challenges in relation to climate neutrality eventually revolved around the seven 'trumps' of the city[3]. Discussing the analysis contributed to a broadening of the problem perception from a narrow focus on climate and energy towards a more holistic view. Additionally, the sketch of the city's historical developments enabled to highlight parallels to the contemporary state and to create the feeling that change is possible. In the second arena meeting (June 2011), participants defined basic principles for their city to become sustainable by 2050, taking the systems analysis and the problem definition as starting points. A third arena meeting (July 2011) focused on the actual envisioning of Ghent 2050 in a vivid image and an accompanying narrative. A visual harvesting artist animated the session to stimulate a visionary mindset. In a follow-up session with a smaller group, the vision was further elaborated.

Figure 8: Discussions during a transition arena meeting (photo by Peter Van Hoof)

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[3] 'Authentic city', 'Labour city', 'Water city', 'Knowledge city', 'Livable city', 'Sympathetic city', 'Energetic city'

The fourth transition arena meeting (September 2011) centred on backcasting to identify transition pathways towards the envisioned future, and to determine milestones and actions for a few of these pathways. The pathways – twenty in total, clustered along the four categories of the vision – were synthesised, interpreted and completed by the transition team. The first category of pathways ('Creating added value locally with an opening to the world') focuses on sustainable production and consumption patterns. The second ('Ghent, good to live in') relates to urban planning in terms of city greening and expanding the water network as well as to the reorganisation of mobility. The pathways of the third ('Energetic city: intelligent cycles') are concerned with decreasing energy demand, energy efficiency, renewable energy and closed material cycles. The last category ('Ghent's citizens feel at home in their city') centres on activation of citizens to work towards a more sustainable city.

For the fifth transition arena (October 2011), a few additional participants were invited because of their link to the themes of the transition pathways. The meeting aimed at a prioritisation of transition pathways by the arena group. Five participants took leadership for one path and chaired a subgroup to formulate transition experiments that they would actually be willing to realise. Afterwards, extensive personal contact from the transition team with the arena participants on an individual basis led to a more elaborated framing of the transition experiments and the formulation of three additional transition experiments, which laid the basis for future spin-off initiatives (see outcomes).

In late 2011 and early 2012, the environmental department and the arena participants disseminated their ideas and engaged a broader group of actors. The major event organised for this purpose was the Climate Forum (November 2011), to which the arena participants would invite ("headhunt") people who could contribute to the realisation of the emerging transition experiments. As a result, the event was attended by more than a hundred highly motivated people who were informed about the arena results thus far. Additionally, the arena work and results were presented to the city council. These presentations contributed to the uptake of the ambitions from the arena in the election programs of three political parties.

Furthermore, the ideas from the arena were published as fifteen 'transition magazines'[4] to promote the vision of the arena and lobby for support. A variant was made for each of the arena participants, including a photo on the cover and a personal interview, alongside a general introduction to the process and the vision. The magazines were published online (over 20.000 views) and also handed out to the arena participants so they could distribute them in their networks.
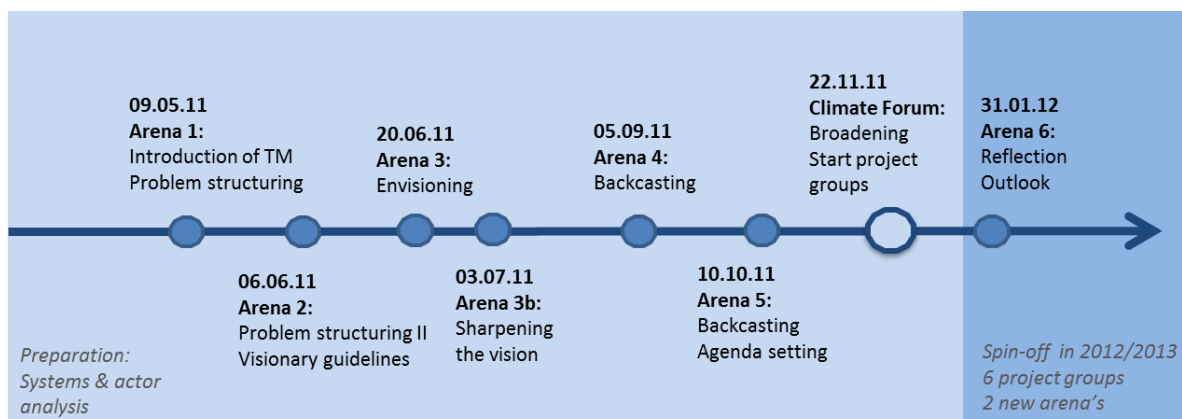

Figure 9: Timeline of the arena meetings in Ghent

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[4] Online at: http://www.gentsklimaatverbond.be/stad-gent/wat-zeggen-de-gentse-klimaathelden-over-2050

Outcomes

The climate arena resulted in a number of spin-off initiatives based on the ideas for the transition experiments, most of which were elaborated and implemented in Climate Working Groups (CWGs). These project groups started at, or shortly after, the Climate Forum, and consisted of arena participants and gradually added new actors. The city administration took a supportive, but limited role, thinking along, creating connections and offering logistical support.

Several spin-off initiatives took place in 2012/2013. Furthermore, inspired by the experiences, two additional arena processes started up in different contexts. See table 3 below for a complete overview.

Initiative	Relation to arena process	Outreach
Carrot mob	CWG 'consumer pushes the market'	A carrot mob is a form of activism campaign to mobilize consumers to buy goods from one shop to reward its commitments to sustainability. This one-day carrot mob attracted 938 mobbers and made the targeted supermarket invest €10.000 in sustainability measures; it was featured as most successful carrot mob of 2012 on the global movement's website.
Urban farming project with children	Arena participant active in CWG 'city agriculture'	In collaboration with social youth organization; a project with a small group of children, growing and harvesting mushrooms, preparing a soup and having dinner with the children's families
Valorization of sewage water projects	CWG 'valorization of sewage water'	Development of a business case for city district the Old Docs (350 dwellings) on the transport of organic waste through the sewage system and the use of sewage water to produce warmth, biogas, nutrients and water; in 7 meetings with on average 12 participants a business case was developed, which was eventually pursued by 2 project developers. By the end of 2013 the bid for developing the area closed: the winning consortium had adopted these plans in their proposal, so the idea will now be implemented in the development of the Old Docs.
Energy efficiency for businesses	CWG 'energy efficiency for businesses'	A project financed by the City of Ghent aimed at stimulating and guiding SMEs to prompt them to structurally work on energy efficiency; the project started with a group of 10 SMEs. Additionally, this group provided input for the new municipal climate policy.
Blue economy	CWG 'Blue economy'	The ambition was to find a company that would set up an iconic project in line with the Blue-economy principles to enhance ecosystems (see Pauli, 2010). The working group was unsuccessful in finding a focus and involving partners to start up a project.
Green Track	Five art organizations sought connection to arena process and created CWG 'Green Track'	Thus far 30 cultural organizations joined; aim is to monitor CO_2 emissions of the participating organisations (including emissions from buildings, transport, consumptions and visitors), to develop an energy action plan and to sensitize visitors; several workshops were held on emission monitoring, sustainable transport and retrofitting. Brussels, Leuven and Antwerpen also participate in this project now.
Mobility arena	In the climate arena, the theme was put on the agenda and the opportunity for the departments to join forces was identified; involves some climate arena participants	The municipal mobility and environmental departments jointly organized an arena process to explore the future of mobility in Ghent, involving 25 participants and several city departments (mobility, environment, spatial planning). This resulted in the launch of the enthusiastically received transition agenda 'The bike of Troy'; regular follow-up meetings in form of mobility cafes, and 3 iconic projects to create support for the envisioned developments, most notably the 'leefstraat' project converting streets in car-free zones full of activity for 1 month (involving 2 streets in 2013 and 10 other streets in 2014). Some of the involved actors have established an organization as agency to further the transition to sustainable mobility.

Transition UGent	Environmental coordinator of the University, participant in the initial arena group, initiated and implemented new arena process	Arena-process initiated by the University of Ghent to explore how the university could become sustainable; over 120 students, scientists and administrative staff members participated; the resulting transition agenda 'Transition UGent – together for a sustainable university' formally became approved by the board of the university; spin-off activities are now starting up; sustainability platform is established as follow-up;

Table 3: overview of spin-off initiatives of the climate arena process. Adapted from (Hölscher 2013).

Next to the transition magazine summarising the insights from the arena group discussions, and the emerging spin-off activities, the climate arena has led to more intangible outcomes.

First, the strategic perspective developed by the climate arena, consisting of the problem structuring, a vision and its pathways, resonates in the city. We can acknowledge that a much broader variety of actors now relate their practices to the climate targets of the city and take a role in the transition (e.g. through the spin-off activities). Furthermore, it has influenced thinking about the future of the city: this is clearest in its uptake on the political level. Three political parties integrated insights from the arena in their political programmes, ultimately contributing to an extra climate budget, a broad range of climate-related measures and a 'top-down meets bottom-up' pillar in the council agreement of the newly established council in 2013.

Secondly, the process empowered the involved actors to pursue the transition they had envisioned. For the participants, the most valuable results of the process were the creation of a new network and contacts. Most of them recounted how envisioning a climate neutral Ghent in 2050 was contagious, inspiring and motivating; several have been motivated to take action or link their activities to the vision. The feeling of being part of a group of like-minded people and the involvement of the city administration and of the alderman has further enhanced the sense of impact, creating joint commitment and support.

Finally, the city administration now seems more ready and able to further the transition. The climate arena process proved valuable in building new bridges between departments (e.g. environment, economy, harbour, mobility, housing, spatial planning) on the issue of climate neutrality. The broad perspective of the systems analysis and the personal involvement of policy officials in the arena discussions made the climate issue relevant for other departments. The process also influenced the attitude and role of the city administration in relation to citizens, businesses, institutions and other organizations in the city. It led to a better understanding of complexity and the broader societal context of the low-carbon challenge. While the city administration still feels insecure with regard to its role in such processes, this process has created more understanding for how others relate to issues of concern to the city administration; and how the city administration can better forge link with agendas and competences of other societal actors.

Figure 10: Covers of transition magazines in Ghent

4.4 Transition management in Ludwigsburg

Context

Ludwigsburg is a German middle-sized town of about 87.000 inhabitants. Originally a small settlement adjoining the biggest baroque castle in Germany, Ludwigsburg is now a prosperous centre located in the Stuttgart region in the South of Germany.

Figure 11: Ludwigsburg Market Square (by Todd Martin under Creative Commons License)

Ludwigsburg signed the Covenant of Mayors and initiated a Local Agenda 21 process in 2001, proof of its ambition to promote sustainability and CO_2-reduction, as well as to develop citizen participation. The latter can be seen in the Urban Development Concept, which is a long-term participatory process that involves 3-yearly future conferences to discuss relevant topics, targets and strategies with the city society.

Since 2008, this process is hosted by the newly established Department for Sustainable Urban Development (DSUD), a cross-sectional unit that is an immediate subordinate to the Lord Mayor, a driving force for local sustainability and participation since his election in 2003. Ludwigsburg has received several awards in these areas. The city enacts its sustainability policies in the wider context of the national nuclear phase out, as well as the 'Energiewende' (the national energy transition); the state of Baden Württemberg, where Ludwigsburg is located, is also governed by a green-led coalition since the last elections in 2011.

Based on insights from their integrated climate change and energy concept, the city administration's recognition that it could not advance the Energiewende alone (being responsible for only 2% of the total energy use) led to the involvement of others – a transition management process was therefore started up to complement existing participatory processes. As the methodology of transition management was unknown to the local administration, the initial focus of the transition team was on discerning what transition management could mean for Ludwigsburg and how it related to existing participatory and sustainability-related processes, such as the Urban Development Concept. To this end, the approach was presented to different audiences within and outside the local government.

The process has initially been legitimised within the administration as being part of a European cooperation project. Thus, the transition management approach was utilized to inform and deepen the Energy theme in preparation for the next Future Conference. It was framed as a process in which citizens and professionals could dig deeper than in earlier participatory processes, and which would build on the integrated climate change and energy concept. This led to the underlying question: How can the 'Energiewende' [Energy transition] be achieved locally in Ludwigsburg?'.

Process

The implementation of the process was located at the DSUD, a department with a high working pressure and competing priorities. A transition team was set up, but no official mandate was sought for the process, meaning that responsibilities and tasks were distributed according to availability. The transition team, which would guide the application of transition management, consisted of two policy officials and rotating trainees from DSUD, the head of the department of civic engagement, a transitions expert, and an external facilitator. Ludwigsburg started the process with a short system sketch based on an internal systems analysis workshop and about 30 interviews with local actors. The latter included citizens, entrepreneurs and professionals that the municipality had been in contact with – they had stood out for their engagement, raised sustainability-related questions, or been indicated by others as interesting in being involve in the process. All interviewees were invited to participate in the process. In a first participatory meeting that took place in November 2011, the transition team presented the project and its goals to all interviewees. The evening was focused on the presentation of the system sketch, which touched on a number of open questions on different aspects of life in Ludwigsburg related to the overall energy topic (e.g. housing, consumption).

Figure 12: Working group Energy Round Table

After the kick-off meeting, the arena process took place between March and September 2012, with six meetings involving at least a core of 10 participants with diverse interests and backgrounds. All were committed to the city and sustainability, and most of them were and still are active in local

initiatives in the energy field. In the first four meetings, the group developed an inspiring vision of "One day in the life of Ludwig and Ludwiga in 2050", which was accompanied by a more descriptive vision along with visionary images, such as mobility and green spaces. Through an extensive backcasting exercise, the arena group elaborated 21 action fields (their term for pathways), for example, how citizens can be provided a space to combine housing and culture in an innovative and creative way.

In the winter of 2012/2013, three broadening events took place where the vision and the resulting agenda were presented to, discussed and further developed with other city actors. The municipality and the arena members invited a wide range of participants to these events. The first meeting, the Energy Round Table, was the revival of an earlier participatory tool, through which actors interested in the energy topic could meet. The goal was to present the vision and to discuss and further elaborate and concretize the pathways. Another aim was to reach out and involve new actors. This was also done through the 'Future Conference' where energy was discussed as one of the eleven thematic fields of the Urban Development Concept; the goals were similar to the Energy Round Table meeting. A last meeting in February 2013 was the Energy Market of Opportunities, which had the aim of formulating concrete projects.
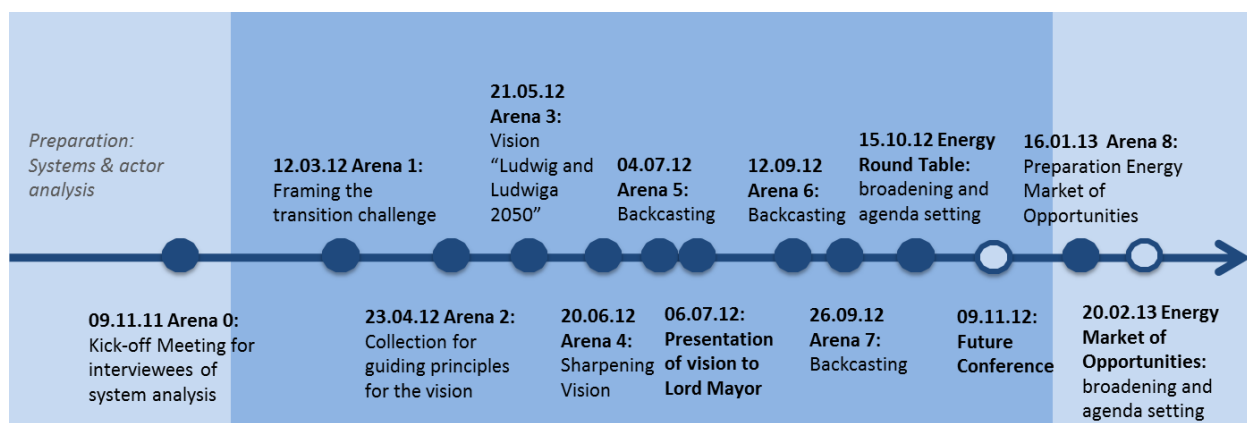

Figure 13:Timeline of arena meetings in Ludwigsburg

Outcomes

The ambition of the administration was to engage the city collectively in furthering the local Energiewende. Throughout the transition management process, some 250 citizens, entrepreneurs, professionals, policy officials and politicians became collaborated and thought about how to achieve the Energiewende locally, either in the transition arena or in one of the broadening events.

The vision and two preliminary pathways were presented to the Lord Mayor as early as July 2012, and the city council had been informed through existing channels, which also served as the main link between the arena and official decision-making processes. In winter 2012, the website 'MeinLb.de' was launched and linked to the arena process. It was meant to motivate and gather activities of citizens, especially those in search for new collaborators. During the Energy Market of Opportunities, the working group 'local energy transition' was formed, consisting of some of the initial arena group members, as well as newly interested persons. At the same meeting, a number of spin-off activities pertaining to one or the other of the 21 pathways were started or prepared. For instance, in autumn 2013 a sustainability exhibition took place, which focused on energy and was developed by the city of Ludwigsburg in collaboration with a communication agency and the input of the working group.

Other concrete projects include the development of a 'sustainable shopping basket' to raise awareness for sustainable consumption and the energy potential maps, which were developed by the administration to serve as decision-making support.

The substantial learning of the transition team members was also translated into a structural change within the administration, through the setting up a cross-departmental working group energy. Participants valued the process as an opportunity for active engagement, developing new contacts, and gaining insights into the issues most relevant to Ludwigsburg. The atmosphere in the arena was open, friendly and highly productive; participants trusted each other and felt part of a group of like-minded people. They valued knowledge sharing, new contacts, the systems perspective and the potential for developing projects.

Ludwigsburg connected the transition management process to on-going participatory processes, and the Energiewende specifically. By focusing on energy while not ignoring its complex interplay with other topics and sectors, the process increased the attention it received; the local society could connect to, get informed and develop knowledge about it. By blending it into the process of the Urban Development Concept, which is connected to formal decision-making process, Ludwigsburg was assured that the results would be built upon and not get 'lost' – as such, the results of the arena process are diffusing.

Figure 14: Illustrations taken from the vision document in Ludwigsburg

4.5 Transition management in Montreuil

Context

Montreuil (France) is the third most populous suburb of Paris with 102.889 inhabitants. In the centre, the wall of peaches (Murs à pêches) is a testament to the city's past as the heart of an agricultural region and a fruit supplier for the whole of France. The city has a long history of immigration, especially from Mali and has become split into two parts – the richer part, Montreuil-Bas, with a direct metro connection to Paris and the poorer part, Montreuil-Haut, with no metro connection, a lot of social housing and lower levels of political engagement. With a history of communist mayors, Montreuil's citizens are highly engaged in social and cultural topics. Its current mayor, Dominique Voynet, is a former French Minister of Environment from the Green Party.

Figure 15: Scenery of Montreuil

The city signed the Covenant of Mayors in 2009, and subsequently drew up a Climate Plan and started a Local Agenda 21 process – the progress of both is reported upon annually in a Sustainability Report. The transition management process was expected to contribute to these ongoing activities by, on the one hand, increasing the involvement of local actors in achieving sustainability and, on the other, achieving the CO_2-reduction objectives of the city (20% reduction and 20% sustainable energy by 2020). Energy poverty is an important topic in the city's context. The mayor and city council gave carte blanche to the civil servants to pursue the process, with the limitation of having no additional public money to support the process or its outcomes.

Process

The implementation of the process and the MUSIC project as such was located within the environmental department. The members of the transition team were working in different municipal departments, namely the environmental and planning departments and the general directorate. The city of Montreuil contracted a local energy agency to support them in coordinating the process; they were initially also supported by a transition expert. Fuelled by a few intensive brainstorm sessions and some 40 interviews with frontrunners, the team formulated a transition analysis. Part of this analysis involved the broadening of the original focus on climate mitigation to include all relevant domains of urban policy making. This broader focus resulted from applying a systems perspective to

the situation of Montreuil. The systems analysis covered the following topics: local economy, 'green city', conviviality and participation, soft and peaceful mobility, mixed use development, diversity and social cohesion.

For the first meeting, 25 participants were invited. They were selected for being frontrunners in the field of sustainability or in other social fields, or people difficult to engage in sustainability. The group itself consisted of a mix of backgrounds, for example, energy and climate, environment, architecture, housing, mobility, economy, culture and arts, education, social interaction and international solidarity. During this initial meeting in September 2011, the extensive analysis by the Montreuil transition team was supported and well received – a meeting to pave the way for a transition process in Montreuil. Yet, the transition team was missing the appropriation of the analysis by the arena participants, and therefore designed a special workshop method for the second transition arena in November 2011. This method allowed the participants to redefine parts of the analysis and to be analysts rather than listeners. This resulted in a reformulation of the challenges. For instance, with respect to the "local economy", the transition team had proposed the challenge "how can we develop 'green' economic activities?", this became "how can we relocate the economy and reinforce food self-sufficiency?" and "Is the city the appropriate scale–level to talk about the local economy?". Outcomes from this and the next meeting in January 2012 were collected and fed back to the arena participants in an elaborately designed overview of the transition analysis.

In March 2012, 13 participants met to formulate the vision "Montreuil in 2030" with three main themes, namely a solidary Montreuil, a modest Montreuil and a Montreuil reinforcing local democracy. The guiding focus was on retrofitting, housing diversification and education for change. Each of the themes included several aspects accompanied by a question. One of the aspects of democracy was co-decision, which was accompanied by the question: "which co-decision mechanisms, which simple and appropriate systems can be installed?" The following arena meeting took place in June with 16 participants and focused on collecting and prioritizing ideas. More than 300 ideas resulted from this meeting, and were clustered in different categories, such as possible pathways, orientations, and principles. The prioritization of these ideas took place by distinguishing, on the one hand, between 'old' and 'new' ideas and, on the other hand, between 'easy to realise' and 'more difficult to realise'.

Figure 16: Output of the problem structuring phase in Montreuil

The fifth arena meeting in September 2012 stood out as a milestone. It was devoted to a meta-reflection on the process and the relations between municipality and citizens, and led to the formulation of an agreement between both parties to guarantee the continuation of this new constellation. The arena then met to formulate seven 'solution cards', for example, 'share space and knowledge'. Each card focused on a specific challenge, its history, a general pathway including ideas to tackle it, linkages to ongoing municipal and civil processes and initiatives. The cards were illustrated by quotations and slogans. An online platform was used for each of the solution topics for the networking of organisations and ongoing initiatives and actions. In March 2013, the final arena was organized to discuss the future of the group and its importance in moving Montreuil in the desired direction. The transition agenda was drafted at this point to engage and motivate others; it included a short outline of the arena process and an overview of the solution cards. The agenda was then presented and handed over to the mayor of Montreuil during the launch event in June 2013. At the same event, one of the transition experiments, FabLab[5] was opened.

The transition work continued afterwards. In the beginning of October the group gathered to work on the solution cards and to prepare a two-day MUSIC & FabLab Festival at the end of October[6]. This festival gathered about 200 people to give a new impulse to the transition agenda. It saw the elaboration of seven key projects, which were subsequently taken up by the participating citizens and organisations with the assistance of the municipality. To this end, another meeting took place in December 2014. In May 2014, the municipality gathered the group to think further about how to continue fostering transition in Montreuil.

For the future, the city administration is in the process of making an inventory of lessons learned from this transition arena process. Part of this process are creativity sessions to solve the challenges and localize the process guidelines further. The next iteration should be starting by the end of 2014.

Figure 17: Timeline of arena meetings in Montreuil

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[5] A Fab Lab, short for Fabrication Laboratory, is a workshop for digital fabrication that: - is free and open to the public, although direct expenses like materials used maybe charged; - subscribes to the Fab Charter and has its text on display on site and web site; - disposes of a common set of core tools and processes (and maybe even more); - contributes to and/or cooperates with many other Fab Labs and takes part in or leads network initiatives. (http://www.fablabinternational.org/fab-lab/what-is-it-in-essence)
[6] See the video impression of this event: http://webtv.montreuil.fr/festival-m.u.s.i.c-et-fablab-video-415-8.html

Outcomes

In starting the transition process, Montreuil had the ambition to engage local actors in drafting an energy agenda for the city. Throughout the process, this ambition shifted to include new perspectives on local governance and on the functioning of the city administration as such.

Throughout the process, over 200 people in Montreuil became involved through the arena process, action-oriented projects and the two broader events. Subsequent publications further expanded outreach efforts. The process and its outcomes are documented in the transition agenda, which was signed by the mayor and the arena participants, and is available online[7].

Figure 18: The mayor and change-agents sign the transition agenda.

The collaboration of the participants led to the identification of synergies between existing projects. One spin-off project, 'La voie est libre' is picking up on ideas from the 90s, when highways were closed for one Sunday a year and a huge number of initiatives were presented on the road – music, theatre and activities for children. Another spin-off project, the 'Velodrom' is the result of a collaboration between two frontrunners, one working with Roma on agriculture projects and another engaged in a cycling initiative, to initiate bicycle lessons for Roma children, and including a repair shop.

Seven specific projects sprouted from the later arena meetings and the MUSIC & Fablab festival. Considerable amounts of time and energy were dedicated to these projects, first because of the frontrunners' desire to enter a more concrete phase of the process and, second, because the need was felt to make the outcomes more tangible and comprehensive in Montreuil (both toward the administration and the citizens and communities). Four of the projects are led by participants, these include the following:

- *Hands-on learning center on eco-renovation* : enhancing the skills of Montreuil's craftsmen in the field of eco-renovation through practical experience on a dedicated building.
- *Fablab and School of transition*: using the FabLab not only as a place to create one's own objects, but also to educate Montreuil's inhabitants on transition thinking.
- *Green and Living Roofs* – transforming the roofs of public buildings into places where inhabitants can not only grow food, but can also enjoy a nature together.

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[7] See: http://www.montreuil.fr/agenda-de-transition.pdf

- *Mobile information center for eco-renovation in a double-decker bus*: reaching out to people with information about eco-renovation to them and connecting people from different background (craftsmen, private people, etc.).

Two other projects are taken up by the municipality.

- *Re-using vegetable cooking oil for its energetic potential*: the municipality is investigating into the possibility of having a comprehensive study of the energetic potential of the intercommunal territory.
- *Applied research on a concrete energy efficient territorial organization for Montreuil*: using a biomimetic approach to further delineate the vision developed in the transition arena and to draw a detailed picture of an energy efficient Montreuil.

This action-oriented focus emerged, even though most of the change agents had initially understood the process as reflection-centred. During the meetings, the arena group also reflected on the relation between the municipality and its citizens, the broader theme of local governance, and the role of the arena therein. This resulted in an agreement on the ownership of ideas, the implementation of projects, facilitation and communication, as well as governance. It helped to bring governmental officials and citizens together and acted as a basis for follow-up actions. Within the local administration, the transition management process led to new ties between different departments. The long-term sick leave of a leading team member led to the external Energy Agency taking on a more coordinating and leading role. This added to the reflexivity of the process in terms of local government-citizen relationships, but also allowed for a further reflection of the (municipal) transition team members on their own way of working. The transition team experienced the collaboration between different departments and services as something very important not only for the process but also for the future of their daily work. The identification of this element as the key issue shifted the focus from the initial energy transition towards an institutional transition, which was strongly supported by the facilitator and therefore influenced by his understanding of the process as he stated: *"With the arena we worked on the agenda, but at the same time we worked with the transition team to create space to reflect, to look at what has to change to realise the projects. The way of working of the municipality has to be modified and for that a space is needed to criticize and to turn the process against them."*

4.6 Transition management in Rotterdam

Context

Rotterdam (The Netherlands) is home to one of the world's biggest ports. The inner city was completely rebuilt after being destroyed during the Second World War, giving it a more modern atmosphere than other Dutch cities. The city itself is characterised by being a city of workers and has known several waves of immigration, from within the Netherlands, former Dutch colonies, as well as Morocco and Turkey. Being home to about 170 nationalities gives Rotterdam an multicultural atmosphere.

Facing sea-level rise, higher rainfall, increasing heat waves and small-scale flooding, Rotterdam has become committed to sustainability. The Rotterdam Climate Initiative was already founded in 2007, and in 2009 the city signed the Covenant of Mayors and submitted an action plan, the Rotterdam Programme on Sustainability and Climate Change. The city aims to reduce its CO_2 emissions by 50% until 2025 (from 1990 levels), while ensuring economic vitality. In recent years, harbour activities have increasingly been relocated to outside of the inner city circle, leaving the 'city harbour' area open for a sustainable redevelopment, including a focus on the densification of the inner city.

The transition management process initiated as part of the MUSIC project was embedded in an ongoing envisioning process. Its first aim was to spur additional reflection on the densification and greening of the inner city, a topic explored by the municipality for the International Architecture Biennale Rotterdam (IABR) 2012. For this, the urban planning department, which was in charge of the process, organized a number of meetings, supplementing a larger envisioning process. In addition, the department connected the process to other ongoing initiatives, such as asset-based planning and the development of a 'sustainability profile' for neighbourhoods. A second aim was to use the process to involve different departments in implementing sustainability on the city level, while also igniting a discussion on the changing role of local governments.

Figure 19: Scenery of Rotterdam (by Marc Heeman, rotterdamimagebank.nl)

Process

The transition team, which was responsible for implementing the transition management process, consisted of two officials from the planning department and two officials primarily responsible for the biennale project with initial support from two transition management experts. In line with the aims mentioned above, the transition management process can be seen as consisting of two parts – one internal to the municipality, the other external.

Internally, the transition team held a great number of meetings with participants ranging from a handful of critics to over 20 people from several departments, so as to ensure the relevance of the approach to other flagship projects. As such, it spread discussions on the issue of CO_2 reduction across the city administration, and created a broader understanding of the topic by relating it to sustainability in a broader sense and to quality of life. The MUSIC project enjoyed support from several influential individuals within the municipality (e.g. heads of departments, aldermen), which put the issue of CO_2 reduction higher on the agenda.

For the external process, the transition team first interviewed 23 people they had identified as frontrunners in the development of the inner city. These were mostly professionals (architects, urban planners, housing corporations), but also included a few citizens and people involved in local sustainability initiatives and cultural institutes. The central theme of the IABR was the notion that people living and working in Rotterdam could "make" their own city. A series of three meetings was set up to gain insight from frontrunners on what a 'making of the city' without the municipality being in the driving seat might entail. As such, the approach was used to reflect on the current and future roles of the municipality and other actors in Rotterdam.

In three meetings, which were adequately qualified as focus groups by the municipality, over 20 participants discussed and gave input and feedback to the densification and greening strategies of the city administration. The participants included the frontrunners mentioned above, as well as a number of municipal officials. The strategies were bundled in the chapter *"Enabling Rotterdam to involve"* of the publication *"Rotterdam – people make the inner city"*, which was distributed at the International Architecture Biennale Rotterdam (IABR 2012) from April to August 2012, and is still available for download online[8].
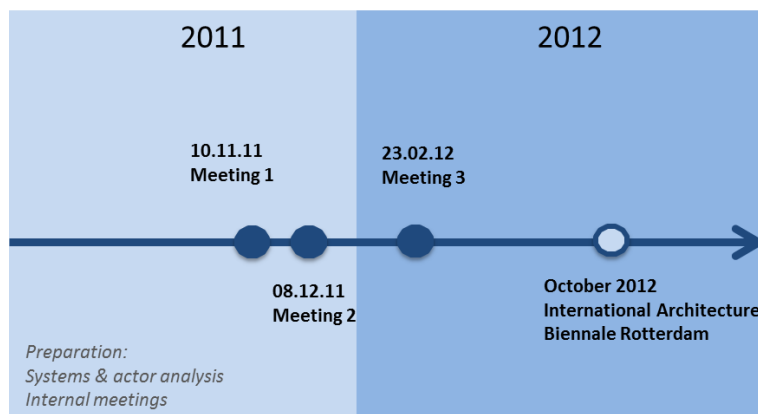

Figure 20: Timeline of arena meetings in Rotterdam, Netherlands

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[8] Online at: https://www.tno.nl/downloads/making_city_en.pdf

Outcomes

In the following, we consider the aims of the Rotterdam municipality: on the one hand, the focus of internal change within the organisation and the reflection on the role of the municipality as such; on the other hand, the use of the process as part of a much wider envisioning process for the preparation of the IABR 2012.

With regard to former, the process succeeded in engaging different departments in implementing sustainability on the city level. Through the internal discussions and the involvement of a large number of municipal officials in the arena, the sustainability ambitions were put high on the agenda of the municipality. Moreover, the organisation of the process sparked discussions within the city administration on the changing role of local governments. The officials involved in the transition team noted that they understood better what it meant to play into existing dynamics, instead of planning from the top down.

However, this was not put into practice in this process. An arena trajectory could be used to engage diverse change agents in a learning journey, creating a joint understanding of the issues at hand and exploring own roles for in making the city more sustainable. Instead, the urban planning department organized the trajectory as a series of focus group meetings, part of a much wider process. The aim was to receiving input and feedback on its previously formulated densification and greening strategies. As the process did not encourage the participants to question the assumptions, the arena group had a very limited contribution to the content of the densification and greening strategies. Or as put by one of the participants: "[...] I don't know if you can call it an output of the group or a vision already laid out by the municipality and adjusted by the group."

Still some participants appreciated the "new one-to-one connections between the change agents both from and within the city". In addition, the token value of including the change agents should not be underestimated. Their portraits and quotes featured in the final publication were highly appreciated by readers, including key decision-makers in the city administration, as it enabled them to connect on a personal level to the otherwise abstract strategies.

Figure 21: Quotes from change agents in the publication "*Rotterdam – people make the inner city*"

5. Reflection on the transition management processes

By reflecting on the five MUSIC partner cities, we can deepen our understanding of the transition management processes and their outcomes. In this chapter, we discuss these experiences following five mechanisms that transition management presents for addressing sustainability challenges:

- Participants and the policy officials involved in the process gain a <u>better understanding of the complexity</u> and societal context of the low-carbon challenge.

- A <u>shared narrative</u> (i.e. understanding) about the past, the present and the future of the city is developed by the participants, and inspires or is taken up by individuals beyond those involved in the arena meetings.

- Through the arena meetings and operational experiments, innovations are clustered and <u>new networks and constellations emerge</u>. Examples are an increased interaction of top-down and bottom-up activities and between more status-quo oriented individuals and radical or moderate innovators.

- Through a common learning journey, actors from different backgrounds and perspectives start to leave institutional barriers behind and search for <u>new roles and relations</u> necessary for working towards a shared future vision.

- The search for new roles and relations is also linked to shifting views on participation: rather than citizens or businesses participating in a decision-making process, transition management is about the involvement of all in a societal learning process for <u>the co-production of societal knowledge</u> on new structures, cultures and practices for a sustainable future. These processes create joint understanding and responsibility for these challenges.

These mechanisms have been distilled from the scientific literature on transition management and extensive discussions with the practitioners from the partner cities during transnational project meetings.

5.1 Understanding of complexity

Overall, transition management helps to increase participants' understanding of the complex problems faced by cities and of their societal context. Two elements of the approach are directly related: work on a systems analysis to acquire an overview of the city as the basis for the formulation of transition challenges, and discussions in a transition arena setting regarding problem structuring and envisioning.

The process and its output were strongly influenced by the emphasis on exploring the problems that cities face from a 'systems perspective'. In the MUSIC project, a set of methods has been developed to assist the cities in performing a systems analysis as a basis for the further discussions. This includes taking account historical developments (past and future) across multiple domains (e.g. energy, mobility, urban planning) and at multiple scales (e.g. neighbourhood, city, national and global), as well as their interrelations and the multitude of actors involved. In all partner cities, this led to a reframing of the initial challenges.

The systems analysis and subsequent discussions made it possible to move beyond a focus on energy or climate mitigation to include other relevant domains of urban policy making on the way to a low-carbon future. The transition arena participants (i.e. the change agents of the urban society) and the policy officials driving the process in the transition team shared this understanding. Others actors who became involved throughout the process, including policy officials from other departments, also gained this perspective. However, the cities did not succeed without struggling: time and trust was needed to go beyond business as usual, as was openness for reflection and learning; this was generally not part of the culture of the municipal organizations. The systems analysis tools and embedding of problem structuring as a necessary task in the MUSIC project helped the policy officials to work on this.

The interviews during the preparation phase had already broadened the view of the transition teams and had given insights in how the challenges could be framed. The transition teams in Montreuil en Ghent were positively surprised by the unexpected insights from the interviews with diverse actors in their city. Ludwigsburg was confronted with the insight that citizens were unaware of the city's ambitious sustainability projects. In Aberdeen, Ghent and Montreuil, the first arena meetings allowed the participants to further enrich and even reframe the results of the system analysis, and therefore the focus of the entire process. This did not happen in Ludwigsburg and Rotterdam, as the arena meetings in these cities were embedded in other ongoing processes, and as such presented participants with fewer opportunities to reframe understandings of the challenges.

In Montreuil, a transition team member stated that "[transition management] allowed us to remove the institutional perspective of looking at things" and "replaced our business as usual for looking more to the long-term". This was not equally appreciated by all. For example, a policy official from Aberdeen worried about the loss of clear focus: "we started with the low carbon idea as the objective of the process, but the group was more focused on education, maybe social aspects […] they sort of changed the vision."

Moreover, as put by a policy official in the city of Ghent, "the systems analysis was important to lift the level of the arena discussions" and enabled the participants, with their diverse backgrounds, to build upon and learn from each other, which most of them highly appreciated. Individually, and also as a group, this gave them insights beyond their fields of expertise, and also increased their commitment. One arena participant in Aberdeen framed it as follows: "in order to own the problem you have to be part of the problem definition and I think that was done quite well". Through the collective formulation of the problem, the transition management process goes far beyond usual parameters for participation in policy processes, where the main focus is on informing society or consulting it with regard to a specific issue.

5.2 Shared narrative

Shared understandings about the past, present and future of the city, as well as a shared language are expected outcomes of a transition management process. This is summarized in an output document of the transition arena groups, the transition agenda, which consolidates the problem framing, visionary images, pathways, and ideas for short-term actions.

In all cities, the analysis from a systems perspective and discussions on problem framing in the arena groups enabled participants and initiating policy officials to question current paradigms. The subsequent envisioning discussions, meant for jointly exploring how alternative paradigms could materialize in the future, were generally experienced as inspiring and motivating. Nevertheless, some participants in Aberdeen, Ludwigsburg and Montreuil raised doubts whether they were in the position to create a vision for a low-carbon city; they felt that as a group they lacked authority and were not representative of the city. This was addressed by stressing that the visions were not formal documents, but meant to inspire others and guide activities.

The resulting visions – being holistic and embedded in the local context – were considered by some as a vital way of enabling diverse people to relate to a sustainable future. As a transition team member in Rotterdam explained: "not everyone is hot for sustainability. What does inspire people is work, income, eco-friendliness, or that their kids can go to school safely". Others disputed the usefulness of such visions. For example, one arena participant in Ghent argued "[…] [the vision] remains very broad. And I think that's why it was not immediately sticking to my mind". A participant in Montreuil also stated that "[…] reality is different. […]. I think it is good to start with a utopia. But I don't see concrete actions coming out of these documents."

With "documents", this participant refers to the publications of the transition agendas, which were meant to enable the uptake of the problem structuring, vision, pathways and short-term actions by a larger audience. The wider effects of these narratives cannot be simply pinpointed, as their uptake is both indirect and diffuse, although clear indications for such effects exist. The city of Ghent provides the clearest example: three political parties incorporated insights from the transition arena into their political programs. Together with several other influences, this ultimately led to the inclusion of an extra climate budget, a broad range of climate-related measures and a 'top-down meets bottom-up' pillar in the agreement of the newly-established council in 2013. While such clear links cannot be found in the other cities, the narrative evidently also resonates within their administrations, influencing climate and energy policy, as well as policy plans from departments such as spatial planning, mobility and economy. Moreover, some of the arena participants indicated that the narrative serves them as an anchor point, helping them to orient their professional and personal actions and choices. This is further visible in the follow-up initiatives they become involved in, as described in the next paragraph.

5.3 New networks and constellations

Another mechanism of the transition management process is the emergence of new networks and constellations. The establishment of new contacts during the transition arena meetings were highly valued by the arena participants and transition team members, as the following quotes from Ghent and Aberdeen illustrate: "friends were made", "I met people through the MUSIC project I wouldn't have met without it, that's very positive" and "most valuable was the dynamic atmosphere of people who want to be the change".

Comparing the five cities, it is striking that the transition teams had different focuses regarding the background of the participants they sought to involve. For example, the arena group in Rotterdam consisted mostly of professional actors, e.g. architects, planners or housing corporations. In the other cities, the involvement was on a much more personal level; only part of the participants could

directly link the work of the arena to their professional role. The arena composition in Montreuil largely targeted actors with pre-existing initiatives on the civic level, whereas the arena in Aberdeen had a relative high share of academics. These differences seem to relate to differences in the foci of the arena processes and in previous participatory efforts. Moreover, the quest to involve 'change-agents' and more 'radical' actors proved difficult. The need for such actors was acknowledged, but the concepts remains open to discussion ("radicality is in the eye of the beholder"). Although the concepts 'change-agents' and 'radical' actors were not strictly defined, they were still understood and successfully used by the transition teams as selection criteria for the arenas.

By inviting additional participants to backcasting workshops in the later transition arena meetings and through broadening events, more actors became involved in the transition management process. As such, a larger group could contribute to the agenda setting (in Aberdeen) or to the project groups (in Ghent and Montreuil), and could stay informed of policy and consult with its makers (e.g. in Ludwigsburg with regard to the Urban Development Concept). In Aberdeen, Ghent and Montreuil, civic project groups were started as follow-up to the backcasting workshops, in order to elaborate more specific themes and concrete project ideas. These project groups involved arena participants and other relevant actors, and were only to a limited extent facilitated by the city administration. Although the participants in Ludwigsburg perceived the process as being about informing the city administration rather than taking action, they also engaged in some spin-off activities. The follow-up and spin-off activities included:

- In Aberdeen, six project groups were created by the end of 2013. Three of these focus on education: one on primary education (developing an education package for primary school pupils on energy and sustainability), one on secondary education (assisting students and families to monitor and ultimately decrease their energy use), and one for secondary school and higher education (promoting sustainable living for students). The other three project groups work on 'remote working hubs' (a series of trial days testing the concept of remote working hubs), 'transport' (developing an e-forum on sustainable transport), and 'celebrate the streets' (developing an event that recognises low-carbon transport and alternative uses for streets).

- In Ghent, six project groups were also started during 2012 and 2013: 'consumer pushes the market' (organizing a carrot mob), 'urban farming' (developing an urban farming agenda for the city), 'valorisation of sewage water' (developing a business case for a city district on the transport of organic waste through the sewage system and the use of sewage water to produce warmth, biogas, nutrients and water); 'energy efficiency for businesses' (promoting energy efficiency under SMEs, financed by the city administration), 'Blue economy' (convincing businesses to start an iconic project in line with the Blue economy principles, the attempt turned out unsuccessful) and 'Green Track' (collaboration of 30 cultural organizations on developing an energy action plan and to sensitize visitors, supported by the city administration). Next to these, two new arena trajectories were initiated (focussing on a sustainable university and sustainable mobility), which led to further spin-off initiatives.

- In Montreuil, a Fablab was launched by a participant and connected to the launch of the transition agenda. The later MUSIC & FabLab Festival elaborated seven key projects. Four of these which were taken up by the participating citizens and organisations, assisted by the

municipality: 'Hands-on learning centre on eco-renovation', 'School of transition', 'Green and Living Roofs' and 'Mobile information centre for eco-renovation'. Two other projects are taken up by the municipality: 'Re-using vegetable cooking oil for its energetic potential' and 'Applied research on a concrete energy efficient territorial organization for Montreuil'. Next to these projects, also synergies between existing projects were established in two cases: 'La voie est libre' (organizing music, theatre and activities on a closed highway) and 'Velodrom' (bicycle lessons and a repair shop for Roma youth, a new collaboration between two participants).

- In Ludwigsburg, a project group 'local energy transition' was formed, giving input to a sustainability exhibition and developing a 'sustainable shopping basket' to raise awareness for sustainable consumption. This group is online at MeinLB.de where it invites other actors to join the group.

The connections between the participants in the project groups proved stronger than the contacts established in the initial transition arena groups, which fizzled out in all cities. However, most participants also valued the network created in the transition arena setting, especially to people with backgrounds and organisations previously unfamiliar to them: they can get in touch with their new contacts when necessary – a participant in Ghent articulated this as being about "knowing people, knowing where you have to ask questions". Furthermore, the contacts between the city administration and other local actors (e.g. inhabitants, grassroots activists, entrepreneurs, researchers) were mutually appreciated.

5.4 New roles and relations

The transition arena process can been considered as a learning journey for both the participants and the city administration with regard to acting upon and experimenting with (possible and alternative) roles and relations in the transition towards a sustainable city. As put by a transition team member in Aberdeen: "[…] through the transition management process what we are really trying to infuse is a sense of responsibility and a sense of urgency amongst our population". Her colleague from Ghent underlines that "everyone needs to feel part of the larger whole and that the larger whole is progressing".

Within the city administrations, the application of the transition management approach created lasting cross-departmental linkages. Policy officials from diverse domains, especially those involved in the arena meetings, discovered the links with and the relevance of climate and energy ambitions for their own work. This is remarkable, as earlier attempts to put climate neutrality on the agenda of their departments had often led to more resistance than cooperation. In Ludwigsburg, for example, a cross-departmental working group on energy issues has been set up. According to a transition team member in Montreuil, it is "not our culture to have different departments working together", but, his colleague in Ghent added, "transition management helps to get climate neutrality on the agenda in every department".

For a number of reasons, the process step at which the structured transition arena setting was dissolved and the process of diffusion and translation of the narrative, actions and networks started,

was a critical moment of the process. Firstly, the transition management approach (and the manual provided to the cities) did not give concrete indications for interventions at this stage.[9] Secondly, the city administrations often had neither time nor a specific budget available for the continued support of the transition movement. Thirdly, there was no formal setting or role foreseen for the arena-participants and the city administration. At this point, it boiled down to each individual actor (within the diverse networks): which role they could imagine and take up for themselves?

The cities decided not to provide a prolonged arena setting, instead hoping that they could facilitate the start of project groups and then refrain from further intervention, leaving the execution to the arena participants. However, experience showed that city administrations do need to play a continuing facilitation role, also in times of a withdrawing welfare state where more and more is asked from citizens (see also next section on co-production). A participant in Ghent commented that the city administration was "the glue of the process […] the reason you come together". Participants in Aberdeen and Ghent added, respectively, that "the problem is that these kind of projects rely on volunteering of time and time is probably the most pressured resource we have" and "when actions drive on voluntary involvement, they die. They just die".

Clearly, participants are still struggling with their roles and with the expectations projected on them when policy-makers are talking about co-production. This is framed by a participant in Ghent: "What's in it for me? I mean, me as a citizen? What's in it for me? We are working long hours a day, so why would we still be involved in these types of activities?" and "[…] It is not a process that leads its own life. [the city administration] should be the initiator and the motivator."

Efforts continued in part on an individual basis, as policy officials but also change-agents translated the narrative to their own agendas. Many of the arena participants in the five MUSIC partner cities indicated that the process strengthened their capacities and motivation to play a role in the transition to a low-carbon city. New insights and connections helped to enable this. A participant in Ghent summarizes: "you see all these nice people who do that as well, so it stimulates you to also go a step further". Some arena participants adjusted clearly their own activities inspired by the arena process; most prominent example is the environmental coordinator of Ghent University who initiated a new arena process involving students, professors and administrative staff members to explore how the university could contribute to a climate neutral city.

Surely, not all arena participants committed to a role in project groups for the reasons mentioned above. On the one hand, it was advocated that the project teams would need more resources or better alignment with the professional ambitions of the people involved. On the other, most arena participants were already striving for a sustainable future of the city in some way (which was one of the reasons for choosing them to be part of the group) and continued to do so. However, they very much valued being in a group of like-minded people and being acknowledged by the city administration. A Ludwigsburg participant stated: „at the meeting there are like-mined people [not living in the here and now only, but concerned about the future]. I liked this and it did me good". Moreover, additional actors became involved through these project groups, including actors who

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[9] It did suggest three groups of activities: dissemination of the transition narrative; coalition forming & broadening the network; conducting transition experiments & implementation in regular policy and projects, but did not go in depth into the 'how' of these steps as they were estimated to be too much context dependent to be elaborated.

would normally not even be triggered by the issue of a low-carbon city; they could relate their (professional or personal) ambitions to the more specific projects, such as a social worker in case of the Velodrome project in Montreuil, teachers in the educational projects in Aberdeen and citizens living in the participating streets in the 'leefstraten'-project in Ghent.

5.5 Co-production

The search for new roles and relations also belongs to the shifting of views on participation within local governments: rather than citizens or businesses participating in a municipal decision making process, transition management is about co-production in a societal learning process. In the words of a transition team member in Ludwigsburg: "One person or a government can never be as clever and creative and so incredibly involved as an entire population. If everyone contributes a little bit, the result is something truly amazing".

The transition management approach influenced the attitude and role of the city administration in relation to citizens, businesses, institutions and other organizations in all cities. "I was amazed how much vigour such a group can have", a transition team member from Ghent expressed, and her colleague in Aberdeen remarked that "one output from MUSIC was an increase in partnership working […] [and] an opportunity to recognise what was already happening and see how partners could work together". In order to understand how other actors relate to the issues and to try to link to their agendas and competences, a transition team member in Montreuil now recommends all policy officials should "go out and listen much more and much earlier in processes". Also many participants appreciate this. A participant in Rotterdam, although critical about the lack of continuity in the process, states "I think this [type of interaction] is really good. They should do that more often".

The new mode of working, focusing on social and institutional learning and creating opportunities for change agents, is in part translated into the daily work of the city administration. In Aberdeen, for example, it influenced the city's approach to drafting a Strategic Energy Action Plan by encouraging the administration "to enter into this process with a genuine open mind", such that "people are involved from the beginning and feel that they can really contribute" – as a policy official explains. In Ludwigsburg, the website 'MeinLb.de' was launched to motivate and gather the activities of citizens. In Ghent, the city administration even decided to organize a new transition arena on the theme of sustainable mobility, and further adapted the required capacities in the application round for a new colleague in the climate team.

In Montreuil, the reflection on the relation between the municipality and its citizens became very central to the process. Policy officials from Montreuil stated that "transition management is not just another participatory process, it is about transforming from inside" and "with the arena we worked on the agenda but at the same time we worked with the transition team to create space to reflect […]". The facilitator of the arena process in Montreuil expressed that "for [the policy officials] there is something like a before and after the arena, it really modified their way of working". He also stated that "we need new structures, which will enable the emergence of new political and economic relationships in the area, so that people will have a larger say in the city. People should reclaim the right to the city today. I think that's important."

At the same time, there is still much insecurity within administrations when it comes to defining its role in relation to such processes. In spite of the acknowledgement that a strong outward orientation is needed, a city official in Ghent noted that "it will take a while before the governments feels comfortable with that and discovers its new role". Also, aiming for co-production does not mean others simply take over governmental tasks, as a policy official from Aberdeen seems to assume when saying that the process is about "empowering [the participants] to take action themselves and shifting that role away from local authority".

These processes also showed that it is difficult for both sides, citizens and administration, to overcome the ingrained role patterns that they have cultivated for a long time. The experience in Ludwigsburg is an example: while the city acts at the forefront of citizen participation, it has in the past often approached society as an input source for policy formulation, rather than for co-creating a common future. Seeing the transition management process in this same tradition, actors in Ludwigsburg felt less compelled to take on new roles. Equally, a participant in Rotterdam mentioned the problem of the control culture within the city administration, and suggests the arena participants should "teach the city officials on how to […] do something for the citizens without letting their bosses know.", as "they have the same problems as I have but I am from the outside and they are from the inside".

6. Lessons learned

By reflecting on these transition management processes and their outcomes, we can draw generic and practical lessons for the transition management approach in the urban context and, in broader sense, for the governance of urban sustainability transitions. To start with the latter:

- The experiences reveal the benefits of <u>playing into local dynamics</u>, learning from and connecting to actors and initiatives in the city that (could) contribute to sustainability ambitions, e.g. a low-carbon future. While this goes against the dominant culture of city administrations, the MUSIC project created a window of opportunity to start working on a new type of interaction. One that is based upon the dynamics of the city rather than planned from a blank slate. The transition management approach enables this by providing the involved policy-makers with a framework to do this in a structured way.

- The orientation towards local dynamics made it necessary for the city administrations to <u>acknowledge that they do not have full control</u> – neither over the transition management process, nor over the transition as a whole. It is not possible to dominate the content of the narrative or the resulting initiatives; the perspectives and motivations of the participants (including the city administration) determine them. Outcomes might therefore not be fully in line with the goals, ambitions and plans of the municipality. Overall, patience is essential: time is needed for ideas to evolve, contacts to develop trust, and conditions to change. Moreover, opportunities are not always readily available and might need to be created from scratch.

- The demand for controllable steps and predictable outputs can put the process under undue pressure. The creation of <u>mental and organizational space</u> is therefore crucial in the application of transition management or similar 'open' and reflexive approaches. This includes the provision of time and trust to go beyond business as usual, openness for reflection and learning. Gaining support within the city administration proved a balancing act. On the one hand, to create buy-in a clear planning is needed in terms of timing and results, and moreover the process should to be adapted to ongoing policy efforts of the city. At the same time, its implementation needed to be flexible and protected from existing agendas and vested interests for participants to have a setting from which they could challenge the status quo.

- Dealing with <u>accountability</u> is a delicate issue, as this relates to the perception of 'results' and 'achievements'. It was often raised in relation to how far the process could reduce greenhouse gas emissions. Reductions cannot be simply calculated, as the processes do not reduce emissions in a straightforward way. The effect is intangible and indirect: the spin-off activities and the changes to actors, policies and agendas are what make a difference. Although difficult to measure, these effects need to be monitored to account for the efforts and investments put into the process. Indicators other than simplistically quantitative ones should be used, alongside a preferably reflexive monitoring approach.

Generic lessons for applying the transition management approach in the urban context are:

▪ City administrations should <u>not underestimate the importance of a facilitation role</u>. In all cities, the organization of the arena trajectory was a demanding task – especially due to its institutional learning components. In addition to this arena trajectory, the municipalities could use their facilitation role to increase the impact of the arena results by disseminating the narrative and supporting the emerging project teams (without making them too dependent on this support or claiming the results). Such facilitation role is also helpful to foster learning from the transition experiments, and to relate these to the overarching umbrella sketched by the transition agenda. More general, the municipalities could further pursue the role of transition instigator by engaging a broader group of people, organisations and initiatives to adopt ambitions for a sustainable future, and relate this to their own agendas and practices.

▪ Related to this, it is also important <u>not to have overstretched expectations for participants to engage in specific actions</u>. Especially in Aberdeen and Ghent, the arena participants were also expected to play a role in project teams and other spin-off activities. Participants who could link these activities to their professional networks, their work or a strong intrinsic motivation often continued to be involved. Others did not tend to become engaged in such activities, although they might also have taken up insights from the transition arena. This is not per se problematic; some of the participants are selected principally for their ability to introduce new ways of thinking and other actors can become engaged after the temporary setting of the arena. Still, also when new actors become involved, they cannot be expected to simply pursue the ideas from the arena group or the ambitions from the municipality. The resulting projects will therefore be influenced by their own agendas and ambitions.

▪ A tension between the general understanding of <u>'power' and 'impact' versus the ambition to go beyond the status quo and beyond 'business as usual'</u> appears, as these two sometimes seem to conflict. For example, some participants pleaded for the involvement of more 'powerful' actors with more resources (particularly financial resources and decision-making authority). Other participants argued for the involvement of a larger and more representative group, and even 'environmental sceptics'. There appears to be an underlying assumption that the arena process should influence 'decision makers' or the whole urban population, and make all of them embrace climate measures. The transition management approach, however, aims at another type of impact: changing what people think is 'possible' or 'impossible'. The inclusion of more 'powerful' and 'environmentally sceptical' actors could easily imperil the quality of the arena output by not letting them pass the threshold of business-as-usual, or by formulating a narrative that is not reaching for a *sustainable* future.

Other, more practical lessons, for applying the transition management approach include:

▪ A thorough preparation is key. This includes exploring challenges and, especially, <u>selecting change-agents</u>. The arena composition was a crucial step, as it determined the development and outcomes of the processes. All cities therefore spent significant time on this. A methodology for the actor analysis also helped the city administrations to identify change-agents and make an informed selection of diverse group, in terms of profession, interest and involvement. Still, it proved challenging to find a good mix of more 'radical' and more

'moderate' actors, and of 'thinkers' and 'doers'. A lesson is that the profiles needed to make the process a success change over time. Therefore already from the start of the arena trajectory a broader network should be involved, but more distantly.

- The <u>balance between 'steering' and 'following'</u> the dynamics of the process is delicate. In the case of Ghent, it took the lead in structuring the process and elaborating the content, while still checking with participants. This was highly appreciated, except for during the agenda-setting phase, when time pressure made some participants lose their sense of ownership. However, going too slow can also damage the motivation of participants, as was seen in Aberdeen and Ludwigsburg. As each arena group is unique and at times diverse, cities need to allow for different paces: while some participants request more time for the elaboration of the vision and transition pathways ('determining direction'), others want to get to concrete results quickly ('moving forward').

- The need to devote greater attention to the <u>atmosphere</u> and <u>facilitation</u> methods of the arena meetings. The latter help to get the participants in a future-oriented mode and think beyond what is possible nowadays. The former refers to the role of the facilitator: the facilitator should be a neutral person to the arena group, and should not be engaged in the framing or discussion of the content. Therefore, it best is to involve a facilitator, who is external to the local government. The facilitation and process setting are, moreover, important to enable an open atmosphere, a 'safe' environment, and positive group energy. Especially in Ghent and Montreuil, this was achieved by holding the meetings in different inspiring places, physically exploring the challenges and opportunities of the city, as well as by celebrating outcomes and initiatives.

- The importance of <u>explicitly elaborating the core ideas</u> that arise in the transition arena. This is not only time-consuming, but also challenging: by sharply defining these ideas, one cannot hide behind vague concepts or ignore differences in perspectives. The experiences suggest that a sharp definition of the (systemic) problems and a concrete vision in terms of clearly defined objectives hold a stronger potential for giving direction to initiatives and instigating debate.

7. Concluding reflections

7.1 MUSIC as a learning experience

Institutions all over Europe are looking for new modes of participation, and many now talk about 'co-production'. This was not yet the case when the MUSIC project started – in a way, the partner cities "paved the way in front of the game". The project has been an intensive learning process for all involved: the transition arena participants gained a better understanding of their role in reaching a low-carbon future; the city policy officials explored new ways of interacting with wider society, while driving the transition management process; and DRIFT learnt to better explain and contextualize the transition management approach for the urban context by coaching the partner cities, and could then draw lessons from these experiences.

Transition management was contextualized in a specific way as part of the MUSIC project. Reflecting on these particularities, we find that:

- Implementation by a (local) government implies a strong learning component regarding its role, as well as a struggle to create space to explore new roles and to deal with multiple roles. An alternative would be for a research institute or an NGO to lead the implementation; this could ease tensions, and would therefore warrant further exploration. Doing so could, however, limit the process' impact on the practices of the local government and hamper bottom-up – top-down interaction.
- The urban context is a relevant scale-level for the implementation of transition management. Interventions and innovations on this scale are sufficiently small to be tangible, while being sufficiently large to be relevant. Of course, one should acknowledge that a city is not an island and, during the analysis and agenda-setting phases, highlight links to developments elsewhere and at other scales. The urban context also has an impact on the process itself: it combines the personal and emotional engagement, as in processes at the neighbourhood level[10], with professional engagement and expert input, as in sector-based approaches[11].
- Taking climate & energy as starting points is somewhat problematic, as they are very much driven by policy agendas and perceived as rather technical issues. The transition management process nevertheless enabled diverse actors to relate to these issues by placing them in the context of reaching a sustainable future. The urban scale may have helped, as taking a place-and-people based viewpoint invites participants to break through sectoral silos and gain a holistic perspective. The climate and energy topics are also rather broad; we've seen that the spin-off projects and – in case of Ghent – the follow-up arenas, were more specific, thereby helping to make the themes more tangible.
- Implementation in different cultural contexts – "does transition management travel"?. We can conclude from this project that the approach does, at least in the northern European context. Some differences between the cities might be related to the cultural context. For example, transition management combines active reflection with reflexive action, the former

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[10] See eg. Wittmayer *et al*. (2013)
[11] See eg.: Loorbach & Rotmans (2010)

being more revolutionary for the 'pragmatic' Dutch, the latter more innovative for the 'philosophical' French participants. However, this remark is based on gut-feeling and cultural clichés. The role of local, national, institutional and cultural contexts has not been investigated, but would indeed be an interesting avenue for further research.

- Implementation as an <u>EU-project</u>, with co-funding from the Interreg programme, gave the process a certain status and level of independence. In this way, the MUSIC project created a window of opportunity to explore new ways of working. Such openings could also be created in different manners, for example, based on the ambitions of an alderman or head of department. Moreover, the widespread and strict use of planning and (quantitative) indicators in most EU-projects could be counter-productive, as it could kill space for adaptation and flexibility – as such, MUSIC is not a typical EU project. In this case, while the project duration was sufficiently long to give a serious impulse, there remains a clear need for a continued 'space to get out of the comfort zone'. The partner cities can organize such follow-up themselves, but support from higher levels (regional, national, European) would be very useful in providing this space to other cities and in enabling peer-to-peer interaction, which would assist the involved policy officials.

7.2 Outcomes of transition management

In all MUSIC partner-cities, the application of the transition management approach has proved to be a productive but challenging journey. It provided the participants and city administrations with a space for going beyond the status quo. The experiences from the MUSIC project make it possible to clearly articulate the potential outcomes of transition management for urban climate governance:

- A <u>guiding perspective</u> that provides a sense of direction regarding the fundamental changes needed to reach a sustainable future**.** The participants and policy officials gain a better understanding of the complexity and societal context of low-carbon ambitions. They develop a systemic change perspective, which "helps to close the gap between knowing and doing" – as a policy official from Ghent states. This perspective is upheld by participants and inspires individuals beyond the arena setting;
- An <u>impulse</u> for moving towards a more sustainable future. The process gives energy and extra motivation to the participants. Spin-off activities emerge as 'seeds of change' that allow a variety of actors to contribute towards the guiding perspective. Also the guiding perspective gives an impulse: it encourages and clusters initiatives and innovations, and it serves as a lens to recognize and possibly enhance existing initiatives that contribute to this future perspective.
- <u>Empowerment</u> enabling actors in the city to more effectively foster a transition towards a sustainable future**.** Through the process, actors from different backgrounds collectively start exploring and taking on (new) roles. A policy official from a partner city expressed that "you are not doing it alone anymore" as a local government, since other stakeholders also play a part in addressing the challenge of CO_2 reduction. Furthermore, policy officials become empowered to enter new roles, as this requires a shift in their views on participation (towards co-production), as well as new ways of working – for example, playing much more into the city's existing dynamics instead of formulating policy "from behind their desk".

Obviously, transition management is not a silver bullet for realizing ambitious sustainability objectives. The approach does not replace the need for other, complementary, policy interventions. Moreover, the idealized outcomes mentioned above are subject to local ambitions and circumstances; in the MUSIC partner cities they have been reached to more or lesser extent. Nevertheless, the project's outcomes offer glimpses into the approach's potential when it comes to urban climate governance.

7.3 Outlook

So, what's next? For the partner cities, it's not just about supporting and preserving the networks and constellations that formed throughout the transition management process. Rather it is about continuing to create space for new developments, strengthening initiatives that contribute to the sketched guiding perspective, and challenging actors to take part in the transition. The organization of the transition arena gave the partner cities a concrete starting point to play into societal dynamics; this new interface between the municipality and urban society can now be extended in various ways – including, for example, the organization of transition processes on other subthemes.

The question remains whether the partner cities can continue to generate this 'space to get out of the comfort zone', without the window of opportunity created by the MUSIC project. Of course, this also holds for other (European) cities. The last years have seen a growing debate around 'big society' and new forms of governance, as well as a broader recognition that (local) governments cannot address sustainability challenges on their own and that many other actors are also strongly influencing this issue.

The need for transition management and similar approaches is thus increasingly being acknowledged. We expect this new governance mode therefore to become more widespread. This development could reinforce (and be reinforced by) the further 'transitioning' of institutions: changing structures (e.g. further breaking the silos and altering regulations), cultures (e.g. embracing complexity and becoming more prone to co-creation) and practices (e.g. adjusting financing schemes to foster sustainable measures and building capacities for transition). This will again prove to be an intensive struggle and learning experience.

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