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**Military Technical College
Kobry El-Kobbah,
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**Transition governance as a model for city transformation
Toward sustainable future**

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Abstract In this paper will brief the audience about the origins and status of the transition governance approach which was developed over a decade ago in the Netherlands and has since been adopted worldwide. Transitions are fundamental changes in the structures and practices of (parts of) our cities and societies. Transition governance has been developed based on empirical and theoretical insights and an understanding of the dynamics and mechanisms of transitions. It provides a governance philosophy and concrete instruments and methods aimed at influencing the direction and pace of urban change dynamics towards sustainability. The approach is generic for complex societal issues and persistent unsustainability. It is used to address transition challenges on the scale of regions, cities and neighborhoods, as well as to initiate transformations in socio-technological systems such as energy, water and mobility. Transition governance in practice creates a new interface between policy makers and other societal actors. Local governments can be (but are not necessarily) in the driving seat with this approach and, together with (often) external transition experts, co-develop pioneering frontrunner networks called transition arenas. These transition arenas form the basis for developing society based transition agendas, strategies and experiments. Through the specific process design and approach to structure the transition agenda a collective ambition and perspective is developed which fuels all sorts of innovative projects and experiments. To local governments and other actors (such as citizens, businesses, institutions and other organizations), transition governance is a learning process during which opportunities are created to build upon each other's transformative capacity and play into local dynamics.

Key words: Transition, governance, transformation, city, Sustainability.

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Transition governance as a model for city transformation Toward sustainable future

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1-Introduction

Many cities recognize 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. [1]

Fortunately, local governments do not stand alone in their desire to realize structural change toward sustainability. Many citizens, companies and non-governmental organizations (NGOs) have set up initiatives 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 so, this research presents and elaborates a proposed model transition, which is based on insights from complex systems, governance and sociological theories.

2-Sustainability transitions in cities and their governance

2-1-Transition theory

The term ‘Transition’ is defined as a ‘passage from one state, stage, subject, or place to another’ or ‘a movement, development, or evolution from one form, stage, or style to another’⁵⁹. These forms have internal characteristics, which give them coherence and stability. Also, the notion of a transition has the connotation of a rapid change, a provisional turn, a discontinuous shift to a new trajectory and system or a ‘jump’ from one state to another [2]. The typical case is the notion of ‘transition economy’ or ‘transitional economy’ that refers to an economy that is changing from a centrally planned economy to a free market⁶¹. Consequently, the transition process is usually characterized by the changing and creating of institutions; changes in the role of the state, thereby, the creation of fundamentally different governmental institutions; and the promotion of privately-owned enterprises, markets and independent financial institutions.

Both a ‘transformation’ and ‘transition’, which are rooted in the system theory, can refer to a change. In the ‘transition’ literature, the term ‘transition’ has several meanings that are sometimes contradicted by each other. It can be used to refer to a radical change of a complex system with interrelation and co-evolution of various processes, such as the ‘transition’ from a traditional transport system based on horse-drawn carriages to a modern transport system based on automobiles. It may also refer to an evolutionary process. In general, there has been no agreed definition of the terms ‘transformation’ and ‘transition. The process of transition is a long process and can take several-generations. As mentioned before, it is not a linear process and happens in a disorganized process of changes [3].

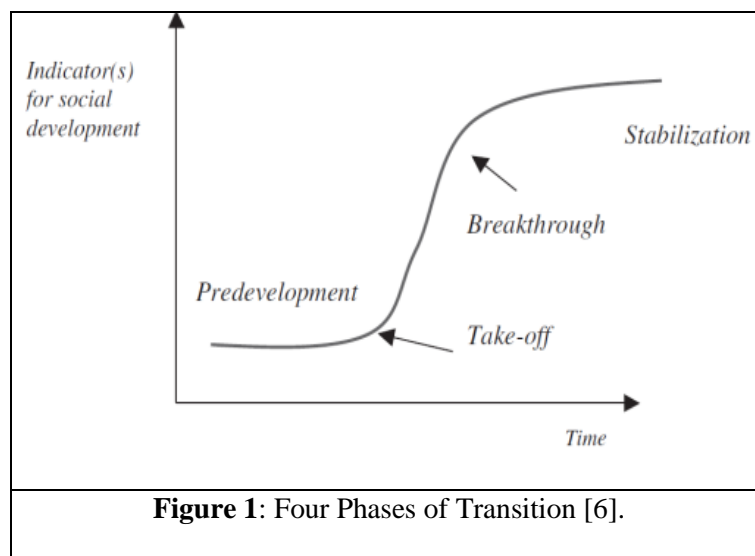
Rotmans stated that when we reach to the point that we understand transitions in societal systems then it would be possible to steer this processes by a transition governance. In general, it is possible to characterize all transitions into four phases [4].

The four phases can be seen in figure 1, where they are characterized by a S-shaped curve. The different phases are called predevelopment, take-off, breakthrough and stabilization phase. These phases can be understood as follows:

The first phase describes small changes in a system, where actions are mainly taking place on an individual level. The take-off phase already sees a higher level of interaction between actors

and considers that a change has already started in the system. This could mean that some businesses already established successfully transition practices and the topic became more and more on the agenda of politicians. People started to see it as an important topic and doubt whether the current system of how we handle our resources and goods is the right one. A visible change of the system is described as breakthrough phase.

Legislations have already been set that require a development towards transition and demand a similar development of businesses. A system change is inevitable at this point. The stabilization phase is characterized by a decrease of disorder and the establishment of the new system [5]. A more detailed description and explanation of these four phases will be undertaken in the next sections



2-2-Urban Sustainability Transitions stages and paths

There are three dominant threat groups (or barriers) facing the urban sustainability of transforming cities with middle to high income are thus defined as follows: (See table 1)

Table 1. Three dominant threat groups in Transforming Cities toward sustainability [7]

Type	Economic	Social	Environmental
1. Social dominated threats	middle-income, medium-rapid growth	poverty, social-conflicts, safety, equality, low growth in social well-being and life quality	Poverty-related pollution, growing production-related and consumption-related pollution
2. Environmental dominated threats	middle-income, medium-rapid growth	Rapid growth in social well-being and life quality	Production-related pollution, growing consumption-related pollution
3. Consumption dominated threats	high-income, low-middle growth	High life quality	Consumption related pollution

- There Type 1 includes social dominated threats such as poverty and social conflicts. Deficiency in housing and infrastructure and rapid migration of the rural population into

cities may result in city slums, where people live in small houses without proper access to water supplies and sanitation.

- Type 2 includes environmental dominated risks such as air pollution by NO_x and particulates, and water and energy consumption by mass production. Rapid urbanization and industrialization, motorization, outmoded technology, inadequate treatment of emissions, a lack of strict regulations and effective management on land use (i.e. transport) and environmental quality are the major barriers to sustainability. Governments usually focus on the economic growth and social development, but often lack a long-term perspective on environmental quality.
- Type 3 includes consumption dominated risks such as overuse of automobiles, overconsumption of resources, loss of biodiversity, increased amounts and treatment of municipal waste, and increased CO₂ emissions.

This third type of barriers is often invisible to local residents, and thus in many cases is not recognized as a problem, or even argued as meeting human needs or increasing social welfare. From the viewpoint of urban sustainability, the ideal stage or type of a city is one that has neither social risks nor environmental risks, and with minimized environmental impacts caused by consumption, this being referred to as a sustainable city. Hence, four phases can be defined in urban sustainability transitions process as follows: (See Figure 1)

- Social dominated stage
- Environmental dominated stage.
- Consumption dominated stage.
- Sustainable City.

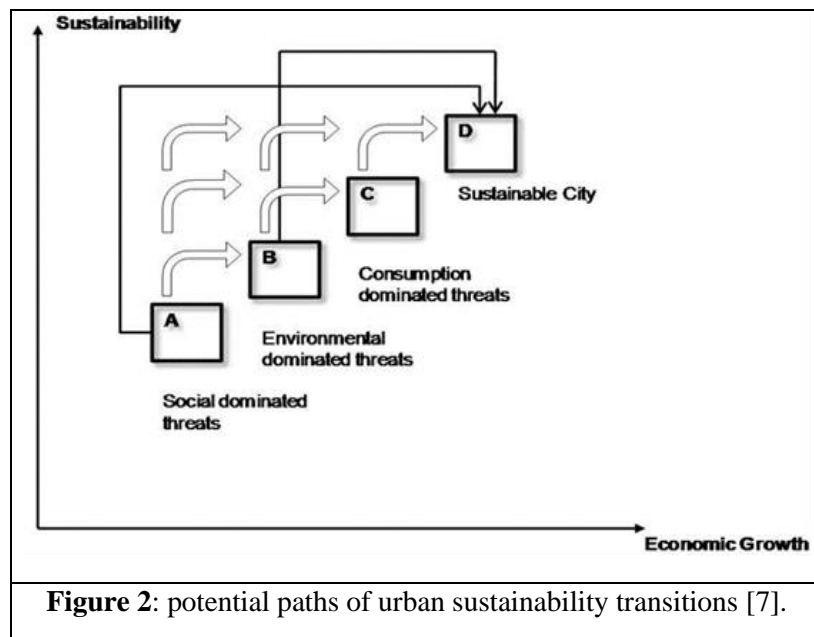


Figure 2: potential paths of urban sustainability transitions [7].

Based on the previous discussion, assuming that the underlying goal of each type is achieving urban sustainability, or sustainable city type (D), potential paths of urban sustainability transitions can be illustrated as a seven tracks of sustainable urban transformation, as shown in Table (2), which in turn are considered as scenarios for possible path models of city transitions, there are some paths that pass and develop through four stages such as the first path, and some paths may form through their pass through three stages :The second, third and fifth, as some tracks may be based on two stages only, as in the fourth, sixth and seventh tracks.

Table 2. The seven scenarios (paths) of urban sustainability transitions

UST 1 : A → B → C → D
UST 2 : A → B → D
UST 3 : A → C → D
UST 4 : A → D
UST 5 : B → C → D
UST 6 : B → D
UST 7 : C → D

2-3-potential pathways to urban sustainability transitions

Olazabal and Pascual introduce the conceptual framework of potential pathways to urban sustainability transitions (UST) [8], which identifies three potential pathways of urban transformation depending on the type of governance used when facing (or perceiving) a crisis (or need to change), as the following (See Figure 3):

1. Path 1: offers the most sustainable outcome, is strongly driven by socio-technical transformation, innovation and creativity where collective efforts stimulate change.
2. Path 2: is associated with crisis and is embraced within policies on optimization of resources and efficiency although short term planning is still present in urban management and planning. This can lead to two potential resulting paths: Path 2a where a slow process of social behavioral change improves sustainability but at higher costs in comparison with Path 1, and Path 2b where urban planning lock-in hinders sustainable development. Eventually,
3. Path 3: crisis is ignored and unsustainable patterns are maintained.

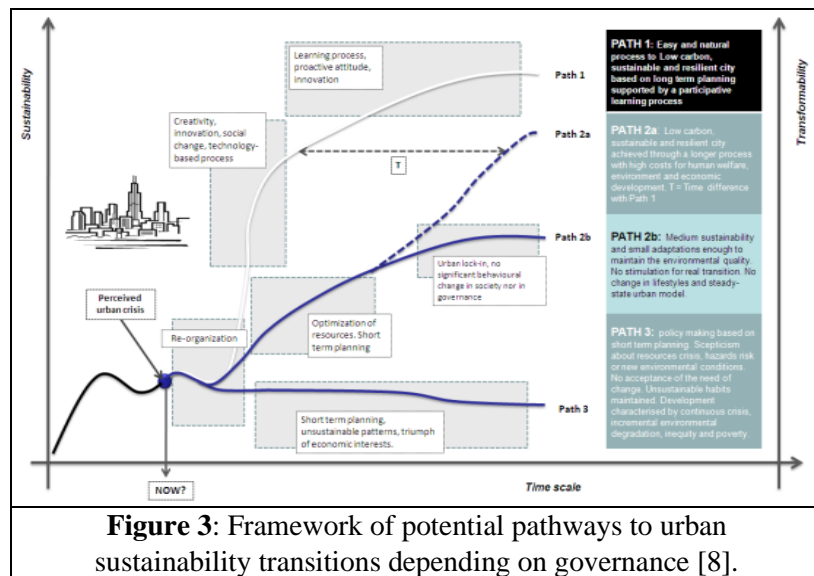


Figure 3: Framework of potential pathways to urban sustainability transitions depending on governance [8].

3-Transition governance

Transition governance is based on the empirical and theoretical insights of transition studies, and offers ways to influence the direction and pace of societal change dynamics towards sustainability [9].

3-1-Transition governance approach

The approach has been used to stimulate sustainability transitions in localities (e.g. Regions, cities and neighborhoods), and to initiate transformations in socio-technical systems, such as energy, water, and mobility.

The transition governance approach proposes six principles for influencing transitions:

- 1) Insight into the system: The complexity of the challenges must be fully acknowledged.
- 2) System innovation in incremental steps: The aim is to go beyond system improvements and optimization to system innovation.
- 3) Diversity and flexibility: 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.
- 4) Co-creation. Neither local government nor any other single actor can address sustainability challenges on its own.
- 5) Creating opportunities for change agents. Achieving ambitious targets is difficult when vested interests and positions are taken as a starting point.
- 6) Facilitate social and institutional learning: Learning is essential for societal change.

3-2-Interventions types in transition governance

These principles are operationalized in four types of interventions: orienting, agenda-setting, activating and reflecting (see figure 4): [10]

- Orienting includes analyzing and positioning oneself (as a city officer). This includes building analytical capacity for transitions
- Agenda-setting includes broadening the discursive and actor network underpinning a common direction. This includes building networking capacity for transitions.
- Activating includes putting the shared direction into action through setting up projects and learning from them. This objective also includes building capacity for transitions.

Our main focus is on the transition arena, which includes all four types of interventions: orienting, agenda-setting, activating, and reflecting.

The transition arena is a temporary setting that provides an informal and well-structured space to a small group of change agents from diverse backgrounds (businesses, government, and citizens). The group engages in a series of meetings, jointly elaborates a transition challenge, drafts a long-term vision, and develops transition pathways to realize this vision. The transition arena gathers a group of ambassadors inspired to go beyond current interests and daily routines. Together, they develop a shared transition agenda, which provides a starting point for involving a wider group and instigating new activities, networks and collaborations

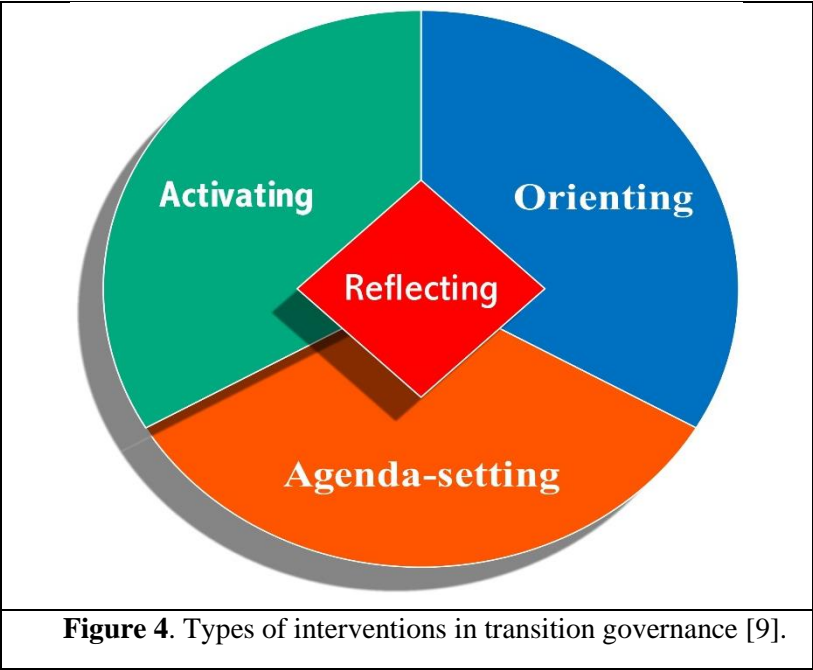


Figure 4. Types of interventions in transition governance [9].

3-3-Key outcomes of transition governance process

Implementing a transition governance approach along the lines, has the prospect of resulting in three key outcomes:

- 1) A sense of direction; proposing a strategic future perspective which addresses the fundamental changes needed to reach a sustainable future. Throughout the process, a group of change agents questions and thereby challenges the status quo and proposes a strategic future perspective. Their insights and discussions are condensed in a transition narrative: (re-)structuring the problems and underlying challenges, the future vision, and possible pathways. Through thinking about transformative change, a sense of direction is built for the long term and opportunities are revealed for taking first steps on the short term.
- 2) An impulse for local change; inspiring new and enhancing existing initiatives that contribute to the envisioned future; most city administrations are fully aware that they cannot achieve energy and emission reductions on their own. Ludwigsburg is one example. The administration is only responsible for 2% of the city’s CO2 emissions, and therefore seeks to mobilize other urban actors to achieve a reduction of greenhouse gas emissions. As a city officer states: “Our question is: how can we tackle the energy transition locally? Because 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. To play a small part in that is what motivates me”.
- 3) Collective empowerment; enabling actors in the city to tackle challenges and seize opportunities for a sustainable city. The process also is a learning journey which creates room for city officers, citizens, businesses, institutions and other actors in the city to re-define and experiment with roles and learn new ways of relating to one another.

3-4-Applying transition governance approach

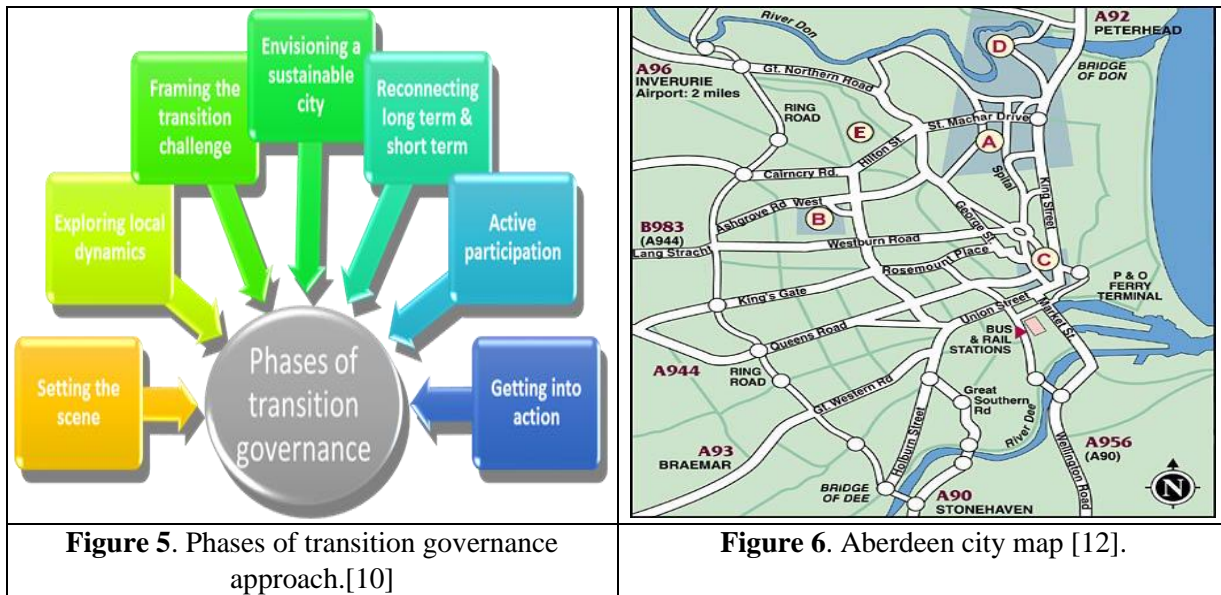
The process structure and methods in this chapter provide guidance for implementing the transition governance approach. It is not a universally applicable blueprint; it provides a structure, which needs to be adapted to the specific circumstances of and dynamics emerging throughout the process. The table below (table 3) broadly outlines the process structure, distinguishing between seven

(partly overlapping) phases that can guide the implementation of the process. [10]

Table 3. The seven phases of transition governance approach [10]

Phases	Implementation
1-Setting the scene for transition governance	A transition team is formed to drive the process and embed it in the local context.
2-Exploring local dynamics	The transition team starts to explore the city's dynamics, conducting interviews and doing desk research, and working towards a system analysis and actor analysis. Based on the actor analysis, a diverse group of change agents is invited to engage in a series of meetings as a transition arena group.
3-Framing the transition challenge	The change agents first explore the transition challenges and create a shared problem framing.
4-Envisioning a sustainable city	Subsequently, they exchange and elaborate perspectives on a possible future, thereby creating visionary images for the future of the city.
5-Reconnecting long term & short term	As a final step in the transition arena setting, the change agents elaborate transition pathways, indicating fundamental changes and corresponding actions needed to reach the envisioned future. The ideas brought forward by the transition arena are summarized and published in a transition agenda.
6-Active participation	Actions are undertaken to make the transition agenda public and give others a chance to adopt and adapt it, and relate it to their own agenda and practices.
7-Getting into action	Transition experiments, radical short-term actions in line with the transition agenda, are initiated or adapted. Through these actions, more actors become engaged. Insights from these experiments can be taken to a more strategic level

The suggested sequence of phases helps to get a grip on the process, but it is not set in stone. For example, a city could also start fostering transition experiments to widen the range of alternative practices, and subsequently derive visionary images and transition pathways by reflecting on the larger meaning of these experiments. Figure 5 clarifies phases of transition governance approach.



3-5-Experience of transition governance in Aberdeen city, UK

Aberdeen is the third largest city of Scotland (See figure 6), home to over 210.000 inhabitants. Industrial activity was historically characterized by the fishing, paper, shipbuilding 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 its buildings being made from granite sourced from local quarries. 7-Conclusion and recommendations [11]

The Aberdeen City Council aims to reduce its CO₂-emissions by 42% by 2020 (relative to 2008). A sustainability vision for Aberdeen was presented in 2011 and inspired policy officers, but not the population. Between 2011 and 2015, participation in the MUSIC project gave Aberdeen the opportunity to work on its ambitious climate agenda together with change-agents from the city. A transition governance 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.

In December 2013, the ‘Sustainable Aberdeen Summit’ was organized 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 [12].

The transition governance 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 prioritized 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.

The transition governance 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 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 205010 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.

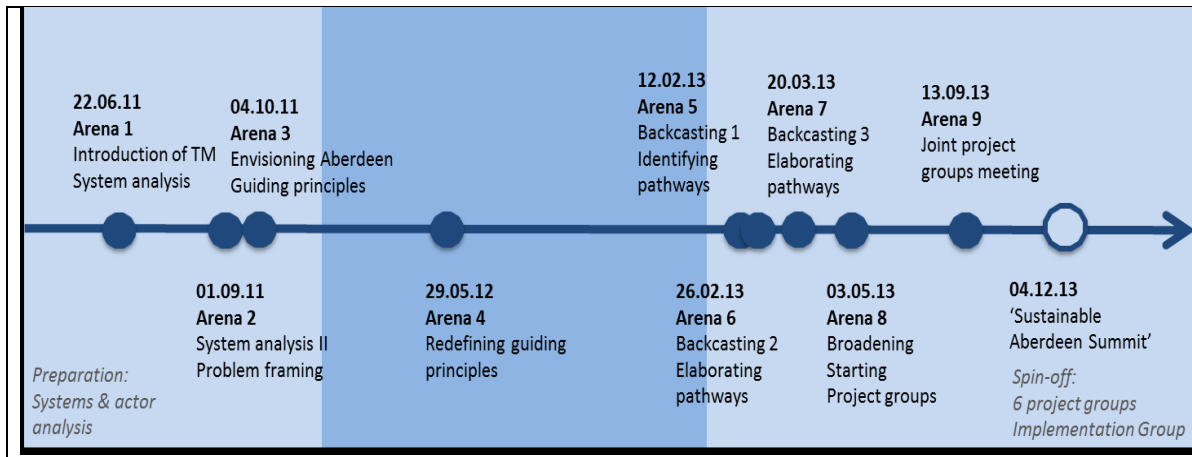


Figure 7. Timeline of arena meetings in Aberdeen [11], [15].

A final outcome from the transition governance 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 officer 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”.

4-Conclusion

In this paper, we have outlined the models of transformations and transition governance for achieving a more sustainable society. We have argued that transitions are necessary to achieve more sustainable solutions, and that current policies are not sufficient. We need new modes of governance that, more adequately than current governance approaches, deal with the complexity and unstructured nature of ‘sustainability’ problems and which involve a large variety of stakeholders. To this end, we have presented the approach of transition governance, which is operationalized through transition arenas.

Transition governance offers a new policy perspective that uses the power of both markets and planning, and is engaged with the establishment of new as well as with the change of old institutions. This approach implies a new role for governments that should engage societal alignment policies- aligning policies and policy goals to visions of sustainability, through transition agendas and the use of process management. This does not render obsolete the use of regular policy instruments, such as regulation and pricing mechanisms, but says that they should be undertaken as part of a broader transitional approach that aims to anticipate and adapt societal dynamics to sustainability goals.

Transition governance is inclusive and calls for setting long-term and intermediate goals, alignment of policies short- and long-term policies, and strategic experimentation

Besides traditional policies. Because it aims for long-term change through small steps it is doable in a society in which interests are well organized and steering from the top is basically impossible. It is used in the cities for managing the transition to sustainable energy,

sustainable mobility, sustainable agriculture, and the biodiversity and natural resource transition.

For the coming years the achievement of real-life successes and a further deepening of the concepts of transitions and transition governance will be crucial. In our view, transition governance not only makes good sense but is also the only possible (and do-able) way of achieving true sustainability benefits in the long term while maintaining short-term diversity. The implementation of transition governance, however, is dependent on factors such as creativity, perseverance, communication skills and spirit, and its success will therefore depend on those who take up this challenge.

Overall outcomes of Transition governance as the following:

- Creating joined understanding & responsibility for the challenges
- Empowerment and learning
- Bundling of innovation: new networks and constellations
- Changing roles and relationships

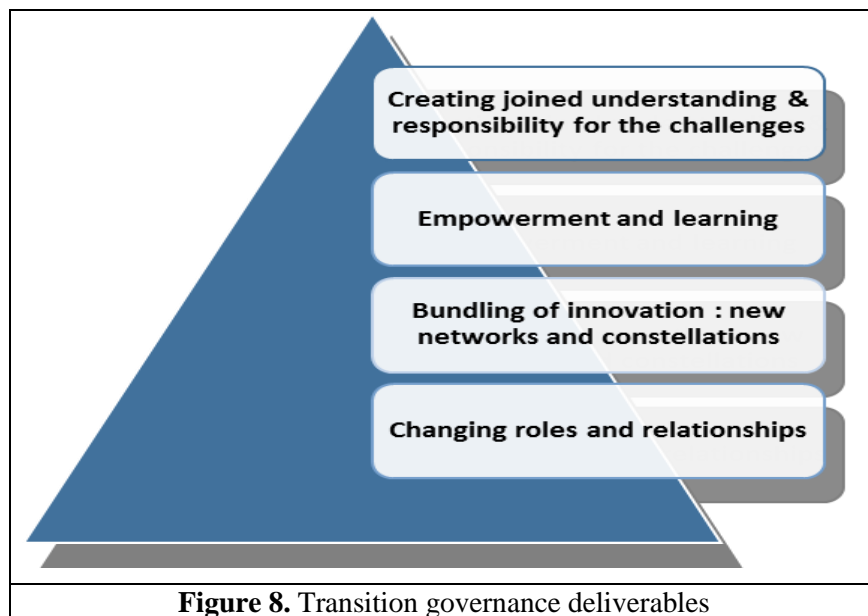


Figure 8. Transition governance deliverables

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