

6.1.3 A multi-sector network approach for an integrated Local Climate Policy - Think Global, Connect Local (Tilburg, The Netherlands)

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Abstract

The City of Tilburg has put in place plans for an ambitious, integrated and effective local climate policy. Ambitious as the city wants to be climate neutral and climate resilient by 2045. Integrated as it includes both mitigation and adaptation, and with the aim that the policy is integrated in a broad range of policy fields managed by the city councillors. Effective in the sense that it will be assessed on the projects, infrastructure, changes and results present in a complex existing urban society.

Tilburg has recently made substantial progress towards the realisation of an integrated climate programme. The factors contributing to its success have included:

- continued political backing of climate policy as a priority
- earlier successes and rewards, building on these
- early involvement of stakeholders
- clarification of main issues through research
- broad and timely communication, and
- participation in local, national and international networks.

This case study illustrates how the establishment of a multi-sector network helped to mobilise the civil forces needed to realise climate neutrality and climate resilience.

Keywords: adaptation scan, CO₂ neutral target, Energy Service Company (ESCO), environmental protection, integrated long-term climate policy, local climate alliances, multi-sector network, sustainability, public-private partnerships (PPPs), stakeholders

6.1.3.1 Context of the Municipality

Table 6.1.3.1 - Tilburg municipal profile

Population:	200,000+ inhabitants (2008)
Land area:	119,15 km ²
Municipal budget:	903,7 million Euro (2008)
eCO ₂ targets:	To become climate neutral and climate resilient by 2045

Tilburg, centrally located in the Province of Noord-Brabant, is the sixth largest city in the Netherlands¹.

¹ www.tilburg.nl

It is a modern city that came to prominence at the end of the nineteenth century with the rise of its textile industry. Following this industry's decline in the 1960s, the city and surrounding area succeeded in the development of a hugely varied local economy. An economy which, partly thanks to its diversity, is thriving and increasingly making its mark in the Netherlands. Time and again foreign companies choose to locate their Dutch or European headquarters in the city. The knowledge-based economy and creative entrepreneurship are gaining importance, a process aided by the city's three higher education institutions. Currently, the three main economic sectors from a regional perspective are leisure, logistics and life sciences.

Protecting the environment is one of Tilburg's top priorities. Tilburg is focused on improving the quality of air, water and soil, and looks to local politicians to promote and protect the city's green areas and surrounding countryside. The fact that Tilburg was elected the most sustainable town in the Netherlands several times in a row is a testament to how strongly the city feels about protecting the environment. An example of Tilburg's commitment to limiting pollution is its 'clean lorry traffic' policy which bans environmentally-unfriendly trucks from the city centre. The climate programme discussed below is related to all these subjects and has been developed to support cooperation with other interested parties and stakeholders.

6.1.3.2 Goals

The objectives of the local climate programme are to reduce CO₂ emissions. The city aims at being CO₂ neutral in 2045, and to adapt to the impacts of climate change. In order to reach these goals a multi-sector network is being formed involving all relevant parties. This network was initiated by the City Council, with involvement by other organisations.

6.1.3.3 Starting point

Tilburg has been on the road towards sustainability and energy efficiency (EE) for many years. This has resulted in many eye-catching projects and programmes. For instance the city uses heat and cold storage in the ground in several places and has a modern public lighting policy (dimming at night instead of turning off half the lights, and using light-emitting diodes [LED] lighting). This was in line with an agreement with social housing corporations which are steadily implementing EE renovation. Other energy saving achievements include district heating, waste heat recovery, as well as bicycle lanes and routes throughout the city to encourage a reduction in car dependency. Although city officials were already convinced that climate change was demanding serious action, in the beginning of 2006 it was realised that action to protect the city should be handled in an even more thorough and structural manner². The observation that the climate is already changing and will continue to change, even under low carbon scenario's, led to the question whether Tilburg could and should become climate resilient and be able to seize opportunities emerging from climate change. A third aspect was whether all the parties potentially affected by climate change or potentially needed for mitigation and adaptation actions would share the sense of urgency, understand and agree to further involvement.

In order to answer these issues several activities were executed. As a first step a stakeholder process was initiated through interviews, a series of stakeholders' conferences were organised, a website was developed and a newsletter compiled. Secondly, two studies were commissioned: a back-casting³ study for a carbon-neutral city and an adaptation scan.

² www.localclimateprotection.eu/437.html

³ Backcasting scenarios reason from a desired future situation and offer a number of different strategies to reach this situation. Terminology source: <http://glossary.eea.europa.eu> (EEA 2000)

Table 6.1.3.2 - Timeline of the Tilburg stakeholder process

Stakeholder process	'Old' Environmental Policy	2005
	Start investigations into city CO ₂ neutrality	2006
	First local climate conference	2006
	Researches 'Tilburg CO ₂ - neutral' and 'Adaptation Scan'	2007
	Interviews with Stakeholders	2006
	Second local climate conference	2007
	Building Multi-Sector Network	2007-ongoing
	Start working on an integrated long-term Climate Policy	2008

6.1.3.4 The Tilburg roadmap towards CO₂ neutrality

A background study called 'The roadmap towards a CO₂ neutral Tilburg' was undertaken in 2007. It identified current emissions, energy demand and emission trends, and all the required and achievable energy savings and renewable energy (RE) options. In a business-as-usual scenario Tilburg would reach CO₂ neutrality somewhere around 2090. With a 'pull-out-all-the-stops' programme CO₂ neutrality could be reached in 2045. The roadmap describes all the necessary actions required to reach that goal.

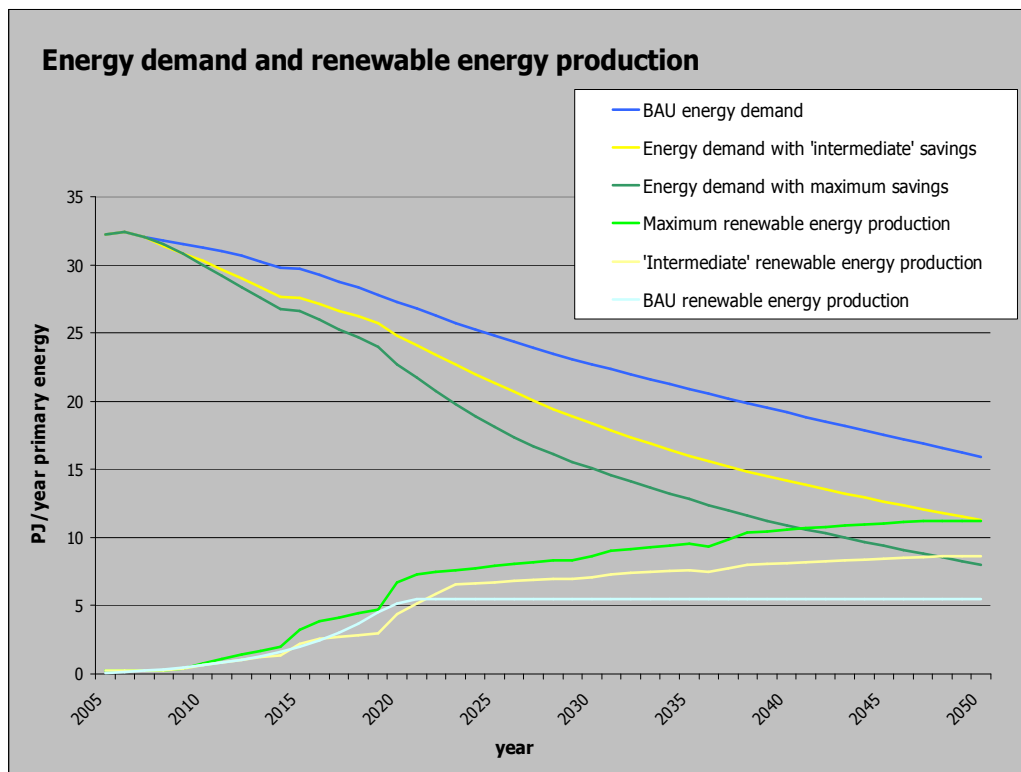


Fig. 6.1.3.1 - Scenarios for CO₂ neutrality in Tilburg (Braber et al 2007)

The above mentioned table shows how a 'pull-out-all-the-stops' programme could achieve CO₂ neutrality in 2045 (or even 2042). As can be seen, energy consumption and sustainable energy production are equal by the year 2045. The roadmap report includes a year-by-year programme of all

feasible, but necessary local actions to reach CO₂ neutrality. This programme contains actions ranging from promoting zero energy buildings, solar, wind and biomass power production, heat and cold storage, heat capture to new funding schemes and new energy service concepts. In total, the report substantiates a realistic storyline towards CO₂ neutrality in 2045.

6.1.3.5 The adaptation scan: investigating local climate change impacts

Although Tilburg is situated 14 meters above sea level, the city still has to cope with impacts of climate change such as increasingly intensive rainstorms and the urban heat-island effect. With software from the Dutch Meteorological Institute (KNMI) four local climate scenarios were developed for the year 2050 (e.g. the period 2035-2065) based on local historical meteorological data. The year scenarios for 2050 indicated drier and warmer summers, more heat waves, more heavy showers and warmer temperatures in winter. The table below illustrates a selection of the average effects of summers around the year 2050 compared to summers around 1990.

Table 6.1.3.3 - Example of local climate scenario: Tilburg summers 2035-2065

Mean summer temperature:	0,9°C to 2,9°C warmer
Mean of daily highs:	0,9°C to 2,9°C warmer
Hottest summer day:	1,1°C to 4,3°C warmer
Number of days > 25°C:	4,8°C to 17,1 extra days (27% to 96% more)
Number of days > 30°C:	3,5C to 10,7 extra days (117% to 356% more)
Mean daily precipitation:	5% more to 20% less
Number of rainy days:	1,7% to 19% more
Maximum amount of precipitation:	3 to 20% more

A list of approximately 100 impacts, selected from Dutch climate research literature, was compiled and checked for applicability with the local Tilburg situation. Impacts proved to be both threats and opportunities. The image below shows a selection of positive (green), negative (red) and neutral (grey) impacts of climate change for Tilburg as used in internal discussion sessions.

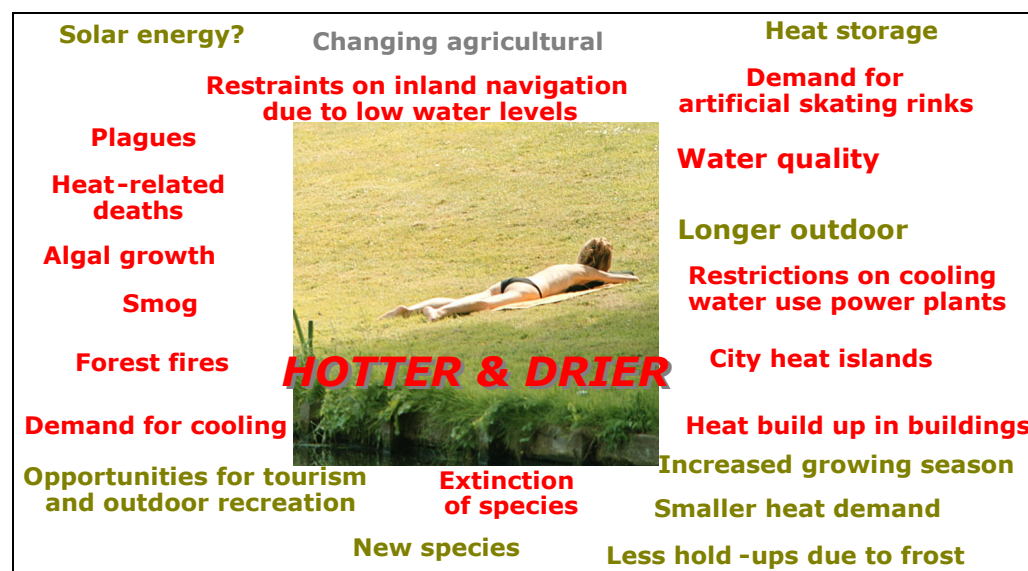


Fig. 6.1.3.2 - Mood-board with climate change impacts for Tilburg

All impacts of relevance for Tilburg were discussed with local experts and categorised as ‘urgent’, ‘not urgent’ and ‘to be investigated’. The last category listed a number of knowledge gaps both with respect to the nature and seriousness of the impact and also to possible adaptation measures. One interesting outcome was that adaptation to climate change also brings the potential to realise new economic opportunities. For instance with respect to the leisure industry in Tilburg and its surroundings, including both a large amusement park as holiday resorts, camp sites, outdoor activities, restaurants and some cultural festivals. Another unexpected finding was that for some issues (like heat casualties) discussion

arose about which was the primarily responsible organisation. For some impacts measures were foreseen (like sewer overflows) but not yet sufficiently executed. Other 'new' impacts like city heat build-up still require a lot of research on the size of the problem and to identify effective measures. Follow-up actions were identified and will be implemented through the Tilburg Climate Change programme.

6.1.3.6 Building a Multi-sector Network

6.1.3.6.1 Consequences of the Climate Conferences

The realisation of a transition towards a local CO₂ neutral energy supply within four decades is an enormous task which requires many practical local solutions. Besides this mitigation effort, the city will also have to cope with the local impacts of climate change. More and more organisations are feeling the responsibility and urgency to act on climate change. Discussions with local stakeholders have demonstrated that the local government is not seen as the only 'owner' to the problem. Because of the broad impact on several fields like water, housing, nature, recreation and health care, it is recognised that climate change directly affects more organisations in their core business and is not just the responsibility of the public.

Hence, the municipality of Tilburg organised two local climate conferences. The first conference - organised in December 2006 - was to determine and exchange initial views. It was attended by a diverse group of organisations from the region. Climate change turned out to be a topic of broad interest. After this first local climate conference the event participants were interviewed about their specific view on climate change and what to do about it. They were found to be aware of the effects of climate change and its urgency to act upon the effects or find ways to cope with them. Some of them also saw business opportunities emerging from the climate change issue: for instance the sale of renewable energy and energy saving services. Others saw possibilities arising from a longer and warmer outdoor season, for instance an amusement park which considers staying open all year because of the better weather. It was also determined that they were most willing to participate in a multi-sector network to deal with the challenges climate change offers. In this network all participants would strive for a common goal next to their own mission. For example, interviewees from private organisations want to engage in profitable activities. During the second conference - held in October 2007 - groups were formed according to their interests. Themes around climate change topics (in line with these interests) were agreed upon and workshops were held. In these small groups the initial ideas about collective projects were identified, as well as the fundamentals of the future structure of the network.

From that moment on the municipality, in cooperation with BuildDesk consultancy, started building a multi-sector network in an open dialogue with 25 interested public, private and non-profit organisations in and around Tilburg. This method was chosen because success in the institutionalisation of a network as described above can only be achieved when the goal formulation and the decision of participation is not dependent of one party or some parties (Milward and Provan 2006). The network will strive to accomplish the climate programme with the two ambitious goals stated in that programme: being a CO₂ neutral and resilient city in 2045.

6.1.3.6.2 Inter-organisational cooperation

Research literature shows that dealing with immense societal problems can be tackled through inter-organisational cooperation (Pearce and Doh 2005). Provan and Kenis (2007), in their article about Modes of Network Governance, perceive a network as 'a group of three or more legally autonomous organisations that work together to achieve not only their own goals but also a collective goal'. This description has a very significant aspect that corresponds to the Tilburg situation, in which each individual goal is recognised next to the establishment of a common ambition. The network of local organisations that will participate in the support of the goals of the climate programme is a multi-sector network. That means that the actors from civil society, business and governmental institutions come together in order to find a common solution to a problem that affects all of them (Rollof 2008). The multi-sector network described above addresses the issue of climate change on a regional level; Tilburg

and its surrounding region, in a climate programme.

6.1.3.6.3 The multi-sector network

Next to becoming a CO₂ neutral and climate change resilient city in 2045, the establishment of the multi-sector network itself is a principal challenge of the climate programme. The multi-sector network is based on the environmental social capital to solve a future-oriented problem. It is formed by participating parties from the public, private and non-profit sector: a broad range of organisations, all with their own networks and their own goals. The fundamentals of the multi-sector network are its alliances, with several parties collaborating on one theme. The alliances of the programme are represented in the eight circles (the structure of the network) in the figure below:

- a common Sustainable Energy Service Company (ESCO)
- a covenant for an energy efficient housing sector
- an alliance tackling health impacts
- an alliance tackling water impacts
- an alliance aimed at behavioural change
- an alliance tackling spatial planning issues
- an alliance supporting socially responsible companies and sustainable industrial areas, and
- an alliance aimed on energy efficient and climate resilient public buildings and installations.

According to Milward and Provan (2006) the best way to organise such a network is to set up a separate administrative entity specifically to support the network, its alliances and activities. Such network facilitating entities are mostly initialised to realise large regional goals (Gebauer et al 2005, Slob et al 2007). The administrative entity (or network broker), here called the 'Climate Board' plays a key role in coordinating and sustaining the network. The form chosen in Tilburg is supported by the earlier interviews in which the parties clarified that they preferred to operate in a network that is supported by an independent project office. Subsequently, a project office will be specially set up to facilitate the network (Provan and Kenis 2007). In the figure below the grey circle around the green sphere represents the project office in the Tilburg case. The aim is to have a formal executive project office fully operational in 2010. The main tasks of the (estimated four) future employees will be acquiring funding for the alliances, maintaining communications and network exchanges, and monitoring & reporting.

The participants in each alliance have the sometimes difficult task of obtaining commitment in their own organisations. One way to achieve this commitment is to manage the shared responsibility in the network (Pearce and Doh 2005), to make sure that the parties are equal to each other (Provan and Kenis 2007) and that they all recognise the goals of the network (Milward and Provan 2006). From this perspective Tilburg has chosen a structure similar to that of the 'Conference of the Parties' (COP), derived from the United Nations Climate Change Conferences. The COP is the most important decision-making body in realising the network goals. It is the collection of all parties which have committed themselves to participate in the network. The members of the network intend to come together once a year to decide upon the goals, visions and agenda for upcoming year.

The central board of the climate programme consists of about seven members with their own expertise. Currently this central board still operates as a 'management team', initiating all necessary tasks to keep the process going, and is under the direction of an alderman (councillor) of the municipality of Tilburg. This chairmanship will probably change over time after elections. In the near future the central board should operate as a board of governors appointed by the 'COP', and the network is intended to be more independent from the municipality. Then the municipality of Tilburg will be just a participant, like the other participating organisations in the network. The 'COP' will then attain the legal entity of a non-profit cooperative society (in Dutch: Vereniging), 'owned' by its members, as the parties participating in the 'COP'. The members elect the board of governors, which will be responsible for the day-to-day operation of the network and its alliances and which will govern the regional climate office.

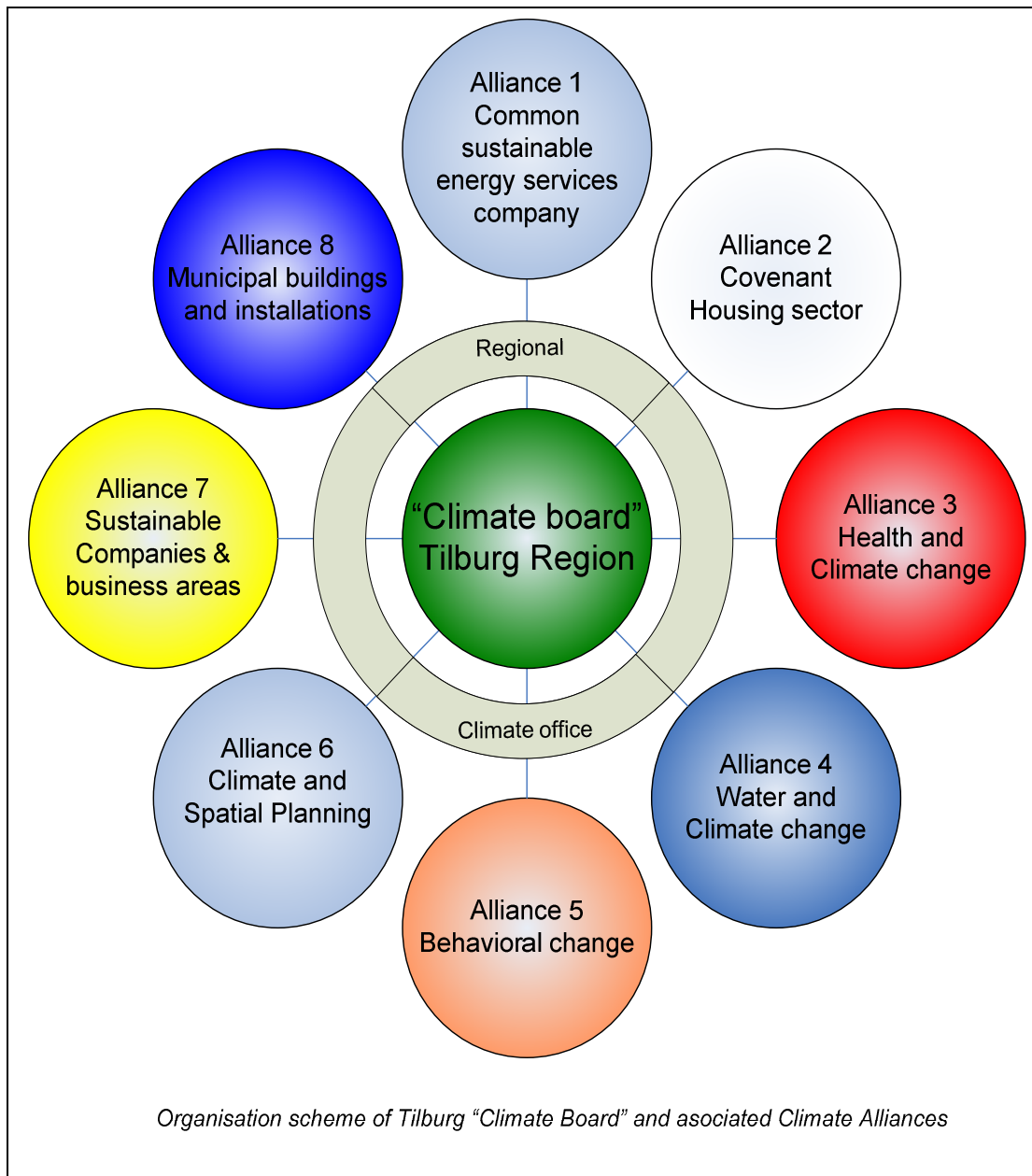


Fig. 6.1.3.3 - Multi-sector network Tilburg, showing the organisation scheme of Tilburg's 'Climate Board' and associated local climate alliances

An analogy to the traditional water board is made. The complete multi-sector network will be coordinated by a 'climate board' (in Dutch: 'klimaatschap'), named after the Dutch water boards (in Dutch: 'waterschap'). Water boards in the Netherlands are public bodies specifically aimed at addressing water quality and water quantity management. The water boards have a history of many centuries and have their own democratic controls through elections and representation. The analogy made here is that the 'climate board' should be an organisation aimed at realising a CO₂ neutral future and protecting citizens from climate change impacts, similar to the 'water board' as is an organisation aimed at realising clean and sufficient surface and ground water and protecting citizens from flooding. The 'climate board' should be a separate body in order to be able to act in a focused and decisive way, but should also have some democratic controls in order to represent all the stakeholders involved. The above mentioned 'COP' will provide these controls.

6.1.3.7 Results

The results of the process in Tilburg so far include:

- a roadmap towards a CO₂ neutral Tilburg in 2045 outlined,
- climate change scenarios for 2050,
- a broad awareness amongst local professionals of the expected impacts of climate change in the decades ahead,
- an overview of threats, opportunities and knowledge gaps with respect to climate change impacts and adaptation measures,
- the commencement of a committed multi-sector network allied to a non-profit cooperative society,
- stakeholders working together on climate change issues in local climate alliances,
- an organisational structure safe-guarding long-term continuity against potential short-term political changes of interest,
- a Local Sustainable Energy Service Company (one of the local climate alliances; currently under construction and discussion);
- a five year integrated local climate policy (currently under construction: to be adopted by the City Council in late 2008 or early 2009).

6.1.3.8 Lessons Learned

From the recent development of Tilburg's integrated climate policy and the 'climate board' we can draw the following lessons – seen as important success factors:

- the long-term political and professional commitment towards environmental and climate change policy,
- regularly achieved successes and reporting this, e.g. public appraisal, winning prizes, receiving good press coverage - which in turn reaffirms to politicians and civil servants that things are moving and provides encouragement to continue on the chosen road,
- 'internal' support for the policy from within the city policy-making community,
- external funding - without funding from national schemes like BANS⁴ & KvR⁵, this process would have been too expensive for a medium-sized city; substantial support either with money or with knowledge and manpower is indispensable,
- the use of external expertise at specific moments along the road.

In addition the following insights were gained:

- Complete CO₂ neutrality is hard to reach for a city like Tilburg. Tilburg is densely built, has a large existing building stock and some energy intensive industrial and logistic activities. Although 35 years to reach the goal of CO₂ neutrality may seem a very long time it is actually rather short for such a massive task.
- Unorthodox solutions need to be conceived and deployed to reach CO₂ neutrality within this ambitious time scheme: e.g. public-private partnerships (PPPs), exceeding national building codes, creating new funding schemes (revolving fund), more than traditional civil involvement.
- There are still a lot of knowledge gaps regarding climate change impacts and adequate adaptation measures.
- There is a lot of human capital, creativity and knowledge available within city boundaries. For instance within the city educational and research institutes and within companies and organisations. It proves to be achievable and worthwhile to mobilise this human capital on the condition that you have consulted people and organisations properly, respect for their interests and supply them with good quality and understandable information.
- Dealing with networks is important and indispensable for a multi-faceted tasks such as achieving climate neutrality and resilience.
- The internal process is as important as the external process and sometimes even more so. It proved

⁴ BANS (and its successor SLOK) are national subsidy schemes which offer a 50% co-financing of municipal climate change policies.

⁵ 'KvR' (Klimaat voor Ruimte - Climate changes Spatial Planning) is a Dutch research programme in which Tilburg received a "hotspot" status. As a result it could use funds to interactively apply scientific knowledge with respect to climate change to the local situation.

to be important to create internal as well as external ‘ambassadors’ of the ambitious climate change policy.

Key replication aspects

- Political ambition and willingness to act.
- The realisation of short-term successes and the perspective of an attractive long-term outlook.
- Continuous and effective ‘missionary work’ within the town hall.
- A sufficient budget (from multiple sources).
- Parallel and coordinated action on: knowledge build-up, stakeholder process, dissemination of results, policy development and acquisition of long-term funding.
- Involvement of outside resources - both national (research programmes, universities) and local (university, colleges, water board, energy companies, health care organisations, companies, ..)

6.1.3.9 Budget and financing

The preparation and development of the local climate programme and the development and realisation of the multi-sector approach including the ‘climate board’ and its ‘climate alliances’ has been, and still is, a time consuming and costly process. The City of Tilburg invested 2 to 4 fulltime equivalent for many years for programme management and many working hours within city departments. Apart from that, consultants and experts had to be hired for specialised tasks. All these costs could only be handled by making use of multiple funding sources: the city budget, national support schemes for municipalities (BANS, SLOK), European project funding (like the EU framework programmes for preliminary research issues and EU implementation programmes like SAVE and CONCERTO for developing specific local policy solutions), and a subsidy from the national programme Climate Change Research (CCSP) in which Tilburg received a ‘hotspot’-status.

In order to execute the four (4) year climate change programme 2008-2012 again multiple funding sources will be needed. Currently the following sources are identified:

- € 500,000 co-financing subsidy from the national ‘SLOK’ scheme,
- budgeted labour costs within the City of Tilburg,
- ‘The Sustainability Impulse’ of the City of Tilburg, including budget for public communication and involvement and the establishment of a Revolving Fund for energy efficiency investments, and
- Additional project related subsidies, contributions and co-financing – to be received during the coming years.

6.1.3.10 Conclusion

Tilburg is one of the forerunners in municipal climate policy in the Netherlands. The results achieved seem to inspire other cities, towns and villages in the Netherlands. Several other communities are investigating the concept of CO₂ neutrality and many cities have adopted a local climate policy in one way or another. The national co-financing scheme for local climate policy development (BANS) certainly contributed to this situation. As yet no city to our knowledge implemented an ambitious integrated climate policy tackling both adaptation and mitigation, and no city developed included a multi-sector network in the way Tilburg is doing in order to realise that policy.

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