Report: Work Package 2

D2.4 Deliverable, 'Vision and targets for each of the partner cities'

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1. Executive Summary

Deliverable aims and objectives

Deliverable 2.4 (D2.4) is an overview of how cities engage, communicate and co-ordinate work with all relevant stakeholders to understand their interests and priorities and develop shared visions and targets for a low carbon future. The aims of this deliverable are to build a compelling vision for a sustainable city in collaboration with stakeholders, mobilise their resources, and ensure that realistic and supported ambitions and targets for achieving energy demand reduction, an increase in renewables and lower carbon emissions by 2020 are set in the cities' Sustainable Energy Action Plans (SEAPs). In some cases, cities have already started to take a longer term view and have agreed visions and targets for 2030 or 2050; these are also discussed in this deliverable.

City approaches

To complete the analysis of their visions and targets, partner cities responded to questions in a template developed by the deliverable lead (see Annex C). Cities provided information on their current vision and targets for strategic development and, more specifically, climate and energy, as well as how these were developed. The links between local strategic planning and the EU 2020 climate and energy goals, wider Europe 2020 strategy, and smart cities ambitions were also analysed.[1] The cities also reflected on their methods and approaches towards stakeholder engagement and acquiring and analysing data in the process of developing visions and targets, building on the work completed in D2.1,'Stakeholder analysis and engagement plans' (see best practice approaches in Annex B). This exercise has helped the cities begin to identify any gaps or emerging measures to be addressed in the future, in particular in the development of their enhanced SEAPs.

The broad process followed by the partner cities was to:

- Review the existing city visions and targets for strategic development;
- Review the existing visions and targets for energy and emissions reduction;
- Review the process used to reach the agreed visions and targets, including the involvement of stakeholders and the engagement of political decision makers;

[1] Energy 2020 goals, http://ec.europa.eu/energy/strategies/2010/2020_en.htm; Europe 2020 strategy, http://ec.europa.eu/europe2020/index_en.htm; European Innovation Partnership on smart cities and communities, http://ec.europa.eu/eip/smartcities/

- Where necessary, revise the existing visions and targets or develop new ones, based on the outcomes of the engagement process above;
- Analyse how the agreed vision and targets for energy and emissions reduction in the city will support the ambitions of the city to reach smart city status, and feed in to the European 2020 energy and climate goals and wider Europe 2020 strategy; and
- Analyse to what extent the agreed targets are SMART (specific, measurable, achievable, realistic and time-bound).

Key findings

The table below provides a summary of the vision in each city, the targets the cities are working towards and under what timeframes, the key city documents that the visions and targets are set out in, and the broad approaches used to engage stakeholders in the development and agreement of the visions and targets.

Table A. Summary of the STEP UP cities' visions, targets and timeframes

	Glasgow	Ghent	Gothenburg	Riga
Vision	•Economic growth; •A world class city; •A sustainable city; •A city that looks after its vulnerable people; & •A learning city.	•Open, caring, wise & child-friendly city; •Connects all forces to shape the city into a liveable place, now & in the future; •Forerunner in the transition to a low carbon city; •Environmentally friendly & diversified economy that brings prosperity for everyone; •A community of responsible citizens who can grow & can count on the necessary support.	In 2050 Gothenburg has a sustainable & fair level of carbon dioxide emissions.	•"Riga – opportunity for everyone"; •Opportunity to live in a qualitative, harmonious environment; •The opportunity for oneself & one's welfare; •Riga is a green, resource saving & energy efficient city.
Targets	30% CO_2 emissions reduction from a 2006 baseline by 2020.	•European 2020 climate & energy targets have to be realised by 2019; •15% of the city's renewable energy consumption will be produced in Ghent by 2020; •The City Council has	•By 2020 the emissions of CO_2 from the non-ETS sector have been reduced by at least 40% compared to 1990; •By 2020 the use of energy in housing should have been reduced by at least	A reduction in CO_2 emissions (from 1990 levels) by: •55-60% by 2020; •70% by 2030; & •85-90% by 2050.

		to be self-sufficient for renewable electricity in 2020; & •Ghent has to be climate neutral in 2050.	30% & the use of electricity (excluding industry & transport) should decrease by at least 20% compared to 1995; •In 2035 the emissions of greenhouse gases will not exceed 2 tonnes of CO_2e per capita; & •By 2035 the consumption based emissions of greenhouse gases will not exceed 3.5 tonnes per capita.	
Timeframe	2020	2019-2020-2050	2020-2035-2050	2020-2030-2050
Key Document(s)	Strategic plan 2012-2017; Sustainable Glasgow report (2010), soon to be updated to the Energy & Carbon Masterplan (agreement expected autumn 2014) Climate Change Strategy & Action Plan (2010).	Council agreement 2013-2018; Climate plan 2008-2020, soon to be updated to the new climate plan for 2014-2019-2050 (council agreement expected December 2014).	Gothenburg 2050 – visions of a sustainable society; Climate programme (agreement expected autumn 2014).	Long term development strategy for 2030; smart city SEAP for 2014-2020 (approved July 2014).
Stakeholder engagement in the process	Workshops, online surveys, meetings, events.	Workshops, meetings, transition arenas, climate forum, interviews.	Meetings, workshops, project groups.	Public consultations, working groups, 'energy days'.

The above table shows that all four cities have different visions, but share key principles around sustainability and the move to a low carbon society. All four cities have a vision for energy which encompasses increasing energy efficiency and the share of renewables in the energy mix, and reducing CO_2 emissions, particularly in key sectors which currently make a big contribution to these emissions. The cities also all focus on fairness and equality, and the need to ensure that opportunities are available to everyone in the city.

The cities have all worked closely with relevant stakeholders to develop and agree their visions and targets, though different approaches have been taken based on past experiences and traditions, as well as the new stakeholder engagement plans developed in STEP UP deliverable D2.1 ('Stakeholder analysis and engagement plans'). This has led to the cities' visions and targets having support from a variety of stakeholders, including politicians, key sectors and citizens. However, the achievability of

the targets has not always been tested strongly in the cities, which can be attributed to the fact that the setting of visions and targets is in part a political process rather than an entirely technical or analytical one.

It is clear that in all four cities, political leaders and other decision makers are prioritising climate and energy issues, and have supported the development of SEAPs in alignment with other city plans and strategies. However, the hierarchy of strategic planning documents in some cities has given current SEAPs higher priority than in others. This highlights the importance of ensuring the enhanced SEAPs are developed in line with other city documents, and are fully accepted and supported by political and other stakeholders, in order to ensure that their ambitions are shared across the city and that full responsibility is taken for, and priority is given to, their delivery.

All cities have set CO_2 emissions reduction targets that meet or exceed the European Energy 2020 targets, but only Ghent and Gothenburg have set targets for renewable energy, and only Gothenburg has set any energy consumption targets to date. Ghent, Gothenburg and Riga are all taking a longer term view in addition to the 2020 targets, with visions and targets set for 2050. In Glasgow, the focus remains on 2020, although the city plans to set 2030 targets if the proposed European 2030 climate and energy framework is agreed. Cities have also shown that their visions and targets steer their enhanced SEAPs towards an integrated approach between energy, transport and ICT sectors, and share the European Commission's focus on smart cities in order to build on competitiveness and long term sustainability.

All four cities have defended the 'SMART' status of their targets. They view their targets to be realistic and achievable, with Ghent projecting that its 20% CO_2 emissions reduction target will be met a year ahead of schedule, and Gothenburg, Riga and Glasgow all striving to meet targets that exceed the European level targets. All cities have also put into place plans to measure and monitor progress against their targets, either on an annual or two-yearly basis. However, at the same time the cities recognise that meeting their targets will be challenging, which emphasises the need for enhanced SEAPs containing actions that are designed to effectively meet the targets.

Challenges and learning points

In this analysis, cities have identified some key challenges and learning points, including:

- Ensuring the agreed vision is shared across the city, balancing the interests of various groups for the long term benefit of a sustainable community and securing buy-in from all relevant stakeholders and sectors;

- Taking a long term view, including setting long term targets and planning to review and revise them as needed;
- Defining short term actions as balanced stepping stones to the long term targets;
- Integration with wider city plans and strategies to ensure the visions and targets are aligned with these;
- Ensuring an integrated approach is taken to meet the wider European 2020 targets on employment, R&D, education and fighting poverty and social exclusion;
- Co-ordinating and managing engagement with stakeholders and their associations, and refining existing engagement processes as needed;
- Meeting the targets – this can be a challenge in itself, especially if a clear delivery plan is not established early on;
- Managing cross-sectoral coordination to meet the targets for all sectors addressed; and
- Ensuring the necessary monitoring and measuring systems are in place to understand progress against the targets.

Key recommendations

The key recommendations that have been identified as a result of this work would benefit the STEP UP cities when they come to revise or develop new visions and targets in the future, as well as other cities that are developing and implementing visions and targets or developing SEAPs. These are:

- **Cities should build realistic visions and targets that can feasibly be met within the planned timeframes**, with an enhanced SEAP to set out a clear plan of action for how these will be delivered and how data will be acquired and analysed so that progress against them can be measured. The achievability of the vision and targets should be tested and they should serve for long term purposes where it is feasible and realistic to do so;
- **Cities should consider establishing targets for renewable energy and energy efficiency** where these do not already exist, in line with the European Energy 2020 targets and the longer term European 2030 framework if agreed;

- **Cities should develop visions and targets for energy in line with wider city strategic planning documents**, using an integrated approach to secure support and commitment from a broad range of stakeholders and maximise the potential of reaching the agreed targets;

- **Visions and targets should also be developed in line with relevant national and European strategies and targets, including those not specifically related to energy**. The Europe 2020 strategy is a good example of where measures designed to meet energy-related targets could also help meet wider targets using an integrated approach, in particular in relation to employment, R&D, education and fighting poverty and social exclusion;

- **Cities should consider, as part of discussions with stakeholders and their associations at the local or regional level, their role in reaching national and European level targets and strategies**. This could help local authorities, and national governments, participate further in the debate on the proposal for a European 2030 framework for climate and energy policies;

- **Involving and engaging a wide range of stakeholders should be built in to the whole process of defining and refining visions and targets, and developing and implementing enhanced SEAPs**, to consider their interests and resources and ensure their buy in and support;

- **Cities should continue to work to strengthen engagement with groups of stakeholders across the energy, transport and ICT sectors**, both for the enhanced SEAPs and to support the cities' progress towards smart cities status;

- **When setting visions and targets, cities should develop a plan for reviewing, strengthening and revising them at a later date, taking a long term view** and recognising that current visions and targets may not remain appropriate with changes to other factors such as the political, economic, socio-cultural or technological environment. This process should involve all relevant stakeholders in order to build shared and well-supported revised visions and targets.

Going forward, partner cities will use the knowledge and experience gained through their analysis of visions and targets to support the development of their enhanced SEAPs, identifying new measures to be implemented in the SEAPs in order to meet the targets, and continuing to engage with all relevant stakeholders to ensure the SEAPs have city-wide support and commitment.

2. Introduction to Work Package 2, 'Enhancement of city energy plans'

The role of Work Package 2 is to enhance each city's Sustainable Energy Action Plan (SEAP), by integrating in depth analysis of the existing plans and city energy systems, and selecting appropriate measures based on strategic thinking that gives a strong emphasis towards economics and stakeholder involvement. This work package works together closely with WP3, 'Development of innovative projects', to ensure the identification and delivery of high quality, high impact projects and assist with the prioritisation and integration of these projects with other city plans.

The energy actions described in city SEAPs will be difficult to successfully implement without strong support from city leaders and commitment from public and private stakeholders. By bringing multiple stakeholders and projects together it is possible to create integrated solutions that have the scope to speed delivery, enable new projects, improve economic viability, increase availability of public and private investment, maximise positive impacts and reduce deployment risks.

This work package is being delivered in each city by teams of local partners, supported by key experts and organisations in the STEP UP international partnership.

The objectives of this work package are as follows:

- Development of sustainable energy action plans that deliver greater impact based on solutions that have strong and realistic prospects for implementation;
- Development of sustainable energy action plans that promote more integrated solutions with greater efficiency and improved economic pay-back;
- Development of sustainable energy action plans that are actively supported by key stakeholders and that are aligned with their objectives;
- Development of city energy plans that are robust and can respond to changing circumstances;
- Improved implementation, monitoring and ongoing revision of city energy plans.

3. Deliverable D2.4, 'Vision and targets for each of the partner cities'

Introduction to the deliverable

Deliverable D2.4 is an analysis of each city's vision and targets for a low carbon future. It indicates how these connect to the overall city vision (including city growth and sustainable city development), as well as how they help to achieve the European 2020 energy and climate goals and other relevant targets in the wider Europe 2020 strategy. As outlined in the STEP UP Description of Work under sub-task 2.2.1, 'Defining the vision with stakeholders and their associations', through discussions on different visions with all relevant stakeholders, different interests can be mapped, resources within the cities can be better understood, and a shared vision of the city and its stakeholders can be built.

This analysis supports cities in the ongoing process of SEAP development, and at the same time indicates issues still to be resolved together with stakeholders engaged in the SEAP development process. It also recognises one of the key learnings from deliverable D2.1, 'Stakeholder analysis and engagement plan', which found that more attention should be paid in the development of SEAPs to political stakeholders, as the decision makers on the future of the cities.

As set out in the Description of Work under sub-task 2.2.2, 'Refining the vision and defining targets', based on acquired data, reviews and analysis of the cities, all relevant political and public stakeholders have been engaged in each city in the development of ambitious targets for energy efficiency and energy reduction, renewables and carbon emissions reduction, to serve for long term purposes. This helps cities ensure that the targets that are set are 'SMART' - specific, measurable, achievable, realistic and time-bound[2] - and have the full support of a broad variety of stakeholders.

This report takes into account findings and results from the above tasks, as well as key recommendations from the stakeholder analysis conducted and engagement plans produced earlier in the project (D2.1). The definition of visions and targets in the cities is one step in the process of developing enhanced SEAPs, and as such the outputs from this work will feed into later deliverables in Work Package 2, including the scenario analysis (D2.6), in which the impacts of potential future socio-economic changes on the current visions and targets are understood, and the development of the SEAPs themselves (D2.7). The approaches taken by the partners cities to develop and agree

[2] SMART method; http://en.wikipedia.org/wiki/SMART_criteria

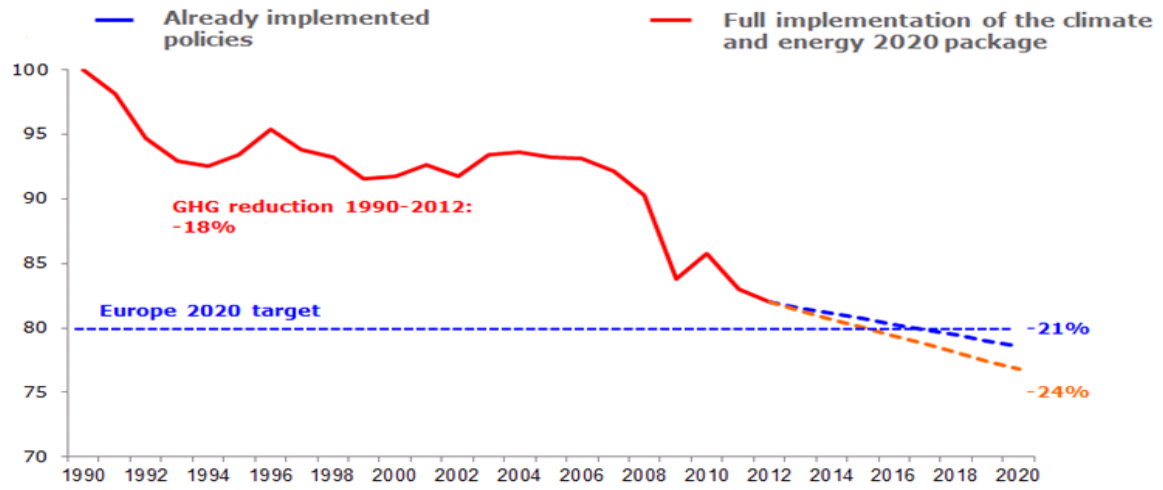
visions and targets will also be used in Work Packages 4 and 5, to share learning and experiences with companion cities and those in the wider learning network, and disseminate this more widely through the STEP UP website.

Why ambitious visions and targets are necessary

In March 2014 the European Commission published the communication 'Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth'.[3] This document provided data on the pace of implementation of the strategy, and set out recommendations for the remaining period to EU member states implementing the strategy on a national level. National level results have also been provided by the Commission and are available online.[4]

The results for greenhouse gas emissions (see Figure 1 below) show that on the current trajectory, and without full implementation of the EU climate and energy package across all member states, the 2020 target for greenhouse gas emission reductions will only just be met. However, if member states and their major cities are ambitious in their visions and targets, the reductions could be greater, at around 24% lower than 1990 levels by 2020. This highlights the need for ambitious action on carbon emissions and energy use in cities and member states across Europe.

Figure 1. EU greenhouse gas emissions 1990-2020



Source: European Commission (index 1990 = 100)

[3] European Commission, 2014, *Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth*, Communication to the European Parliament, The Council, The European economic and social committee and the committee of the regions, Brussels, 19.3.2014 COM(2014)130final/2 http://ec.europa.eu/europe2020/index_en.htm

[4] Europe 2020 in your country - http://ec.europa.eu/europe2020/europe-2020-in-your-country/index_en.htm

3.1 Method

To complete the analysis of their visions and targets, partner cities responded to questions in a template developed by the deliverable lead (see Annex C). Cities provided information on their current vision and targets for strategic development and, more specifically, climate and energy, as well as how these were developed. The links between local strategic planning and the EU 2020 climate and energy goals, wider Europe 2020 strategy, and smart cities ambitions were also analysed. The cities also reflected on their methods and approaches towards stakeholder engagement and acquiring and analysing data in the process of developing visions and targets, building on the work completed in D2.1,'Stakeholder analysis and engagement plans' (see best practice approaches in Annex B).

Work on this task started in 2013, with discussions between STEP UP project partners in workshops in Gothenburg (June 2013) and Ghent (November 2013). Following this, work was carried out unilaterally in the cities and in bilateral conversations between cities and the deliverable lead on the methods and approaches to be followed to complete the task.

The broad process followed by the partner cities was to:

- Review the existing city visions and targets for strategic development;
- Review the existing visions and targets for energy and emissions reduction;
- Review the process used to reach the agreed visions and targets, including the involvement of stakeholders and the engagement of political decision makers;
- Where necessary, revise the existing visions and targets or develop new ones, based on the outcomes of the engagement process above;
- Analyse how the agreed vision and targets for energy and emissions reduction in the city will support the ambitions of the city to reach smart city status, and feed in to the European 2020 energy and climate goals and wider Europe 2020 strategy; and
- Analyse to what extent the agreed targets are SMART (specific, measurable, achievable, realistic and time-bound).

3.1.1 The city's vision: city approaches

The cities first identified and described the strategic vision of the city (deliverable template Q1, see Annex C), and more specifically the existing visions for energy generation and use, energy efficiency

and renewables (Q2). This dual approach was taken as, whilst the focus of STEP UP is on energy planning, these plans and strategies need to be developed to align with wider city strategies in order for them to be effective and be given sufficient priority in the city.

The partners then described the agreed common understanding of the vision for energy in their city, shared between politicians and other stakeholders, in terms of how they act, co-operate and co-ordinate implementation (Q3).

3.1.2 Defining the vision with stakeholders and their associations: city approaches

Having identified the vision of the city, the cities then addressed the process followed to agree the vision (Q5), in terms of:

- How and when the process started;
- Which stakeholders were engaged and how;
- How stakeholders' views were taken on board;
- How this information was analysed;
- How agreement on the vision was reached; and
- How and when the vision was approved.

This task challenged the cities to think about how work with stakeholders is organised most effectively, how the process is set up and co-ordinated, and how to ensure that agreement on the vision is reached to the satisfaction of a wide variety of stakeholders.

3.1.3 Refining the vision and defining the targets: city approaches

With the vision established, cities then considered key features of the vision (Q6), including:

- How it will implement and help reach smart cities targets[5], Europe 2020 strategy targets[6] and more specifically the 2020 energy and climate goals within this[7]; and
- How it could potentially support the EU 2030 proposed framework for climate and energy[8], and the city's views on this proposal.

[5] Smart cities - http://ec.europa.eu/eip/smartcities/
[6] Europe 2020 strategy- http://ec.europa.eu/europe2020/documents/related-document-type/index_en.htm
[7] Energy 2020 strategy - http://ec.europa.eu/energy/energy2020/index_en.htm
[8] Europe 2030 framework proposal - http://ec.europa.eu/clima/policies/2030/index_en.htm

The cities then considered the agreed targets that have been put in place to support this vision in the city (Q7-9), specifically:

- What the targets are;
- How these targets were agreed; and
- How these targets are SMART.

By considering the Europe 2020 strategy, and the climate and energy targets within this, the cities took a broader view on their visions and were challenged to think about whether their visions support the implementation of both these strategies.

This broader approach was taken due to the key focus in STEP UP on the integrated approach towards urban energy planning and smart city development. Smart city development, including ICT, research and new technologies, is an incentive for the improvement of the business environment and development of new businesses, which in turn supports sustainable economic growth in cities. Accordingly, the other key areas of the Europe 2020 strategy, in particular education, employment and R&D, become of increasing significance when developing energy-related visions and strategies with a view to supporting wider smart city development.

More detail regarding the process used by the municipalities to establish and refine each city's energy visions and targets can be found in Annex A. How stakeholders have been engaged and involved in the process is set out in each city's section in the 'Results and Findings' below, under 'Building a shared vision of the city with stakeholders and their associations'.

3.2 Results and Findings: the cities' visions and targets

The table below provides a summary of the vision in each city, the targets the cities are working towards and under what timeframes, the key city documents that the visions and targets are set out in, and the broad approaches used to engage stakeholders in the development and agreement of the visions and targets.

Table 1. Summary of the STEP UP cities' visions, targets and timeframes

	Glasgow	Ghent	Gothenburg	Riga
Vision	•Economic growth; •A world class city; •A sustainable city; •A city that looks after its vulnerable people; & •A learning city.	•Open, caring, wise & child-friendly city; •Connects all forces to shape the city into a liveable place, now & in the future; •Forerunner in the transition to a low carbon city; •Environmentally friendly & diversified economy that brings prosperity for everyone; •A community of responsible citizens who can grow & can count on the necessary support.	In 2050 Gothenburg has a sustainable & fair level of carbon dioxide emissions.	•"Riga – opportunity for everyone"; •Opportunity to live in a qualitative, harmonious environment; •The opportunity for oneself & one's welfare; •Riga is a green, resource saving & energy efficient city.
Targets	30% CO_2 emissions reduction from a 2006 baseline by 2020.	•European 2020 climate & energy targets have to be realised by 2019; •15% of the city's renewable energy consumption will be produced in Ghent by 2020; •The City Council has to be self-sufficient for renewable electricity in 2020; & •Ghent has to be climate neutral in 2050.	•By 2020 the emissions of CO_2 from the non-ETS sector have been reduced by at least 40% compared to 1990; •By 2020 the use of energy in housing should have been reduced by at least 30% & the use of electricity (excluding industry & transport) should decrease by at least 20% compared to 1995; •In 2035 the emissions of greenhouse gases will not exceed 2 tonnes of CO_2e per capita; &	A reduction in CO_2 emissions (from 1990 levels) by: •55-60% by 2020; •70% by 2030; & •85-90% by 2050.

			•By 2035 the consumption based emissions of greenhouse gases will not exceed 3.5 tonnes per capita.	
Timeframe	2020	2019-2020-2050	2020-2035-2050	2020-2030-2050
Key Document(s)	Strategic plan 2012-2017; Sustainable Glasgow report (2010), soon to be updated to the Energy & Carbon Masterplan (agreement expected autumn 2014) Climate Change Strategy & Action Plan (2010).	Council agreement 2013-2018; Climate plan 2008-2020, soon to be updated to the new climate plan for 2014-2019-2050 (council agreement expected December 2014).	Gothenburg 2050 – visions of a sustainable society; Climate programme (agreement expected autumn 2014).	Long term development strategy for 2030; smart city SEAP for 2014-2020 (approved July 2014).
Stakeholder engagement in the process	Workshops, online surveys, meetings, events.	Workshops, meetings, transition arenas, climate forum, interviews.	Meetings, workshops, project groups.	Public consultations, working groups, 'energy days'.

3.2.1 Glasgow

3.2.1.1 Overall city vision

Glasgow City Council has both a strategic vision for the city and a vision for a sustainable city. The City Council set out its vision for Glasgow and the Council's priorities for the next five years in its strategic plan for 2012-2017, which presents a vision of economic growth and resilience for the city and its communities.[9] The plan highlighted five priority areas to drive progress and achievement in Glasgow over the next five years. These are:

- Economic growth;
- A world class city;
- A sustainable city;
- A city that looks after its vulnerable people; and
- A learning city.

[9] Glasgow's strategic plan 2012-17 - www.glasgow.gov.uk/CHttpHandler.ashx?id=14572&p=0

3.2.1.2 The vision for energy

The vision for a sustainable city was agreed in 2010 by the Sustainable Glasgow Board; a partnership which combines public and private interests across the city in order to reflect the breadth and scale of the key issues affecting the city. Partners include Glasgow City Council, University of Strathclyde, Scottish Power, Scottish and Southern Energy, Green Investment Bank, Scottish Government and Scottish Enterprise. A vision statement is included in the Sustainable Glasgow Report,[10] which was submitted to the Covenant of Mayors as the supporting document for the city's current SEAP in November 2010.

"Sustainable Glasgow will act in partnership to make Glasgow one of Europe's most sustainable cities within 10 years. Our aim is to improve the lifestyles and opportunities for Glasgow's people and businesses, enhance Glasgow's image as a leader in sustainable urban living, and to deliver this in a way that is compatible with the development of a vibrant and growing city. We will make a tangible contribution to tackling climate change through reducing Glasgow's carbon emissions by 30% within 10 years, maximise use of sustainable energy resources, and minimise Glasgow's adverse impacts on the environment.

Sustainable Glasgow will go significantly beyond achieving carbon emission reductions. Sustainable Glasgow will deliver major investment, create long term jobs, help tackle fuel poverty, support the development of new clean energy sector in the city, create new revenue streams for the public sector and communities, improve air quality, and help regenerate communities. We will help transform Glasgow's image – making it a better place to live, work, and invest. Our vision is broad – covering energy systems, energy management, waste, transportation, and behavioural change. We aim to deliver Sustainable Glasgow in a way that is both technically and financially achievable with a 10 year time frame."[11]

Glasgow has now made a political commitment to maintain the vision for energy and more specifically the 30% carbon emissions reduction target in its enhanced SEAP (the Energy and Carbon Masterplan), which is currently being developed.

3.2.1.3 The targets

[10] Sustainable Glasgow Report 2010 - www.glasgow.gov.uk/CHttpHandler.ashx?id=10159&p=0
[11] Sustainable Glasgow Report www.glasgow.gov.uk/index.aspx?articleid=4604

As described above, the Sustainable Glasgow report set out the city's target of reducing its carbon emissions by 30% (from 2006 levels) by 2020, maximising the use of renewable energy resources, increasing energy efficiency and minimising Glasgow's adverse impacts on the environment. The City Council has a similar target to reduce CO_2 emissions from its own operations by 30% by 2020 (from 2006 levels), which is set out in the Council's Carbon Management Plan.

In Glasgow the enhanced SEAP will be presented as the Energy and Carbon Masterplan, the publication of which is a political manifesto commitment of Glasgow City Council. Glasgow's enhanced SEAP will maintain the focus on meeting the city's 30% CO_2 emissions reduction target by 2020. The city has recognised the challenge of achieving this target with the existing range of actions in the current SEAP, so the need to update and enhance the plan is clear.

The enhanced plan will contain a new range of actions which, if fully implemented, should result in substantial CO_2 reductions to help close the expected gap between the projected emissions and the 30% reduction target (see Figure 2 below), including more widespread implementation of district heating, associated energy efficiency measures for existing housing stock, and further renewable energy projects across the city (such as solar photovoltaics). Key actions will be specified for each sector, aiming to reduce emissions by around 1.2 million tonnes by 2020 from 2006 levels, with key stakeholders fully engaged in the process. An annual measurement of the progress against this target will be made from 2015 onwards.

Table 2 below sets out how Glasgow's targets are SMART.

Table 2. SMART targets - Glasgow

SMART criteria	**Description**
Specific *(Is the target well defined and is it clear what is required?)*	In the existing SEAP the 30% CO_2 reduction target is the only discrete target. There are estimates of the expected energy savings and CO_2 savings of each key action.
Measurable *(How will progress towards the target be measured?)*	The 30% CO_2 reduction target is quantifiable and amounts to a reduction of 1.2 million tonnes of CO_2 from 2006 to 2020. An assessment of current progress towards this target has been carried out as part of the gap and issue analysis of the existing SEAP (summarised in STEP UP deliverable D2.2). Glasgow will measure the progress of the key actions contained in the enhanced SEAP in an annual report, which will be produced from 2015 onwards for internal control within Glasgow City Council. A monitoring report will be presented every two years and an implementation report every four years to the Covenant of Mayors.

Achievable *(Is the target achievable?)*	The 30% CO_2 reduction target was considered achievable in 2010, and data shows that Glasgow has been on target to achieve this in every year except 2007 and 2008. This target has been kept for the enhanced SEAP in 2014 as it is still considered realistic and achievable. The original 30 key actions contained in the current SEAP have been reviewed and these are now being restructured using criteria relating to finance and investment, monitoring of carbon savings and the feasibility of actions.
Realistic *(Does the City have the skills and competence to complete the target?)*	The 30% CO_2 reduction target was considered realistic in 2010 and is so far viewed as achievable. However, recent analysis carried out as part of STEP UP deliverable D2.2 (gap and issue analysis) has shown the target will most likely be missed if current trends continue and existing actions remain the same. The current and projected energy flows analysis conducted for STEP UP deliverable D2.3 highlights the major energy consumers, potential for energy generation, energy network constraints and specific sectors (buildings, industrial/commercial and particularly residential premises; and transport) that the enhanced SEAP will focus on. The findings from the D2.2 and D2.3 reports are shaping the key actions that the enhanced SEAP will include. In Glasgow's stakeholder engagement plan (see the D2.1 report), the key players for the SEAP have been identified, and a process of engaging with each of them is in place.
Time-bound *(Have deadlines been set?)*	The 30% CO_2 reduction target is time-bound (2020) and will remain as such in the enhanced SEAP.

3.2.1.4 The city's targets and the Europe 2020 strategy

Europe 2020 is the European Union's strategy for delivering smart, sustainable and inclusive growth over the period to 2020. The Strategy sets out five key targets for the EU: employment; education; research and innovation; social inclusion and poverty reduction; and climate/energy.

Glasgow is strongly supportive of the ambitions and priorities of Europe 2020 and has set specific targets to reduce carbon emissions, tackle climate change, increase renewable energy production, transition to a low carbon economy and reduce fuel poverty. Glasgow is playing a specific role in delivering some aspects of Scotland's response, for example through the International Technology and Renewable Energy Zone (ITREZ) now being developed in Glasgow city centre, which is one of the key elements outlined in the National Renewables Infrastructure Plan, and is where industry and academia are working together to meet the challenges associated with the development of the offshore renewables sector in Scotland. The Offshore Renewable Energy Catapult Centre will also be located alongside ITREZ in Glasgow.

Glasgow also plays a key role in the Scottish Cities Alliance which is promoting the concept of smart cities through a national Future Cities Development Programme designed to demonstrate how technology can make Scottish cities smarter, safer and more sustainable - based on Glasgow's experience as a UK Future City Demonstrator.

3.2.1.5 The city's targets and the European Energy 2020 targets

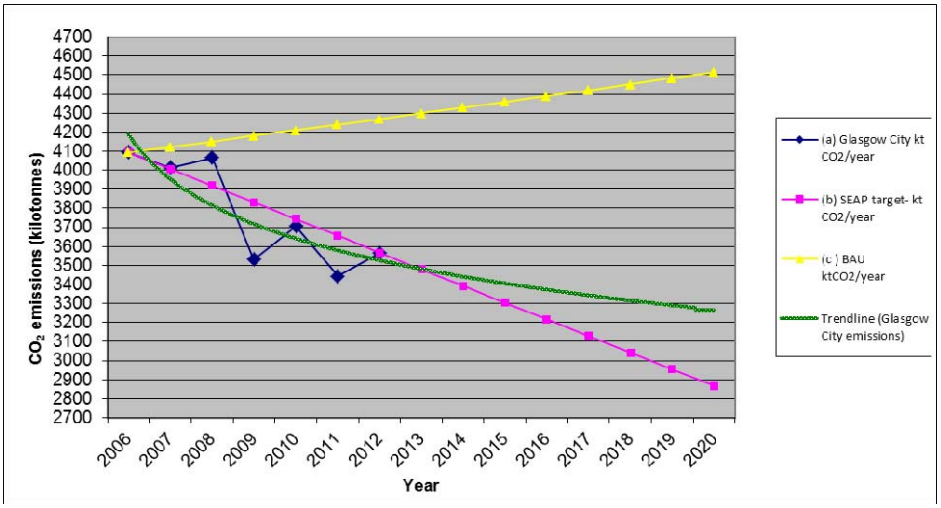
Data made available by the UK Department for Energy and Climate Change (DECC) shows that Glasgow is on track to meet the European Energy 2020 strategy target of 20% CO_2 emissions reduction by 2020.[12] However, Glasgow will find it challenging to meet its own 30% reduction target.

DECC data is initially positive, showing that Glasgow's CO_2 emissions have reduced by about 13% between 2006 and 2012 (see Figure 2 below), with yearly reductions greater than those needed to meet the 30% target by 2020, except for in 2007 and 2008. The economic downturn has had a large impact upon this trend, but the Council's own carbon management activities, including building rationalisation, have also contributed. The Council's figures show that CO_2 emissions from industrial and commercial use of energy were the main reason for the higher figures in 2007 and 2008, which just preceded the global recession.

However, a trend line for emissions in the city drawn from 2006 to 2020 - taking into account the actions included in the SEAP - compared to the SEAP's 30% target (line (b) on Figure 2), shows that the city meets its target up to 2013, but from 2014 onwards a gap is likely to emerge. It is estimated that the sum total of measures in the existing SEAP will leave the city about 13.7% (roughly 390,000 tonnes of CO_2) short of achieving its 30% reduction target by 2020.

[12] European Commission, 2010, *Energy 2020 - A strategy for competitive, sustainable and secure energy*; http://ec.europa.eu/energy/strategies/2010/2020_en.htm

Figure 2. Glasgow's CO_2 emissions since 2006 and projections to 2020



In terms of the Energy 2020 strategy target of a 20% increase in energy efficiency by 2020, the number of households where insulation measures have been successfully applied in the city has exceeded 7,500 over the past three years, reducing carbon emissions by 117,000 tonnes of CO_2. Government funding has served as a lever to attract additional financing from energy companies under the Carbon Emissions Reduction Target (CERT[13]) and Community Energy Savings Programme (CESP[14]) schemes, which have been the main drivers behind the delivered results.

In terms of the target for a 20% increase in renewable energy by 2020, since the SEAP was produced in 2010, the Cathkin wind turbine[15] - a single 3MW wind turbine which will generate around 7.3GWh of renewable energy every year - has been developed in the south of the city. It will produce enough electricity to power almost 20% of the city's street lighting. This is the first commercial wind turbine in Glasgow and is expected to cut the city's carbon emissions by 900 tonnes per annum. Though there is no target for renewable energy generation in the existing SEAP, the enhanced SEAP will set out a number of targets to generate a significant amount of local renewable energy by 2020.

3.2.1.6 The city's targets and European smart cities ambitions

The idea of a smart city is one that encompasses many features of a city while highlighting the growing importance of Information and Communication Technologies (ICT) and social and

[13] Carbon Emissions Reduction Target (CERT), www.parliament.uk/business/publications/research/briefing-papers/SN06196/carbon-emissions-reduction-target-cert

[14] Community Energy Savings Programme (CESP), www.parliament.uk/business/publications/research/briefing-papers/SN06197/community-energy-savings-programme-cesp

[15] Cathkin Wind Turbine, www.eveningtimes.co.uk/news/5m-city-turbine-will-be-visible-around-world-125182n.21157020

environmental capital in profiling the economic competitiveness of the city. Glasgow is taking forward this vision of the city; one which is both smart and sustainable environmentally, while following an integrated approach to strategic city development.

Glasgow City Council is participating in the UK Technology Strategy Board (TSB) Future Cities Demonstrator project. This is showing how public, private and academic sectors can combine expertise and use cutting-edge technology in areas such as public safety, transport, health and sustainable energy, to enhance day-to-day life in the city. The Future Cities Demonstrator is addressing a number of relevant challenges, including energy conservation and generation, greater use of green technology such as white street lighting, air pollution, and the integration of active transport (walking and cycling) routes with public transport networks. There are no specific targets attached to these initiatives, but they aim to deliver discrete projects to specific timescales. Partners in the project include Glasgow City Council, Glasgow Community and Safety Services, Sustainable Glasgow, health providers, energy suppliers and universities.

3.2.1.7 The city's views on the proposed Europe 2030 climate and energy framework

Glasgow City Council submitted its views to Eurocities[16] on the proposed Energy 2030 framework in February 2014. The Council's view is that the proposed 40% greenhouse gas emissions reduction target (from a 1990 baseline) is likely to be appropriate but will require caps on emissions from EU Emissions Trading Scheme (EU ETS) sectors, emissions cuts from sectors outside the EU ETS will need to be shared between member states, and these will also need to be agreed between the member states. The city has also set out that the framework target, when agreed, needs a clear implementation plan incorporating the key sectors which will contribute to the target and stating how this will be done, and that this needs to be supported by national energy and climate plans.

Glasgow supports the proposed target of a 27% increase in renewable energy in Europe. Approximately 40% of gross electricity consumption in Scotland in 2012 was met by renewable energy sources, and Scotland is on track to meet its interim target of 50% renewables by 2015. The enhanced SEAP for Glasgow will have a pipeline of renewable energy projects, which will come on stream prior to the 2020 target and will be calculated as an increase in installed capacity in the city.

Glasgow also agrees with the European Parliament's proposed target of a 40% increase in energy efficiency by 2030. Improved energy efficiency is a key part of any sustainable energy system; and

[16] Eurocities - the network of major European cities. Members are the elected local and municipal governments of major European cities, www.eurocities.eu/eurocities/about_us

the UK is particularly poor at energy efficiency compared to other member states. The proposed member states' national energy plans will have to cover energy efficiency to meet this target, and this will be a strong theme in the enhanced SEAP for Glasgow.

3.2.1.8 Building a shared vision of the city and its stakeholders

Until recently stakeholder engagement has been made indirectly through other projects, partnerships or schemes, although some key private and academic stakeholders have been continually engaged through their participation in the Sustainable Glasgow Board.

From analysis carried out by the Glasgow STEP UP team, it became clear that when Glasgow's SEAP was approved by the Covenant of Mayors in 2010, some key actions were not fully implemented, and initially there was a lack of direct engagement with some stakeholders. Recognising this, meetings, workshops and other events were held between March and October 2013, helping the STEP UP team to understand stakeholders better, and to identify the critical parties for the successful delivery of the enhanced SEAP in Glasgow (the Energy and Carbon Masterplan).

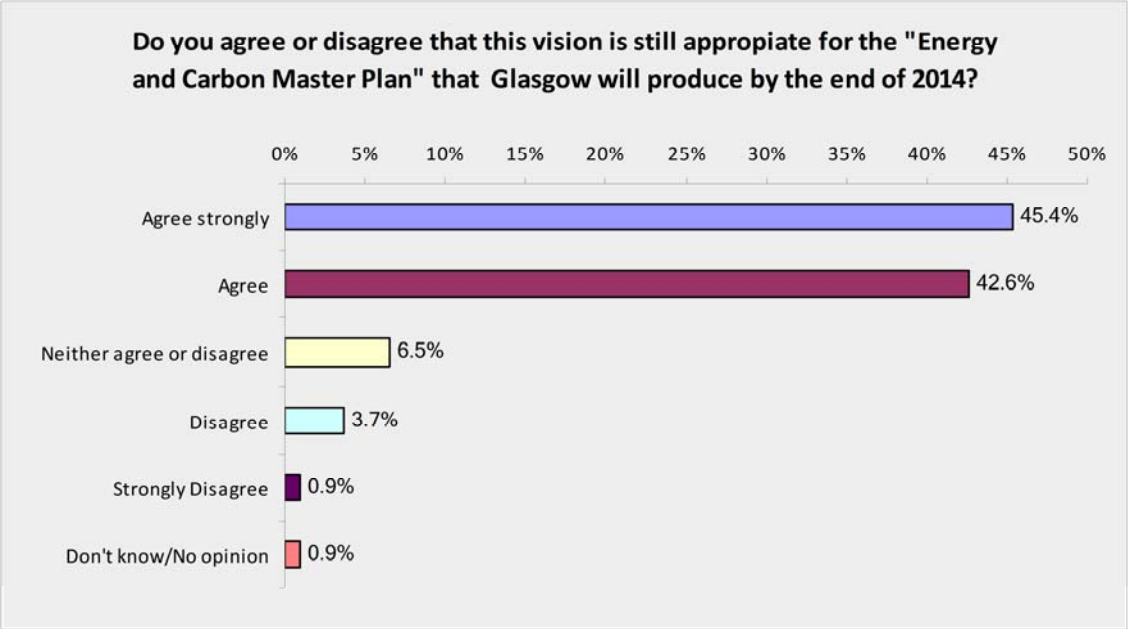
Glasgow is now involving stakeholders in the development of the enhanced SEAP within the context of the multi-stakeholder Sustainable Glasgow Board and the Glasgow Community Planning Partnership, both of which are being consulted during the process. The process is being guided by the analysis of stakeholders and the stakeholder engagement plan carried out as part of the earlier STEP UP deliverable D2.1, 'Stakeholder analysis and engagement plan'. Stakeholders in particular sectors are also being engaged directly, especially those which had limited involvement in the existing SEAP and those which have been prioritised as key players for the development of the enhanced SEAP.

In particular, the stakeholder analysis reflected the importance of public and private sector economic interests, including Glasgow's economic leadership, investment organisations such as the Green Investment Bank and Scottish Futures Trust, commercial organisations, the transport sector, further and higher education, energy suppliers, and public sector organisations such as the NHS.

In order to establish a baseline of stakeholder views and to begin to develop stakeholder engagement in the enhanced SEAP, the City Council consulted a wide range of stakeholders across the city, including representatives from priority sectors. Over 200 stakeholders were invited to participate between December 2013 and January 2014, and 125 responded. Questions were asked on issues such as the city's overall vision, CO_2 reduction targets, the vision statement for energy, and

the SEAP development process. The response of the stakeholders regarding the vision is presented in Figure 3.[17]

Figure 3. Glasgow's vision statement – stakeholder survey (January 2014)



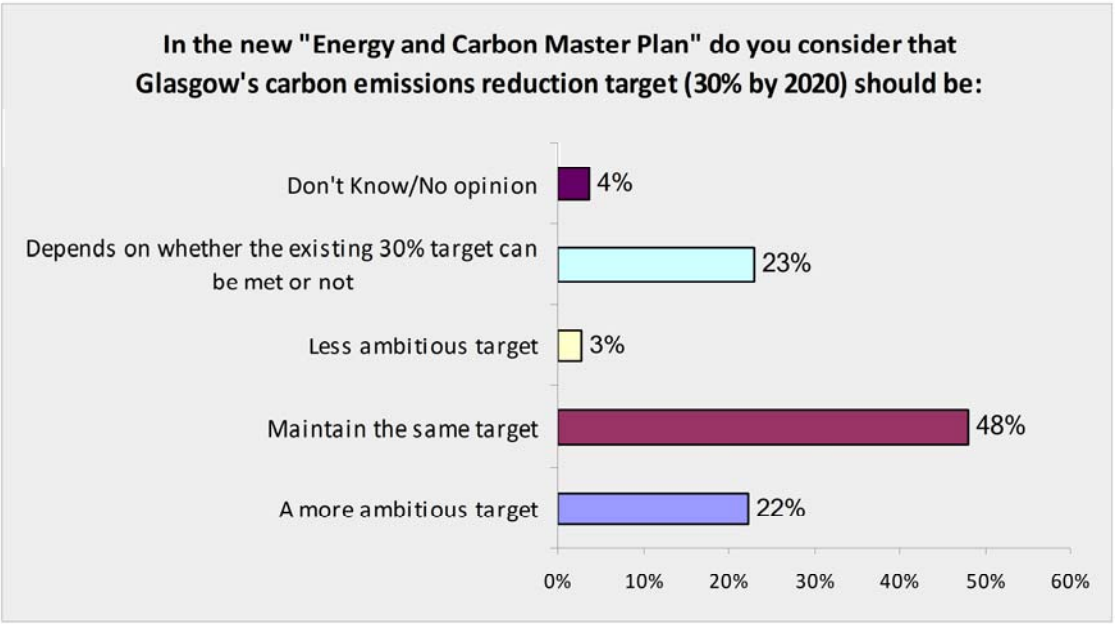
Source: Glasgow City Council, LES, STEP UP team.

The results show that in terms of the appropriateness of the current vision for Glasgow for the new SEAP, 88% of respondents 'agree' or 'agree strongly' that it remains appropriate to take forward in the enhanced SEAP, and only a small minority (4.6%) disagree or strongly disagree. Therefore, the stakeholder consultation helped the city to understand that maintaining the current vision in the enhanced SEAP will have the support of local stakeholders.

When asked about the 30% carbon reduction targets (see Figure 4), the results show that 70% of respondents would either choose to maintain the same target or think that a more ambitious target is needed. However, almost a quarter of respondents felt that this depends on whether the existing target can actually be met. These observations demonstrate to the City Council that there is sufficient support for the 30% carbon emissions reduction target by 2020 to be kept in the enhanced SEAP.

[17] Glasgow's stakeholder survey and results are available on the STEP UP website, www.stepupsmartcities.eu/ViewNews/tabid/3242/articleType/ArticleView/articleId/2940/Glasgow-City-Council-holds-successful-Stakeholder-Survey.aspx

Figure 4. Glasgow's 30% CO_2 reduction target – stakeholder survey (January 2014)



Source: Glasgow City Council, LES, STEP UP team.

Further attention is now being focused on the engagement of each of the priority sectors in turn, including transport regulators, transport operators, and citizens' and community groups.

The stakeholder survey was followed in April 2014 by a citizens' survey designed to provide citizens with an opportunity to have their say on energy, transport, green events and carbon reduction measures in Glasgow. This survey sought to specifically engage Glasgow's citizens about their individual energy use and environmental concerns. The results (from 500 respondents) were that more than 50% of respondents think that energy efficiency and waste/recycling are the most important aspects of Glasgow's green agenda.

3.2.2 Ghent

3.2.2.1 Overall city vision

Ghent's city vision was confirmed in the Council agreement 2013-2018:

"Ghent is an open, caring, wise and child-friendly city. It connects all forces to shape the city into a liveable place, now and in the future. In a creative way Ghent wants to be forerunner in the transition to a low carbon city. We build further to an environmentally friendly and diversified economy that brings prosperity for everyone. So we develop us as a community of responsible citizens who can grow and can count on the necessary support."

There are nine agreed main strategic targets attached to this vision:

1. Ghent stimulates its citizens to the maximum to develop themselves and gives them equal opportunities for social improvement;
2. Ghent will become carbon neutral and energy-independent by placing a maximum focus on energy reduction and on local sustainable and renewable energy production;
3. Ghent opts for sustainable modes of transport in terms of accessibility, liveability and safety;
4. Ghent is a pleasant and affordable residential town for all residents with attractive public green space where it's easy to encounter;
5. Ghent employs its creativity and available space in an optimal way for a diversified and sustainable economy and industry, in which talent, entrepreneurial spirit, labour and employment are being encouraged;
6. Ghent is a reference in the field of education and culture by its pioneering role as a learning and creative city;
7. Ghent is a safe, healthy and liveable city by the balanced commitment to prevention, care and law enforcement;
8. Ghent addresses its citizens and other interested parties on their commitment and solidarity and gives them the desire to make and experience the city together; and
9. Ghent is active in a wide and layered network and organises its services in an efficient manner.[18]

3.2.2.2 The vision for energy

The city's vision for energy is incorporated in the overall vision, set out above, which states that "Ghent wants to be forerunner in the transition to a low carbon city." Concrete targets in relation to energy have also been set, as detailed below.

3.2.2.3 The targets

The agreed energy targets in Ghent are as follows:

- European Energy 2020 targets have to be realised by 2019;

[18] Press release city of Ghent, 22/2/2013, www.gent.be/eCache/THE/2/171.html

- 15% of the city's renewable energy consumption will be produced in Ghent by 2020;
- The City as an organisation has to be self-sufficient for renewable electricity in 2020 (as set out in the City's Energy Policy Note for own buildings and public lighting 2013-2020); and
- Ghent has to be climate neutral in 2050 (minimum 80% emissions reduction).

Additional targets are under discussion and will be reconfirmed with the new climate plan for 2014-2019-2050 (expected to be agreed in December 2014). These are likely to relate to economic benefits, fuel poverty, health, liveability, waste, and modal shift for transport use, amongst others.

Table 3 below sets out how Ghent's targets are SMART.

Table 3. SMART targets - Ghent

SMART criteria	Description
Specific *(Is the target well defined and is it clear what is required?)*	The targets are specific, as set out above. Energy 2020 targets have to be reached in 2019.
Measurable *(How will progress towards the target be measured?)*	CO_2 monitoring is carried out every two years. Indicators like CO_2/person, installed Wp photovoltaic energy per person for renewables, and the Green capital Award[19] will be used
Achievable *(Is the target achievable?)*	Calculations of several scenarios, based on stakeholder input and criteria agreed with them, have been made to help the city understand whether the targets are achievable. The selected scenario used for the enhanced SEAP keeps a balance between CO_2 reduction, cross sector win-wins, social and economic factors and the City's budget. Under this scenario the CO_2 reduction targets are feasible.
Realistic *(Does the City have the skills and competence to complete the target?)*	As a local authority alone, Ghent is not able to meet the target. In order to address this, Ghent started the Climate Alliance, a cooperation between the City Council and its stakeholders. The process of co-creation of the vision and targets has been run with a view to establishing co-implementation of the SEAP. Important stakeholders like Port of Ghent, social housing company Woningent, are also setting similar targets.
Time-bound *(Have deadlines been set?)*	EU Energy 2020 targets should be reached by 2019. By 2050 Ghent has to be climate neutral.

[19] European Green Capital Award - http://en.wikipedia.org/wiki/European_Green_Capital_Award

3.2.2.4 The city's targets and the Europe 2020 strategy

The EU 2020 strategy is a long term strategy towards a strong sustainable and social economy with substantial employment. In order to reach that goal several key issues are stressed: more research and development, more employment, more green economic growth, more social inclusion, and lifting the level of education. The City's energy targets and integral council agreement 2013-2018 align with the European 2020 strategy.

Together with Flanders, Ghent has chosen to switch to an innovation-driven economy, based on the valorisation of available knowledge. In this growth strategy, creativity and entrepreneurship are important conditions for competitiveness. Investments in the application of knowledge and innovation, in their broadest sense, are required to ensure sustainable growth and job creation.

The City has an enormous, fast-growing potential in its research facilities which can lead to new practices and technologies. Ghent currently boasts 13 world class research centres and science parks that are currently in development will create new space for research in the future. As a university city Ghent supports research and development strongly, especially the links with industry. This support has helped to create, for instance, Ghent Bio Energy Valley (GBEV) and the Bio Base Europe pilot plant (www.bbeu.org). Ghent Big in Creativity (Gent BC) was created in 2008 (www.gentbc.be) to close the gap between knowledge and businesses.

Green economic growth is very important for Ghent. In 2010, the Port of Ghent launched a Strategic Plan 2010-2020 for the harbour area aiming to increase energy efficiency by 20% by 2020. The Port of Ghent also focuses on integrated sustainability and has an ambition to become an example of Corporate Social Responsibility within the European port scene. This plan formulated targets but not detailed actions; however, in the new SEAP details of their action plan are included. The new SEAP pays special attention to businesses outside the harbour area and tertiary sector, with tailor made actions due to the importance of this sector in terms of CO_2 reduction. The purpose of the actions is to strengthen the corporations, help them to become more future proofed for energy and safeguard employment.

Employment is a particularly important issue because although Ghent has many jobs available, there is still a relatively high level of unemployment in the city. Special attention is also needed for newcomers as Ghent has a growing amount of ethnic cultural minorities and several of these minorities face substantial problems in finding a job. The mission of the Council stresses the link between education and the market. Strong efforts are made to bring education and entrepreneurs closer to each other through information days, joined projects, and the adjustment of bachelor and

masters classes at the university. This mission is also translated into energy related actions. For several years the University of Ghent and several education institutions have cooperated with the City to balance their educational and research targets with the climate targets.

Poverty in general is increasing, with indicators used to estimate the amount of poverty in Ghent showing an increase of poverty between 2008 and 2010. Two essential causes are defined: households have more expenditure relative to income (especially on energy) and the risk of poverty is higher for ethnic cultural minorities. To link poverty and energy the new SEAP focuses on actions for lower incomes and reserves the majority of the available budget for these groups. In addition, the focus on more renewables fits with this picture because it adds to the growing energy independency of households.

3.2.2.5 The city's targets and the European Energy 2020 targets

Ghent has set itself the target of attaining the Energy 2020 targets by 2019, a year ahead of schedule. Ghent plans to maximise renewable energy sources in its territory, but analysis of energy use and renewables potential shows that it is not possible to produce enough renewables on Ghent's territory to meet the needs of all, or even any, key sectors. Theoretically, 70% of Ghent's households could be provided with locally produced renewable energy, but it is likely that this target will not be reached for all sectors in 2020. In particular, Ghent recognises that the city has limited green and open space for wind energy or local biomass. Cooperation with the region around Ghent will be necessary to reach the 2050 targets. However, public buildings and public lighting are on schedule and have met the Energy 2020 renewable energy targets since 2008 for electricity. According to CO_2 monitoring in the new SEAP of Ghent, the city still has to bridge a gap of a 10.5% reduction in CO_2 to meet the 2019 target.

The city's vision is very ambitious but there is a clear framework for policy and targets for several city services. Climate has been put on the agenda of several services and the Council has provided a significant budget for transport, green and energy measures for the coming five years (until 2019), in order to realise the city's targets. The agreed vision, actions and budget show that the Council takes the ambition to realise the EU targets in 2019 seriously, and also that the Council takes stakeholders' input on board and acts accordingly.

3.2.2.6 The city's targets and European smart cities ambitions

Ghent aims to be a liveable, smart city. The Council defined many challenges in its council agreement declaration like housing, climate change and immigration; battle against poverty and accessibility of education and work; safety; care for a positive and sustainable economic climate; and finally the

involvement of the inhabitants in the city. The Council defined 800 actions to meet those challenges and aims for a social, ecologic and enterprising city, as formulated in the vision and the strategic targets (see 3.2.2.1).

A city can be defined as 'smart' when investments in human and social capital, in transport and modern (ICT) communication infrastructure fuel sustainable economic development and a high quality of life, with a wise management of natural resources, through participatory action and engagement. The targets the City Council has defined focus on those components. Even if smart is seen as an integrated focus on ICT, transport and energy, Ghent wants to meet these challenges. Action 19.8 explicitly stipulates that Ghent must adopt the European local digital agenda and become a smart city. Moreover, the city should become a living lab.

As the targets are everyone's responsibility, the Council supports more bottom-up involvement, co-creation and co-implementation. The city sees that this could be the right way to mobilise inhabitants to participate not only in the future development of the city, but first to take responsibility for their own capacity and knowledge building in order to be a part of the competitive environment of the city as well as building a sustainable environment for future generations.

3.2.2.7 The city's views on the proposed Europe 2030 climate and energy framework

Ghent's approach to review this proposal is to look at how the proposal's initiatives will help the city towards its 2050 goals. The target of 40% CO_2 reduction in 2030 fits with the 2050 climate neutral target of Ghent, but no investigation has yet been done as to whether this is feasible. Research has showed that a CO_2 reduction of 85% is technically feasible in 2030 if the steel sector is excluded. This research only investigated technical solutions and no system changes, or the impact of behaviour change, and suggested that a yearly additional cost of more than €330 million would be required to meet the target through technological solutions. Further research is necessary to know the organisational, financial and legal impact of -40% in 2030 since a local authority does not have the power on its own to guarantee this outcome.

3.2.2.8 Building a shared vision of the city and its stakeholders

Through various 'transition arenas' formed by the City Council, in which stakeholders work together to create visions and possible transition paths for the future in areas such as climate and mobility, stakeholders have been able to shape the Council's vision and agreement for 2013-2018 as well as the city's SEAP. Representatives of the Deputy Mayor and the Deputy Mayor of Environment, urban planning and living have been involved in the arenas. The different focus of each member has helped stakeholders to link many themes together.

As this transition management approach is intense and has had significant impacts on policy in the past, the City decided that the involvement of stakeholders for the new SEAP should build further on these earlier experiences (set out in more detail in Annex A), maintaining the current transition management drive but not forming a new arena which would risk being a re-run of the previous arenas.

The STEP UP project team in Ghent is now working towards an enhanced SEAP with concrete pilots involving stakeholders. The team has recognised that it is important to learn from, and build on the past, by using new methods and networks to engage different stakeholders. Building on previous outputs, it was necessary to fine tune the vision, criteria, transition paths and actions, and to involve stakeholders in order to:

- Receive input and correct data;
- Discuss the criteria for selection between potential measures (quantitative and qualitative);
- Build support for combinations of measures in certain scenarios; and
- Activate stakeholders to see their role (particularly those stakeholders with leverage to change things).

To get stakeholder input on what the detailed vision should be and what should be included in Ghent's enhanced SEAP, workshops were held in 2013, on:

- Cross-sector opportunities with VITO[20] experts, to shape stakeholder workshops and understand how to find win-wins between different themes;
- Cross-sector opportunities with stakeholders, including a discussion on challenges, visions and potential new projects for Ghent;
- Visions for Ghent with stakeholders, including how the City communicates its vision and SEAP and how to scale up action while at the same time creating space to allow for experiments;

[20] VITO – 'Vision on Technologies', an independent and customer-oriented research organisation. VITO provides innovative technological solutions as well as scientifically based advice and support in order to stimulate sustainable development and reinforce the economic and social fabric of Flanders;
www.vito.be/EN/HomepageAdmin/Home/Organisatie/Profiel/Pages/profiel.aspx

- Scenarios for the SEAP, including a discussion on the guiding principles that should help to make policy decision for the SEAP and different scenarios based on different city visions;
- Mobility, focusing on activities that rely less on transport, a sustainable modal split and increased efficiency of transport; and
- Economic benefits of the SEAP with economic experts, specifically on how to include these benefits in the vision and the SEAP itself.

In addition, interviews on the role of a local authority in the SEAP were also held, with:

- Okra, an organisation for elderly people focusing on retrofit and sustainable living;
- The Conference of Cities, on the role of local authorities in the realisation of EU targets;
- The advisory board for housing, with stakeholders and social organisations regarding their input to the city vision and SEAP targets;
- The advisory board for the environment, with stakeholders and environmental organisations regarding their input to the city vision and SEAP targets; and
- Business representatives and sector organisations in the climate working group for energy efficiency in SMEs to understand their vision and possible actions.

Data gathering took into account a broad range of sources, including surveys of different departments and knowledge centres, existing city monitoring and maps, and surveys on renewable energy potential, fuel poverty and other key focus areas.

The workshops, interviews and meetings helped the City to identify the instruments required to help shape the vision and support policy making (for example, a GIS map showing zones with potential fit for district heating). The main points where there was a common understanding were putting a focus on bottom-up action and cross sector win-wins, and giving the SEAP a strong social and economic focus. The process also helped to define the focus of the new actions in the SEAP, with priority areas established by politicians and stakeholders including:

1. Households: supporting vulnerable (gross income of 29,000 Euros or less) and 'modal' households (those with a gross income of 40,000 Euros or less for singles or 57.000€ for couples) to tackle poverty and improve the efficiency of their homes, and tailor made approaches to encourage more prosperous households to invest in making their homes more energy efficient;

2. Transport: focusing on living streets (reshaping street function by making it car free), liveable districts (eg. modal shift, stimulating local shopping, any slow transport within the city may not take longer than 30 minutes) and a connected city (e.g.cooperation with neighboring local authorities to avoid unnecessary incoming transport and encourage modal shift) ; and
3. Businesses: support for businesses to find economically feasible solutions, including tailored guidance for SMEs and the creation of ESCOs to support them, and space for experiments and pilots.

There has been a strong integration of sustainability in Ghent's policies and actions, with the 3 P's (planet, profit/prosperity and people) as the foundations of many of these actions. Policy documents of various Deputy Mayors are currently being developed and are in the process of being politically approved. Each of those policy documents contain parts of the SEAP, which shows the SEAP is being fully integrated across city plans and strategies.

3.2.3 Gothenburg

3.2.3.1 Overall city vision

In 2002 Gothenburg published the city's long term vision, 'Gothenburg 2050 – visions of a sustainable society'.[21] The vision document contains statements on energy, transport, environment and wider issues influencing the quality of life of Gothenburg's inhabitants and guests.

3.2.3.2 The vision for energy

Gothenburg has agreed on twelve local environmental quality targets. The climate target for 2050, approved by the City Council in 2008, states that "In 2050 Gothenburg has a sustainable and fair level of carbon dioxide emissions." This long term visionary target is the foundation of Gothenburg's energy and climate related strategies and programmes.

The visionary target has four milestone CO_2 emissions and energy use targets, for 2020 and 2035. These are set out in section 3.2.3.3 below. The 2035 targets were discussed and adopted by the City Council in Spring 2014. The 2020 targets were adopted in 2008. In order to achieve the vision and milestone targets Gothenburg has developed several strategies and programmes:

Climate Programme (proposed, decision due in autumn 2014): This contains 24 strategies that describe the pathways towards reaching the visionary climate target for 2050, focusing on energy

[21] Gothenburg 2050 – Visions of a sustainable society, www.goteborg2050.se/pdf/English_version_02.pdf

efficiency, conversion to renewable energy and reduced climate impact from transport and the consumption of goods and services. The proposal for the Climate Programme has been sent for consultation to all municipal committees in the city.

Vision for the RiverCity (Vision Älvstaden): This was adopted in 2012 and states that "RiverCity Gothenburg will be open to the world. It will be inclusive, green and dynamic. It will be designed in a way that connects the whole city, embraces the water and reinforces the regional centre. Success in this endeavour requires openness, collaboration, knowledge development and strong leadership."

The Vision provides guidance on how RiverCity Gothenburg can be developed sustainably, reinforcing both the city and West Sweden. Gothenburg is facing changes in the global economy, increasing socio-economic differences and a changing climate. Rising water levels and extreme weather mean that a more integrated approach to city development and planning is needed. The RiverCity vision includes strategies for how to build efficient and flexible systems for renewable energy and transport, climate adaption to protect the city from rising water levels, and development of the city to strengthen Gothenburg's role as the core of West Sweden.

Energy efficiency strategy: This was initiated as a result of a national energy efficiency programme which ran from 2011 to 2014. The programme aimed to help municipalities reduce energy use in housing and transport, providing support for work on energy efficiency. At the start of the project a strategy was formulated to reduce energy use in municipally owned buildings and the city's transport. The targets and the strategy have since been adopted by the City Council.

Urban Development 2035: The City of Gothenburg has recently developed three strategic documents which, along with the Vision for the RiverCity, set the direction for Gothenburg to become a city that offers an easier everyday life for more people in a green and vibrant city with a lively business community. The common time horizon for the strategies is 2035, at which point Gothenburg is expected to have 150,000 more residents and 80,000 more jobs, as well as being the core of a labour market region with 1.75 million residents. The Comprehensive Plan adopted in 2009 is the overarching policy document for the city's land use and was the common starting point for the strategies:

1. Strategy for development planning 2035 (adopted January 2014): This shows which sites have particularly good prospects for sustainable urban development, giving residents easier access to amenities by making the city even denser. The strategy focuses on the city centre and the surrounding urban area which has good public transport links and is where many of the city's

inhabitants live. The strategy provides for possible expansion, adding approximately 45,000 to 50,000 new homes.

2. Transport Strategy for a close city (adopted February 2014): This shows how traffic needs evolve when more people live, work, shop, study and meet in the city. Under the strategy, transport systems and routes in the city will be made easier, the city environment will be attractive and contribute to a rich urban life, and Gothenburg will be world leading in efficient and climate friendly cargo handling.

3. Green Strategy for a dense and green city (adopted February 2014): This shows how Gothenburg can remain and further develop into a city with considerable green qualities, from both a social and ecological perspective, whilst also becoming denser. It shows what qualities there should be in the future dense green Gothenburg and how the city will work to achieve them.[22]

3.2.3.3 The targets

The milestone targets for climate and energy within Gothenburg's 2050 climate vision are as follows:

- By 2020 the emissions of carbon dioxide from the non-ETS sector in Gothenburg have been reduced by at least 40% compared to 1990;
- By 2020 the use of energy in housing should have been reduced by at least 30% and the use of electricity (excluding industry and transport) should decrease by at least 20% compared to 1995;
- In 2035 the emissions of greenhouse gases from the geographical area of Gothenburg will not exceed 2 tonnes of carbon dioxide equivalents per capita; and
- By 2035 the consumption based emissions of greenhouse gases will not exceed 3.5 tonnes per capita in Gothenburg.

The targets in the Climate Programme (due to be approved by the City Council in autumn 2014) are as follows:

1. **In 2030 all district heating is produced from renewable energy sources, waste incineration or industrial excess heat**. Currently, the district heating in Gothenburg originates from

[22] Link to the strategies: http://goteborg.se/wps/portal/enheter/projekt/stadsutveckling-2035

industrial processes, heat from waste incineration, natural gas combined heat and power production and oil.

2. **By 2030 the total use of primary energy sources for electricity and heat does not exceed 31 MWh per inhabitant**. This means a reduction of about 10% compared to 2011. The target concerns the use of electricity and heat in industries, residential buildings and commercial buildings, and the entire production chain is considered. Reduced use of electricity is a priority.

3. **In 2030 at least 500 GWh of renewable electricity and 1200 GWh of biogas is produced in Gothenburg**, up from 80 GWh (from wind power) and 130 GWh respectively in 2012. The target concerns production in the geographical area of Gothenburg and production owned by the city of Gothenburg in other municipalities.

4. **The carbon dioxide emissions from road transport in the geographical area of Gothenburg will decrease by at least 80% by 2030 compared to 2010**. This target is adapted from the national road transport ambitions formulated by the Swedish Transport Administration. To reach the target, road transport must decrease overall and fossil fuels need to be replaced by renewables.

5. **By 2030 the carbon dioxide emissions from shipping in the geographical area of Gothenburg will have been reduced by at least 20% compared to 2010**. This target includes commercial shipping of goods, cruise ships and ferries, public transport and transport to and from Lake Vänern.

6. **Climate impact from air travel by the inhabitants of Gothenburg will be reduced by at least 20 percent by 2030 compared to the year 2012.** To achieve the target, it is crucial that the distance travelled per capita does not increase. Under the current trend, there is a doubling of the air travelling every fifteen years and to reach the target, the trend needs to change. Development of new technology is important, but in the short term it will not give enough effect on emission levels to compensate for increased travelling and reduce overall emissions from aviation. The challenge is great as the city organisation has limited ability to influence the development.

7. **By 2030 the climate impact of food consumed in the city will have been reduced by 40% compared to 2010**. This originates from production, transport and waste disposal, and foods with high climate impact include red meat and dairy. The city provides food for various organisations, including schools, kindergartens and retirement homes.

8. **The climate impact from purchases of materials should decrease, and a target for 2030 will be set before 2018**. The city consumes large amounts of materials that cause greenhouse gas emissions, and this is currently not monitored. The City aims to find models for calculating the current climate impact and setting a target.

9. **By 2030 the amount of household waste per capita in Gothenburg will have been reduced by 30% compared to 2010**, including household waste, bulky waste, food waste and recycled waste. The amount of household waste is an indicator of consumption.

These targets sit under the 24 strategies in the Programme, with a number of them falling under more than one strategy.

Agreed targets in the Energy Efficiency Strategy are as follows:

- By 2014 energy use (kWh/square metre) in commercial and residential premises owned by the city will have been reduced by 7% compared to 2009;
- By 2020 energy use (kWh/square metre) in commercial and residential premises owned by the city will have been reduced by 15% compared to 2009;
- By 2014 the use of energy in the city's own transport has been reduced by 3% compared to 2009; and
- By 2020 the use of energy in the city's own transport has been reduced by 7% compared to 2009.

Table 4 below sets out how Gothenburg's targets are SMART.

Table 4. SMART targets - Gothenburg

SMART criteria	Description
Specific *(Is the target well defined and is it clear what is required?)*	As can be seen above, all targets, including those in the Climate Programme, the energy efficiency strategy and the milestone targets, are well defined with clear ambitions and deadlines for completing them.
Measurable *(How will progress towards the target be measured?)*	All environment quality targets are monitored and measured annually in the annual Environment Report made by the City's Environment Administration. In terms of the Climate Programme, energy use, energy production, transport and waste are monitored and measured by the city already and therefore should not present any difficulties going forward. The consumption targets are new and the methods for monitoring them need

	to be developed further. The Energy Efficiency Strategy targets are measurable and are monitored annually.
Achievable *(Is the target achievable?)*	By setting climate related targets for 2020 and 2035 as milestones towards the 2050 target, this helps the city keep track of progress and make sure the overall climate target for 2050 is achievable.
Realistic *(Does the City have the skills and competence to complete the target?)*	The City of Gothenburg recognises it has a long way to go to reach the overall target of sustainable and fair CO_2 emissions in 2050, so the Climate Programme has been developed in order to make this possible. Some of the sub-targets in the programme are harder to reach than others, especially those that require intervention on a national level (such as the transport target) or those that require behavioural changes (such as the consumption targets). Other targets are seen to be realistic, especially those that the City can influence completely locally such as district heating, energy efficiency in municipal buildings or the new production of renewable energy. The City of Gothenburg considers the milestone targets and the energy efficiency strategy targets to be realistic.
Time-bound *(Have deadlines been set?)*	The milestone targets are time-bound (2020 and 2035), and are seen as interim deadlines to keep progress on track to meet the 2050 target. The Climate Programme targets are time-bound for 2030. The Energy Efficiency Strategy targets are time-bound for 2014 and 2020.

3.2.3.4 The city's targets and the Europe 2020 strategy

Gothenburg's climate vision will help contribute to some of the wider Europe 2020 strategy targets for employment, R&D, education and poverty. The city's vision does not directly consider employment, but the City of Gothenburg sees that if there is an increased focus on energy and climate this has the potential to create more jobs in this sector.

Gothenburg partners see that more research and development is needed to fulfil the city's vision. Although the vision in itself does not directly increase investments in R&D, it is expected that the focus on climate will distribute more funds to research in this area.

The vision is not expected to make a difference for education. However, many of the programmes and strategies in the city that will help to fulfil the vision have a social focus that could have an impact on poverty and social exclusion. Changes in city planning could reduce segregation problems in the city, and improved public transport could also have a positive impact on this. Energy efficiency measures in 1970s buildings, which are often situated in Gothenburg's poorer areas, are necessary to achieve the vision and this could also improve the quality of life, poverty and health levels in these areas.

3.2.3.5 The city's targets and the European Energy 2020 targets

In order to achieve the agreed vision work needs to be done in Gothenburg concerning efficiency measures, increased use of renewable energy sources and overall CO_2 emission reductions. However, the climate targets set by Gothenburg for 2020 do exceed both national and EU 2020 targets.

3.2.3.6 The city's targets and European smart cities ambitions

Gothenburg's agreed vision and targets are aligned with several areas of focus for the smart cities agenda. Specifically:

- Smart economy: the vision could contribute to this through the innovations and entrepreneurship that are necessary to achieve the vision;
- Smart mobility: more sustainable transport and improve access to public transport is needed to achieve the vision;
- Smart living: the vision could contribute to this by improving housing quality through energy efficiency measures, and by using city planning visions to develop a more attractive city that provides more homes in areas with good public transport connections; and
- Smart environment: the vision will contribute to this through sustainable resource management and reduced pollution.

3.2.3.7 The city's views on the proposed Europe 2030 climate and energy framework

Gothenburg is still in discussion about this proposal. However, a view is emerging that a 40% reduction in CO_2 emissions by 2030 is reasonable and probably realistic. The 27% target for renewable energy is seen to be relatively low, and could be set higher. Finally, the city is supportive of an indicative 2030 target for energy efficiency, as although the 2020 target might be difficult to achieve it is still important to support energy efficiency in order to maximise the possibility of reaching the overall CO_2 target.

3.2.3.8 Building a shared vision of the city and its stakeholders

The Climate Programme was proposed by the City's Environment Committee as a way to achieve the city's 2050 vision for energy. It sets out 24 strategies to reach this vision, and has been developed in close cooperation with other stakeholders in the city, including other parts of the city

administration, industry and academia. Implementation will take place through measures decided in the annual city budget.

Given the large number of strategies Gothenburg is working with, coordination between, and shared understanding of, the visions and strategies is crucial. In particular, it is necessary to ensure daily monitoring of the implementation and results of different strategies. Figure 5 below explains the hierarchy of the strategic documents in the city.

Gothenburg has considerable experience in how to involve, co-ordinate and communicate with stakeholders. In the development of the vision for 2050 a small selection of stakeholders were invited to participate in the process. However, in the development of the Climate Programme and the vision for the RiverCity a broader range of stakeholders were involved.

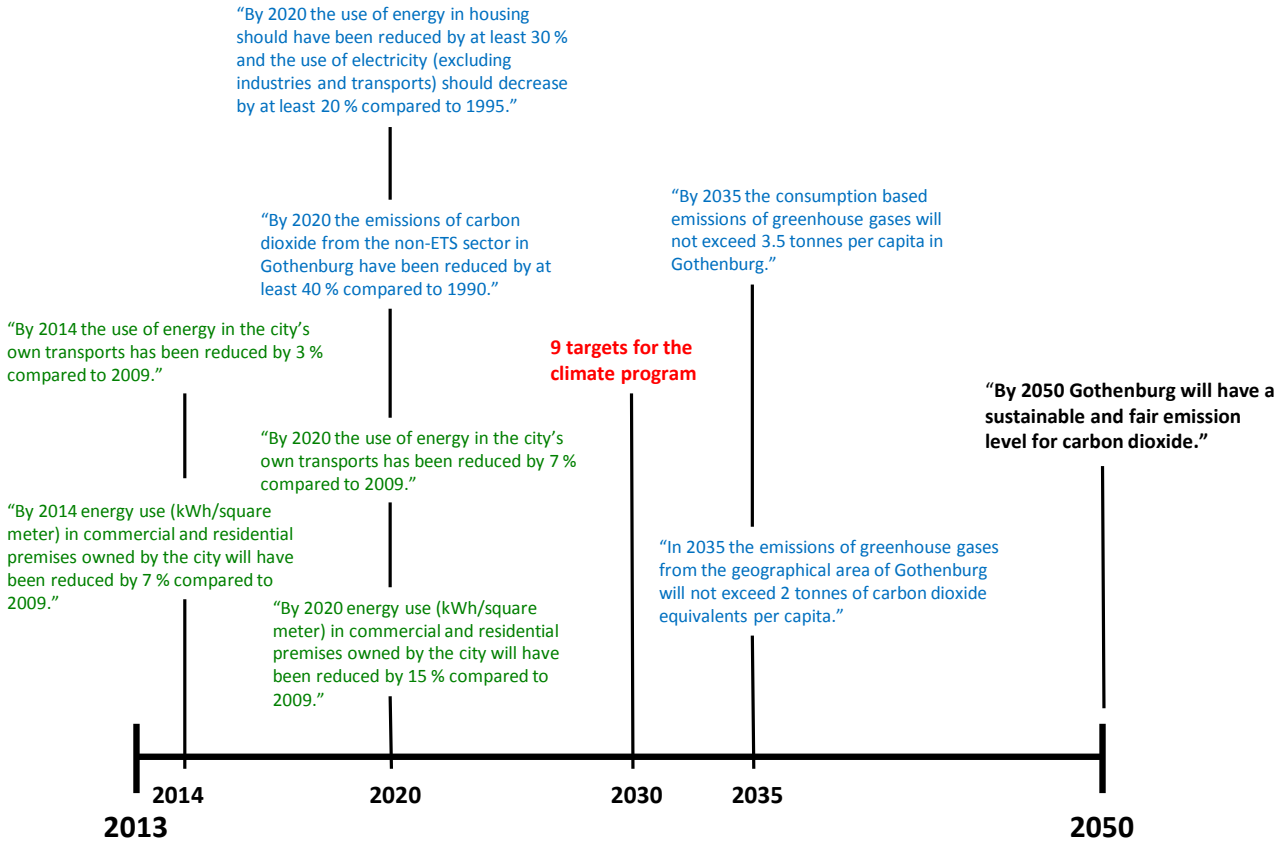
Stakeholder analysis was carried out to understand the role of various stakeholders in the development of the Climate Programme. Following this, an engagement plan was developed to enhance existing work with stakeholders and involve additional stakeholders in developing the enhanced SEAP and innovative projects through the STEP UP project. During 2013 meetings and workshops with stakeholders took place in order for goals and strategies to be developed. A steering group held a meeting every 1-2 months, and in order to solve different sub-tasks particular stakeholders were involved as required. Since then, engagement has taken place around short-term specific topics (i.e. climate, environmental or energy issues) with informal meetings held for involved parties. During the stakeholder engagement process in the summer and autumn of 2013 more than 80 potential stakeholders were identified and approached, the majority of whom were external.

The RiverCity project was initiated by the City Executive Board in November 2009. Following a City Council decision in March 2010, a management team was given a mandate to formulate a vision and strategy for the area. A project team was also formed, and their work was conducted on the basis of social, ecological and economic dimensions, in dialogue with the Gothenburg community. The management and project team were composed of people with different backgrounds, affiliations and expertise. The project group had representatives from both industry and academia, whereas the management team has engaged dialogue groups including representatives of municipal administrations, regional and state agencies, industry and academia.

For the development of the Energy Efficiency Strategy, municipal companies that own residential and commercial buildings and the Traffic Administration were involved. The Environment Administration is responsible for the strategy, together with two working groups (one for buildings and one for transport), consisting of representatives from the involved parties.

Figure 5. Gothenburg's strategic documents hierarchy – vision and targets

Green = energy efficiency strategy, Blue = environmental quality target, Red = climate programme targets, Black = vision for 2050



3.2.4 Riga

3.2.4.1 Overall city vision

"Riga – opportunity for everyone" is the long term vision of the city until 2030. The vision focuses on the opportunity to live in a qualitative, harmonious environment; the opportunity for oneself and one's welfare. The municipality of Riga is entrusted with professionally serving the inhabitants of the city, facilitating their personal growth and the improvement of the quality of their lives.[23]

Riga's development plan is elaborated with the purpose of ensuring a valuable and effective municipal administration, as well as to clearly mark the future vision of the city, and the city's development priorities, targets and how to achieve them. The overall purpose of the plan is to facilitate Riga's long term development, providing the highest possible quality of life for everyone working, living, investing in or simply visiting Riga.

The development plan consists of three interdependent documents:

1. Long term development strategy for 2030: The strategy is an overall document, setting out the development vision and interests of the city, development priorities and targets, guidelines for spatial planning, and the model for the realisation of the strategy.

2. Development programme 2014-2020: This includes a comprehensive description of the current situation in the city from the sector point of view, and sets out the tasks, programmes and projects required for the promotion of Riga's socio-economic development in line with the city's long term development strategy. The programme was approved in May 2014.

3. Spatial planning 2006-2018: This document determines the land use policy in the city.

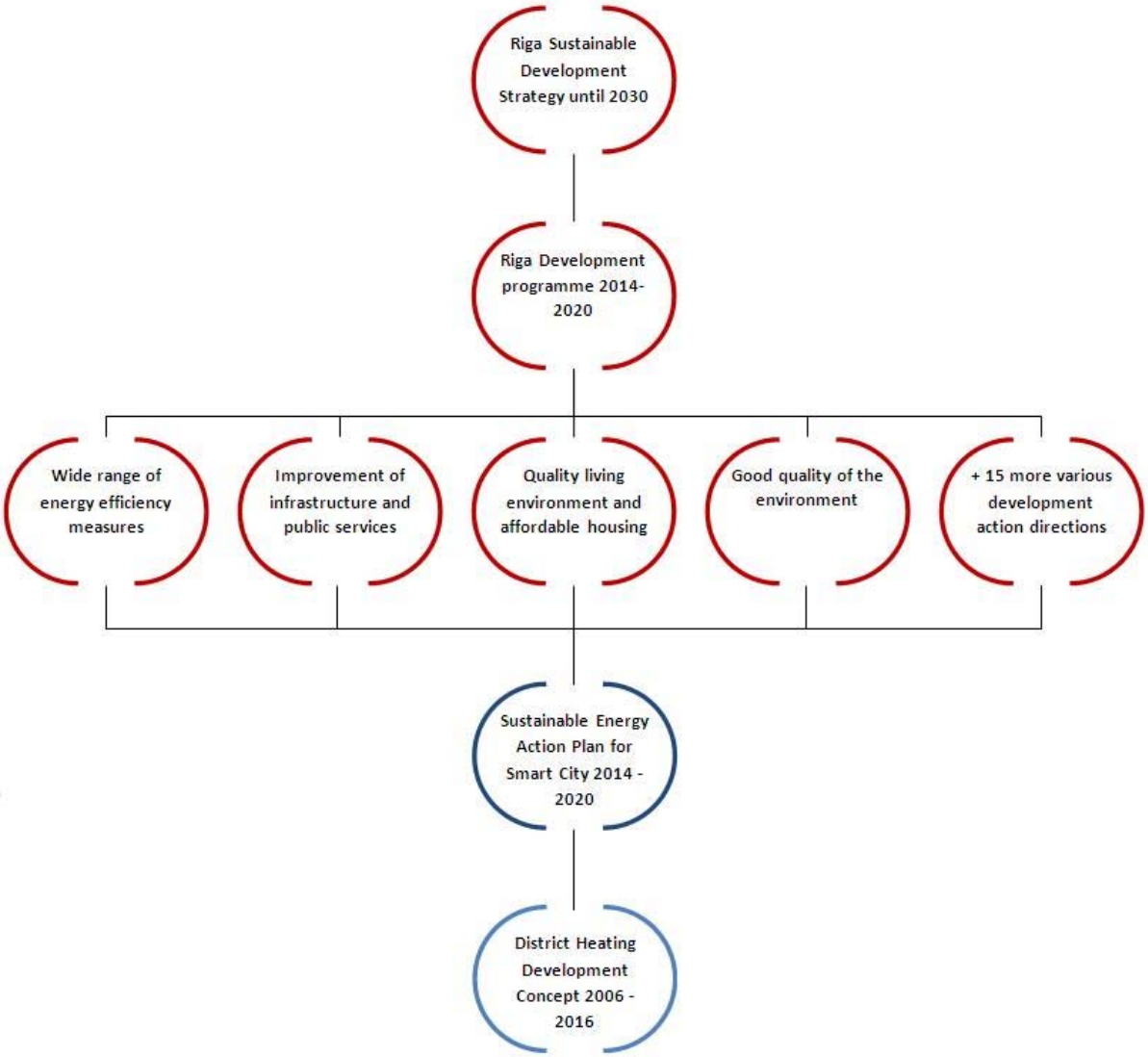
3.2.4.2 Vision for energy

Riga is a green, resource saving and energy efficient city, which aims to reduce CO_2 emissions by 55-60% by 2020, 70% by 2030 and 85-90% by 2050. This vision is based on the current situation in Riga as well as the potential for raising energy efficiency and using renewable energy resources in the

[23] Riga City long term strategy 2030, www.sus.lv/en

future. This vision has been, or is being, included in the strategic development documents of the city, as shown in Figure 6 below.

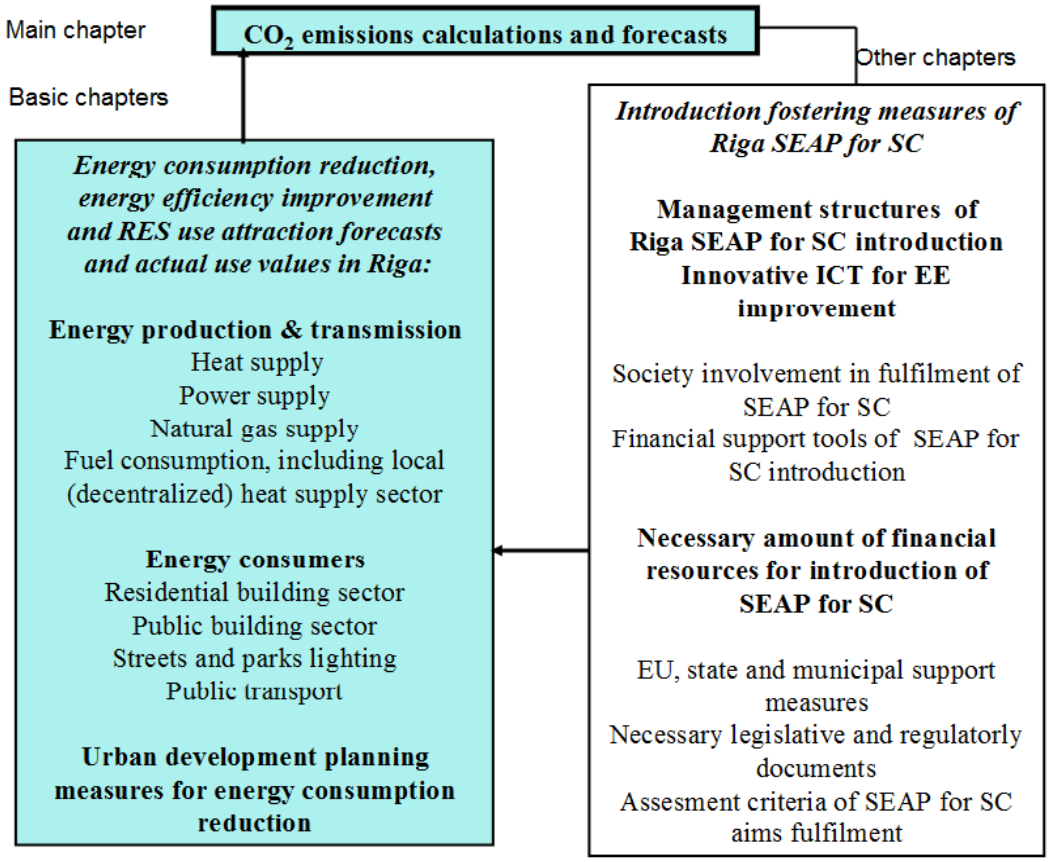
Figure 6. Riga's SEAP role and place within the city's strategic planning document hierarchy



Source: Riga Energy Agency

The agreed vision of Riga is a smart city that includes using smart metering devices and smart grids, and wide ranging ICT integration in energy, transport and everyday city life. The vision is described in the new smart city SEAP for 2014-2020, which has been developed with close involvement of stakeholders and residents. The new SEAP was adopted by Riga City Council on 8th July 2014. It is seen to be the next step in the approved action plan for further development of the city, with a focus on innovative smart technologies and tools. The new SEAP's structure is shown in Figure 7 below. It is based on commitments made by Riga City when it joined the Covenant of Mayors.

Figure 7. Riga's smart city SEAP structure



3.2.4.3 The targets

As noted above, the targets that have been included in Riga's smart city SEAP for 2014-2020 are for a reduction in CO_2 emissions (from 1990 levels) by:

- 55-60% by 2020;
- 70% by 2030; and
- 85-90% by 2050.

These targets are based on the 52% reduction from 1990 levels reached by 2012 and the analysis of the actual reduction levels attained for several years prior to that, which show that with the current reduction speed and methods the annual decrease in CO_2 emissions is at least 1%. This analysis takes into consideration the dynamics of city development, city growth and rise in living standards that

require more energy resources. It also takes into account a reduction in energy consumption due to higher energy efficiency (in buildings, transport, processes and infrastructure) and the use of renewable energy sources.

In order to reduce CO_2 emissions by 55-60% by 2020, the new SEAP proposes measures to increase energy efficiency and the use of renewable energy resources in the public and private sectors. The key target groups for the measures are as follows:

- District heating supply company JSC Rīgas siltums, which is partially owned by the municipality;
- Municipal institutions, in particular educational institutions;
- Municipal enterprises; and
- Households.

The commercial and industrial sectors have a less marked presence in the plan and are targeted by emissions reduction measures indirectly.

Table 5 below sets out how Riga's targets are SMART.

Table 5. SMART targets - Riga

SMART criteria	Description
Specific *(Is the target well defined and is it clear what is required?)*	Targets have been defined in Riga's SEAP and are set according to data analysis and on results already achieved.
Measurable *(How will progress towards the target be measured?)*	The target can be measured using data on energy and fuel consumption in the city (statistical data), based on which the reduction in CO_2 emissions is calculated according to a constant and EU approved method of calculation. Every year a progress report on the implementation of the SEAP in Riga is prepared.
Achievable *(Is the target achievable?)*	The achievability of the target is ensured by constant monitoring and control of the progress against it, as well as by organising different stakeholder activities and involving important stakeholders in the management process.
Realistic *(Does the City have the skills and competence to complete the target?)*	Riga Energy Agency has sufficient know-how and competence in order to ensure successful management of this process.
Time-bound *(Have deadlines been set?)*	The target can be achieved in the period of time foreseen.

3.2.4.4 The city's targets and the Europe 2020 strategy

Riga's targets are created by respecting Europe 2020 strategy and targets, as well as the Latvian national targets and strategy listed above and the EU member state targets.

3.2.4.5 The city's targets and the European Energy 2020 targets

Riga's SEAP includes actions and measures to reduce CO_2 emissions in the following energy generating and energy consuming sectors:

- Heat energy generation and transmission;
- Electric power supply;
- Residential buildings;
- Public buildings;
- Lighting of streets and parks;
- Public transport system of the city; and
- Waste management.

An assessment of the probable impact of the first SEAP has been undertaken, which shows the city will exceed the Energy 2020 targets, specifically in terms of CO_2 emissions reduction. 2011 data showed that CO_2 emissions had fallen by 50.69% compared to the baseline year (1990).

Table 6 shows the overall approach to the definition of CO_2 emissions reduction used in Riga.

Table 6. Overall approach to the definition of CO_2 emission reduction in Riga's SEAP, 2010

SEAP time period	2010-2020
Baseline year	1990
CO_2 emissions in baseline year, thousand tonnes	4,295
CO_2 reduction indicator	Total reduction in CO_2 emissions against the business as usual (BAU)[24] scenario

[24] BAU – business as usual scenario, www.ipcc.ch/ipccreports/tar/wg3/index.php?idp=286, www.oxfordreference.com/view/10.1093/oi/authority.20110803095538117

CO_2 reduction in percentage against baseline year (three scenarios)	44.7% (minimum scenario) 46.3% (optimum scenario) 47.9% (maximum scenario)

The three scenarios in the SEAP characterise the implementation rate of the sustainable energy policy of the city, the availability of public funding and the potential to attract external funding. Under the minimum scenario, some of the measures do not benefit from suitable support and implementation mechanisms and there is little opportunity to divert municipal funding to emissions-reducing measures. Under the optimum scenario, an adequate amount of municipal budget is allocated to the SEAP measures and the city also actively mobilises EU structural funds for the implementation of these measures. Finally, under the maximum scenario, in addition to the conditions in the optimum scenario, various other financial mechanisms and project implementation approaches are actively used, such as revolving funds, the ELENA programme[25], ESCO[26] projects and others.

Table 7 below shows the CO_2 emissions reduction potential by 2020 for each scenario.

Table 7. Riga's SEAP CO_2 emissions reduction targets per scenario by 2010, 2015, and 2020

Scenario	**Forecasted emission reduction potential, CO_2 tonnes per year**		
	2010	**2015**	**2020**
Minimum	11,481	54,819	107,762
Optimum	11,744	72,533	172,360
Maximum	12,257	101,298	240,206

The targets set have been elaborated further and a list of measures for each scenario has been developed. Specific sectors and measures in the framework of the SEAP have been prioritised, with more detailed action programmes to address priority measures such as the energy efficient

[25] ELENA programme - European Local Energy Assistance, www.eib.europa.eu/infocentre/publications/all/elena.htm

[26] ESCO – An energy service company or energy savings company (acronym: ESCO or ESCo) is a commercial or non-profit business providing a broad range of energy solutions, including the design and implementation of energy savings projects, retrofitting, energy conservation, energy infrastructure outsourcing, power generation and energy supply, and risk management; http://en.wikipedia.org/wiki/Energy_service_company

renovation of multi apartment blocks of flats, the use of biomass as a fuel in the district heating supply system, energy efficiency in municipal educational institutions and the use of biofuel for transport.

3.2.4.6 The city's targets and European smart cities ambitions

The European Commission's smart cities and communities European Innovation Partnership was launched in 2012. Riga's enhanced, smart city, SEAP has been developed to be aligned with the Commission's smart cities focus on the intersection between energy, transport and ICT. In particular the City Council recognises the potential of ICT in the reduction of CO_2 in the energy and transport sectors. For example, heat supplier JSC Rīgas Siltums introduced smart meters and automatic remote reading systems in 2012/2013 for all of its customers using centralised heat supply systems, and power supplier JSC Latvenergo has introduced smart metering for its customers who have up to 100 kW of installed capacity. The City Council has found the progress in emissions reductions made under the current SEAP to be an incentive to adopt more integrated, cross-sectoral measures in the enhanced SEAP in order to realise even greater reductions.

3.2.4.7 The city's views on the proposed Europe 2030 climate and energy framework

Riga City Council supports a total reduction in CO_2 emissions in Europe of 40% by 2030, and sees this goal as realistic if smart cities and other initiatives are implemented. Riga City also supports a 30% target for renewable energy and a 40% target for energy efficiency by 2030.

3.2.4.8 Building shared vision of the city and its stakeholders

The city considers the scheme of work with stakeholders and their associations used for the city's first SEAP to be successful, and as a result the same scheme and approach was used to develop the new SEAP. A focus was placed on specific expert discussions (for example, on the sustainability of district heating systems, on multi apartment building renovation experience, on possible financing solutions in the period 2014-2020, or on the role of ICT and new technologies in energy and energy efficiency). In these discussions the experience of implementing the first SEAP was analysed, as well as the challenges to be addressed in the upcoming period of SEAP implementation.

The REA Management Board consists of 12 members and is chaired by a member of Riga City Council. A number of stakeholders have a place on the Board, including representatives from community groups, government administration, energy and service companies, energy consumers and academia. The Board monitors the implementation of the SEAP and is also responsible for the

managing public interest. The REA Advisory Board consists of 16 leadings scientists and experts in the energy and housing sectors. The Board's main task is to provide REA with high quality advice and solutions on the technical issues of energy supply, energy efficiency and the use of renewable resources.

Synergies in the implementation of the SEAP are ensured by the SEAP inter-institutional working group, which consists of 21 members who represent the main organisations that participate in the implementation of the SEAP. The working group is chaired by REA directors, and its members act as a link to executive bodies, foster information exchange and participate in drafting SEAP implementation reports. New members have joined the working group for the implementation of the new SEAP, including representatives of the industrial sector, public buildings and ICT, as well as Riga Technical University (RTU).

Public consultations have been organised in the form of seminars and discussions on different sections of the SEAP, as well as open days and information campaigns, organised through the REA energy efficiency information centre and publicised on the REA website. The REA and its partners also organise month-long 'energy days' every October, which stakeholders from across the city participate in. As a result, the proposals in the new SEAP have been drafted by the REA in coordination with the public. More information on stakeholder analysis and involvement is available in STEP UP deliverable 2.1.

Data gathering has an important role in the development and implementation of the enhanced SEAP, involving Riga City Council and the scientific economic institute, as well as stakeholders (public companies and agencies) through the inter-institutional working group. Formal data analysis has included time series analyses, regression analyses, the calculation of indicators to carry out benchmarking, and combining national level aggregated data and individual enterprise level data.

3.3 Conclusions

For this task the four partner cities - Glasgow, Ghent, Gothenburg and Riga - have analysed their city development, energy and CO_2 emissions reduction strategies, and agreed visions and targets. As well as the visions and targets themselves, the process of developing these visions and targets has been set out, in particular the involvement of key stakeholders. Finally, the cities have analysed how their targets are SMART (specific, measurable, achievable, realistic and time-bound), and how they contribute to European Energy 2020 targets, the wider Europe 2020 strategy and smart cities ambitions, both in terms of their focus and the implementation of strategies so far. This has helped the cities begin to identify any gaps or emerging measures to be addressed in the future, in particular in the development of their enhanced SEAPs.

3.3.1 The city's vision and targets

Whilst all four cities have quite different visions and different levels of ambition, there is a common theme running through them – recognising the need for sustainability to be at the heart of the city's long term plans and strategies. All four cities have a vision for energy which encompasses increasing energy efficiency, increasing the share of renewables in the energy mix and reducing CO_2 emissions, particularly in key sectors which currently make a big contribution to these emissions. The cities also all focus on fairness and equality, and the need to ensure that opportunities are available to everyone in the city.

Whereas Glasgow has a vision for 2020, Ghent, Riga and Gothenburg also have long term visions for the period to 2050. This long term view is aligned with emerging thinking at the European level, such as the roadmap for moving to a competitive low carbon economy in 2050 developed by the European Commission.[27] These cities could be examples for knowledge exchange on how this roadmap is interpreted and used and how the milestones for 2050 could be met. Although Glasgow is not yet taking such a long term view, the city is supportive of 2030 targets at the European level, and recognises that if these targets are set, the city will need to refocus its ambitions towards 2030 in line with this European framework.

The cities have all set specific, time-bound CO_2 emissions reduction targets that match, or exceed, the ambition set at the European level for a 20% reduction in CO_2 emissions by 2020. However,

[27] A Roadmap for moving to a competitive low carbon economy in 2050, Communication from the European Commission to the Eruopean Parliament, The Council, The European economic and social committee and the committee of the reģions, http://ec.europa.eu/clima/policies/roadmap/index_en.htm

setting targets for the penetration of renewables or an increase in energy efficiency at the city level is far less common, with only Ghent and Gothenburg setting targets for renewable energy, and only Gothenburg setting any energy consumption targets to date. All four cities view their targets to be realistic and achievable, with Ghent projecting that the 20% CO_2 emissions reduction target will be met a year ahead of schedule, and Gothenburg, Riga and Glasgow all striving to meet targets that exceed the European level targets. All cities have also put into place plans to measure and monitor progress against their targets, either on an annual or two-yearly basis.

However, the achievability of the targets has not always been tested strongly in the cities, which can be attributed to the fact that the setting of visions and targets is in part a political process rather than an entirely technical or analytical one. At the same time, the cities do recognise that meeting their targets will be challenging. Glasgow has acknowledged a gap between the target and projected emissions level in 2020, based on the actions in the current SEAP, and is therefore developing actions for its enhanced SEAP that will help to close this gap. Ghent recognises that meeting its renewable energy target will be challenging, due to the limited space available for biomass and wind in its territory. Partners in Gothenburg recognise that the proposed new Climate Programme sets a large number of targets, some of which will be harder to both monitor and meet than others. Finally, in Riga the partners acknowledge that progress to meet the targets depends on the implementation rate of the sustainable energy policy of the city, the availability of public funding and the potential to attract external funding.

Cities have shown that their visions and targets steer their enhanced SEAPs towards an integrated approach between energy, transport and ICT sectors, and share the European Commission's focus on smart cities in order to build on competitiveness and long term sustainability. The cities understand the importance of co-ordinating and managing strategies, targets and measures with a cross-sectoral focus, but at the same time there is further work to be done in this regard as new opportunities are developed further in each city in the remainder of the STEP UP project.

The European Commission is currently collecting different views from member states in order to agree on balanced and achievable targets for 2030. In this deliverable cities have reviewed the proposal and been open on their views. The European 2030 climate and energy proposal, if approved, would create new challenges for the cities. Despite this, the cities have all indicated their support for this proposed framework, with some suggesting that it could be more ambitious.

All cities have also reflected on how their visions and targets could support the goals in the wider Europe 2020 strategy, in relation to education, employment, R&D and fighting poverty and social

exclusion. However, there is scope for further exploration of this by the cities as they develop their enhanced SEAPs, especially given the focus of STEP UP on the integrated approach. Whilst the focus of the enhanced SEAPs is on energy, arguably an integrated, cross-sectoral approach should help to address a broad range of challenges faced by the cities, including those addressed by the Europe 2020 strategy.

3.3.2 Building a shared vision of the city with stakeholders and their associations

The main stages in SEAP development, such as initiation, planning, implementation, monitoring, and reporting have been identified by the Covenant of Mayors as key for the involvement of specific stakeholders.[28] Cities have recognised this and built stakeholder engagement into all stages of the process for their enhanced SEAPs, tailoring their communication approaches based on the resources, skills and interests of different stakeholder groups (see deliverable D2.1).

Cities have followed their experiences and learnings from deliverable D2.1 to steer their stakeholder involvement and engagement approaches. Cities have identified key stakeholders and understood how best to engage them, recognising that work with stakeholders and their associations requires capacity and resources from the cities to manage and co-ordinate their input. Some stakeholders have been identified as important players in strategy implementation because they acquire and deliver data required to monitor the pace of implementation of the strategies. Others have expertise in certain sectors and have been able to advise on suitable targets as they are developed. Others, such as citizens, are key to engage so that they can understand what the vision and targets mean for their lives, and how they will benefit from the city's focus on sustainable energy planning.

Defining the visions follows certain traditions established by the cities, working with existing stakeholders, engaging new ones and using various communication networks. All four cities have a good history of collaboration with various institutions and interest groups, and all have democratic governance and diverse tools for ensuring the participation of society. In addition, experience from the cities show that work with stakeholders and their associations is not project based, but part of an ongoing culture of stakeholder engagement that has become established in the cities. However, in most cases to date, the cooperation between cities and stakeholders has been built sector by sector. Work with a larger number of diverse stakeholders across different sectors requires additional efforts to engage them and communicate with them effectively.

[28] Covenant of Mayors office, 2010, *How to develop a sustainable energy action plan (SEAP) – guidebook*, www.eumayors.eu/IMG/pdf/seap_guidelines_en.pdf

A good example of engagement is the approach used by Glasgow, with a stakeholder survey which featured the specific question: “Is the existing vision still appropriate or not?” This meant that a broad range of stakeholders were given the opportunity to shape the city’s vision and helped the City Council to understand whether maintaining the current vision would be supported locally or not. Ghent used a different approach, organising in-depth workshops to collect input and arguments from stakeholders, which were then discussed and agreed on the political level. This was part of Ghent’s long term bottom-up stakeholder engagement approach, which has been built up over a number of years. This approach is an example of a clear mechanism for how to settle issues, and come to an agreement or find a compromise. It also enhances the political engagement and support during the process of revising or defining visions.

It is clear that in all four cities, political leaders and other decision makers are prioritising climate and energy issues, and have supported the development of SEAPs in alignment with other city plans and strategies. However, the hierarchy of strategic planning documents in some cities gives higher priority to climate strategy than in others; in some cities the current SEAP has been seen as a core guiding strategic document for the cities, but in others it has not. In Gothenburg, for example, the current SEAP was not given as high a priority as other city plans and strategies, which also contained energy and climate ambitions, and as a result the specific measures in the action plan were not fully addressed. This highlights the importance of ensuring that the enhanced SEAPs are developed in line with other city documents, and are fully accepted and supported by political and other stakeholders, in order to ensure that their ambitions are shared across the city and that full responsibility is taken for, and priority is given to, their delivery.

3.4 Learning points and Recommendations

3.4.1 Challenges and learning points

Each city has identified a number of challenges and learning points from this exercise, which can be taken forward by STEP UP cities when they come to revise their visions and targets in the future, and by other cities in the process of developing or revising their own visions and targets.

3.4.1.1 Glasgow

Communicating the vision and targets to stakeholders: The city recognises that it is important to have an easily understood vision for the city that is communicated frequently by the city's political leadership.

Stakeholder engagement should also be a dynamic process of both widening and deepening engagement with all sectors on the issues of energy and climate change, to ensure that all can play their part in the delivery of actions.

Short to longer term visions and targets: Setting and then keeping to a target for carbon reduction and having a clear plan for how the city can achieve this is important. In the future the city will set targets for 2030 and 2050 and will investigate expanding the CO_2 target to cover greenhouse gases (GHG), so that methane and other gases can be accounted for.

3.4.1.2 Ghent

Communicating the vision and targets to stakeholders: It is important to ensure that the city vision and targets are aligned with stakeholder priorities to secure their buy-in and support. Ghent tested the transition approach to help stakeholders make the link from vision and target to concrete experiments and actions in order to show that change is possible. However, the method of transition management could still be further improved; empowering bottom up ideas and allowing stakeholders to co-control the city targets.

Ghent is characterised by many small owners of houses and SMEs, and also has a few large, multi-national enterprises that have a great impact on its carbon reduction targets. Initial efforts were made to involve the bigger corporations but these were was not always successful because these types of business did not wish to engage at a city level, and were instead more concerned with national and international discussions. Although addressing them is time consuming and demands a higher budget, many stakeholders emphasised that it is necessary to engage these small owners as well as larger ones. The impact of energy actions on citizens and SMEs has strong links to energy

independency and more resistance to higher fuel prices and the stakeholders pointed out its importance for the liveability in Ghent. Local partners may also be more open and willing to become involved in city experiments and to take up new technologies or solutions.

Short to longer term visions and targets: Long term visions and targets to 2050 can be easy to agree for present politicians as many of them will no longer be in positions of power in 2050. It is therefore important to formulate the impact of the targets and actions of the present legislations as a stepping stone to the final long term targets. For example, if the 2050 target is a carbon reduction of more than 80%, then legislations put in place between now and then have to bear a fair share of the challenge and politicians must understand that postponing behaviour will cause problems. Back-casting could therefore be a good way to realise this.

3.4.1.3 Gothenburg

Communicating the vision and targets to stakeholders: The agreed vision applies to the whole city organisation, but awareness and understanding of it could be wider spread across the organisation. The City Council is a large organisation and to be able to reach the targets it is crucial that many people are involved.

Integration of the vision with other policies: There are many different strategic documents that are important for the work in Gothenburg. All are important, but sometimes it is a challenge to make them integrated. This is important to work on further.

Ensuring targets are SMART: The targets are SMART to most extent, but some of them are still difficult to measure progress in. The challenge to find suitable indicators remains for the City to work more with.

3.4.1.4 Riga

Integration of the vision with other policies: The body responsible for energy policies should anticipate and engage in the development of all the policies of the city to ensure that CO_2 reduction, energy efficiency, renewable energy resources, and also smart city issues are properly covered in all relevant policies and papers.

Integration of the vision with other policies: It is necessary to follow closely and regularly all energy, transport, ICT and cross-sectorial developments at local, national, EU and global level, such as technological innovations, pilot projects and policy initiatives, so that they are reflected in the discussions leading to the development of city policies.

Communicating the vision and targets to stakeholders: Communication using different tools and instruments at all levels in the city, with various stakeholders, is important to secure the harmonised and effective coordination of policy implementation.

3.4.2 Recommendations

The outcomes from this exercise and the challenges and learning points that have emerged help to identify key recommendations. These recommendations could not only benefit the STEP UP cities when they come to revise or develop new visions and targets in the future, but also other cities looking to develop their own visions and targets.

- **Cities should build realistic visions and targets that can feasibly be met within the planned timeframes**, with an enhanced SEAP to set out a clear plan of action for how these will be delivered and how data will be acquired and analysed so that progress against them can be measured. The achievability of the vision and targets should be tested and they should serve for long term purposes where it is feasible and realistic to do so;

- **Cities should consider establishing targets for renewable energy and energy efficiency** where these do not already exist, in line with the European Energy 2020 targets and the longer term European 2030 framework if agreed;

- **Cities should develop visions and targets for energy in line with wider city strategic planning documents**, using an integrated approach to secure support and commitment from a broad range of stakeholders and maximise the potential of reaching the agreed targets;

- **Visions and targets should also be developed in line with relevant national and European strategies and targets, including those not specifically related to energy**. The Europe 2020 strategy is a good example of where measures designed to meet energy-related targets could also help meet wider targets using an integrated approach, in particular in relation to employment, R&D, education and fighting poverty and social exclusion;

- **Cities should consider, as part of discussions with stakeholders and their associations at the local or regional level, their role in reaching national and European level targets and strategies**. This could help local authorities, and national governments, participate further in the debate on the proposal for a European 2030 framework for climate and energy policies;

- **Involving and engaging a wide range of stakeholders should be built in to the whole process of defining and refining visions and targets, and developing and implementing enhanced SEAPs**, to consider their interests and resources and ensure their buy in and support;

- **Cities should continue to work to strengthen engagement with groups of stakeholders across the energy, transport and ICT sectors**, both for the enhanced SEAPs and to support the cities' progress towards smart cities status;

- **When setting visions and targets, cities should develop a plan for reviewing, strengthening and revising them at a later date, taking a long term view** and recognising that current visions and targets may not remain appropriate with changes to other factors such as the political, economic, socio-cultural or technological environment. This process should involve all relevant stakeholders in order to build shared and well-supported revised visions and targets.

3.5 Next steps

Through this analysis, cities have been able to assess how their visions and targets were developed, and the key roles that various stakeholders, including politicians, industry, businesses and citizens, have played in the process. The cities have reviewed how their visions and targets are integrated in the city's overall strategic plans and strategies, how they help contribute to European Energy 2020 targets, the wider Energy 2020 strategy and the smart cities agenda, and how they are SMART (specific, measurable, achievable, realistic and time-bound).

This now gives the cities the opportunity to combine this work with the work already completed in earlier Work Package 2 deliverables (especially the gap and issue analysis (D2.2) and current and projected energy flows (D2.3)) to identify any key issues or gaps to be addressed in the development of their enhanced SEAPs. Going forward the cities now all have the task of establishing new, integrated and smart opportunities for their enhanced SEAPs, which will serve to meet the ambitious visions and targets that they have set. This will be taken forward in the remaining Work Package 2 and Work Package 3 deliverables, including the inventory and assessment of energy actions (D2.5), the enhanced SEAPs (D2.7), the inventory of pipeline projects and windows of opportunity and list of innovative projects for common development (D3.4+3.5).

4. Annexes

Annex A: Defining the visions and targets – City processes

This annex sets out in detail the process followed by each City Council to define its visions and targets.

1. Glasgow

Agreeing the vision

The process of agreeing the vision for Glasgow was initiated in 2009-2010 when the Sustainable Glasgow initiative was started. The Sustainable Glasgow Board had its first meeting in March 2010, during which an outline of the Sustainable Glasgow report (Glasgow's current SEAP) was discussed. The report was initially drafted by the University of Strathclyde and commissioned by the City Council. The vision set out in the report was then agreed by the Sustainable Glasgow Board, and later by the City Council.

As the Sustainable Glasgow initiative is a private/public sector partnership, a wide range of stakeholders were involved in the agreement of the vision, including local government, utilities, research organisations and academia, industry, consultancies and representatives of civil society. Politicians played a key role as the Leader of the City Council chairs the Sustainable Glasgow Board. Other senior politicians were also involved in its formulation, including the Executive Members for Development and Regeneration, and for Land and Environment.

Agreeing the targets

The current SEAP targets and actions were established in the light of an analysis of Glasgow's carbon emissions, the city's renewable energy resources, and the technically and financially feasible opportunities which could reduce Glasgow's carbon emissions by 30% by 2020 and help to create a more sustainable city.

The vision and targets were also established in the context of the European Energy 2020 targets and the Climate Change (Scotland) Act 2009 target to reduce emissions by 42% by 2020 from 1990 levels. Achieving a 30% reduction from 2006 emission levels by 2020 in Glasgow is equal to the Scottish 42% reduction target.

The target was arrived at by agreement between politicians and stakeholders, and represents the degree of ambition that exists in the city. Glasgow has no significant energy generation installations

(such as power stations and oil refineries) within its boundaries, reductions from which would reduce emissions significantly. It also has very little renewable energy generation capacity within the city itself, a larger proportion of which would help to reduce carbon emissions from electricity consumption, which currently make up 46% of city-wide emissions.

Glasgow's SEAP in 2010 identified that the main opportunities for CO_2 reduction lay in a range of measures, from rationalisation of the Council's own use of buildings, to energy efficiency in buildings, promoting the generation of low carbon energy, and reducing the demand for energy through awareness raising and education.

2. Ghent

Agreeing the vision

Ghent has learnt from past experiences of engagement and cooperation with stakeholders and their associations, in both the development of its vision for energy and the strategic plan for city development. As a result, the city recognises the importance of working together with politicians and other stakeholders in order to reach agreement and cooperate on the implementation of visions and strategies.

Past experiences and steps in the process towards Ghent's vision include:

- In 1996 Ghent signed the first **Climate Alliance** to reduce greenhouse gas emissions (GHGs). In the following years many action plans on integrated sustainability and environment were developed, focusing mainly on energy and GHGs.
- In 2007 the city signed the local **Kyoto Protocol** and committed itself to a 7.5% reduction in CO_2 emissions by 2012 compared to 2003 for the city's own activities. In 2007 the City of Ghent also developed a long term vision for Ghent.
- The result of this was the **mission statement 'Ghent 2020'**. All policy options in all policy areas should be developed with the aim of helping to realise this mission. Five main strategic objectives describe how the mission can be accomplished, including one related to ecological sustainability: "By 2020, Ghent will offer its inhabitants a healthy and good quality living environment and Ghent will have a smaller ecological footprint."
- As a consequence, the **council agreement 2007-2013** contained several actions that support progress towards a climate neutral city. The policy document also stipulates that the city has a local energy agency focusing on energy reduction, in particular among socially deprived target groups.

The ideas of Ghent 2020 and the council agreement were then translated into several new policy plans and decisions, with the Ghent Local Climate Plan at the core:

- In October 2008 the Council approved the **Ghent Local Climate Plan** (2008-2020) containing the following ambitions:

1. For the city organisation: Energy Plan 2008-2013

- 10% reduction of energy use by 2013 compared to 2003 (1.83 million kWh electricity, 8.8 million kWh heating for buildings and 1.56 million kWh for public lighting);
- 50% reduction of CO_2 emissions by 2013 compared to 2003;
- 40% increase of renewable energy by 2013 compared to 2003;
- 20% energy reduction, 60% CO_2 reduction, and 50% more renewable energy compared to 2003 by 2020;
- By 2020 all new buildings should be CO_2 neutral; and
- Self-reliance for the production of electricity.

2. For the city of Ghent:

- By 2020, 20% energy reduction compared to 2007; and
- By 2020, 20% CO_2 reduction compared to 2007.

The climate plan consists of 105 actions, with creating a 'Climate Alliance' with stakeholders being one of the most important. The city recognises that setting high targets and aiming towards climate neutrality in the long run (2050) is only possible through cooperation with all actors on all levels.

Other agreements have also been signed, all of which are intended to enforce the present and future Local Climate Plans of Ghent:

- In 2010 the **Ghent Lightplan II** was approved, tightening the existing ambitions. The main target is a 20% overall energy reduction in 2020 compared to 2008, through the installation of new atmospheric lighting in 24 quarters (-22%) and functional lighting (-26%). In 2010 the city also decided to accelerate the replacement of the 20,325 highest energy-consuming light bulbs (total investment of 3.4 million Euros). For public lighting the 2020 target was realised early, in 2013.
- In February 2009 the Mayor signed the **Covenant of Mayors** (COM), as well as the **Declaration of Hamburg City Climate Conference**, underlining the important role of cities in the combat against CO_2 emissions.

- The **Green Digital Charter** was signed in the same year, committing Ghent to reduce CO_2 emissions through ICT and promote progress in tackling climate change through the innovative use of digital technologies.
- In June 2009 the Council approved the **Local Windplan of Ghent**, laying out all possible locations and conditions for wind energy.
- In 2010 the Port of Ghent launched a **Strategic Plan 2010-2020 for the harbour area**, aiming for a 20% increase in energy efficiency by 2020. The Port of Ghent also focuses on integrated sustainability and has an ambition to become an example of corporate social responsibility within the European port scene.

Politicians have been closely involved with the development and agreement of Ghent's vision, and the rate of political support remains high. This is reflected in the fact that one of the city's main strategic targets is climate, and is also evidenced by the allocation of the City's budget to climate issues. Not all city departments and services are involved, but the most relevant and important services support the vision and corresponding targets, even where this is not part of their core business, as they can see the importance of finding cross sector win-wins.

Agreeing the targets

The city's targets were agreed in symbiosis with the agreement of the vision. Working with stakeholders led towards more cross sector thinking and acting, which helped to ensure that the targets are SMART, integrated and lead towards smart cities status. Stakeholder involvement in the EU projects MUSIC and STEP UP has generated much input for the main strategic targets of the city. As set out above, this input has been gathered in discussion sessions, workshops, interviews, advisory boards, commissions and tailored events. For example, in the ICT sector 'Ghent open data' or 'apps for Ghent' events have been organised, linking open data on energy with business creation and ICT innovation. Actions like these served as eye-openers for the City to put more smart actions in the SEAP. The SMART targets are stipulated in the main strategic targets of the City, showing that the Council has linked people, planet, prosperity and policy as well as stakeholder participation.

3. Gothenburg

On 26th April 2006 the City Council agreed to establish local environment quality targets for Gothenburg, based on national environment quality targets. Sweden has adopted 16 national environment quality targets for 2020, as well as a climate target for 2050, and municipalities have been encouraged to make local adaptations of these national targets.

Agreeing the vision

The City Administrative Office was responsible for leading the development of the targets, including the climate target for 2050. Each target was treated as a separate project and officials from city administrations and municipal companies were assigned to work in project groups. Politicians were involved in the process through a political reference group that monitored the development of the targets.

It was agreed that the targets should be realistic and specify the ecological dimension of Gothenburg's sustainable development. As much as possible the project groups aimed to propose targets that were indicators of the desired environmental state in Gothenburg (for example, the level of CO_2 emissions), without dictating the pathway to reach the targets. Decisions on measures to reach the targets are made in the yearly City budget.

Upon completion of their work, the project groups delivered a background report and proposed targets to the City Administrative Office. The City Administrative Office then continued working with the proposed targets in dialogue with the political reference group. In order to involve society, a hearing was organised in December 2007 on the 2050 climate target, to which different actors and representatives from all parts of the city administration were invited to discuss the proposal. The finished proposal was then forwarded to the City Executive Board and the City Council, who adopted the target in April 2008.

The climate target for 2050 is monitored together with the other environment quality targets through the annual Environment Report made by the City's Environment Administration, in which progress is tracked against previous years. Data is collected annually, from Statistics Sweden, local utilities, industries and the Traffic Administration.

A principal challenge in the process was agreeing whether the vision and target should be production or consumption based. Most climate targets are production based and only concern the emissions in a specific geographical area. However, Gothenburg prefers to consider all emissions caused by the citizens of Gothenburg through their lifestyles, and therefore a consumption based target was more appropriate. As a result, the 2050 vision now states that emissions should be sustainable and fair; fair meaning that the city should not only decrease local emissions, but also take into consideration the emissions that consumption in Gothenburg causes elsewhere in the world. It also refers to the fact that more developed nations use an unfair amount of the world's resources today, and therefore it is reasonable that these countries decrease their emissions more than other nations.

Agreeing the targets

The overall 2050 target and milestone climate targets for 2020 were agreed through the process described in section 3.2.2.3. The milestone targets for 2035 have been added in 2014 as part of the development of the Climate Programme (see below). The environment quality targets have all been adopted by the City Council, and are monitored annually in an Environment report using data collected from Statistics Sweden and local utilities and industries.

The targets in the Climate Programme were developed in a workshop with the city administration, as well as municipal companies and representatives from local industries and academia. After the workshop the targets were further discussed by the groups developing the Climate Programme, and some targets were also evaluated by a consulting company. Specific percentages in the targets were defined by officials, including the municipal energy company and the Traffic Administration. During the process of developing the targets, politicians were informed about the structure and character of the targets. Background data was collected by the city in co-operation with different stakeholders and their associations. SP Technical Research Institute of Sweden[29] was consulted to carry out an audit and make a Sankey diagram to show the energy flows in the city. The Climate Programme is due to be adopted by the City Council in autumn 2014.

For the Energy Efficiency Strategy, stakeholders helped to set individual targets for 2014 and 2020, as well as overall targets. Building-related targets were defined by the municipal administrations and companies that own residential and commercial buildings in Gothenburg. The transport targets were defined by the Traffic Administration. The strategy and its targets were adopted by the City Council in 2010. Monitoring and measurement of progress against these targets is carried out annually, through the collection of data from the municipal companies and administrations involved.

4. Riga

Agreeing the vision

Targeted sustainable development of the city of Riga was started in the 1990's, when the Charter of European Cities & Towns Towards Sustainability (Aalborg Charter[30]) was signed and the visions of this Charter were built into the strategic development documents of the city.

[29] SP Technical Research Institute of Sweden - www.sp.se/en/about/Sidor/default.aspx
[30] Aalborg Charter - www.sustainablecities.eu/aalborg-process/charter

In 2007, Riga Energy Agency was established with the logistical and financial support of the EU Intelligent Energy - Europe programme[31], following a recommendation from the Riga City advisory board of energy supply experts (which then became the REA advisory board). The REA's remit was to build capacity to work on issues related to the energy and energy efficiency sectors.

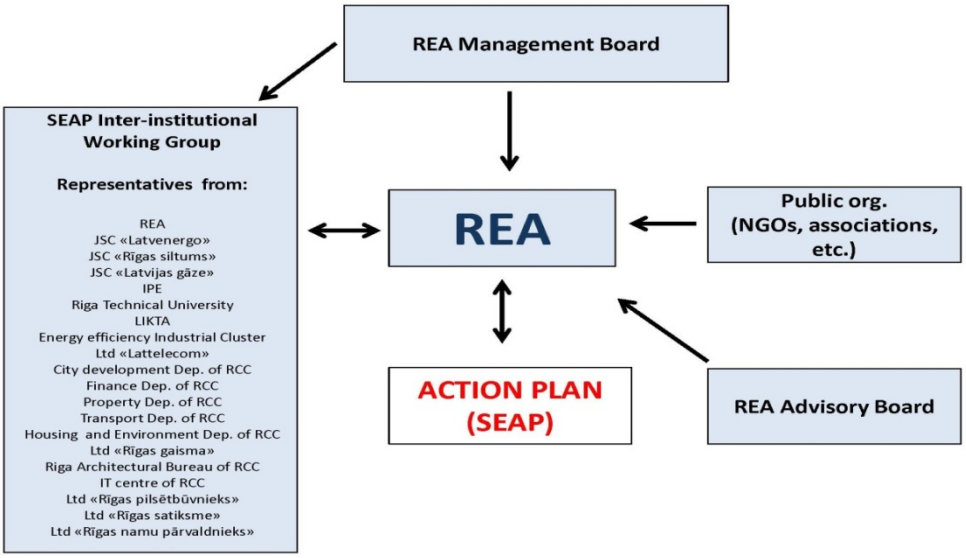
In September 2008 the Covenant of Mayors was signed underlining the city's sustainability visions, with a focus on the energy and transport sectors, given their contribution towards the city's overall CO_2 emissions (transport = 37%; district heating = 28%; end use of fuel = 20%; electricity consumption = 15%). Specific targets were included in Riga's SEAP for 2010-2020, which was developed by the REA in close collaboration with energy supply experts on its advisory board, and adopted by Riga City Council on 6th June 2010. Political support has been high since then, with Riga City Council supporting all REA initiatives focusing on sustainable and smart energy development.

The development of the first SEAP marked the shift from a sector based approach to integrated energy and climate focused planning and the SEAP is an important, novel strategic planning document for the City of Riga. The integrated approach has also been applied by incorporating SEAP targets and measures within the strategic planning document hierarchy in the City (including Riga's long term development plan to 2025 and the development programme to 2012).

Good progress on the SEAP gave the city an incentive to adopt the new EU initiative on the development of smart cities and communities in 2012, acknowledging the potential of ICT in the reduction of CO_2 in the energy and transport sectors. Following this, the City started to develop the new enhanced SEAP. Riga City Council gave Riga Energy Agency responsibility for organising and managing the implementation of the enhanced SEAP, and additional management bodies have also been established for public involvement and participation. Figure A below shows the organisational scheme for the REA, setting out how the Agency cooperates and co-ordinates work with key stakeholders and their associations.

[31] European Commission, Intelligent Energy – Europe (IEE), http://ec.europa.eu/energy/intelligent/index_en.htm

Figure A. Riga Energy Agency's organisational structure



Agreeing the targets

How targets have been set, how agreement was reached, and which methods, data gathering and analyses have been used are set out in section 3.2.4.8 above. As described, the responsibility for developing and agreeing targets lies with the REA and its advisory board, supported by politicians. Other structures operating in the SEAP management system approved by Riga City Council were also involved in the process (see Figure A above). In drafting the SEAP no central research was carried out and no solutions were sought; this research was carried out in each sector independently and the SEAP was drafted based on the results of the research.

In terms of the overall CO_2 emissions reduction target, the Covenant of Mayors' Guidebook for SEAP development[32] provides options to set this either as an absolute reduction or as a per capita reduction. For Riga's SEAP, an absolute reduction target for the total amount of CO_2 emissions has been set. Given the specific conditions in Riga, namely, the continuous decline in population coupled with a relatively low standard of living in the period of time considered, which is characterised by comparatively low electrical energy consumption levels in households, per capita CO_2 emissions are not seen to be appropriate as a descriptive measure.

[32] Covenant of Mayors, 2014, *Reporting Guidelines of Sustainable Energy Action Plan and Monitoring*, www.covenantofmayors.eu/IMG/pdf/Reporting_Guidelines_SEAP_and_Monitoring.pdf

Annex B: Best practice approaches in the cities – stakeholder involvement

(NB. The text below is copied from deliverable D2.1, Annex F, May 2014)

Ghent

Sharing responsibilities for the enhanced SEAP by proposing co-signing by the City and stakeholders as part of the 'Ghent Climate Alliance'

Ghent is mobilising companies, citizens, local organisations, schools and policy makers to work together to achieve climate neutrality by 2050. Through the 'Ghent Climate Alliance' the city strengthens cooperation between all sectors of society. The Climate Alliance, which was established in 2009, is a platform for activities, debates, ideas and solutions related to climate issues in Ghent. The city is getting stakeholders involved through two parallel processes: 'thinking' and 'doing'. The former concerns debates, workshops and meetings between different stakeholders to develop policy solutions to climate challenges. The latter includes participatory and co-creative actions which lead the 'transition' towards climate neutrality. This shared responsibility for Ghent's climate targets is captured by co-signatures: the engaged stakeholders become part of Ghent's Climate Alliance by signing a Climate Charter. To date, 1,242 companies, organisations and individuals have signed this charter.

Building on the history of local stakeholder engagement using the method of transition management

The engagement of stakeholders in the process of building an enhanced SEAP for Ghent has drawn input from Ghent's transition process in previous years. Active 'front-runners' from these transition arenas were involved in workshops and made enquiries for the creation of the SEAP. The climate and mobility transition arena had built up a detailed shared vision for the future of Ghent, and experimented with pilot projects towards this goal. This background process provided a rich starting point for the engagement plan for Ghent's enhanced SEAP. The intensive process of in-depth interviews and arena meetings was not repeated within the current engagement phase, as this was not seen to give additional value. However the learning's from this have been integrated into the new phase.

Engaging active and knowledgeable individuals

A particular characteristic of the transition management approach is to engage individual 'front-runners' with an influential network. Through a process of interviews and structured meetings these visionary thinkers analyse the current system and formulate a shared vision for the future. This

analysis and vision provide a basis for pilot actions in which more stakeholders are involved. Subsequently these pilot actions influence an even greater group of stakeholders to become engaged. To stimulate the creation of projects and actions the city of Ghent has developed instruments to support bottom-up initiatives which are part of Ghent's Climate Alliance. For example, inhabitants of the same neighbourhood who collaborate in neighbourhood-level projects that reduce CO_2 and stimulate energy efficiency can receive project guidance or an implementation subsidy. Projects organised by citizens or organisations to raise awareness of climate issues (for example relating to energy efficient housing, or sustainable food consumption and production) are also entitled to a subsidy from the City of Ghent.

A sectoral approach with tailor-made methods of engagement

Ghent's stakeholder engagement plan includes a strategy for companies, the housing sector and mobility sector as these thematic groups play a central role in the scenarios built in developing the climate plan. Stakeholders are contacted for three reasons: input to SEAP, building support and activation. To reach these goals effectively, different methods of contacting and engaging stakeholders have been used: including workshops, interviews, one to one meetings, and meetings with the deputy mayor. The choice of approach was tuned to each specific stakeholder.

Glasgow

Stakeholder involvement

In Glasgow, the initial stakeholder analysis and prioritisation carried out early on in the project was revisited several months later in light of the more in-depth stakeholder analysis. In this later analysis, Glasgow identified more specifically the 'key players' (based on their power and influence) who were most important to engage in the enhanced SEAP. In the revised stakeholder matrix the key partners were in some cases already represented on the Sustainable Glasgow Board but other issues were also identified, including the need to involve Glasgow's Economic Leadership, commercial bodies, transport organisations and the Community Planning Partnership. Stakeholder involvement should be seen as a dynamic process, so it is seen to be of value to revisit the position of stakeholders and their participation as interactions with the SEAP evolve over time. Glasgow partners see this as best practice for STEP UP and recommend that cities working on SEAPs should review stakeholders engaged on a periodic basis and revise their engagement in light of this.

Sustainable Glasgow Board

In Glasgow, the Sustainable Glasgow Board has been in existence since 2009. It provides the governance and reporting mechanism for the SEAP as far as stakeholders are concerned and enables buy in and support for an enhanced SEAP. The Sustainable Glasgow Board combines public and private interests across Glasgow, which reflects the breadth and scale of the key issues affecting the city. Partners include Glasgow City Council, University of Strathclyde, Scottish Power, Scottish and Southern Energy, Green Investment Bank, Scottish Government and Scottish Enterprise. It is chaired by the Leader of Glasgow City Council. The Board meets every three months and an update on the enhanced SEAP is presented at each meeting. Glasgow partners see this as best practice for STEP UP and propose that the establishment of, and reporting to, a stakeholder fora is an important part of the SEAP process.

Linking planning processes and stakeholders involved in each

Glasgow is developing stakeholder engagement alongside the enhanced SEAP, building on engagement that has already taken place in other planning processes and engaging stakeholders that are already engaged through other fora. At city wide level, the Sustainable Glasgow Board and the Community Planning Partnership have representation from stakeholders in different sectors. Within the local authority, the Carbon Management Plan, the Local Development Plan and other documents such as the City Centre Strategy have already engaged extensively with stakeholders and the SEAP process in Glasgow is utilising the contacts and established relationships that exist as a result of this. It is important that the SEAP seeks to integrate planning processes in the city both in terms of topics covered and stakeholders engaged. Glasgow partners see this as best practice for STEP UP and recommend that other cities developing their SEAPs should build on engagement with stakeholders by linking with other planning processes and the stakeholders engaged in these.

Stakeholder survey

A stakeholder survey for organisations endorsed by the Leader of Glasgow City Council was sent to a variety of public organisations, private stakeholders and the community/voluntary sector in December 2013. The main objective was to consult organisations on the enhanced SEAP for Glasgow and questions were asked on issues such as vision, CO_2 reduction targets and the SEAP development process. The survey was sent to over 200 organisations and the response was very encouraging with over 125 organisations completing the survey (over 55% response rate). Respondents also provided comments that will be helpful in the development of the enhanced SEAP. Part of the reason for the high response rate was that an online survey tool was used and publicity about the survey was conducted using social media including Twitter. The experience in Glasgow is that the high response

rate and wide range of organisations reached gave both a commitment to engage in the process and useful information and views on the SEAP. A similar citizens' survey covering issues such as energy choices and behaviours is now being conducted and will help to integrate the views and thoughts of the public into the enhanced SEAP. This is seen to be another example of best practice for STEP UP, and Glasgow partners recommend that other cities should make use of online survey tools and social media when seeking to engage with stakeholders and citizens.

Riga

Formal structures for SEAP development and implementation

Politicians in Riga City Council support the creation of a basic stakeholder group; with the Council's decision the SEAP members of the steering group were approved, including representatives from 20 grassroots organisations. This steering group is the leader for SEAP implementation in Riga city. The form of cooperation is determined by regulations, which establish concerted activities in developing the SEAP, monitoring and controlling the realisation of SEAP tasks and mutual information exchanges with the SEAP's leading organisation (Riga Energy Agency, REA). SEAP steering group members are co-authors for the developed SEAP; the SEAP chapters and goals to be achieved by 2020 are established as a result of information that is prepared by them. An additional example of best practice in the enhanced SEAP is that organisations representing ICT sector have been invited to join this stakeholder group for the new SEAP, recognising their importance in the ambition to reach 'smart city' status.

Politicians in Riga City Council have also supported the Advisory Board - the other important stakeholder group for SEAP development and implementation. The line-up of this group has been approved by REA and it operates following regulations approved by REA. The group consists of the country's most well-known scientists and leading experts in the field of energy and housing, thus ensuring the SEAP is of required quality. The main innovative solutions in the SEAP are discussed within the meetings of the Advisory Board. The Advisory Board's reputation and knowledge helps REA to achieve legislative changes necessary for the SEAP's implementation in Latvia.

Engaging the public

Of great importance for the successful implementation of the SEAP is informing the public of planned SEAP activities. Information provision measures carried out by REA are: maintaining their own website and social media accounts (Twitter, Facebook and YouTube), as well as signing cooperation agreements with stakeholders for the exchange and dissemination of information. An example of a success story is the agreement with the news website "Building.lv" which publishes

information submitted by REA on its news site, under its current affairs section. Such cooperation helps in information networking and provides the widest possible public coverage.

Riga sees advanced cooperation with stakeholders as the cornerstone for successful SEAP development and implementation in the city.

Gothenburg

Regular steering committee meetings

In order to establish decisions with the most important stakeholders in the city administration, meetings are held with the steering committee every 1-2 months. The steering committee consists of the CEOs of the local energy company and municipal housing companies, as well as the directors of city administrations important for environmental issues such as the Environment Administration, Traffic Office, and Property Development Office. By holding frequent meetings the organisations in the steering committee have been made aware of the SEAP process and have had the opportunity to provide comments at an early stage.

Citizen involvement in the RiverCity vision

Citizen involvement has been important in many processes related to the SEAP. However, this has especially been the case in the work on the vision for the RiverCity, which focuses on the sustainable development of the central parts of Gothenburg along the river. The process included public consultations, school projects with secondary schools in Gothenburg, and projects with students at Chalmers University of Technology and School of Crafts and Design. Citizen involvement, especially from young people, has been a key factor in order to find out what they value in the future development of the city.

Stakeholder workshops

Large workshops have been held to develop the SMART targets and other plans, involving stakeholders from many parts of the city, including private sector companies such as Volvo, academia and City officials. As a vehicle manufacturer Volvo provided valuable comments on technology development in the transport sector. Academia contributed with important comments on consumption, transport and energy system development, and the City officials were included at an early stage to help define targets that will influence their organisation.

Annex C: Deliverable template and guidance note

Template for Deliverable D2.4, 'Visions and targets for each of the partner cities'

Please read accompanying guidance document before completing this template

Deliverable description: Identification, analysis and discussion of the visions of key stakeholders to build a shared sustainable vision for the city's low carbon future.

City:

1. **Is there a vision of the city defined and agreed? If yes, please write it below** (vision for sustainable development of the city). If no, please explain the current status of the city's vision (vision for sustainable development: of the city).

2. **Please write vision for energy of the city agreed below** (energy generation, maintenance, use, energy efficiency/energy reduction, renewables and carbon emissions):

3. **Please write agreed understanding of the vision for energy of the city** (please write with your own words, what is the understanding agreed between politicians and stakeholders on the vision for energy of the city. How they understand the vision and act, co-operate, co-ordinate implementation?):

4. **Please provide background text explaining the city's vision** (could be also separate attachment to the template, not more then 1-3 pages. You can use a copy of the vision document or send a link where it is published, or attach a summary pages of the document stipulating the vision)

5. **Please describe the process how the city came to the agreed vision:**

5.1. How and when the process started?

5.2. What stakeholders were/are involved?

☐ Local or regional government ☐ Local/ regional utilities

☐ National utilities ☐ Research and Training organizations

☐ Industry ☐ Universities

☐ Spatial planners ☐ Consultancies

☐ NGOs/ representatives of civil society

5.3. How politicians were involved, consulted with?

5.4. Rate the level of political and administrative support to define the vision for energy of the city

☐ Low ☐ Medium ☐ High

Please describe/comment:

5.5. What information platforms used to involve society?

5.6. What methods and analysis used to gather the data?

5.7. What methods used to analyse the data?

5.8. How different interests were discussed and treated, what were main interests with completely opposite views? What were main interests with common understanding, view?

5.9. How the agreement between involved parties was reached?

5.10. When and how vision was approved, by whom?

6. How the agreed vision for energy of the city will implement and reach:

6.1. **Smart cities targets**:

6.2. **Europe 2020 targets?**

6.3. **Energy 2020 targets?**

6.4. Your city and your country view on Energy 2030 proposal: (Energy 2030 http://ec.europa.eu/clima/policies/2030/index_en.htm, please indicate position of your country on the discussion about the proposal, do you support it, what is not understandable, clear, duplicating…?)

7. **Please write the SMART targets of the vision** (defined and agreed) **below:**

8. **Please explain for each of the targets how the defined and agreed target is:**

Specific-target well defined and it is clear what is required
Measurable-how you will measure whether you will reach your objectives, target?
Achievable-how you will achieve the target?
Realistic – do you have the skills and competence to complete the target?
Time-bound – when you expect to complete (reach) the target?

9. **How these SMART targets were agreed? Who was engaged? What information used? How the agreement was reached?** Please describe the process, methods, data gathering, analysis.

Guidance for Deliverable D2.4, 'Visions and targets for each of the partner cities'

Below is a list of guidelines to help cities complete the template for D2.4, 'Visions and targets for each of the partner cities'. This deliverable is supported by two sub-tasks in the Description of Work: 2.2.1 (defining the vision with stakeholders and their associations) and 2.2.2 (refining the vision and defining the targets).

In this deliverable, a compelling vision for a sustainable city is built in strong collaboration with all relevant political and public stakeholders. Based on this vision, the cities agree on SMART targets (Specific, Measurable, Achievable, Realistic, Time-bound) on energy efficiency/energy reduction, renewables and carbon emissions. This vision and related targets will be worked out and strengthened in an interactive way throughout the project.

We need to be clear about our scope of the STEP-UP project, also timeline and to compare it with other linked ongoing processes. For example, in case cities have longer term (2030/2050) visions and targets they need to explain how these link with 2020 SEAP aims.

Questions 1-4:

- Defining the vision of the city – in the scope of the project we understand the vision for energy.
- However, future of the city development is ongoing building process, strategic planning process, where energy strategy is one of the key elements to work on. Therefore template requires indicate both vision of the city and vision for energy generation and use, energy efficiency.

Question 5:

- An agreed vision on paper is already an achievement, but the vision cannot be reached if there is no common understanding between all concerned, and if it is not shared and does not reflect the interests of various stakeholders.
- Reflecting on the process could be useful especially you are still in the process of definition and agreement of the vision, as that could allow you to find out the risks to be minimized.

Question 6:

- Broader context – links between the city's vision and Europe 2020, Energy 2020, Energy 2030 proposal (under discussion), Smart Cities. As usual in the planning the process is ongoing. We are in process to implement one strategy, but another one is under the discussion. To keep your mind open, there are some questions about future developments here.

Question 7-8:

- SMART targets – proof the way to reach the vision. These should be based on acquired data, reviews and analysis of the cities, and developed through engagement with political and public stakeholders.