Report: Work Package 2

Executive Summary of Deliverable D2.7, 'Enhanced SEAPs'

Grant Agreement number: 314679

Project Name: Strategies Towards Energy Performance and Urban Planning

Project acronym: STEP UP

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Executive Summary

Deliverable aims and objectives

The purpose of deliverable 2.7 (D2.7, 'Enhanced SEAPs') is the development and presentation of the enhanced Sustainable Energy Action Plans (SEAPs) for each of the STEP UP cities – Glasgow, Ghent, Gothenburg and Riga – with more integrated solutions and greater impacts. The development of enhanced SEAPs has enabled the cities to strengthen their sustainable energy planning, supported their transition to smart city status, and helped them better contribute towards the achievement of the EU 2020 climate and energy goals. The enhanced SEAPs have been developed by the STEP UP cities using the outputs and lessons learned from earlier STEP UP deliverables to reflect political priorities, address key city challenges, align with other strategies and programmes, and enable the cities' ambitious climate and energy goals to be met.

The key aim of this report is to demonstrate how the new SEAPs have been enhanced compared to the cities' initial SEAPs, with a particular focus on three key STEP UP dimensions: 'energy and technology', 'economics and finance', and 'organisation and stakeholders'.

The report reviews the key features of the enhanced SEAPs, examining what makes them more robust to the key challenges the city is facing or may face in the future. It also reviews the selection of actions and projects in the enhanced SEAPs in order to allow the cities' ambitious targets be achieved by 2020 and sets out the impact of STEP UP deliverables on enhanced SEAP development, as well as the challenges and learning points that have emerged in the enhanced SEAP development process.

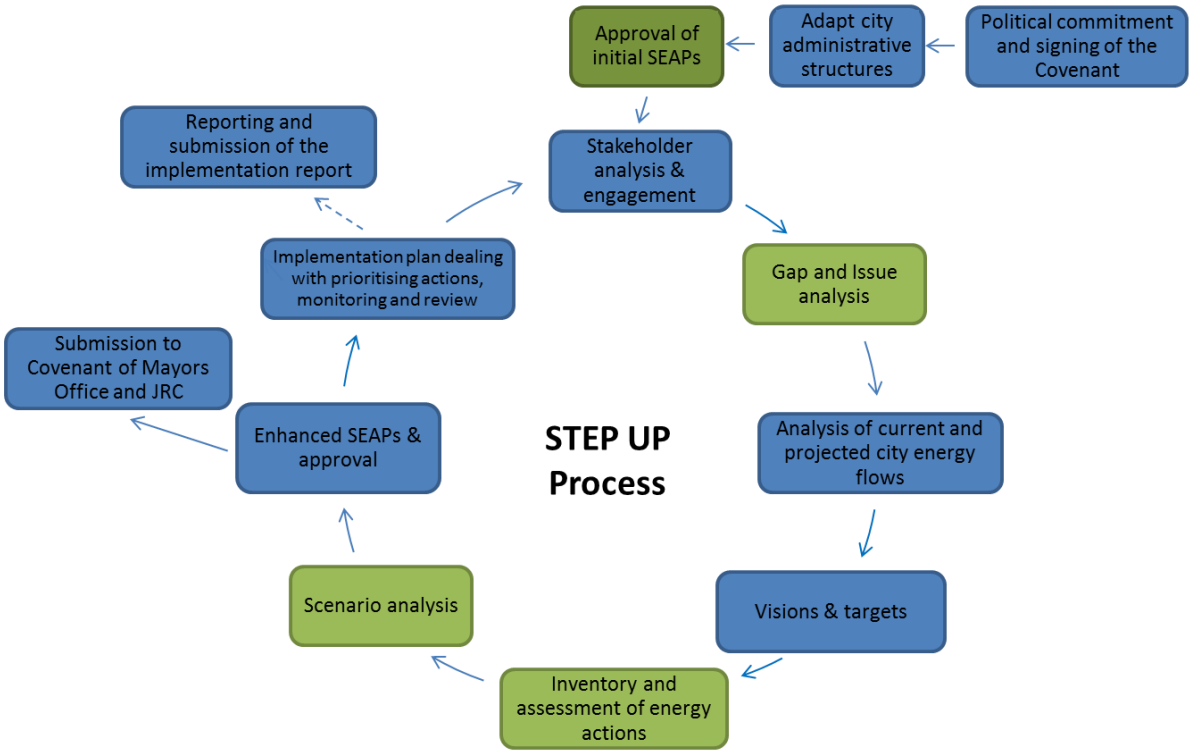
City approaches

The process followed by the STEP UP cities to develop their enhanced SEAPs is based on a framework which was defined at the start of the project and consists of the following steps: 'understanding the city' (through engagement with stakeholders, reviewing existing climate and energy strategies and analysing current and projected energy flows), 'building a shared vision and setting targets', and 'analysing energy actions' (through which inventories of stand-alone actions and cross-sector opportunities have been created, various city scenarios and their potential impacts have been analysed, and SEAP actions have been selected).

This framework is not only based on the Covenant of Mayors SEAP process, but in addition new steps (in green in the figure below) have been defined, in order to enable the development of enhanced SEAPs that are more integrated, robust and ambitious. Whilst all four STEP UP cities

followed the same overall approach, the different steps of the process were given city-specific interpretations, taking into account the local context, background and timeframes for SEAP development. The illustration below presents an overview of the enhanced SEAP process followed by the STEP UP cities. This will be discussed in more detail in deliverable D2.9, 'Documentation of the STEP UP approach to enhancing SEAPs'.

Figure A. The STEP UP process



To provide supporting information to feed into this deliverable report alongside the SEAPs themselves, the cities responded to questions in a template developed by the deliverable lead. The template covers: the key features of the enhanced SEAPs; the main differences between the initial and enhanced SEAPs in terms of energy and technology, economics and finance, and organisation and stakeholders; the factors that make the enhanced SEAPs more robust to key challenges that the city is facing or may face in the future; the selection process of actions/projects in the enhanced SEAPs; the impact of the work carried out through STEP UP on the enhanced SEAPs; and the lessons learned through enhanced SEAP development.

Key findings

The four cities' SEAPs are available in full as separate annexes to this report. Due to differing timings of political processes in the cities, the involvement of stakeholders and consultations with the wider

public, the four partners are at different stages of SEAP approval. The titles given to the enhanced SEAPs, their current statuses, and the key targets, are set out in the table below.

Table A. SEAPs and their status

City	SEAP title	SEAP approval date (actual or forecast)	Current status	Key targets
Ghent	Climate Plan 2014-2019 (*Klimaatplan* 2014-2019)	January 26, 2015	Approved	-20% CO_2 by 2019 (2007 baseline); -20% energy use by 2019 (2007 baseline); -Local production of renewables (wind, solar) has to make up 15% of households energy consumption by 2019.
Glasgow	*Glasgow's Energy and Carbon Masterplan* (ECM)	April 2, 2015	Ratified by Environment and Policy Development Committee on February 4, 2015; to be passed to Executive Committee for final approval on 2nd April 2015	-30% CO_2 by 2020 (2006 baseline)
Gothenburg	Climate Programme for Gothenburg (*Klimatstrategiskt program för Göteborg*)	September 4, 2014	Approved	-40% CO_2 by 2020 (1990 baseline)[1]; -30% energy use in homes and -20% electricity use (excluding industry and transport) by 2020 (1995 baseline); By 2030 the City of Gothenburg produces at least 500 GWh of renewable electricity and 1200 GWh of biogas.
Riga	Riga Smart City – Sustainable Energy Action Plan (*Rīgas pilsētas ilgtspējīgas enerģētikas rīcības plāns viedai pilsētai 2014.-2020.gadam*)	July 8, 2014	Approved	-55-60% CO_2 by 2020 (1990 baseline)

[1] Non-ETS sectors only.

Through STEP UP the cities have gone beyond the Covenant of Mayors' requirements for SEAPs by: considering the gaps in their initial SEAPs; ensuring that their enhanced SEAPs are developed with greater stakeholder engagement and closer alignment to other city plans and strategies; analysing the actions to be included in their SEAPs in detail in order to prioritise them; understanding potential future city scenarios and their impacts, and planning for improved implementation, monitoring and review of the plans. The adoption of a smart city planning approach is also seen to have contributed considerably to the enhancement of the cities' SEAPs, allowing for improved integration between different sectors.

There are a number of common threads running through the cities' enhanced SEAPs, as set out below:

Greater climate and energy impact

The table above shows that the cities have all set targets to contribute towards the achievement of the EU 2020 energy and climate goals. Whilst all four cities have set CO_2 emissions reduction targets, only Ghent and Gothenburg have set targets for energy savings and renewable energy production. Nevertheless, all four cities' SEAPs include actions that will not only reduce CO_2 emissions but also contribute to lower energy use across the cities and an increased focus on the local generation of energy from low carbon sources. As part of the target setting and SEAP development process, the cities have identified the priority sectors that contribute the most to CO_2 emissions. The three priority sectors that the four cities have in common are: heating of buildings, transport and public lighting. Actions have been set in the SEAPs which will ensure that targets can be met, and that these priority sectors are addressed. Whilst in Gothenburg and Riga, this has resulted in more ambitious targets in the enhanced SEAPs compared to the initial SEAPs, Glasgow and Ghent have maintained their existing targets (although Ghent has moved its target year forward from 2020 to 2019). All four cities have defined a set of actions that will deliver higher impact than before and address the limitations of their initial SEAPs.

Developing integrated strategies that tackle multiple city priorities

The enhanced SEAPs address multiple policy objectives in the cities that go beyond the EU 2020 climate and energy goals and are aligned with wider city priorities and strategies; they are not solely focussed on carbon reductions, energy savings and the uptake of renewables, but also take into account the added value of a holistic perspective that encompasses the environmental, social and economic dimensions of sustainability. This has been valuable in ensuring that projects take an integrated approach, with strong foundations that not only result in significant carbon and energy

savings but also increase employment opportunities and the uptake of low carbon technologies and decrease fuel poverty, amongst other impacts.

These integrated strategies not only ensure that the SEAPs have sufficient political support and are given priority in the city, but also help to ensure their viability and robustness. For example, Ghent cites the importance of cross-sector integration of actions and cross-sector wins as being key to its enhanced SEAP's development, resulting in the integration of climate and energy related issues with other policy domains, such as mobility and urban planning, and increased public acceptance of the selected measures.

Actively engaging and securing support from key stakeholders

All four cities have made their SEAPs more robust by actively engaging with stakeholders and securing support for planned actions from key actors. Building on the work conducted in D2.1, 'Stakeholder analysis and engagement plan', cities have engaged with stakeholders to define visions, strategies and actions for the enhanced SEAPs and secure their commitment during the implementation phase.

The active engagement of stakeholders through the various stages of enhanced SEAP development has demonstrated two key benefits for the cities. Firstly, the increased involvement of stakeholders throughout the process of enhanced SEAP development has increased stakeholder buy-in and support for the plans and the actions within them; and secondly, by incorporating stakeholder knowledge and expertise directly into different stages of SEAP development, the enhanced SEAPs have been built on a better understanding of the city and the partnerships and activities being undertaken within it.

Solutions with greater impacts and realistic prospects for implementation

The increased stakeholder involvement and the additional research undertaken during the development of the enhanced SEAPs has provided cities with the opportunity to identify and develop solutions with greater impacts, tailored to their own local context. Significant improvements have been noted in relation to the energy and technology dimensions of the enhanced SEAPs, with cities featuring innovative and smart technologies in their plans, and using new, higher quality research results and data which has helped them to identify key areas for taking action. For some cities, types of research and analysis have been undertaken which are new to the city, such as scenario analysis, allowing for the way the city works as a system to be better understood and both challenges and opportunities better addressed.

Additionally, to increase the impact of adopted actions, cities have placed a greater focus on developing actions that have higher prospects for being implemented effectively. Decisions on the selection of actions have been driven in part by stakeholder involvement, an emphasis on the distribution of responsibilities for delivering actions and the alignment of enhanced SEAPs with other city policies and strategies.

Energy actions for which financing and funding mechanisms can be secured

Financing and economic viability of actions are key to the successful implementation of enhanced SEAPs, but low carbon actions still tend to be perceived as actions with high investment costs and long payback periods. As a result, the cities are considering a variety of ways in which their SEAP actions could be financed, including revolving funds, ESCos, EU structural funds and other funding streams.

The cities have also recognised the importance of local social and economic impacts, in addition to environmental impacts, when considering financing options for enhanced SEAP actions. Examples include the social approach to financial support taken in Ghent, or the qualitative impact assessment of actions incorporating economic and social benefits undertaken in Gothenburg.

Robust and flexible plans that can respond to changing circumstances

As part of the STEP UP process, the four cities analysed the key challenges they face and the extent to which these challenges are understood and addressed in comparison to the initial SEAPs, in order to develop more robust plans. Several common challenges have been highlighted in the cities' SEAPs, including energy efficiency, heating existing buildings, availability of finance and investment, reliance on fossil fuels, and fuel and energy poverty, all of which need to be addressed in order for the cities to reach their targets. Additionally, the cities have identified key opportunities that support the development and implementation of their SEAPs and help to tackle the key challenges, such as improved energy efficiency and energy management systems for buildings, strengthened low carbon transport opportunities, increased local energy generation, high-impact city renewal projects and development plans, increased opportunities for integrated approaches, new research methods and tools to provide more accurate and easily accessible data, and increasing engagement with stakeholders in order to secure commitment over the long-term. Glasgow, for example, has found that the adoption of a problem/solution tree tool for this analysis has been effective in helping the municipality to gain a better understanding of what solutions it can implement to tackle the challenges it faces.

The cities have also identified other key ways for building more robust, enhanced SEAPs. Gothenburg, for example, highlights that its enhanced SEAP is more robust because it is more firmly established in the City organisation. In addition, the decision to take a long-term strategic approach has enabled greater flexibility in how actions are achieved, allowing the City to adjust its strategy according to any changing circumstances, and to involve stakeholders in a more adaptable and resourceful way. Riga's enhanced SEAP is strongly linked and aligned with other city documents, and therefore is seen to be more firmly established within the city and as a result more likely to be achieved.

Furthermore, all STEP UP cities have developed monitoring plans to ensure the successful implementation of their enhanced SEAPs, with review stages built in to allow for plans to be revised accordingly.

STEP UP tools, approaches, findings and experiences

The research undertaken by the cities through the STEP UP project has contributed greatly to the process of enhancing SEAPs in all four cities. Firstly, it is clear that from the experience gained in the implementation of the initial SEAPs and the development of the enhanced SEAPs, STEP UP cities have recognised the critical importance of understanding stakeholders and involving them in all stages of the SEAP process. In addition, the STEP UP project has played a significant role in highlighting to cities that they are not alone in facing key challenges in their city, and in developing an enhanced SEAP. Tools and approaches adopted have served, and will continue to serve, as inspiration for other cities. Whilst no one-size-fits-all solution exists to the challenges faced by cities, the nature of the tasks completed through STEP UP and the collaborative ways of working through project partnerships have facilitated knowledge exchange and enabled cities to consider different approaches and identify new opportunities that will help meet their targets.

Challenges and learning points

The cities have identified a number of learning points from the enhanced SEAP development process, which can be taken into account by other cities when they develop or enhance SEAPs:

- **Stakeholder involvement:** A common learning point noted by the cities is the importance of involving stakeholders in all stages of the enhanced SEAP process in order to develop a SEAP with clear, realistic objectives and actions that will effectively meet them. However, the cities also recognise that stakeholder analysis and engagement can be a time-consuming process,

requiring broad collaboration, commitment and the identification and involvement of people with the appropriate skills and knowledge.

- **Political support, commitment and leadership:** The cities note that strong commitment from politicians and local leaders is crucial, in order for the enhanced SEAP to be supported and effectively implemented in the city.
- **Good project management:** The importance of establishing good project management processes before starting SEAP-related activities has been emphasised by several cities. This provides the foundation for all other work and having an established team and management approach can help to keep stakeholders engaged throughout the process.
- **Balance short-term goals within a longer-term perspective:** Whilst the enhanced SEAPs have a timeframe until 2020, cities have learned the importance of also considering a longer-term perspective.
- **An integrated approach to planning and sustainability helps to meet multiple objectives:** It is important for the enhanced SEAPs to reflect an integrated concept of sustainability within the city, addressing environmental, social and economic dimensions to improve the quality of life for citizens and meet multiple policy objectives.
- **Data availability and quality can be challenging, but are essential:** Accessing reliable energy and CO_2 data has been a challenge for all four cities. However, the experience of the STEP UP cities shows that accessing reliable, up-to-date and local data on energy production, consumption and related CO_2 emissions in the city is essential to assess the impact of actions and monitor the success or failure of the SEAP.
- **Energy mapping and modelling can improve understanding of the city:** The cities have found that it is beneficial to have a good understanding of energy use and production flows in the city. One way to do this is through the use of energy maps to identify spatial issues and opportunities and locate specific areas which require attention in terms of reducing energy consumption and increasing energy efficiency.
- **Investment in actions and projects is key:** The cities recognise that actions are only economically viable if appropriate funding and financing mechanisms are in place.
- **Developing an effective monitoring process is integral to the SEAP's success:** Establishing a monitoring process, as all four cities have done, is essential to ensure that progress against key actions can be tracked.
- **Developing SEAPs starting from other city plans can be challenging:** For cities that are developing their enhanced SEAP as part of a longer-term plan or strategy with a wider focus,

meeting the Covenant of Mayors requirements for the SEAP template can be challenging, as it is not able to account for all parameters within a city.

- **The Covenant of Mayors SEAP process can be strengthened:** The STEP UP cities have found the Covenant of Mayors SEAP process to be strengthened by the additional steps identified and tested within the STEP UP project. These steps, combined with the recent refinements to the SEAP templates provided by the Covenant of Mayors Office and the enhanced monitoring plans in the cities, allow for enhanced SEAPs, which are more robust to changing circumstances and have a greater impact on the EU 2020 targets, to be produced across Europe.
- **Learn from others**: Sharing experiences with partner cities and cities in the learning network, as well as involvement in other European projects, is also noted to have been influential in promoting knowledge exchange and incorporating effective approaches from other cities into the development of the enhanced SEAP.
- **Communication is key:** The cities recognise that SEAP policy documents can be long, and difficult for a broader audience to navigate, and thus it is important that the end product is comprehensible and easy to read, understand and communicate.

Key recommendations

The outcomes from the enhanced SEAP development process and the challenges and learning points that have emerged help to identify key recommendations for STEP UP cities to take forward:

- **Stakeholder involvement**: The cities should continue (and improve) the process of stakeholder involvement set up during the development of the enhanced SEAPs. Collaboration and engagement with key actors in the city should be maintained, and can also provide significant benefits in other projects.
- **Data improvements**: The cities should continue to search for ways to gain better data, including through funding opportunities which will enable this, to input to their emissions inventories, to assess the impacts of actions, and to feed into new research and analysis methods to better understand the city.
- **Implementation, monitoring and review**: The cities should continue with the enhanced SEAP process after finalising the STEP UP project, through implementation, monitoring and review of their action plans, and by providing progress reports both locally and to the Covenant of Mayors. Regular monitoring followed by appropriate adaptations of the plans allow for continuous improvements to be made to the process.

- **Knowledge exchange and dissemination**: STEP UP should capture best practices, tools and techniques in sustainable city planning in an easy-to-use format for other cities, to extend their effective use and impact across Europe and beyond.
- **SEAP template flexibility:** STEP UP should consider, and discuss with the Covenant of Mayors Office, how the SEAP template can be best be completed and used, in order to accommodate and reflect different local contexts, ambitions and resources.

Recommendations can also be made for other cities that are planning to develop an enhanced SEAP, or considering signing the Covenant of Mayors:

- **Tailor city approaches**: Cities developing a SEAP should not feel obliged to follow the recommended Covenant of Mayors SEAP process step by step. Adapting the process to the city's capabilities and needs can prove beneficial, providing all key requirements are still met and participatory processes are in place.
- **Knowledge exchange**: Cities developing a SEAP should learn from the experiences of other cities and share their own, in order to exchange ideas, methodologies and learning.
- **Understand the city and its stakeholders**: Cities should base their SEAPs on a clear understanding of where they are and what kind of future they are working towards. In the development of a SEAP it is essential to set clear targets and visions which are supported by stakeholders, including politicians and citizens.
- **Address multiple policy objectives**: Cities developing a SEAP should align it with other policy objectives in the city, assessing the environmental, economic and social impact of potential actions.
- **Stakeholder support and involvement**: Cities developing a SEAP should secure strong support from citizens, stakeholders and politicians for the specific measures it sets out, and at the same time foster the capacity to focus the resources of multiple stakeholders so that they work effectively together to create and deliver integrated projects.
- **Develop long term partnerships**: Cooperating with universities, other research institutions and commercial partners over the long term may help increase access to data, experise and technologies.
- **Feasibility, integration and robustness**: Cities developing a SEAP should, one the one hand, ensure that it is feasible, creating a credible, integrated, long-term framework that will attract significant additional funding from investors, and on the other hand, ensure that it is robust, offering flexibility in the face of changing circumstances.

Next steps

Gothenburg, Riga and Ghent's enhanced SEAPs have been approved, with Glasgow's SEAP being passed to the Council's Executive Committee for final approval on 2nd April 2015. All four cities have also been working on their SEAP templates (emissions inventories and action plans), with Riga's, Ghent's and Gothenburg's all submitted and Glasgow's to be submitted following final SEAP approval. Therefore a key next step for all cities is to plan for, and deliver, the implementation of the actions in their SEAPs.

The approaches followed by each city, as well as the SEAP policy documents and findings of this report, will be central to the final work undertaken by the cities: the prioritisation of SEAP actions, creating a high level implementation plan and setting out how these actions will be monitored and reviews; and documenting the STEP UP approach for enhanced SEAPs, for other cities to learn from and replicate.

The findings from this report will also be relevant for cities as they continue to develop their innovative projects and show for each project that the integrated approach achieves better climate and energy impact. The lessons learned and recommendations will also be shared with the STEP UP learning network of cities and the Covenant of Mayors Office, and disseminated more widely through the STEP UP website, events and other channels.

The findings will also contribute to the two new Masters programmes that have been created through STEP UP (D5.7): the MSc in Global Sustainable Cites at the University of Strathclyde and the MSc.Ing. in Energy Efficient Infrastructure for Smart Cities at Riga Technical University.[2]

[2] For more information, see: www.strath.ac.uk/courses/postgraduatetaught/globalsustainablecities/ and www.bf.rtu.lv/documents/SGUTI_EN.pdf