



City of  
Gothenburg



# Work Package 3

Executive Summary:

D3.3 List of common challenges and exploitable similarities around which innovative projects will be focused

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## **Executive Summary**

### **Deliverable aims and objectives**

This report presents the results of Deliverable 3.3 (D3.3), ‘List of common challenges and exploitable similarities around which innovative projects will be focused’, which is part of Work Package 3, ‘Development of innovative projects’. In this work package the STEP UP partner cities are developing a number of innovative projects based on an integrated approach to energy planning.

The deliverable fulfils sub-task 3.2.1 ‘Defining common challenges and exploitable similarities’, where the partner cities have been asked to identify their key climate and energy challenges which they would like to focus on and potentially collaborate around, for example: reduced heat demand and heat related emissions from buildings, or reduced energy demand for transport and mobility through smarter logistics and improved city planning. Another important aspect is the key exploitable similarities in the cities, which may present opportunities for identifying focus for collaboration. For example, excess waste heat from industry in close vicinity to areas of high heat demand in the city centre, or rivers that can be used for district cooling.

The main goal of the deliverable is twofold. Firstly, by analysing the similarities in challenges and project opportunities between the cities, the deliverable is a way for the cities in STEP UP to learn from each other and work together. In this way, the deliverable also feeds into the learning process facilitated within Work Package 4. Secondly, the deliverable seeks to help each city identify project opportunities which can be used as a basis for developing two or three ‘innovative projects’ later in the project, and thereby provides a link to the deliverables D3.4+3.5 and D3.6. In this way, it also feeds into the enhanced SEAPs developed within D2.7, the prioritisation of actions within D2.8 and the STEP UP approach which will be documented in D2.9.

### **City approaches**

Cities were given flexibility in the methodologies they chose, and so a variety of approaches have been used to arrive at the results (see table below):

	<b>Ghent</b>	<b>Glasgow</b>	<b>Gothenburg</b>	<b>Riga</b>
<b>Methods</b>	Workshops, internal meetings, outreach activities, desktop analysis	Workshops, desktop analysis	Workshops, desktop analysis	Workshops, desktop analysis

<b>Tools</b>	Transition arenas, master classes, study tours, system analysis	Problem/Solution Tree Analysis	Mapping common thematic areas in strategic documents	Qualitative and quantitative research methods, including SWOT analysis
<b>Participants</b>	Wide range of different stakeholders	Wide range of different stakeholders	Wide range of different stakeholders	Predominantly STEP UP partners, some external stakeholders
<b>Time period</b>	2011-2013	June 2013-March 2014	2011-2014	2013-2014

## Key findings

As well as wider challenges such as economic growth and social deprivation, the common challenges and opportunities identified by the cities are summarised below.

- **Common challenges faced by STEP UP cities, which can be used to frame later projects:**

- Improved low carbon energy infrastructure and network flexibility
- Transport and mobility
- Improving the energy efficiency of the built environment
- Climate change
- High energy prices and fuel poverty
- Towards energy efficient and sustainable lifestyles
- Reducing and reusing waste

- **Similar opportunities for projects within cities are focused around:**

- Infrastructure projects
- ICT projects
- Policy and regulation changes
- Training and skills enhancement
- Education to promote behaviour change
- Challenges/opportunities where one city is doing something different

The table below sets out the specific challenges and opportunities identified in each city, grouped into the key challenge areas listed above. As explained by the key below, colour coding is used to show commonality between cities in terms of the challenges (different shades of green) and to categorise the different opportunities identified. This helps to identify potential for collaboration around specific challenges and opportunities shared between the cities.

Key	
<b>Common Challenges</b>	<b>Categorised Opportunities</b>
Key commonality between all cities on challenges	Energy infrastructure projects
Key commonality between some cities on challenges	Transport infrastructure projects
Challenges in single city only	Building retrofit
	ICT projects
	Policy and regulation changes
	Training and skills enhancement
	Education to promote behaviour change
	Other

Key Challenge Areas	City	Specific identified challenges	Opportunities identified where the city has the best capacity to act/influence
Improved low carbon energy infrastructure and network flexibility	Ghent	Establishing district scale energy systems	Extending the existing district heating system
		Ensuring energy efficiency opportunities work for all	Creating tailor made energy support and advice services
	Glasgow	Ensuring (low carbon) energy security at a reasonable cost	Improved flexibility of options for heating supply
		Finance and investment	Improved use of ICT and data sharing
	Gothenburg	Improved energy distribution and production	Training and skills enhancement
	Riga	Secure, efficient and low carbon energy production and supply	Investment funds for low carbon projects
			Designing new and innovative energy supply systems
		Promoting and expanding the use of renewable energy sources	Recovery of waste heat from heat manufacturing processes
Transport and mobility	Ghent	Reducing the negative impacts of transport	Biomass as a heat generation fuel
	Glasgow	Developing more sustainable transport in the city	Small-scale projects with renewable energy at their core
			Improved street design to enable modal shift
	Gothenburg	Reducing the negative impacts of transport	Improved transport infrastructure to enable modal shift
Riga	Developing a sustainable urban transport system	Education to promote behaviour change	
Climate change	Ghent	Reducing the negative impacts of climate change	Encouraging the use of new technologies
			Sustainable energy infrastructure in seaport areas
	Glasgow	CO <sub>2</sub> emissions reduction	Steering mechanisms for reduced car traffic
	Gothenburg	A divided city that contributes to climate change	Giving priority to pedestrians, cyclists and emissions-free public transport
Improving the energy efficiency of the built environment	Riga	CO <sub>2</sub> emissions reduction	District level regeneration
	Ghent	Retrofitting inefficient building stock	Sustainable energy infrastructure in seaport areas
			Education to promote behaviour change
	Glasgow	City regeneration	Carbon sequestration
High energy prices and fuel poverty	Ghent	Tackling fuel poverty and its impacts	Planning for energy and transport efficient neighbourhoods
			Integrated approaches to emissions reduction
	Glasgow	Fuel poverty	Aligning policy instruments on different levels
			Policy and regulation changes
Towards energy efficient and sustainable lifestyles	Gothenburg	Energy efficient lifestyles and business practices	Policy and regulation changes
		Sustainable everyday life	Large-scale retrofit programmes
	Riga	Raising awareness among the local population	Training and skills enhancement
Reducing and reusing waste	Gothenburg	Preventing the generation of waste and supporting recycling	Climate friendly goods delivery
			Education to promote behaviour change - climate friendly lifestyles
			Long term stakeholder outreach and cooperation
			Innovative waste solutions



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## Key recommendations

This deliverable has helped to identify three key recommendations for the STEP UP partners, as well as for other cities that are aiming to develop innovative projects. These recommendations are set out below:

For STEP UP cities:

- **Use the six key shared challenges identified in this exercise as the basis of future collaboration and knowledge transfer for sustainable city projects**, as follows: improved low carbon energy infrastructure and network flexibility; transport and mobility; climate change; improving the energy efficiency of the built environment, high energy prices and fuel poverty; and towards energy efficient and sustainable lifestyles.
- **Use the identified shared areas of opportunity as the basis for knowledge transfer and potential collaborative projects between cities**: infrastructure projects; ICT projects; policy and regulation changes; training and skills enhancement; education to promote behaviour change; and challenges or opportunities where one city is doing something different.

For other cities:

- **Develop projects based on an analysis of major challenges**: If cities are aiming to identify innovate projects for further development, starting by analysing major challenges in the city has proven to be a helpful approach that supports cities in taking a step back and reflecting on their preconceived notions regarding what should and should not be done.
- **Use a Problem Tree Analysis**: For projects that are just about to start, the Problem Tree Analysis tool has proved to be a structured way of analysing challenges, their causes and consequences, as well as possible solutions. However, in cities where work has already been done in analysing major challenges, it might not be possible to use the tool in its entirety.
- **Connect the analysis of challenges to SEAPs or other strategic documents**: Identifying challenges in the city's SEAP or in other strategic documents can be a way of providing a connection between the identified solution and major policy goals in the city.

In this exercise a number of common or similar challenges and opportunities have been identified that have the potential to be exploited in collaboration between the cities, but it is clear that further discussions are needed between the STEP UP cities to understand how this can be done.



## Next Steps

The project opportunities will also help the cities select innovative projects for development in later STEP UP deliverables, such as D3.4+D3.5, where each city will have to show in what ways the innovative projects that they intend to develop are focused on the city challenges and project opportunities identified in this report.

It should be noted that there are also a wider set of common challenges that exist for the cities that are outside of the sustainable energy area. Economic growth and social deprivation are key issues in all cities, and aspects of the geographies, climates and economies of the cities can also said to be alike. For example the fact that cities are all northern European cities of a similar size means that the scale of opportunities that exist will also be comparable, as will the appropriate technical solutions and funding streams available.

During Autumn 2014, a further workshop is planned to use the challenges and exploitable similarities as a way of enabling all STEP UP cities to fully learn from one another, and to discuss common areas on which future projects and European Commission calls can be focused. An addendum update from this deliverable will therefore be produced as a result of this workshop.