Report: Work Package 3

Executive summary of D3.7: Show for each project that the integrated approach achieves better energy and climate impact

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Executive summary

Deliverable aims and objectives

The key aim of this deliverable is to show the impact of an integrated approach to project development compared to a traditional approach, with a principle focus on energy and economics, but also on technology and innovation, stakeholders, risks and other policy objectives. The deliverable aims to meet one of the key objectives of Work Package 3: Show that an integrated approach between sectors and actors achieves better energy efficiency and economics than traditional approaches.

This deliverable focuses on the same six innovative projects previously described by the STEP UP cities in earlier Work Package 3 deliverables, which are currently being developed to the edge of implementation.

Method

Following guidance provided by the Work Package lead, the cities collected information about the innovative projects which are being developed to the edge of implementation in their cities, building on the information already collected in earlier deliverables. An overview of these projects is given in the table below.

An overview of the projects

Project title	Responsible city	Timescale
Database for multi-apartment residential buildings	Riga	2008-2017
Demand side management	Glasgow	2014-2016
District heating schemes and ESCo	Glasgow	2015-2020
Planning for sustainable lifestyles	Gothenburg	2015-2016
Sint-Amandsberg Dampoort	Ghent	2008-2025
Smart urban logistics	Gothenburg	2016-2018

Cities considered what their project would look like if a traditional approach was used instead of an integrated approach. A project with an integrated approach can be defined as a project that tries to achieve more “holistic solutions” to complex problems by integrating different kinds of stakeholders, sectors, technologies etc., as summarised in the table below.

The difference between the integrated and the traditional approach

INTEGRATED	TRADITIONAL
Integration of sectors such as energy, transport, housing and ICT, using innovative technologies. *E.g. A smart mobility project, car sharing with e-vehicles and e-bikes with an app for booking, working together with an energy company for the charging infrastructure.*	Every sector works in silos, with no or limited integration and a focus on established technologies. *E.g. A car sharing project.*
Integration of stakeholders, combining actors from business, politics, NGOs, citizens, etc. *E.g. The mobility project involves stakeholders from the municipality, SMEs and a cycling-focused NGO.*	Stakeholders are not working together; actors are more engaged in their own organisation rather than the development of the project. *E.g. The car sharing project is owned by a company, which is not represented in the city, and there is no or very little communication with end-users, the municipality or NGOs.*
A holistic view, combining different dimensions of sustainability; one project tackling energy poverty, and also employment and energy security. A clear focus of the project overall, where social issues are not just a sideshow. *E.g. Car sharing for mobility, reduction of CO_2 and energy use, but also as a way of having fewer cars in the city, making the city more liveable, reducing air pollution and improving health. Sharing as a way of tackling the climate challenge.*	Only one focus at any point, handling issues one by one, and not taking the holistic view of how a change somewhere will affect other parts of the city. *E.g. Car sharing is for people that do not want or are not able to own their own car; the project is designed to meet this need only.*

The cities then compared the integrated approach with the traditional approach when it comes to energy performance, economics, risks, project development, project organisation, stakeholders, objectives, sustainability and replication. In addition, the cities completed a table comparing estimated data (if available) from their innovative project to data from a similar project developed using a traditional approach. The data was collected with the aim of visualising the difference between the integrated and the traditional approach in an infographic. From the previous deliverables we have understood that detailed data is not always available but the guidance document gave the opportunity to use 'less', 'equal' and 'more' as an indicator of the number where this was the case.

Key findings

As the projects are very different from each other and at very different stages of development, it is difficult to draw direct comparisons between the projects; instead, the focus of this summary report

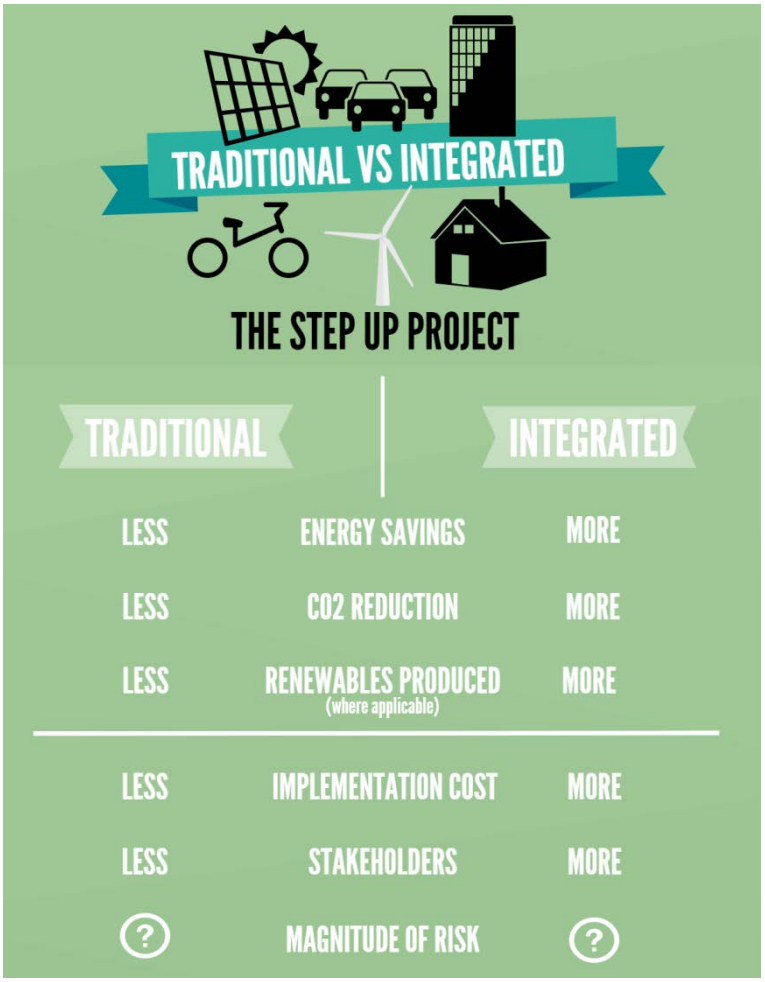
is on comparing the integrated approach of each of the projects listed above to what the project would have looked like under a more traditional approach.

The key findings when comparing the integrated approach with the traditional approach is that the integrated approach means:

- Better energy performance – in energy savings, CO_2 emissions reduction and renewables production (where renewables generation is applicable to the project);
- Larger projects with often higher investment costs;
- Greater capacity to attract investment;
- More complex project organisation;
- Increased numbers of stakeholders involved;
- Increased benefits in all three sustainability dimensions – environmental, social and economic; and
- The need for a robust management structure.

The infographic below shows the overall conclusions in terms of energy performance, implementation costs, number of stakeholders and risks. There is a great variation between the projects and therefore this is a general picture presenting the performance of the traditional versus the integrated approach.

Traditional approach vs integrated approach – an overview of all innovative projects



Better energy performance

The integrated approach is clearly a better choice than a traditional approach for all of these innovative projects when it comes to energy performance, as illustrated through a number of factors:

- Energy savings are greater in all of the projects;
- Carbon emission reductions are greater in all of the projects; and
- Renewable energy production is increased, in those projects for which this is relevant.

In addition to these impacts, it is apparent that there are more positive energy-related effects gained from the integrated approach such as a better living environment and quality of life.

Economics and resources

Four out of the six projects have higher implementation costs with an integrated approach than a traditional approach; the reasons for this are seen to vary depending on the context of the project, but overall the impact of a more complex project, involving more stakeholders and multiple sectors, or of being a demonstrator project are seen as influential. As these projects are aiming to achieve

increased and/or wider benefits than a traditional approach, the implementation costs are also seen to increase overall.

However, higher implementation costs are not common across all of the projects. For example, one project, *Database for multi-apartment residential buildings*, has a lower implementation cost as the integrated approach requires fewer man-hours than in a traditional approach. Therefore, whilst it is seen as common that implementation costs are higher when taking an integrated approach, this is clearly dependent on the nature of the project, its goals and local context.

Risks

Many of the project teams have noted that the increased number of stakeholders involved in the integrated projects is a key factor increasing the risk of the project, due to the need to manage multiple stakeholders' priorities and interests; however, for some project teams, the benefits achieved by involving multiple stakeholders are seen to clearly balance out the additional risk, becoming a key element of the project's success. Therefore, how cities assess and balance out risks and benefits is seen to be very influential on the perceived impact. Other types of risk, for example financial risk, are also seen to be important for integrated projects but are highly dependent on the nature of the project being analysed, making it difficult to draw clear conclusions when comparing magnitude of risk between integrated and traditional project approaches.

Project development – technology and innovation

The impacts of the integrated approach on technology and innovation seem to be largely dependent on the nature of the innovative element within the project. Innovations are seen in the project organisation, scope, scale and technological elements, and some of the projects would have looked very different under a traditional approach, or maybe would not have been possible at all. For other projects the integrated approach has allowed the introduction of new technologies which offer greater benefits, and collaboration with multiple stakeholders is seen to offer good opportunities for introducing more technologies and innovations. Overall, the integrated approach has clearly had an impact on the technology and innovation, in a variety of different ways, and all projects have to some extent been reinforced by using an integrated approach.

Project organisation

When it comes to project organisation, there are some key aspects that often seem to be true for an integrated approach:

- The project is more complex, with more stakeholders involved;

- There is a wider range of sectors represented within the project group;
- The integration between different city administrations is closer;
- The tempo in the execution phase of the project is faster, in terms of response time from project partners, quicker processes, etc.;
- However, the planning phase of an integrated project takes more time than it does in a project with a traditional approach.

Stakeholders

Across all of the projects, there are more stakeholders involved than there would be in a traditional project. It is apparent that complex and integrated projects need more stakeholder involvement to be implemented successfully; this in itself can complicate the project organisation, yet overall can deliver significant benefits by bringing together highly relevant expertise from different sectors and organisations, sharing risk and responsibilities and creating new opportunities. A similar pattern can be seen for political support, as all of the projects have gained political support seemingly aided by taking an integrated approach, as these complex projects are working towards delivering on multiple policy objectives.

Integration of sustainability dimensions

The integrated approach will clearly improve the integration of sustainability dimensions compared to using a traditional approach. All of the projects have a focus on energy and the EU2020 targets, and are all in some way linked to the cities' SEAPs, ensuring that the environmental dimension of sustainability is well addressed. This would also be expected of energy projects developed using a traditional approach. However, through STEP UP, the partner cities are also incorporating social and economic dimensions in their innovative projects in order to take a holistic approach to sustainability and deliver wider benefits for the cities and their inhabitants. A number of the projects strongly demonstrate the integration of the social aspect in particular, such as *Sint-Amandsberg Dampoort* and *Planning for sustainable lifestyles*.

Objectives

It cannot be established that the integrated approach has had a clear impact on the objectives of all of the innovative projects, in particular because not all of the projects have had their objectives set yet. However, in some cases the objectives have been affected and the integrated approach has had positive effects compared to a traditional approach. For example, the holistic perspective can be seen to allow multiple objectives to be targeted equally, rather than having a key objective in one area, such as energy, and acknowledging other indirect benefits without expressly setting out to

tackle them. This suggests there are clear links between the integration of multiple sustainability dimensions and the setting of project objectives under an integrated approach, helping to consider the city in a more holistic way.

Replication

Replication potential is a complex issue that is affected by many different aspects. The analysis suggests that other factors, such as organisational, economic, cultural, societal and environmental aspects of projects, influence the replication potential of a project more than whether the project has an integrated or traditional approach. Yet, it is clear that even where local conditions, such as infrastructure constraints, may constrain the replication of an entire project, there are aspects of the integrated projects, such as management and governance structures and stakeholder management processes, which could perhaps be applied in a range of different projects more easily than replicating an entire project.

Key recommendations

Based on the findings of this report, a number of key recommendations can be made. Recommendations for STEP UP cities interested in continuing to compare impacts from integrated and traditional approaches, or for other projects and initiatives looking follow a similar line of enquiry, include:

- **Define relevant key words very clearly:** It is very important to define key words, such as integrated approach, pipeline projects or other relevant terms. The definitions need to be clear, as when it works well it is a demarcation of what will be evaluated or compared.
- **Compare similar projects:** If possible, try to compare projects that are similar in some ways, in order to make comparisons and draw conclusions. It can be relevant and interesting to compare different projects, and it is certainly possible to learn from them, but it is important to understand the difficulty of drawing any general conclusions.
- **Compare projects within the same time span, and with roughly the same pace of development:** The projects are pipeline projects, which means that they should be developed and implemented before 2020. Even within this time span, the status of projects varies considerably, including those that are already being implemented, those that will be implemented during the next year, and those in an early development phase that will still be developed before 2020. Comparing and evaluation is much easier if the projects are developed in the same time span, and with the same pace of development.

- **Analyse projects from multiple perspectives:** The integrated approach can impact on projects in many ways, not just in terms of climate and energy impacts but also in terms of economics, stakeholders, replication, risk, innovation, objectives, integration of sustainability dimensions and project organisation. Reviewing these different factors can help to get a holistic picture of the effects that taking an integrated approach can have, and also to identify ways in which other projects could be adapted in order to take more of an integrated approach.
- **Revisit projects later in the implementation stage to assess benefits delivered:** Comparing projects at an early stage of development can be useful, allowing cities time to factor in lessons or new ideas from other cities; however, to assess the actual benefits delivered, better understand the overall process and costs of integrated project development, and any further challenges that may be faced in implementing integrated projects, revisit and review projects at a later stage. It is likely that more data will be available at this stage, making it easier to demonstrate the benefits of an integrated approach, and how this compares to a traditional approach, in a more robust way.

There are also some recommendations relevant for cities interested in applying an integrated approach to their own project development:

- **Consider using the integrated approach to solve complex problems:** Projects with an integrated approach have more stakeholders involved, the investment costs are often higher, and the risks can be more difficult to mitigate, but the outcome in terms of energy performance and other wider benefits can be better. Whilst it may not always be the easiest and cheapest way to use the integrated approach, it has other values linked to the results of the projects. Therefore it can be good to use the integrated approach when the projects are intended to address complex problems that are linked to multiple policy areas and a variety of objectives.
- **Take a holistic view of the integrated approach:** The integrated approach can be defined in many different ways, but is likely to involve the integration of multiple sectors, technologies, dimensions of sustainability, stakeholders, policy objectives and more. Considering these different perspectives will help ensure that the integrated approach taken is a holistic one, delivering a range of benefits to the city and its inhabitants and offering scope for its replication elsewhere in the future.
- **Involve multiple stakeholders:** Involvement of a range of stakeholders from different sectors and organisations can be a good way to gain wider support and buy-in for the project,

benefit from multiple perspectives and areas of expertise, share data and explore new opportunities. Taking more time over the planning stages in order to involve multiple stakeholders can pay off during the implementation phase, when actions can often be delivered more quickly and effectively.

- **Consider project organisation early on:** Complex projects require effective project organisation early on in order to become well-established. Take time with the project team to look at other effective models of project organisation and consider your own local context.
- **Start to gather data as early as possible:** Data is important to monitor and evaluate projects. If data gathering is built in early in the project development, and collected regularly as the project is implemented, the project will be easier to monitor, and potentially to replicate in other parts of the city. If projects lack data and monitoring, then it will be difficult to evaluate their successes.
- **Use visual communication tools to present integrated projects to a wider audience:** Building stakeholder and citizen support for projects is key. Whilst key stakeholders may understand the essence of terms such as 'integrated project' due to their expertise, wider stakeholders and citizens may find simple, visual communications such as infographics helpful to understand the project and what it sets out to achieve.

Next steps

Within STEP UP there has been constructive learning between the partners and the cities involved and discussions will continue on opportunities to share ideas and experiences and explore the potential for common development further as part of the legacy of the project.

The innovative projects and their integrated approaches will be communicated and disseminated at the city level in all four cities, as they continue to be developed and implemented using the learnings from the STEP UP project. The ways in which this will be done will be based on the communications plans developed by the cities.

Additional steps to take at the wider STEP UP project level are to discuss and share learnings with the companion cities on how the STEP UP cities are developing innovative projects, and also to spread the information to the wider learning network and beyond during EU Sustainable Energy Week in Brussels in June 2015.

Dissemination activities are also ongoing, and for this purpose two guidebooks have been developed: one focusing on how to create and develop innovative integrated projects; and the other on the STEP UP process for enhancing SEAPs. Lessons learned relating to the development of innovative projects

have been incorporated into these guides, providing other cities with practical advice and recommendations to support their own project development. These publications are being, and will continue to be, shared through learning network events, conferences, the website and other dissemination activity across the STEP UP cities.