



EU financial support to sustainable urban mobility and to the use of alternative fuels in EU urban areas

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**EU financial support to
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to the use of alternative fuels
in EU urban areas**

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List of Acronyms

BAU	Business-As-Usual
CBA	Cost Benefit Analysis
CEF	Connecting European Facility
CF	Cohesion Fund
CNG	Compressed Natural Gas
DG ENER	European Commission Directorate-General for Energy
DG ENV	European Commission Directorate-General for Environment
DG MOVE	European Commission Directorate-General for Mobility and Transport
EIB	European Investment Bank
ERDF	European Regional Development Fund
EU	European Union
EUR	Euro
EUROSTAT	Statistical Office of the European Union
FP5-6-7	Framework Programme 5th-6th 7th
GDP	Gross Domestic Product
IA	Impact Assessment
IEE	Intelligent Energy Europe
ITS	Intelligent Transport Systems
OECD	Organisation for Economic Cooperation and Development
R&D	Research & Development
SMEs	Small and Medium-sized Enterprises
SUMP	Sustainable Urban Mobility Plan
TEN-T	Trans-European Networks – Transport

1. Executive summary

1. The key role of the **urban dimension** in the future development of the Europe 2020 strategy, combined with the world economic and financial crisis that has deeply affected the European economy, calls for the optimisation of the use of scarce financial resources. To this end, the present study has undertaken an ex-post evaluation of EU financial support for projects concerning sustainable urban mobility and the use of alternative fuels in EU urban areas carried out in the last two financial perspectives: 2000-2006 and 2007-2013. Seven EU financial tools in these fields have been analysed, each with its specific nature and objectives:
 - 1) the R&D FP – Framework Programmes (FP5, FP6, FP7),
 - 2) the IEE – Intelligent Energy for Europe Programme,
 - 3) the European Regional Development Fund – ERDF, including the Interregional Cooperation Programme, e.g. INTERREG;
 - 4) the Cohesion Fund (CF),
 - 5) the LIFE Programme,
 - 6) the Trans-European-Networks in Transport – TEN-T and
 - 7) the loans funded by EIB.

2. At the outset of the study, an **inventory of the cities that were beneficiaries** (140 in 2000-2006 and 272 in 2007-2013) of EU support under each of the relevant financial tools has been made (see Annex I for details), showing the amount of financial support received by each beneficiary city. The final list of EU-funded projects included in the inventory for the 2000-2013 period features 525 projects, of which 500 relate to sustainable urban mobility and 25 to alternative fuels, with some projects allocated to both categories. However, the lack of information on projects can lead to an underestimation of the number of EU funded projects included in the inventory, as is the case of transport and major projects funded in 2000-2006 by the CF and ERDF financial tools.

3. The **evaluation methodology** uses a common approach for all financial tools, answering 19 questions related to the 6 evaluation criteria: **1) relevance, 2) efficiency, 3) effectiveness, 4) European added value, 5) coherence and 6) sustainability** (see section 4.2 for details).
Three main data collection channels and resources used to answer the evaluation questions:
 1. Literature review
 2. Case studies
 3. Public consultations.

Most of the information used for this study was gathered with the support of a questionnaire (see Annex 3 for details) to answer the 19 evaluation questions, accompanied by interviews to clarify controversial aspects. *Case studies* were identified in 25 cities having received support from at least two financial tools for a total amount of at least EUR 1 million, involving in total an in-depth evaluation of 83 EU funded projects (see section 4.1.2 for details).

For each evaluation criterion, summary conclusions, along with the main strengths and weaknesses of the various financial tools, are highlighted below.

4. Relevance of EU financial tools to local needs

Most of the evidence from the case studies (88 % in the case of projects dealing with sustainable urban mobility and 71 % in the case of projects supporting the use of alternative fuels) as well as public consultations (89 % of the respondents) clearly show that **beneficiaries perceive EU funded projects as relevant to their needs**. This perception cuts across all these financial tools, and is particularly strong in small and medium-sized cities. As for big cities, the relatively small scale of some projects, notably those funded under IEE or LIFE, appears to limit the perceived relevance of impacts with respect to local needs. Relevance to actual city needs could be improved by focusing the projects on implementation, particularly as far as the IEE and LIFE financial tools are concerned. Beneficiaries in the FP financial tool would have appreciated the possibility to spend larger portions of budgets on the 'hard' aspects of implementation, and especially secondary infrastructure and ITS applications. According to the beneficiaries, for this type of financial tool, more generous infrastructure funding associated with recognised policy/measure innovation could enhance the relevance of the financial tool.

5. Effectiveness of EU financial tools

In general, respondents have a positive view of the effectiveness of EU financial tools. In particular, **small and medium cities have benefitted from the leverage effects of EU funding** to achieve the critical mass (in terms of economic resources, knowledge base and technical input) required to implement projects in the areas of mobility management, traffic modelling and sustainable mobility. These would otherwise not have reached the operational stage, according to the beneficiaries. Budget limitations are perceived as a barrier to effectiveness in most IEE and LIFE projects, specifically when dealing with the promotion of alternative fuels. According to respondents, effectiveness has sometimes also been undermined by long tender procedures and administrative barriers (in particular towards SMEs involvement) in FP and ERDF financial tools, and to a minor extent, in IEE financial tools.

6. Efficiency of EU financial tools

The efficiency of EU financial tools **for transport infrastructure projects funded by EIB in association with ERDF and CF grants is, in general, considered to be high by respondents**, all the more when the benefits from the reduction of transport-related external costs are included in the analysis (social return on investment). In general, urban infrastructure is subsidised both in terms of construction and operation, and low cost recovery is common. Demonstrations funded by the FP financial tool, as in the CIVITAS initiative, and examples from IEE and LIFE projects are in general deemed efficient by respondents, even though, in the absence of a systematic analysis of a wider sample of projects, any generalisation would be risky.

Concerning the possibility of assessing the efficiency of EU funded projects, it has been difficult to find projects that included a detailed ex-post analysis of how resources have been used according to cost-efficiency parameters. Such lack of adequate ex-post performance indicators mainly concerns the IEE and LIFE financial tools, due to an insufficient monitoring of the projects after their completion.

7. European added value of EU financial tools

The added value provided by EU financial tools **is substantial according to beneficiaries**. Respondents give different answers regarding the characteristics and scope of the added value, which varies depending on the financial tool that is being examined. For FP and IEE, EU interventions are considered unique occasions to cooperate with different types of EU actors, to work with experts from other countries, and to share knowledge and best practices across Europe. This leads to the acquisition of new knowledge and expertise. Transport infrastructure projects financed by EIB and funded by ERDF and CF mainly provide impacts in terms of job creation, inclusive city development (improving accessibility) and the development of a sustainable mobility framework, e.g. reducing air pollution. In the Eastern European urban areas, according to the sample of respondents, the added value arising from involvement in projects funded by CF was mainly on the technical side and in knowledge building, i.e. helping the city to become aligned to European standards in the infrastructure provision area.

8. Coherence of EU financial tools

The coherence of EU financial tools can be evaluated along two dimensions. The first deals with the synergy of the combined effects of two or more financial tools on local sustainable mobility and use of alternative fuels. The second dimension relates to the coherence of EU financial tools with other national or local plans, i.e. the way in which the former and the latter can work together. Concerning the first dimension, the conclusions of the study indicate that FP, IEE and LIFE financial tools show coherence with each other, with particular reference to the use of alternative fuels and energy saving policies. **Transport infrastructure projects funded by ERDF-CF and EIB are indicated as coherent with FP sustainable urban mobility projects.** Concerning the second dimension, synergies with local and national infrastructure development plans mainly concerns EIB, TEN-T projects and FP funded projects. CF and ERDF financial tools are found to primarily support the local/regional transport infrastructure development, while FP and IEE projects are usually a catalyst for sustainable mobility projects, e.g. helping to activate additional national funds.

9. Sustainability of EU financial tools

Sustainability concerns the likelihood of continued effects over the intended life of the project, i.e. beyond the EU funding period. **The respondents answered that the main factor that determines whether a measure is maintained over the lifetime of a project is its financial sustainability.** Another key driver that is believed to influence sustainability performance is political commitment, including citizens' support. When the legal and political frameworks cooperate effectively to leverage a measure, positive results in the longer term may show up. Some pilots and demonstrations carried out in projects funded by the FP financial tool still continue after the end of the projects, relying on the combination of the two factors above. The involvement of industry in the pilots and demonstrations has sometimes been seen as a pre-condition to ensure sustainability in the long term. As for weaknesses, insufficient leverage is considered to be a key issue: according to respondents, IEE and LIFE funded projects often suffer from lack of funding once EU financial contributions are no longer active, which dramatically undermines their sustainability.

10. Main conclusions

Overall, two main types of conclusions can be drawn, concerning 1) trends in EU funding distribution and 2) interplay among financial tools.

10.1 With regard to the former, the analysis of the distribution of EU funding among beneficiaries and countries over the years indicates an **increase in the number of beneficiaries, from 140 in 2000-2006 to 272 urban areas in 2007-2013**. On the other hand, the concentration of EU funding in a small group of seven cities (Madrid, London, Barcelona, Athens, Stockholm, Prague and Rome), which account for 56.5 % and 29.4 % of total EU funding in 2000-2006 and 2007-2013 respectively, has been observed. The concentration of spending at local level among a small group of actors may signal an inability to increase the number of actors involved at local government level, in particular as far as big transport infrastructure projects are concerned. The distribution of the EU funding, not considering the big infrastructure projects (i.e. projects funded by the FP, IEE and LIFE financial tools), does indeed show a different picture, with a diversified set of beneficiaries in the top ten of the cities receiving most of the funding in the two financial perspectives 2000-2006 and 2007-2013 (e.g. only one city, Rome, is present in both the top tens).

10.2 Concerning the latter, **respondents have pointed out the need to ensure continuity for the projects through the integration and combination of funding programmes**, which could entail the possibility of accessing EU funding at different stages of the projects. According to the respondents, the barriers to the full exploitation and synergy among the different EU financial tools lie in the lack of technical support in ensuring the full completion of the project life cycle: from research/feasibility to implementation. For example, providing support for the second stage 'from demonstration to implementation' of mobility solutions which have proved to be successful in the research and demonstration phase. Local authorities feel that the initial efforts made for demonstrating bold and sometimes unpopular policies/measures are often stifled by the lack of subsequent funding opportunities for full implementation, which seems to be taken for granted. The financial tools should carefully and adequately assist the critical transition from demonstration to implementation, possibly with clear indications/priority access to interdependent/inter-tools funding avenues. This approach would reduce the risk of policy/measure discontinuation and result in a more cost-effective use of EU funds.

Building on these conclusions, the study presents **recommendations** on how to improve EU financial tools. In general, **long-term plans and strategies for transport and environment at the urban level (e.g. SUMP) are fundamental for a better implementation of EU projects**. The procurement procedure for project adjudication should require the existence of a SUMP or an integrated mobility strategy at the urban level. The EC DG REGIO (CF and ERDF financial tools) has already taken steps forward in this direction. For example, when the Managing Authority wants to finance urban transport projects and was negotiating cohesion policy programmes for the 2014-2020 period, DG REGIO required the initiatives to be in line with SUMPs or other strategic documents on urban mobility/clean air.

11. Specific recommendations

The following specific recommendations for improving each financial tool have not included the TEN-T financial tool due to the limited number of projects at the urban level co-financed under this tool in the financial period under examination (2000-2013).

▪12.1 The European Regional Development Fund (ERDF)

- **Strengthening coordination between urban projects and overall strategies and objectives included in Operational Programmes.** Findings from the analysis indicate that coordination with national Operational Programmes has helped improve funding performance. Such coordination, to be effective, must involve not only the Regional or National authority, but the municipality level (or equivalent local level) as well.
- **Improving the accuracy of projects' evaluation at the feasibility stage.** A better assessment of the financial sustainability of ERDF projects would benefit from more accuracy in some relevant indicators; e.g. expected growth in transport demand.

▪12.2 The Cohesion Fund (CF)

- **Reducing shortcomings in the ongoing monitoring of operational programmes projects, particularly in terms of outcomes and results.** Indications from the study's sources support the consideration made in the European Court of Auditors' report on ERDF and CF projects (2014), stressing that the management of CF projects dealing with the implementation of infrastructure may require that a minimum number of result indicators with related targets are included in the grant agreements and subsequently measured, in order to reduce the risk of cost overruns and delays.
- **Improving the capability to involve private sector funding.** Findings from some CF funded projects stress the lack of funding from the private sector. Simpler tender procedures may lead to involvement of the private sector. Furthermore, as stressed in previous ex-post evaluation studies¹, private investors have been reluctant to commit to projects that seek cohesion policy funding, because of the time that elapses before there is certainty that cohesion policy funding is available.

▪12.3 The LIFE programme

- **Ensuring additional funding.** Findings from the study indicate that the results obtained through the LIFE financial tool may be undermined by a lack of funding after the end of projects.
- **Setting longer timing for demonstrations.** Findings also indicate that, despite good results, demonstrations activities under LIFE suffered because the timing

¹ European Union, 2016, 'Ex-post evaluation of Cohesion Policy programmes 2007-2013', focusing on the European Regional Development Fund (ERDF) and the Cohesion Fund (CF)

was not appropriate. Operational experimentation was not sufficient to obtain the benefits, i.e. paving the way to commercialisation and wide diffusion.

■ 12.4 The 5th, 6th and 7th Framework Programmes (FP5, FP6 and FP7)

- **Streamline administrative procedures.** There are indications that sometimes the biggest challenges that cities had to overcome when they participated in FP, e.g. CIVITAS, had to do with administrative issues (such as excessive reporting, excessively long evaluation periods to award funds).
- **Facilitating the involvement of SMEs.** In the FP financial tools, when SME participation was low, it was mainly due to lack of awareness of EU incentive programmes or the apprehension of SMEs regarding the onerous EU administration, which might be difficult to handle for small entities with limited staff, and long waiting times for payments.
- **Improving funding flexibility and risk coverage.** Findings from demonstration projects involving new technologies, e.g. CUTE on hydrogen fuel cell buses in Stockholm, or CARAVEL CNG buses in Krakow, indicate that more budget flexibility may be needed to face unexpected technical barriers, which may increase costs and could determine that the budget is not in line with project objectives.
- **Implementation of supporting measures.** Some beneficiaries of the FP financial tool would have appreciated the possibility of spending larger portions of budgets on the 'hard' aspects of implementation, especially secondary infrastructure and ITS. More generous infrastructure funding associated with recognised policy/measure innovation could in fact enhance the relevance of the financial tool according to beneficiaries.

■ 12.5 Intelligent Energy Europe (IEE): Energy in transport (STEER)

- **Setting up project targets consistent with their urban scale.** Sometimes ambitious targets, i.e. improving modal split at the urban level, are not proportional to the project's scope, which can be too small to generate significant impacts at the city level.
- **Ensuring plans for continuity after the project ends.** Some beneficiaries pointed out that if a project is successful, it should receive a longer commitment from the EU funding after its end. This would make it possible to continue or extend the project to a larger scale.
- **Moving from demonstrations to implementation.** A by-product of the need to ensure continuity to projects is the respondent's concerns about the lack of implementation stages, which could undermine the IEE pilots and demonstrations capability to gain better visibility for local stakeholders.

■ 12.6 EIB tool

- **Easing administrative burden.** Even though the projects managed by the EIB financial tool are considered satisfactory and efficient, in some cases some

respondents answered that administrative burdens, e.g. heavy reporting and monitoring requirements, could be alleviated.

13. Data availability and limitations

In the interpretation of results, the most important caveat to be considered is the limited data availability. The number and distribution of beneficiaries taken into account in the analysis depends on data made available by the financial tools web sites (see section 3.3 for details) and the analysis of the evaluation questions relies mainly on the sample of answers collected through the 25 case studies. Though stakeholders' interviews have contributed to fill in partially the informative gaps, the complexity of the matter has not allowed getting significant feedback from the public consultation at large.

2. Scope of the study and rationale of the report

This report is the Final Report of the DG MOVE study 'Ex-post evaluation of EU financial support to sustainable urban mobility and to the use of alternative fuels in EU urban areas ', as specified under the contract MOVE/A3/119-2013.

The study is based on the analysis of seven EU financial tools covering the last two financial periods 2000-2006 and 2007-2013 (see section 3.2 for details). The assessment of how these financial tools contributed to enhance sustainable mobility and the use of alternative fuels in EU urban areas is organised around nineteen evaluation questions, categorised under six evaluation criteria (1. Relevance, 2. Effectiveness, 3. Efficiency, 4. EU added value, 5. Coherence and 6. Sustainability), plus an informational State of Play section (see section 4.2 for details).

The aim of this report is to summarise the key results of the study, providing an analysis of findings along with factually based conclusions and recommendations.

Serving this purpose, the next chapters are structured as follows:

- Chapter 3 sets the scene for the analysis providing an overview of the EU policy and objectives concerning sustainable urban mobility and the use of alternative fuels in urban areas.
- Chapter 4 describes the methodological approach and the data sources used for the overall assessment, i.e. case studies, public consultation and literature review.
- Chapter 5 shows the results of the analysis of the evaluation questions and financial tools resulting from each type of data source and with reference to specific geographical and socio-economic contexts.
- Chapter 6 draws the conclusions.
- Chapter 7 provides recommendations on how to optimise financial tools and how to improve their usage.
- This Final Report is complemented by a separate set of Annexes: the inventory of beneficiaries of EU funding (Annex I), a report of the public consultations carried out (Annex II) and details of the case studies (Annex III).

The study has been carried out by a consortium consisting of five highly experienced organisations in research and consultancy, under the lead of ISIS. The other consortium partners are PANTEIA, RUPPRECHT Consult, Fraunhofer-ISI and PriceWaterhouse&Cooper (PwC).

3. EU policy and objectives

3.1 The legislative context

Good urban mobility conditions and an extensive use of alternative fuel vehicles can significantly contribute toward achieving objectives in a wide range of policy domains for which the EU has an established competence. The success of policies and policy objectives that have been agreed at EU level, for example on the efficiency of the EU transport system, pursuing socio-economic objectives, reducing energy dependency, or climate change, partly depends on actions taken by national, regional and local authorities. Mobility in urban areas is also an important facilitator for growth and employment and for sustainable development in the EU areas. The European Commission's first policy proposals in the area of urban mobility, the 'Citizens' Network', trace back to between 1995 and 1998. They resulted in the launch of a series of initiatives based upon a 'best practice' approach.

Further to the mid-term review of the 2001 Transport White Paper 'European transport policy for 2010: time to decide' [\[1\]](#), the European Commission adopted the Green Paper 'Towards a new culture for urban mobility' [\[2\]](#) on 25 September 2007. This consultation document opened a broad debate on the key issues of urban mobility: e.g. greener towns and cities, smarter urban mobility and urban transport services, which should be accessible, safe and secure for all European citizens. Based upon the results of the consultation, the European Commission adopted the Action Plan on urban mobility [\[3\]](#) on 30 September 2009.

As a follow-up to the 2011 Transport White Paper 'Roadmap to a Single European Transport Area' [\[4\]](#), the European Commission published in 2013 the Urban Mobility Package [\[5\]](#) that addressed initiatives 31, 32 and 33 of the White Paper. Initiative 31 called for establishing procedures and financial support mechanisms at the European level for preparing Urban Mobility Plans; initiative 32 foresaw the development of a package for urban road user charging and access restriction schemes, and initiative 33 covered the production of best practice guidelines to better monitor and manage urban freight flows.

Concerning alternative fuels, the Clean Power for Transport package adopted in 2013 has been designed to facilitate the development of a single market for alternative fuels for transport in Europe. Among the cornerstones of the package, it is important to stress the following steps:

- A Communication laying out a comprehensive European alternative fuels strategy [\[COM\(2013\)17\]](#) [\[6\]](#), for the long-term substitution of oil as energy source for all modes of transport;
- A proposal for a Directive on the deployment of alternative fuels recharging and refuelling infrastructure [\[COM \(2013\)18\]](#) [\[7\]](#).

The Directive on the deployment of alternative fuels, as adopted by the European Parliament and the Council on 29 September 2014, has established the following steps:

- Require Member States to develop national policy frameworks for the market development of alternative fuels and their infrastructure;
- Foresee the use of common technical specifications for recharging and refuelling stations;

- Pave the way for setting up appropriate consumer information on alternative fuels, including a clear and sound price comparison methodology.

3.2 Financial tools

The European Union has designed a variety of financial tools to support the research, development, demonstration and implementation of policies and technologies aiming at enhancing sustainable urban mobility and the promotion of the use of alternative fuels in urban areas.

In the context of this study, focused on urban areas, the following financial tools are considered:

1. The European Regional Development Fund (ERDF, managed by DG REGIO)

Target: ERDF is designed to contribute to reducing disparities between the levels of development of the various regions across the EU and to reduce the backwardness of the least favoured regions.

Main actors and stakeholders involved: Local authorities, SMEs

Financial instruments: Co-funding through grants
2. The Cohesion Fund (CF, managed by DG REGIO)

Target: CF provides financial assistance to increase economic and social cohesion in Member States with a per capita GNP of less than 90 % of the EU average by financing environment and transport projects.

Main actors and stakeholders involved: Local authorities, SMEs

Financial instruments: Co-funding through grants
3. The LIFE programme (managed by DG ENV)

Target: The LIFE programme provides financial support to environmental, nature conservation and climate action projects throughout the Europe.

Main actors and stakeholders involved: Local authorities, NGOs

Financial instruments: Co-funding through grants
4. The 5th, 6th and 7th Framework Programmes (FP5, FP6 and FP7, managed by DSGs RTD, MOVE, ENER, CONNECT, ENTR).

Target: The specific objectives and actions vary between the Framework Programmes. In general, FP5 focused on a number of objectives and areas combining technological, industrial, economic, social and cultural aspects, FP6 mainly supported integration in its social, economic and environmental dimensions, and FP7 main focus was in technological research, demonstrations and take-up of sustainable solutions in urban areas.

Main actors and stakeholders involved: Local authorities, SMEs

Financial instruments: Co-funding through grants
5. Intelligent Energy Europe (IEE) - Energy in transport (STEER, managed by DG ENER).

Target: The financial tool addresses energy savings and energy efficiency in the transport sector, including stimulation of demand for alternative fuels and clean and energy efficient vehicles.

Main actors and stakeholders involved: Local authorities, SMEs

Financial instruments: Co-funding through grants

6. TEN-T programme (managed by DG MOVE and INEA)

Target: The financial tool aims to promote the completion of an EU multi-modal transport infrastructure network.

Main actors and stakeholders involved: Member States

Financial instruments: Co-funding through grants, loans and guarantees from the European Investment Bank (EIB).

7. EIB tools

Target: EIB supports initiatives aimed at environmental improvement, regional development, the knowledge economy, and the trans-European networks. The Bank is a European institution and focuses on activities that are likely to have the greatest impact on furthering EU policy goals.

Main actors and stakeholders involved: National, Regional and local authorities, private sector.

Financial instruments: Loans, equity investments, guarantees (e.g. JESSICA tool). In this report, the focus is on loans provided by the EIB to projects. No intermediary loans are included in the study.

The following table briefly reports the relevant objectives of each financial tool with specific reference to urban mobility.

Tool	Relevant objectives/ priorities
ERDF	Within the objective 'Convergence', two tasks encompass urban mobility: 1. investment in transport 2. better accessibility and sustainable urban development.
Cohesion Fund	Among others, three priorities relate to urban mobility: 1. supporting energy efficiency, smart energy management and renewable energy use in public infrastructure 2. promotion of sustainable multimodal urban mobility 3. taking action to improve the urban environment.
LIFE programme	General objective: to contribute to the implementation, updating and development of Community environmental policy and legislation, including the integration of the environment into other policies, thereby contributing to sustainable development.
5th Framework Programme	Some of key actions supported: 1. Sustainable mobility and intermodality 2. The city of tomorrow and cultural heritage.
6th Framework Programme	'Sustainable Development, Global Change and Ecosystems' was among the priorities of the Programme. Within this priority one of the thematic areas is 'Sustainable surface transport', one of the aspects of which is 'environmentally friendly and competitive transport systems'.
7th Framework Programme	Within the Cooperation Programme two themes are relevant for urban mobility: 1. Environment; 2. Transport, e.g. CIVITAS.
IEE: Energy in Transport	One of the funding areas is relevant: Energy in transport (STEER). This strand covers initiatives targeting energy savings and energy efficiency in the transport sector, including stimulation of demand for alternative fuels and clean and energy-efficient vehicles.

Tool	Relevant objectives/ priorities
TEN-T funding (CEF)	Funding Objective 2 is relevant: Ensuring sustainable and efficient transport systems in the long run, with a view to preparing for expected future transport flows, as well as enabling all modes of transport to be decarbonised through transition to innovative low-carbon and energy-efficient transport technologies, while optimising safety.
EIB	EIB has two relevant priorities: Environment and Infrastructure. Within Environment priority one of the topics is 'Urban Environment', which includes two relevant tasks 'Infrastructure – promoting sustainable transport, energy, ICT' and 'Mobility – helping people move around while cutting noise and air pollution'. The EIB transport lending policy was revised following a formal public consultation that was launched in 2010. The new transport lending policy fully takes into account the European Commission White Paper for Transport 'Roadmap to a Single European Transport Area –Towards a competitive and resource efficient transport system' that was adopted on 28 March 2011.

3.3 The state of play

The state of play provides the informational background of the study with reference to the EU funded projects in the period under examination (2000-2013)². Namely, it addresses the following topics:

- The allocation of EU funding by type of project (projects dealing with the use of alternative fuels or sustainable urban mobility) and by type of financial tool (Table 2, Table 3, Table 4 and Table 5);
- The allocation of EU funding by type of financial tool (Table 6);
- The allocation of EU funding by type of beneficiary, based on a sample of FP7 projects (Table 7, Table 8 and Table 9)
- Trends in the distribution of EU funding to European cities in the two financial perspectives 2000-2006 and 2007-2013 (Table 10, Table 11, Table 12, Table 13 and Table 14).

Most of the information underlying the state of play analysis is based on the EU funded projects screening carried out in the 'Inventory of beneficiaries' of the EU funding (Annex I), whose composition is subject to the following caveats:

- The list of EU funded projects examined during the period 2000-2013 includes 525 items (see Annex I for details). An excel file accompanying this study has been set up to serve as a simple tool allowing to browse through projects and beneficiaries. The projects under examination concern urban areas only. Projects funded at regional/metropolitan level and/or involving interurban corridors have not been considered.

² The informational background of the study addresses the questions 0.1 and 0.2 of the 'State of Play' evaluation question: 0.1 Which types of projects (e.g. sustainable urban mobility, alternative fuels, public transport, road safety, urban logistics, etc.) have been funded? Which type of financial tools (grants, loans, equity, loan guarantees) have been used? What percentages of costs have been covered by the EU tools? 0.2 Who have been the main beneficiaries of funding (e.g. public authorities, private operators/companies, others)?

- In terms of duration, projects that started before 2000 have not been considered, even if their funds may have been allocated during the period 2000-2013. The same applies to projects funded before 2013, but with a time-scale of funding allocation beyond 2013.
- In some cases, projects funded at national level without a clear indication of the cities' beneficiaries have not been considered, such as the EIB loans supporting urban transport projects in France in 2004 (€ 2.2 billion) over a time span of ten years, because information on the cities' beneficiaries was not available.
- For a small number of projects, in particular for projects funded in the early 2000s under the FP5 Framework, information on the EU financial support to cities' beneficiaries is lacking. In such cases, a standard financial contribution has been allocated to each beneficiary, equal to the average amount of contributions (total contribution divided number of beneficiaries)
- As specified in Table 1, most of the information is drawn from the financial tools' web sites. In case of the European Structural and Investment Funds (CF and ERDF), information on financial perspectives of transport projects and major projects in 2000-2006 is not available. The same information is instead available for the 2007-2013 financial perspective, and it has been included in the inventory of beneficiaries.

The identification and screening of projects has been carried out based on the following sources.

Table 1: Sources for EU funded projects screening

EU financial tool	Source	Comments
CF/ERDF	http://ec.europa.eu/regional_policy/	No access to projects managed at national level, e.g. Operational Programmes and major projects in 2000-2006 financial perspective.
FP5-6-7	http://cordis.europa.eu/projects and European Commission material	Missing information on EU contributions to beneficiaries for a small number of FP5 projects.
IEE	http://ec.europa.eu/energy/ and European Commission material	Information drawn from IEE, STEER web sites and EC services.
EIB	http://www.eib.europa.eu/projects/	Information drawn from EIB project database.
LIFE	http://ec.europa.eu/environment/life/project	Information drawn from LIFE project database.
TEN-T	http://ec.europa.eu/transport/themes/	Information drawn from the TEN-T project database.

In terms of distribution between typology of projects, the larger share accrues to projects where funds were devoted to sustainable urban transport (Table 2).

Table 2: Allocation of EU funding by type of project (€)

	Total amount	Support received	%	Number of projects
	A	B	B/A	(*)
	€	€		
Alternative fuels	383,258,805	113,920,846	29.7 %	25
Sustainable Urban transport	119,513,955,860	40,505,755,992	33.9 %	500
Total	119,897,214,665	40,619,676,838	33.9 %	525

(*) The number of Alternative fuels funded projects may be underestimated because several EU funded projects, e.g. CIVITAS initiatives allocated to sustainable urban transport also funded demonstrations on the use of alternative fuels.

EU funding allocated to alternative fuels and sustainable urban transport projects amounts in total to about € 41 billion (financial period 2000-2013), corresponding to 33.9 % of the total value of the projects (over € 119 billion).

In terms of contribution by type of financial tools (percentage of costs covered), ERDF and LIFE rank first for projects on the use of alternative fuels, followed by EIB projects (Table 3).

Table 3: Contribution of EU financial tools in funding the use of alternative fuels in urban areas (%)

	Total amount	Support received	%	Number of projects
	A	B	B/A	(*)
	€	€		
CF				
EIB	227,272,727	75,000,000	33.0 %	1
ERDF	16,801,202	12,973,066	77.2 %	5
FP5	62,297,141	14,858,338	23.9 %	3
FP6	59,267,749	8,559,801	14.4 %	2
FP7				
IEE	16,179,781	1,895,698	11.7 %	13
LIFE	1,440,205	633,943	44.0 %	1
TEN-T				
Total	383,258,805	113,920,846	29.7 %	25

(*) The number of alternative fuels funded projects may be underestimated because several EU funded projects, e.g. CIVITAS, considered in this study as sustainable urban transport projects, have also sporadically funded demonstrations concerning the use of alternative fuels.

The same pattern holds true for sustainable urban transport projects, for which CF, ERDF and LIFE projects show the highest coverage of costs.

Table 4: Contribution of EU financial tools in funding sustainable mobility in urban areas (%)

	Total amount	Support received	%	Number of projects
	A	B	B/A	(*)
	€	€		
CF	3,658,270,711	1,819,165,860	49.7 %	24
EIB	106,831,974,226	35,254,551,495	33.0 %	292
ERDF	7,379,989,393	3,123,456,768	42.3 %	71
FP5	166,541,396	62,479,860	37.5 %	16
FP6	152,076,281	30,878,020	20.3 %	10
FP7	160,975,650	52,097,032	32.4 %	11
IEE	81,343,187	13,758,300	16.9 %	55
LIFE	24,885,016	10,657,657	42.8 %	13
TEN-T	1,057,900,000	138,711,000	13.1 %	8
Total	119,513,955,860	40,505,755,992	33.9 %	500

The following table shows the importance of structural funds for sustainable urban mobility and alternative fuels projects (CF and ERDF) and EIB funding, by type of financial tool, corresponding to more than 80 % both in terms of value of projects and contributions (financial support). The percentage of costs covered in the structural funds and LIFE projects is higher, on average, than in the other financial tools (CF exhibit the highest percentage, i.e. about 50 %).

Table 5: Allocation of EU funding by type of financial tool (€)

	Total amount	Support received	%	Number of projects
	A	B	B/A	(*)
	€	€		
CF	3,658,270,711	1,819,165,860	49.7 %	24
EIB	107,059,246,954	35,329,551,495	33.0 %	293
ERDF	7,396,790,595	3,136,429,834	42.4 %	76
FP7	160,975,650	52,097,032	32.4 %	19
FP6	211,344,030	39,437,821	18.7 %	12

	Total amount	Support received	%	Number of projects
FP5	228,838,537	77,338,198	33.8 %	11
IEE	97,522,968	15,653,998	16.1 %	68
LIFE	26,325,221	11,291,600	42.9 %	14
TEN-T	1,057,900,000	138,711,000	13.1 %	8
Total	119,897,214,665	40,619,676,838	33.9 %	525

(*) The number of alternative fuels funded projects may be underestimated because several EU funded projects, e.g. CIVITAS, allocated in this study under sustainable urban transport projects, have also sporadically funded demonstrations concerning the use of alternative fuels.

Concerning the type of financial instrument, the financial support is generally carried out through grants, with the exception of the projects financed by EIB, which are supported through loans (other tools, like guarantees, have not been considered in this report). Due to the significant value of the EIB projects (basically concerning large infrastructure projects); the weight of the loans in the total financial support is equal to 86 %, as shown in the following table.

Table 6: Financial tools by type of financial instrument (€)

	Grant	Loan	Total	%
CF	1,819,165,860		1,819,165,860	4.5 %
EIB		35,329,551,495	35,329,551,495	87.0 %
ERDF	3,136,429,834		3,136,429,834	7.7 %
FP5	77,338,198		77,338,198	0.2 %
FP6	39,437,821		39,437,821	0.1 %
FP7	52,097,032		52,097,032	0.1 %
IEE	15,653,998		15,653,998	0.0 %
LIFE	11,291,600		11,291,600	0.0 %
TEN-T	138,711,000		138,711,000	0.3 %
Total	5,290,125,343	35,329,551,495	40,619,676,838	-

The detailed disaggregation of the EU funded projects by type of beneficiary, e.g. research companies, industry, international associations, etc. has proved unfeasible, owing to the lack of information prompting the need to examine each individual project financial sheet.

However, in spite of the lack of information, the EU contribution by type of beneficiary has been estimated, based on a sample of FP5-6 and 7 projects, for which information has been made available.

Therefore, a basic classification between local authorities (i.e. local transport departments, local offices and agencies), transport operators, industry (manufacturers, energy providers) and research institutes, has been carried out with reference to a sample of projects related to the FP5-6 and 7 financial tools. The projects concern both funding in sustainable urban transport and alternative fuels, as shown in the following tables.

Table 7: Urban transport: allocation of EU funding by type of beneficiary %

Projects	Municipality	Public transport operator	Public and private research	Industry	Total
ARCHIMEDES	72.8	15.4%	11.8%	0.0	100.0 %
CATS	5.6	3.3%	69.4%	21.7%	100.0 %
CONDUITS	26.5	15.2%	58.3%	0.0%	100.0 %
DEMOCRITOS	13.4%	2.4%	84.2%	0.0%	100.0 %
ELAN	37.0%	15.2%	36.0%	11.8%	100.0 %
MIMOSA	54.9%	21.5%	23.6%	0.0%	100.0 %
MODERN	28.3%	36.2%	33.2%	2.3%	100.0 %
RENAISSANCE	49.1%	14.5%	35.6%	0.8%	100.0 %
STADIUM	0.0%	18.2%	54.9%	26.9%	100.0 %
CITYLOG	1.6%	4.8%	49.7%	43.9%	100.0 %
EBSF	3.7%	12.4%	56.6%	27.3%	100.0 %
TOTAL	37.5 %	16.5 %	36.2 %	9.8 %	100.0 %

Table 8: Alternative fuels: allocation of EU funding by type of beneficiary %

Projects	Municipality	Public transport operator	Public and private research	Industry	Total
SMARTBATT	0.0 %	0.0 %	89.5%	10.4%	100.0 %
FUEREX	0.0 %	0.0 %	50.5%	49.4%	100.0 %
PICAV	0.0 %	5.0 %	70.2%	24.7%	100.0 %
CITYNETMOBIL	0.0 %	0.0 %	100%	0.0%	100.0 %
BEAUTY	0.0 %	0.0 %	66.4%	33.5%	100.0 %
ELVA	0.0 %	0.0 %	38.5%	61.4%	100.0 %
TOTAL	0,00 %	0,9 %	64.9%	34.2%	100.00 %

Table 7 and Table 8 reveal the important role of research institutions, (in sustainable transport mobility projects) industry and research (in alternative fuels projects) specifically for FP7 projects in the sample (EU support in % of the total).

With reference to the FP5-6 and 7 projects as a whole, the basic disaggregation between funding accrued to municipality and transport operators shows that the main beneficiaries of the funds are local authorities: funding allocated to transport operators amounts on average to 62 % of the funds allocated to municipalities.

Table 9: Funding allocation between local government and transport operators € (FP5-6-7 sample of projects)

	City	Transport operator	%
	A	B	B/A
FP7	35,341,340	16,895,492	47.8 %
FP6	29,909,165	10,226,729	34.2 %
FP5	31,032,411	19,124,389	61.6 %

Concerning the trends in EU funding, the comparison of the available information on EU funded projects (EU financial support) between the two financial periods under examination (2000-2006 and 2007-2013) shows (Table 10) that the number of beneficiaries has increased by 94 % (from 140 to 272 cities).

Despite the lack of information for some projects in the financial period 2000-2006 (in particular concerning CF and FP5) which may have led to overestimating to a certain extent the growth of beneficiaries, Table 10 confirms the basic trend towards the growing importance of EU funding for European urban areas in terms of amount of funding and number of beneficiaries.

Table 10: Trends in EU funding (financial periods 2000-2006 and 2007-2013)

Financial tool	Financial period 2000-2006		Financial period 2007-2013	
	Support received (€)	Cities beneficiaries*	Support received (€)	Cities beneficiaries*
EIB	14,651,527,553	47	20,678,023,942	77
ERDF/CF	72,681,343	15	4,882,914,351	125
FP	109,690,202	90	59,182,850	69
IEE	2,608,295	32	13,045,703	113
LIFE	7,217,305	9	4,074,295	8
TEN-T	0		138,711,000	8
	14,843,724,697	140	25,775,952,141	272

(*) One city may benefit from one or more EU funding tools. The total number of beneficiaries (140 and 272 in the two financial periods) concern cities with funding from at least one financial tool.

In aggregated terms at country level (EU and non-EU countries), the comparison between the two financial periods (Table 11) shows the trend towards a balanced distribution of EU funding. During the financial period 2000-2006, the first three countries in order of funding received about 60 % of total funding (Spain, France, and the United Kingdom). In the next financial period 2007-2013 the first three countries have received about 46 % of the total resources (Spain, Poland and France), leaving resources to new countries, as for example Poland and Romania, raising their share respectively from 0.9 % (2000-2006) to 15 % (2007-2013) and from 2 % (2000-2006) to 5.3 % (2007-2013).

Table 11: Trends in EU funding - geographical distribution (%) (financial periods 2000-2006 and 2007-2013)

EU financial period 2000-2006			EU financial period 2007-2013		
EU funding by urban areas (by country)			EU funding by urban areas (by country)		
	Total (€)	%		Total (€)	%
Spain	4,581,167,864	30.86266%	Spain	4,178,989,287	16.21274%
France	2,201,296,742	14.82981%	Poland	3,866,578,223	15.00072%
United Kingdom	2,030,635,017	13.68009%	France	3,763,101,771	14.59927%
Greece	1,268,803,150	8.54774%	Italy	2,666,647,111	10.34548%
Hungary	962,127,950	6.48172%	United Kingdom	2,184,468,597	8.47483%
Sweden	886,122,948	5.96968%	Greece	1,514,739,506	5.87656%
Italy	668,816,430	4.50572%	Sweden	1,395,011,635	5.41207%
Portugal	661,447,856	4.45608%	Romania	1,372,513,426	5.32478%
Czech Republic	535,172,860	3.60538%	Czech Republic	1,018,131,601	3.94993%
Denmark	344,801,581	2.32288%	Bulgaria	799,576,496	3.10203%
Romania	299,044,327	2.01462%	Germany	670,003,613	2.59934%
Poland	142,028,770	0.95683%	Portugal	596,494,202	2.31415%
Belgium	110,541,488	0.74470%	Hungary	592,014,176	2.29677%
Ireland	60,655,535	0.40863%	Finland	510,580,000	1.98084%
Germany	55,812,676	0.37600%	Netherlands	304,734,362	1.18224%
Finland	16,079,970	0.10833%	Austria	98,334,041	0.38150%
Austria	7,718,077	0.05200%	Belgium	79,063,413	0.30673%
Netherlands	6,574,293	0.04429%	Slovak Republic	64,449,954	0.25004%
Slovak Republic	1,797,473	0.01211%	Estonia	58,656,670	0.22756%
Estonia	879,229	0.00592%	Cyprus	30,394,994	0.11792%
The Netherlands	856,610	0.00577%	Denmark	5,053,784	0.01961%
Luxembourg	716,700	0.00483%	Slovenia	3,329,114	0.01292%
Slovenia	341,899	0.00230%	Croatia	848,637	0.00329%
Lithuania	139,334	0.00094%	Ireland	558,408	0.00217%
Latvia	13,199	0.00009%	Lithuania	447,789	0.00174%
			Latvia	149,223	0.00058%
Sub-total (A)	14,843,591,979		Sub-total (A)	25,774,870,032	
Non- EU funding by urban areas (by country) 2000-2006			Non- EU funding by urban areas (by country) 2007-2013		
Norway	132,718	0.00089%	Macedonia	617,698	0.00240%
			Norway	321,085	0.00125%
			Serbia	100,000	0.00039%
			Turkey	43,326	0.00017%
Sub-total (B)	132,718		Sub-total (B)	1,082,109	
Total (A+B)	14,843,724,697		Total (A+B)	25,775,952,141	

However, if the analysis focuses on the urban level (Table 12), it can be observed that the trend towards the increase of beneficiaries falls together with the trend towards the concentration of resources in a small group of cities. Madrid, London, Barcelona, Athens, Stockholm, Prague and Rome indeed rank among the top ten cities receiving the highest amounts of EU funding both in the financial period 2000-2006 and in 2007-2013.

Table 12: Trends in EU funding: expenditures at urban level (financial periods 2000-2006 and 2007-2013 – all EU financial tools)

EU financial period 2000-2006 EU funding by urban areas (top ten) (€)		EU financial period 2007-2013 EU funding by urban areas (top ten) (€)	
Madrid	2,271,208,693	Warsaw	1,976,217,267
London	2,017,841,408	Bucharest	1,352,864,251
Barcelona	1,721,880,071	London	1,398,565,821
Budapest	960,000,000	Rome	1,228,097,739
Athens	740,000,000	Paris	1,176,423,047
Stockholm	649,458,861	Barcelona	1,069,505,426
Toulouse	603,226,338	Athens	1,029,013,982
Prague	535,172,860	Prague	1,007,737,525
Thessaloniki	527,132,743	Stockholm	997,789,679
Rome	445,140,702	Madrid	843,091,161
Total Top 10	10,471,331,677	Total Top 10	12,079,305,898
Total EU support	14,843,724,697	Total EU support	25,775,952,141

The same seven cities account respectively for 56.5 % and 29.4 % of the total EU funding in 2000-2006 and 2007-2013 (Table 13). Although the trend is to reduce their share on the total spending, the concentration of spending at local level in a small group of cities may represent a signal of lack of capacity to enlarge the number of actors involved at local level, in particular concerning large transport infrastructure projects. The CF and ERDF have increased spending from 8.5 % to 12.5 % for the share of the total funding in the seven cities (Table 13). The concentration of spending by the same actors may also indicate the creation of a system of static public clients, better endowed with the competence to spend cohesion policy funds. In such a context, the plea for reforming cohesion policy that was raised in 2009 in the direction of a major mobilisation of local actors may in part still be valid³.

³ In particular, F. Barca, "An Agenda for a reformed cohesion policy", Independent report prepared at the request of Danuta Hübner, Commissioner for Regional Policy, 2009

Table 13: Trends in EU funding – share of funding by financial tool at urban level in seven high spending cities (financial periods 2000-2006 and 2007-2013)

Financial tool	Financial period 2000-2006		Financial period 2007-2013	
	Support received * (€)	% on total EU funding	Support received* (€)	% on total EU funding
EIB	8,350,024,071	57.0 %	6,955,099,539	33.6 %
ERDF/CF	6,208,394	8.5 %	611,435,980	12.5 %
FP	23,333,366	21.2 %	5,280,807	8.9 %
IEE	321,641	12.3 %	985,007	7.6 %
LIFE	1,085,125	15.0 %	0	0.0 %
TEN-T	0	0.0 %	1,000,000	0.7 %
	8,380,972,596	56.5 %	7,573,801,333	29.4 %

(*) Amount related to seven cities: Madrid, London, Barcelona, Athens, Stockholm, Prague and Rome

However, if we consider the same distribution shown in Table 12, but focused on EU financial tools not including big transport infrastructure projects (i.e. FP, IEE and LIFE projects), a different picture can be observed, in which a diversified set of beneficiaries shows up in the top ten of the two financial perspectives (e.g. only one city, Rome, is present in both the top tens), as shown in Table 14.

Table 14: Trends in EU funding: expenditures at urban level not including transport infrastructure projects (financial periods 2000-2006 and 2007-2013)

EU financial period 2000-2006		EU financial period 2007-2013	
EU funding by urban areas (top ten)		EU funding by urban areas (top ten)	
Rome	7,942,167	Perugia	4,650,152
Stockholm	6,953,647	Aalborg	4,330,011
Bristol	6,229,694	Gent	3,8832,313
Genova	5,743,009	Bologna	3,842,212
Malmö	5,126,933	Donostia-San Sebastián	3,445,883
Rotterdam	5,084,094	Utrecht	3,164,726
Barcelona	3,045,769	Rome	3,004,040
Nantes	3,377,011	Ljubljana	2,450,993
Toulouse	3,226,338	Bath	2,397,641
Klagenfurt	3,030,726	Brescia	2,299,092
Total	49,759,388	Total	33,468,063

4. Methodology

This chapter describes the methodology adopted to carry out the study and presents the intervention logic of the analysis. A brief overview of the data sources used and their interaction is also provided. At the end, the complete list of the evaluation criteria and related evaluation questions is given, including the main challenges the consortium faced in responding to them.

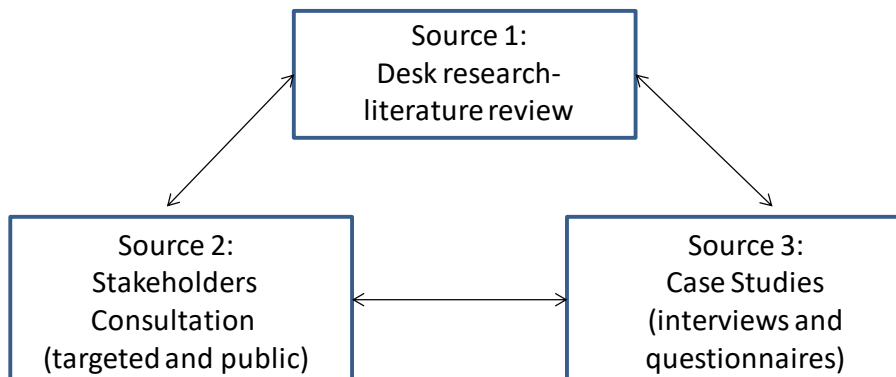
4.1 Data sources

The study relies on the information gathered from three main sources, namely:

- Desk research (literature review)
- Case studies (interviews and questionnaires)
- Public consultation.

The ex-post evaluation exercise builds on the *principle of interplay among different sources*, in order to channel, combine and cross validate findings and arguments from several (unrelated) sources. In turn, this approach confers robustness to the evaluation findings. Figure 1 below illustrates how the principle of triangulation has been applied in the context of this study.

Figure 1: The triangulation principle



4.1.1 Desk research

Desk research (literature review) represents an important source of information. In the course of the study two main types of material have been consulted:

1) Background evaluation reports from financial tools:

Financial tools	Recent evaluation reports
ERDF and CF	<ul style="list-style-type: none"> ▪ 2016, DG REGIO 'Ex-post evaluation of Cohesion Policy programmes between 2007 and 2013 – WP5 Transport' ▪ 2014, Court of Auditors, Special report on effectiveness of EU-supported public urban transport projects (2014); ▪ 2011, Ex-post Evaluation of Cohesion Policy Interventions 2000-2006 Financed by the Cohesion Fund (including former ISPA)
EIB tools	<ul style="list-style-type: none"> ▪ 2011, Evaluation of EIB financing of urban infrastructure projects in the European Union
FP5-6-7	<ul style="list-style-type: none"> ▪ Evaluation report for CIVITAS initiatives: ▪ 2014, CIVITAS WIKI 'Long term evaluation from CIVITAS II' (2005-2009) ▪ 2013, CIVITAS MIMOSA Evaluation Framework Deliverable 5.1.1 ▪ 2012 CIVITAS ELAN Final Evaluation Report ▪ 2009, CIVITAS POINTER, Framework for Evaluation in POINTER. ▪ 2009, CIVITAS SMILE, Evaluation Report ▪ 2006, CIVITAS GUARD, Framework for Evaluation
LIFE	<ul style="list-style-type: none"> ▪ 2010, Mid-Term Evaluation of the Implementation of the LIFE+ Regulation ▪ 2009, 'Ex-post Evaluation of Projects and Activities Financed under the LIFE Programme', Directorate General Environment, Unit E.4. LIFE
IEE	<ul style="list-style-type: none"> ▪ 2013, IEE II: performance report 2007-2012 ▪ 2011, Final Evaluation of the Intelligent Energy-Europe II Programme within the Competitiveness and Innovation Framework Programme, Deloitte
TEN-T	<ul style="list-style-type: none"> ▪ 2014, Ex-post evaluation of the loan guarantee tool for Trans-European Transport Network projects (LGTT)

2) Academic literature, mostly in the field of transport projects evaluation. Details of the literature consulted can be found in the References section of this report.

4.1.2 Case studies

A selection of 25 case studies were carried out in 25 European cities, selected to represent a broad range of cities according to the following criteria:

- Cities should cover at least 10 Member States, of which at least four having accessed the EU after 01/05/2004;
- Cities should have received support from at least two of the seven financial tools. In case this does not allow attaining a sufficient number of case studies, cities having benefitted from only one financial tool can be considered as long as all financial tools are ultimately covered;
- Cities should have received a global EU financial contribution of at least one million EUR during the evaluation period (2000-2013).

The following picture shows the geographical coverage of the 25 cities, while Table 15 presents the list of the cities, and their size (n° of inhabitants).

Figure 2: European geographical coverage of the 25 cities



Table 15: List of cities

	City	Country	Population (*)
1	Athens	EL	664,046
2	Barcelona	ES	1,602,386
3	Bratislava	SK	419.678
4	Bremen	DE	548,597
5	Bucharest	RO	2,110,878
6	Budapest	HU	1,744,665
7	Donostia San Sebastián	ES	186,126
8	Funchal	PT	106,721
9	Gdansk	PL	461,531
10	Göteborg	SE	520,371
11	Graz	AT	265,778
12	Helsinki	FI	612,664
13	Krakow	PL	758,992
14	London	UK	8,477,600
15	Madrid	ES	3,155,235
16	Malmö	SE	302,835
17	Odense	DK	193,370
18	Perugia	IT	166,003
19	Roma	IT	2,863,332
20	Rotterdam	NL	616.294
21	Sofia	BG	1,221,292
22	Stockholm	SE	864,324
23	Stuttgart	DE	604,297
24	Toulouse	FR	752,652
25	Utrecht	NL	321,926

(*) Population at 2014 (EUROSTAT)

For each case study, experts and municipality representatives were asked to fill in a questionnaire on the EU funded projects addressing all the six evaluation criteria. When

necessary, interviews and additional questions have completed the case study. From these cities, we have received information on a total of 83 projects, representing a significant sample of the EU funded projects carried out in these cities, most of which were completed in the financial period 2000-2013 (see the Annex III for details on case studies contacts, the type of projects examined and the questionnaire). The following tables allow for a summary view on the 83 projects classified by financial tools, funding stage and type of projects.

Projects classification by *EU financial tools*:

FP5-6-7	33
IEE	24
ERDF	10
EIB	8
CF	4
LIFE	3
Ten-T	1
TOTAL	83

Projects classification by *funding stages*:

Pilot	47
Implementation	40
Research	19
Exploring market opportunities	13
TOTAL	119*

*Multiple answers allowed

Projects classification by *type of project*:

SUM – Sustainable Urban Mobility	73
AF – Alternative Fuels	12
TOTAL	85*

*Some projects address both SUM and AF

4.1.3 Targeted consultation

The targeted consultation consisted in the distribution of a questionnaire to collect feedback on EU funded projects on sustainable urban transport and use of alternative fuels from key stakeholders. A list of about 400 contacts was compiled as recipients of the questionnaire, representing mainly two stakeholders' categories:

1. Organisations, bodies and public administrations related to the sustainable urban mobility and alternative fuels sectors (international, national, regional and local authorities);
2. Operational stakeholders active in the sectors (industry and service providers) and associations thereof.

The consultation was carried out from 8 July 2015 to 5 January 2016.

Annex II shows the details of the targeted consultation, i.e. the answers to the questionnaire and the list of stakeholders involved.

The results in terms of evaluation of EU funding are shown in Chapter 5.

4.1.4 Public consultation

A simplified version of the questionnaire used for the targeted consultation (see Annex II) was elaborated to gather feedback from the general public via an open public consultation. The questionnaire was hosted by the DG MOVE website for 12 weeks, from December 2015 to February 2016.

47 respondents took part in the open public consultation, primarily representing individual citizens (11), local public authorities (6), and organisations/associations and interest groups (7).

Annex II shows details of the public consultation, i.e., the questionnaire and feedback.

The results in terms of evaluation of EU funding are shown in Chapter 5.

4.2 Evaluation questions

The assessment of how the EU financial tools contributed to enhancing sustainable mobility and the use of alternative fuels in EU urban areas has been structured around a series of nineteen evaluation questions, categorised under six evaluation criteria and an introductory State of Play section. The information gathered from the different data sources presented in the previous sections were used to respond to these evaluation questions making use of specific indicators, as described hereafter.

0) State of Play

<p>State of Play</p> <p>0.1 Which type of projects (e.g. sustainable urban mobility, alternative fuels, public transport, road safety, urban logistics, etc.) have been funded and which financial tools have been used? Which type of financial tools (grants, loans, equity, loan guarantees) have been used? What percentages of costs have been covered by the EU tools?</p> <p>0.2 Who have been the main beneficiaries of funding (e.g. public authorities, private operators/companies, others)?</p> <p>0.3 What have been the results of the EU financial support? In other words, how has the EU financial support impacted sustainable urban mobility and the use of alternative fuels in EU areas?</p>	
<p>What do we want to measure?</p> <p>The first two evaluation questions can be dealt with in parallel, provided that they address the same objective: the screening of the projects funded by the seven financial tools in terms of</p> <p>a) the type of financial tool involved and the type of financial tool adopted, e.g. grant, loan, etc.</p> <p>b) the percentage of costs covered by the financial tools,</p> <p>c) indication of which type of stakeholder has received or managed the funding.</p>	
Methodology	Indicators used
<p>Projects have been classified by type of financial tool and main action undertaken (sustainable urban mobility and use of alternative fuels).</p> <p>Summary tables and statistics on the number and share of projects dealing with sustainable urban mobility and use of alternative fuels on the total projects, by type of financial tool and beneficiary.</p>	<p>Number of projects classified by type of financial tool and main action undertaken (sustainable urban mobility and use of alternative fuels)</p> <p>Summary tables and statistics on the number and share of projects dealing with sustainable urban mobility and use of alternative fuels on the total projects, by type of financial tool (see Annex 1)</p>

Question 0.3, implying the analysis of the impacts of the financial tools, has been elaborated in chapter 5.

1) Relevance

Two evaluation questions have been elaborated:

<p>Relevance</p> <p>1.1 To what extent has the EU financial support proved relevant to the actual needs of projects in view of establishing sustainable urban mobility conditions in cities including the use of conventionally fuelled vehicles?</p> <p>1.2 Should this financial support have not proved to be fully relevant in some cases, what adjustments can be envisaged, e.g. to the financial tools?</p>
<p>What do we want to measure?</p> <p>Relevance is the extent to which the objectives of the financial support are consistent with the project and local strategies as well as beneficiaries' needs. It also takes into account of the internal coherence of objectives and the relevance of the financial support design in pursuing</p>

sustainable urban transport and the use of alternative fuels. In case of a mismatch between the financial support and users' needs, the related adjustments are envisaged in close collaboration with stakeholders.	
Methodology	Indicators used
The assessment of the relevance of the financial support has been conducted through the analysis of sample projects, literature review and the on-line stakeholders' consultations for each financial tool. The sample of the projects under examination includes, on the one hand, the projects analysed in the financial tools evaluation reports, and, on the other, the case studies and related feedback from interviews.	'Satisfactory', 'Partly satisfactory', 'unsatisfactory' indicators from quantitative elaboration of answers to questionnaires (case studies).

2) Effectiveness

Five evaluation questions have been elaborated:

Effectiveness	
2.1 Has the EU financial support (be it through a single financial tool or a mix of different tools) been effective in terms of providing incentives to participants and why? What has been the leverage of EU funding?	
<p>What do we want to measure?</p> <p>Under this Evaluation Question we seek to answer the following questions:</p> <p>How strong were the incentives provided by the projects/activities in altering participants' attitudes towards sustainable mobility?</p> <p>How strong were the effects on actual changes in actual consumption, travel or business behaviour during the projects' lifetime?</p> <p>How sustainable are the behavioural effects after the projects'/activity's lifetime?</p> <p>Which funding phases (cp. evaluation question 2.2) are most suitable for creating sustainable behavioural effects?</p>	
Methodology	Indicators used
We approach these questions by collecting the opinions generated for the case studies and public consultation. As we are dealing with complex issues of environmental psychology, we have also considered the latest insights from behavioural sciences literature.	Number of respondents 'yes' and 'no' from public consultation and answers from questionnaires (case studies).

Effectiveness

2.2 Did the EU financial support prove appropriate to the objectives of improving urban mobility conditions and the use of alternative fuels in cities? Which objectives were achieved and to which extent? For example, what has been the impact on modal split, air quality, congestion, use of alternative fuels and vehicles, road safety, efficiency of urban logistics, deployment of ITS, urban mobility management, and noise pollution?

What do we want to measure?

The aim of this question is to assess the degree to which financing through the EU tools improves urban mobility and the use of alternative fuels. In this context, we also ask which objectives were most likely to be fulfilled in each of the cities selected for our study.

Methodology

The attribution of effects to the EU intervention can be a critical and complex issue. We ask stakeholders about their views related to the achievement of objectives and on the degree to which the different policy objectives, e.g. road safety, air quality, mobility management, etc., have been met.

Indicators used

Indicators from case studies about projects' effectiveness (e.g. emission reduction, reducing travel time, etc.) and type objectives fulfilled.

Effectiveness

2.3 Which combination of funding stages, actors and initiatives has proved effective in achieving the different objectives? Can indicators/parameters be identified to categorise potentially effective combinations?

What do we want to measure?

The selected EU financial tools provide support to various stages of projects (e.g., research, problem analysis, pilot or demonstration), as well as different actors (cities, businesses, research institutes, etc.). The scope of this question is to better understand the effects of providing support at different stages to different actors. In this context, we analyse during which stages the selected EU tools provide financial support and to which actors.

Methodology

The methodology reviews for each case study about the stages to which funding was given and the most efficient combination of funding stages and beneficiaries.

Indicators used

Number of 'Most effective funding stages' answers from questionnaires (case studies) and consultation.

Effectiveness

2.4 Has the range of beneficiaries been appropriate to achieve the objectives? Have the conditions been appropriate to encourage SME participation?

What do we want to measure?

This question intends to evaluate the extent to which beneficiaries of the EU financial tools (e.g., cities, businesses, including SMEs, research institutes, etc.) are an appropriate group to make the most use of the financial support, and to best carry out the project.

Under this question, thought has also been given to whether the existing conditions under which financial support is given, is appropriate to ensure that SMEs can participate (and apply for) funding stemming from these tools.

Methodology

The methodology envisaged for answering this question relies on the analysis of the beneficiary's opinions' (case studies and public consultation) on SMEs involvement and appropriateness of range of actors. 'Appropriateness' is seen in this context as denoting the suitability of the actor to make the best use of the fund received, as well as its capabilities to implement the project, both regarding technical and managerial aspects. Literature review has also supported the analysis

Indicators used

Number of respondents 'yes' and 'no' from consultation and case studies

Effectiveness

2.5 Where expectations have not been met, what factors have hindered the achievement of the objectives?

What do we want to measure?

In order to better understand the true scale of the effectiveness of EU financial support to urban mobility, it has been necessary to carry out a critical analysis of the projects that did not achieve their objectives in improving urban mobility.

Methodology

The methodology consists of the analysis of projects that did not meet their objectives in improving urban mobility and promoting the use of alternative fuels.

Indicators used

Number of hindering factors from consultation and case studies.

3) Efficiency

Four evaluation questions have been elaborated:

Efficiency	
3.1 Were the outputs and effects achieved in a cost-effective way? If not, what were the underlying causes?	
<p>What do we want to measure?</p> <p>The first part of the question requires the elaboration of quantitative indicators relating effects of the projects or activities to the costs involved.</p> <p>The second part is of qualitative nature. Here a ranking of prevailing factors hindering or supporting the successful implementation of the projects / activities is required.</p>	
Methodology	Indicators used
The methodology requires the analysis of cost-efficiency indicators. However, case studies have not delivered enough information on efficiency for a generalisation on programme level. Literature review has been used to fill in the gaps.	Cost-efficient indicators, e.g. budget overrun, from literature review

Efficiency	
3.2 At which stage and for which actors is funding most efficient to achieve the individual objective?	
<p>What do we want to measure?</p> <p>The financial tools that fall within the scope of this evaluation offer funding possibilities at various stages of a project (e.g. research, problem analysis, feasibility study, pilot or demonstration stages, etc.), and to various actors (cities, public administrations, research institutes, undertakings, etc.). This question seeks, therefore, to explore the extent to which funding has various efficiency levels depending on the stage of the project that is financed or the actors who benefit from the funding.</p>	
Methodology	Indicators used
The methodology relies on the analysis of stakeholders' opinions on the stages and actors for which funding is considered most efficient. Evidence from case studies and public consultation have been collected on the matter at various project stages.	Percentage of success depending on type of project stage, from public consultation and case studies

Efficiency	
3.3 Have the cities that received the funding faced major unsustainable urban mobility conditions?	
What do we want to measure? This question aims at assessing the efficiency of the funding tools by looking at the mobility conditions that existed before awarding the funding.	
Methodology	Indicators used
The methodology relies on stakeholders' opinions on the conditions that existed prior to the funding.	Number of cities suffering unsustainable mobility conditions, as from the case studies.

Efficiency	
3.4 Based on available evidence or good practice, could the same results have been achieved with less funding? Could the use of other measures or mechanisms or through intervention at different stages or to different actors or by using a different tool have provided better cost-effectiveness?	
What do we want to measure? The underlying reason behind this question is to determine to what extent the financial tools efficiently contributed to the achievement of their objectives. It also assesses whether the same results and same benefits could have been achieved at lower costs.	
Methodology	Indicators used
The methodology approaches this question on a case-by-case basis, looking at findings from case studies and public consultation.	Number of projects in which the same results could have been achieved with less funding from quantitative elaboration of answers to questionnaires and public consultation results.

4) European added value

Two evaluation questions have been elaborated:

European Added Value	
4.1 What is the additional value resulting from the EU intervention(s)? In other words, to what extent have the EU interventions provided more added value than what could have been achieved by Member States at national and/or regional levels?	
What do we want to measure? This evaluation question focuses on the understanding of whether the activities of the financial tools result in benefits on EU level. In particular, the evaluation question aims at disclosing the perception of the EU added value in the different financial tools.	
Methodology	Indicators used
The methodology consists of the analysis of stakeholders' opinions from consultation and case studies insights, about their views on whether the financial tools' activities are necessary and whether these activities contribute to better achieving the EU added value.	Number and type of projects in which European added value has been reached, from case studies and public consultation.

European Added Value

4.2 What would have happened if the EU had not intervened? Is there still a need for EU funding in the area of sustainable urban mobility and the use of alternative fuels in EU urban areas?

What do we want to measure?

This evaluation question aims to assess the extent to which pursuing the objectives of sustainable urban mobility and the use of alternative fuels in urban areas would have led to the same result without the EU financial tools activities.

Methodology

Stakeholders' opinions are taken into account to evaluate what would have been the implications for local authorities and policymakers when tackling air pollution, congestion, accidents, etc. without the EU financial support.

Indicators used

Number and type of projects in which investment would have been delayed if EU funding would not have intervened, from case studies and public consultation.

5) Coherence

Three evaluation questions have been elaborated:

Coherence

5.1 How well did the evaluated EU financial support work together with or were complementary to other EU and non-EU initiatives/interventions which have similar objectives, e.g. in the field of the other dimensions of transport (different from the urban dimension), environment, climate change, research and development, energy, enterprise policy?

What do we want to measure?

The aim of this question is to assess the extent to which the evaluated EU financial tools are coherent with the other existing funding schemes (either EU or non-EU) with similar objectives. In particular, we consider to what extent synergies can be identified between the various funding schemes, and to what extent the evaluated EU financial tools are complementary to the objectives of other financial tools.

Methodology

The methodology relies on obtaining the necessary information through the case studies, questionnaires and interviews with experts, including literature review.

Indicators used

Thematic urban areas, e.g. transport, energy, environment, in which EU funding was complementary to non-EU initiatives, from questionnaires and public consultation.

Coherence	
5.2 To what extent are different EU funded projects coherent? To what extent have the different financial tools produced synergetic effects? Are there conflicting objective/results?	
What do we want to measure? The purpose of this question is to assess to what extent the selected EU funding tools are coherent to one another. In particular, we assess to what extent the objectives of the various tools overlap, and what synergies can be determined in the impacts that the financial tools achieved.	
Methodology	Indicators used
The methodology adopts a comparative analysis approach in analysing the level of complementarity between the selected funding tools from case studies and public consultation.	Number of projects for which EU funding has determined synergetic effects.

Coherence	
5.3 To what extent was EU financial support related to sustainable urban mobility and the use of alternative fuels coherent with existing urban mobility strategies or plans? To what extent has the EU financial support helped in achieving the objectives/targets of these strategies or plans?	
What do we want to measure? This question explores the extent to which the selected EU financial tools are coherent with the national/local overall policy and targets on sustainable urban mobility and use of alternative fuels.	
Methodology	Indicators used
The methodology relies on the analyses of case studies, stakeholders' consultation and the other evaluation questions, i.e. relevance and European added value, in order to assess to what extent, the selected financial tools contribute to the national and local policy objectives of sustainable urban mobility and use of alternative fuels.	Number of projects in which EU funding is consistent with urban strategies, from questionnaires and public consultation.

6) Sustainability

Sustainability	
6.1 To what extent were the results of the projects sustainable? Which factors influence sustainable results being achieved?	
What do we want to measure? The sustainability analysis concerns, on the one hand, the likelihood of continued long-term effects over the intended life of the projects, and, on the other, the identification of factors and practices that are able to support the long-term project sustainability.	
Methodology	Indicators used
The methodology is based on case studies and public consultation analysis, which provide the basic informative source to the evaluation of sustainability.	Number of projects with sustainable results in the long-term, from case studies and public consultation.

4.3 Criticalities

We faced several challenges in this study. These challenges can be divided in two main categories: 1) lack of information from case studies and 2) complexity in the analysis of the indicators.

Collecting indicators for projects at non-implementation stages and projects with long-term effects turned out to be complicated.

Projects at non-implementation stages (i.e. research, exploring market opportunities and feasibility studies, pilot projects) normally do not have a sufficient budget to carry out ex-post evaluations, which require significant resources, but can provide important indicators for evaluating efficiency and effectiveness.

Concerning the projects with long-term effects, it is difficult to capture outputs, which may have only long-term effects, difficult to measure or even to monetise, e.g. the long-term social sustainability of a new transport service in terms of willingness to pay for the new service, number of people with reduced accessibility to transport services, due to the implementation of new services, e.g. a new high speed rail reducing rail services on secondary lines, etc.

In order to overcome this lack of information, during the ex-post evaluation process, cities (case studies) were contacted several times with additional questions on specific issues.

Taking into account these criticalities, the ex-post assessment conducted in this study has sometimes replaced quantitative indicators, difficult to collect, with semi-quantitative indicators, as indicated in the following table with reference to the effectiveness and sustainability evaluation criteria.

Table 16: Analysis of indicators: the original and the revised approach

Indicator	Original approach	Revised approach
<p>Effectiveness:</p> <p>1. Direct EU funding with short-term impacts: direct EU spending per:</p> <p>a) lives saved in accidents b) tons of air pollutant saved c) tons of GHG (CO2-eq.) saved d) dB(A) of noise pollution saved e) car trip shifted to alternative modes f) hours in congestion saved g) fossil fuelled cars replaced by alternatively fuelled vehicles</p>	<p>Direct funding from EC database, short term impacts obtained in project reports and EC evaluation</p>	<p>Replacement of the physical indicators by new question to cities: 'On a scale of 1-10' and taking into account the size of the project, please estimate the project's direct and short term contribution to sustainability goals.</p>
<p>Sustainability:</p> <p>2. Direct EU, national and local funding with long-term impacts: Direct and indirect financial resources needed per ... a) to g) as above</p>	<p>Long term impacts obtained from project reports and EC evaluation</p>	<p>Replacement by question: Taking into account the size of the project and its focus (research, feasibility studies, pilot or implementation stage), how would you perceive that this project affected sustainability in your city (Please rank it on a scale of 1-10) and triggered more sustainability projects? (Please rank it on a scale of 1-10).</p>

5. Analysis of the evaluation questions

5.1 Results by evaluation criteria

The following results draw on the analysis of the information gathered from the cities participating in the case studies (section 4.1.2), the targeted questionnaire (section 4.1.3) and the online consultation (section 4.1.4). When available and considered appropriate, evidence is supported by the relevant literature (section 4.1.1).

5.1.1 Relevance

Summary of evaluation

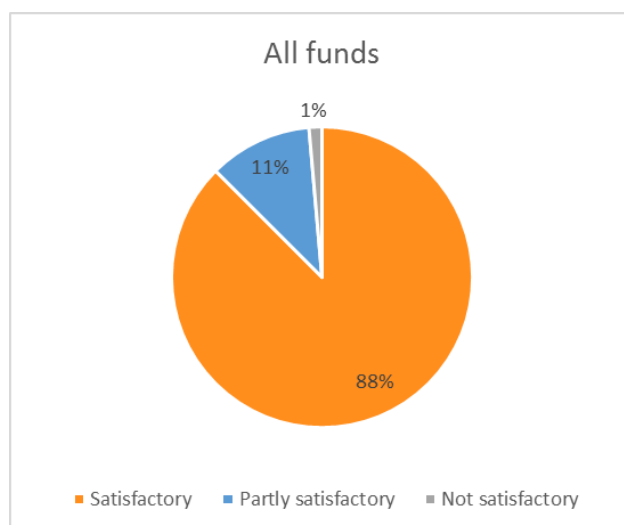
According to the sample of 83 projects assessed through the case studies, the relevance of EU funding was considered very high (88 %). Also, from the 42 respondents to the targeted questionnaire most of the feedback received (89 %) considered the projects relevant to the local plans and needs, and very helpful in achieving the local policy objectives.

Besides the overall appreciation, cities made some suggestions to improve the EU financial tools' relevance to the beneficiaries' needs. In particular, recommending an easier access to financing and reducing the administrative burdens.

Question 1: To what extent has EU financial support proved relevant to the actual needs of projects in view of establishing sustainable urban mobility conditions in cities including the use of conventionally fuelled vehicles?

The feedback received from the **case studies** shows that a high majority of cities (88 %) consider the financial support received from the EU proved relevant (satisfactory). Only 1 % has considered it unsatisfactory.

Figure 3: Relevance of EU funded projects – sustainable mobility - Percentages calculated from 72 projects out of 80



It is worth noting that the only negative feedback comes from London. This is in relation to the project 'Optimising Bike Sharing in European Cities (OBIS)', funded by IEE. However, the reason was that: *'The bike sharing system was already implemented in London. The benefit of the project therefore, was quite limited'*.

From the **targeted consultation**, most of the respondents (89 %) considered the projects relevant to the local plans and needs, and very helpful in achieving the local policy objectives.

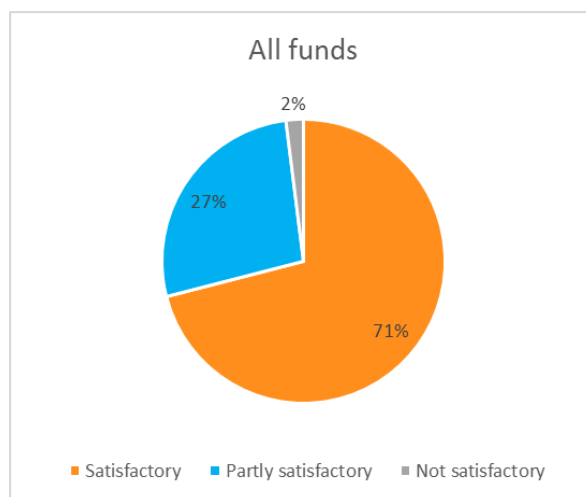
These positive results remain consistent if we look at the EU financing tools separately. Recipients of EIB and TEN-T funds are 100 % satisfied, while the only project responding in an unsatisfied way resides within the IEE tool, as mentioned above.

Sometimes the level of satisfaction changed during the project lifetime.

Rotterdam, CATALYST (FP7): "After 2 years, the feeling was that Rotterdam only sent knowledge and did not receive back knowledge. Years after finalisation of the project, Rotterdam approached it differently and was satisfied because the project had established a good network and contacts."

When asked about the appreciation of the EU intervention in establishing conditions for the use of **alternative fuels**, cities provided slightly less positive feedback, as projects expressing a partly satisfied appreciation rise from 12 % to 27 % and the fully satisfied decrease from 88 % to 71 %.

Figure 4: Relevance of EU funded projects – alternative fuels - Percentages calculated from 60 projects out of 72



The main reason for the lower level of satisfaction relates in most cases to the need for the cities to allocate additional investments for the actual take-up of alternative fuels after the project completion, which are not covered by the EU financial tools. As in the case of projects

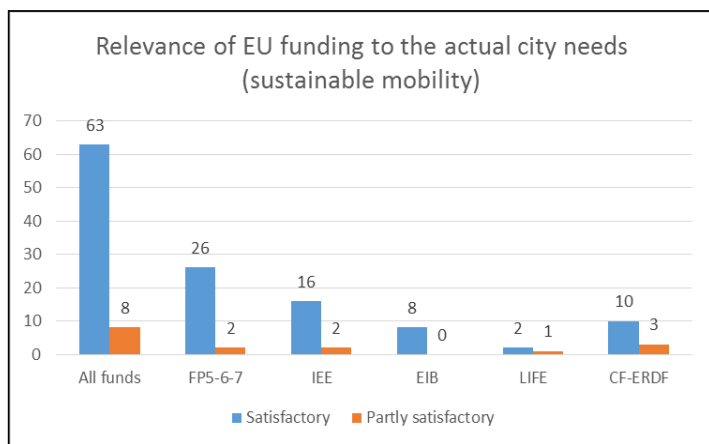
related to sustainable mobility, the results remain consistent if we look at the EU financing tools separately.

Question 2: Should this financial support have not proved fully relevant in some cases, what adjustments can be envisaged, e.g. to the financial tools?

Although most of the cities participating to the **case studies** expressed an overall appreciation of the EU intervention to enhance their local mobility, they suggested a number of possible improvements to the EU financial tools. Most of these suggestions relate to bureaucracy and administrative constraints related to the requests and awarding phases of the different EU financial tools, recommending finding ways to facilitate access to financing.

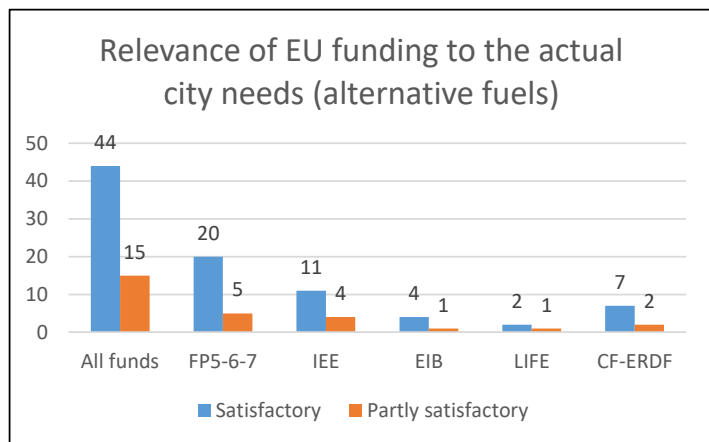
More specifically, considering the analysis by type of financial tool and type of projects, i.e. addressing sustainable urban mobility or the use of alternative fuels, the following figure shows that the projects considered not fully relevant mainly concern the use of alternative fuels in FP and IEE financial tools.

Figure 5: Relevance of EU funded projects by financial tool (number of projects considered satisfactory and partly satisfactory)



The analysis of this sub set of projects allows the identification of the following constraints and suggestions (alternative fuels in urban areas):

FP financial tools: in general, demonstrations and pilot projects supporting the use of alternative fuels and vehicles in urban areas are considered relevant to the city needs. However, the main obstacles result from the financial perspective. Suggestions concern easing access to specific funding for infrastructure to cities that have already demonstrated successful participation and achievements in research and demonstration projects.



IEE financial tool: the relevance to the actual city needs would be improved by focusing the tool on the implementation side. It has been suggested in fact that without a clear reference to the implementation part, in some projects the extra costs to participate (regulation, preparation, etc.,) would exceed the positive outcomes.

5.1.2 Effectiveness

Summary of the evaluation

Concerning the effectiveness with reference to the objectives achieved, a key conclusion from the feedback received is that a single project may be too small to provide a significant "impact in the city, but this would not necessarily mean that the EU financing was inappropriate to achieve the objectives. EU financing (grants) have proven to represent an effective incentive to carry out the projects, in particular in the research, feasibility and pilot/demonstration stages.

Leverage effects of EU funding range from raising awareness among stakeholders on the potential of new technologies and policies, to enhancing cooperation through networking and best practices dissemination. Smaller cities can also benefit by reaching the critical mass to carry out projects otherwise not manageable. Leverage effects in case of transport infrastructure may be wider; from job creation to shaping the overall urban development.

Improvement of air quality, reducing fuel consumption and increasing the modal split towards public transportation are among the objectives most frequently achieved.

The combination of funding stages and actors, which has proven to be effective, involves city departments and universities/research institutes in the research/feasibility project stage; and a wider range of stakeholders, from civil society to local SMEs, in the pilot/demonstration stage. The presence of industry/SMEs is considered a key requirement in the project implementation stage.

Effectiveness with reference to the type of actors involved is, in general, considered appropriate, as well as the participation of SMEs. In the sample of projects reviewed the participation of SMEs amounts to 43 %. Factors hindering SME involvement are the EU administrative procedures (e.g. delayed payment and administrative costs), or the project scale not involving local partners and technological barriers.

As for the factors hindering the effectiveness in general, technical issues are identified as being the main impeding factors, followed by lack of local political support, financial issues and language barriers. Bureaucracy and specific legislative and normative contexts at local level are often mentioned as hindering factors as well, for example local regulation on privacy and data protection may hinder the transferability of effective measures concerning the installation of a camera at public transport stops to improve safety and security, as in the CIVITAS project MIMOSA in Gdansk.

Question 1: Has the EU financial support (be it through a single financial tool or a mix of different tools) been effective in terms of providing incentives to participants and why? What has been the leverage of EU funding?

The assessment of the role of incentives to change behaviour is a complex matter. Studies point out that reducing the use of the personal car in many cases implies sacrificing immediate personal benefits to reduce long-term environmental costs (Nordlund, Garvill 2003). According to the authors of this study, pro-environmental behaviour may require the individual to limit their egoistic tendencies for the benefit of others by making short-term sacrifices. Thus, collective oriented values, environmental values, environmental problem awareness and especially personal norms are issues that influence the use of public transportation.

Later, Bamberg et al. (2007)⁴ also investigated the use of public transportation instead of car. They observe again the important role of norms and social values, such as feelings of guilt and most importantly, perceived social norms. Their study provides an interesting explanation on how different social contexts may influence the use of public transportation instead of own cars.

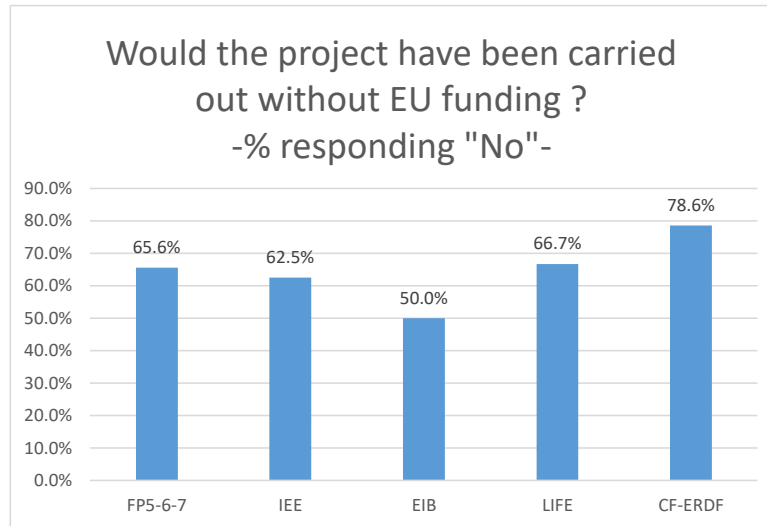
It is worth mentioning that at policy level, authorities are not always aware of or confident in the role of behavioural change policies in order to promote the use of more environmental friendly transport, as studied by Economides et al. (2012)⁵

Most of the cities participating in the **case studies** declared that getting EU funds was in itself an incentive to carry out the project. In fact, many of the projects might not have been carried out without EU funding. Evidence from the case studies suggests that the effectiveness of the EU financial support as an incentive to get involved in EU funding depends on the financial tool: very high in grants (demonstrations, research and feasibility projects), lower in infrastructure projects funded by loans. Figure 6 shows that between 60 % and 70 % of the research, demonstration and feasibility projects funded by FP, IEE and LIFE tools examined in the case studies would not have been carried out without EU grants. The percentage increases to about 80 % with reference to the infrastructure projects funded by the CF and ERDF tools. On the contrary, in the case of EIB loans, only 50 % of the projects would not have been funded without the EIB loans, meaning that funding opportunities from other financing institutions could have been found.

⁴ Bamberg, Sebastian; Hunecke, Marcel; Blöbaum, Anke (2007): Social context, personal norms and the use of public transportation: Two field studies. In Journal of environmental psychology 27 (3), pp. 190–203.

⁵ Economides, S. B.; Han, C. L.; Orowitsch, S.; Im Scoullou; Nuttall, W. J. (2012): Paradigm shift for future mobility: a cross country analysis of behavioural policies. In Procedia-Social and Behavioural Sciences 48, pp. 2588–2596.

Figure 6: Project's feasibility without EU funding



As for the leverage of EU funding, the key feedback from the cities is that the EU support was important to raise awareness on sustainable transport and the use of alternative fuels. Such visibility was important at different levels:

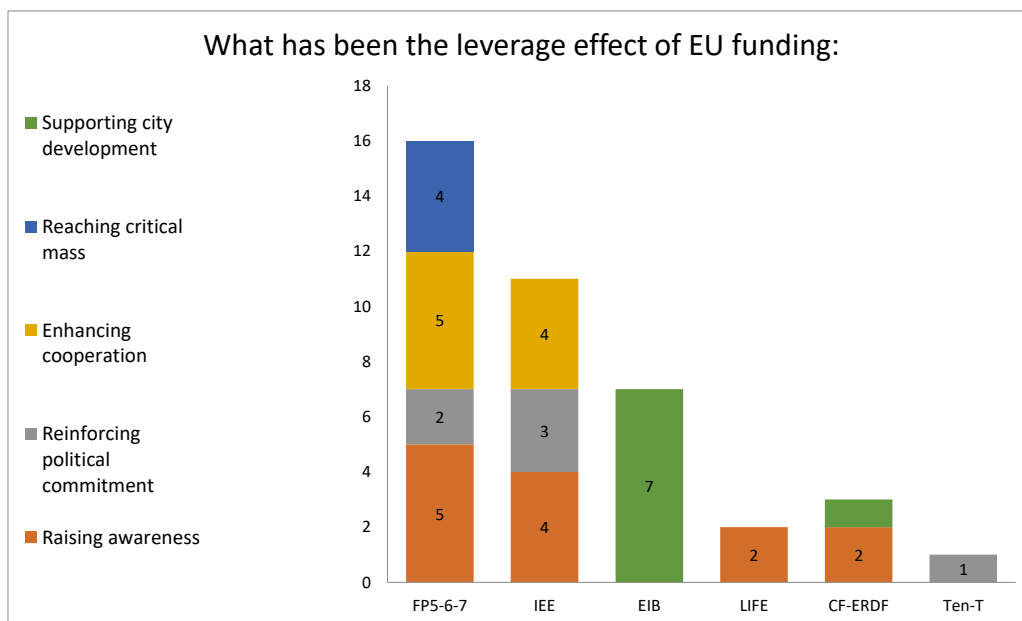
- at the political level, as more projects in this area were accepted thanks to the previous ones.
- at stakeholders' level, municipalities, industry, universities, consultancies, along with other partners, were interested in developing projects in these areas because they have seen that well-developed ideas had a unique opportunity to be funded.

The type of financial tools (Figure 7) and available data from the case studies (i.e. the number of projects indicating the leverage effect) allow the identification of five key typologies:

1. Raising awareness, which is the most frequent leverage effect across the financial tools, concerns the possibility to raise awareness, among stakeholders, of the importance of the EU funded projects dealing with sustainable mobility and the use of alternative fuels, which would not have been fully exploited without EU funding. This effect mainly addresses FP, IEE, CF-ERDF and LIFE demonstrations and feasibility projects.
2. Enhancing cooperation, mainly concerning FP and IEE financial tools, deals with the leverage effect arising from networking activities and exchange of best practices, which are generally the by-products of the EU cooperation in research projects.
3. Reinforcing political commitment addresses the leverage effect on local policymakers, who can take stock from the EU projects to commit the transport policy agenda towards specific themes, e.g. traffic management systems (as in Stuttgart, from the FP6 CARAVEL project) or the development of sustainable mobility plans as in Utrecht, from FP7 MIMOSA project. In some cases, as in Göteborg, the participation in EU funded projects can reinforce the long-term political commitment towards the EU transport policy (IEE START project).
4. The FP financial tool appears to be particularly apt to help medium-small cities, e.g. Odense, San Sebastián, Toulouse, Malmö, to reach the critical mass (in terms of economic resources, knowledge base, technical input) to carry out projects in the fields of mobility management, traffic modelling and sustainable mobility strategy.

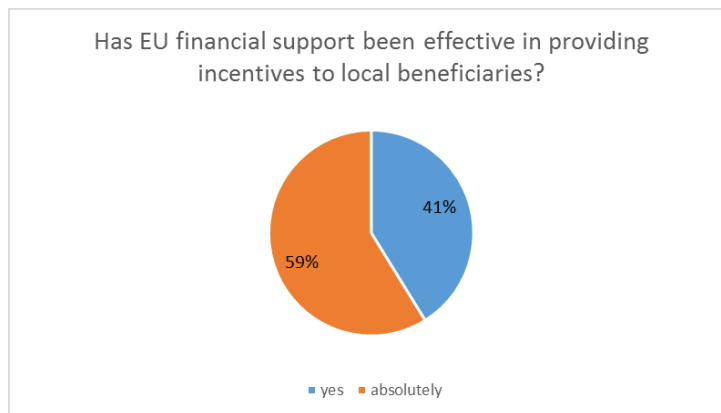
- Supporting the city development is related to the capability to shape decisively the development of urban transport system. This leverage effect stems typically from the EIB financial tool. The reason lies in the nature of the projects funded. Investment in Metro upgrading (e.g. Helsinki WESTMETRO, Budapest Metro Line 2, Toulouse Metro A and B, Barcelona Metro 9 Line and Athens Metro Line 2) contributes decisively toward shaping overall urban development, in terms of accessibility, household location and development of economic activities.

Figure 7: What has been the leverage effect of EU funding



From the **targeted consultation**, the effectiveness of EU funding is considered appropriate (see Figure 8), in particular to support local beneficiaries' strategies. The answer to this question is in line with the general appreciation of the EU financial tools (see Relevance – Question 1).

Figure 8: EU financial support and incentives to beneficiaries



More specifically, local beneficiaries have benefited in terms of:

- Reduced costs for clean vehicles/refuelling/fuel, e.g. + 7.6 % in fuel efficiency from dual fuel diesel/methane engine in Perugia (CIVITAS REINASSANCE project, managed by FP financial tool);
- More information on possibilities, exchange of experience;
- Cooperation between local authorities, stakeholders and transport operators;
- SMEs involvement;
- Modal shift to walking and cycling, e.g. + 8 %/year during the project lifetime in Donostia-San Sebastian (CIVITAS ARCHIMEDES project, managed by FP financial tool);
- Public consultation, awareness raising to promote soft measures, e.g. doubling the share of cycling in modal share, from 2 % to 4 %, through information campaigns in Gdansk (CIVITAS MIMOSA project, managed by FP financial tool).

Question 2. Did the EU financial support prove appropriate to the objectives of improving urban mobility conditions and the use of alternative fuels in cities? Which objectives were achieved and to what extent? For example, what has been the impact on modal split, air quality, congestion, use of alternative fuels and vehicles, road safety, efficiency of urban logistics, deployment of ITS, urban mobility management, and noise pollution?

Few cities participating in the **case studies** provided figures of improved mobility conditions or use of alternative fuels due their participation in EU projects. Often, cities responded that a single project receiving EU financing was in general too small to have a measurable impact. This would not necessarily mean that the EU financing is inappropriate to achieving the objectives of improving sustainable urban mobility and the use of alternative fuels. The city of Stuttgart provides the following suggestion to improve the way to look upon EU financing and the appropriateness in achieving those objectives:

Graz, GO PEDELEC (IEE): "In our opinion the key problem with such evaluations is that breaking objectives down to the impact of single projects is, in the majority of cases, not really useful and also not feasible. Really helpful would be to rather follow the development of an objective along the years and along a sequence of related and sequenced projects trying to track down effects of the project bundle."

However, some cities provided the following contributions as examples of achieved objectives from the implementation of EU funded projects. When data are available, the ex-post evaluation of EU projects shows a general effectiveness with reference to curbing air pollution and CO₂ emissions, reducing travel times and improving modal split towards public transportation.

Stockholm, BALTIC BIOGAS BUS (ERDF): "The project resulted in a reduction of 35 000 tonnes of CO₂, 140 tonnes of NO_x and 2 tonnes of PM per year. In addition, the use of diesel has been reduced by 11 million litres per year".

Toulouse, Toulouse Metro (EIB): "The number of trips by Metro was doubled (in 2013 169 million trips per year). Modal shift between 2003 and 2013 improved by 5 %: 2004 (8 %), 2013 13 %)".

London, ASTUTE (IEE): "The project resulted in a reduction of 620 tonnes of CO₂ emissions per year. Also, a commuting plan was created for 2 000 employees. However, the modal shift towards cycling remained unclear.

Bremen, MOSES (FP5): "The project contributed to the reduction of the number of circulating cars - as each car-sharing vehicle replaces 4 - 10 private cars. In Bremen, about 700 private cars have been replaced by car-sharing (3 100 customers. It also helped to reduce the mileage driven by cars - as the pay-as-you drive system was an incentive to drive less by car".

Athens, Sectoral Operational Programme for Railway (CF): "The programme resulted into an increased operational speed of 30.2km/h, and in a general reduction of noise and vibrations. In addition, an average travel time savings from 51 to 48 minutes and increased safety (increased headway) and comfort are noticeable in the Athens rail network.

Some important considerations have been found in **literature**.

The European Court of Auditors (ECA) published a special report on the effectiveness of EU-supported public urban transport projects⁶ managed by ERDF and CF. The Court audited the performance of 26 public urban transport projects directly in 11 cities in five Member States. The Court concluded the following:

- In general, infrastructure and vehicles for most projects were implemented in accordance with project specifications. Significant delays affected four urban transport projects and three projects had significant cost overruns.

⁶ Special report, effectiveness of EU-supported public urban transport projects, European Court of Auditors, 2014.

- Once completed, almost all the projects audited met the users' needs. However, a comparison between planned use on specific dates and actual use shows that two thirds of the projects were underutilised. This implies underperformance in terms of economic and social benefits, which is generally not followed up by the promoters or by the national authorities. It may also imply financial imbalances for the public authorities that have to ensure the sustainability of the urban transport concerned.
- The underutilisation of public transport is mainly due to weaknesses in project design and mobility policy. Several issues could have been addressed at the project planning stage.

Furthermore, the 2000-2006 ERDF and CF ex-post evaluations report⁷ also provides the following information:

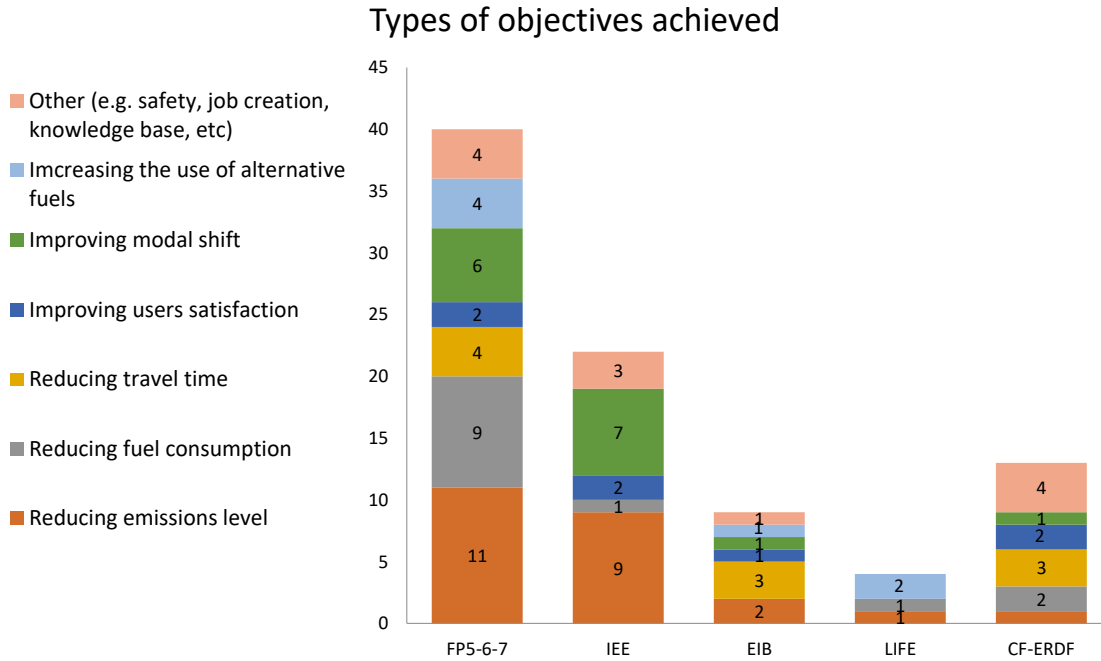
- All projects delivered value for money.
- The CF contribution was needed to unlock the economic benefits of these projects. Benefits from these projects come from eight categories (travel time savings, vehicle operating costs, safety improvements, carbon emission, air and noise reduction and the residual item other). Generally, the utilisation rates found are compatible with the objective to build in sufficient spare capacity to give room for growth over a project's lifetime.
- It was difficult to establish a direct causal link between the transport infrastructure investments and the wider socio-economic impacts (especially relevant for GDP).

Concerning the type of objectives achieved, from the case studies it is possible, based on available answers, to carry out the analysis by funding tools (Figure 9). It can be observed that air quality (reducing emissions level), reducing fuel consumption and improving modal shifts are the most frequent objectives considered achieved in FP and IEE financial tools.

In CF-ERDF and EIB projects the objectives in the item 'Other' are significant. This item encompasses a wide range of objectives, from improving the technical knowledge base to job creation. The wider range of objectives achieved in the CF-ERDF and EIB projects depends on the prevailing transport infrastructure-led projects, which spread their effects over a wider range of domains, compared to the type of projects managed by FP, IEE and LIFE financial tools. Consistently, reducing travel time is indicated as being among the objectives reached in the Cohesion Fund-ERDF and EIB transport infrastructure-led projects.

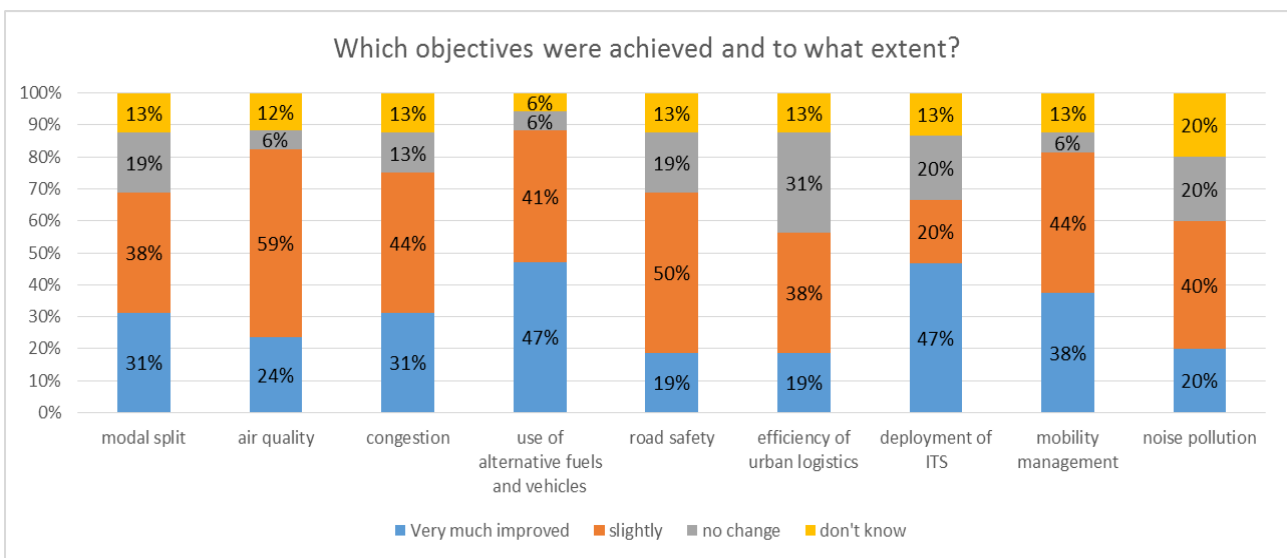
⁷ Ex-post evaluation of the ERDF 2000-2006, ex-post evaluation of Cohesion Fund (2000-2006).

Figure 9: Objectives achieved by financial tools (number of projects)



From the responses to the **targeted consultation** shown in Figure 10, respondents highlight how projects objectives have been achieved mainly in terms of ITS deployment, increased use of alternative fuels and mobility management targets; on the contrary, a lower effectiveness has been reached with reference to logistics, road safety and noise pollution. In general, beneficiaries have found a valid support in EU funding to reach the objectives.

Figure 10: Targeted consultation: objectives reached by EU funded projects



Question 3: Which combination of funding stages, actors and initiatives have proved to be effective in achieving the different objectives? Can indicators/parameters be identified to categorise potentially effective combinations?

Four funding stages have been considered in the study:

- 1) research
- 2) exploring market opportunities (feasibility stage)
- 3) pilot/demonstration
- 4) implementation

Figure 11 and Figure 12 show an overview of project funding stages by financial tool, for the projects addressing sustainable mobility and the use of alternative fuels (**case studies**).

A common trend can be observed, regardless of the type of initiative funded: pilot/demonstration and research/feasibility stages projects are mainly present in FP and IEE financial tools, projects at the implementation stage in the EIB financial tool.

CF-ERDF financial tools show the prevailing presence of implementation and pilot/demonstration stages projects. LIFE financial tool shows an even distribution among funding stages.

In general, considering the overall project cycle from design to implementation, the emerging combination from the available information assigns the preliminary stages (research and feasibility) mainly to FP, pilot and demonstration to FP, IEE and CF-ERDF financial tools and implementation to EIB. In funding infrastructure projects, some of the projects scrutinised, e.g. the integrated public transportation in the Krakow agglomeration Stage II, combine EU grants (CF and EIB loans).

Figure 11: Funding stages: sustainable mobility projects

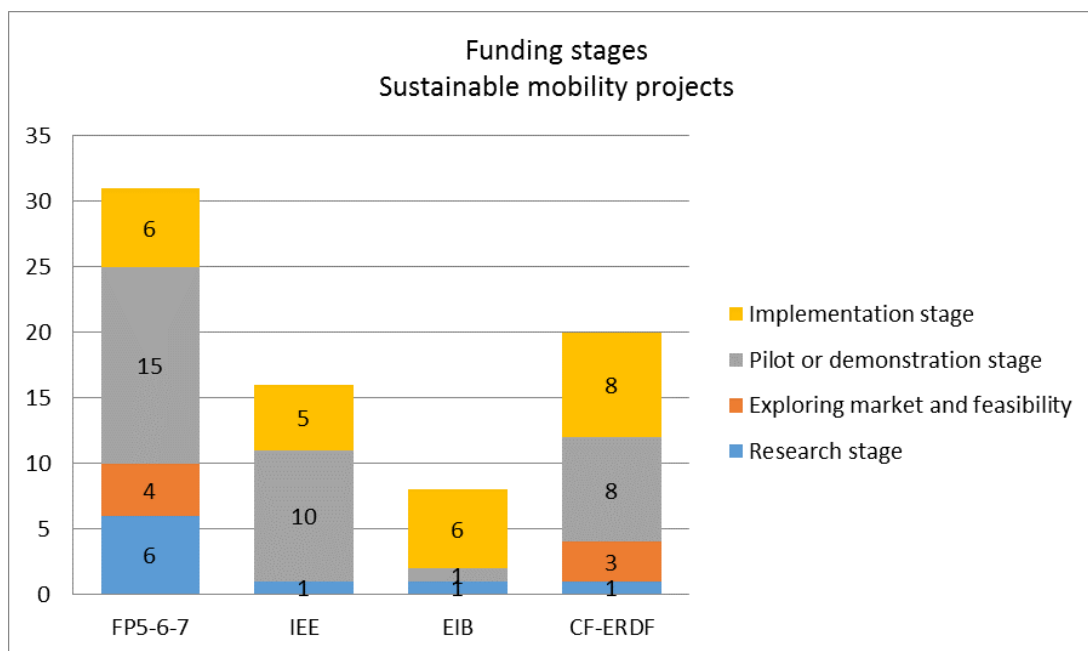


Figure 12: Funding stages: use of alternative fuels projects

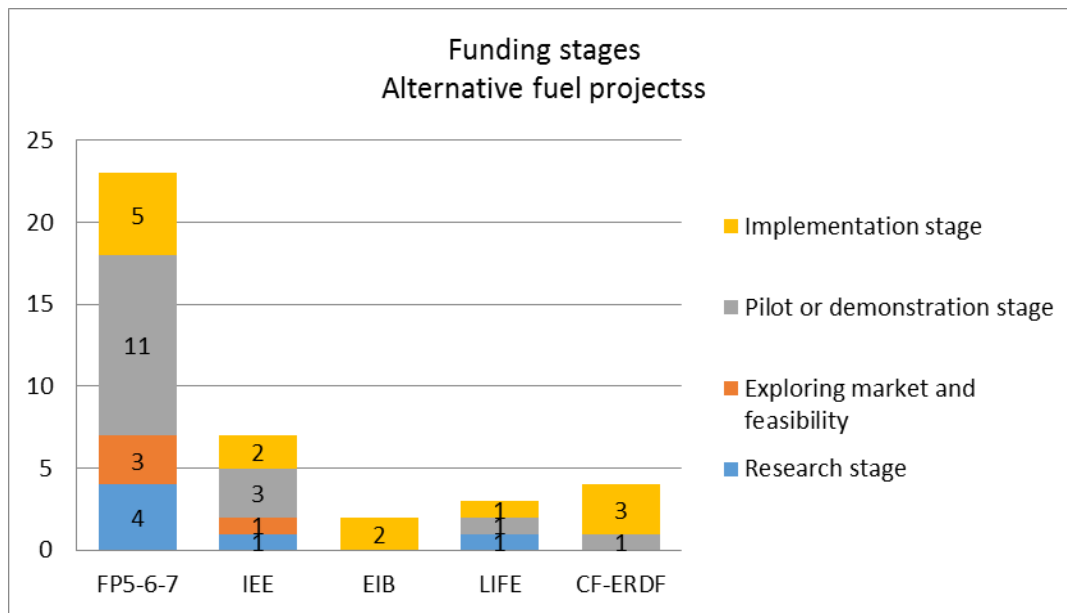


Table 17 shows the potential effective combination of actors and funding stages, as has emerged from the case studies.

Table 17: Actors and funding stages

Actors	University, Research institutes	City departments and transport operators	Civil society (NGOs, citizens, etc.)	Industry, SMEs
Project stage				
Research/Feasibility	✓	✓		
Pilot/demonstration	✓	✓	✓	✓
Implementation		✓		✓

The key parameter to be considered is the project stage.

In the research/feasibility stage, the most effective combination consists of involving all relevant decision makers, from the municipality and other institutions like: officers from various city departments, Traffic Management Company (TMC), roads and greenery management companies, PT operators, etc. It is believed that the goal of raising decision makers' awareness on the potential of the project would not be possible to achieve unless all relevant stakeholders are addressed. Depending on the subject, in this stage actors can change. For example, with reference to infrastructure projects managed by CF-ERDF financial tools, the preliminary research stage requires the effective collaboration between infrastructure managers and the

intermediate body, i.e. the managing authority defining the Operational Programmes and submitting the project to the EC.

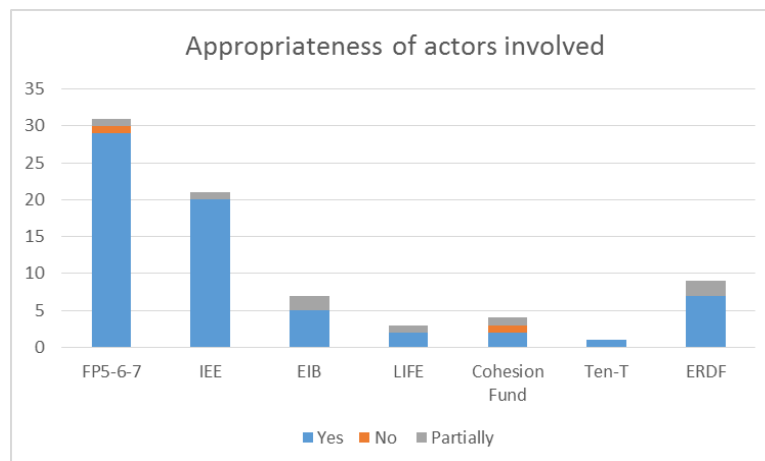
The pilot/demonstration stage requires a wide variety of stakeholders (technical stakeholders, vehicle manufacturers, industry). Establishing a specific framework (e.g. partnership for implementation) may support this stage as well as integrating civil society (experts, NGOs etc.) because the know-how on this topic often cannot be found in universities or research institutes. Furthermore, dissemination of the pilot/demonstration is easier via the involvement of civil organisations. Implementation also facilitates the evaluation and impact assessment of the project and therefore the presence of universities and research institutes is an important element to get political support.

Concerning projects at the implementation stage, in particular projects with an equivalent of TRL (Technological Readiness Level) from 6 to 9, i.e. involving the project implementation in operational environment, the involvement of the private sector actors (industries and SMEs) represents an important pre-condition to be effective.

Question 4: Has the range of beneficiaries been appropriate to achieve the objectives? Have the conditions been appropriate to encourage SME participation?

From the **case studies**, when cities are asked whether the involved actors have been appropriate to achieve the projects’ objectives, the answers are overwhelmingly positive as can be seen in Figure 13.

Figure 13: Appropriateness of actors involved



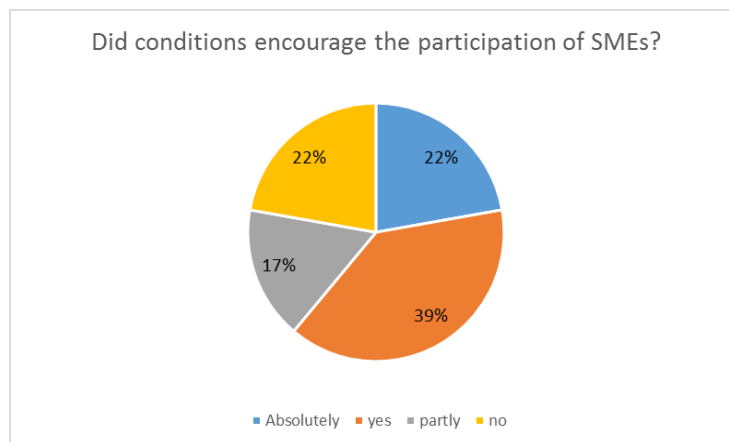
City respondents state that they perceive the range of actors appropriate: out of 76 valid answers received, 66 cases show an appropriate actor range, 2 cases show an inappropriate actor range and 8 cases show a partially appropriate actors range.

As for the participation of SMEs, from **the case studies** it emerged that 29 projects out of 66 (43 %), calculated on the valid answers, included SMEs.

The projects that did not include SMEs pointed out several reasons:

- In Göteborg, the projects START and CARMA (both IEE funded) did not include SMEs, to the extent that they did not imply any close cooperation with local actors.
- In Bucharest, the YOUTH project (also IEE) was not appropriate for SME involvement either, as it was a school-oriented project.
- In Sofia, the projects PIMMS Transfer (INTERREG) and SUM (ERDF) also indicated that they have not been applicable to SMEs due to the scale of projects (city level and between cities), not appropriate in most cases for a SME involvement.
- Also in San Sebastián, the SITE (INTERREG) project was not applicable to SME participation because it depicted a public transport project, which typically does not include SMEs. In Gdansk, a PIMMS (INTERREG) project did not involve SMEs either.

From the **targeted consultation**, in terms of support for the involvement of SMEs, the picture is positive. More than 60 % of the respondents found that the conditions were appropriate to encourage the participation of SMEs.



When SMEs participation was not encouraged, it was mainly due to lack of awareness of EU incentive programmes or SMEs apprehension for the heavy EU administration, which might be difficult to handle for small entities with limited staff, and long waiting time for payments.,.

In conclusion, low SME participation generally depends on the overall nature and settings of the projects, i.e. the scale, not involving any local partner, technological features only suitable for bigger providers, e.g. ICT services or complex project administration, which are in general factors not easily managed by SMEs. This happens more often in IEE and INTERREG funded projects than in FP5-7 funded projects.

From the **literature review**, the major concern appears to be related to the level of expertise of the beneficiaries awarded the EU funding, more than on the appropriateness of the range of EU project partners.

According to the ex-post evaluation of the CF, EU funds are sometimes awarded to contractors with insufficient competence. This happens as a result of procurement procedures when the choice is made on the grounds of lower price rather than quality. Ultimately, the choice of a contractor with a limited competence can lead to delays and higher costs at later stages of the

project. Therefore, it would be advisable to select the contractors more judiciously and attach more weight to quality aspects and less to price.

One more problem⁸ underlined in relation to beneficiaries is the lack of experience of managing authorities (MAs) in planning the expenditures in such a way that they are directed to infrastructure, which is most in need of improvement. The main problem areas are:

- (i) selecting the projects in compliance with the actual transport needs of the region;
- (ii) ensuring consistency in the implementation of OPs undertaken in parallel and over time;
- (iii) ongoing monitoring of programmes, particularly in terms of outcomes and results;
- (iv) managing programme risk effectively

This is explained by the lack of qualified staff within the relevant institutions.

The evaluation of the conditions for SME participation was carried out within an Interim Evaluation of FP7 components⁹. Within this evaluation, the participation of SMEs in the Cooperation Programme and the Research for the benefit of SMEs (RSME) schemes under the CAPACITIES Programme of the Seventh Framework Programme for Research, Technological development and Demonstration activities 2007-2013 (FP7) was assessed.

Overall, the rate of participation of SMEs in the FP7 was quite high. Within the Cooperation programme¹⁰ about 10 % of the projects were coordinated by SMEs. As regards RSME in 66 % of the projects, SMEs fulfilled the role of coordinator; however, SMEs initiated the project in only 12 % of these cases.

Within the Cooperation programme there were 5 650 projects started in the period 2007 - February 2013. The number of participants amounted to 64 508, of which 11 952, or 18.5 % were SMEs. The relatively high level of interest shown in the scheme by SMEs can be considered to be a sign of appropriateness of the programme to encourage participation of SMEs. However, some experts claim that this is still a tiny fraction of Europe's SME and it is too small to have strategic importance. In any case, it is too small to have an effect on research and development and innovation needs of Europe's SMEs in general.

Question 5: Where expectations have not been met, what factors have hindered the achievement of the objectives?

From the European Court of Auditors (ECA), it has been discerned that the two most common factors hindering effectiveness are delay in implementation and budget overrun (CF and ERDF)¹¹.

⁸ (Ex-post Evaluation of Cohesion Policy Programmes 2000-2006 co-financed by the European Fond for Regional Development (Objectives 1&2)- Work Package 5A: Transport, 2010).

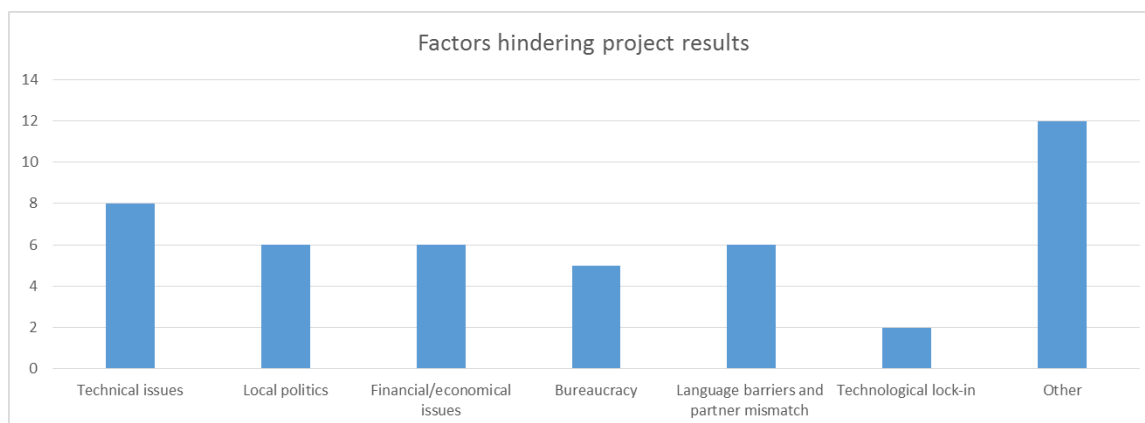
⁹ (Performance of SMEs within FP7. An Interim Evaluation of FP7 components., 2014). It shall be noted that within this evaluation the participation of SMEs in all projects of Cooperation programme and RSME was investigated, without a specific focus on urban related projects.

¹⁰ The Cooperation Programme is the largest single component of FP7, and will invest just over € 32 000 million (65% of the total available budget) across a 7-year term, through a combination of collaborative research and various coordination actions across 10 thematic areas: Health; Food, Agriculture and Fisheries, and Biotechnology; Information and Communication Technologies; Nano-sciences, Nano-technologies; Energy; Environment (including Climate Change); Transport (including Aeronautics); Socio-economic Sciences and Humanities; Space; Security. See for details, European Commission, 2014 "Performance of SMEs within FP7 An Interim Evaluation of FP7 components"

¹¹ Court of Auditors, Special report on effectiveness of EU-supported public urban transport projects (2014);

Concerning the **case studies**, Figure 14 provides an overview of which factors have undermined the project results (multiple answers were possible).

Figure 14: Factors hindering project results



Most of the times technical issues, e.g. complexity in alternative fuels management (hydrogen buses in the CUTE project), staff skills (CARAVEL project), are identified as a hindering factor, followed by lack of local support from politicians, financial issues and language barriers and partner mismatch. Bureaucracy and technological inertia are often mentioned as hindering factors as well.

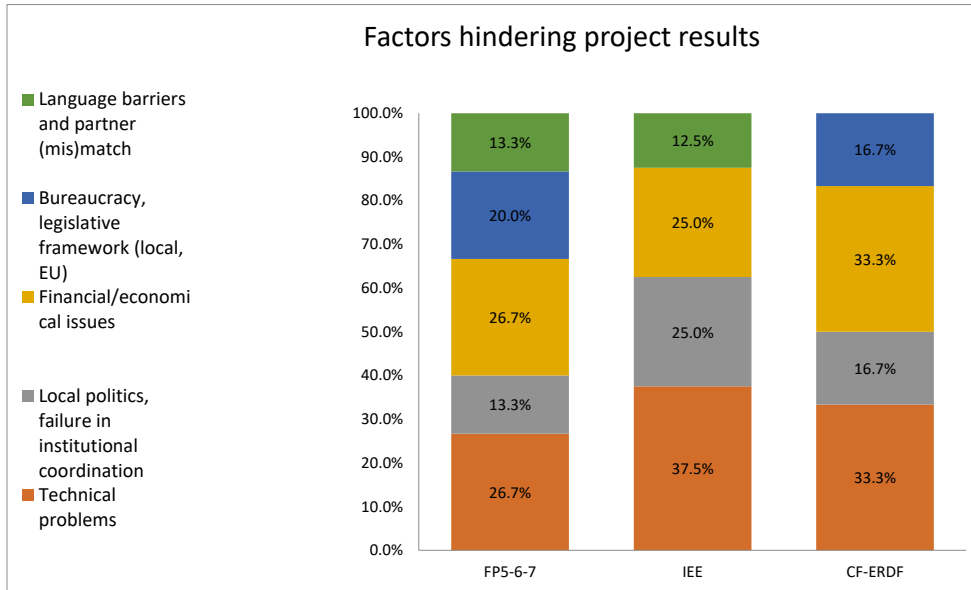
A general conclusion about unmet expectations is that they can primarily be traced back to endogenous, rather than exogenous factors, i.e. economic crisis (H2Power project).

For infrastructural projects, the exogenous hindering factors resulted primarily in time delays due to archaeological findings and political and tendering issues. Another reason was the market maturity for biogas for the Malmö SMILE project to achieve the expectations regarding the operational launch of biogas vehicle fleets. The PIMMS project in Gdansk had trouble achieving an obligatory bicycle training on the roads for school children due to existing traffic regulations.

Endogenous hindering factors have had a more case specific nature than the exogenous factors (which are quite common in infrastructure projects). IEE projects trying to achieve public awareness for changing mobility culture either had too small scopes to reach a sufficient audience (Odense AENEAS and Göteborg CARMA) or had unclearly defined scopes (Göteborg START).

Technical and financial factors hinder mainly infrastructure projects managed by CF-ERDF tools. In the IEE projects, technical and financial factors are also accompanied by the incidence of institutional problems (e.g. a weak political commitment). In the FP projects, demonstrations have also been hindered by legislative constraints, e.g. concerning privacy rules, or local administration bureaucratic rules, e.g. difficulty in hiring personnel and not enough flexibility to respond to the demonstrations and pilots needs.

Figure 15: Factors hindering project results by financial tool (% on total answers)



In the **targeted consultation**, participants responded that when problems with regard to fulfilling expectations arose, this mainly concerned financial problems (41 %), followed by political and/or institutional constraints (29 % and 24 %). In some cases, these institutional/regulatory constraints (or their complexity) have hindered or delayed the achievement of measures and results. Very low resistance comes from social factors.

5.1.3 Efficiency

Summary of evaluation

Concerning the achievement of results in a cost-effective way, the case studies indicate that it has been difficult to select projects that included a detailed cost-benefit analysis. Firstly, non-implementation projects (i.e. research, exploring market opportunities, feasibility studies and pilot projects) normally do not have sufficient budget to carry out such an assessment, which would use a lot of resources. Secondly, it is difficult to capture outputs from a research project, which may have only long-term effects, difficult to measure or even to monetise.

However, from the available information it can be observed that urban transport infrastructure projects managed by the EIB financial tool generally provide positive efficiency indicators, in particular when social benefits from reducing transport externalities are considered. Factors negatively affecting efficiency mainly concern the overestimation of transport demand, leading to the underutilisation of the transport infrastructure. Similar trends have been observed for the urban transport infrastructure projects funded by CF-ERDF financial tools. Also, demonstrations funded by the FP financial tool, as in CIVITAS initiatives, generally achieve efficiency, even if the improvement of evaluation methodologies, e.g. citizens' satisfaction, or steps forward towards the evaluation of integrated packages of measures, could improve the efficiency assessment. Efficiency estimated for projects funded by LIFE and IEE financial tools provide positive results, but the unavailability of systematic analysis from a wider sample of projects makes any generalisation difficult.

The most efficient combination among project stages, actors and financial tools depends on the project stage. Research/feasibility and pilot/demonstration stages require the involvement of several actors, e.g. municipalities, researchers, transport operators, infrastructure managers and manufactures, in particular with the FP, IEE and LIFE financial tools. The combination of infrastructure managers and transport operators is considered efficient by respondents with reference to projects managed by CF-ERDF and EIB financial tools in the implementation stage.

In general, resources have been used efficiently: only 6 out of 69 projects (<9 %) point out that similar results could have been achieved with less funding. If that had happened, less funding would have delayed the project implementation or reduced their outcomes.

Question 1. Were the outputs and effects achieved in a cost-effective way? If not, what were the underlying causes?

From the **case studies**, it should be stressed that it has been difficult to find projects that included a detailed ex-post analysis as well as social assessment or other types of appraisal. The first reason for this is that non-implementation projects (i.e. research, exploring market opportunities and feasibility studies, pilot projects) normally do not have a sufficient budget to carry out such an assessment, which implies many resources. Secondly, it is difficult to capture outputs from a research project, which may have only long-term effects, difficult to measure or even to monetise.

However, despite the paucity of information, comparing evidence from a literature review and available information, the following conclusions on the efficiency in the use of EU funding can be drawn.

Concerning the EIB financial tool, some important considerations have been found in **literature**. As clearly stated in the EIB synthesis report (Pfeffer et al., 2012),¹² efficiency concerns the extent to which project benefits/outputs are proportionate to inputs and resources. The analysis of the EIB makes use of outturn investment cost, actual implementation schedule, project management and operational performance, environmental and social externalities, estimated through financial and economic profitability calculation. However, discussions are still ongoing regarding the fairest approach to carry out this assessment (van Wee, 2012)¹³.

As pointed out in the EIB Operations Evaluation report¹⁴, for most of the transport projects (over the 2000-2010 period), all financial rates of return were negative except one, both ex-ante and ex post. It was stressed that a negative financial rate of return is deemed common for urban transport projects and explains why these projects are generally funded partly with public appropriations.

However, as the case studies carried out in this study have shown, if the evaluation includes social benefits from the reduction of transport externalities, e.g. reducing congestion, indicators may turn out to be positive.

This is the case for the EIB funded projects in Athens (extension of Metro Line 2 and 3) for which the SROI (Social Return of Investment) of EU spending per benefit category was estimated.

The SROI indicator reflects the value (in Euros) of each benefit, resulting from an expenditure of one (1) Euro spent by the EU funded project. Table 18: shows that the SROI indicators are higher with reference to congestion, due to the importance of modal shift and transport demand in the evaluation of the efficiency of transport infrastructure projects, i.e. reducing travel time.

¹² Pfeffer, M.; et al.: Evaluation of EIB's Energy Efficiency (EE) Financing in the EU from 2000-2011: How did the Bank respond to the EE challenge in the context of a reinforced EU EE policy? Synthesis Report. Edited by Operations Evaluation. European Investment Bank. Available online at http://www.eib.org/attachments/ev/ev_energy_efficiency_synthesis_report_en.pdf.

¹³ Van Wee, Bert (2012): How suitable is CBA for the ex-ante evaluation of transport projects and policies? A discussion from the perspective of ethics. In Transport policy 19 (1), pp. 1-7. DOI: 10.1016/j.tranpol.2011.07.001.

¹⁴ EIB, 'Evaluation of EIB financing of urban infrastructure projects in the European Union', Synthesis Report, 2011

Table 18: The EIB project in Athens (Metro Line extension): efficiency

Project	Indicator
1. Extension of Metro Line 2 'Ag. Dimitrios - Elliniko''	<ul style="list-style-type: none"> • SROIcongestion = 1,78 • SROIaccidents(fatal) = 0,033 • SROIair pollution = 0,013
2. Extension of Metro Line 3 'Egaleo - Ag. Marina'	<ul style="list-style-type: none"> • SROIcongestion = 2,92 • SROIaccidents(fatal) = 0,453 • SROIair pollution = 0,045
3. Extension of Metro Line 3 'Ag. Marina - Piraeus'	<ul style="list-style-type: none"> • SROIcongestion = 6,426 • SROIaccidents(fatal) = 0,046 • SROIair pollution = 0,029

The inaccuracy of forecast transport demand as a factor undermining efficiency has also been stressed in the EIB funded 'Metro de Madrid' case study, which pointed out the lack of reliable demand studies.

The case study 'Integrated public transportation in the Krakow agglomeration Stage II', funded by CF-ERDF and EIB JASPERS tool shows the following cost-benefit indicators:

Table 19: The CF project in Krakow (integrated public transport): efficiency

Project	Indicator
1. Construction of a new tram line and tram tracks refurbishment	Social Discount Rate 5.0 % ERR= 14.6 % ENPV= 111 549 950 EUR (491 935 280 PLN) BCR =2.22 Benefit % Vehicle operating cost decrease (cars) (minus ticket purchase) 21.7 % Users time savings decrease 66.9 % Cost of accidents decrease 8.0 % Environment and climate costs decrease 3.4 % Total 100.0 %

ERR: Economic Rate of Return
 ENPV: Economic Net Present Value
 BCR: Benefit-cost ratio

Also in the case of CF-ERDF projects, the importance of a reliable assessment of transport demand serving the overall financial sustainability of the projects is confirmed in the ex-post assessment carried out by the European Court of Auditors¹⁵.

¹⁵ European Court of Auditors (2014) 'Special Report Effectiveness of EU-supported public urban transport projects'.

Underutilisation is indeed mentioned among the causes affecting the efficiency of the monitored projects (financial period 2007-2013). It is stressed that the expected benefits are estimated by the project promoters based on a key indicator such as the number of passengers switching from private cars to public transport. Therefore, if the utilisation rate for public transport projects does not meet the targets set, such benefits may also be affected.

A similar problem was raised with reference to the passenger demand in the ERDF-CF Hungary Budapest Metro Line 4 project, it was approximately 40 % less than the level forecast for the cost benefit analysis of this project¹⁶.

Concerning the FP projects, the reference to several evaluation reports from CIVITAS projects, e.g. CIVITAS SMILE¹⁷, CIVITAS ELAN¹⁸, and CIVITAS MIMOSA¹⁹ provides useful indications in terms of efficiency evaluation. In particular, the CIVITAS initiatives developed a common evaluation framework through three collaborative projects METEOR (CIVITAS I), GUARD (CIVITAS II) and POINTER (CIVITAS PLUS), setting a common approach to the evaluation of CIVITAS demonstrations²⁰.

Table 20 shows the ex-post evaluation of a sample of CIVITAS demonstrations assuming the NPV (defined as the total present value of all future benefits less the discounted sum of all future costs over the appraisal period) as the key indicator of the projects' efficiency.

Table 20: The FP projects in CIVITAS: efficiency

Project	City	CIVITAS project	Indicator (NPV) in €
1. Cleaner Private Vehicle	Bologna	MIMOSA	• 3.5 Mio
2. Car sharing	Bologna	MIMOSA	• 2.1Mio
3. Sustainable Fleet	Funchal	MIMOSA	• 19.5Mio
4. Anti-Vandalism	Funchal	MIMOSA	▪ -345k
5. Eco driving	Tallin	MIMOSA	▪ 67k
6. Cargohopper	Utrecht	MIMOSA	▪ 65k
7. New e-ticketing system	Coimbra	MODERN	▪ 1.8Mio
8. Infomobility tools	Coimbra	MODERN	▪ 11.6Mio
9. Improving bus services for disabled people	Brno	ELAN	▪ 318k

NPV defined for different projects time-span and social discount rates

¹⁶ Directorate-General for Regional and Urban Policy (2016) 'Ex-post evaluation of Cohesion Policy programmes 2007-2013, focusing on the European Regional Development Fund (ERDF) and the Cohesion Fund (CF)'

¹⁷ 2009, CIVITAS SMILE, Evaluation Report

¹⁸ 2012 CIVITAS ELAN Final Evaluation Report

¹⁹ 2013 CIVITAS MIMOSA Final Evaluation Report

²⁰ Waxmann Verlag GmbH, 2013 'Evaluation matters A practitioners' guide to sound evaluation for urban mobility measures'

The sample of CIVITAS demonstrations in different urban transport domains (Table 21) shows a general efficiency achievement, which is also consistent with the evidences from the case studies examined in this study (e.g. the city of Perugia, REINASSANCE project).

Table 21: The FP projects efficiency: evidence from case studies

Project	Indicator
1. Shifting from diesel engine to dual fuel diesel/methane in Public Transportation (city of Perugia)	<p>CBA shows a scenario in which 24 % of freight with destination in the historic centre of Perugia moves in the new PIPENET system, generating environmental savings in addition to operational costs reduction, time benefits, accident reduction, noise reduction and decongestion. After 30 years of life cycle for the investment economic indicators show:</p> <p>ENPV (EUR 1 000): 8008 ERR: 10.5 % B/C: 1,82</p> <p>Estimation for the benefits coming for the first year of exercise of the system (after 4 years of only investments expenses) are (in thousands of Euros for each EUR 1 000 000 €. invested):</p> <p>Operating costs: -246.7 Time costs: -75.4 Environmental costs: -43.6 Accidents: -86.5 Noise costs: -54.8 Congestion costs: 1112.2 Environment and climate costs decrease 3.4 % Total 100.0 %</p>

When efficiency is lacking, besides the influence of the factors hindering FP projects in general (e.g. the role of technical and financial factors discussed in the effectiveness evaluation criteria), methodological factors appear to make the evaluation problematic. For example, the negative NPV of anti-vandalism measures in Funchal depends on the lack of clear methodological guidelines to monetise the level of citizens' satisfaction, when feeling unsafe and insecure.

Furthermore, most of the cost-benefit analyses are closely linked to one specific measure. In order to improve the assessment, the efficiency should be related to integrated packages of measures, overcoming the methodological challenges.

The information available from the case studies, on LIFE and IEE projects focuses mainly on projects at research and feasibility/pilot stage, which have not carried out a cost benefit analysis.

Research and pilot projects managed by the LIFE financial tool showed savings in pollutants and CO₂ emissions. The case of the H2Power project in Perugia, testing the use of methane in Public Transport vehicles, did not carry out a CBA, but provided the following indicators.

Table 22: The LIFE project in Perugia (use of alternative fuels): efficiency

Project	Indicator
1. Testing the use of a mixture of hydrogen and methane on a conventional engine in Public Transport vehicles	Reduction in fuel consumption equal to 30 % by weight and 7 % by volume; It is obtained that the travel costs for one km will be: - EUR 0.115 / km methane - EUR 0.105 / km hydro-methane, with a reduction of EUR 0,01 /Km Progress of research in the production of low-cost hydrogen from renewable sources will determine a higher economic return.

In Utrecht, the IEE project SEGMENT provided the following indicators:

Table 23: The IEE project in Utrecht: efficiency

Project	Indicator
1. Persuading people to change their travel behaviour and adopt more energy efficient forms of transport	SEGMENT Utrecht New resident campaign: -204.10 tons of CO ₂ per year Change of car-users: -3.6 % Long-term change of car usage: - 1 500 014 km/year Emission effect (in total): -204.10 tons of CO ₂ per year SEGMENT Utrecht: new primary school pupils' parents campaign -59 60 tons of CO ₂ per year Modal split: Change of car-users: -4.6 % Long-term change of car usage: - 316 680 km/year Emission effect (in total): -59.60 tons of CO ₂ per year

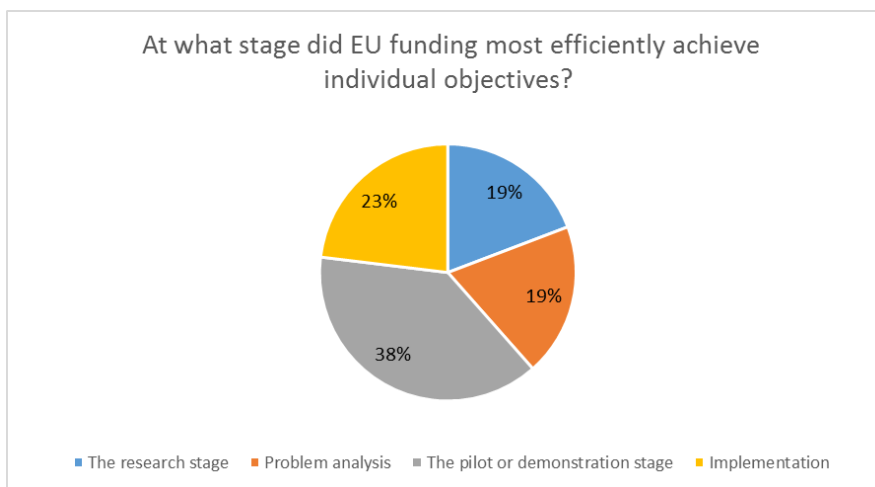
In general, factors affecting efficiency in the two financial tools concern a lack of funding in the long-term period, allowing the switch from the pilot to the implementation stage.

Concerning the LIFE and IEE financial tools, however, the absence of systematic analysis of projects' efficiency makes any generalisation difficult.

Overall, it did not prove possible to systematically estimate the cost-effectiveness of the financial tools, because impact studies with comparable costs and benefits are only available in a few cases. Some partial information was found for some tools. For EIB funded projects some information on the Social Return on Investment was found for the Athens Metro projects. The SROI indicators are higher with reference to congestion, due to the importance of modal shift and transport demand in the evaluation of the efficiency of transport infrastructure projects. CF and ERDF projects provide a similar set of information. The case study 'Integrated public transportation in the Krakow agglomeration Stage II: new tramway line and track refurbishment', funded by the CF and involving the technical assistance of the JASPERS (Joint Assistance to Support Projects in European Regions) instrument, shows a benefit-cost ratio (BCR) of 2.22. Evaluation reports from CIVITAS projects (MIMOSA, MODERN, ELAN) provide some data for NPV (Net Present Value) of individual projects. The highest NPV is for info mobility tools occurs in Coimbra in the MODERN project (EUR 11.6 M over a ten-year period). The sample of CIVITAS demonstrations in different urban transport domains shows a general efficiency achievement. The city of Brescia (MODERN project) shows a BCR of 1.82 for dual fuel buses. Research and pilot projects managed by LIFE financial tool showed savings in pollutants and CO₂ emissions. The IEE project SEGMENT provided the following indicators on outcomes, but without a CBA.

Participants in the **targeted consultation** pointed out that pilot or demonstration projects are the project typologies more likely to attain objectives in a cost-effective way, in particular when public transport operators and local administrations are involved.

Figure 16: At what stage is funding most efficient to reach objectives? – targeted questionnaire



Question 2. At which stage and to which actor is funding most efficient for achieving the individual objective?

From **case studies**, the following table shows the comparison between the stages during which funding has been received and which stages are considered most efficient by beneficiaries.

Funding stage of the projects (case studies)	All funds	Percentage	Question: Given the project's objective, at what stage is funding most efficient?	All funds	Percentage
Research stage	19	16 %	Research stage	23	17 %
Exploring market and feasibility	13	11 %	Exploring market opportunities and feasibility studies stage	16	12 %
Pilot or demonstration stage	47	39 %	Pilot or demonstration stage	54	41 %
Implementation stage	40	34 %	Implementation stage	40	30 %
Total	119	100 %	Total	133	100 %

Source: Own elaboration from case studies

The table shows that in general the beneficiaries consider the stage at which they receive the funding as efficient. The table indeed shows a good correspondence between the funding stage of the projects and the stages at which the beneficiaries have considered receiving funding as efficient.

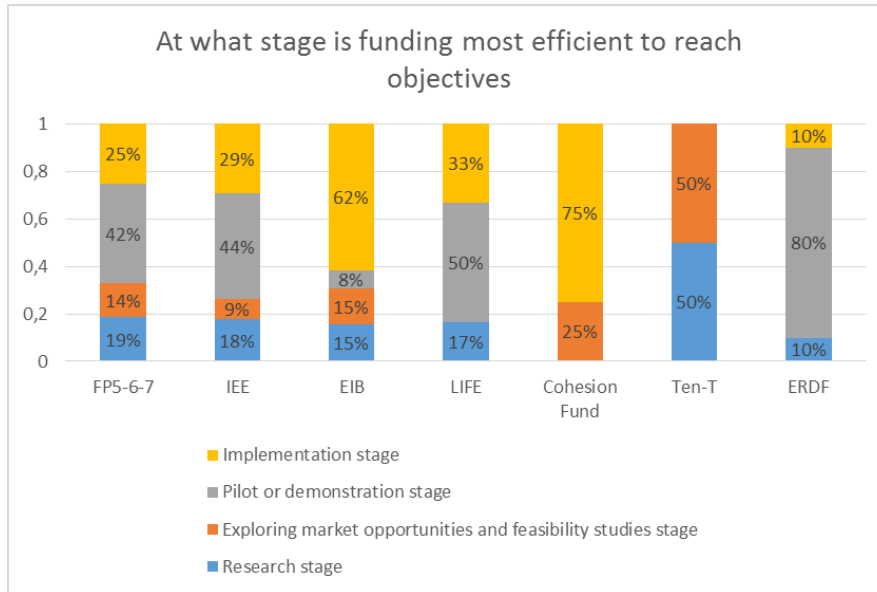
Per type of financial tool, from Figure 17 it has emerged that the FP5-6-7 project funding tool is deemed most efficient for pilot or demonstration stages, followed by implementation, research and the market exploration stages. IEE shows a similar conclusion. EIB and CF financial tools are considered to be the most efficient when applied during the implementation stage. LIFE project respondents in the sample of projects examined in the case studies do not mention the market exploration stage at all as an efficient stage to finance by that particular programme.

This evidence is consistent with the findings of the similar evaluation question formulated with reference to effectiveness (Figure 11 and 12): which funding stages are considered effective.

The emerging pattern from the sample of EU funded projects considered in this study is the following:

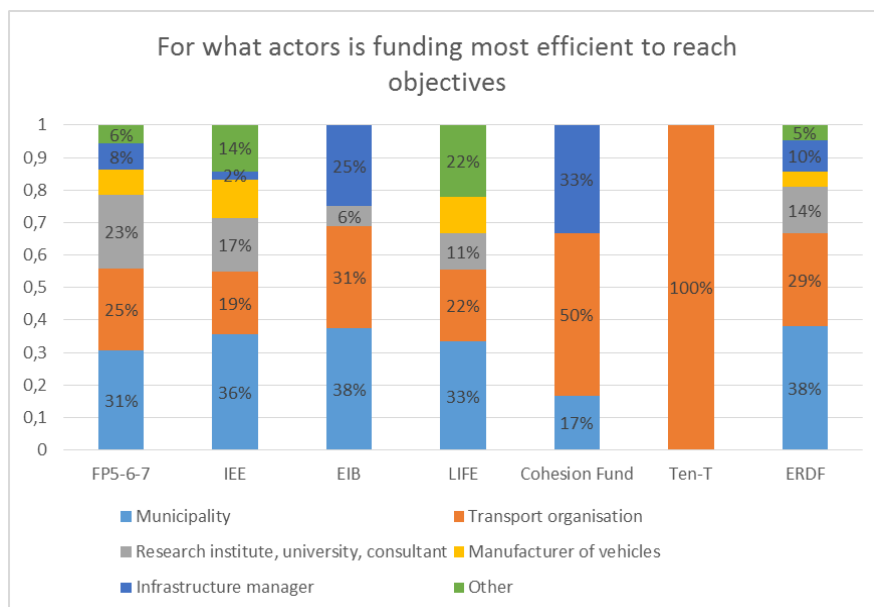
- FP, IEE and LIFE financial tools are considered efficient and effective mainly with reference to the research/feasibility and pilot/demonstration stages
- CF-ERDF financial tools show a mixed composition of preferences allocated to implementation and pilot/demonstration stages in terms of efficiency/effectiveness
- The EIB financial tool is considered most efficient/effective in the implementation stage.

Figure 17: At what stage is funding most efficient to reach objectives? – Case studies



With reference to the type of beneficiaries, Figure 18 shows that FP5-6-7, IEE, LIFE and ERDF are considered efficient by a variety of beneficiaries, e.g. municipalities, research, transport operators, infrastructure managers and manufacturers; while the CF, EIB and TEN-T show a negligible presence of research institutes and universities, with a more significant presence of infrastructure managers and transport operators. It may be interesting to point out that the presence of research institutes and universities in research/feasibility and pilot stages is also considered relevant with reference to the projects effectiveness as well (see Table 17).

Figure 18: For which actors is funding most efficient to reach objectives?



From the sample of projects examined in the case studies, research institutes and universities are in fact mainly involved in the research/feasibility and pilot/demonstration case, which mainly characterise FP, IEE and LIFE financial tools.

Question 3: Have the cities that received the funding faced major unsustainable urban mobility conditions?

The cities participating to the **case studies** indicate, in 17 cases out of 51 valid answers (33 %), that they have faced major unsustainable mobility conditions. The interpretation of 'unsustainable conditions' was quite diverse, ranging from the lack of bicycle infrastructure when promoting modal shift towards cycling (Sofia, MODUM) to general congestion problems to even local weather conditions, as indicated in the following examples.

Athens, METRO (EIB): "In some cases traffic congestion causes manageable level problems for metro construction worksites, which in turn deteriorates the local traffic conditions even further. The competitive, instead of complementary character of Public Transport organisations and corresponding networks and modes (metro, tram, buses, trolley-busses), deteriorates the sustainability of urban mobility conditions; hence all Public Transport Networks should be further integrated under the carefully structured management of one Metropolitan Authority".

Stockholm, E-TOUR (FP) "Obstacles were the high price of two-wheelers at that time and the sometimes cold and snowy Swedish winters, limiting the use to about eight months a year.

Göteborg, CARMA (IEE): "The implementation of CARMA was without doubt affected by bad weather conditions during the summer of 2012."

For a sample of projects for which information is available, Table 24 shows details about the nature of the unsustainable conditions incurred before and during the project implementation. The table also shows the corresponding EU funding.

Table 24: Nature of unsustainable urban mobility conditions and EU funding

Project	Nature of unsustainable urban mobility conditions	EU support (€)
Budapest- Rehabilitation and extension of tramlines 1 and 3	Infrastructure: Road quality, congestion levels	117 673 466
Renewal of trams in Bratislava	Infrastructure: Road quality, congestion levels	61 410 375
Athens Metro lines 1 & 2	Infrastructure: Congestion problems around the construction site	200 000 000
Göteborg - CARMA	Weather conditions	359 166
Stockholm E-TOUR	Weather conditions	69 636
Malmö- ADVANCE	Urban mobility condition: congestion, air quality, noise	350 000
Gdansk- MoCuBa Mobility Culture in the Baltic Sea Area	Cultural barriers: private vehicles as status symbol	50 475
Sofia. Models for Optimising Dynamic Urban Mobility	Cultural barriers against the use of cycling	250 542
Funchal – AD PERSONAM a direct marketing programme for public transport	Political barriers: lack of institutional support from the Municipality	102 382

It can be observed that when unsustainable urban conditions address the quality of urban infrastructure, the corresponding EU funding tends to be higher.

Besides these examples, the general conclusion for the case studies is that no major unsustainable mobility conditions have been identified.

From the **targeted consultation**, the perception seems different, as respondents, mainly citizens, stated that urban areas generally suffer from unsustainable conditions concerning mobility. Only 21 % of the respondents do not perceive this issue. The most common problem concerns the air quality with a prevailing car-oriented culture and its negative impact on the use of public space.

Respondents stated that the dominant cultural approach is still focused on prioritisation of vehicle circulation, e.g. measure to relieve congestion, rather than people's accessibility, e.g. traffic banning in historical centre, and that there is a need for investment in infrastructure to promote sustainable modes, e.g. cycle paths.

Question 4: Based on available evidence or good practice, could the same results have been achieved with less funding? Could the use of other measures or mechanisms or through intervention at different stages or different actors or by using a different tool have provided better cost-effectiveness?

From the **case studies**, only 6 out of 69 (<9 %) responses indicate that similar results could have been achieved with less funding, but with a longer period of implementation, as in the case of Bratislava:

Bratislava, Renewal of tram and trolleybus (CF) "The renewal of trams and trolleybuses could have been done with less funding, but as the city says 'in a longer period of time and more gradually'."

The same evidence came from the **targeted questionnaire** where 59 % of respondents considered the EU funding necessary to reach the objectives and 24 % of them assessed that without funding the projects would be less effective.

For the case studies in which less funding was not an option to achieve the same results, the general conclusion was that the more funding they received the more results they could accomplish. For instance:

Gdansk, PIMMS: "Without funding it would not be possible to invite staff from schools, police, city officers etc. to participate in study visits, organise workshops and invite foreign experts to share best practice and experience, organise attractive promotional campaigns with interesting promotional materials issued, make decision makers participate in master classes."

Concerning the hypothetical use of other tools, or actors, or measures to reach better cost-effectiveness than was actually reached, the lack of quantitative results from the case studies makes it difficult to determine if other stages and funding mechanisms could have produced more cost efficient results.

However, it is interesting to note that for the project funded by the EIB loans and TEN-T funds for new transport infrastructure in Helsinki, i.e. the City Rail Link Helsinki-Leppavaara project, it has been stated that the planning and implementation stages would also have been carried out using national funds. Despite the acknowledgment that the EIB loan had a positive impact for the project, the City Rail Link project suggests that in some cases a different mix between national and EU funding can reach the same result, at least in the planning phase.

5.1.4 European added value

Summary of evaluation

In general, the EU intervention is considered a unique occasion to cooperate with different types of EU actors, and work with experts from other countries. Sharing knowledge and best practices across Europe enhances the acquisition of new knowledge, expertise and know-how, which would not be possible otherwise. This is particularly true for projects financed under the FP and ERDF.

Cities' appreciation of the need of the EU intervention in the fields of sustainable mobility and alternative fuels in urban areas is overwhelmingly in favour of continuing and enhancing EU projects funding (94 %). Without EU support, local interventions or investments would be delayed — mainly waiting to receive funds from elsewhere — or would take place to a very limited extent, or not at all.

Cities openly suggested sectors that would benefit from further EU intervention, such as alternative fuels — in particular electric mobility — deployment of new technologies to enhance public transport and info-mobility, followed by access regulation measures to decrease car use and funding to build new infrastructure or extend the existing one.

Question 1. What is the additional value resulting from the EU intervention(s)? In other words, to what extent have the EU interventions provided more added value than what could have been achieved by Member States at national and/or regional level?

From the **case studies**, respondent cities provided different definitions of the European added value resulting from the EU intervention. From the analysis of the questionnaires received, it was possible to classify responses according to six major groups:

Responses	Number of responses	Percentage
Enhanced knowledge due to exchange of best practices and cooperation with EU experts	32	36.0 %
Increased visibility of the city	19	21.3 %
Establishment of EU wide networks	11	12.4 %
Raised awareness about sustainable mobility policies	9	10.1 %
Brought local standards closer to EU standards	9	10.1 %
Boost in new technologies	5	5.6 %
Other	4	4.5 %

Considering projects from all financial tools, the large majority of cities (36 %) recognises that the EU intervention constitutes a unique occasion to cooperate with different types of EU actors, and work with experts from other countries. Sharing knowledge and best practices across Europe enhances the acquisition of new knowledge and expertise, which would not be possible otherwise.

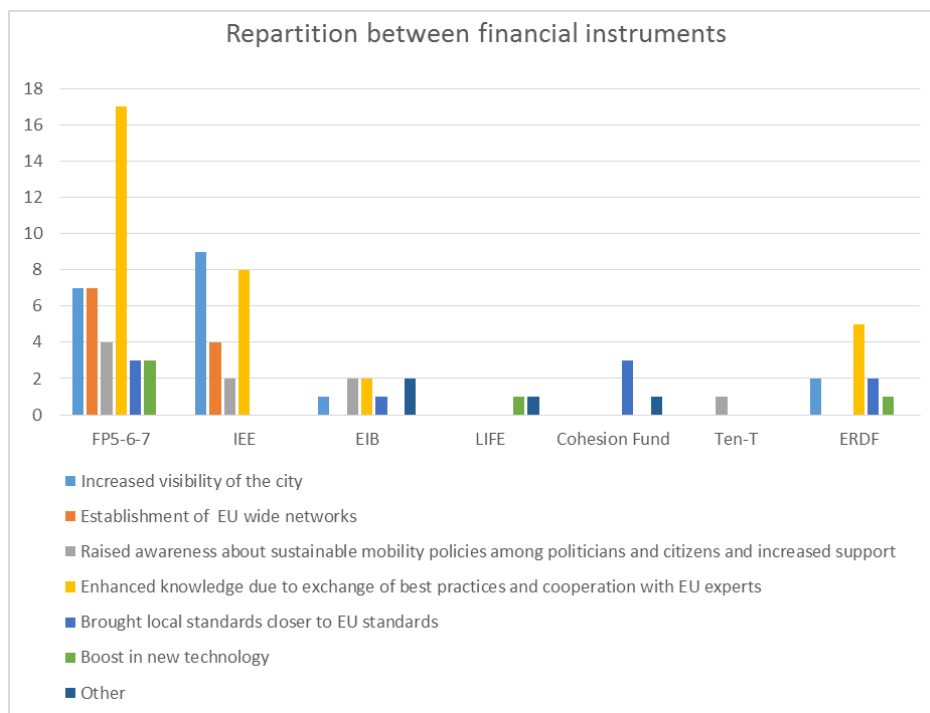
Cities also acknowledge that the EU intervention often increases the visibility of cities at EU level (21 %). Equally valuable is the establishment of EU stakeholder networks that often continue after the end of the EU intervention (10 %).

Other values that cities attribute to EU intervention are: alignment of local standards to EU standards (8 %); awareness raising on sustainable mobility policies (8 %) and, lastly, the boost in new technologies (4 %).

Similarly, the respondents to the **targeted questionnaire** stated that they benefitted from experiences from other partners involved in the same projects. The exchange of knowledge among cities allowed for learning from the best solutions and strategies deployed elsewhere to create/promote sustainable urban mobility conditions.

Considering the repartition between EU financial tools, we notice that the enhanced knowledge due to exchange of best practices and cooperation with EU experts is particularly important for the Framework Programmes and ERDF (Figure 19).

Figure 19: European added value by financial tool

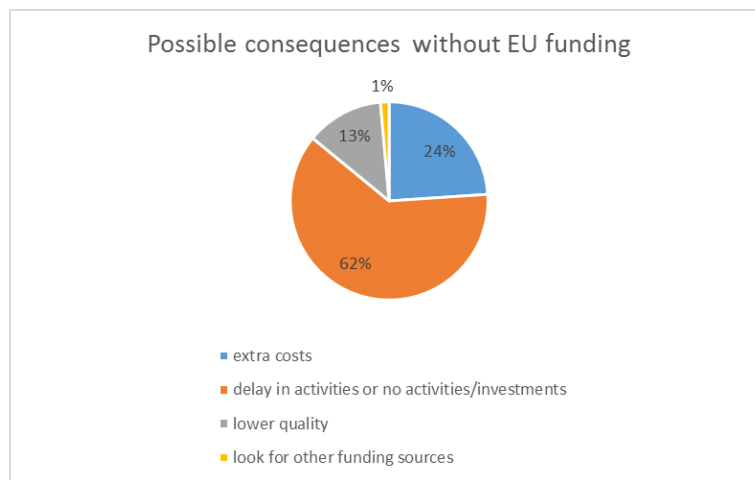


Question 2. What would have happened if the EU had not intervened? Is there still a need for EU funding in the area of sustainable urban mobility and the use of alternative fuels in EU urban areas?

An interesting result emerging from the answers to this question is that without the EU funding, for the very large majority of cities (62 %), the local interventions or investments would have either been delayed or would have taken place to a very limited extent, or not at all. The remaining interventions would have taken place without EU funding, but at the expenses of their overall quality (13 %) or extra costs would have been incurred (24 %).

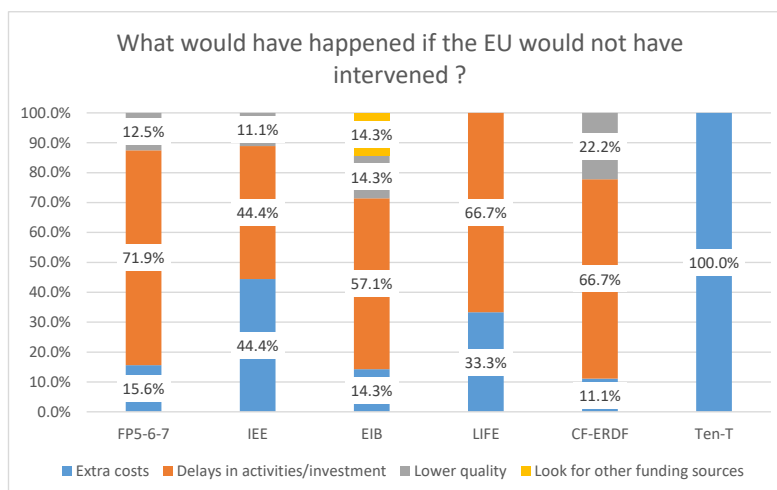
A minor percentage (1 %) would look for other funding sources.

Figure 20: Consequences without EU funding



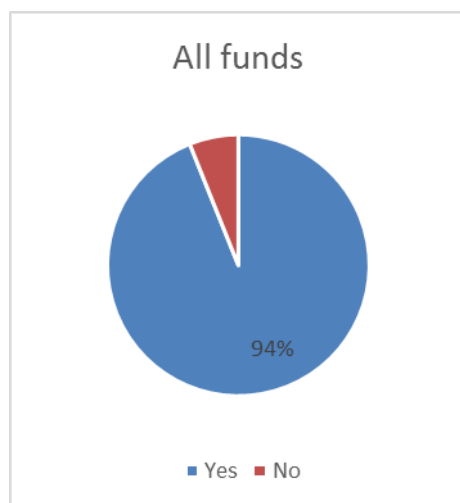
If we look at each EU financing tool (Figure 21), delays or no activities are particularly relevant in the FP5 projects (71.9 %), followed by LIFE and CF-ERDF project (66.7 %). Look for other funding sources concern only the EIB funded projects (14.3 %).

Figure 21: What would have happened if the EU would not have intervened?



As for the cities' appreciation of the need of EU intervention in the field of sustainable mobility and alternative fuels in urban areas, the results from the projects analysed are overwhelmingly in favour of continuing and enhancing EU projects funding (94 %). No differences are reported among EU financing tools as the three 'no' answers are spread between FPs, IEE and the EIB loans.

Figure 22: Appreciation of the need for EU financial support



YES, there still a need for EU funding for local mobility initiatives	62
NO there is no need for EU funding for local mobility initiatives	4

Cities openly suggested sectors that would definitely benefit from further EU intervention. On top of the list — with 24 preferences — cities mentioned alternative fuels, among which electricity seems to be the preferred option. Further suggestions include support to the research and deployment of new technologies for the public transport sector and info-mobility provision, access regulation measures to decrease private car use, and additional funding to build or extend new infrastructure. Additional suggestions, which received between 3 to 1 preferences, are tackling future mobility for ageing citizens, safety, behavioural issues and exchange of best practices.

Alternative fuels (including acquisition of clean rolling stocks), mainly electric	24
New technology for PT and traffic information	10
Measures to improve air quality	10
Infrastructures	7

5.1.5 Coherence

Summary of evaluation

The projects analysed have had objectives complementary to the urban policies about environmental issues, green and alternative fuels (e.g. in Stockholm, London, Athens, Barcelona and Madrid). Other cities pointed out that projects are in line with objectives and initiatives from national programmes, for example the infrastructure and environment programme in Poland and the environmental programme in Sweden. The EU financial support was consistent with existing local, regional and/or national plans in several cities. In other cities – without an existing plan or strategy – the EU financial support helped to achieve input for setting up local or regional urban mobility strategies. CF and ERDF financial tools help mainly the transport infrastructure development, while FP and IEE projects are usually a catalyst for sustainable mobility projects. FP and IEE, together with LIFE projects, also support cities for their competitiveness. Synergetic effects of the different EU financial tools with local initiatives have also been examined in five cities (Helsinki, Funchal, Rome, Perugia and Utrecht), reaching the same conclusions.

The analysis of the case studies allows the identification of the thematic areas in which the different EU financial tools are coherent with one another. It can be observed that FP, IEE and LIFE projects show a good degree of integration, with particular reference to the use of alternative fuels and energy saving policies. Synergies with local and national infrastructure development plans concern basically EIB, TEN-T projects and FP funded projects. Barriers to the full exploitation among the different EU financial tools lies in the lack of technical support in ensuring the full completion of the project life-cycle: from research/feasibility to implementation. For example, providing support for the second stage 'from demonstration to implementation' of mobility solutions which have proven to be successful in the Research and Demonstration phase.

Question 1: How well did the evaluated EU financial support work together with or was it complementary to other EU and non-EU initiatives/interventions which have similar objectives, e.g. in the field of the other dimensions of transport (different from the urban dimension), environment, climate change, research and development, energy, enterprise policy?

The evaluated EU financial support is complementary to a number of other EU and non-EU initiatives/interventions. These interventions, which have similar objectives, include:

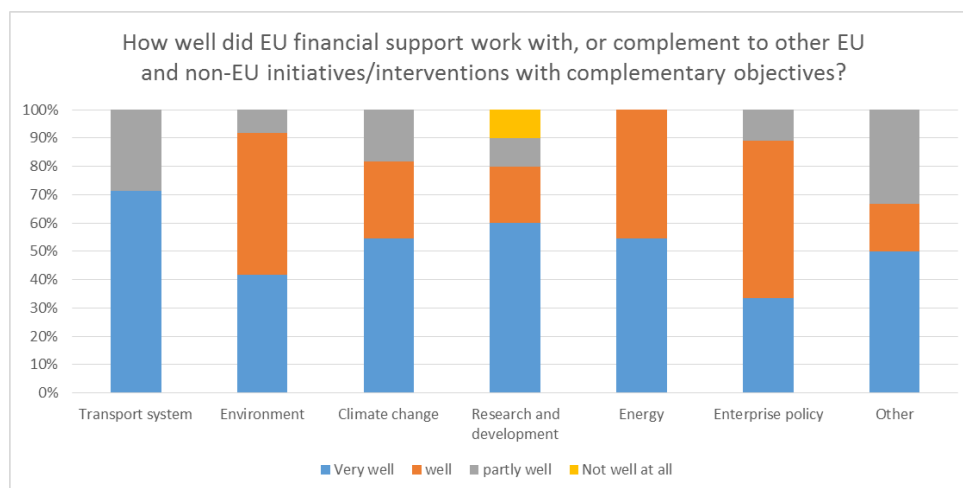
- Marco Polo I and II²¹: Only projects concerning freight transport services may be supported by the Marco Polo programme. Infrastructure projects, research or study projects are not eligible for funding. However, also mixed passenger-freight services and RoRo Ferries services may be proposed, but the support would then only be provided for the freight part.

²¹ http://ec.europa.eu/transport/marcopolo/files/calls/docs/faq/faq_mp_programme_updated_for_call2013_july2013.pdf

- Fuel Cells and Hydrogen (FCH)^{22 23}: The initiative is deemed to support research, technological development and demonstration (RTD) activities in fuel cell and hydrogen energy technologies in Europe. Conditions to access are found in 'Fuel Cells and Hydrogen Joint Undertaking' (FCH JU), rules for submission of proposals, and the related evaluation, selection and award procedures.
- European Bank for Reconstruction and Development offers a wide range of financial tools and project investments are at the heart of EBRD operations. The principal types of direct financing that the EBRD may offer are loans, equity and guarantees; loans are tailored to meet the particular requirements of a project.
- Marguerite Fund²⁴: The 2020 European Fund for Energy, Climate Change and Infrastructure aims to act as a catalyst in the development of greenfield infrastructure in Europe; it is the first fund of its kind launched by Europe's leading public financial institutions.
- Shift2Rail²⁵ Joint Undertaking (S2R JU) is a public-private partnership in the rail sector, established under Horizon 2020, to provide a platform for coordination of research activities with a view to driving innovation in the rail sector

From the **case studies**, several indications support the conclusion about the complementarity between EU initiatives/funding tools and urban thematic areas in the fields of environment, energy and transport. Cities also state that projects were in line with objectives and initiatives from national programmes as, for example, the infrastructure and environment programme in Poland and the environment programme in Sweden. EU projects in Stuttgart were integrated in the general strategy and complement nationally funded ('Schaufenster') projects by improving the knowledge base. From the targeted consultation, environment, energy and climate change are among the areas of interventions for which the highest coherence with the EU funded initiatives on sustainable mobility and alternative fuels has been reported.

Figure 23: How well did EU financial support work with, or was complementary to, other EU and non-EU initiatives?



²²https://ec.europa.eu/research/participants/portal/doc/call/fp7/fch-ju-2010-1/29901-fch_ju_rules_for_submission_of_proposals_and_the_related_evaluation_selection_and_award_procedures_en.pdf

²³ http://ec.europa.eu/research/participants/data/ref/h2020/other/legal/jtis/fch-multi-workplan_en.pdf

²⁴ <http://www.marguerite.com/fund-overview/overview/>

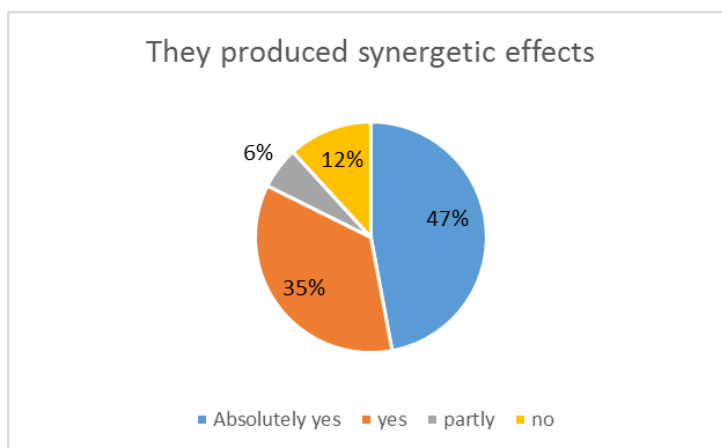
²⁵ http://shift2rail.org/wp-content/uploads/2016/04/Press-Release_CFP_FINAL30032016.pdf

The environmental dimension has mainly benefited from the synergy between EU funded transport infrastructure projects aiming at improving public transport and environmental plans for reducing emissions, e.g. in the city of Krakow, through the CF-EIB funding for integrating the public transportation network and the FP project CARAVEL funding sustainable mobility measures. The energy sector benefitted from the synergy between LIFE funded research projects and FP demonstrations on alternative fuels, as in the Perugia H2Power (LIFE) and REINASSANCE (FP) projects. Climate change has mainly been addressed through CO₂ reduction, which is the result of all projects leading towards transport network optimisation and infrastructure renewal (rolling stock, clean vehicles, etc.).

Question 2: To what extent are different EU funded projects coherent? To what extent have the different financial tools produced synergetic effects? Are there conflicting objective/results?

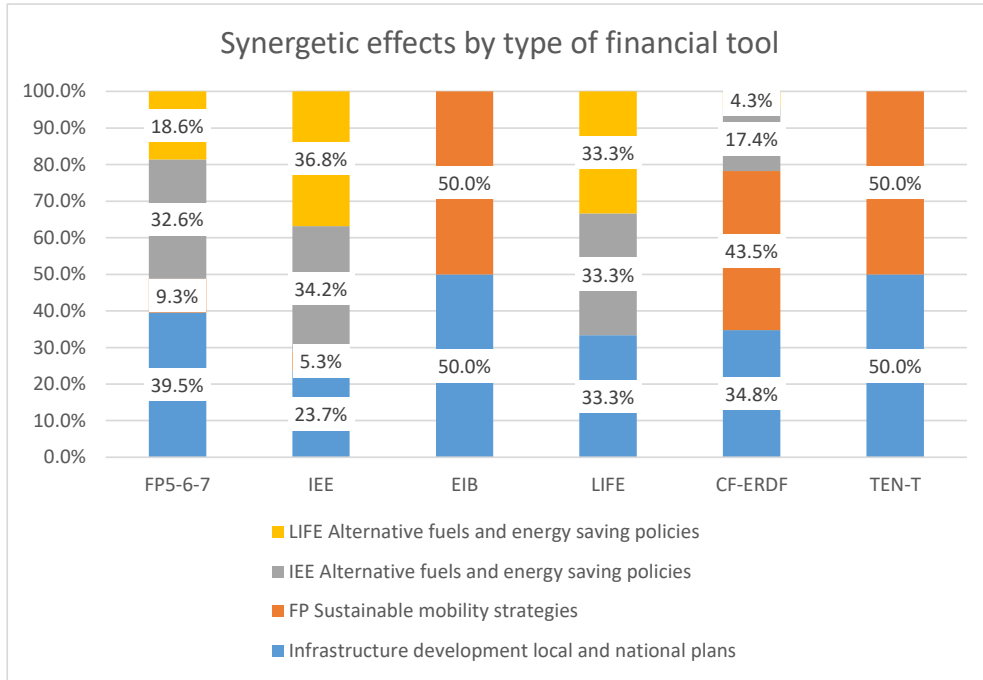
From the **targeted questionnaire**, participants replied positively in 82 % of cases to the question 'To what extent were the different EU funded projects coherent? A total of 87 % of participants also confirmed that the results produced were not conflicting.

Figure 24: To what extent were the different EU funded projects coherent?



Respondents remarking on the synergetic effects of EU funding have pointed out the difficulties in giving continuity to successful EU projects, i.e. providing support for the second stage 'from demonstration to implementation' of mobility solutions, involving different EU funding. In order to strengthen the synergetic effects of different EU tools, technical support would make the access to specific EU funding to cities that have demonstrated successful participation and achievements in Research and Demonstration projects easier. Concerning the extent to which the different EU funding tools have produced synergetic effects, Figure 25, elaborated from the case studies analysis, shows the thematic area in which the different EU financial tools are coherent with each other.

Figure 25: Synergetic effects of EU financial tools



It can be observed that FP, IEE and LIFE projects show a good integration among each other: with particular reference to the use of alternative fuels and energy saving policies, which have about 34 % of the projects in common.

Synergies with local and national infrastructure development plans basically concern EIB, TEN-T projects (50 %) and also FP funded projects (about 40 %).

At urban level, a closer look to the synergy and complementarities of EU financial tools in five cities in which at least three financial tools operated over the period 2000-2013 shows how the interplay between EU funded projects was consistent with the urban strategies. The cities under examination and the relative EU projects are shown in Table 25 and in the following box.

Table 25: Examples of coherence of EU financial tools in five urban areas

City	FP	LIFE	IEE	ERDF	TEN-T	EIB
Helsinki	1				1	3
Funchal	1		2	1		
Perugia	1	1	1			
Utrecht	1	1	1			
Roma	1		1	1		

The **city of Helsinki** had a very favourable modal split, since the financial period 2000-2006, with only 20 % of trips made with private vehicles, 35 % on PT and the rest with soft modes.

Due to this situation, the Helsinki city mobility plan has given (and reconfirmed in the 2015 version) highest priority to high capacity public transport in order to improve the accessibility to the city and surroundings. This strategic policy has been supported by the impacts of the three projects carried out through under the different EU funding tools.

The three EIB loans have been used for three projects related to the constructions of a 14-km metro line from Central Helsinki to Espoo, the set-up of new bus lines and city rail links.

The TEN-T project has been synergic with the EIB ones, addressing planning and designing the improvement of accessibility to the metro area.

The FP project was a small demonstration within CITYMOBILE 2 in the Helsinki metropolitan area: in which the neighbourhood of Vantaa has tested the possibility to use automated vehicles as a part of public transport.

The **city of Funchal** (Madeira Island) projects addressed the strategic policy of shifting the modal split towards public transport, which was 53 % private cars, 34 % PT, the rest soft modes, and improving the attractiveness of touristic transport services at the same time.

The two IEE projects concerned in fact with a direct marketing programme for public transport and mobility efficiency in the tourist regions. However, one project has suffered long-term financial sustainability due to the lack of local funds.

The ERDF funding enabled a small-medium size city as Funchal to be one of the very first Portuguese cities to deploy a 100 % electric bus line. The project allowed taking the first step towards an urban integrated plan for mobility in Funchal.

The costly battery maintenance did not allow sustaining the service after the projects' end. However, the project achieved the outcomes and outputs initially foreseen, contributing to a significant mind shift in terms of sustainable mobility.

The FP project was part of the CIVITAS Initiative, concerning the improvement of urban sustainable mobility strategies. One of the two IEE projects was consistent with the strategic pillars set out by this strategy.

Concerning the **city of Perugia**, the Perugia mobility plan (year 2006) tried to rebalance the negative modal split (up to 73 % of individual motorised trips) and to support the use of alternative, non-fossil, fuels. The key project belonging to the FP CIVITAS Initiative (REINASSANCE) started to address the need for radical interventions.

The project raised awareness among policymakers and citizens in terms of new mobility options and new instruments. Most of the measures are still operational after the end of the project life cycle and are still producing savings, both financial and environmental for the city administration and citizens.

The other two projects dealt with the use of alternative fuels, focussing respectively on
a) supporting measures for the use of hydro methane and hydrogen fuelled vehicles in

- public transport and
b) fleet renewal for mail delivery services in city centres.

The first project (H2 POWER) was funded by LIFE +. Given that the use of hydro methane is not sustainable without incentives, the city plan, aiming at the development and take up of alternative fuels, was not making explicit reference to hydro methane. The project tried to fill the gap, funding demonstrations on the economic and technical viability of public transport means fuelled by hydro methane.

The second project (GREEN POST) was funded by the IEE financial tool. Green freight delivery was addressed through testing new environmentally friendly vehicles of Poste Italiane, to reduce the impacts of mail and parcel deliveries in urban area.

Both projects were coherent with the overall city environmental goals.

In the **city of Utrecht**, the city's strategic plans concerned with the development of Sustainable Urban Mobility Plans (SUMP), encompassing sustainable transport policies in a coherent framework. The EU funding of the CIVITAS MIMOSA project was satisfactory as it was aligned with the city policies and addressed the actual city needs. Under the umbrella of this urban mobility strategy, a SUMP, six action plans and a Districts agenda were approved.

Some of the pilot's measures are being continued and have been contributing to the urban mobility strategy.

The IEE project aimed at raising awareness amongst employees for smarter ways to commute, such as cycling or use of electric bikes for smart alternatives to the use of a private car, including the development of car sharing.

In the LIFE project, the city of Utrecht was involved in a large e-recharging installation to facilitate the onset and consolidation of e-mobility in the country.

As in many Italian cities, the strong use of private cars (modal split 65 %) calls for large and integrated actions to rebalance the modal split in favour of public transportation and non-motorised transport means.

The CIVITAS MIRACLES FP6 project **in Rome** was consistent with the guidelines of the General Urban Mobility Masterplan (PGTU) issued in 1999. The results of the project demonstrations were taken into account in the definition of the PGTU (General Transportation Plan) issued in 2014/2015. Namely, with the promotion of car sharing and the application of Intelligent Transport Systems, e.g. cameras for vehicle detection in urban access restriction schemes.

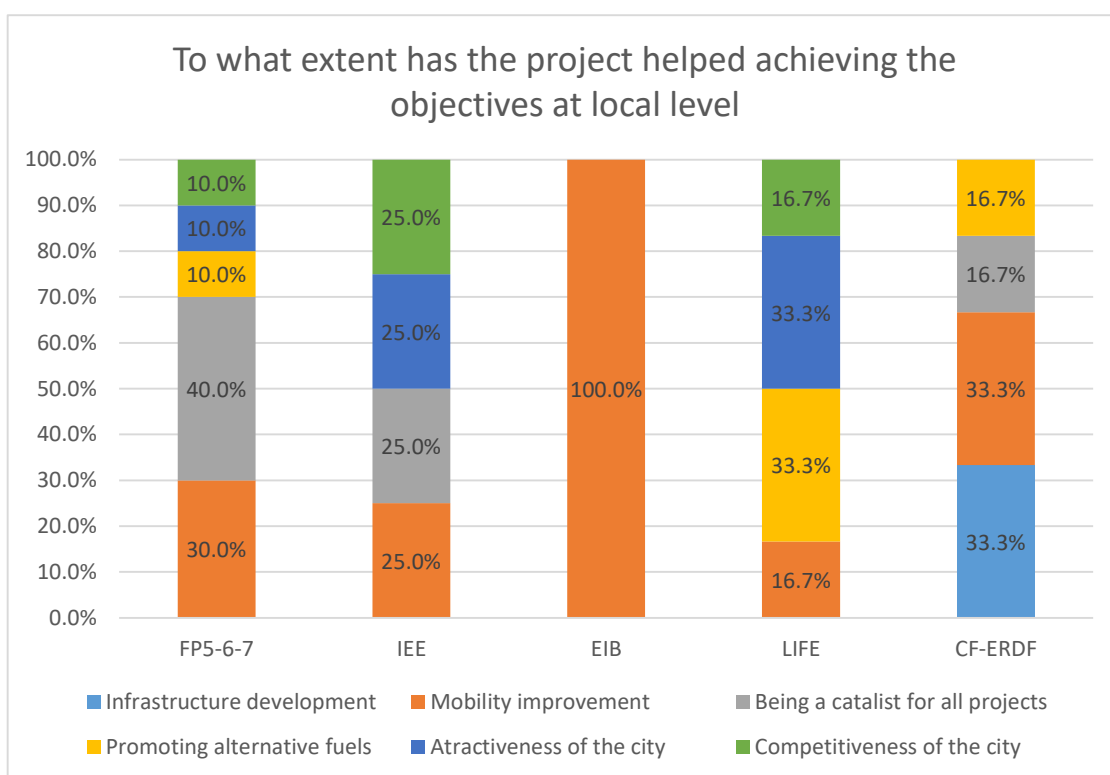
The IEE STEER project (2006) allowed the city to implementing bike sharing services for the first time. The service was launched in June 2008, being complementary to the initiatives devoted to the improvement of air quality. However, the bike sharing service was not sustainable after the project closure.

The ERDF (INTERREG IV C) project developed a tool able to monitor the traffic and mobility situation in urban agglomeration. The set of indicators developed by the project has become a benefit to the new PGTU were the indicators have been incorporated to monitor all the plan of interventions.

Question 3: To what extent was EU financial support related to sustainable urban mobility and the use of alternative fuels coherent with existing urban mobility strategies or plans? To what extent has the EU financial support helped achieving the objectives/targets of these strategies or plans?

A number of cities interviewed for the **case studies** stated that urban mobility strategies or plans have been supported by the EU funds in achieving their objectives. CF and ERDF funding mainly help infrastructure development. Mobility improvement is one of the main objectives for each funding tool (in particular the EIB tool), while FP, IEE projects, together with LIFE projects, also help cities with regard to competitiveness.

Figure 26: To what extent has the project helped achieving the objectives at local level?



From the Stockholm, Barcelona and Perugia case studies, it can be seen that projects have been placed in a clear strategic view, e.g. environmental targets. Therefore, stakeholders have committed to the use of renewable fuels and clean electricity, and projects have been complementary to all other initiatives including environment.

The EU financial support was found consistent with existing local, regional and/or national plans in several cities, as was seen in 54 case studies (out of 57). In other cities — without an existing plan or strategy — EU financial support has helped to achieve input for setting up local or regional urban mobility strategies.

Funchal, SEEMORE(IEE): "No structured and final urban mobility strategy was prepared by the city, neither during the project lifetime, nor afterwards. There have been, however, some meaningful contributions made by the SEEMORE project for the regional urban mobility strategy. For example, when an important event takes place, Horários do Funchal, together with the Municipality traffic department and other stakeholders, draft targeted traffic plans likely to dissuade people from bringing cars to the places where the events are held. This activity was included in the set of measures of the project."

Gdansk, PIMMS TRANSFER: "The city has an existing strategy (Mobilny Gdansk). Gdansk performed a few projects on sustainable mobility before PIMMS TRANSFER so this project adds on to what has been done and contributes largely to citizens' expectations of improving quality of life in the city. It has helped to enrich concepts of more sustainable transport development. The main impact, in regard to the strategy building, is awareness raising of decision makers and providing the overview of different solutions, already implemented elsewhere".

Malmö, ADVANCE (IEE): "The project was a catalyst in the sense of gathering different departments within the city administration. It led to great discussions and we were convinced that the need of a plan like this (Trafik- OCH mobility plan, which will be politically adopted in 2016) was crucial".

Odense, MOBILIS (FP 6) "The city has the Traffic and Mobility plan. We are currently working on a new plan. Hopefully the plan will be agreed on in summer 2016. The CIVITAS project was an important leverage for this plan."

In some cases, cities answered that the project did not help to achieve the objectives of their existing plans. However, this does not mean that the project did not help other cities in achieving their objectives. A clear example occurred in Stockholm, in the NICHES project. "Though the city was the only expert in green fuel technologies in the workshops, the project has provided a forum for those involved in European research activities and projects as well as national, local and industrial initiatives in the area of innovative urban transport concepts to share their knowledge and experience." In such a case, the city transferred its knowledge base to other cities.

5.1.6 Sustainability

Summary of evaluation

The majority of cities stated that the projects were sustainable in the long term, continuing to run after the EU funding ended.

When the benefits end with the end of project funding, the reasons can be multiple, such as, amongst others, the lack of resources (in particular dedicated staff after the end of the project) or the management of new technologies needing additional research and investments.

Evidence on the main factors influencing the sustainability of project achievements concern the consistency of the projects' objectives with the local or national long-term plans and strategies for transport, and the commitment and support of policymakers. Other important factors are the cooperation between actors and local stakeholders, in particular the citizen's involvement.

Question 1: To what extent were the results of the projects sustainable?

Following the definition of the EC Directorate-General for Education and Culture, a project is sustainable when it continues to deliver benefits to the project beneficiaries and/or other constituencies for an extended period after the Commission's financial assistance has been terminated.²⁶

A practical way to describe the potential or achieved sustainability of a project is to use the following two criteria:

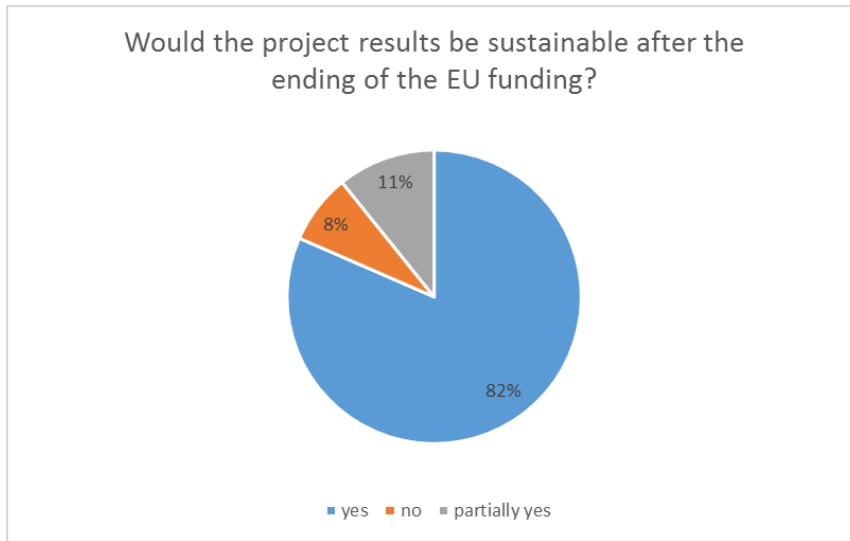
- Diversity and intensity of activities/results maintained or further developed;
- Intensity and enlargement of the cooperation: the international and the local networks are either maintained (i.e. partners take care of the follow-up, local stakeholders meet regularly etc.) or the initial network can be enlarged to incorporate other domains or entities.

Sustainability may not concern all the aspects of a project at the same time. A project can be considered to be sustainable if relevant activities are pursued and results are maintained or developed after the end of the EU funding.

From the **case studies**, it is possible to collect the respondents' opinions on the long-term sustainability of the projects. The majority of cities (82 %) stated that the projects continued to run after the ending of EU funding.

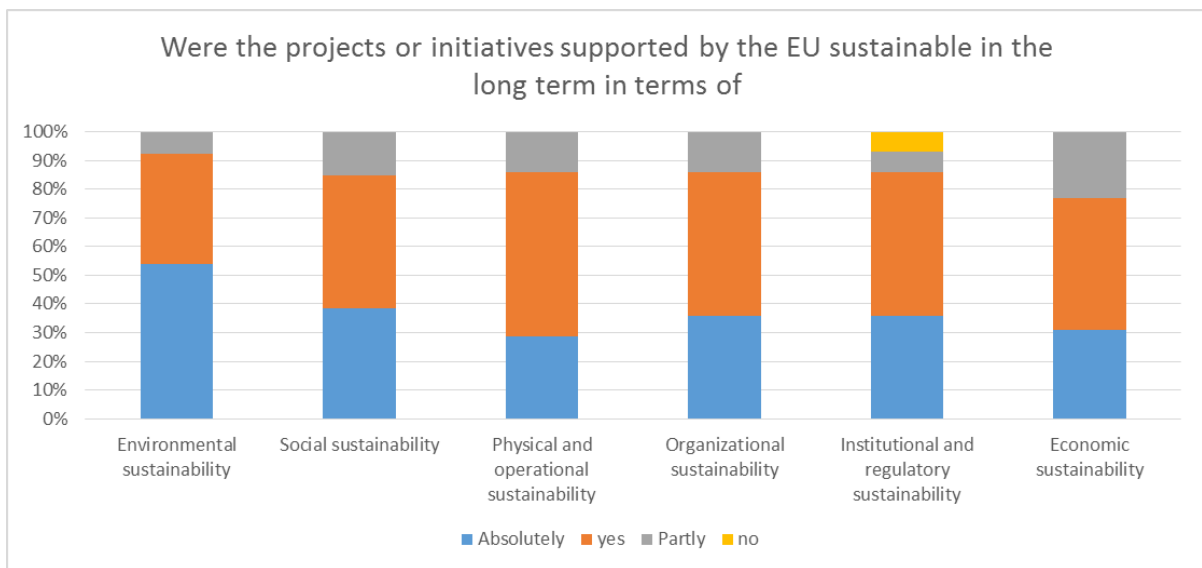
²⁶ <http://eacea.ec.europa.eu/tempus/doc/sustainhandbook.pdf>

Figure 27: Sustainability after the end of the project



From **targeted questionnaires**, the most relevant projects' objectives considered sustainable in the long-term perspective are those falling under the environmental sustainability, e.g. air quality. Economic, social and institutional objectives appear to be the most difficult to reach in terms of sustainability.

Figure 28: In which sectors were the projects or initiatives supported by the EU sustainable in the long term?



In many cases, sustainable projects concern infrastructure works such as metro lines or bus lines and have a significant impact on the cities, even if maintenance remains the principal issue.

Concerning the CIVITAS projects, the majority of the measures that were implemented are still running and increasing their relevance with upgrading/upscaling actions. Sometimes due to lack of cost effectiveness, some measures have been abandoned.

Concerning the barriers to sustainability, results from **case studies** and **targeted questionnaires** show that the main reasons for the lack of sustainability in EU projects are the following:

- Lack of resources and dedicated staff after the end of the project;
- The activities were not in the core part of the city;
- The institutional constraints in the mobility management area due to a lack of cultural awareness / involvement of the major part of the technicians of the Municipality in the sustainable mobility field;
- Lack of understanding of the importance of citizens' participation in the decision/planning process and of the importance of the 'soft measures', e.g. awareness and information campaigns.
- Weaknesses of the project itself;
- New technologies that need additional research and investments;
- Lack of demonstration projects;

Lack of quality of technology investments made;

The funding scheme itself was not enough for the city, i.e. insufficient funding compared to the target objectives.

Measures without a dedicated budget and those that do not generate the interest of private companies are more difficult to sustain in the long term. Several cities, however, declared that the participation and the interest of the actors, including long-term policy support from policymakers, is the main factor ensuring the sustainability of the project in the long term, even without adequate financial support. Sometimes the network that has been established between project partners helped the cities to achieve the results and face the difficulties regardless of the funds' ending.

Another important element raised by cities is their preference for demonstration and implementation projects instead of mere research or feasibility projects, as the output of the latter is often limited to a series of reports and documents without any financial possibility to implement them in the future.

Question 2: Which factors influence sustainable results being achieved?

From **the case studies** and from the **targeted questionnaires**, the main factors that influence the sustainability of project achievements are the following:

- Long-term plans and strategy for transport and environment (non-fossil technologies, integrated transport plans, SUMP, etc.) and integration of the project results within the city's agenda;
- Improvement of environmental quality in the city;
- Aspects linked to economic issues (to guarantee the coverage of the operational costs also during the ex-post EU funding) and to risk management;
- Commitment of policymakers and/or political support from citizens;
- Other local, national or non-EU available funding;
- Long-term infrastructure maintenance programme;
- An effective communication of the results achieved;
- Citizens' involvement;
- Cooperation and synergy between actors, partners, authorities and networking;
- High societal demand to invest on pursuing high environmental standards in urban areas.

5.2 Results by financial tool

As outlined in the technical proposal, the analysis of the impact of the financial tools is carried out through the definition of an overall financial tool performance, which combines the insights from the analysis of the evaluation questions (case studies) with input from the literature review (the ex-post evaluation reports of EU financial tools activity in the field of urban mobility and use of alternative fuels). The financial tool performance analysis is carried out solely using the observations drawn from the case studies. Its feature is experimental and not grounded on consolidated methodologies.

More specifically, the methodological approach underlying the overall evaluation relies on two steps:

1. Identification of a sample of answers from the questionnaires distributed during the case studies addressing each evaluation question and definition of the scoring system and weighting criteria to differentiate the relative importance of the evaluation questions.
2. Definition of a set of criteria leading to the set-up of an evaluation scale for each answer.

The methodological approach, caveats for the interpretation of results and results by EU financial tools are described in the next sections.

5.2.1 Methodology

Step 1: Identification of a sample of answers from the questionnaires distributed during the case studies addressing each evaluation question and definition of the scoring system and weighting criteria to differentiate the relative importance of the evaluation questions.

The main condition for the identification of the sample of answers is that data is available, i.e. there are a good number of occurrences (answers) for each evaluation question.

Then, the scoring and weighting system to be applied to the answers to the evaluation questions is defined as follows:

- the score 3 (high) means that the evaluation is satisfactory, e.g. fully coherent, high relevance, etc.
- the score 2 indicates an intermediate level of satisfaction,
- the score 1 (low) denotes a low level of satisfaction.

In order to clarify the methodology, Table 26 shows the questions, number of occurrences and the corresponding allocated score.

Table 26: Occurrences from the case studies and definition of the weighting system

Questions	Occurrences	Score
Relevance of EU funding to the actual city needs (sustainable mobility)	Occurrences	Score

Questions	Occurrences	Score
Satisfactory	63	3
Partly satisfactory	7	2
Not satisfactory	1	1
Incomplete/misleading answer	0	
No answer		
Total	71	
Relevance of EU funding to the actual city needs (alternative fuels)		
Satisfactory	44	3
Partly satisfactory	15	2
Not satisfactory	1	1
Incomplete/misleading answer	0	
No answer		
Total	60	
Effectiveness: has the EU financial support been effective in terms of providing incentive to participants?		
Sometimes	17	2
Yes	47	3
No	3	1
No answer	0	
Total	67	
Efficiency: what were the factors of /reason for failures		
Sometimes there are factors affecting efficiency	16	2 or 1
No presence of factors affecting efficiency	16	3
Incomplete/misleading answer	2	
No answer	0	
Total	34	
European added value: possible consequences if the EU funding would have not intervened		
Extra costs	17	2
Delay in activities/investments r no activities/investments	44	3
lower quality	9	1
Look for other funding sources	1	1

Questions	Occurrences	Score
Incomplete/misleading answer	0	1
Total	71	
Coherence: has the project helped achieving the objectives of these strategies or plans?		
Yes	53	3
No	2	1
Incomplete/misleading answer	2	1
No answer	0	
Total	57	
Sustainability		
Would the project results be sustainable after the ending of the EU funding?		
Yes	61	3
No	6	1
Total	67	

The weighting system is based on the assumption that not all the evaluation criteria have the same importance for the beneficiary, i.e. in particular for the policymakers (municipality). The weighting system associates the higher weights with the higher importance for the beneficiary. In such an approach, Effectiveness and Efficiency criteria are considered of primary importance for the beneficiary (weight equal to 3), while European added value and Coherence are considered less important (weight equal to 1). Sustainability and Relevance evaluation criteria stand in the middle (weight equal to 2).

The following weights have been adopted for each evaluation question.

Evaluation criteria	Weight
Relevance	2
Effectiveness	3
Efficiency	3
European added value	1
Coherence	1
Sustainability	2

Step 2: Definition of a set of criteria leading to setting up an evaluation scale for each answer.

The second step concerns the set-up of an evaluation scale for each answer, so that each answer can be ranked.

The scoring takes into account the weighting system, which affects the evaluation score associated to the answers (step 1 above), i.e. multiplying the evaluation score by the weights. For each evaluation question, the corresponding simple arithmetic average denotes the relative performance: higher values indicate better performance.

The corresponding performance levels are indicated in the following table.

Value	Scale	Performance
3	High	vVV
2	Medium	vV
1	Low	v

Furthermore, to emphasize the importance of the assessment of the evaluation questions at urban level, the methodological approach provides the analysis of the common evaluation scale according to two urban clusters:

1. Cluster of cities classified on the basis of dimension. The 25 European urban areas (see chapter 4 for details) have been classified in three groups:
 - i. Big > 1 000 000 inhabitants
 - ii. Medium 999 999 - 350 000 inhabitants
 - iii. Small < 350 000 inhabitants

The following table shows the number of cities included in each cluster.

Cluster of cities	Number of cities
BIG	7
MID	11
SMALL	7
Total	25

2. Cluster of cities classified on the basis of geographical location. The 25 European urban areas have been classified in the following four groups:
 - i. CENTRAL (Germany, Austria, France, Netherlands)
 - ii. EAST (Poland, Hungary, Slovakia, Bulgaria, Romania)
 - iii. NORTH (Denmark, Finland, Sweden, United Kingdom,
 - iv. SOUTH (Italy, Spain, Greece)

The following table shows the number of cities included in each cluster.

Cluster of cities	Number of cities
CENTRAL	7
EAST	6
NORTH	6
SOUTH	6
Total	25

5.2.2 Caveats for the interpretation of results

The most important caveat to be considered is data availability. The overall financial tool performance relies first on a sample of answers collected through the case studies, i.e. answers for which most information is available and can be expressed in quantitative terms (i.e. not resulting from open questions). Data availability also affects the capability to evaluate the different financial tools.

For example, information available for the TEN-T financial tool is very low: just one project. Therefore, the TEN-T financial tool is not included in the evaluation.

Second, the weighting system to rank the importance of evaluation questions relies on the subjective consultants' perception of what evaluation criteria are the most important for the beneficiaries.

The following sections show the outcome of the assessment of evaluation questions by financial tool.

5.2.3 European Regional Development Fund (ERDF)

Projects distribution by city dimension and geographic location

The 9 ERDF funded projects for which data are available are evenly distributed by city dimension. Most of the evaluation questions are based on at least two projects, with the exception of Efficiency in small urban areas, with just one project.

Data by geographical location are missing for the urban areas located in Central Europe.

Evaluation question	Projects by city dimension			
	Small	Medium	Big	Total
Relevance	3	3	3	9
Effectiveness	3	3	3	9
Efficiency	1	2	2	5
European Added Value	3	2	2	7
Coherence	3	2	3	8
Sustainability	3	3	3	9

The evaluation questions Coherence, European Added Value and Efficiency in Northern European cities have been based on just one project. On the contrary, information addressing Relevance, European Added Value, Coherence and Sustainability in the urban areas located in Eastern Europe is based on four projects.

Evaluation question	Projects by city geographic location				
	South	North	East	Central	Total
Relevance	3	2	4	-	9
Effectiveness	3	3	3	-	9
Efficiency	2	1	2	-	5
European Added Value	2	1	4	-	7
Coherence	3	1	4	-	8
Sustainability	3	2	4	-	9

Comparative ex-post evaluation

The ex-post evaluation of the ERDF projects shows, on average, better performances in the medium and small cities located in East and South of Europe; in particular, as far as Effectiveness, Efficiency, Relevance and Sustainability are concerned. Eastern and Southern cities have benefited from knowledge transfer implied in some projects (e.g. PIMMS).

Evaluation question	City dimension		
	Small	Medium	Big
Relevance	1	3	2
Effectiveness	3	3	1
Efficiency	3	3	1
European Added Value	1	2	2
Coherence	2	2	2
Sustainability	1	3	1

1= Low performance, 2 = Medium performance, 3 = High performance

When projects have involved the implementation of sustainable transport measures and the promotion of alternative fuels as in Funchal (Eco Line in Funchal city centre project) and Stockholm (Baltic Biogas Bus project), the small-medium scale of the city and the coordination with the national Operational Programmes have contributed toward improving the overall funding performance.

Evaluation question	City European geographic location			
	South	North	East	Central
Relevance	1	3	3	-
Effectiveness	3	1	3	-
Efficiency	3	1	3	-
European Added Value	1	2	2	-
Coherence	2	2	2	-
Sustainability	1	3	3	-

1= Low performance, 2 = Medium performance, 3 = High performance

5.2.4 Cohesion Fund (CF)

Projects distribution by city dimension and geographic location

Four projects are available with reference to the CF. They have been mainly implemented in medium size cities, with just one project implemented in big cities.

Evaluation question	Projects by city dimension			
	Small	Medium	Big	Total
Relevance	-	3	1	4
Effectiveness	-	3	1	4
Efficiency	-	1	1	2
European Added Value	-	2	1	3
Coherence	-	3	1	4
Sustainability	-	3	1	4

By geographical location, only cities located in East Europe, with three projects, and in South Europe (one project) are included. The reason lies in the fact that the CF financial assistance targets Member States with a per capita GNP of less than 90 % of the EU average.

The evaluation questions on Efficiency and European Added Value are based on average on a lower number of projects. On the contrary, Relevance, Effectiveness, Coherence and Sustainability are present with three projects.

Evaluation question	Projects by city geographic location				
	South	North	East	Central	Total
Relevance	1	-	3	-	4
Effectiveness	1	-	3	-	4
Efficiency	-	-	2	-	2
European Added Value	1	-	2	-	3
Coherence	1	-	3	-	4
Sustainability	1	-	3	-	4

Comparative ex-post evaluation

The ex-post evaluation of the CF projects in the medium cities shows good performances, on average. With the exception of Efficiency, in fact, all the other evaluation criteria rank medium-high. Reasons for inefficiencies concern financial constraints and delays, as in the case of Athens Metro Line 1 renovation project.

Evaluation question	City dimension		
	Small	Medium	Big
Relevance	-	2	2
Effectiveness	-	2	2
Efficiency	-	1	3
European Added Value	-	3	1
Coherence	-	2	2
Sustainability	-	2	2

1= Low performance, 2 = Medium performance, 3 = High performance

This evidence supports the considerations made in the European Court of Auditors report on ERDF and CF projects (2014), stressing that the management of CF projects dealing with implementation of infrastructure require that a minimum number of result indicators with related targets be included in the grant agreements and be subsequently measured, in order to reduce the risk of cost overrun and delays.

Evaluation question	City European geographic location			
	South	North	East	Central
Relevance	3	-	1	-
Effectiveness	2	-	2	-
Efficiency	1	-	2	-
European Added Value	3	-	1	-
Coherence	2	-	2	-
Sustainability	2	-	2	-

1= Low performance, 2 = Medium performance, 3 = High performance

5.2.5 European Investment Bank (EIB)

Projects' distribution by city dimension and geographic location

Eight projects are available with reference to the EIB funded projects. They are mainly located in medium and big cities, with no presence in smaller cities. Most of the evaluation questions are based on at least three projects, with the exception of Efficiency in medium urban areas and Effectiveness in big cities, with just one project.

Evaluation question	Projects by city dimension			
	Small	Medium	Big	Total
Relevance	-	5	3	8
Effectiveness	-	4	1	5
Efficiency	-	1	2	3
European Added Value	-	3	3	6
Coherence	-	3	3	6
Sustainability	-	5	2	7

By geographical location, Eastern and Central urban areas are present with just one project. Most of the information available is located in urban areas located in Southern and Northern European areas.

The evaluation question Efficiency is addressed on average with less information (three projects). On the contrary, the other evaluation questions may benefit from a larger number of observations, e.g. eight projects for Relevance, seven for Sustainability, six for European added value and Coherence.

Evaluation question	Projects by city geographic location				
	South	North	East	Central	Total
Relevance	3	3	1	1	8
Effectiveness	1	2	1	1	5
Efficiency	1	-	1	1	3
European Added Value	3	1	1	1	6
Coherence	3	1	1	1	6
Sustainability	2	3	1	1	7

Comparative ex-post evaluation

On average, the reported ex-post evaluation received from projects supported by EIB loans can be considered satisfactory. The performances of the evaluation criteria are in general evaluated as medium-high, in particular in the medium sized cities.

Evaluation question	City dimension		
	Small	Medium	Big
Relevance	-	2	2
Effectiveness	-	2	2
Efficiency	-	3	1
European Added Value	-	2	2
Coherence	-	2	2
Sustainability	-	2	2

1= Low performance, 2 = Medium performance, 3 = High performance

When Efficiency is rated low, as in the big cities (e.g. the Madrid Metro funding), the underlying problem is the underutilisation of the infrastructure due to the inaccurate forecast transport demand, which does not, however, fall under the responsibility of the EIB.

As far as the European added value is concerned, the projects in Southern and Northern cities indicate job creation (metro lines funded in Athens), and favouring sustainable mobility as in Helsinki (Helsinki City Rail Link project) respectively.

Evaluation question	City European geographic location			
	South	North	East	Central
Relevance	2	2	2	2
Effectiveness	2	2	2	2
Efficiency	1	-	3	3
European Added Value	3	3	1	1
Coherence	2	2	2	2
Sustainability	2	2	2	2

1= Low performance, 2 = Medium performance, 3 = High performance

5.2.6 The 5th, 6th and 7th Framework Programmes (FP)

Projects' distribution by city dimension and geographic location

The information available for the FP projects is substantial: 31 FP funded projects for which the available data are evenly distributed by city dimension, with a strong presence of medium-sized cities.

Evaluation question	Projects by city dimension			
	Small	Medium	Big	Total
Relevance	5	17	8	30
Effectiveness	5	16	3	24
Efficiency	4	7	4	15
European Added Value	6	17	8	31
Coherence	3	14	6	23
Sustainability	6	15	8	29

By geographical location, available data are mainly available for Southern and Northern European cities.

The evaluation questions Relevance, European Added Value and Sustainability are evenly addressed across all geographical areas. Less information is available for Efficiency, in

particular for the Central European cities, in which only one project has provided the relevant information.

Evaluation question	Projects by city geographic location				
	South	North	East	Central	Total
Relevance	10	10	4	6	30
Effectiveness	5	11	4	4	24
Efficiency	6	6	2	1	15
European Added Value	10	11	4	6	31
Coherence	8	8	3	4	23
Sustainability	10	9	4	6	29

Comparative ex-post evaluation

The ex-post evaluation of the FP projects shows, on average, better performances in the small and in medium cities. This evidence is consistent with the ex-post evaluation carried out in the CIVITAS WIKI project (2014), in which the sample of cities (small and medium-sized) indicates to a large extent (70 %) the appreciation of projects' outcomes (efficiency). In big cities, Effectiveness and Efficiency may be undermined by difficulties in ensuring the switch from the pilot stage (e.g. ICT EMISSIONS in Madrid) to the implementation stage.

Evaluation question	City dimension		
	Small	Medium	Big
Relevance	3	2	2
Effectiveness	3	1	1
Efficiency	3	3	1
European Added Value	2	2	2
Coherence	2	2	2
Sustainability	2	3	1

1= Low performance, 2 = Medium performance, 3 = High performance

Urban areas located in Eastern Europe show, on average, the best performances (with reference to Effectiveness, Efficiency and Sustainability). The medium/small dimensions of these cities, e.g. Krakow, Gdansk, Sofia, have allowed for successful demonstrations and increased visibility at European level.

Evaluation question	City European geographic location			
	South	North	East	Central
Relevance	2	2	2	2
Effectiveness	3	1	3	3
Efficiency	3	3	3	1
European Added Value	2	2	2	1
Coherence	2	2	2	2
Sustainability	1	3	3	3

1= Low performance, 2 = Medium performance, 3 = High performance

5.2.7 Intelligent Energy in Europe, Energy in transport, STEER (IEE)

Projects' distribution by city dimension and geographic location

The 20 IEE funded projects for which data are available are evenly distributed by city dimension. Most of the evaluation questions are based on more than three projects, i.e. up to nine in big cities (addressing Effectiveness).

Evaluation question	Projects by city dimension			
	Small	Medium	Big	Total
Relevance	7	6	7	20
Effectiveness	6	4	9	19
Efficiency	1	4	2	7
European Added Value	6	6	6	18
Coherence	3	4	3	10
Sustainability	6	4	5	15

By geographical location, data are mainly available for the Northern European cities.

Efficiency is the evaluation criterion for which information is less available (seven projects in total, located in Northern and Central European cities). On the contrary, information on Relevance, Effectiveness and European added value is evenly spread across European cities, with three to seven projects.

Evaluation question	Projects by city geographic location				
	South	North	East	Central	Total
Relevance	4	7	3	6	20
Effectiveness	4	8	3	4	19
Efficiency	-	4	-	3	7
European Added Value	4	5	3	6	18
Coherence	2	6	-	2	10
Sustainability	4	2	3	6	15

Comparative ex-post evaluation

On average the IEE projects show better performances in the medium and small cities located in Eastern and Southern Europe, in particular as far as Effectiveness, Efficiency, and Sustainability are concerned. In big cities, the lower performance in Relevance, Effectiveness, Efficiency and Sustainability is mainly due to insufficient funding to ensure a take up of the measures (e.g. SPYCICLES in Rome) or to switch to the implementation stage, e.g. Optimising Bike Sharing in European Cities in London.

Evaluation question	City dimension		
	Small	Medium	Big
Relevance	3	2	1
Effectiveness	2	3	1
Efficiency	1	3	1
European Added Value	3	1	2
Coherence	2	2	2
Sustainability	3	3	1

1= Low performance, 2 = Medium performance, 3 = High performance

These considerations are consistent with the insights from the analysis of IEE projects from literature review and interviews carried out during the case studies. Some cities responded that when a project receives EU financing, that project receives too little funding to have a long-term measurable impact (as a demonstration project for instance) or had a too small a scope to reach a sufficient audience (Odense with the AENEAS project and Göteborg, with the CARMA project).

Evaluation question	City European geographic location			
	South	North	East	Central
Relevance	2	1	3	2
Effectiveness	3	1	3	2
Efficiency	-	1	-	3
European Added Value	3	2	1	1
Coherence	2	2	-	2
Sustainability	1	1	3	3

1= Low performance, 2 = Medium performance, 3 = High performance

5.2.8 LIFE

Projects' distribution by city dimension and geographic location

LIFE funded projects in the field of sustainable transport and use of alternative fuels account for a small role, compared to other financial tools (see Table 5 above). This evidence is reflected in the lack of projects for which data are available, i.e. three projects, with no presence in big cities.

Evaluation question	Projects by city dimension			
	Small	Medium	Big	Total
Relevance	2	1	-	3
Effectiveness	1	1	-	2
Efficiency	1	1	-	2
European Added Value	2	1	-	3
Coherence	1	1	-	2
Sustainability	2	1	-	3

By geographical location, data are not available for the Eastern European cities.

When data are available, all evaluation questions are generally addressed, to the exception of projects in Central European cities, which show no data on Effectiveness, Efficiency and Coherence.

Evaluation question	Projects by city geographic location				
	South	North	East	Central	Total
Relevance	1	1	-	1	3
Effectiveness	1	1	-	-	2
Efficiency	1	1	-	-	2
European Added Value	1	1	-	1	3
Coherence	1	1	-	-	2
Sustainability	1	1	-	1	3

Comparative ex-post evaluation

On average, the LIFE projects show better performances in the Relevance, European added value and Sustainability evaluation criteria, with at least two projects showing high performances.

This evidence is consistent with previous ex-post evaluations, in which the projects evaluated were considered to be in line with or supporting existing EU legislation/policies relevant for the beneficiaries (COWI, 2009).

Evaluation question	City dimension		
	Small	Medium	Big
Relevance	3	1	-
Effectiveness	2	2	-
Efficiency	2	2	-
European Added Value	2	3	-
Coherence	2	2	-
Sustainability	1	3	-

1= Low performance, 2 = Medium performance, 3 = High performance

On average, the LIFE projects show better performances in the Relevance, European added value and Sustainability evaluation criteria, with at least two projects showing high performances.

This evidence is consistent with previous ex-post evaluations, in which the projects evaluated were considered to be in line with or supporting existing EU legislation/policies relevant for the beneficiaries (COWI, 2009).

Demonstration projects in LIFE have provided new knowledge or demonstrated the feasibility of urban management approaches that can be of value for the development of new European policies or legislation (e.g. CLEAN TRUCK in Stockholm). However, the long-term Sustainability of the demonstrations may be undermined by the lack of EU funding after the end of the project (e.g. H2Power in Perugia).

Evaluation question	City European geographic location			
	South	North	East	Central
Relevance	3	1	-	3
Effectiveness	2	2	-	
Efficiency	2	2	-	
European Added Value	3	3	-	1
Coherence	2	2	-	
Sustainability	1	3	-	3

1= Low performance, 2 = Medium performance, 3 = High performance

6. Conclusions

This chapter draws conclusions on the relevance, effectiveness, efficiency, coherence, EU added value and sustainability of the EU funded projects supporting sustainable mobility and the use of alternative fuels in European urban areas during the financial perspectives 2000-2006 and 2007-2013.

In doing that, strengths and weaknesses of each evaluation criteria are summarised in the sub-sections below. When appropriate, comments on the influence of data availability are provided.

6.1 Relevance of EU financial tools to local needs

Most of the evidences from case studies (88 % in the case of projects dealing with sustainable urban mobility and 71 % in the case of projects supporting the use of alternative fuels) and public consultation (89 % of the respondents) lead to the conclusion that beneficiaries perceive EU funded projects as relevant to their needs. The perception is transversal to the financial tools, with a particular appreciation expressed by small and medium sized cities. The problem with big cities is, in fact, that sometimes the smaller scale of some projects, mainly funded under IEE, LIFE and FP financial tools, may reduce the impacts on local needs. Beneficiaries of the FP financial tool would have appreciated the possibility to spend larger portions of budgets on the 'hard' aspects of implementation, and especially secondary infrastructure and ITS applications. More generous infrastructure funding associated with recognised policy/measure innovation could in fact enhance the relevance of the financial tool.

6.1.1 Strengths and weaknesses of EU financial tools' relevance to local needs

Data availability to draw the above conclusions is robust. Most respondents have, in fact, answered the questions concerning relevance, reducing to a minimum any risk of misunderstanding about scope and objectives of this evaluation criterion.

On the weaknesses side, the relevance to the actual city needs would be improved by focusing the projects on the implementation side, in particular as far as the IEE and LIFE financial tools are concerned.

6.2 Effectiveness of EU financial tools

Respondents have, in general, appreciated the effectiveness of EU financial tools. In particular, small and medium cities have benefitted from the leverage effects of reaching critical mass (in terms of economic resources, knowledge base, technical input) to carry out projects in mobility management, traffic modelling and sustainable mobility, which would not have been possible otherwise. The FP financial tool appears to be particularly suited to serving this purpose. The most effective project consortia are composed of city departments and universities/research institutes in the research/feasibility project stage, with a wide range of stakeholders, from civil society to local SMEs, in the pilot/demonstration stage, and the involvement of industry/SMEs as a key requirement in the implementation stage. FP, IEE and ERDF/CF financial tools are considered efficient mainly in the pilot/demonstration and research/feasibility stages, while the EIB tool is considered efficient in the implementation stage. When dealing with transport infrastructure, the combination of ERDF/CF financial tools for planning and design — research

stage — and EIB in the implementation stage has proved to be effective. Furthermore, beneficiaries of FP, IEE and LIFE financial tools have emphasized their ability to effectively link up parties and individuals across borders, fostering knowledge exchange, mutual support and inspiration, compounding in that the European added value of EU funding.

6.2.1 Strengths and weaknesses of EU financial tools' effectiveness

In the FP financial tool, demonstrations and pilots to elicit support from policymakers and raising awareness in stakeholders represent a key strength concerning effectiveness. Sometimes, also experimentations of innovative technologies and approaches in LIFE or ERDF financial tools are considered effective in the long term, provided that financial continuity to the projects is ensured.

On the weaknesses side, budget limitation was considered a barrier to reach effectiveness in most of IEE and LIFE projects, in particular when dealing with the use of alternative fuels. Sometimes efficiency has also been undermined by longer tender procedures and administrative barriers (in particular for SMEs involvement) in FP and ERDF financial tools, and, to a minor extent, in IEE financial tools.

6.3 Efficiency of EU financial tools

In the context of this ex-post evaluation, efficiency concerns the extent to which project benefits/outputs are proportionate to inputs and resources. In such a context, efficiency of EU financial tools is in general achieved with transport infrastructure projects funded by EIB, in association with ERDF and CF grants, in particular when benefits from the reduction of transport external costs are included (social return of investment). It should be considered, in fact, that from the financial point of view, urban infrastructure projects are subsidised in terms of both construction and operation, in a general context of low cost recovery. Demonstrations funded by the FP financial tool, as in CIVITAS initiatives, and examples from IEE and LIFE projects are generally efficient, even if the lack of systematic analysis from a wider sample of projects makes any generalisation difficult. Consistently with the conclusions drawn with reference to effectiveness, the most efficient combination among project stages, actors and financial tools associates the research/feasibility and pilot/demonstration stages to a wide set of actors e.g. municipalities, research, transport operators, infrastructure managers and manufactures with reference to FP, IEE and LIFE financial tools. Concerning the implementation and pilot/demonstration stages, the most efficient combination was between infrastructure managers and transport operators, with particular reference to projects funded by the CF-ERDF and the EIB financial tools.

6.3.1 Strengths and weaknesses of EU financial tools' efficiency

Concerning the strengths of the analysis, there is robust evidence that EU funding is considered efficient in reaching results: only 6 out of 69 (<9 %) responses indicate that similar results could have been achieved with less funding or different composition of actors/tools.

However, on the weaknesses' side, it should be stressed that it has been difficult to find projects that included a detailed ex-post analysis of how resources have been used according to cost-efficient parameters (66 % of the projects examined did not provide indicators of efficiency). Lack of adequate ex-post performance indicators mainly

concerns the IEE and LIFE financial tools, due to insufficient monitoring of the projects' follow-up. Despite significant efforts in drafting guidelines to cost-benefit appraisal in urban transport measures²⁷, in some cases, as in the FP financial tool, comprehensive guidelines in the evaluation of impacts from transport measures, e.g. addressing social equity and inclusion, would improve the assessment of costs and benefits. On the methodological side, also the efficiency of projects funded by ERDF and the CF would benefit from a more accurate (reliable) assessment of ex-ante transport demand, which can lead, in case of overestimation, to the underutilisation of transport infrastructure and the consequent negative impact on their overall performance.

6.4 European added value of EU financial tools

There is a substantial appreciation of the EU added value provided by the EU financial tools. Characteristics and scope of the EU added value vary according to the financial tool under examination. In FP and IEE financial tools the EU intervention is considered a unique occasion to cooperate with different types of EU actors, work with experts from other countries, share knowledge and best practices across Europe, leading to new knowledge, expertise and know-how. Transport infrastructure projects funded by EIB, ERDF and the CF mainly provide impacts in terms of job creation, inclusive city development (improving accessibility) and development of a sustainable mobility framework, e.g. reducing air pollution. In the Eastern urban areas, the EU added value from the involvement in projects funded by the CF was mainly on the technical side and knowledge building, i.e. helping the city to align to European standards. There are two more elements of added value by cooperating in the EU:

- 1) the participation in EU projects, especially under the FP financial tool, fosters the development of an impact and process 'evaluation culture' in local administrations, which over time tends to consolidate into a standard practice, also for locally funded projects (this is not in contrast with the conclusions on the lack of strong cost-benefit evaluation, which only covers one aspect of project assessment);
- 2) the FP, IEE and LIFE financial tools promote the active involvement of stakeholders in policymaking and measure taking throughout the design, implementation and monitoring project stages, thereby allowing for the adoption of more informed, owned and effective transport and mobility solutions. This EU added value can in time mature into an organic vision-making and problem-solving local approach.

6.4.1 Strengths and weaknesses of the EU added value of EU financial tools

About the strengths of EU added value of EU funding, it is interesting to point out that without the EU funding, for the very large majority of cities (62 %), the local interventions or investments would have either been delayed or would have taken place to a very limited extent, or not at all.

No specific weaknesses have been observed under this evaluation criterion.

²⁷ For example, TIDE (Transport Innovation Deployment in Europe) "Impact Assessment Handbook"

6.5 Coherence of EU financial tools

The coherence of EU financial tools can be evaluated along two dimensions. The first one is the coherence of EU financial tools with each other; i.e. the synergy of the effects of one or more financial tools on local sustainable mobility conditions and use of alternative fuels. The second one is the coherence with other national or local plans, i.e. the way in which they can work together. Concerning the former dimension, the conclusions of the study indicate that the FP, IEE and LIFE financial tools show coherence with each other with particular reference to the use of alternative fuels and energy saving policies. Transport infrastructure projects funded by ERDF-CF and EIB are indicated as coherent with FP sustainable urban mobility projects. Concerning the latter dimension, synergies with local and national infrastructure development plans concern basically EIB, TEN-T projects and FP funded projects. CF and ERDF financial tools help mainly the local/regional transport infrastructure development, while FP and IEE projects are usually a catalyst for sustainable mobility projects; e.g. mobilising additional national funds.

6.5.1 Strengths and weaknesses of EU financial tools coherence

Data availability shows that most of the respondents consider the EU financial tool coherent. To the question 'To what extent were the different EU funded projects coherent?' participants reply positively in 82 % of cases, of which 87 % confirmed that the results produced were perceived as 'not conflicting'.

Barriers to the full exploitation and synergy among the different EU financial tools lie in the lack of technical support in ensuring the completion of the project life cycle from research/feasibility to implementation. For example, providing support for the second stage 'from demonstration to implementation' of mobility solutions which have proved to be successful in the Research and Demonstration phase. Local authorities feel that the initial efforts made for demonstrating bold and sometimes unpopular policies/measures are often stifled by the lack of subsequent funding opportunities for full implementation-. The critical transition from demonstration to implementation should be carefully and adequately assisted by the financial tools, possibly with clear indications/priority access to interdependent/inter-tools funding avenues. This approach would reduce the risk of policy/measure discontinuation and result in a more cost-effective use of EU funds. These conclusions link up with those of the next evaluation criterion.

6.6 Sustainability of EU financial tools

Sustainability concerns the likelihood of continued effects over the intended life of the project. The main factor that determines whether a measure is maintained over the lifetime of a project is its financial-sustainability. Another key driver that influences sustainable results is political commitment, including citizens' support. When the legal and political frameworks get together to leverage a measure, positive results may appear in the longer term. Some demonstrations from the FP financial tool continue after the end of the project, relying on the combination of the two mentioned factors. The involvement of industry in the demonstrations is often considered as a pre-condition to ensure sustainability in the long term, particularly in large-scale demonstration projects requiring comprehensive delivery teams (i.e. Smart Cities).

6.6.1 Strengths and weaknesses of EU financial tools sustainability

Data availability shows a clear indication of the sustainability of the projects' results after the end of the projects. The majority of beneficiaries (82 %) stated in fact that the projects continued to run after the ending of EU funding.

Weaknesses in sustainability mainly depend on the type of project under examination. Projects delivering pure knowledge transfer exercises, as in some IEE or LIFE projects, are likely to survive the EU funding for they effectively enact a strategic vision. More sectorial policies/measures, even on a large scale (e.g. urban logistics, cycling, parking and alternative fuels schemes) as in some FP, IEE, LIFE projects, may suffer the transition from demonstration to full implementation, for they often meet strong initial stakeholders' resistance and require years to be fine-tuned, financed and physiologically accepted.

6.7 Overall conclusions

Leaving aside the findings on the specific evaluation criteria, two overall conclusions can be drawn, concerning respectively 1) trends in EU funding distribution and 2) interplay among financial tools.

1. Sustainable mobility in European urban areas, including the promotion and uptake of alternative fuels, has benefitted from several funding opportunities during the financial perspectives 2000-2006 and 2007-2013.

The analysis of available data (525 projects, corresponding to about EUR 41 billion of EU financial support) has shown, on the one hand, the growth of beneficiaries in the passage from one financial perspective (2000-2006) to another (2007-2013), i.e. from 192 to 401 urban areas, some of which are located in countries with negligible EU funding in the previous financial perspective 2000-2006, such as Poland and Romania. There is therefore a clear trend towards the enlargement of beneficiaries.

On the other hand, the trend towards the increase of beneficiaries in absolute value is associated to a trend towards the relative concentration of EU funding to a small group of seven cities (Madrid, London, Barcelona, Athens, Stockholm, Prague and Rome), which account respectively for 56.5 % and 29.4 % of the total EU funding in 2000-2006 and 2007-2013, in particular due to the contribution of transport infrastructure projects. The concentration of spending at local level on a small group of actors may indicate the lack of capacity to involve a substantial number of beneficiaries in Europe, in particular as far as big transport infrastructure projects are concerned. If we consider the distribution of the EU funding without taking the big infrastructure projects into account (i.e. projects funded by the FP, IEE and LIFE financial tools), a diversified set of beneficiaries appears at the top ten in the two financial perspectives, showing an even share on the total funding related to non-transport infrastructure projects, respectively of 44 % in 2000-2006 and 40 % in 2007-2013 respectively.

2. The overall conclusions of the study raise the issue of the limited evidence of synergies in sharing knowledge and communication across the financial tools. Respondents have pointed out the need to ensure continuity of the projects through the integration with other programmes, which could represent the possibility to access other sources of

funding at different stages of the projects, i.e. from pilot/demonstration to large-scale implementation.

Considering the life cycle of an innovative urban project, throughout the upstream research and development stages to the downstream implementation stages, the prevailing stakeholders' opinions on the most efficient combination of financial tools may be depicted as follows:

		Life cycle project stages			
		Upstream-----> Downstream			
Financial Tools*	Life-Cycle stages	Research	Feasibility	Pilot /Demonstration	Implementation
	IEE		√	√	
LIFE		√	√		
FP		√	√	√	
CF-ERDF			√	√	√
EIB					√

(*) Financial tools operating in 2000-2013 period.

Given the broad and in some cases overlapping competences of the EU financial tools, in particular in the upstream stages (i.e. among IEE, LIFE, FP and CF projects), a more incisive attitude of the European Commission and Member States, e.g. smoothing time lags and delays in the implementation of EU funding programmes, standardising administrative forms, providing cross-cutting information on the potential synergy among EU financial tools, etc., would help the projects long-term continuation and facilitate the use of several financial tools, possibly with clear indications of the possible forms of priority access to interdependent/inter-tools funding avenues.

7. Recommendations

The recommendations are based on the consultants' interpretation of evidence from case studies, stakeholders' consultations and literature reviews summarised in chapter 6, and have been drawn in order to formulate interventions that can provide a better alignment of EU funding schemes with the needs of future beneficiaries, favouring synergies and positive interplay.

The recommendations focus on two issues:

1. General recommendations to improve the EU financial tools, including the development of synergies, smooth interplay and future priorities;
2. Specific recommendations to improve each financial tool.

When looking at the recommendations, it is important to take into account the limitations of this study. In some cases, the small sample of projects on which the ex-post assessment has been based has made it difficult to draw straightforward conclusions. This is particularly true for the TEN-T financial tool, whose marginal role in urban transport projects during the period under examination (2000-2013) may have reduced data availability.

7.1 General recommendations to optimise EU financial tools

1. Evidence from case studies and public consultations suggests a number of possible improvements to EU financial tools. Most of the suggestions relate to **reducing the weight of bureaucratic and administrative constraints** during the awarding and implementation phases of the different EU financial tools. This evidence has been particularly pronounced in EU-funded projects under the FP5-6 and 7.
2. The implementation of projects may present technical and administrative barriers, as well as **mutated political or context conditions**, that are not easy to foresee during the proposal phase of the project and that might require more resources than expected. Therefore, EU-funded projects need to have more flexibility in **reallocating resources**. Demonstration, research and pilot projects in the context of FP5-6 and 7 have raised this issue.
3. Funding should be provided at all stages, but when it comes to the pilot and implementation stages, **municipalities and especially local communities should be deeply involved**. There is in fact a need to increase the involvement of civil society organisations, local communities and others outside the government in EU funding and decision-making. Similar conclusions have been made in the Mid-Term Evaluation of the Implementation of the LIFE+ Regulation²⁸ where the important role of local actors has been emphasised.
4. Concerning the **participation of SMEs**, it has been stressed that the **complexity of the programmes, the length of the evaluation and decision process, and the slow administrative process of applying for EU financing** do not favour SME involvement (lack of time, knowledge, resources, experience with EU financing). It may even be more

²⁸ Mid-Term Evaluation of the Implementation of the LIFE+ Regulation. Final Report., 2010

difficult for NGOs to participate in these projects, as they have limited resources. Under all the EU financial tools in which SMEs are likely to get involved, i.e. FP5-6 and 7, LIFE, IEE, simplified administrative processes would increase the participation of SMEs.

5. **Funding** is important, even if the amount is not large in some cases. Only 6 out of 69 (<9 %) responses to the question: "could the same results have been achieved with less funding?" indicate that similar results could have been achieved with less funding, but with a longer period of implementation. In this context, it is important to ensure **consistency and proportionality between the allocated project budget and the objectives to be achieved**. In some cases, funding was not deemed appropriate. Projects trying to achieve ambitious objectives, such as improving public awareness with a view to changing mobility culture, either had too small a scope to reach a sufficient audience or were allowed an insufficient budget. In particular, IEE-funded projects have raised this issue. These projects specifically suffer from the lack of an appropriate budget for evaluation, which is typically reduced to a minimum when the overall allowance is too small.
6. **Long-term plans and strategies** for transport and environment at urban level (e.g. integrated transport plans, SUMP, etc.) are fundamental for a better implementation of EU projects²⁹. The **procurement procedure** for project adjudication should require the existence of a SUMP or an equivalent integrated mobility strategy at the urban level. The EC DG REGIO (CF and ERDF financial tools) has already taken steps forward in this direction. For example, when a managing authority wanted to finance urban transport projects and was negotiating cohesion policy programmes for the 2014-2020 period, DG REGIO required the initiatives to be in line with SUMP or other strategic documents on urban mobility/clean air.
7. Concerning **interplay and synergies** among different EU tools, evidence from the study shows that FP5-6-7 and IEE project funding is most effective when provided during the pilot or demonstration stages. **Major efforts should be devoted to raising awareness among beneficiaries of the different funding streams that can best address the different project cycle stages**, e.g. research, testing, roll-out, commercialisation, etc. To this end, some respondents have suggested the centralisation of the supporting activities (administrative guidelines, information, coordination) under a dedicated European agency, so as to facilitate the combination of more than one funding source.
8. The optimisation of EU financial tools also requires **a better alignment of funding schemes with the future needs of urban areas**. Evidence from the study shows that most of the cities have expressed an overall appreciation of EU interventions designed to enhance local mobility. However, responses from the case study questionnaires have suggested the following four future topics for funding:
 - 1) the use of alternative fuels in urban areas (including the public procurement of clean vehicles, mainly electric), which has become increasingly relevant;
 - 2) new technologies for public transport and traffic information;
 - 3) measures to improve air quality;
 - 4) urban infrastructure (the extension of metro lines, pedestrian and cycling areas, etc.).

²⁹ See also the Ec Communication "Together towards competitive and resource-efficient urban mobility" Brussels, 17.12.2013 COM (2013) 913 final

7.2 Specific recommendations to improve each financial tool

The following table summarises the recommendations for each financial tool. Recommendations are not made for the TEN-T financial tool due to insufficient information.

Financial tool	How to improve the financial tool
1. The European Regional Development Fund (ERDF)	<ul style="list-style-type: none"> • Strengthening coordination between urban projects and overall strategies and objectives included in Operational Programmes. Findings from the analysis indicate that coordination with national operational programmes has helped improve funding performance. Such a coordination, to be effective, must involve not only the regional or national authorities, but the municipalities as well. • Improving the accuracy of projects' evaluation at the feasibility stage. A better assessment of financial sustainability of the ERDF projects would benefit from more accuracy in some relevant indicators; e.g. expected growth in transport demand. •
2. The Cohesion Fund (CF)	<ul style="list-style-type: none"> • Reducing shortcomings in the ongoing monitoring of programmes, particularly in terms of outcomes and results. Indications from the study's sources support the consideration made in the European Court of Auditors' report on ERDF and CF projects (2014), stressing that the management of CF projects dealing with the implementation of infrastructure may require that a minimum number of result indicators with related targets be included in the grant agreements and subsequently measured, in order to reduce the risk of cost overruns and delays. • Improving the capability to involve private sector funding. Findings from some CF funded projects stress the lack of funding from the private sector. Simpler tender procedures and shorter time lag in spending may stimulate the involvement of the private sector. As stressed in previous ex-post evaluation studies³⁰, private investors have been reluctant to commit to projects that are seeking cohesion policy funding, because of the time that lapses before there is certainty that that cohesion policy funds are made available.
3. The LIFE programme	<ul style="list-style-type: none"> • Ensuring additional funding. Findings from the study show that the results obtained through EU funding may be undermined by the lack of funding after the end of projects.

³⁰ DG REGIO, 2016, "Ex-post evaluation of Cohesion Policy programmes 2007-2013, focusing on the European Regional Development Fund (ERDF) and the Cohesion Fund (CF)"

Financial tool	How to improve the financial tool
	<ul style="list-style-type: none"> • Setting longer timing for demonstrations. Findings also indicate that, despite good results, demonstration activities under LIFE suffered because the timing was not appropriate. Operational experimentation was not sufficient to obtain the benefits, i.e. paving the way to commercialisation and wide diffusion.
<p>4. The 5th, 6th and 7th Framework Programmes (FP5, FP6 and FP7)</p>	<ul style="list-style-type: none"> • Streamline administrative procedures. There are indications that sometimes the biggest challenges that cities had to overcome when they participating in FP, e.g., CIVITAS, had to do with administrative issues (such as excessive reporting, too long appraisal periods to award funds, etc.). • Facilitating the involvement of SMEs. In the FP financial tool, when SME participation was low, it was mainly due to lack of awareness of EU incentive programmes or SMEs' apprehension regarding the onerous EU administration, which might be difficult to handle for small entities with limited staff, and the long waiting time for payments, • Improving funding flexibility and risk coverage. Findings from demonstration projects involving new technologies, e.g. CUTE on hydrogen fuel cell buses in Stockholm, or CARAVEL on CNG buses in Krakow, indicate that more budget flexibility may be needed to face unexpected technical barriers, which may increase costs and make the budget inadequate to project objectives. • Implementation of supporting measures. Some beneficiaries of the FP financial tools would have appreciated the possibility of spending larger portions of budgets on the 'hard' aspects of implementation, especially secondary infrastructure and ITS applications. More generous infrastructure funding associated with recognised policy/measure innovation could in fact enhance the relevance of the financial tool.

Financial tool	How to improve the financial tool
<p>5. Intelligent Energy Europe (IEE): Energy in transport (STEER)</p>	<ul style="list-style-type: none"> • Setting up projects' targets consistent with their urban scale. Sometimes ambitious targets, i.e. improving modal split at the urban level, are not proportional to the project's scope, which can be at too small a scale to generate significant impacts at the city level. • Ensuring plans for continuity after the project ends. Some beneficiaries pointed out that if a project is successful, it should receive a longer commitment from the EU funding after the end of the project. This would make it possible to continue or extend the project to a larger scale. • Moving from demonstrations to implementation. A by-product of the need to ensure continuity to projects is the respondent's concerns about the lack of implementation stages, which could undermine the IEE pilots and demonstrations' capability to gain better visibility for local stakeholders.
<p>6.TEN-T</p>	<ul style="list-style-type: none"> • No recommendation due to insufficient information
<p>7. EIB tool</p>	<ul style="list-style-type: none"> • Easing administrative burden. Even though the projects managed by the EIB financial tool are considered satisfactory and efficient, some respondents pointed out that administrative burdens, e.g. heavy reporting and monitoring requirements, could be relieved.

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