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CIVITAS 2020
Cleaner and better transport in cities

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Disclaimer

The present Guidelines represent a research document developed by SUITS (Supporting Urban Integrated Transport Systems; Transferable Tools for Authorities) Project, a four-year research and innovation action, intending to increase the capacity building of Local Authorities and transport stakeholders to implement sustainable transport measures.

SUITS is one of the three projects of the EU's CIVITAS 2020 initiative focusing on sustainable urban mobility plans. The SUITS project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement no. 690650 / 2016.

This document is a final version and is provided for use by EU Local Authorities / stakeholders willing to understand the spirit of the European reform in public procurement, and to apply innovative procurement criteria and procedures in support of mobility sustainable development-related policies.

This version will be used in the context of the legislation in force.

Through the care of SUITS partners, the final version of the Guidelines is due to be released in November 2019, in 8 European Union official languages (English, Romanian, Italian, Spanish, German, Greek, Portuguese, Lithuanian).

The information and views set out in these Guidelines are those of the authors and do not necessarily reflect the official opinion of the European Union. Neither the European Union institutions and bodies nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

In case the potential beneficiaries have questions or need clarifications referring to the Guidelines, they are asked to address: office@integralconsulting.ro

Abstract

The new legislative framework [1] related to Public Procurement across the EU brings about a major shift in terms of public procurement procedures, and necessitates a reconsideration of public authorities' organisation and capacities.

Within the procurement procedures, the contracting authorities and institutions will have to go beyond strictly applying legal provisions, aiming at the strategic application of public procurement, to also include environmental and social objectives and innovation potentials in their procurement selection.

The main objective of the complex procurement reform is for procurement to greatly benefit society with a view to long-term sustainable development, not only based on the lowest price.

This document provides a guide for local authorities and other stakeholders to apply to schemes for innovative procurement in the planning and implementation of innovative sustainable mobility measures.

Consequently, SUITS will offer strong support to local authorities and other stakeholders in their endeavours to develop more effective approaches regarding transport plans and implementation.

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Dissemination Level:
PU – Public.
PP - Restricted to other programme participants (including the Commission Services).
RE - Restricted to a group specified by the consortium (including the Commission Services)
CO - Confidential, only for members of the consortium (including the Commission Services)

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Abbreviations

CIP	Capital Improvement Programme
CSA	Coordination and Support Actions
DG Grow	Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs
EC	European Commission
EIB	European Investment Bank
EEA	European Environment Agency
EIF	European Investment Fund
ESIF	European Structural and Investment Funds
ESPD	The European Single Procurement Document
EU	European Union
GDP	Gross Domestic Product
H2020	Horizon 2020
LAs	Local Authorities
LCC	Life Cycle Cost
OECD	The Organisation for Economic Co-operation and Development
OJEU	Official Journal of the European Union
PCP	Pre-Commercial Procurement
PM	Particulate Matter
PPI	Public Procurement of Innovation
PTO	Public Transport Operator
S-M	Small and Medium
SME	Small and medium-sized enterprise
SUITS	Supporting Urban Integrated Transport Systems
SUMP	Sustainable Urban Mobility Plan
TED	Tenders Electronic Daily
WP	Work Package

Executive Summary

The overall objective of the SUITS project is to enhance the capacity of small and medium (S-M) local authorities to develop and implement sustainable, inclusive, integrated and accessible transport strategies, policies, technologies, practices, procedures, tools, measures and intelligent transport systems that recognise the end-to-end travel experiences of all users and freight.

The aim of the innovative procedures and criteria introduced for public procurement is to serve the city's long-term interests with a view to society's sustainable development.

This objective can be achieved by means of adequate decision-making support tools to aid innovative and sustainable financing, the implementation of schemes for innovative procurement, and the development of new business models and partnerships.

The Guidelines to Innovative Procurement is one of the three decision-making support tools for local authorities and other stakeholders, provided under SUITS WP4. The Guidelines aim to enhance the administrative capacity of the local authorities and to contribute to the training of personnel in charge of procurement, not necessarily through preset patterns, but by teaching them to think creatively, so that the products and services obtained from public procurement may best meet the wider objectives of sustainable development.

The document was first drafted on 30.09.2017. This first draft, just like the following ones, were submitted to the 23 partners (from 10 countries) under SUITS project, as well as to local authorities and stakeholders through direct and online dissemination actions.

Alongside the other two Guidelines developed under WP4, the Guidelines to Innovative Financing, and the Guidelines to Developing bankable projects, new business models and partnerships, the Guidelines to Innovative Procurement was tested within a pilot application in Alba Iulia Municipality, in the time interval June 2018 – October 2019. During the same time period, the Guidelines were used by the partner Municipalities / Stakeholders under SUITS project: WMCA - Coventry, Kalamaria- Greece, RSM - Italy, INNDEA - Spain, Las Naves- Spain, Stuttgart – Germany.

Following further research, and all the feedbacks received, the Guidelines have been subject to 11 stages of upgrading and completion.

The Guidelines include a package of annexes with specifically applied templates in support of the users.

This document is a final version and is provided for use by EU local authorities / stakeholders willing to understand the spirit of the European reform in Public Procurement, and to apply innovative procurement criteria and procedures in support of the mobility sustainable development- related policies.

To this end, an Integrated Decision Support Tools has been developed under WP4.

Even if it is still at its test and upgrading stage, it is already accessible on the site www.rossada.solutions/suits/decision_tool/idst.html , and can be used alongside the 3 Guidelines.

NOTE! This site will be replaced by https://www.suits-project.eu/

Together, the Guidelines to applying innovative and sustainable financing and the Guidelines to developing bankable projects, new business models and partnerships, make up an integrated online package – a true decision-making user-friendly support tool to successfully plan and implement innovative sustainable mobility measures.

1. Introduction

1.1. SUITS goal and objectives

Supporting Urban Integrated Transport Systems: Transferable tools for authorities – SUITS is a research project financed under the HORIZON 2020 programme. SUITS addresses the topic: 'Strengthening the knowledge and capacities of local authorities' (MG-5.4-2015) [2].

The overall aim of SUITS is to support the cities in their efforts to enhance their capacity to reduce congestion and pollution, as well as to develop sustainable mobility with a view to improving the quality of citizens' life.

One of the key areas that SUITS targets, refers to the capacity gaps in S-M local authorities' knowledge and work practices which may have arisen due to government and economic cutbacks, re-organisation, changing technology, new business entrants, shifts in mobility, changing expectations of citizens and new directives (e.g. in terms of financing and procurement).

The project's overall objective is to enhance the capacity of small and medium (S-M) local authorities to develop and implement sustainable, inclusive, integrated and accessible transport strategies, policies, technologies, practices, procedures, tools, measures and intelligent transport systems that recognise the end-to-end travel experiences of all users and freight.

This objective can be achieved by means of adequate decision-making support tools in aid of innovative and sustainable financing, the implementation of schemes for innovative procurement, and of development of new business models and partnerships.

Through SUITS tools and methods will be provided which meet the requirements of S-M cities to enhance their capacity to plan, finance and implement sustainable transport measures and create new business opportunities.

Under SUITS WP4 three Guidelines were developed to aid decision making in S-M cities in relation to the development of sustainable mobility, namely:

- Guidelines in applying Innovative and Sustainable Financing approaches
- Guidelines to Innovative Procurements
- Guidelines to the development of bankable projects, new business models and partnerships

These three Guidelines were used within a Pilot Application by Alba Iulia Municipality, Romania in the time interval June 2018 – October 2019.

The Pilot Application is aimed to check the utility and efficiency of these three Guidelines in Alba Iulia Municipality's policies and procedures related to the implementation of innovative sustainable mobility measures and to enhance its organisational structure and work procedures. The other cities and partners in SUITS will act as advisors to ensure that the final guidelines remain relevant to the wider European context.

A workshop was held in Alba Iulia, where presentations were made on:

- The Pilot Application
- The final versions of the three Guidelines and their annexes (in 8 languages)
- The test version of the integrated system of decision support tools.

Between November 2019 – July 2020 the nine partner cities (Westmidlands Combined Authority – WMCA Coventry, Stuttgart, Dahau, Palanga, Rome, Valencia, Torino, Alba Iulia, Kalamaria) in the SUITS project applied the know-how provided by WP4, in order to enhance the administrative capacity to implement innovative sustainable mobility measures.

Dissemination and other traning activities were jointly co-ordinated with SUITS's workpackeges WP5, WP8, WP9.

In July 2020, a joint workshop will take place, to present the activities and achievements in the nine participating cities by applying the results and the know-how from all SUITS WPs.

1.2. Guidelines to Innovative Procurements

1.2.1. Goals

The Guidelines goals are:

- To provide a useful and efficient tool to apply innovative measures in the procurement policies and procedures related to mobility sustainable development.
- To enhance the administrative capacity of authorities and stakeholders in small and medium-sized cities with a view to facilitating sustainable mobility development.

1.2.2. Objectives

The Guidelines' main objective is to contribute to training the personnel in charge of procurement, not necessarily through present patterns, but by teaching them to think creatively, so that the products and services obtained as a result of public procurement may also fulfil the wider goals of sustainable transport as described at large in the SUMPs (eg improved mobility, access and life quality).

Public procurement is relevant to the ten CIVITAS Themes [3], and the Guidelines to Innovative Procurement have been developed with these in mind.

The main objectives of the new EU Procurement and Concession Rules introduced on 18 April 2016, [1] were:

a) To enhance efficiency and provide support for SME access to public procurement;

b) To modernise public services and slash administrative burden;

c) To create a culture of integrity and fair play;

d) To ddress societal challenges; and

e) To promote Single Market. Boost jobs, growth and investment.

1.2.3. Importance of innovative improvements in procurement strategy and procedures

European cities are faced with a series of common challenges regarding transport and mobility, with a negative effect on the European economy and on the quality of life of European citizens. Among them:

- Traffic congestion - millions of hours are spent in urban and regional congestion. Congestion in the EU is often located in and around urban areas, and the estimated cost is around EUR 130 billion annually [4], or just over one percentage of the EU's GDP;
- Quality of transport services, with a major impact on the quality of citizens' life;
- Accessibility of the urban transport system for senior citizens and people with disabilities or reduced mobility. One in six people in the EU has a disability ranging from mild to severe while the population in most EU countries is aging. Senior citizens, 65+, are expected to account for 24% of the total population by 2020 and 29% by 2050 as opposed to 17% today [5].
- Urban sprawl: necessity of covering longer distances, and implicitly the increase in the number of car owners and in commuter traffic;
- Energy consumption - domination of oil as a transport fuel and resulting emission and pollution;
- Safety and security – Approximately 67% of all reported road traffic accidents in the EU take place in urban areas. For road traffic deaths, this is approximately 38% in urban areas in 2015 [6]; with a slight lowering to 37% in 2016 [7]. There is an aim to decrease by 50% in transport accidents by 2020 (as compared to 2010) [8]), which is unlikely to be met, as since 2013 there has been no great change [9].
- Land use for traffic roads and parking to the detriment of safeguarding the natural environment and the pedestrian areas or the zones of cultural / social / tourist interest;
- Population ageing;
- Health problems caused by air pollution and noise - Heart disease and stroke are the most common reasons for premature death attributable to air pollution and are responsible for 80 % of cases [10]; [11];
- Climatic changes - Urban traffic is responsible for 40% of CO2 emissions and 70% of emissions of other pollutants arising from road transport [12];
- Increase in mobility costs, both for municipalities and citizens.

The Transport White Paper – 2011 [4] proposes strategic objectives to be met by 2050, and calls for cities to follow a mixed strategy involving land-use planning, pricing schemes, efficient public transport services and infrastructure for non-motorised modes and charging of clean vehicles to reduce congestion and emissions. It specifically encourages cities to develop SUMPs bringing all these elements together.

To rise to these challenges, joint actions of local authorities, transport operators, local business, logistic suppliers, landlords, estate developers, stakeholders and citizens are called for at the scale of each city. There is a wide range of available tools to put this effort into practice and conduct efficient interventions to benefit communities.
The public procurement reform plays a very important role in reaching these objectives, also considering as follows:

'Every year, over 250 000 public authorities in the EU spend around 14% of GDP on the purchase of services, works and supplies. In many sectors such as energy, transport, waste management, social protection and the provision of health or education services, public authorities are the principal buyers. Transparent, fair and competitive public procurement across the EU's Single Market generates business opportunities, drives economic growth and creates jobs' [13].

'The total value of public procurement in the EU is estimated at €2 trillion per year – or about 19% of European GDP. The way in which this money is spent has clear implications for the economy, as well as for the organisations spending it and the citizens who ultimately avail of their services' [14].

The estimated value of tenders published in TED excluding utilities and defence 'is an increase of 9.2%, from 319.66 in 2014 to 349.18 billion in 2015. […] Excluding utilities and defence, significant increases were in Romania (33%), Estonia (31%), Slovenia (24%), UK (23%) and Malta (21%)' [15] .

The principles and legal framework of public procurement within the EU are mainly defined under Directives 2014/24/EU [16], 2014/25/EU [17], 2014/23/EU [18] which enhance the efficiency of the public procurement system in Europe, and foresee more intelligent norms and electronic procedures. At the same time, these new norms allow the authorities to use public procurement to try to reach more far-reaching political objectives, such as the social, environmental-, innovation objectives. Based on these Directives, each member state has implemented a legislative package and methodologies providing a legal framework through which public procurement procedures must be conducted.

Since 18 April 2016 (the deadline set by EC for transposing Directives 23, 24, 25/2014 in the legislations of the Member States), three directives on public procurement and concessions adopted in 2014 have profoundly changed the way the Member States and public authorities spend money on European public procurement every year.

1.2.4. How to use the present Guidelines

Within the procurement procedures, the Contracting Authorities and institutions are required to comply with the legal provisions, whilst also combining their creativity and analytical power in order to make those procedures more efficient ('best value for money') and to put the spirit of the Procurement Reform into practice.

The Guidelines to Innovative Procurement advocate this performance-oriented paradigm shift at the level of the contracting authorities and other institutions with purchasing control.

The present Guidelines should be applied in the specific context. The context LAs act, refers to legislation, procedures/regulations, political factors a.s.o., and is specific to each and every LA and in compliance with the above-mentioned documents. These Guidelines are intended to point out certain innovative procedures, as well as to explain modalities and examples of applying them.

The Guidelines include the theoretical, legal etc. considerations related to the procurement reform and to the modality the LAs should approach this issue. The annexes are independent, but they come in useful in support of the Guidelines utilisation to describe the legislation and the organisational framework related to the EU and to each country, which each LA conducting public procurement must know and comply with.

Some annexes go into more details when dealing with complex, difficult issues, providing examples, case studies etc

The Guidelines are structured as follows:

- Chapter 1 describes the background against which the Guidelines were developed (1.1.), their target, objectives and limits (1.2.);
- Chapter 2 outlines the research methodology;
- Chapter 3 presents the legal and regulatory framework of the public procurement in the EU and in part of its member states, as well as references to strategies and governance from the perspective of innovative public procurement in urban mobility areas;
- Chapter 4 deals with the innovative approaches to public procurement procedures in urban mobility area along with the presentation of the public procurement reform (4.1.) and the modernisation of public services and of public procurement procedures (4.2.);
- Chapter 5 refers to innovative procurement procedures and includes the presentation of innovative awarding criteria (5.1.), innovative procedures for procurement of supplies and services (5.2; 5.3);
- Chapter 6 deals with essential aspects and recommendations for enhancing the capacity of local authorities and other stakeholders through the public procurement reform;
- The Guidelines include a package of annexes containing information on EU legislation in the field of public procurement - A1 and annexes A2, A3 - in which innovative public procurement is discussed from a practical perspective.
  - Annexes A1 – Institutional system and legal framework in the field of procurement;
  - Annexes A2 – Innovative evaluation criteria:
    A2.1. Life Cycle Costs (LCC) criterion; A2.2. External transport costs.
  - Annexes A3 – Innovative procurement procedures.

1.2.5. Limitations

- In keeping with the aim and objectives specified, the present Guidelines can be used in conjunction with current legal regulations.
- With complex procurements, the recommendations must be adjusted to / correlated / completed in accordance with specific technical requirements, as well as with the specific legal norms and provisions.
- The status of the Procurement Guidelines is to support and provide guidance to the people in charge of public procurement. The Guidelines do not replace nor modify the provisions of the legislation in force.
- The present document is not an instruction manual.
- The present document does not stand for a legal interpretation of the EU legislation.

1.2.6. Role of stakeholders in developing the present Guidelines

Developed by a team of researchers, the Guidelines should become a practical and efficient tool to aid local administrations and stakeholders put into practice public procurement reforms, in keeping with the new EU procurement and concession rules of 18 April 2016.

Throughout the Pilot Application, the partner cities, the SUITS partners as well as other stakeholders contributed to the upgrading and optimisation of the three Guidelines. Starting from the experience gained under the Pilot Application, and from the feedback received, an integrated decision support was provided.

The SUITS team set up a network of users amongst whom we circulate and discuss information relating to the Guidelines utilization in procurement procedures and in enhancing the administrative capacity, so as to jointly reach the best results. As the importance of a collaborative approach is acknowledged, we collaborate with the CIVITAS[1] network and Eltis[2], so that the European cities may get to know and use the Guidelines.

[1] CIVITAS is a network -(www.civitas.eu) of cities that are dedicated to cleaner, better transport in Europe
[2] Eltis Platform (http://www.eltis.org) facilitates the exchange of information, knowledge and experiences in the field of sustainable urban mobility in Europe

2. Research Methodology

The organisation and conduct of public procurement procedures is regulated by EU Directives and national legislation. The activities were conducted to study the specialised literature, the legislation and the good practice in the field, to identify and explain the innovative aspects concurring to the procurement reform. The explanations provided and recommendations made are intended to facilitate the understanding of the importance of procurement, not only in terms of procurement value (minimum price criterion), but particularly in terms of the major long-term effects regarding the social field, the environment, fostering innovation, enhancing business – public interest interaction, reducing costs and bureaucracy etc.

The research is aimed at understanding these aspects and their interactions, as well as at pointing out the innovative procedures and criteria to be considered and transposed in procurement procedures. Also, the research points out the connections between the procurement procedures and other complementary activities such as innovative financing, innovative business models and partnerships (in line with the package made up of the three complementary Guidelines developed in WP4-SUITS).

A qualitative research method with an abductive approach was used. Aspects related to framing the cities in their respective contexts were analysed, and references provided by various stakeholders were used in order to most adequately interpret certain aspects of reality. The research does not put forth strict rules; it will assist with the inherent understanding of the importance and effects of procurement, allowing for a scientific approach of the procurement procedures and for their continuous upgrading based on expertise, objectives and permanent evolution.

The research involved many activities, as follows:

- Undertaking a desktop study of official documents of the EU and other countries;
- Consulting documentation on scientific studies published or elaborated under other EU research projects;
- Collecting information from the authority representatives and from other stakeholders from the 9 cities participating in SUITS;
- Correlating and using information and studies from the other WPs in SUITS;
- Selecting opinions, experiences, both from the public and the private sector;
- Reviewing public tender documents;
- Analysing documents and summing up, aggregating and validating data;
- Interpreting results;
- Researching case studies;
- Presenting recommendations and conclusions.

Online documentation in the public domain has been augmented with source documents collected / selected within the research work, and those available in our own data base or contributed by the partners. The document includes text modules, graphic illustrations relevant to the content of the work. The Guidelines developed as a result of a research work include certain formulations or ideas either taken over as such from various EU documents or interpreted in the authors' vision. Throughout the process of drafting the Guidelines, the elaborator communicated with the SUITS partners as appropriate.

3. Public Procurement in Urban Mobility Area

The European Commission has promoted and developed the SUMP concept and has provided the necessary tools and guidance in to support European cities implemementing their mobility plans. The SUMP concept has been developed /disseminated in a series of EU documents, such as:

- COM(2013) 913 final,'Together towards competitive and resource-efficient urban mobility' [19]
- COM(2011) 144 final, White Paper 'Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system' [4];
- COM(2010) 2020 final,'Europe 2020: A strategy for smart, sustainable and inclusive growth' [20]
- COM(2009) 490 final 'Action Plan on Urban Mobility' [21];
- CIVITAS Initiatives.
- Online platform 'Urban Mobility Observatory' (Eltis)

As part of Action 1 of the EC Action Plan on Urban Mobility to accelerate the large scale take-up of SUMPs by local and regional authorities in Europe, a standardised methodological framework for drawing up the SUMPs, created a framework of collaboration and know-how exchange among the cities elaborating and implementing the SUMPs (ELTIS platform, CIVITAS initiatives), as well as of twinning / collaboration of various Horizon 2020 research projects (e.g. SUITS) with CIVITAS and other projects with a view to making efforts more efficient, training and disseminating the results etc.

The initiatives and projects financed under EU programmes bring together the parties concerned and experts from various cities to analyse the current approaches, discuss different local or regional issues, identify the best practice to plan and efficiently use public funds within the public procurement process, as well as to enhance the capacity of the authorities and stakeholders to apply them innovatively and efficiently.

These Guidelines aim to explain the procurement reform and provide recommendations so that innovative public procurement (together with innovative financing and business models) may become drivers in enhancing LAs capacity to apply the measures foreseen in the SUMPs.

3.1. EU procurement legal and regulatory framework

In 2004 the European Directives (17/2004/CE [22] and 18/2004/CE [23]) were developed as the first European regulatory step taken regarding procurement procedures. Research projects financed under European programmes after 2004, pointed out innovative aspects with a view to a new approach to the public procurement and about criteria like energy consumption, environmental impact, Life Cycle Costs etc.

Among these projects, the following are noteworthy:

- Project EcoRailS - Energy Efficient and Environmental Criteria in the commissioning of regional rail transport vehicles and services, Programme IEE, (2009÷2011). [24]
  Based on the studies conducted within the project, and on independent tests conducted in Italy, Romania, Germany and Sweden-Denmark, the Guidelines and Annexes to Procurement for Public Transport Administration in Europe were created (in 6 langages). [25]
- Project PROSPER – Harmonised Enviromental Specifications for new Rolling Stock funded by UIC – result UIC leaflet 345/2006. [26]

- Railenergy Project "Innovative Integrated Energy Efficiency Solutions for Railway Rolling Stock, Rail Infrastructure and Train Operation" [27] - 2006-2010 financed by UNIFE and by the 6th Framework Programme for Research and Development. Railenergy addresses the problem of energy efficiency aiming to cut the energy consumption by developing a holistic framework approach, new concepts and integrated technical and technological solutions to improve energy efficiency.
- RAVEL project, 2001 - capability of improving the eco-efficiency of railway vehicles during their entire life cycle, besides reducing the environmental impact.
- REPID project - Rail sector framework and tools for standardising and improving usability of Environmental Performance. [28]
- EVENT project - Evaluation of Energy Efficiency Technologies for Rolling Stock and Train Operation of Railways [29]
- IEE Project TRAINER: Cooperation in improvement of energy-efficiency by railways (2007) [30]

This fuelled the need for reform in public procurement, which was seen as essential in domains of public interest, for instance Transport, Mobility, Energy, Innovation. In these areas of long-term development evolution is rapid and supplies and services have a determining role in sustainable development and in enhancing life quality. As a result of the EC undertakings, as well as of the aspects pointed out through such research works, the following materials were produced:

- Directive 2009/33/CE [31] - Promotion of clean and energy-efficient road transport vehicles, amended by Directive of the European Parliament and of the Council COM(2017) 653 final [32] and 2019/1161 [33]
- Regulation (EC) no 1370/2007 [34], Public passenger transport services by rail and by road
- Directive 2014/24/EU on Public procurement [16], replacing Directive 2004/18/EC [23]
- Directive 2014/25/EUon Procurement by entities operating in the water, energy, transport and postal services sectors [17], replacing Directive 2004/17/EC [22]
- Directive 2014/23/EU on the Award of concession contracts [18], which does not directly replace a previous directive.

These Directives are new or change and amend the provisions in the previous European legislation (Directives 2004/17 and 2004/18). The effect of applying these legal changes is the public procurement reform as it is briefly described in the Guidelines.

In line with the Article referring to the Transposition and transitional provisions under the Directives the Member States were asked to put into force the laws, regulations and administrative provisions necessary to comply with these Directives by 18 April 2016. The new legal framework contributes to enhancing the efficiency of the public procurement system in Europe and foresees more intelligent norms and a larger number of electronic procedures.

The new legal framework will make it easier for SMEs to participate in the tenders for contract awarding under public procurements, whilst also allowing for the EU- promoted principles of transparency and competition to be complied with. The facilities for SMEs refer to: the fact that contracts are divided into several parts, a lower threshold of the turnorver admitted in the tender, less documentation required, compulsory utilisation of online procurement, having the benefit of the Digital Single Market.

This new legal framework makes it possible for a strategic use of public procurement to follow important political objectives, whether societal, or related to the environment, or promoting innovation in the European economy.

As Elżbieta Bieńkowska, Commissioner for Internal market, Industry, Entrepreneurship and SMEs (2016) puts it:

> *'Public procurement rules are there to ensure that taxpayers' money that goes into the public purchase of goods, works and services is well spent. The new rules will further simplify public tender procedures and render them more flexible to the benefit of SMEs in particular. They also encourage the shift towards an energy and resource efficient economy alongside the well-established objective of achieving the best quality-price ratio.* [35]*'*

Bearing in mind that EU Directives and the national legislation are periodically subject to review and amendment, the aim of WP4 was to use the know-how and experience developed under the SUITS project in Alba-Iulia pilot application, and by the other partner Municipalities and stakeholders, respectively, may actively contribute to these upgrades.

3.2. EU Member States procurement legal and regulatory framework

Annexes A1 (A1.1 ÷ A1.7) to the Guidelines present syntheses referring to the legal framework and the institutional system in the field of public procurement at EU level and for part of the member states.

3.3. Public procurement strategies

The new regulations in public procurement, and accompanying documents published at EU level, as well as the diversity of approaches are instrumental to developing competitive strategies in the field of sustainable urban mobility. That can support decision makers at the level of municipalities to identify the range of possible actions and steps necessary to implement the most adequate mobility related measures.

These tools should be part of an adequate and significant strategy in order to conduct high-performance innovative activities at the municipality scale.

> *'Authorities that have already made the transition to eProcurement report savings between 5% and 20%. Given the size of the total procurement market in the EU, each 5% saved could return around €100 billion to the public purse.'* [36]

Having in view the specific character of the reform in procurement and in the modernisation of public services, the role of (long-term) strategies and procurement plans becomes a first priority in order to be able to initiate, develop and optimise the new procedures of innovative procurement, financing, and innovative partnerships.

3.4. Public procurement governance

Institutional and governance frameworks and their related networks are critical for urban transport infrastructure and services (planning, delivery, operation etc.).

Governance in urban mobility area is faced with major difficulties among which are the lack of financing and multi-annual long-range budgets, frequent modifications in leadership (elections), the lack of knowledge / acceptance of certain measures by the population etc.

The new public procurement paradigm at the EU level allows public administrations to become more efficient and flexible in relation to the communities' needs. The new directives are aimed at ensuring a fair and innovative competition framework, as well as at efficiently promoting a good governance in public procurement.

Improving governance, reducing bureaucracy, transparency, simplifying procedures, training personnel to high professional standards, and using e-tools in public procurement are relevant elements in fighting fraud and corruption.

Both public authorities and the stakeholders in the field of procurement shall enlarge their sets of skills in order to be able to rise to the complex challenges posed by the market.

A specific research area must provide the necessary know-how to assist governance in urban mobility for an optimum administrative organisation with competent and creative personnel.

4. Innovative approach to public procurement procedures in urban mobility

Sustainable urban mobility development depends on several components to be best enhanced and correlated. These components can fall under the scope of the procurement of:

- Supplies (transport vehicles, traffic lights, spare parts etc.)
- Services (electronic ticketing, traffic management system, bike sharing, traffic data collection and monitoring services, traffic control systems, parking management, transport modelling and simulations etc.)
- Works (building or modernisation of routes and stops for public transport, bike lanes, pedestrian areas, building of park and ride facilities, charging points, street modernisation)

The innovative aspects in procurement procedures refer to the means by which the reform and its objectives (defined under para 1.2.2.) can be best and most efficiently reached. The innovative solutions for public services need to play an essential role in providing better services with a long-term value for money. Without neglecting the importance of financial resources in procurement, innovation depends on the creativity and competence of human capital as well as on management strategy.

4.1. Public procurement reform

In keeping with EU documents on public procurement, the new European Directives (Directives 23, 24 and 25) from 2014, which made void or amended the old Directives (from 2004), emphasise the extremely important role of public procurement and propose the basic reform in this field, so that its objectives may be reached.

Transposing these in each state means developing a national legislation and strategy in keeping with the provisions made under the European directives. Of course, even if this stage has been officially reached, the actual reform must take place within each public procurement procedure and

within each central, regional and local authority, or at the level of other parties concerned, stakeholders launching public procurement procedures.

In all cases, the authorities/ parties concerned must apply the new national legislations in line with the public procurement reform as imposed by EU directives. Even if these legislations are already in force, the reform must be understood and applied in terms of its innovative character. To this end, all personnel in charge of public procurement must be reorganised, selected and trained to understand the gist of the reform, to apply it creatively in the context of the new legislation, to take inherent risks. There will be new procedures which can be challenged or modified – particularly those in which the complementary legislation and application are not yet elaborated, or not comprehensive.

Public procurement reform is aimed at opening the EU public procurement market, promoting through procurement the most competitive supplies / services related to sustainable development long-term desiderata.

The main innovative elements of the Reform [1] in public procurement refer to:

4.1.1. e-Procurement, increasing efficiency

The new approach to public procurement regulations is based on the compulsory introduction of e-procurement in the public sector. This includes e-tender platforms, e-tenders, e-catalogues, dynamic electronic- procurement and -billing systems.

Modalities through which EC supports digitisation in the field of public procurement:

- The introduction of the European Single Procurement Document (ESPD) – a self-declaration form of a tenderer regarding the financial status, the competences and the compliance with the criteria of public procurement procedures. The document is available in all EU languages and is used as a preliminary proof of fulfilling the necessary criteria of EU public procurement procedures. Thus, the tenderers no longer need to provide complete documentary proofs when entering the competition. It is only the winning tenderers that will have to submit all the documents proving they qualify for contract awarding. Each document is submitted just once to the authorities, so that they can check the tenderer's eligibility. This drastically reduces the bulk of documents necessary for selecting tenderers, while also reducing bureaucracy.
- The tenderers can be excluded from the public procurement procedure, or can be sued if the information provided in their ESPD is false, if there is undisclosed information, or the information cannot be backed up by supporting documents.
- E-Certis is a free online source of information regarding the documents and certificates needed by the companies bidding for public procurement contracts in EU member states. E-Certis system allows for a rapid search, by using a series of criteria, inclusively searching for key words in the original language of the document. Electronic submission of public procurement documents shall be compulsory by October 2018.

Public procurement digitisation will create, amongst other things, a more transparent and efficient information flow, a wider access to information, particularly for SMEs, while also simplifying the approach to cross-border tendering opportunities. Electronic public procurement supports the reduction of bureaucracy and enhances the efficiency of administrative expenses, as well as contributes to economic development by providing more open and fairer access to public procurement markets.

4.1.2. Encourage SMEs participation in public procurement

SMEs are considered the EU's economy backbone, as they have a huge potential of job creation, growth and innovation. Easier access to public procurement markets for SMEs has a positive impact on economy. The simplification of the requirements referring to the procurement procedures- related documentation, as well as the compulsory utilisation of e-procurement will facilitate SME access to public procurement and make their activity more efficient.

Directive 2014/24/UE foresees under art. 46 the member states' right to introduce the division of contracts into lots. The contract could be divided into separate lots, both in terms of quantity, so that the dimension of an individual contract may better suit the SME capacity, and in terms of quality, so that stand-alone lots can adjust to the SME specialisations. A contract can be divided into lots for various stages, to assist SMEs to better manage their workload.

The new regulations promote the relevant and proportionate financial capacity, the turnover and the security level, so as to facilitate SME participation in public procurement. The turnover necessary for the participation in a tendering procedure will be limited, allowing for the participation of a larger number of SMEs and newly set-up companies. For the first time, the turnover requirement should not exceed twice the estimated contract value.

4.1.3. Creating culture of integrity and fair play

Public procurements stand for a particularly sensitive domain, as they involve expenditures from the contracting authorities' budget, thus becoming a risk factor for incorrect practices.The new Public Procurement Directives contain measures to directly enhance transparency and tackle corruption.

- The concept of conflict of interest is put forth under Article 24 'Conflict of interest' in Directive 2014/24/EU [16]. The sanction imposed for the instances of conflict of interest is the exclusion of the infringer from the procedure. The EU countries and the contracting authorities are invited to take the proper measures to prevent, identify and efficiently remedy such cases.
- In the new directive, the reasons of exclusion from the public procurement procedures have been strengthened, with the following instances also falling under the sentence of fraud and corruption: if a company unduly influenced the decision-making process, provided false statements regarding the contract awarding procedure, the ownership or over-evaluation of technical-, professional- or financial capacities, or agreements to the detriment of fair competition.
- Exclusion can be made both by public purchasers and by the member state. However, an excluded company can prove to be worthy of confidence by providing evidence of the measures taken in order to remedy the problem, or to make up for the damages caused, except when decided otherwise by a court law.
- The preliminary consulting with a view to preparing the call of tenders shall, by no means, favour the respective company's participation in the awarding procedure. Such consultations could favour the companies concerned, distorting the competition. In this respect, any exchange of information with a company, following the latter previous involvement, shall be shared with the other participating companies as well.

- As far as contract modification post- awarding is concerned, the norms regarding contract modification throughout their mandate were cleared up and simplified. A new call for tenders is not required for modifications:
  - Which are not essential (they do not modify the contract nature or economic balance);
  - If the value does not exceed the thresholds of application under the directives and is below 10% of the initial contract value for supplies and services and 15% for work;
  - If they are specified in the contract, irrespective of their value;
  - Pursuant to unpredictable events or related to additional necessary works, supplies or services, yet which, out of interchangeability- or interoperability reasons, or cost-related reasons, can be provided only by the company awarded the ongoing contract. In both cases, the increase in the price cannot exceed 50% of the initial value.
- The new directives include numerous measures to directly enhance the opening of the public procurement process. The new directives foresee certain measures aimed at enhancing transparency in the awarding processes:
  - The national authorities must submit a report to the EC every three years, including the most frequent sources of wrong application or legal uncertainty including possible structural or recurring problems in the application of the rules, on the level of SME participation in public procurement and about prevention, detection and adequate reporting of cases of procurement fraud, corruption, conflict of interest and other serious irregularities. [16]
  - Contracting authorities shall, at least for the duration of the contract, keep copies of all concluded contracts with a value equal to or greater than:
    a) EUR 1,000,000 in the case of public supply contracts or public service contracts;
    b) EUR 10,000,000 in the case of public works contracts.

Procurement digitising will foster a non-discriminating competitive environment, as public expenses should become more transparent, optimised, rationalised and efficiently managed.

Electronic public procurement was made mandatory for all contracting and all procurement procedures by October 2018.

4.1.4. Addressing societal challenges

The new EU directives provide a better framework for social and environmental criteria in public procurement.

Contracting authorities can introduce social measures and environmental considerations throughout the procurement process, as long as they fall under the contract scope. When awarding procurement contracts based on the best value for money, they can select those offers providing more social advantages.

Compliance with the environmental-, social- and labour liabilities, collective labour agreements included, is now stipulated as mandatory through the principles of this law, and the tenderers can be excluded on failing to comply.

Public authorities can make a difference between what they purchase based on the production process and methods which are not visible in the final product. This will allow public purchasers to lend priority to those tenderers providing better working conditions and favouring disabled and

disadvantaged workers' integration. Contracting authorities can limit some tender procedures to social enterprises, if at least 30% of the employees are disadvantaged people.

By applying criteria laying greater stress on environmental issues, public authorities can foster eco-innovation. They can require tenderers not only to meet environmental liabilities, but also to deliver goods by complying with the requirements of ecological labels.
They can require the tenderers to integrate the environmental costs into a tender based on a Life Cycle Cost (LCC) approach, or to enhance environmental factors when producing goods.

By means of the new directives, it will be simpler to purchase social-, cultural-, health services and of other types, for instance in the legal domain, in hospitality, catering- and canteen services.

4.1.5. The new rules promote single market and boost jobs, growth and investment

The public procurement reform has extended the set of tools available for the contracting authorities willing to get involved in joint public procurement activities, particularly under cross-border collaboration.
The new regulations facilitate cross-border procurement by supporting free travel of goods and services, as well as by promoting a healthy business milieu in the EU, and a deeper and fairer single market.
The existence of more transparent, fairer and more competitive regulations will lead to greater business opportunities, a higher and more efficient competition in awarding public procurement contracts, while providing better value for money and boosting jobs and investments.

4.2. Modernisation of public services and of public procurement procedures

The new public procurement regulations aim to simplify the public procurement process and make it more flexible. Contracting authorities have available a set of useful tools which allow each procedure to be tailored to concrete conditions, as well as access to a simpler and more flexible procedural regime.

These reforms with enable public authorities to conduct procurement faster (reduced deadlines for participation and submission) with less bureaucracy and a greater stress on getting the right supplier and the best offer.

The main innovative elements of the Reform [36] in public procurement refer to:

4.2.1. Simplifying the rules for contracting authorities to modernise public administrations

The most important new apsects are:

- Flexible procedures of competitive dialogue and negotiation.
- The competitive procedure with negotiation (with at least three candidates invited) can be used when it is impossible to draw up a complete specification from the very beginning, or a specification to allow the evaluation of all the solutions offered by the market. This procedure can be used for awarding a particularly complex contract, or if the product or service searched for cannot be bought as such off the shelf. Competitive dialogue can be used for goods, services and works.

- Simplified process of participating in procurement procedure.
- Introducing the European Single Procurement Document (ESPD considerably facilitates the access to the tendering opportunities, fosters cross-border procurement and SME participation in public procurements.
- Contracting authorities can require fulfilling the requirements of environmental labels for the works, services or supplies. It is a specific label to prove that the supplies meet the standards related to the environment, social, or others set for procurement.
- With open procedures, contracting authorities can decide on the order in which to proceed. They can decide whether to admit the tenderers, before evaluating the offers and making the awarding decision, or they can decide to first examine the offers, before checking whether there are reasons for exclusion, and whether the eligibility criteria are met.
- Contracting authorities have the obligation to exclude from the procedures the tenderer who has a background of significant drawbacks while running a public procurement contract. According to the legislation, the tenderer who has a background of significant drawbacks must be excluded (unlike the previous paragraph, where the contracting authority can decide whether to exclude them or not. This is an anticorruption measure to eliminate the tenderers who have a background of significant drawbacks, and can vitiate the results of the procurement procedure, can challenge the results on an ill-grounded base etc. In all cases, the prejudices caused by them can be important, and the law requires their exclusion based on their background of significant drawbacks.
- Municipalities, regional authorities or public law bodies can publish a prior note specifying that the contract will be awarded without any further notice published, and the tenderers can express their interest in the contract.
- Contracting authorities can use joint procurement procedures, or by means of a central body. More LAs can cooperate in a joint procurement of the same product, having the advantage of the cooperation in organisation, several tenderers concerned, and getting better prices (bigger quantities). Or a Ministry can organise a tender at the country scale, the contracted products (buses, medicines etc.) being distributed to all the LAs, or to other users. The advantages derived are the same, yet bigger.

4.2.2. Innovation partnerships keep public services up-to-date

Research and innovation trigger the scientific and technological progress that is necessary for a sustainable development of urban mobility, as well as for enhancing life quality. Research and innovation has the top priority under 'Europe 2020 Strategy for smart, sustainable and inclusive growth' [20] and COM (2011) 21 final, as well as under other EU documents: COM (2005) 24 final – Working together for growth and jobs. A new start for Lisbon Strategy [37], COM (2007) 161 final – European Research Space, new perspectives [38], Action Plan on urban mobility – COM (2009) 490 final [39], COM (2015) 913 final [40] etc.
These documents argue that innovation is key to solving major societal challenges.

Research and innovations highly benefit society's long-term harmonious development, but they are costly and need support. The new EU Regulations have created new ways to foster innovation without affecting competition and transparency.

Public procurement strategies must spot out innovative domains and objectives and generate timely and realistic procurement strategies to support achievement of these.

This is supported by the new regulations regarding public procurement in the following ways:

a) Innovation Partnership procedure.
Regulation 31 (SI 2015/102) (PCR 2015) [41] introduced the new procurement procedure 'innovation partnership' intended to facilitate innovation in order to develop certain innovative supplies / services necessary under the sustainable development desiderata, yet missing in the offers available on the market. The contracting authority must identify and define quite accurately the nature and aim of the expected solutions.
The procedure is aimed at initiating a partnership along several stages, with well-defined objectives and staggered financings. The partnership can be initiated with a group of partners.

b) Public Procurement of Innovation (PPI) solutions. [42]
It takes place mainly over three distinct stages:
- Competitive stage. Based on certain requirements to mirror what society wants to achieve by means of innovative supplies / services, the most suitable and credible partners will be selected considering their skills and abilities.
- Research and development stage – the selected partners will develop new solutions in collaboration with the contracting authority. According to the number of partners and of the degree of complexity, the stage can involve several sub-stages in which the number of partners can be gradually reduced, as various pre-set criteria are met.
- Public procurement stage through which innovative supplies / works / services can be purchased. This stage can be also achieved through innovative procurement procedures (e.g. open / negotiated procedure, competitive dialogue, applying LCC, joint procurement for a larger group of users, inclusively cross-border procurement etc.).

Based on the above-mentioned procedures contracting authorities are able to acquire goods at higher up-front costs, yet with multiple long-term economic and social advantages.

Although this procedure does not provide direct funding for the research-development activities, it will nevertheless benefit innovative supplies and continuous innovative development over life cycle or longer periods. Based on such procedures, the companies are stimulated to invest in research and / or draw further research- supporting funds so that they can deliver competitive innovative supplies / works / services and contribute to their long-term monitoring and improving. Such procedures should be initiated in good time, based on the development strategies, to allow for the above stages to be properly covered.

The EU Research Programmes, such as Horizon 2020[3], the European Structural and Investment Funds (ESIF) [43], in cooperation with European Investment Bank (EIB) and European Investment Fund (EIF) [44], as well as the European Assistance for Innovation Procurement Initiative (Eafip) [45], provide technical, legal and financial support to such PPI procedures.

c) Pre-Commercial Procurement - PCP. [46] [47] [48]
This is a competitive procedure to purchase research and development services.

[3] Horizon 2020 - The biggest EU Research and Innovation programme," [Online]. Available: https://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020.

The concept was introduced through Communication COM/2007/799 final [49] and the working document SEC/2007/1668 [50], as a new approach to support R&D activities, so that an investor or a group of investors / SMEs can invest in developing innovative solutions through which certain supplies / services can be upgraded.

PCP and PPI (Public Procurement of Innovative Solutions) [51] are two distinctive procedures, yet they can be jointly applied, as complementary procedures, even featuring certain advantages as compared to Innovation Partnership.

A thorough understanding of these procedures, correlated with a long-term strategy to define the innovative objectives necessary for some new supplies / services to be purchased, will allow for the most efficient approaches in the public procurement policy as well as innovative financing mechanisms.

4.2.3. More competition with new rules on concessions

The new regulations will be applied to concessions of both works and services. The contracts including both work elements and services will be classified according to the element accounting for the bigger share in the contract. A concession contract can appear when a contracting authority awards a contract of works or services to a third party ('the licensee'). It comes down to the right to operate the work or service.

Directive 2014/23/EU [18] applies with concessions whose value amounts to at least EUR 5,186, 000. A concession contract should be limited in time. For concessions longer than 5 years, the time period should not exceed the duration in which a grantee is reasonably expected to recuperate their investment.

4.2.4. Facilitating procurement cooperation among public authorities

The new directives clear up the terms in which the cooperation between public entities is exempted from the application of the directives, without affecting competition with private economic operators.

When contracting authorities conclude contracts between one another, contracts can be awarded between contracting authorities without private parties participating, provided such cooperation is stipulated in the contract.

Market business besides cooperation should be strictly limited – the participating contracting authorities should perform less than 20% of the activities targeted by the cooperation on the open market and exclude direct private capital participation in controlled entities.

4.2.5. Lighter rules for the utilities sector including transport

- The entities in the utilities sector need not comply with the whole set of EU regulations referring to public procurement. The utilities sectors fall under separate and more flexible rules regarding public procurement.
- Specific utilities markets can award contracts directly, without any tender, when a competitive environment is secured.
- The new directive regarding public utilities allows the contracting authorities to apply the competitive dialogue- and innovative partnership procedures.

5. Innovative Procurement Procedures

Until recently the minimum price criterion was the main one used in public procurement. This criterion was recommended by previous EU Directives and national legislation and preferred by most contracting authorities. It was easy to understand, perceived to be objective and difficult to challenge.

The procurement reform is based on the necessity to use other criteria during the evaluation, in order to promote, through public procurement, a higher living standard and continuous innovation. These innovative procedures require selection and training of the personnel in charge, so that they understand the gist of the reform and apply it in the context of the new legislation, and take – where meritted – inherent risks (new procedures may be challenged, particularly those in which the legislation and the complementary application methodologies are not elaborated or do not cover all the concrete aspects).

5.1. Innovative Criteria for Transport and Mobility

Transport is vital for society's mobility and economic growth, yet its development (per transport modes) is still chaotic and subject to various conjunctures. Therefore, it does not comply with the European document which sets the strategic objectives for transport development in EU by 2050 namely the Transport White Paper, COM (2011) 144 final - Roadmap to a single European Transport area – Towards a competitive and resource efficient transport system [4], nor with other documents, studies etc., particularly because the external costs are not sufficiently quantified, and no agreement has been reached regarding their internalization. External costs (e.g. gas emissions, noise pollution, costs of accidents, traffic congestion and stops) are not included in the travel fare, yet they are paid for by the whole society (see also Chapter. 5.1.4).

There is a huge difference in terms of the share and value of these criteria (related to the above-mentioned external costs elements) according to transport type. The lack of quantification and the unfair payment of external costs favour transport by private cars – currently the most polluting, the most expensive and accounting for the highest number of accidents. Considerations referring to the differences between transport modes, or vehicle types are given at chapter 5.1.4. 'External Transport Costs' and in Annex A2.2.

Prioritising these criteria, as well as the modalities of formulating, quantifying and evaluating them under a public procurement procedure are difficult actions to carry out, as there are no well-defined norms yet. The present Guidelines (including their Annexes) will support the professionals in LAs in selecting the adequate procedures.

Each team publishing a public procurement plan or procedure should be familiar with these trends and apply them and creatively and in full, even if that means taking on additional tasks and risks.

The Guidelines to Innovative Procurement are intended to lend basic assistance with a view to understanding the necessity and role of innovative criteria and the modality of applying them for transport and mobility projects on the urban level.

Figure 1 shows the changes in 'Award Criteria' (an indicator that measures the proportion of procedures which were awarded in EU countries only on the basis of lowest price) over the period 2014-2016. As the reform has been promoted since 18 April 2016, as per the EU Directives (2014), significant decreases in this indicator should be noticed in all countries after this date, thus accounting for the degree to which the procurement reform is actually applied.

The graph shows that:

a) There remain big differences in the value of this indicator across various countries listed in descending order for year 2016)s:

- over 90%: Romania, Malta, Greece, Cyprus, Croatia, Lithuania (4-10%) in United Kingdom, France, Ireland

b) The procurement reform aims at decreasing the influence of the lowest price criterion (among others)

- For the period 2014-2016 there are few countries in which significant decreases are noticed: Poland (80 – 15%), Estonia (78 – 62%), Ireland (15 – 5%), Latvia (77 – 65%).
- Decreases in the percentage of 'lowest priced' procurement in other countries are generally lower, yet noticeable, particularly in those countries which featured low percentages in 2014. Such countries have been proponents of using more full economic costs even before 2014.
- Some countries have featured increases during this period, for instance Romania (88-95%), Greece (83-76-92%) and Portugal (54-65%)

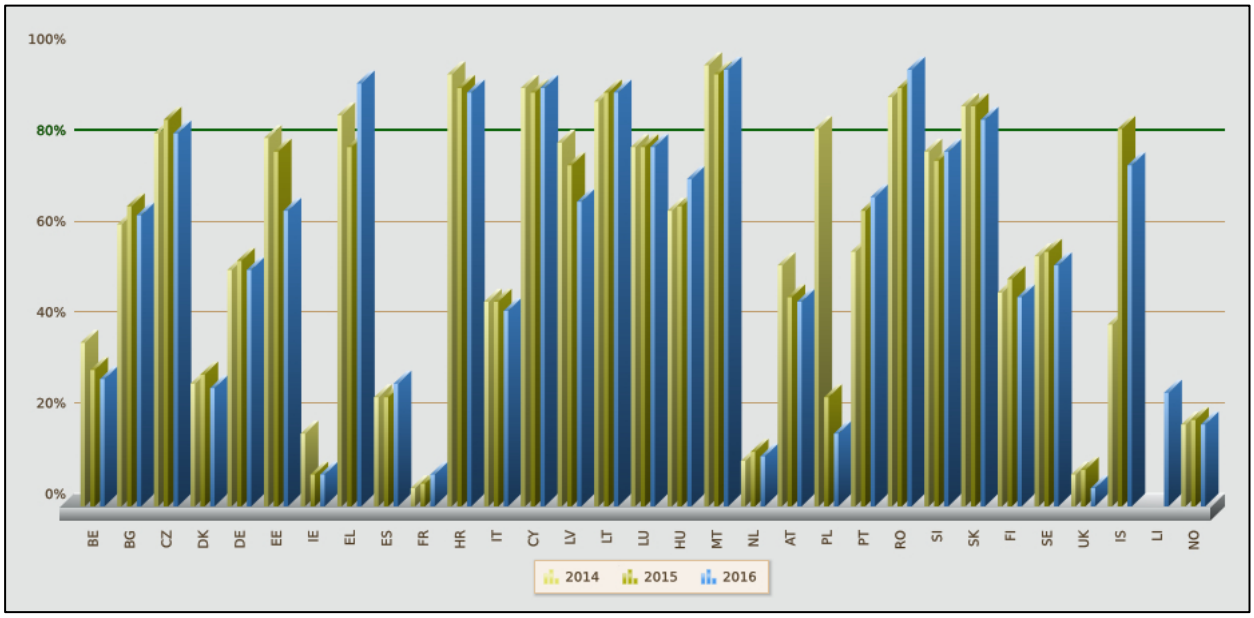

Fig.1. Award Criteria in EU countries (2014-2016).

The 'Award Criteria' indicator measures the proportion of procedures which were awarded only based on lowest price [52].

Note: The data was updated through the Single Market Scoreboard - Public Procurement Reporting period: 01/2018 – 12/2018 [53].

In what follows and in the annexes to the present document, we will present the main innovative criteria recommended to be applied in the public procurement of certain supplies / services of long service life and which have a major impact on the environment, costs and life quality.

5.1.1. Life Cycle Costs (LCC)

Life Cycle Costs can be evaluated based on the statistic and probabilistic data, as well as on the mathematical models considering LCC components: procurement price, energetic costs, operation and maintenance costs (labour, consumables, spares, repair, modernisations, trainings, logistic expenditures etc.), decommission at the end of the time period, opportunity costs (enhancing operation safety, reduction in consumption and emissions etc.), evolution of inflation, labour costs, fuel costs, rate of exchange, penalties resulted from unavailability and accidents etc.

There is a large amount of literature and software[4] that could be used to define and calculate LCC, including a package of European Norms (EN) among which we recommend EN 60300-3-3: 20047– Application Guidelines – Life Cycle Cost Evaluation [54] updated through Norm EN 60300-3-3:2017 [55].
LCC calculation modality can be understood by studying this main norm EN 60300-3-3.

Once the concept is understood, the LAs must insert specific forms in the procurement procedure, so that the tenderers offer the LCC value as calculated in the same way to be compared and evaluated against each other.

With supplies and services of long-life cycle which have a major impact on the environment, costs and life quality, LCC criterion is more suitable than the purchase price.

For instance, various sources and analyses for a locomotive for public transport (comparable to vehicles used in public transport) show a cost structure as per Table 1:

Table 1. Cost structure for a passenger transport vehicle

Costs	Locomotive for passenger service*	Electric bus with 250 kWh on-board
Purchase	22,7 %	43%
Energy consumption	46,2 %	12%
Maintenance	31,0 %	46%
	Source: * Trümpi 1998 [56]	Source: Bloomberg Finance 2018 [57]

The table above, based on real calculations and data shows that the purchase of a locomotive cost is below 23% of the total LCC. This is an example confirming the provisions in Directive 2009/33/CE mentioned below.

4 See the bibliographical references in Annex A2.1

Even for electric buses (where upfront costs are relatively high and the energy consumption costs are low) the purchase costs are around 40% of the total costs.

The LCC criterion is considered to be an empowering factor which stimulates technological innovations in the enhanced design, fabrication, operation and maintenance of products, enabling new products to be brought to market quicker. Even if the denomination LCC seems to refer only to costs, their optimisation will also result in a reduction in emissions, higher performances and social effects. The reduction in LCCs means also a reduction in energy consumption, emissions, hothouse effect gases, all that having sociale effects. The difficulties in the LCC- driven procurement procedures consist in identifying the contracting authority's requirements and inserting them in the procurement documentation, so that the tenders quantify LCCs and the offers are evaluated on this criterion.

Given the importance of this criterion, the procurement reform advocated through the 2014 Directives, was foreshadowed by Directive 2009/33/CE [31], stipulating as follows:

> *Art. 16 - 'The biggest impact on the market, together with the best cost / benefit result is obtained through mandatory inclusion of lifetime costs for energy consumption, CO_2 emissions and pollutant emissions as award criteria in the procurement of vehicles for public transport services.'*
>
> *Art. 20. Including the above costs as selection criteria 'does not impose higher total costs but rather anticipates operational lifetime costs in the procurement decision'*

The Directive also specifies the possibility to lend public support for purchasing non-polluting energy-efficient transport vehicles, in line with EC policies in the field of environment, climate and energy, European funds, national and regional operational programmes, certain community programmes such as CIVITAS and IEE.

The importance of the topic range is also demonstrated by the Directive (EU) 2019/1161 of the European Parliament and of the Council of 20 June 2019 amending Directive 2009/33/EC [33].

Among the most important provisions under this Directive, the following is noteworthy:

- *'The member states will have to submit reports regarding the directive application, every three years (starting from 2023)'*
- *'The directive application range is extended to other forms of public procurement namely vehicle leasing or hiring, public services contracts for road mass transport services, renting services etc. '*
- *'In the European strategy regarding low emission mobility, it is maintained that the commitments under the UNO Framework Conventio (CCONUSC) Paris 2015* [58] *can be met through various political initiatives, inclusively through public procurement of non-polluting vehicles'*
- *'Public Authorities, can set up and support goods- and innovative services markets, through therir public procurement- related policy'*
- *'LCC calculation is an important tool for the contracting authorities in order to cover the energy- and environmental costs'*
- *'A greater support in spreading non-polluting vehicles on the market can be achieved by providing public support measures at a national and at the Union scale'*

- *'Annex 1 to Directive COM(2017)653 final* [59] *foresees the share of zero emission buses by year 2030 at the scale of EU Member States. This share will reach 75% of the overall pubic procurements in half of the EU Member States (Table 5)'*

Calculating the LCC may be complex and laborious, so LAs profesionals should focus on setting LCC structure and indicators and asking tenderers to provide these costs. For more details see Annex A 2.1.

The LA personnel in charge of procurement do not have the training and the basic necessary data to make LCC calculations for complex products. It is not their duty to do that. Their role is to specify their requirements (what costs will be included into LCC), and the tenderers will make the calculations and the LCC resulted from their calculations. The tenderers have the technical and operational data necessary to make the LCC calculations for the product they offer. The directives regulate the general legal framework, without going into such technical and organisational details. The above are our recommendations in the Guidelines, regarding the modality of approaching LCC-driven procurement (see also Annex A.2.1)

Procurement procedure must include analysis and decision making on the best solutions, most suitable for each procurement, namely:

- The possibility that several authorities enter a partnership so that the procurement of public transport vehicles (for instance) may be tailored to the regional / national / cross-border necessities, thus making the procurement more attractive for the most prestigious and innovative tenderers in the field
- Application of procurement procedures which favour innovation (Innovation Partnership, Procurement of Innovative solutions - PPI, Pre-Commercial Procurement – PCP). Based on such procedures, the companies are stimulated to invest in research and develop innovative solutions to reduce LCCs and emissions, to enhance safety in operation and others.

  For details, see the Annex A3.3 - Innovative partnerships in procurement procedures.
- The possibility that the procurement refers to both rolling stock (for example) and maintenance services throughout service life.
- Adopting LCC as the main criterion in procurement means that the procurement documentation provided by tenderers should include an annex specifying and guaranteeing the respective expenditures. Major tenderers have long shown such interests and awareness and have the necessary data for these calculations, as well as the innovative potential to upgrade them. In procurements based on the lowest price, the tenderers offer standardised products, as cheap as possible. The tenderers offering research services have higher expenses and are at a disadvantage. In the case of LCC-driven procurement, they can apply the research, finalised or in progress, obtaining a lower LCC, even if the purchase cost is higher. See also the provisions quoted from Directive 2009/33/CE on chapter 5.1.1. and the amendments to Directive COM (2017) 653 final [32] and Directive (EU) 2019/1161 [33]
- One of the requirements in the procurement documentation refers to the necessity of setting a single form to present LCC related data, specifying the structure of the main components, the costs for labour and energy, and their expected evolution etc. as well as the single procedure to check these data (upon acceptance and periodically, throughout the life cycle).

- Thus, based on the statistical data and on their own calculations referring to the object of their offer, the tenderers can submit their data in a documented, transparent and comparable format, so that tenders may be evaluated against each other
- The frame contract included in the award documentation will foresee sanctions and penalties for failure to comply with the data in the offer, and a modality of bonus / malus according to the actual data accomplished. As in LCC- driven procurement procedure, the contract is awarded based on the best LCC, it is necessary to specify in the procurement documentation and in the contract, the modalities to check the LCC both at the acceptance of the product, and at given time intervals. If the checks differ from the results in the offers, then the bonus/malus policy is applied.
- LCC permanent monitoring and optimising is a challenge for the management of the operation and maintenance of the purchased supplies, and calls for both political will and a scientific and modern organisation of the activities, but the results – quantified in savings, reduction of emissions, personnel training and incentivisation, high quality transport services also – will be spectacular, as proven by the experience of those who decided to get involved and to make these efforts in procurement policy and in LCC monitoring[5].

Annex A 2.1 presents a more detailed LCC description and case studies referring to the utilisation of this criterion. The following sections discuss criteria other than LCC

5.1.2. Pollution reduction criterion

As shown above urban mobility accounts for a considerable source of polluting emissions. Even if these are problems at a local level, their impact is felt at a continental scale through, for example, climate change and more serious health problems. [COM (2007) 551 final [12] – Green Paper 'Towards a new culture for urban mobility'.
Other detail about Air and noise pollution from transport cause – Report EEA [60]
Costs to society for local pollution are still very high – at about 0.4% of GDP, according to a study by CE Delft, and new evidence from the Organisation for Economic Co-operation and Development (OECD) provides even higher estimates (up to 6 times higher). Consequently, air quality in cities remains a fundamental challenge for public health [61].

Chemical Pollution

- Polluting exhaust gases, carbon monoxide (CO), hydrocarbons (CHx), sulphur dioxide (SO2), nitrogen oxide (NOx), volatile organic compounds, particulate matters (PM), etc.

Vehicle emissions feature two noteworthy particularities: first, exhaust is very close to the ground, which cause high concentrations at very low heights, even for low density gases with high capacity of diffusion in the atmosphere (so effect pedestrians and cyclists). On the other hand, emissions spread over the whole surface of the localities, the differences in concentration depending on traffic intensity.

Greenhouse effect gases

[5] See the bibliographical references in Annex A2.1

Global warming currently involves two major problems: on the one hand, the necessity to drastically reduce greenhouse effect gases, and on the other hand, the necessity to adjust to climatic change effects.

Transport represents almost a quarter of Europe's greenhouse gas emissions and is the main cause of air pollution in cities. [62]

The main pollutants causing the greenhouse effect, and which are mainly produced as exhaust gases by car vehicles are carbon dioxide (CO_2), nitrous oxide (N2O), methane (NH_4), alongside other chemical compounds from other sources, particularly from industry.

Main regulations referring to gas emissions:

- Directive 2008/50/EC [63] regarding air quality.
- Regulation (EU) 2016/1628 regarding mandatory conditions (NRE stage V for new internal combustion motors, or spares after January 2018 [64]
- Directive 2009/33/CE [31] - Promotion of clean and energy-efficient road transport vehicles, amended by Directive of the European Parliament and of the Council COM(2017) 653 final [32] and 2019/1161 [33]
- Directive 2009/28/EC [65] on the promotion of the use of energy from renewable sources

Noise Pollution

Prolonged exposure to high noise pollution levels may seriously affect human health.

City inhabitants are faced with stress, modifications in the sleep stages and clinical symptoms, such as hypertension and cardiovascular condition, premature death rate – all caused, among others, by noise.

Noise-related relevant regulations:

- Directive 2002/49/CE [66] - evaluation and monitoring of ambient noise
- Commission Regulation (EU) No 1304/2014 [67] Interoperability Technical Specifications regarding 'rolling stock – noise' sub-system of the conventional trans-European railway system
- National or local regulations.

The requirements regarding the admitted emission level should be included into the Technical Specifications and the procurement documentation, in order to comply with the limits allowed for under the norms, or under additional local requirements (mandatory eliminatory requirements), with a possibility to score higher innovative ecological tenders featuring better performance.

Therefore the procurement documentation should include the conditions and the modality to check emissions, both upon acceptance and periodically, to prove compliance with the limits allowed for upon contracting. Such provisions and calculation modalities are included in the provisions of Directive 2009/33/CE and Directive COM (2017) 653 final.

The requirements regarding the emission level should also determine the decisions on the vehicle types to be purchased through public tenders, selecting non-polluting vehicle types (electric traction, rolling stock, regenerative electrical braking, alternative fuel use etc.)

Directive 2009/33/EC requires the contracting authorities and operators carrying out public service duties under a public services contract, to consider, as selection criteria:

- the energy consumption

- CO_2 emissions
- polluting emissions.

These should also be applied in the strategies and decisions aimed at improving public transport, namely a rise in the share of public transport, pedestrians, bike riding etc. and at reducing individual transport by cars.

5.1.3. Energy Consumption

Energy consumption is an important criterion during the procurement for transport and other energy consuming equipment which causes pollution.

Procurement documentation needs to set out maximum allowed limits of energy consumption, while tenders coming up with innovative solutions to reducing consumptions should be awarded with higher scores.

These criteria can be separated or included into LCC criterion.

The analysis of energy consumptions should be exhaustive, considering the innovative solutions through which other consumptions besides standard ones of the traction equipment (consumption at braking, consumptions with parking / maintenance, consumption related to providing comfort conditions, solutions to reducing and optimising consumptions).

5.1.4. External Transport Costs

Transport activities have a major impact on sustainable development and life quality through their effects on the environment, casualties, traffic congestions and delays, infrastructure wear, areas occupied by transport infrastructure.

Most of the costs of these negative effects – named 'External costs' – are incurred by the whole society, and not only by transport services suppliers and users (these costs are not included into transport costs). Thus, transport service suppliers and users benefit by unfair incentives, to the detriment of the entire society that actually incurs these costs These costs amount to a huge value, and this state of things is more unfair that the costs are distributed in a very different way among the various modes of transport.

According to 'External Costs of Transport in Europe, Update Study for 2008', CE Delft, November, 2011 [68]:

- The overall amount of external costs of transports in EU + Norway + Switzerland:
  EUR500 billion / year, accounting for 4% of EU annual GDP;
- The share of road transport external costs:
  EUR465 billion / year, accounting for 93% of the total external costs;
- The share of railway transport external costs:
  EUR10 billion / year, accounting for below 2% of the total external costs.

Mention should be made that, however impressing these figures may be, they cannot totally cover the external costs effects: casualties in transport accidents, the effect of chemical emissions, greenhouse gases, noise, time wasted in traffic congestions etc.

External costs internalisation means integrating these costs into transport ones so that the decisions made by the society and transport users take them into account.

External costs internalisation, by using market tools, by procurement procedures, by political actions etc. is a complex and difficult undertaking, which has long been of interest with EU politicians, as it also results from:

- Modification of Directive 1999/62/CE [69] – the legislator required the European Commission to submit a transparent applicable model for the evaluation of all the external costs.
- Transport White Paper, 2011 [4] – through which the strategies and guiding lines aimed at developing transports and transport modes are elaborated considering external costs.

Following these undertakings, the Commission issued a Communication COM(2008) 435 final – Strategy for the internalization of external cost [70] with annexes {SEC(2008) 2207}, {SEC(2008) 2208},{SEC(2008) 2209} and Directive 2006/38/CE.

According to the results of the impact analysis of the internalisation of external costs [71], if nothing is done in the next few years, the environmental costs (air pollution, CO2 emissions) could reach EUR 210 billion by 2020. Individuals and businesses would also face traffic congestion on more than a quarter of Europe's roads.

The technical Annex {SEC(2008) 2207} proposes a common workframe for calculating the external costs regarding traffic congestion, air pollution, noise and climate changes as a result of identifying joint principles and methodologies. Road traffic accidents are not explicitly dealt with in this document; instead, special mechanisms will be used to take into consideration the nature of risks and correction modalities.

The elaboration and interpretation of the Sustainable Urban Mobility Plans (SUMPs) as well as the policies of including certain criteria into the procurement of transport / works / transport services, considering the volume and share of external costs are necessary and can have major effects on enhancing life quality.

Annex A 2.2. – External transport costs contains various considerations, modalities and study cases for estimating and applying these criteria.

5.2. Innovative procedures in public procurement

5.2.1. General

The reform in public procurement refers to applying not only certain innovative criteria (chapter 5.1), but also innovative procedures in procurement.

The principles underlying public procurement contract award and the organisation of solution contests are:

- non-discrimination;
- equal treatment;
- mutual recognition;
- transparency;
- proportionality;
- taking on responsibility.

The directives impose the legality and liabilities of public bodies regarding advertising and using objective calls for tenders, compliance with the procedures for those contracts exceeding certain value thresholds etc.

EU Directives fostering reform in procurement emphasise these basic principles.

The reform widens the range of possibilities of applying innovative procedures and criteria, however, they must be conducted honestly and fairly, so as to best capitalise on public money.

The following types of contracts fall within the scope of EU Directives referring to public procurement:

- Works – constructions and civil engineering
- Supplies – procurement of machinery, materials and goods
- Services.

EU Directives set up the priority domains (services and related supplies / materials) for public procurement. Out of them, the following can be counted in the field of sustainable mobility development:

- Services and necessary means for public- or freight transport
- Services related to maintenance and repairs
- Telecommunication services
- Informatics and related services
- Certain research and development- related services
- Architecture-, engineering-, urbanism-, scientific consultancy and joint technique- related services
- Testing and technical analysis- related services
- Management consultancy and related services
- Market research- and opinion surveys- related services
- Advertising- related services
- Financial-, insurance-, banking- and investments- related services.

Both SUMPs and the 'SMART City'- related concepts emphasise that the purchase of these services / supplies / works must be approached through an integrated outlook, able to bring about an accelerated, sustainable and harmonious development of the components contributing to sustainable mobility and life quality.

The EU Documents regarding the procurement reform, as well as other elements fundamental to EU development strategy (Europe 2020 Strategy, Lisbon Strategy, HORIZON 2020 Framework Programme) emphasise the fact that research development has become a priority, being the only way to promote an intelligent and sustainable enhancement favourable to inclusion. The procurement strategy and the multiannual procurement plans will foresee the objectives and requirements necessary to meet the above desiderata, and to enhance the efficiency of the procurement results.

In the procurement strategy there are also named the major objectives for the local population in the following years (a reduction in energy consumptions, emissions and life cycle costs, economy / tourist promotion, upgrading life quality etc. The multiannual procurement plan will include the procurement of products and services necessary to develop sustainable mobility. These products and services will have to best meet the major objectives for the local population. To this end, it is necessary to involve the entities able to develop innovative solutions under innovative partnerships. These partnerships should be developed in good time, so that products / services with already

feasible innovative solutions / performances can be required at the tenders. Related financing solutions (H2020 for PCP, PCI CSA – see chapter 5.2.3, facilities offered by LAs etc.) can be found under innovative partnerships.

Here below is a listing of some procedures which allow for LAs actions to shorten deadlines, cut expenses, have more and more performant tenderers, introduce innovative solutions adequate to the objectives set by means of the strategies. Even if certain procedures are 'classical' , and not specific to promoting innovation, the modality to select and use the procedure which is most adequate to the procurement strategy and to SUMP, or to combine some procedures, can be an innovative element with important advantages. Some Financing tools in support of innovative public procurement are listed under point 5.2.3.

5.2.2. Procurement Procedures

- **Open procedure.** One single compulsory stage. Any economic operator has the right to submit a tender in response to a call for competition.
- **Restricted procedure.** The call for competition is two-stage:
  1. The first stage includes notification and expression of interest in order to invite potential competitors. A detailed questionnaire (referring to the level of requirements referring to professional-, technical- and financial expertise, and to capacity), as well as the qualification and selection criteria for the potential competitors will be published. The contracting authority will specify in the participation notice the minimum number, and – if need be – the maximum number of candidates to be selected for the second stage.
  2. In the second stage, only the tenderers having met the eligibility requirements are invited to participate. Alongside the invitation, the tender documents required to be completed will be included as well as a copy for the contract to be signed by the tender winner.
- **Competitive Dialogue.** This procedure provides more flexibility in the procurement process. It is used in complex contracts, for instance Public – Private Partnerships (PPPs). The procedure is conducted in three stages:
  1. Submission of requests to participate and selection of candidates in keeping with the qualification and selection criteria
  2. A dialogue with the selected candidates, in order to identify the optimum solution/s to meet the contracting authority's needs, based on which the final tenders will be submitted.
     The dialogue can include several successive stages, thus reducing the number of solutions and issues under discussion. When the best solutions have been adopted, a minimum number of candidates (at least three) will be notified and invited to submit their final tenders.
  3. Final tender submission by the remaining candidates following the dialogue and the evaluation according to the award criterion and the set evaluation factors.
- **Competitive Negotiation.** The procedure usually includes two compulsory stages:

1. Publication of a participation notice and of the criteria regarding the qualification and the selection of the candidates.
2. Invitation of at least three candidates, selected in the former stage to submit initial tenders to meet the nimimum set conditions. Negotiations with a view to upgrading the intial tenders and submission of final tenders to be evaluated in keeping with the evaluation criteria and factors.

- **Negotiation without prior notice.** This is an exceptional procedure for use only under exceptional circumstances, determined in keeping with legal provisions. When applying this procedure, it is compulsory to read the law in which a lot of details are given, inclusively the exceptional circumstances, with all the legal details.

  The authority negotiates the contract terms with one or several partners, without notice.

- **Competition of solutions.** This can be organised:
  - within a procedure of awarding a public procurement contract of services
  - as a distinct award procedure, with awards or payments to the participants.

  This is initiated by the publication by the contracting authority of a notice of competition through which the economic operators concerned are invited to submit projects.

  If the contracting authority intends to limit the number of participants, clear, objective and non-discriminatory qualification and selection criteria will be set, which will be specified in the procurement documents.

  In order to evaluate the projects submitted, the contracting authority assigns a suitably qualified jury independent from the participants in the competition. The jury is autonomous in the decisions and opinions they put forward. The detailed regulations regarding the organisation of the competition of solutions are set through methodological norms of applying legal provisions.

<u>Issues applying to all procurement processes:</u>

- Under all circumstances of dialogue and negotiation, the Contracting Authority must ensure fair treatment and compliance with the copyright regulations for all the dialogue partners.
- Objectiveness and transparency should be ensured by a clear formulation of the criteria, and the utilisation of the evaluation form – in which there will be specified the scores awarded to each criterion and the modality of their evaluation / calculation.
- Evaluations of the budget / effective costs / economic advantages are usual modalities with a view to a clear and non-discriminating evaluation. It is necessary that the calculation- or evaluation values in the tenders should be in line with a clear, unitary and verifiable methodology, specified by the Contracting Authority, so that the tenders may be genuinely comparable, without distorsions.
- In the case of two-stage tenders, it is considered that, after the former stage, the evaluation requirements were met, and do not then have be included in the final evaluation criteria and sheet.
- If, after the former stage, the minimum number of candidates foreseen for the latter stage could not be achieved, the Contracting Authority has the right to choose between either to

continue the procedure with only that candidate / those candidates meeting the requirements, or to cancel the awarding procedure.

- For the utilities sectors and certain public services there are special regulations in keeping with Directive 2014/25/CE, Regulation (CE) No. 1370/2007.

The above are summaries necessary to understand these procedures, in keeping with the object of the current Guidelines. Selecting and applying the procedures, setting up the tender timeline, writing the documentation and organising the award procedures should be conducted in strict compliance with the legal provisions for each procedure type.
Supplementary bibliography: Public Procurement Best Practice Guide [72]

Besides these award procedures, there are further ones for specific situations, or combinations / upgradings specific to certain procurement types, among which we mention as follows:

- **Market consultancy**

  The new legislations regulate the possibility of the Contracting Authority conducting market consultancies with a view to preparing the procurement, by means of the electronic public procurement system, as well as through any other means.

  The Authority is entitled:

  - to invite independent experts, public authorities, economic operators within the consultancies
  - to apply or implement the opinions, suggestions or recommendations received within consultancies, to prepare the procurement documentation and to organise the award procedure.

  The Authority is liable to take the necessary measures so that, following the consultancy, competitiveness may not be distorted, and non-discrimination and transparency principles may not be infringed on, either.

- **Partnership for innovation.** The procedure involves three stages:

  a) The competitive stage – submission of the requests for participation and selection of the most adequate candidates based on their expertise and skills, in keeping with the qualification and selection criteria.

  b) Submission of initial tenders by the candidates selected within the former stage, and evaluation of their compliance with the requirements set by the Contracting Authority.

  c) Negotiations with a view to upgrading the initial tenders. This stage can be further subdivided into several stages along which the number of partners may be gradually reduced, according to the compliance with the preset criteria.

  Submission of final tenders and evaluation by applying the award criterion and the evaluation factors.

- **Other types of innovative procurement**

The concepts introduced through SUMP, the concepts 'SMART City' [73], 'Green Procurement' [74] / Green Public Procurement - GPP (based on EU Clean Vehicle Directive – CVD, 2009/33/CE), ECO-Innovation [75], SRPP- Socially Responsible Public Procurement [76], SPP - Sustainable

Public Procurement [77], aimed to support sustainable mobility development in line with global developments and strategies to increase quality of life.

In numerous countries, in which there is genuine awareness about the importance of such concepts, there are programmes and initiatives developed at the Government and regional level, as well as by organisations / institutes (for instance the Institute for Sustainable Development - IISD) through which strategies, studies, and regulations are elaborated in support of implementing the innovative concepts into the public procurement procedures.

The procurement strategies of the regional / local authorities should foresee complex procurements for several products or services, correlated and coordinated in a unitary way, to best achieve these global objectives.

For instance, highly specialised and costly consultancy services are currently purchased in order to elaborate a SUMP. It would be very useful if the same team, or a similar highly-skilled team coordinated the implementation programme as well, in order to prove SUMP viability and implementation feasibility, with a view to building the Local Authority's capacity, and to evaluating the results periodically and after a representative period of time (for instance 5 years), based on holistic measurable performance indicators. The major benefits achieved as a result of the SUMP and its efficient implementation, through modern procurement methods, would account for the expenditures of such a specialised consultancy.

Specialised consultancy means additional costs for LAs, but it will set up the technical requirements necessary for the purchased product to feature lower LCC, lower emissions etc. The costs and benefits thus gained will be greater than the expenditures for specialised consultancy. The LA personnel must specialise in procurement, but they cannot specialise in the technical aspects specific to each complex product.

5.2.3. Financing tools in support of innovative public procurements

The financing tools to support innovative public procurements were developed (particularly through HORIZON 2020 research – development programme) in order to foster innovative solutions in domains of high interest, as such solutions are difficult to purchase through a classical public procurement procedure when considering research related risks, long duration and costs. The overall value of this financial support is of over 348 M Euro for the period 2018 – 2019. Some indicators describing the public procurement market in the European Union and its member states in 2015 [78].

- **Pre-Commercial Procurement (PCP)** [46] [47] [48]

  PCP refers to public procurement of research- and development services, not including their implementation into the final commercial products. PCP can be used when the market fails to provide solutions able to meet the purchasers' requirements. The procurement is conducted in order to get new solutions, developed and tested so as to meet the procurement needs. PCP allows for a comparison across alternative approaches to solutions, by designing the solutions, developing and testing the model / prototype.

  PCP actions target consortia of procurers with similar procurement needs who want to procure together the development of innovative ICT based solutions to modernize public services whilst creating growth opportunities for industry and researchers in Europe in new

markets. This topic is open to proposals for PCP actions in all areas of public sector interest requiring innovative ICT based solutions [79]
The maximum funding rate for eligible costs for PCP actions is of 90% of the procurement costs [80]

- **Procurement of Innovative Solutions (PPI)** [42] [51]

  PPI can be used when challenges of public interest can be approached through innovative solutions which are almost finalised, and do not require the funding of research to develop new solutions. In this case, suppliers can purchase the existing solutions in order to test and deliver them at the set deadlines, integrating them into the products / services they provide.

  Considering the large volume of public spending (19% of EU GDP, or roughly EUR 2,200 billion in 2009), the public sector constitutes an important driver to stimulate market transformation towards more sustainable energy-related products and services.

  'Actions enabling a group of procurers (buyers group) to undertake a PPI procurement for innovative solutions for, products, services and buildings with high energy-efficiency performance (e.g. Nearly Zero Energy Buildings, renovation) which are not yet available on a large-scale commercial basis, and which have energy performance levels that are better than the best levels available on the market. The innovative solutions procured by all procurers in the buyers group must have the same core functionality and performance characteristics, but may have additional 'local' functionality due to differences in the local context of each individual procurer' [81]. It is an exemple of PPI application to a certain domain. It can be extended to any domain.
  PPI allows for refunding 35% of the procurement costs.

- **Coordination and Support Actions (CSA).** Financing rate: 100%.

  There are financed coordination activities, for instance preparing a PCP or PPI by a group of purchasers (identification of common challenges, consultancy between the open market and the industry, before initiating an actual PCP or PPI etc.).

  A specific Challenge of the Horizon 2020 call is to promote excellent collaborative research and innovation on future and emerging technologies to secure and renew the basis for future European competitiveness and growth, and that will make a difference for society in the decades to come [82].

The three financing tools are not mutually exclusive; on the contrary, it is recommended they should be applied in a complementary way.

In the period 2018-2019 HORIZON 2020 Programme has a budget of EUR 124 million for innovative procurement.
Further details regarding the funds for Innovation Procurement, Guidelines for participants:

- http://ec.europa.eu/digital-agenda/en/innovation-procurement
  - Innovation Procurement - The power of the public purse http://ec.europa.eu/digital-agenda/en/news/innovation-procurement-power-public-purse
  - European Assistance for Innovation Procurement (Eafip): http://eafip.eu/
  - Guide on the synergies between H2020 and the ESIF: http://ec.europa.eu/research/regions/pdf/publications/h2020_synergies_201406.pdf
- H2020 participant portal: http://ec.europa.eu/research/participants/portal/desktop/en/home.html

5.2.4. Specific tools and techniques for public procurement contract award

- **Framework agreement.** Duration: maximum 4 years, apart from exceptional cases.
- **Dynamic procurement system.** It is the procurement procedure organised through electronic means and open throughout the validity period to any economic operator meeting the qualification- and selection criteria for current use procurement. The legal framework does no longer restrict the maximum duration of the procurement dynamic system; however, the duration should be specified in the participation notice.
- **Electronic Tender**

5.2.5. Conclusions

Innovative procedures and criteria should be applied in a creative and well grounded way, considering that the best way of capitalising on public money is through maximising the long-term advantages to society as a whole. The best capitalisation of public money includes the purchase price, as well as the long-term advantages for society, namely conditions for mobility sustainable development (emissions- free environment, reduction of the number of accidents, lower energy consumption, lower LCCs, accessibility, congestion reduction, boost of economic-, social- and cultural development, higher life quality etc.). As such, the selection of evaluation procedures and criteria becomes difficult, calling for thorough training and organisation in order to define and reach the objective of each tender, in strict compliance with the legislation and the basic principles.

Annex A 3.3 - Innovative partnerships in procurement procedures presents a more detailed description and case studies.

Public procurement innovative aspect

In this case innovation does not mean applying a new procedure, not currently existing in the legal provisions, but making the best choice of the procedure, the criteria (of qualification, selection and awarding) and of the evaluation modality, sustainably fostering innovation, setting up long-term partnerships with the providers of innovative solutions, supplies or services, organising enlarged procurements for several users (in an area / at national- crossborder scale), using EPPS and ESPD, organising procurement-, award- and contracting procedures

An innovative procurement procedure, in the spirit of the Procurement Reform should be:

1. **optimised to the procurement's specific character**
2. **optimised to society's requirements / needs,**
3. **well organised in terms of the observance of the basic principles and the procurement legislation**
4. **aimed at optimum long-term advantages for society** (in force after 18.04.2016)**.**

6. Considerations specific to certain procurement types

Supply contracts can be awarded through the full range of procurement procedures and through framework agreements. A framework agreement is reasonable, if there is a continuous demand for specific goods over a long term.

What is specific about supplies (as compared to services and works) is the ability to provide a precise technical specification. When specifying a supply tender, it is important to distinguish between mandatory and optional specifications. It is important that no reference is made to any make or model of any supplier when tendering for a supply contract.

No contract for a given quantity of supplies may be split up with the intention of avoiding application of the threshold value. Splitting the procurement in smaller lots can be a support to SMEs but should be avoided if it is not necessary in order to avoid non transparent procurement procedures.

Several procurements of supplies of the same type that are to be made at the same time need to be regarded by the contracting authority as one single procurement for the calculation of the estimated value [83].

6.1. Procurement of public transport means

The following section provides basic recommendations for which further technical details and explanations will be provided in the Annexes.

6.1.1. Recommendations referring to the selection of the type of procurement / partnership

- Transport vehicles, particularly rail ones, feature a longer service life during which maintenance, revisions, repairs, modernisations and spares are necessary. Material and labour costs of these activities are much higher than the vehicle procurement cost. Consequently, it is preferable to set up a collaboration with the vehicle manufacturer tenderer with a view to a long-term partnership in which to provide all the above-mentioned works, or at least active technical assistance over a long time. For these activities, clear bonus / malus terms will be foreseen according to meeting the conditions and parameters of the contract. The supplier is thus propelled to provide innovative, high viability solutions at as low LCC as possible to ensure the good partnership continuity.
- For complex long cycle life supplies / services, it is recommended to use a competitive procedure with negotiation (inviting at least three candidates), particularly if setting up a long-term mutually advantageous partnership is envisaged.
- Applying the procedures of Innovation partnerships (Chapter 4.2.2.) to stimulate innovation and select partners according to the modality in which certain pre-set criteria are met.
- Should these acquisitions be considered for regulated public transport markets, incompatible state-aid measures should be avoided through clear public service obligations that include the foreseen level of technology.

6.1.2. Recommendations referring to drawing up the Technical Specifications

- As a result of their characteristic activity, the manufacturing companies of (public / passenger / freight / road / railway etc.) /transport vehicles are technically better prepared than the customer. Consequently, the Specifications should not include or enforce exhaustive descriptions of technical solutions. The specific, basic, mandatory technical conditions will be specified, and for the rest, the tenderer can be required to provide descriptions and technical data, with reference to the Technical- and Interoperability Standards and Norms the product complies with.
- The Technical Specification should refer not only to the existing standards, but it will also require offers with the best solutions achievable, thus fostering innovation and research with a view to finding efficient solutions in the fields of interest to sustainable development.
- Besides the technical descriptions and justifications, the technical data underlying the evaluation will be required on standardised forms so as to make it easy to check the compliance with mandatory conditions, and to allow for a justified, verifiable and non-discriminatory tiebreak according to the evaluation criteria and scores.
- The Technical Specifications should define the technical conditions of utilisation (by specifying that the tenderer is invited to conduct on site findings) and the minimum mandatory performances, particularly from the user's point of view.

Among the necessary requirements and performances, it is recommended that the following characteristics (specific to the conditions or requirements) should be specified:

- Maximum number of passengers to be carried at maximum / average speed of … km/h, along a route of set conditions (along which the acceptance test will be performed)
- Maximum allowed overall dimensions, maximum allowed weight (kg / load, wheel)
- Comfort- and facilities- related requirements
- Availability in service
- Maximum allowed noise level in various operation regimes
- Maximum allowed exhaust gas level
- Conditions ensuring passengers' safety and security
- Interoperability conditions
- Traction type (energy source)

The Technical Specifications should specify the mandatory requirements and conditions, as well as the evaluation criteria differentiating the qualified offers (meeting the mandatory conditions).

6.1.3. Recommendations referring to specific innovative criteria and to the evaluation modality

These criteria and the evaluation modality should be in favour of the tenders which promote mobility sustainable development, to the benefit of the region and the population.

- The evaluation criteria should best reflect the client's and the public supplier's requirements in the long run.
- The evaluation criteria should be quantifiable and verifiable

- Recommended innovative evaluation criteria:
  - Direct indicators for energy consumption (e.g.: kWh / loc. km, kWh / day)
  - Exhaust gas emission
  - Life Cycle Costs (LCC).
- For each evaluation criterion, the minimum / maximum allowed level and the modality of quantification and evaluation should be specified. There will be required standard forms and specifications so that all the tenderers may refer to the same modality of quantifying, measuring, verifying etc.
- The values declared through the tender should be accounted for by the tenderer (certificates, test bulletins, calculations), and should be checked at acceptance (in actual pre-set operation conditions) and periodically, throughout operation.
- The procurement and contracting documentation should foresee sanctions and malus / bonus terms according to the deviations from the declared values.

6.1.4. Recommendations referring to drafting the procurement documentation. Utilisation of e-Procurement procedure

- The documentation should include a calendar of the activities with deadlines for stages, for submitting the tenderers' questions / remarks, for reply / clarifications, possibly modifications, after which no further comments on the documentation wording will be allowed for any longer, and it will be accepted as such by all the tenderers.
- The procurement documentation should specify the mandatory (eliminatory) requirements, the evaluation criteria and the evaluation modality (scoring).
- The procurement documentation should also include the Contract Form.
- The procurement documentation and the Contract should include clear provisions referring to verifications / tests, penalties / gratifications according to the compliance with the data specified in the tender, for various stages (upon acceptance, - e.g. 1 year, upon expiry of the guarantee term, over the whole life cycle etc.).

6.1.5. Recommendations referring to certain contract provisions

The contracts, to be provided alongside the release of the procurement procedure, should foresee sanctions for failure to comply with the obligations undertaken under the tenders, as well as bonus / malus policies according to the degree of meeting certain criteria throughout certain time periods, specified under the contract. The new EU / national provisions allow for modifications of certain contract provisions (upon negotiation and / or throughout the contract duration), by complying with the limits / situations foreseen under the regulations.

6.2. Procurements for public services

Service contracts include public transport obligations, advertising, property management, cleaning, management consultancy, training, financial and IT related services.

There are several features specifically related to the procurement of services.

Defining the Outcome - services tend to be less tangible than supplies and therefore more difficult to define within a specification.

Most service contracts are awarded based on the Most Economically Advantageous Tender and through a series of relevant and appropriate evaluation criteria. It is important with service contracts that part of the selection criteria relates to reliability of the supplier and the expertise and ability of the personnel involved.

In estimating the value of a public contract, the value of material and equipment needed to carry out the services to be supplied by the contracting entity and which are required for the provision of the services shall be considered.

Where a contract is one of a series of similar contracts, the value of each must be aggregated to determine the estimated value of the overall project. As with supply contracts, if the aggregated estimated value of a contract exceeds the threshold, each contract must be advertised in the Official Journal of the European Union (OJEU), even if the estimated value of the individual contract is below the EU thresholds.

As the quality of service delivery is usually dictated by the skills and expertise of the personnel involved it is important that contracting authorities set out minimum requirements for the skills and expertise of the personnel in the specification.

Works are defined as capital development projects such as building and engineering contracts. Contracting authorities are required to estimate the value of the whole works project even though it may be made up of several separate contracts for different activities. For example, if the construction of a new building requires site clearance, construction and fitting out, the threshold must be applied to all three phases (total value) even though the activities are different and may involve different contractors.

Related services, for example architectural services may be purchased under separate contracts, in which case their value need not be counted against the whole works project value.

In Annexes A.3 representative examples will be presented.

6.2.1. Public Transport Services

Competition on urban and regional public transport markets are regulated through Regulation (EC) No 1370/2007 and Regulation (EC) No. 2338/2016.

Regulation (EC) no. 1370 is compulsory as of 3.12.2009; however, there is a transition period until 03.12.2019.

The main provisions of Regulation (EC) no. 1370 refer to:

a) Regulated competition for liabilities in public transport service.

   The Regulation is aimed to ensure, public passenger transport safety, efficiency, high quality and performance, considering the social- and regional-, as well as the environmental factors'.

This is achieved by setting up competitiveness rules for public passenger transport, linking the public procurement legislation to state aid laws (since public transport services cannot survive without financial compensations).

b) Types of public contracts awarding procedures:
   - Direct award;
   - Competitive award;
   - The Public Services Contracts concluded as per the general public procurement legal framework.

c) The advantages of Regulation (EC) no. 1370 as amended by Regulation (EC) no. 2338 [84] as compared to the old procurement- related legislation (EC Directives CE 2004/17 [22], 2004/18 [23]) and legal provisions in public service obligations sector (Regulation (EEC) no. 1191/1969 [85]):
   - Competitive tender procedures, with tender standards in order to determine the best way of meeting specific or complex requirements;
   - The competent authority appealing to a third party, different from the internal operator, will award the Public Service Contracts based on a competitive award procedure (with the exceptions mentioned in the Directives);
   - The local markets are open to European competition;
   - Possibility of direct award under certain circumstances, inclusively for contracts with SMEs;
   - Emergency measures are covered by mandatory transparent Public Service Contracts;
   - Sub-contracting activities are allowed in certain conditions;
   - Requirements regarding quality- and social standards –'Competent authorities should define specifications of public service obligations in public passenger transport. Such specifications should be consistent with the policy objectives as stated in public transport policy documents in the Member States' [84] .
   - Regulating public service contracts duration.
   - Examples of quality standards. They refer to new vehicles and service life, operational safety, sanitation and maintenance, continuous professional- and human resource development training programmes, protection against assault and vandalism, clear definition of the compensatory parties, protection of transport employees' rights

Taking into consideration the different traditions in organising the market of public transport services, the European law [34] accepts in this process of liberalisation both private and public capital in the ownership of public transport operators, but asks from the part of the competent authorities contracts with a limited life of maximum 10 years, for road services, and maximum 15 years for rail services, in order not to block the market. As the European text of law asks for a commercial competition between investors at the moment of awarding the contracts, but accepts monopolies during the contracting period, the rights of employees are also covered in order to avoid social disturbances.

Regulation 1370 could be considered as the first major step in regulating urban public transport services on commercial basis between public authorities and Public Transport Operators (PTOs). The document covers a lot of contractual issues and sets out rights and obligations for both sides.

The European legislators, first, define the players and new concepts that are present on the market and, second, touch the issue of quality standards, subcontracting options as 'subcontracting can contribute to more efficient public passenger transport and makes it possible for undertakings to participate, other than the public service operator which was granted the public service contract', contract definition and awarding procedures and legal protection.

As the competent authorities are allowed to work with in-house PTOs and with third parties, Regulation 1370 sets the rules for tendering procedures (including the post-tender negotiation procedures or exceptions related to the 'modest amounts or distances'), for direct awarding ones (related to an increased transparency or emergency situations) and has foreseen a transition period.

These rules include references to advertising the awarding process in order 'to enable potential public service operators to react' [34, p. 4].

Besides regulating the railway passenger transport open access services, the Fourth Railway Package adopted in December 2016 brings new clarifications and directions in opening the public service market to competition.

A market controlled through contracts asked in the Regulation 1370 is to be further opened to tendered competition through the provisions of the new Regulation (EU) 2016/2338 [84].

Following the principles of a free commercial market and to avoid an unclear business environment, the European legislators ask the competent authorities to define clear public service obligations, alongside the parameters of calculation the compensation payment and the nature of exclusive rights. On the other side, they have included some social responsibilities at the level of public transport operators as regards the protection of employees in case of market transfer.

At the same time the new Regulation accepts the right of competent authorities to work with in-house PTOs through directly awarded contracts and with third parties through tendered contracts. In following any of these paths the competent authority should provide an increased level of transparency around setting up the contract and awarding procedure when we talk about directly awarded contracts and commercial confidentiality around tendered contracts.

The tendering procedures should be open to all operators and can be replaced by direct negotiations should only one operator express interest in the service.

In order to protect interests of small and medium enterprises, the competent authority is allowed (unless prohibited by national law) to award public service contracts directly where the average annual value is less than EUR 7.5 million or less than 500,000 km.

The new procedures envisaged in Regulation 2338 are meant to build a competitive European market of public service contracts. To achieve this goal, the European legislators ask for common rules in this sector, a limited number of contracts awarded to one PTO and non-discriminatory access to suitable rolling stock (i.e. railway rolling stock).

This regulation 2338/2016 ammends Reg. 1370/2007. This new law refers specifically to railway vehicles while the rest of the document refers to urban public transport organization. Today more and more cities are responsible to contract urban and suburban railway services (RER, S-Bahn etc). These services are still considered railway services and central authorities should provide

central vehicle pools to lower costs. These central pools will be used by LAs and their respective operators.

Some of the rules are stipulated in the Art. 1, par. 5: 'Where the competent authority decides to award a public service contract directly, it shall lay down measurable, transparent and verifiable performance requirements. Such requirements shall be included in the contract. The performance requirements shall cover punctuality of services, frequency of operations, quality of rolling stock and transport capacity for passengers. The contract shall include specific performance indicators enabling the competent authority to carry out periodic assessments. The contract shall also include effective and deterrent measures to be imposed in case the PTO fails to meet the performance requirements.

Through the provisions of Regulation 2338, the main European legal framework is updated to ease the access to public service contracts of new market entrants based on European-wide tendering procedures and, at the same time, preserves the rights of competent authority to work through their own PTOs if this procedure helps increasing the quality of services and drop of costs for public service contracts. The transition period is foreseen up to 3 December 2019.

6.2.2. Complex work projects

Works contracts are generally complex in nature and occur over a longer timeframe. Large construction projects, such as the building of a new trolleybus line, tramway line, a workshop and depot area etc., require expert project management and the input of several key stakeholders.

In many works contracts, there is a requirement for a team of experts on the procurement team with a wide knowledge and specific expertise. The contracting authority may have this expertise in-house or may have to recruit one or more external advisors.

With large scale construction works it is advisable that contracting authorities play close attention to warranties and liabilities with contractors since it is common to have additional works and complications that arise during the construction that were not necessarily planned for from the outset.

As a rule, in traditional construction projects, a percentage of the contract (normally 20%) is withheld from the supplier until a final warranty is received which may be some time after the completion of the construction itself. However, in design, execution and operating contracts, payment will be directly linked to performance.

The evaluation of tenders for work contracts often show significant variations in quality and price between different bidders. The evaluation committees of contracting authorities may wish to use formal clarification meetings with bidders to establish these differences and therefore make direct comparisons more manageable. All clarifications should reach all bidders in the competition.

7. Enhance LA capacity in sustainable mobility by public procurement reform

Procurement requires expertise, especially in the procurement of innovation solutions. However, many public buyers still do not have the necessary business skills, technical knowledge or procedural understanding. This can lead to a lack of compliance with rules and has negative consequences for both businesses and taxpayers. Tackling the resulting inefficiencies is essential – the cost saving potential is estimated at billions of euros every year. [86]

Building local authorities' capacity to actually carry through a public procurement reform as an efficient tool to implement the urban mobility sustainable development measures is an important objective rather difficult to reach, too.

Enhancing Local Authorities' capacity in order to meet the 'Objective' above requires taking on the following challenges.

- Professionalize the staff in charge of public procurement: select, employ, train, educate the whole cross-disciplinary- and management team contributing to reaching this objective. Set up the team, their responsibilities, and modality of collaborating;
- Legal framework: a good knowledge of the legal framework, of the legislative changes, introducing specific regulaltions for various situations and procedures;
- Understand and raise awareness about the importance of innovative procurement and prepare their application;
- Financing – increase and optimise the resources allocated, innovative procedures for financing, business models and innovative partnerships;
- Develop a long-term procurement strategy;
- Develop an annual and multi-annual procurement plan intended for mobility sustainable development;
- Develop an evaluation plan and performance indicators;
- Enhance the exchange of knowledge between public authority professionals and suppliers;
- Organise centralised public procurement procedures between local / regional / cross-border public authorities having the same requirements;
- Promote public – private partnerships and the collaboration with the industry;
- Use public financing for research and innovation in a strategic way in order to improve challenge impacts of public procurement;
- Use the new 'Innovation Action' and 'Pre-Commercial Procurement' instruments to encourage cities and the innovation community to collaborate.

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Guidelines to Innovative Procurement

Annex A1

Institutional systems and legal frameworks in the field of procurement

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2020 CiViTAS Cleaner and better transport in cities

THE CIVITAS INITIATIVE IS CO-FINANCED BY THE EUROPEAN UNION

European Platform on Sustainable Urban Mobility Plans

Disclaimer

The present document contains annexes A1.1 up to A1.7 to the "Guidelines to Innovative Procurement" – a research document developed by SUITS (Supporting Urban Integrated Transport Systems; Transferable Tools for Authorities) Project under the HORIZON 2020 research programme.

These Annexes complete the data in the Guidelines with additional information, examples and selected bibliographical references we consider useful for understanding these concepts and the modality to use them in the strategy and policies aimed at developing sustainable mobility.

In case the potential beneficiaries have questions or need clarifications referring to nnexes A1.1÷A1.7, they are requested to address to: office@integralconsulting.ro

Abstract

The Guidelines include the theoretical, legal etc. considerations related to the procurement reform and to the modality the LAs should approach this issue.

The annexes are independent, but they come in useful in support of the Guidelines utilisation.

The Legal framework in the field of EU public procurement (A1.1) describes the legislation and the organisational framework related to the EU. The other Annexes (A1.2-A1.7) describe the Institutional system and legal framework in public procurement in each country, so that each LA can use the Guidelines to Innovative Procurement to conduct public procurement in keeping with the legal provisions listed in the annex.

The annexes will be enlarged and completed according to the legal modifications that may appear throughout the project.

Table of Contents

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PU - Public
PP - Restricted to other programme participants (including the Commission Services)
RE - Restricted to a group specified by the consortium (including the Commission Services)
CO - Confidential, only for members of the consortium (including the Commission Services)

Annex A1.1 - Legal framework in the field of EU public procurement

The relevant sources of legislation are the principles enshrined in the Treaty of Rome and the directives implementing the principles therein.

1. Provisions of the Treaty of Rome

The European Union is based on the rule of law. This means that every action taken by the EU is founded on treaties that have been approved voluntarily and democratically by all EU member countries. Under the treaties, EU institutions can adopt legislation, which the member countries then implement.

Obligations under the Treaty of Rome

A number of provisions in the Treaty concern public procurement:

a) the ban on discrimination on grounds of nationality (first paragraph of Article 7);

b) the ban on restrictions on the sale of products (Article 30), which also applies to all measures having equivalent effect, a concept interpreted by the Court of Justice as applying to all measures which are capable of hindering, directly or indirectly, actually or potentially, intra-Community trade (Dundalk and Du Pont de Nemours);

c) the freedom of establishment of nationals of a Member State in other Member States (Article 52 et seq.);

d) the freedom, for nationals of Member States, to provide services in another Member State (Article 59 et seq.), as illustrated by the Court in Re Data Processing.

2. Public procurement directives

To supplement the general obligations under the Treaty, the Community has brought in a comprehensive system of directives to ensure the transparency of competitive bidding in the entire public procurement field.

By 18 April 2016, EU countries had to transpose the following three directives into national law:

- Directive 2014/24/EU on public procurement [1];
- Directive 2014/25/EU on procurement by entities operating in the water, energy, transport and postal services sectors [2];
- Directive 2014/23/EU on the award of concession contracts [3]

Other relevant documents of the European Commission, in the field of public procurement:

- Regulation (EU) 2016/7 [4] of 5 January 2016 establishing the standard form for the European Single Procurement Document (ESPD)

ESPD is a self-declaration of a business's financial status, abilities and suitability for a public procurement procedure. It is available in all EU languages and used as preliminary evidence of the ability to fulfil the conditions required in public procurement procedures across the EU. From October 2018 onwards the ESPD will be provided exclusively in an electronic form.

- DIRECTIVE 2014/55/EU of 16 April 2014 on electronic invoicing in public procurement [5].
  The deadline for transposing the directive in the Member States has been set on 27 November 2018

Annex A1.2 - Institutional system and legal framework in public procurement in Romania

1. Institutional system in the field of public procurement

- National Agency for Public Procurement (ANAP); www.anap.gov.ro

  ANAP's role is instrumental to conceptually formulating, promoting and implementing public procurement policy, setting up and implementing the system of verifying and controlling the unitary application of legal and procedure regulations in the field of public procurement, as well as to monitoring the efficient operation of the public procurement system.

- The Romanian Digital Agenda Agency (AADR)**;** www.aadr.ro – manages and operates the Public Procurement Electronic System (SEAP); http://www.e-licitatie.ro.

- The National Council for Solving Complaints (CNSC); www.cnsc.ro

- Administrative - jurisdictional activity regarding the remedy system.

2. Strategic Documents

National Strategy in the field of public procurement; http://anap.gov.ro/web/wp-content/uploads/2015/12/Strategia-Nationala-Achizitii-Publice-final.pdf

Approved of through the Romanian Government's Decision No. 901/ 2015, published in the Official Journal No. 881 of 25 November 2015.

3. Primary legislation in the field of public procurement

- Law no. 98/2016 on public procurement – Published in the Official Journal No. 390 of 23 May 2016 [6]
- Law no. 99/2016 on sectoral procurement – Published in the Official Journal No. 391 of 23 May 2016 [7]
- Law no.100/2016 on concessions of works- and services concessions– Published in the Official Journal No. 392 of 23 May 2016 [8];
- Law no.101/2016 on remedies and means of appeal in the award of public procurement contracts, utilities contracts and concession contracts and on the organisation and operation of the National Council for Solving Complaints – Published in the Official Journal No. 393 of 23 May 2016 [9]

Methodological Norms of applying the provisions referring to awarding the public procurement contract / framework agreement under Law No 98/2016 on public procurement – Government Decision No. 395/2016, Published in the Official Journal No. 423 of 6 June 2016 [10].

4. Secondary Legislation

- **Emergency Ordinance no. 104/2017** for the amendment and supplementation of Law no. 233/2016 on public-private partnership [11]
- **Government Emergency Ordinance no. 107/2017** for the amendment and supplementation of normative acts with impact in the field of public procurement. [12]
- **Order no. 1068/1652/2018** of 4 October 2018 for the approval of the Guidelines to Green Public Procurement including the minimal requirements regarding environmental protection for certain groups of products and services to be met by the Specifications [13]

- **Order no. 1581/2018** regarding the approval of standard forms of intermediate minutes of assessment related to the award procedures regarding public procurement contracts / framework agreements, sectoral contracts / framework agreements and works- and services concession contracts / framework agreements [14]
- **Government Emergency Ordinance no. 114/2018** of 28 December 2018 regarding setting up measures in the field of public investments and fiscal-budgetary measures, the amendment and supplementation of normative acts and prorogation of deadlines - Official Monitor 1116 of 29 December 2018 [15]
- **Order no. 2717/318/2018** of 27.12.2018 regarding the review of the update rate to be used at public procurement contract award [16]
- **Instruction no. 2/2018 of 21 December 2018** regarding price adjustment of public / sectoral procurement contracts [17]
- **Government Emergency Ordinance no.19/2019 of 29 March 2019** for the amendment and supplementation of normative acts [18]
- **Government Emergency Ordinance no. 16/2019** of 12 March 2019for the amendment of art. 5 para (2) of Government Emergency Ordinance no. 98/2017 regarding ex-ante control function of the process of awarding public procurement contracts / framework agreements, sectoral contracts / framework agreements etc. [19]
- **Order no. 1017/2019** regarding the approval of the structure, content and modality of using the standard award documentation for public / sectoral product procurement [20]
  The new aspects regarding: **Government Decision no. 419/ 2018** referring to the Methodological Norms for applying Government Emergency Ordinance no. 98/2017 [21]; **Government Emergency Ordinance no. 45/2018** for the amendment and supplementation of normative acts impacting the public procurement system [22]; **Government Emergency Order no. 46/2018** regarding the setting up, organization and operation of the National Centralized Procurement Office [23]. **Commission Delegated Regulation** of 19 December 2017 published in the European Union Official Journal under no. L 337/2017 with impact in the field of public procurement [24] [25] [26].

5. Support Tools

Online Guidelines Development and Implementation

Public Procurement Guidelines; https://achizitiipublice.gov.ro - online application managed by ANAP which provides access to updated information, according to the legal modifications appeared, for all those concerned in public procurement in Romania.

The Guidelines include interactive elements, with links to relevant legal texts and pre-set forms – with a minimum content considered necessary for conducting public procurement activities.

Guidelines to public and sectoral procurement checking ;

http://www.curteadeconturi.ro/Regulamente/Ghid_control_achizitii_publice.pdf [27]

Annex A1.3 - Institutional system and legal framework in public procurement in the U.K.

1. Institutional system in the field of public procurement

Once the 2014 EU Procurement Directives came into force, the government prioritised the Public Contracts Directive for early implementation because it would deregulate and simplify the rules for where most procurement spend and activity takes place. The changes enable buyers to run procurements faster, with less red tape, and with a greater focus on getting the right supplier and best tender in accordance with sound commercial practice.

The implementation of the Public Contracts Regulations 2015 took effect from 26 February 2015. These regulations can be accessed here:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/560262/Guidance_on_Amendments_to_Contracts_-_Oct_16.pdf

The Crown Commercial Service (CCS) is responsible for the legal framework for public sector procurement and leads on the development and implementation of procurement policies for government. CCS has published a handbook and policy specific guidance to help public sector buyers understand the new public contracts regulations.

In July 2014 the Local Government Association launched a National Procurement Strategy (NPS) for Local Government after a period of consultation with Chief Executives, Heads of Procurement and central government. It describes the procurement policy landscape in 2014 which is the major policy related developments which form the context for the National Procurement Strategy and the sub regional procurement strategy. Details are available at: The national strategy for the UK is available at: https://local.gov.uk/national-procurement-strategy

To facilitate the delivery of effective procurement in the above policy context, the NPS 2014 has been structured around 4 key themes. These include:

- Making savings
- Supporting local economies
- Demonstrating leadership
- Modernisation

2. Primary legislation in the field of public procurement

The Legislative Framework within which the UK procures, requires that

> 'The Public Contract Regulations 2015 (PCRs) enact the 2014 EU Directive (2014/24/EU) into UK law and lay out in detail how public procurement must be undertaken across all of the member states within the European Union. Examples of other law impacting procurement are: Public Services (Social Value) Act 2012, Competition Act 1998, Localism Act 2011 Freedom of information Act 2000, and Equality Act 2010.' (*Source: Sub Regional Procurement Strategy 2015-2020 (July 2015).*

3. Procurement policies framework

Vale for money; as a public sector buyer, value for money is fundamental to the procurement activity

Centralised procurement; in 2010 central government moved to a system which buys common goods and services once on behalf of the whole of government, and not in individual departments.

Spending controls; these need to becomplied with in relation to central government spending controls in areas related to:

- Advertising, marketing and communications
- Commercial (strategic supplier management, disputes and commercial models)
- Technology
- Digital service delivery
- Consultancy
- Civil service learning
- Property (facilities management)

More details are available at: https://www.gov.uk/guidance/public-sector-procurement-policy

4. Innovative practice: PCR toolkit 2015

The toolkit has been produced to support implementation of the **National Procurement Strategy (NPS) for Local Government**. This toolkit is a resource for procurement and commissioning professionals and others in service delivery, programme and project management roles. The toolkit provides practical information on how to use the new EU rules to achieve council objectives without being legalistic. The PCR 2015 were introduced following a reform of the EU rules in 2014. The reform was undertaken with a number of objectives in mind:

1. Simplify the rules for bidders and contracting authorities and make them more flexible
2. Enable 'strategic' use of public procurement (delivering social and environmental objectives, supporting SMEs, stimulating innovation)
3. Incorporate European case law (exclusion of 'in house' contracts between public bodies, limits on changes to contracts)
4. Introduce stronger measures on conflicts of interest, procurement fraud and corruption etc.

5. Public procurement procedure for city councils

The Local Government Act 1972 requires the Council to have standing orders with respect to the making of contracts. These Rules for Contract are the standing orders required by the 1972 Act. They are part of the Council's Constitution and are, in effect, the instructions of the Council to officers and councillors for making contracts on behalf of the Council. The purpose of these Rules for Contracts is to set clear rules for the procurement of works, goods and services for the Council and to ensure a system of openness, integrity and accountability, in which the probity and transparency of the Council's procurement process will be beyond reproach. Accordingly, these Rules for Contracts must be followed for all contracts (but excluding the categories listed in Rule 7.2, grants and land contracts which are dealt with under different rules) for:

- the supply of goods to the Council;
- the supply of services to the Council; and
- the execution of works for the Council.

The Coventry City Council has its own Procurement Strategy, setting out how the Council intends to go about procuring works, goods and services. Conformity to these Rules for Contracts, and the Council's Employee Code of Conduct, will ensure that contracts are let in accordance with the Procurement Strategy, the Compliant Procurement Process and associated User Guides and Procedures (Rules for Contracts 2014)

The Council is subject also to the United Kingdom Public Contract Regulations 2006, the legislation which reflects the EU Public Procurement Directives. This legislation requires contract letting procedures to be open, fair and transparent. These Rules for Contracts provide a basis for true and fair competition in contracts, by providing clear and auditable procedures,

which, if followed, will give confidence that the Council has a procurement regime that is fully accountable and compliant with the legislation.

6. Summary of Rules for Contracts – Quick Reference Guide including Approval Levels.

Procurement Process	Above £1million in value	Over £50,000 – and under £1million	£10,000 and under £50,000	Below £10,000
Requirement to be referred to	Procurement Board	Panels	Procurement Service	N/A
Approval	Through budget setting and compliance with Rules for Contracts, Procurement Board approval in consultation with Cabinet Member and Chair of Audit and Procurement Committee. Where the annual value is higher than £1million approval must be obtained from Cabinet	Panel approval. In consultation with Cabinet Member and Chair of Audit and Procurement Committee.	Director approval or delegated authority to budget holder	Budget holder
Invitation to tender	Supplies and Services - Public Contract Regulations 2006 Works > £3.9m Public Contract Regulations 2006	Competitive tenders. Minimum of 3, which must be advertised.	Minimum of 3 written competitive quotations in addition, where appropriate, a minimum of 2 should be local.	Use of corporate contract or demonstrate value for money
Opening of tenders	Electronic or Legal Services in presence of Procurement Service.	Electronic or Legal Services in presence of Procurement Services.	N/A - quotes	N/A
Form of Contract	Standard or bespoke Form of Contract. Contracts in the form of Deeds must be prepared and sealed in Legal Services	Standard or bespoke Form of Contract as advised by Legal Services/Procurement Service.	Official order form or standard Form of Contract	Official order form or Council procurement card

Procurement Process	Above £1million in value	Over £50,000 – and under £1million	£10,000 and under £50,000	Below £10,000
Contract to be endorsed/signed by	Under seal by the Council in the presence of Authorised signatory in Resources Directorate.	Under seal by the Council in the presence of Authorised signatory in Resources Directorate.	Assistant Director Procurement	Budget holder

N.B. Contracts to be signed before expenditure incurred.

Annex A.1.4 - Institutional system and legal framework in public procurement in Greece

1. Institutional system in the field of public procurement

- **Ministry of Development and in particular the Directorate General Government Procurement of the General Secretariat of Commerce** (gge.gov.gr)

It's the responsible entity for public procurement.

- **Hellenic Single Public Procurement Authority (EAADHSY**).

It is intended to develop and promote the national strategy, policy and action in the field of public procurement, ensuring transparency, efficiency, coherence and the harmonization of award procedures and public procurement to the national and European law, the continuous improvement of the framework of public procurement, as well as control of its observance by public authorities. (www.eaadhsy.gr/). It was established by Law No.4013 / 2011 and is regulated by Presidential Decrees 122/2012,123/2012 and 43/2013.

2. Strategic Documents

National Strategy in the field of public procurement: Approved of through the Greek Economic Policy Council No. 50A/20 -1 -2017 (http://www.opengov.gr/aads/?p=5405)

3. Primary legislation in the field of public procurement

- Law 4412/2016 Public Works, Procurement and Services (adaptation to Directives 2014/24 / EU and 2014/25 / EU) - Official Government Gazette A '147 / 8-8-2016
- Law No 4013/2011 "Establishing a Single Independent Public Procurement Authority and the Central Electronic Public Contracts Register " (Official Government Gazette 204 / A / 15-9-2011)
- Law N.4155 / 2013 "National System of Electronic Public Procurement and other provisions "(Official Government Gazette 120 / A / 29-5-2013)
- Ministerial Decision 57654/17 (Government Gazette B / 1781 / 23-05-17) Ministry of Economy and Development "Institutional framework of KIMDIS"
- Joint Ministerial Decision P1 / 2380 "Regulation of the specific operational issues of the Central Electronic Register of Public Procurement "(Official Government Gazette 3400 / B / 20-12-2012)
- Law No 3852/2010 "New Architecture of Local Government and Decentralized Administration - Kallikratis Program"
- Presidential Decree "171/87 (Official Government Gazette A'84) "Bodies that decide or advise and special arrangements on topics of projects performed by local authorities and other relevant provisions"
- Law No. 3861/2010 Strengthening transparency by obligatory posting of laws and acts of government, administrative and self-governing bodies on the internet "Clarity Program" and other provisions (Government Gazette A'112 / 13 July 2010).

4. Greek legislative framework of public procurement system

4.1. Traditional competition procedures for public procurement

Annex A.1.4 - Institutional system and legal framework in public procurement in Greece

The Greek legislative framework for public procurement comprises one main law - 4412/2016 -. The law 4412/2016 "Public procurement for Works, Supplies and Services" (Government Gazette A 147) is an adaptation to EU Directives 2014/24 (public procurement procedures) and 2014/25 (supplies for entities in the water, energy, transport and postal services sector).

The law applies to all public contracts awarded by the contracting authorities" (Article 2, paragraph 2). It is worth to point out that this regulation abolishes all the specific provisions for the award and execution of public works (special regulations) of public sector organizations and companies (local authorities, etc.). Therefore, all the contracting authorities of the country will tender, award and execute public works in accordance with the provisions of this law, as any other opposite general or special provision is abolished (Article 377, paragraph 2).

Implementation limits – upper and lower limits

The law in all its provisions (award criteria, legal protection etc) applies to all public contracts, above and below the limits of the implementation of the European Union Directives. However, specific provisions (Articles 116-118) introduce regulations which refer to contracts under the limits. They are provisions related to short competition (up to EUR 60,000, article 117) and direct award (up to EUR 20,000, article 118).

The lower financial limits, in relation to the estimated value of the contract, excluding VAT, are set for public works, services and supplies (Article 5 of Law 4412/2016) and today apply as follows:

- EUR 5.548.000 for public works contracts
- EUR 221.000 for public supplies and services contracts awarded by local authorities (municipalities) and for design competitions organized by those authorities.

In addition, in regard to contracts below the limits, particular mention should be made in two procedures involving even lower financial limits: 1st in the direct award procedure involving contracts with a value of less than or equal to EUR 20,000 (Article 118 of Law 4412 / 2016) and 2nd in the procedure of the short competition concerning contracts with a value of less than or equal to EUR 60,000 (Article 117 of Law 4412/2016). The provisions relating to these procedures essentially provide different award procedures and publication deadlines for contracts above the limits.

- Short competition (article 117) for estimated value equal to or less than EUR 60,000 (excluding VAT). A simplified call is published and may invite at least three candidates. Procedure details are set out in the contract documents. Optionally use of ESIDIS (National Electronic Procurement System).
- Direct award (article 118) for estimated value of EUR 20,000 or less (excluding VAT). Carried out by local authorities, without the need for a collective body. Award criterion is the ability to perform the contract well and in time, in conjunction with the bidder's financial offer. Following the decision, it is published in KIMDIS (Electronic Register of Public Procurement). It is used the Central Electronic Draw System which is an online application which is being developed in the General Secretariat for Infrastructure of the Ministry of Infrastructure and Transport, in order to conduct electronic draws, in the context of direct award for public procurement works contracts, studies and technical and other related scientific services, as it is prescribed in paragraphs 5 and 6 of Article 118 of Law 4412/2016.

If the budget of public maintenance works is under EUR 5.689, then the legislative framework is the presidential decree **171/87** (Government Gazette A '84).

Definitions (Article 2):

The law introduces new concepts and gives definitions that will find practical application in the assignment and execution of the project. In paragraph 2 of article 2 it is given the definition of public works. In paragraph 22 of Article 2 it is defined a new meaning of a " life cycle ". In paragraph 2.6 a new term of "performativity" is introduced.

Documents

There is also a distinction (in terms of limits) in the European Single Contract Document (ESCD), for upper- limits competitions, and the proposed by EAADHSY (Hellenic Single Public Procurement Authority**)** for projects below -limits. EAADHSY has developed the Standardized Consent Form Document, in faithful copy of "Commission Implementing Regulation (EU) 2016/7 of 5/1/2016, establishing the standard form for the "European Single Procurement Document" and Annex 2 of the Regulation.

An innovation introduced by law at article 79 is the European Single Contract Document.The ESCD is an up-to-date consent form with the implications of Law

1599/1986, submitted by the economic operators and constitutes a preliminary proof in order to replace the certificates issued by public authorities or third parties.

Also, the online repository of certificates (e-Certis) is introduced by law, which in the future will be a pan - European database with data for all economic operators participating in public procurement tenders and where the contracting authorities will seek the corresponding certificates.

Award criteria of contracts
With the incorporation of EU directives, the key award criterion for public works is the most economically advantageous tender (article 86, parag 1).

In paragraph 2 of article 86, the award criterion is also the 'most advantageous financial tender based on price' at the discretion of the contracting authority (ie the so-called "cut- price" criterion). It is therefore the choice of the contracting authority to choose the award criterion. The same paragraph refers to the best value-for-money criterion assessed on the basis of qualitative / environmental and / or social aspects, which are analyzed in the same article. For the application of the criteria, the law provides a formula in paragraph 11. The law also, introduces a new award criterion for life cycle costing (article 87).

4.2 Innovative public procurement contracts

EAADHSY, specifying the current legislative framework, updates and guides, through general instructions, the contracting authorities / contracting entities and economic operators regarding the interpretation and application of these laws, as follows: with templates, clarification documents, guidelines, advice, technical guidelines, supportive material, frequently asked questions (FAQs), since EAADHSY can not substitute the judgment of the contracting authorities / contracting entities, in the decision-making phase concerning the design and execution of public procurement procedures. In the technical guideline no.2 of EAADHSY, the innovative public procurement contracts are analyzed and especially the Pre-Commercial Procurement (PCP) and the Procurement of Innovative Solutions.

Analysis

Benefits from PCP processes

- Improvement of the quality and / or efficiency of public services through the ability of contracting authorities to have access in innovative solutions.
- Higher quality and cheaper products due to the development of competition in the process PCP.
- Reduced risk of failure in large scale PPI supplies. Through PCP processes, it is ensured that prior to the PPI process the contracting authorities have understood the market opportunities so they know exactly what they are asking for, so they do not waste money and resources in low-quality solutions or solutions that do not meet their needs

Benefits from PPI processes

- Improvement of the quality and / or efficiency of public services.
- Start-up / development of innovative businesses.
- Encourage businesses to invest in innovation

Comparison of PCP/PPI processes with traditional procedures of public procurement contracts

Traditional procurement procedures are based on short-term estimates

for public procurement contracts, which place greater emphasis on low cost and lower quality or are aimed only at the direct and not the long-term cost / benefit impact. The lack of knowledge for the technological solutions of the market, often leads to a non-specific description of them required technical specifications in the context of a call, or to their overspecialization.

Replacing existing solutions with innovative ones usually requires an initial investment, which is paid off in the long run, in order that this solution to have result in the improvement of the quality of the services, provided by the contracting authority that has chosen it.

Comparison of PCP / PPI processes in relation to the innovation partnership (Article 31 of Law 4412/2016)

The question to be asked, in order the authority to decide if the appropriate procedure is that of PCP / PPI or Innovation Partnership, is when it is advisable the procedures PCP-PPI to be used, as two separate but complementary processes, and when as a long-term process, combining the demand for innovative R & D products / services

with the consequent purchase of the products / services that will arise from the previous stage, in large quantities.

There is no legal limitation for PCP-PPI procedures. PCP is recommended for the majority of cases where the contracting authority needs a solution that is not unique or specialized in order to be assigned to a specific contractor, but there is a wide range of potential contractors. Typically, there are many businesses that are interested in developing solutions in the context of PCP for big markets. PPIs can also be used in cases which not research and development is needed.

Excellent, with higher quality product are emerged and there is an average of 20% savings in product costs in relation to partnership innovation process. The trapped situation for the supplier, in innovation partnership procedure, prevents the retention of competition till the end (competition continues to exist during the PPI procedure).

The contracting authority uphold the possibility to modify technical specifications and can choose the most appropriate process for PPI, according to the lessons learned from PCP process. The commitment to develop a final product is only "after" the proof that solutions developed during the PCP process are actually better from others in the market. PCP process gives the possibility for a contract with small value to be signed, targeted in real innovation and R & D.

5. Support Tools

5.1. Online Guidelines Development and Implementation

- **A Public Procurement Portal** : http://www.promitheus.gov.gr/
- **Electronic Register of Public Procurement** (KIMDIS). This includes elements of all public procurement above € 1000 for products, services and public works. Also, it is the official national information system for direct electronic submission of public procurement notices to Tenders Electronic Daily (T. E. D.).
- **National Electronic Public Procurement System** (EISDIS). This is the central electronic hub, the reference point for public procurement in Greece. Its aim is to modernize and simplify procurement procedures and stakeholder support.
- **e-CERTIS (http://ec.europa.eu/markt/ecertis/login.do).** This is a free information tool released in 2010 to provide details on the different types of certificates and attestations.

Annex A 1.5 - Public procurement – Study on administrative capacity in the EU Spain Country Profile

1. Key facts and figures

Key Facts and Figures in Spain								
Overview	**Total procurement** 99,600,000,000€		**Procurement % GDP** 10%		**2013 GDP** 1,049,181,000,000€		**Contracting authorities** 8,339	
Procedures applied	**Open** 82%	**Restricted** 2%	**Negociated procedure with call** 4%	**no call** 10%	**Competitive dialogue** 0%		**Direct award** 2%	**Other** 0%
Share of contract notices by buyer	**National** 15%		**Regional/local** 40%		**Body governed by public law** 16%		**Other** 29%	
Contract type	**Services** 55%		**Works** 4%		**Supplies** 41%		**Framework agreement** 8%	
Ex ante conditionality criteria as of 2014	**EU rules** Fully met		**Transparency** Fully met		**Training** Fully met		**Admin. capacity** Fully met	
E-procurement adoption	**E-notification** Mandatory		**E-access** Voluntary		**E-submission** Mandatory		**Uptake rate** N/A	
Perceived corruption	**Corruption widespread in society**				**Corruption widespread in procurement**			
	Businesses 97%		**Individuals** 63%		**At national level** 83%		**At local/regional level** 90%	
TED indicators	**Value of tenders** 13,350,010,157€		**Of total procurement** 13%		**# contract notices** 8,706		**# contract awards** 9,088	
Other indicators	**Received single bid** 19%		**# days for decision** 106.8		**Price only criteria** 24%		**MEAT criteria** 76%	
	Won by foreign firms 1%		**Related to EU funds** 12%		**Joint purchase** 2%		**Central purchasing** Yes, DGRCP	

For more detailed descriptions and links to sources for the above data, please see Section 4 of the report

Summary of public procurement system

The Spanish public procurement system is composed of one single legal framework and a wide diversity of contracting, management and oversight institutions, due largely to the country's decentralised political system. The diffusion of authority creates an opportunity for experimentation, as with the number of e-procurement platforms and purchasing bodies that have been created in recent years at national, regional and local levels, but can result in redundancies. The lack of clarity and transparency of government is a further barrier to effectiveness.

Spain is several years into a major reform of their contracts system in order to address some of the challenges, as well as transposing the 2014 EU Directives. Substantial efforts are underway to improve the centralisation and harmonisation of the system to reduce the costs of its current dispersed nature. In addition, reforms have been implemented to strengthen the monitoring and control of public contracts to promote transparency and reduce irregularities, fraud, and corruption.

2. Description of features

Legal features of public procurement system

The Spanish legislative framework for public procurement consisted of three main laws:

1. the Revised text of the Law on Public Sector Contracts approved by Royal Decree 3/2011 of 14 November[1],
2. the Law on public procurement in the water, energy, transport and postal services sectors 31/2007 of 30 October,
3. the Law on Public Procurement in the defence and security sectors 24/2011 of 1 August.

These three laws will be replaced by the Public Sector Directive 2004/18/EC, the Utilities Directive 2004/17/EC, and the Defence Directive 2009/81/EC respectively.

The national legislation is further developed at the regional level through either regional implementation laws or implementation guidelines. Exceptionally, the autonomous community of Navarra has its own regional law on public procurement (Foral Law 6/2006 of 9 June).

There is no difference between selection and award procedures used for tenders above and below EU thresholds. However, time limits fixed by national legislation are narrower when the contract falls below the EU thresholds[2].

Simplified procedures are available for two types of contracts:

- Firstly, negotiated procedures can be used for contracts between EUR 18,000 and EUR 60,000 for services and supplies, and from EUR 50,000 to EUR 200,000 for public works, as long as the launching of the tenders is communicated to 3 tenderers.
- Secondly, so-called “minor contracts” that have a duration of less than one year and a value below EUR 18,000 for services and supplies and EUR 50,000 for public works. These contracts can be awarded directly to any supplier without publication. These simplified procedures are frequently used by some regional and local authorities, for instance, 86% of public contracts awarded in Andalusia in 2011 were minor contracts[3].

In order to standardise technical and economic requirements for public procurement procedures, Spain also makes use of a company classification system whereby enterprises can request certification as operating in one or more of 22 existing categories of business according to their field. For larger value contracts (more than EUR 200,000 for services, EUR 500,000 for public works) contracting authorities can restrict eligibility to firms with the relevant classification, even under open procedures[4].

The Ministry of Finance and Public Administrations publishes through the State Consultative Board on Administrative Procurement a regularly updated list of enterprises with formal prohibition to engage with public administrations due to a lack of quality or service delivery problems detected in past contracts or solvency problems (technical or financial)[5] **Institutional system**

The Ministry of Finance and Public Administrations is in charge of national public procurement policy through two main bodies.

- The Directorate General for State Assets, which is responsible for the general regulatory framework on public procurement, setting the national strategy for e-procurement and operating the national e-procurement platform.
- The Directorate General for Rationalisation and Centralisation of Procurement, focuses on the harmonisation and centralisation of national public procurement, operates as the central purchasing body for the State administration and State-related entities, and

has developed a centralised procurement catalogue called Conecta-Centralización, directly connected to the State e-procurement platform. This catalogue is used by regional and local authorities on a case-by-case basis as most of them also have their own centralised purchase systems.

The State Consultative Board on Administrative Procurement is an autonomous body within the Ministry of Finance and Public Administrations that provides legal advice and guidance to improve the administrative, technical and financial aspects of public contracts. In addition, 15 out of the 17 regions have their own consultative boards that produce reports and recommendations to improve public procurement.

Two specific registries have been set up at the central level by the Ministries of Finance and of Public Administration. According to the public procurement law, the official registry of tenderers and contractors of the State (ROLECE), as per the corresponding official registries in each region, province and municipality, allows tenderers to register and to provide a set of documentation which is usually required in tender procedures so that they do not have to provide it each times they present a bid. On the other hand, the Public Contracts Registry (RCP), created within the State Consultative Board on Administrative Procurement, centralises information on the awarded contracts for all contracting authorities of the country.

The main oversight bodies are the National Court of Auditors and the General State Comptrollers (IGAE), along with the General Regional Comptrollers operating in the 17 autonomous regions and 2 autonomous cities. Comptrollers at the state and regional levels are internal overseers, verifying that the institutions under their jurisdiction respect the principles of legality, economy, efficiency, and efficacy.

As independent agencies, the Courts of Auditors provide external oversight. According to Law 7/1988 of 5 April, all public sector contracts are subject to the audit and control activities of the National Court. In addition, specific monitoring and control of ESI Funds-related procurement is carried out at the regional level by the Regional Comptrollers in coordination with the Intermediate Bodies in charge of programme management. MAs at the central level only conduct quality control of the regional oversight procedures.

The Central Administrative Court of Contractual Appeals (TACRC) is a unique administrative court specialised in public procurement. It was created in 2010 to improve oversight of contracting authorities at all levels. In 2014, 1,117 appeals were brought before the TACRC, an average of 93 per month, and were decided within an average timeframe of 26 days[6]. The majority of sanctions imposed on contracting authorities involve the invalidation of contracts, but TACRC is also authorised to impose fines on the grounds of bad faith and recklessness when challenging the award. In addition, 7 autonomous communities have created their own Territorial Administrative Courts of Contractual Appeals which operate independently at the regional level and might provide different interpretations of the law.

The Ministry of Economy also funds a National Observatory of Public Procurement (ObCP) at the University of Zaragoza to produce independent research and analysis, and to disseminate information on the evolution of national and European procurement laws and practices.

Key issues that have a bearing on administrative capacity

Human resources: Public procurement in Spain is carried out by more than 8,000 contracting authorities at the national, regional, supra-local, and local levels, including the central administration and its agencies, public-funded bodies, universities, and healthcare services[7]. Despite this complex administrative and territorial structure, the administrative capacity of public authorities is generally adequate, in particular in managing EU funds[8].

Structures: The National Institute of Public Administration (INAP) is the government's leading civil service training school in Spain. In addition, each autonomous region has created its own training school providing similar services to regional public employees. They undertake many activities involving the recruitment, training and professional improvement of public employees, as well as conducting research on public administration and public policies. At the local level, public procurement practitioners benefit from much less training and support.

Training: In terms of capacity building, numerous training seminars and e-learning courses are organised by the INAP and the regional training schools for public procurement practitioners and administrators. The training courses generally provide participants with practical instruments and tools focusing either on the general implementation of the legislation or on specific topics such as transparency, competition, or green, social and innovative procurement.

Systems/tools: The INAP and the regional training schools produce implementation guidelines and provide e-learning courses on public procurement. Many national agencies public-funded bodies have developed their own implementation rules andinstructions to support their staff in charge of public procurement. However, no standardised tender forms or documents have been developed so far to support contracting authorities and in particular non-frequent procurers operating mostly at the local level.

E-procurement

The use of e-procurement in Spain remains quite limited[9]. The one area in which utilisation is more advanced is e-publication of contract notices through individual procurement profiles for each administration, which was made mandatory for all contracting authorities as part of the 2011 reforms. E-submission of bids is not mandatory and thus not usually offered by contracting authorities. Just 9% of enterprises submitted electronic tenders in 2011 compared to an EU average of 13%. Qualified national digital signatures (DNI-e) arecurrently being assigned to Spanish enterprises for use in e-submission but are not available to foreign suppliers.

The State Public Procurement Platform (PLACE) hosts a central registry for contracting authorities to post tenders launched in the country, and which automatically sends that information to the State Official Journal (BOE) and to the OJEU. However, usage of the platform is limited due in part to the fact that several public agencies and regional authorities operate their own competing procurement platforms often via private IT providers[10]. Currently, authorities in Aragon, Cantabria and Madrid are working with the Ministry of Finance to

integrate their platforms with the central portal to share notices and bidder registries. The Ministry of Finance and Public Administrations is currently preparing additional e-procurement integration efforts in order to concentrate the publication of tenders on a unique public procurement platform for the public sector[11]

Because contracting authorities are not required to report e-procurement data, monitoring is necessarily limited. Ministry of Finance and Public Administrations reporting is limited to data on the activities of the national e-procurement platform only.

Corruption

The perception of corruption is very high, with the share of Spanish survey respondents reporting that corruption personally affects their daily lives higher than in any other MS[12], and almost unanimous support for the view that corruption is widespread and constitutes the second major problem of the country, after unemployment[13]. This view is likely impacted by a number of high-profile corruption cases in recent years that have drawn considerable public attention to the issue. As many as one thousand high-level officials have been investigated for corruption in Spain in recent years[14]. The number of investigations has notably increased since the 1990s thanks to the creation of a specialised Prosecution Office for the Fight Against Corruption and Organised Crime (FECCO) whose autonomy and capacity have been reinforced across the years.

According to the National Observatory of Public Procurement, there is a strong link between corruption and public procurement in Spain, and many of the prominent national corruptioncases are connected to procurement in some way. Corruption cases at the regional and local levels are particularly an issue, especially in the construction and waste collection sectors. Notably, alleged violations have increased recently, particularly concerning irregularities in the application of procurement rules, such as splitting of contracts and the unjustified use of urgent procedures, indicating weaknesses in the control systems of public procurement[15]. In late 2013, the Government acknowledged the need to address corruption as a matter of priority and has approved a Plan for Democratic Regeneration[16] including 40 measures to fight corruption and improve transparency in public administrations.

More positive developments in the fight against corruption include the reinforcement of penal sanctions for public officials and the introduction of Law 19/2013 on transparency, access to information and good governance. In particular, this law has led to the creation of a Transparency Portal that publishes, among other things, the list of all contracts awarded by the State administration with the corresponding amounts and names of contractors. Regional portals have being developed as well providing the same kinds of information.

Moreover, initiatives to modernise public administration are also under way, for example through the Law 27/2013 on Rationalisation and Sustainability of Local Administration, which aims to enhance control and to improve coordination among the national, regional and local administrations.

Europe 2020 Agenda

Environmental, innovation, and social considerations are not systematically taken into account in evaluating tenders in Spain, although they may be considered on a case-by-case basis, or as a “tie-breaker” criterion between otherwise equivalent bids[17].

The Green Public Procurement Plan[18] adopted in 2008 set up national targets to increase the use of GPP up to 25% of total procedures and 100% of public purchase for specific products and services. In this context, the Ministry of Environment regularly produces tools and guidelines for the inclusion of environmental criteria in tendering processes, publishes good practices reviews on different types of contracts, organises dissemination and awareness raising events for public procurement practitioners, and monitors annually the use of GPP by the central administration. In 2011, GPP was mainly used in the fields of waste collecting and treatment, public works, energy efficiency in public buildings, IT supplies and cleaning services[19]. Most regions have developed their own GPP strategies and action plans, and some of them also monitor GPP. For instance, the government of the Basque Country has set up Commission for the inclusion of environmental criteria in public procurement that publishes data annually[20]

The 2011 procurement reforms included recommendations for the integration of research and development and innovation criteria in public procurement. Subsequently, several guidelines and catalogues of good practices have been published to promote the inclusion of those criteria. For instance, a Guide on Innovative Public Purchase was produced by the Ministry of Economy in 2011 as part of the State Innovation Strategy (E2i). More recently, the 2014-2020 ERDF Operational Programme on Smart Growth established a specific support in the form of grants or loans to public bodies at the national, regional and local levels to foster the use of public procurement for innovation.

The public procurement law provides a set of recommendations for the inclusion of social considerations in different steps of public procurement procedures, including evaluation of technical capacity, exclusion criteria, selection criteria, and conditions of implementation of the contract. Practical tools and guidelines have been developed regarding social objectives such as equal opportunities between men and women, lifelong learning education, labour inclusion of disabled persons and of people at risk of exclusion, and promotion of fair trade.In addition, the law allows contracting authorities to restrict the award of some contracts to social enterprises or employmenttres if relevant.tres if relevant.

Irregularities and findings of national Audit Authorities

The National Court of Auditors publishes annual findings and recommendations on the use of public procurement by state level contracting authorities. Irregularities related to public procurement are generally attributed to a lack of rigour in the preparation and awarding phases of public contracts, leading to additional delays and unexpected costs, as well as a deficient control and monitoring of contracts implementation.

The National Court of Auditors also regularly assesses the main risk areas in public procurement at regional and local levels. It highlighted in 2012 that the most frequent irregularities found involve the breaking down of large contracts into smaller tenders to avoid public procurement requirements, the use of tailor-made criteria in favour of a specific tenderer, the lack of selection criteria and clear award decisions as well as the lack of penalties applied to high priced offers[21].

In addition, the appeals presented to the TACRC during the past years show that the types of sectors most affected by procurement problems were the infrastructure, security and social services. In 2014, half of the appeals (50%) referred to irregularities related to the awarding of the contract. Other major issues referred to the tender specifications (23%) and to the exclusion of a tenderer (21%)

Outlook

The on-going reforms of the public administration, the public procurement system, and anti-corruption policies are expected to increase efficiency and transparency in the management of public funded contracts. In particular, several measures for the further centralisation of processes are currently foreseen concerning the use of a central purchasing body for national administration and regional/local authorities, a unique register of bidders, and a common e-procurement platform for the public sector gathering information from national and regional contracting authorities. E-procurement has been recently strengthened by making e-invoicing mandatory in January 2015 for all contracting authorities. It will be also reinforced through the further development of e-submission[22].
Further integration of different levels of government are also planned, for example though conventions between national and regional public procurement boards, administrative courts of contractual appeals and between national and regional training schools of public employees to increase collaboration and to clarify the distribution of competences.

Analysis

Strengths

Spain has undertaken substantial efforts to remake their procurement system in recent years, launching a number of new programs, tools, and initiatives. Notable improvements have been made thanks to the creation of a specific administrative jurisdiction of contractual appeals, and to the adequate capabilities of public authorities in particular for the management of EU funds.

The spate of recent corruption scandals has helped to put ambitious anti-corruption and transparency reforms at the top of the political agenda, creating a real opportunity for positive change.
In addition, the economic crisis and the increasing pressure on public finances have led to the launching of a structural reform of public administration aimed at reducing inefficiencies and at

reinforcing simplification, transparency, and harmonisation of public procurement procedures among the different levels of government.

Weaknesses

The high number and diversity of contracting authorities in Spain has caused the multiplication of implementation rules and procedures in public procurement at the cost of clarity and transparency for procurers and tenderers[23]. The decentralized territorial and institutional structure of the country does not necessarily justify the duplication of public procurement bodies at national and regional levels, including oversight bodies, consultative boards, administrative courts, and training schools for public employees. As pointed out by the Commission for the Reform of Public Administrations (CORA)[11], the redundancy of competences and procedures has to be corrected to reduce overlapping, inconsistencies in the implementation of rules within the country, and unnecessary delays and costs.

In addition, while the reforms undertaken have been positive, more remains to be done. Perception of corruption and distrust in government remain high and continue to be a barrier to participation in procurement by both local and international suppliers. Moreover, although Spain's above average use of open procedures has advantages for transparency and despite the recent development of transparency portals publishing statistics and information on awarded contracts, there is still room for improvement. This concerns in particular the access, interoperability and userfriendliness of information on public tenders and the transparency of selection criteria.

Public procurement oversight mechanisms also need to be strengthened particularly by enhancing on-site controls of the execution of contracts. Furthermore, the current sanctions imposed to both contracting authorities and economic operators have not had a sufficient deterrent effect[15].

In addition, the use of e-procurement is still largely limited to e-publication of contract notices and e-invoicing.

3. Recommendations

- **Coordination between regions and with the central administration:**
  Spain's decentralised administrative and territorial structure gives substantial autonomy to regions, which results in redundancies and overlaps between bodies dealing with public procurement. Greater coordination and cooperation between such bodies could reduce uncertainty for practitioners and improve efficiency. Increased coordination between specialised courts of contractual appeals to better harmonise the interpretation of procurement law among the regions.
    - Increase coordination between, and consider mergers of consultative boards on public procurement. These innovative and promising institutions mostly operate locally and independently, leading to overlaps and possible inconsistencies between regions, creating confusion for economic operators and contracting authorities.

  - Increase coordination between public procurement oversight bodies at regional and national levels such as IGAE and regional comptrollers, in order to ensure a consistent application of the single legislative framework on public procurement across the country.
- **Control and oversight**: Public procurement oversight shows some deficiencies in reducing fraud and recurrent irregularities.
  - Increase sanctions for violations of procurement rules to have a more deterrent effect.
  - Enhance monitoring and control of the execution of contracts with on-site checks and visits to reduce cost overruns and delays.
  - Require the publication of annual procurement planning by contracting authorities to increase transparency and facilitate monitoring and oversight by regional and national comptrollers (IGAE) and citizens.
  - National ESI Funds MAs should issue clearer, more centralised instructions and guidance materials for Intermediate Bodies and regional comptrollers to promote a more harmonised interpretation of the rules. Coordination among MAs could result in even greater simplification.
- **E-procurement**: E-procurement uptake remains quite limited, due in part to the large number of disparate tools and platforms, which makes using eprocurement excessively complex and time consuming for economic operators
  - Increase interoperability between local and regional e-procurement platforms and the central e-procurement platform PLACE. The coordination established among regional platforms in Aragon, Cantabria, and Madrid and the PLACE platform could serve as a model. Consolidating e-notification services should be the first priority.
  - Enhance interoperability among the different registries of bidders at national and regional levels.
  - Promote a pro-e-procurement culture among contracting authorities through awareness raising campaign and improvement of e-procurement tools.
- **Local training and support:** While there are substantial training opportunities at the national and regional levels, local practitioners are underserved in terms of training and support.
  - Make training organised for national and regional administrations accessible to local public procurement practitioners.Develop standardised tender forms and documents at national level to support contracting authorities and in particular non-frequent procurers.
  - Create a one-stop shop portal for public procurement info to facilitate contracting authorities access to official guidelines and tools.

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Annex A.1.6 - Institutional system and legal framework in public procurement in Italy

1. Legislation in the field of public procurement

In Italy, **the Legislative decree of 18th April 2016, n. 50** - named Public Contracts Code, regulates the matter of supplies, services and concessions, and related public contracts. Upon its entry into force, it repealed the previous public contracts Code, ie the legislative decree 163/2006.

The new code implements the 2014/23/EU, 2014/24/EU and 2014/25/EU directives on the award of concession contracts, on public procurement and procurement procedures of providers in the water, energy, transport and postal services sectors.

The Code is articulated by sequential processes, from the moment a procurement procedure is decided to the final execution, through:

- the planning, programming and design (crucial phases for the procuring entity)
- the methods of assignment, identifying the principles common to all types of assignment: transparency, economy, effectiveness, correctness, timeliness, free competition, non-discrimination, applicability of collective agreements to the personnel employed in the works, services and supplies covered by the contracts, applicability of law 241/1990 (on administrative transparency), the RUP (Responsabile unico del Procedimento - sole manager of the proceeding), the phases of the procedures, the controls on the acts of entrustment and the criteria of energy and environmental sustainability.

The procedural rules are therefore regulated for each type of contract:

- procurement
- concessions
- other types such as those in house
- general contractor
- public-private partnership instruments, including project financing in the latter
- tools of horizontal subsidiarity
- the administrative barter

The individual steps are regulated through:

- verification of the community threshold and qualification requirements of the procuring entity
- mode of assignment and choice of the contractor
- calls for tender
- alerts
- selection of offers
- award
- execution
- verification
- testing

Regarding the choice of the contractor, the economically most advantageous offer criterion based on the best quality / price ratio (which combines the expected economic offer and the technical offer), which previously represented only one of the alternatives available to the procuring entities, becomes the criterion for preferential award.

Professional qualification is required both for economic operators, for whom a specific discipline is provided, which also includes the legality rating, and for the procuring entities, according to predefined standards and reward systems that allow, progressively, to contract more expensive and complex works, and services.

In the new code between the provisions aimed at favoring competition, the single European tender document is introduced, which will allow an immediate opening up of European competition and simplifications for economic operators, who will use a single document to self-certify the absence of all reasons for exclusion that the procuring entitiy will verify.

The gradual transition to fully digital managed procedures is envisaged, with a consequent reduction in administrative burdens.

The institute of the "public private partnership" (PPP) is regulated in the Code for the first time, as an autonomous general discipline in its own right, as a form of synergy between public authorities and private individuals for financing, implementing or managing infrastructures or public services, so that the administration can have more resources and acquire innovative solutions. It is expected that the revenues of the economic operator may come from the fee recognized by the grantor, but also from other forms of economic compensation, such as the direct income from the management of the service to external users. The PPP includes "horizontal subsidiarity interventions", ie the civil society participation in the care of public areas or the enhancement of unused areas and real estate through cultural initiatives, interventions of urban decor, recovery and reuse with the aim of general interest. The "administrative barter" is also regulated for the realization of works of interest of the citizens, with social and cultural purposes, by organized groups of citizens, without charges for the institution.

The Code does not provide for exceptions to the application of ordinary public procurement procedures, with the exception of sectors that are explicitly excluded from the directive and cases of extreme urgency and civil protection, in which it is envisaged that the immediate execution of the works or services necessary to remove the prejudice against public safety within established limits. The limits specified in the new code are 200,000 or whatever is necessary to remove the prejudice, for cultural assets up to 300,000 euros and for civil protection in cases of state of emergency declaration up to the threshold of the works.

For great public works that may have environmental and social impact on the territories, recourse to the public debate procedure is mandatory. The criteria for identifying the works involved and the terms for carrying out and completing the procedure will be established by a decree of the President of the Council of Ministers, on the proposal of the Minister of Infrastructure and Transport, after consulting the Minister for the Environment and Protection of the territory and the sea and the Minister for Cultural Heritage and Activities, subject to the opinion of the competent parliamentary commissions.

The Legislative Decree n. 56/2017 has made additional and corrective provisions to the Code of public contracts, mainly concerning:

- contracts below the threshold
- design levels
- integrated procurement and irregularity of offers
- selection board

2. E-procurement

The Legislative Decree n. 50 provides specific provisions regarding the implementation of European directives and introduces the necessary actions to regulate and standardize the processes and procedures in the e-procurement area.

The Italian legislation provides for various public e-procurement tools adapted to the different and specific tender procedures: dynamic acquisition system, framework agreement, providing for these procedures the use of electronic and telematic systems to make competitive bids and the electronic publication of tender documents. Furthermore, electronic auctions are regulated: they do not constitute a tender procedure but are "traditional" tender procedures carried out by means of an electronic bid negotiation tool.

The main Italian e-procurement public operator is Consip SpA, an in-house company of the Ministry of the Economy, which uses and makes available specific negotiation tools: Conventions, Electronic Market, Framework Agreements, Dynamic Acquisition System. Out of 1,200,000 purchasing procedures that the public administration initiates every year, 430,000 were managed by Consip in 2013 through e-procurement systems.

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2 DECRETO LEGISLATIVO 18 aprile 2016, n. 50: Attuazione delle direttive 2014/23/UE, 2014/24/UE e 2014/25/UE sull'aggiudicazione dei contratti di concessione, sugli appalti pubblici e sulle procedure d'appalto degli enti erogatori nei settori dell'acqua, dell'energia, dei trasporti e dei servizi postali, nonche' per il riordino della disciplina vigente in materia di contratti pubblici relativi a lavori, servizi e forniture. (16G00062)
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Annex A.1.7 - Institutional system and legal framework in public procurement in Portugal

1. Summary of public procurement system

The Portuguese government is structured in a decentralised system with its central government, two autonomous regions of Azores and Madeira, and municipalities and parishes at the local level. Azores and Madeira have their own political statute and enjoy legislative autonomy in some government areas, including the ability to adapt the national legislation according to their own specificities.

Starting in 2007, Portugal began a substantial shift of the procurement system from one in which responsibilities were widely dispersed, to a centralised system under the coordination of the Institute of Public Markets, Real Estate and Construction (InCI) and the Entity of Shared Services of Public Administration (eSPap).

It modernised and professionalised procurement in Portugal leading to transparency best practices with substantial cost savings within public administration. A key element of the reforms has been the embracing of e-procurement, implemented via private platforms. Portugal became an EU leader by making e-procurement mandatory in 2009, and today the e-procurement environment system is well established, covers the entire procurement value chain, and is often cited as a source of best practices for other MS.

2. Legal features of public procurement system

The current Portuguese procurement system was largely shaped by the adoption of the **Public Procurement Code (PPC)** in 2008, which transposed EU Directives 2004/17/CE and 2004/18/CE and initiated a significant overhaul of the previously legal system.

The PPC modernised, centralised and professionalised the system by creating a central procurement agency, **the InCI**, and a purchasing body, the predecessor to **the eSPap**, and mandating electronic procedures for the central administration. Local authorities retain autonomy for their own procurement, but do have the ability to purchase via eSPap's several framework contracts.

The PPC has subsequently been amended several times, the most recent being via Decree-law 149/2012, which specifies the implementation of Portugal's commitments on public procurement with respect to the Economic Adjustment Programme for Portugal. The autonomous regions of Madeira and Azores have some freedom to adapt the PPC according to their particularities as autonomous regions. The EU Directives of 2014 have not yet been transposed into Portuguese law.

3. Institutional system

The main policy body in the Portuguese procurement system is the **Ministry of the Economy**, which is in charge of development and definition of procurement policy. In this, it is supported by the InCI. Together with the **Ministry of Finance**, another major actor in the procurement

system, their responsibilities cover the communication of information to civil society regarding procurement and reporting to the EU the procurement statistics. Both Ministries are responsible for compliance with statistical reporting of the procurement system.

The central purchasing body is eSPap, which manages a number of large framework contracts through which central government agencies are required to purchase standardised items such as motor vehicles and paper goods. eSPap recently assumed the missions and duties of the previous National Agency of Public Procurement (NAPP), among others. The eSPap provides a number of shared services to different government bodies of which procurement is just one. Services are available to any public body that decides to join the National System of Public Procurement (NSPP), including regional and municipal contracting authorities.

The Portuguese Competition Authority (PCA) has the mission to ensure compliance with the competition rules in Portugal, and in particularly, to supervise and ensure that the public procedures do not violate these rules. PCA is a partner institution of the European Network of Competition Regulators.

Another external oversight body is the **Court of Auditors**, which is a fully independent judicial body that has jurisdiction over all Portuguese administration institutions and its territory, and can apply sanctions for breaches. Internal controls are performed by the Inspectors Generals of the various Ministries.

The **Agency for Development and Cohesion (AD&C)**, which operates under the Ministry for Regional Development, also provides a significant supportive function. The Agency coordinates the regional development policy and ensures, at the technical level, the general coordination of the ESI Funds for the 2014-2020 programming period.

Source:https://ec.europa.eu/regional_policy/sources/policy/how/improving-investment/public-procurement/study/country_profile/pt.pdf

4. The BASE Portal

The BASE Portal (BP), now managed by the Instituto da Construção e do Imobiliário, InCI (Institute of Construction and Real Estate, InCI), was established with the purpose of creating of an internet portal dedicated to public contracts, which shall gather all relevant information on public procurement.
The BP publishes information on all contracts concluded under the Public Contracts Code and it also gives access to the information system that assesses and monitors public works procurement in Portugal: the Observatório das Obras Públicas (Public Works Observatory).
As a reference forum in the area of public procurement, the Portal fulfils several functions:
a) it centralizes the most important data on public contracts that have been concluded;
b) it advertises, inter alia, the launch of calls for tenders and other procurement procedures, the conclusion of contracts, and any penalties imposed for breaches of the Public Contracts Code;
c) it disseminates technical contents and relevant legislation;

d) it brings the institutions closer to the citizens, by stimulating them to monitor and be acquainted with public spending.

http://www.base.gov.pt/Base/en/Portal/Base

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SUITS

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Disclaimer

The present document contains annexes A2.1. and A2.2. to the "Guidelines to Innovative Procurement" – a research document developed by SUITS (Supporting Urban Integrated Transport Systems; Transferable Tools for Authorities) Project under the HORIZON 2020 research programme.

These Annexes complete the data in the Guidelines with additional information, examples and selected bibliographical references we consider useful for understanding these concepts (L.C.C. and External Costs) and the modality to use them in the strategy and policies aimed at developing sustainable mobility.

In case the potential beneficiaries have questions or need clarifications referring to Annexes A2.1 and A2.2, they are requested to address to: office@integralconsulting.ro

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Document History

Date	Author	Action	Status	Diss.
08.12.17	INTECO - Dan Caraman	**Annex A 2.1 _ LCC** elaboration of the first draft 2.1.a -Technical Sheet – Total life cycle costs for DMU	V0.1	RE
02.02.18	Wuppertal Institut - Frederic Rudolph	Excel Sheet which the city of Wuppertal uses to calculate Life Cycle Cost – for Annex A2.1.		RE
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Annex A 2.1 - Life Cycle Costs (LCC) driven procurement

1. General. LCC concept and its importance

'Life Cycle Costs – LCC' concept defines the cumulated costs of a product throughout its whole life cycle (from product design to its disposal). See also Procurement Guidelines, chapter 5.1.1.

The concept (as well as the modalities of approach, calculation, applications) is defined through standard EN60300-3-3:2004 [1], reviewed through IEC 60300-3-3 Ed. 3.0 b:2017 [2].

The calculation modalities are complex and differ with each application.

Directive 2009/33/EC - The Clean Vehicles Directive [3], released before the new directives for procurements (CE 23 [4], 24 [5], 25 /2014 [6]) is the first official document drawing attention to LCC importance, while stipulating LCC mandatory inclusion as a selection criterion for purchasing vehicles aimed at public transport services:

Art. 16. 'The biggest impact on the market, matched by the best costs-to-benefits ratio is reached by mandatorily including the costs for energy consumption and polluting emissions, as calculated over the vehicles overall life cycle, into the list of selection criteria for purchasing public transport services vehicles.'.

Art. 20. Including the above costs as a selection criterion 'does not impose higher overall costs; it only anticipates LCC costs based on these estimates within the purchase decision'.

Directive 2009/33/EC also specifies the modalities through which the costs for emissions can be introduced into the LCC or into the procurement criteria:

Table 1: Cost for emissions in road transport (in 2007 prices)

CO2	NOx	NMHC	Particulate matter
0,03-0,04 EUR/kg	0,0044 EUR/g	0,001 EUR/g	0,087 EUR/g

- *Values are also provided in the Directive for the energy content of different fuel types and the lifetime mileage of different vehicle categories.*

By the Directive of the European Parliament and of the Council COM (2017) 653 final of 8.11.2017 [7] [8] [9] [10] amending Directive 2009/33/EU [3] (see the Procurement Guidelines, chapter 5.1.1).

Among the most important provisions under this Directive, we mention as follows:

- *'Extending the scope of the Directive by including practices such as lease, rental and hire-purchase of vehicles, as well as contracts for public road transport services, as well as specific postal and courier services and waste refusal services ensures that all relevant procurement practices are covered'.*
- *'There should be provided adequate incentives to supporting market-uptake of low- and zero-emission vehicles in the Union, and provisions for their public procurement under this amendment should be aligned with provisions of Union legislation on CO2 emission performance of cars and vans for the post-2020 period10. A more ambitious approach for public procurement can provide an important additional market stimulus.'*
- *'Given the scarce use of the methodology for the calculation of operational lifetime costs under Directive 2009/33/EU and the information provided by contracting authorities and entities on the use of own methodologies tailored to their specific circumstances and needs,* ***there should be no methodology mandatory to use, but contracting authorities, contracting entities or operators should be able to choose any life-costing methodology in order to support their procurement processes.***

- *'Public Authorities, through their procurement policy, can establish and support markets for innovative goods and services'.*
- *'LCC calculation is an important tool for the contracting authorities in order to cover the energy- and environmental costs '*
- *'A greater support in spreading non-polluting vehicles on the market can be achieved by providing public support measures at a national and at the Union scale'.*

As shown above, the calculations for LCC estimate can be complex and laborious, but making them need not be the purchaser's concern and objective.

Nevertheless, it has been found out that it can be drastically reduced (because of its huge external costs, as compared to other means of transport – See Chapter 5.1.4.) in perspective of sustainable development strategies.

That is why the EC considered that public procurement procedures are the most important lever which can bring about fast technical progress, in the desired direction.

However, mention should be made that such regulations have appeared for rail transport as well:

- UIC 345 /2006 – Procedures for Rolling Stock procurement with environmental requirements [11]
- UIC 330 / 2009 – Railway- specific environmental performance indicators [12]

We also specify that these regulations were prepared in line with several European projects that studied and grounded various aspects related to these innovations in procurement procedures. Among them, we mention: Prosper, RailEnergy, ECORailS.

We exemplify the importance of this criterion through LCC structure for a passenger transport locomotive and for electric buses:

Costs	Locomotive for passenger service [13]	Electric bus with 250 kWh on-board [14]
Purchase	22,70 %	43%
Energy consumption	46,20 %	12%
Maintenance	31,00 %	46%

* Sursă: UIC – Energy Efficiency Technologies for Railway – LCC- driven procurement

It is obvious that, in this case, the possible extra purchase costs will be rapidly paid off if the purchase is decided on based on the lowest LCC criterion.

According to a report from Bloomberg, nearly half of the municipal buses on the road worldwide will be electric within seven years (in 2025). [14]

Energy Star was a programme released in the USA in order to promote energy efficient products. Since 1992, Energy Star and its partners have helped save American families and businesses $430 billion on their energy bills—while also achieving broad emissions reductions—all through voluntary action. [15]

In the past 50 years, humans have consumed more resources than in all previous history. [16]

All these costs can be included into LCC, thus providing an essential criterion in support of sustainable development.

2. Difficulties in applying the LCC criterion in procurement procedures

- Lack of technical- and managerial decision knowledge referring to LCC-driven procurement
- Technical complexity of the modalities of LCC calculation and interpretation for each product.
- Purchasers' lack in the expertise to conduct LCC analyses and to include such requirements into the public procurement decision.
- Lack of political- and managerial decision to apply complex, difficult, long-term programmes.

The successful implementation and utilisation of this criterion is mainly conditioned by:

- An innovative approach to procurement long-term preparation
- An innovative approach to public procurement procedures

- A modern and organised approach to product operation management, so that all the expenditures may be continuously monitored and optimised throughout the product life cycle.

3. Support in applying LCC – driven procurement

Besides the above mentioned directives, there are numerous other national and international programmes and initiatives aimed at fostering innovative public procurements to promote the new criteria. Among these, we mention as follows:

- GPP - Green Public Procurement [17]
- SRPP - Socially Responsible Public Procurement [18]
- SPP - Sustainable Public Procurement [19]
- ECO-Innovation [20]
- SMART City [21]

LCC – driven procurement [22] can include all the above mentioned desiderata.

The European Commission is developing a calculation tool on life-cycle costing which aims to facilitate the use of LCC amongst public procurers. The LCC calculation tool will be developed in accordance with art. 68 of the current (2014) public procurement directives.

The necessity to integrate LCC into public procurements should stand for a priority with politicians and decision makers, who are to prepare the support for these activities: the legal and regulatory framework / methodologies, necessary budgets and funds, selection / training / organisation of decision making and execution personnel, strategies and sustainable public procurement policies.

The regulations developed should allow for versatility in procurement organisation, the possibility that the organisation may benefit from part of the savings achieved, which can be used for organisational improvements, monitoring- and management IT systems, preparing other procurements etc.

The regulations should support both innovative procurements and the actions which may facilitate them, such as the application of innovative financing, partnerships and innovative business models.

4. Considerations on LCC – driven procurement

- Based on the long-term procurement strategy, necessary for mobility sustainable development, the Manager and the decision makers of a Local Authority (or the Transport Operator) should identify the complex products, with important LCCs, with major implications in environmental degradation, products which should be purchased through LCC – driven procurement.
- According to a statistic provided by the International Institute for Sustaineble Development (IISD) [23], LCC procurement decisons are applicable and recommended for the following supplies, services and works:
  - Vehicles, ICT equipment, lighting
  - Transport services, electricity
  - Constructions /modernisation of railways, roads, buildings
- The Contracting Authority should prepare these procurements on a well grounded basis and much in advance.
- It is desirable to take steps with a view to the association of several entities which need such products, as well as to initiating a regional-/ national-/ cross-border public procurement. In this way, the top suppliers eager to invest in innovative products, in keeping with the requirements, will apply in response to the calls of tenders for large quantities of products. Besides obtaining high-performance products, and in keeping with the tender requirements, in case of an important purchase, price- and payment facilities, related services and long-term collaboration / partnership with the contractor will be easier to get.

- It is desirable to take action for related innovative procurement procedures (PP, PPI, PCP) through which European and / or other funds can be accessed in order to finance the innovative solutions desired for the new products / services.
- It is desirable that the procurement process should refer simultaneously / cumulatively to both the Product and the Services for Product operation and maintenance. In this way, all LCC expenses can be calculated and monitored / optimised more correctly during operation. Also, a policy of permanent innovation can be developed, in order to reduce LCCs, to the benefit of all parties concerned and of the society.
- The Product- related operation and maintenance services can be provided by the Product Supplier, or by a local provider of such services, yet with the Supplier's management or collaboration.
- Vision and preparation of the product management and operation- and maintenance organisation in terms of monitoring and optimising expenses over the life cycle.
- Organisation of market consultancy in order to prepare the procurement by inviting independent experts, public authorities, economic operators to consultancies, representatives of potential suppliers etc.
- According to specific requirements, to the results of the undertakings suggested above, and to the results of the consultancies, the Authority will decide on the procurement main data: what to purchase, quantities / progress schedule, procurement procedure deadlines, delivery dates, guarantee, long-term partnership etc.
- Selection of the most suitable procurement procedure
- The Contracting Authority should have the necessary training and determination to reach the set objectives. However, for the details related to the Technical Specification, to criteria formulating and checking, or for other specific issues, it will be necessary to purchase consultancy services able to give counsel and assist the Authority throughout the procurement procedure.
- Elaboration of the procurement documentation and the organisation of the award procedure, by using the opinions, suggestions, or recommendations received under the consultancy.

5. LCC criterion - recommendations

a) LCC is defined as the overall cost throughout the life cycle (or over a specified period of time) for a product / service / system. However, out of the numerous components, the Contracting Authority can select those they consider important.

b) LCCs mainly include: the purchase price, the cost of installation, operation costs, maintenance-, repair- and modernisation costs, as well as the residual value at the end of the useful life.

c) LCC-driven procurement calls for compliance with the basic principles of any public procurement:
   - non-discrimination;
   - equal treatment;
   - mutual recognition;
   - transparency
   - proportionality;
   - taking on responsibility.

d) In LCC-driven procurement, special attention and priority shall be given to the criteria GPP - Green Public Procurement, SRPP - Socially Responsible Public Procurement, SPP - Sustainable Public Procurement

e) Most studies insist on LCC necessity and modality of calculation. Such a calculation is very laborious to make for each product type, and yields very uncertain results. We consider that the Contracting Authority does not have to make such a calculation.

f) The Authority should request the LCC results from the tenderers. The tenderers are specialised in the research and design of the respective product, have operation data, and are used to making such LCC- related calculations and records with a view to the product future development. In the case of a complex product, the suppliers request such data from the sub-suppliers. Competitive suppliers are always glad to meet the requirements of such a procurement procedure, being thus given the opportunity to develop innovative products and solutions, many of which are already at a research or design stage. They will be eager to invest in such products which will enhance their chances to win tenders.

g) In order to prepare the procurement procedure, the Contracting Authority and the specialised consultants should carry out the following specific operations:

- Break down LCC into cost elements – according to EN 60300-3-3/2017, the specific character of the respective product, and the sub-criteria outlined as per point e) above. See also the Annex 2.1 a, below.
- Set unitary prices to be used in the calculation: electric energy, fuel, emissions, labour, spare parts
- Set a calculation methodology so that LCC may be calculated in the same way by all the tenderers
- Set standardised forms for tendering the required data, so that the tenders may be easier to compare to one another
- Set the conditions for data check, by stand tests, acceptance tests, LCC periodical tests throughout the life cycle or over determined periods of time.
- Set the modality of collaboration with the supplier for these checks
- Set the supplier's liability in case of deviations of the data as measured from those as provided
- Set, through the award and contract documentation, a bonus-malus policy regarding the results of the periodical checks, the application of subsequent innovative solutuions, the collaboration modality etc.

6. Conclusions

As shown by the vast bibliography referring to LCC concept [24], the theoretical- practical- and approach related aspects are of a wide diversity, and impossible to briefly clear out in a fit-all manner valid for any product / service.

Based on the authors' experience and research, a selection of the information has been made so that the Guidelines and the Annexes may present a concise approach able to support the decision makers and organisers to best understand and use optimally the procedures regarding procurement, contracting and operation based on LCC concept.

It is a big opportunity to have these materials peer reviewd by SUITS partners, and then tested under the Pilot Application, because it is in this way that we will get feedbacks from those concerned, also with the benefit of their multicultural experience.

7. ANNEXES:

A.2.1.a - 'Technical Sheet – Total life cycle costs for DMU'

The annex shows such an example of a standardised form for LCC Offer in the case of a DMU – Diesel multiple unit.

The form was submitted by SC Integral Consulting R&D under the Report on the Pilot Project carried out in Romania, with the collaboration with S.N.T.F.C ,,CFR Călători / Romanian Railways – Passenger Transport", Regional Subsidiary of Passenger Railway Transport Timișoara, under ECORailS Project [25] [26], conducted under IEE Programme – Intelligent Energy Europe.

The studies conducted under the project were tested and validated through 4 pilot projects: Lombardy Italy [27], Øresund, Denmark [28], Timișoara, Romania [29], Berlin-Brandemburg, Germany [30]

The studies and tests conducted have determined that, by applying the procedures recommended by ECORailS project, the following main results are obtained:

- Improvement of energy efficiency: 5% in comparison to current awarding; 10% with regard to the currently used rolling stock; System-wide improvement of energy efficiency for regional railway by 15% by 2020.
- Reduction of CO2 emissions: 5% in comparison to current awarding; 10% with regard to the currently used rolling stock; system-wide reduction of CO2 for regional railway by 15% by 2020.

The report [31] was highly appreciated by the project partners, the potential end-users, or the parties interested in the project results (Railway administrations, transport operators, the most competitive rolling stock suppliers, Authorities for Public Procurement, Cities).

Subsequently, the form, with slight modifications, was included into the rolling stock procurement documentation we developed, which was recommended in 2012 by the National Consultative Committee for Public Procurement coordinated by the National Authority for Public Procurement Regulation and Monitoring (A.N.R.M.A.P.) as a model to upgrade and standardise certain procurement documentations in Romania.

Like with other recommendations, this annex is aimed to assist in understanding the issues under discussion, and in developing further procurement documentations.

Annex A.2.1.a [32]

TECHNICAL SHEET - Total life cycle costs for DMU

Rolling Stock Specifications - ANNEX ... - FT_...

Tenderer: .....

No.	System name	Procu-rement costs	Energy consumption & costs / year			Spare parts	Wear parts, consu-mables	Planned mainte-nance	Repairs	General / capital overhauls			Total costs (€) after:					Total LCC	Observations, attached documents, etc.
		€	Consum-ption	MU	€	€	€	€	€	type	months	€	1 year	5 years	10 years	15 years	30 years (LCC)	%	
0	**DMU**			kWh															
1	Car body																		
2	Bogies and undercarriage																		
3	Diesel engine			l															
4	Main Generator			kWh															
5	Traction control and adjustment																		
6	Traction engines			kWh															
7	Ventilation systems for cooling			kWh															
8	Energy source for auxiliaries			kWh															
9	Accumulator batteries																		
10	Compressor			kWh															
11	Pneumatic installation																		
12	DMU Braking																		
	Braking energy recovery for auxiliary services																		optional
	Braking energy recovery and storage																		optional
13	Electric installation																		
14	Computer system																		
15	Air conditioning			kWh															
16	Heating			kWh															
17	Lighting			kWh															
18	Communication and information system																		
19	Information system																		
20	Interiors, information displays, etc.			kWh															
21	Control of energy consumption for parked trains			kWh															
22	Doors' actuating																		
23	Train control optimization system																		
TOTAL (€)																			total, without optional versions
TOTAL (%)																		100%	

The Roumanian Consultative Committee for Public Procurements (NCCPP) **2011÷2012** | **Document made by S.C. Integral Consulting R&D**

Rolling Stock Specifications - ANNEX … - FT_...
Tenderer: .....

TECHNICAL SHEET - Total life cycle costs for DMU

Explanatory Notes referring to Annex 2.1. a - Technical Sheet (*table page 11*) :

- A period of service of 5000 hours / year, or 200.000 km shall be considered. Out of that, 1400 hours are considered at low temperatures (requiring train heating) and 1000 hours at high temperatures (over 28°C.)
- Parking shall be considered for 3500 hours / year, out of which 2000 hours at night, 800 hours at temperatures below 0 °C and 400 hours below -10°C.
- In the procurement costs column, only the possible extra costs of certain optional versions, as well as the total value (without extra optional costs) of the standard version submitted (the yellow cell) shall be filled in.
- Under energy consumptions, only the costs for the consumption from sources external to the train (fuel, external electrical energy) shall be filled in. The other consumptions shall be given for the comparative analysis.
- For certain component parts (diesel engine, or optional versions, for instance), it is recommended to provide separate LCC sheets, and to fill in only the global data in the present sheet.
- For regenerative braking versions, the values for the regenerated consumptions shall be signed minus.
- The format of the Technical Data Sheet is according to European Standard EN 60300-3-3/2005. The tenderers shall complete it. Any further explanations or details shall be given in an explanatory annex to the technical data sheet.
- It is also there that specifications shall be made - with references to the technical documentation referring to train equipping with devices for consumption measuring and recording, to the concept of LCC monitoring / optimising.
- The optional versions shall be analysed according to the data in the table. Depending on their facilities, optional versions can be contracted accordingly, and in this case, all the offers shall be scored according to the data provided.
- On line 0, there will be specified the overall purchase cost for standard DMU version (without options) and the extra operation costs in addition to the costs specified for various components (Nos. 1÷23) defined in Specifications.
- The overall purchase cost shall be the standard tender price to which possible extra costs will be added only for the options which will be approved.
- When evaluating the offers, the overall purchase value and the LCC overall value will be scored (the yellow cells). The related costs to the optional variants agreed on, can be included into the criteria of the award documentation.
- RK at 60 months is given for information purpose, as an example of how to fill in the document. The RG, RK overhaul schedules shall be filled in by the tenderer.
- The specific unit costs to be calculated for diesel fuel, electrical energy, labour for maintenance and repairs, will be mentioned in the Specifications.

The Romanian Consultative Committee for Public Procurements (RCCPP) 2011÷2012	Document made by S.C. Integral Consulting R&D

Annex A 2.1. - Life Cycle Costs (LCC) driven procurement

A.2.1.b – The Clean Fleets Life Cycle Cost Calculator

clean fleets
purchasing clean public vehicles

VEHICLES - LIFE CYCLE COST (LCC) CALCULATOR

Please fill in the white cells only

GENERAL CONDITIONS							
ⓘ	Contract length/period of vehicle ownership	Year					
ⓘ	Discount rate	%					
ⓘ	Number of bids/offers		3				

ACQUISITION COSTS							
	Name of bidder/vehicle model		**Product 1**		**Product 2**		**Product 3**
ⓘ	Number of vehicles						
ⓘ	Purchase price	€/unit		€/unit		€/unit	
	(or) Lease price	€/unit/year		€/unit/year		€/unit/year	
	COSTS OF ACQUISITION / UNIT		**€ -**		**€ -**		**€ -**

OPERATING COSTS PER VEHICLE							
ⓘ	Annual use of vehicle	km		km		km	
ⓘ	Type of Fuel						
ⓘ	Fuel consumption per vehicle						
	Fuel price						
ⓘ	Add a second fuel type (PHEVs, dual fuel)?						
	OPERATING COSTS / UNIT		**€ -**		**€ -**		**€ -**

MAINTENANCE COSTS PER VEHICLE							
ⓘ	Estimated annual maintenance costs	€/unit/year		€/unit/year		€/unit/year	
ⓘ	(or) Annual service agreement	€/unit/year		€/unit/year		€/unit/year	
	MAINTENANCE COSTS / UNIT		**€ -**		**€ -**		**€ -**

TAXES AND OTHER COSTS/SUBSIDIES PER VEHICLE							
ⓘ	Vehicle tax	€/unit/year		€/unit/year		€/unit/year	
	Insurance costs	€/unit/year		€/unit/year		€/unit/year	
ⓘ	Infrastructure - one off investment costs	€		€		€	
	(or) Infrastructure - annual costs	€/year		€/year		€/year	
ⓘ	Other costs/subsidies *(click on left + to expand)*						
	TOTAL OTHER COSTS AND SAVINGS/ UNIT		**€ -**		**€ -**		**€ -**

ⓘ	EMISSIONS (OPERATIONAL LIFETIME COST- OLC) PER VEHICLE - OPTIONAL SECTION						
	Do you wish to apply the operational lifetime cost methodology from the Clean Vehicles Directive?						
	OPERATION LIFETIME COST (OLC) / UNIT		**€ -**		**€ -**		**€ -**

END OF LIFE							
ⓘ	Remnant value (at end of contract period)	€/unit					
			€ -		**€ -**		**€ -**

	TOTAL LCC PER UNIT		**€ -**		**€ -**		**€ -**
	TOTAL LCC		**€ -**		**€ -**		**€ -**

Annex A 2.1. - Life Cycle Costs (LCC) driven procurement

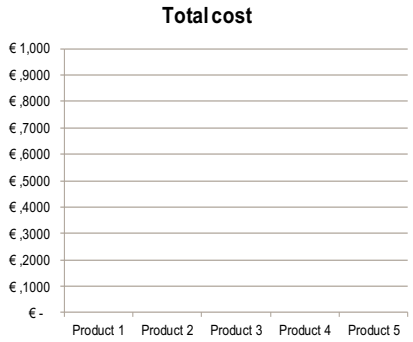
COST OF EMISSIONS		
	Emission	**Cost per unit €/g**
	NOx (Permitted range 0,0044-0,0088)	0,0044
	PM (Permitted range 0,087-0,174)	0,087
	NMHC (Permitted range 0,001-0,002)	0,001
	CO_2 (Permitted range 0.00003 - 0.00008)	0,00003

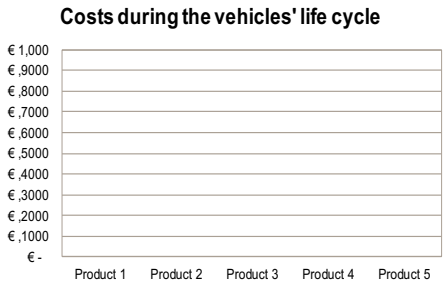
> CLICK HERE FOR DIAGRAMS

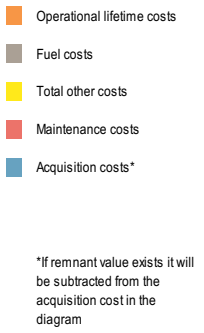
FUEL PRICE INCREASES		
	Select option in box below	
ⓘ	Use default OECD-FAO values	
		Annual % price change over period
	Diesel	
	Petrol	
	Biogas/CBG	
	Natural Gas/CNG Nm³/100km	
	Natural Gas/CNG kg/100km	
	Electricity	
	Biodiesel	
	LPG	
	Ethanol	
	Hydrogen gas	
	Hydrogen liquid - kg/100km	
	Hydrogen liquid - l/100km	
	Emulsion Fuel	

clean fleets
purchasing clean public vehicles

LCC RESULTS DIAGRAM







Notes:

- This calculator performs a lifetime cost calculation on the basis of the harmonized methodology in Art. 6 of Directive 2009/33/EC. Developed by the Clean Fleets project (www.clean-fleets.eu), with the support of the European Commission's Intelligent Energy Europe Programme. [33]
  Clean fleets purchansing clean public vehicles. "The Clean Fleets Life Cycle Cost Calculator is an easy to use tool to allow a comparison of the life cycle costs (LCC)/total costs of ownership (TCO) of different vehicles and bids within a procurement process.
  The tool is fully compliant with the Clean Vehicles Directive (CVD) (2009/33/EC). It includes the option of applying the Operational Lifetime Costing methodology from Directive. This methodology monetises the environmental impacts of fuel consumption and tailpipe emissions."
- To use this calculator, access www.clean-fleets.eu
- The city of Wuppertal, Germany (partner in SUITS project) uses a version of this tool / calculator to calculate Life Cycle Cost for public procurement procedures.

Annex A2.2. External transport costs

1. Sustainable transport development

Sustainable transport development is a relatively new concept, yet unanimously acknowledged in terms of importance and necessity.
However, in many cases, this is just a trendy concept, made use of in political speeches. There are still very few those who, fully understanding its meaning, take upon themselves to develop a visionary, mid-and long-term strategy and the necessary policies to transpose strategy in practice.
On 28.03.2011, the European Commission adopted an ample strategy called '**Transports 2050'** transposed through the White Paper on Transports COM(2011) 144 final [34] out of which we have selected as follows:

- **Creating a fair financial environment: a novel approach to transport taxes.** Transport charges and taxes must be restructured in the direction of wider application of the 'polluter pays' and 'user pays' principle. Infrastructure costs should be applied to motor cars. A second stage: **internalization of the costs applicable to all motor cars** in order to cover both infrastructure costs and the social costs of congestion, CO_2 emissions (if not included in the fuel tax), local pollution, noise and accidents.
- **Total** transport external costs (all modes) for the EU28, in 2016: € 987 billion (6.6% of GDP). [35]
- These costs are distributed across the main categories of external costs as follows: Accidents – 29%; Congestions – 27%; Air pollution – 14%; Climatic changes – 14%. [35]. Out of the overall **external costs**, **93%** are generated by car transport. About 77% of the costs are caused by passenger transport. [36] [37]
- **Traffic congestions** cost Europe (in 2016) approximately € 270 billion, 1,9 % of the Gross Domestic Product / year [35]. Congestion costs will increase by about 50 % by 2050! [34]. Apart from social- and time costs, traffic congestions significantly increase CO_2 and Greenhouse Gas (GHG) emissions, noise, harmful effects on health.
- Urban mobility accounts for 40% of all CO_2 emissions of road transport and up to 70% of other pollutants from transport. [38]
- In urban hubs, CO_2 emission– free freight transport should be achieved by 2030, and conventional fuel vehicles will be reduced by 50%, and eliminated by 2050.

Transport should be oriented to hydrogen- based and hybrid electric cars, green public transport, and walking or bike riding in urban environments. A large part of the responsibility for transport organisation in cities lies with the member states, **and each city will have to decide on their adequate means of transport**.

- A 50% shift from road- to railway- and waterborne transport with long-distance journeys.
- The social costs of **accidents** and noise would continue to increase. In 2012 the Eruopean average was 55 deaths for 1 million inhabitants, with as much as almost 100 deaths / million of inhabitants in some countries. Every year some 1.3 million people die as a result of road traffic crashes worldwide. This is more than 3,500 deaths each day! [39] The social cost estimated for one road casualty was EUR 1,84 million, namely EUR 250 billion în 2012, approx. 2% of the EU's GDP [40]. 69% of road accidents take place in cities. [34] EU Road Safety Policy Framework 2021-2030 – Next steps towards "Vision Zero". [41] [34] In this perspective, the EU aims to halve the number of traffic fatalities by 2020. In the period 2010-2012, this target was reached, but starting with 2013, reductions came to a standstill, so that, at the end of year 2017, the number of fatalities was by 29% higher than the foreseen figure. [37]. 97% of the traffic fatalities (all transport modes) occur in road accidents. Over 90% of the road fatalities in the member states occur on urban and rural roads.
- Transport accounts for approximately one quarter of the overall greenhouse gas emissions (GHG) in Europe. Out of the overall traffic emissions in 2014, car transport accounts for **72,8%,** while rail transport, for 0,6%. [42]

The objectives agreed on by EU leaders on 23.10.2014: GHG reduction by at least 40% in 2030, as compared to year 1990, and by at least 80% în 2050. [43] Cities most suffer from traffic congestion, air low quality, and noise exposure.

Cities and local authorities will play a crucial role in carrying out this strategy.
Along these main guiding lines of the new European strategy, here are, in what follows, several application examples:

Annex A 2.2. External transport costs

1.1. The "Beeching Axe" and Romania's General Transport Master Plan (2015)

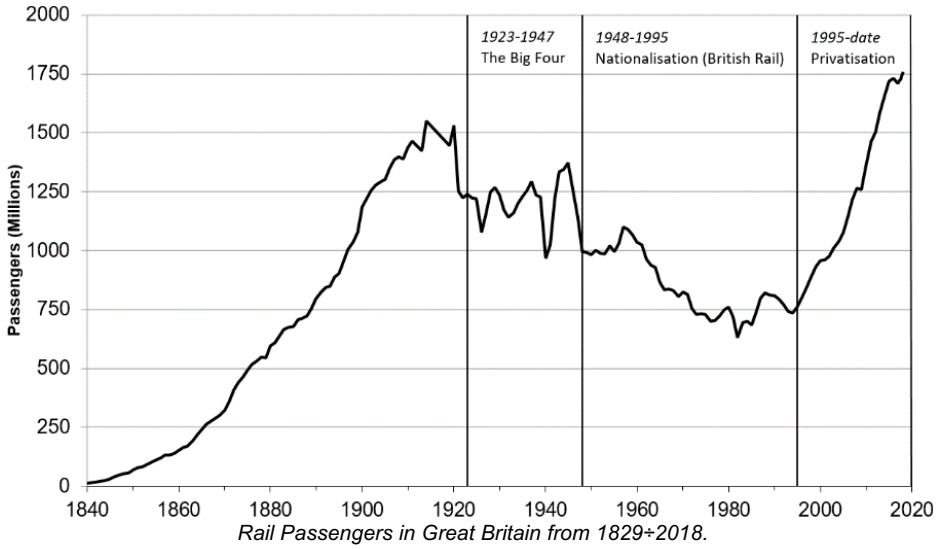
The proposal of Dr. Richard Beeching through his 1963 and 1965 reports [44] , addressed to the British Government, to reduce the British Railways network, is commonly referred to as the "Beeching Axe". Out of reasons of making costs more efficient, it was decided on an approximate 35% reduction of the British railways, with only about 40% of the overall existing railways to be subsequently developed.

Savings of about 30 million £ were achieved, while total losses exceeded 100 million £ per year.

The dramatic reduction in the number of passengers and the negative impact on the society led to major protests.

The disastrous effect of this measure led to the opening up of 27 new lines and 68 railway stations between 1995 and 2009, concurrently with enhancing infrastructure. The number of passengers is only one of the rail transport indicators, but its related social- and environmental effects are much more important.

The diagram below is a compelling illustration of the effects of the two policies (of 1963, and after1995, respectively).



Rail Passengers in Great Britain from 1829÷2018.

In 2014, the team of British experts who developed the Romanian General Transport Master Plan (GTMP) for the period 2014÷2030 included in the Master Plan the measure of closing of approx. 4.000 km of railway (cca.40% of the total), a measure approved by the Government in 2014 [45] [46]
In the GTMP, the financing requirements necessary to develop road transport were set at a value of approx. 36% higher than those for rail transport.
Are history lessons forgotten, and the EU transport development strategy guiding lines ignored?

1.2. Transport policy in Constanța.

Constanța is the fifth largest city in Romania, a tourist city on the Black Sea shore.
(Steam) tramcars were introduced in 1905, and electric tramcars, in 1944. [47]
In 2008 Constanța Municipality decided to give up tram transport, and replace it by bus transport.
Tram rails, depots and maintenance shops were deallocated.
It is true, the White Paper on Transports had not come out back then, yet the disadvantages of buses compared to trams (in terms of emissions, accidents, congestions, capacity, comfort level etc.) were already well known in 2008!

1.3. Transport policy in Iași.

Iași is the fourth largest city in Romania [48].
The city features one of the longest tramcar networks in Romania. Starting from 1990, almost 20% of the tramcar rails were modernised, and in the period 2007÷2015, the remaining over 80%.
The projects are ongoing until year 2023, by purchasing new tramcars, modernising the depots, extending the current rails, building road overpasses.
After 2007, the projects were made possible mainly by drawing European funding (over 114 million euros), to which funds under the national structural funding were added.
So far, these improvements have resulted in an over 60% reduction in traffic interruptions, while the social effects, among which a decrease in emissions, road accidents etc. are considerable.

These achievements have been possible through a joint effort and responsible concerted management of the Iasi Municipality, in cooperation with the Iași Public Transport Company.

The three examples above show that EU strategies will not get automatically applied, and implementing them properly calls for the engagement of competent, motivated and well organised people, with long-term initiatives to the benefit of the whole society.

2. External transport costs

'External transport costs' is a complex and important concept which should be used following a good understanding of their importance and of the mechanisms utilised in support of their internalisation.
In the Guidelines to Innovative Procurement, particularly in chapters 5.1 – Innovative Procurement Criteria and 5.1.4 – External transport costs, there are presented general considerations, context, definitions and importance.
This Annex completes the data in the Guidelines with information and bibliographical references we consider useful for understanding this concept and the modality to use it in the strategy and policies aimed at developing sustainable mobility.
Understanding the external transport costs concept leads mainly to two action types:

- Developing a strategy intended to develop sustainable mobility based on external costs minimising. Urban transport will be mainly achieved by developing performant and attractive public transport based on high-capacity, safe, fast transport vehicles unlikely to run traffic congestion risks, and featuring a low emission level [underground trains, Light Rail (light tramcars / fast tramcars), tramcars]. This principal transport mains will be completed with buses and electrical trolleybuses.
  It is of utmost importance to raise citizens' awareness about choosing walking, bike- and scooter riding for journeys, socialising, participating in cultural, tourist events etc.
  Carrying out these desiderata properly will implicitly result in a reduction of car rides, therefore a significant reduction in the actual external costs incurred by the whole society.
  A large number of studies, projects [49] and European Directives [50] [51] set the principles and modalities to develop such strategies.
- Applying measures intended for the internalisation of external costs.

2.1. The strategy for applying the internalisation of external costs

The guiding lines of this strategy were set through the European Commission Communication COM(2008) 435 final [52], completed with the Technical Annex referring to Strategy - SEC(2008) 2207 [53], with the document SEC(2008) 2208 [54] – Impact assessment of the internalisation of external costs and SEC(2008) 2209 [55] – Summary of the Impact assessment of the internalisation of external costs.
We are presenting in what follows, a synthesis of the main ideas in these and other related documents:

- External transport costs refer to the transport- generated costs impacting and incurred by the whole society. These costs are caused by traffic congestions, road accidents, air pollution, climatic changes engendered by hothouse gases – GHC, noise, other effects on the environment, transport infrastructure wear and tear [56]. A large number of studies have developed calculation models for these social costs to be expressed in monetary expenditures
- The internalisation of external costs is aimed at ensuring a fair competition among transport modes [57], (*as over 93% of the overall external costs are generated by car transport* [36] [37]), as well as the reduction of the costs incurred by the whole society, in line with the 'polluter pays' and ' user pays' principles [34]
- For prices to reflect the internal costs, it is necessary to evaluate the value of each category of external costs [53]. We are presenting in what follows a synthesis of the approaches to the main external costs components, selected by us in keeping with the Handbook on External Costs of Transport, RICARDO-AEA [56] :

Cost component	Best practice approach	Difference between marginal and average costs	Practical implementation and proposed differentiation	Road transport mode

Costs of scarce Infrastruc-ture	WTP for the estimation of the value of time (based on stated preference approaches). Alternatively: WTA. WTP for scarce access slots (based on SP with real or artificial approaches). Alternatively: WTA.	In congested areas, marginal costs are above average costs. The difference is relevant to define external costs.	Estimation of marginal cost based on speed-flow curves for specific traffic clusters (urban-interurban, peak-off-peak). Top-down approaches are not feasible.	InIIndividual transport is causing collective congestion, concentrated on bottlenecks and peak times
Accident costs	Resource costs for valuation of injuries. WTP for the estimation of the value of statistical life, based on SP for the reduction of traffic risks. Alternatively: WTA	Marginal costs differ individually (for non-scheduled traffic). Clustering of Infrastructure users according to accident risk is possible (and typically applied by insurance companies). Thus average and marginal costs can be assumed to be similar in each cluster.	Differentiation (cluster of users) according to schemes applied by insurance companies.	Level of externality depends on the treatment of individual selfinduced accidents (individual or collective risk) insurance covers compensation of victims (excluding value of life).
Air pollution costs and human health	Impact pathway approach using resource cost and WTP for human life (life years lost). Alternatively: WTA.	Linear dose-response function: Marginal costs similar to average costs.	Marginal (averaged) costs per type of vehicle (EURO-class) and traffic and population clusters (urban, interurban).	Level of externality depends on the treatment of individual selfinduced accidents (individual or collective risk) insurance covers compensation of victims (excluding value of life).
Air pollution and building / material damages	Impact pathway approach using repair costs.			
Air pollution and nature	Impact pathway approach using losses (e.g. crop losses at factor costs).	Linear dose response function: Marginal costs similar to average costs	Marginal (averaged) costs per type of vehicle (EURO-class) and traffic clusters (urban, interurban).	Close link between population density and damage costs
Noise	Annoyance costs: WTP approach based on hedonic pricing (loss of rents – this reflects WTA) or SP for noise reduction. Health costs: impact pathway approach for human health using WTP.	Decreasing impact of an additional vehicle with increasing background noise due to logarithmic scale. Marginal costs below average costs.	Marginal (averaged) costs per traffic and population clusters (urban, interurban)	Close link between population density and damage costs
Climate change	Avoidance cost approach based on reduction scenarios of GHG-emissions; alternatively, damage cost approach; shadow prices of an emission trading system.	Complex cost function. As a simplification: Marginal damage costs similar to average costs (if no major risks included). For avoidance costs, marginal costs are higher than average costs.	Marginal (averaged) costs per type of vehicle and/or fuel.	All GHGs relevant.
Nature and Landscape	Compensation cost approach (based on virtual repair costs).	Marginal costs are significantly lower than average costs.	Averaged (or marginal) variable costs per type of Infrastructure.	Differentiation between historic network and motorways extension.

Abbreviations:

- *WTP - willingness to pay. Approach referring to the willingness to pay for an improvement.*
- *WTA - willingness to accept. Approach referring to the willingness to accept a compensation for non-improvement*
- *SP - stated preference approach. The stated preference method using a contingent valuation approach directly measures the WTP, but depends very much on the survey design and the level of information.*

2.2. Internalisation of external costs

For the internalisation of external costs it is necessary to consider the evaluation of each external cost.

Annex A 2.2. External transport costs

2.2.1 Traffic congestions

In Europe's big cities, a driver spends 50÷218 hours / year stuck in traffic jams. Vehicle cars are the most popular means of transport in Europe, accounting for approx. 72% of the total passenger kms.

The people in charge of the policies intended to develop sustainable transport should identify the causes of traffic congestions, those generating these causes, and the necessary measures to eliminate / reduce congestions.

In principle, the necessary measures refer to:

- Developing performant public transport based on transport vehicles with low congestion risk: underground, Light Rail vehicles with dedicated route, cable transport etc.;
- Developing/upgrading a safe and enhanced transport infrastructure in keeping with the traffic needs
- Those responsible for traffic congestions should be charged adequately;
- Raising citizens' awareness about using their private cars in urban traffic as little as possible, and only under special circumstances, and about parking their cars in non-authorized places;
- Additional, adequate taxes for those vehicles engaging in urban traffic, according to areas, hours, vehicle degree of occupancy, as well as heavy sanctions for non-authorized parking. There are theoretical- and case studies referring to successfully applying such measures in various cities; [58] , [56] , [59] , [60]
- GPS positioning and information systems able to provide real time information on the optimum travelling routes (in terms of time and costs) and on the traffic congestions;
- Developing and fostering alternative travel systems: walking, bike- and scooter riding – in completion to the public transport system;
- Dynamic management of urban traffic, both of public transport and of the other vehicles;
- Optimised planning of urban freight transports, of infrastructure repairs and maintenance;
- Intelligent management of urban development and mobility;
- In preparing SUMPs and the public procurement procedures, the pre-feasibility studies should analyse various transport modalities, taking into consideration procurement costs, Life Cycle Costs, as well as the external costs related to each variant analysed.

2.2.2 Road accidents cost

It includes the estimated cost for the injury or death of the people involved, the costs for families, friends, employers, as well as the society- related costs.

OECD (2012), based on the results of a meta-analysis, suggests an EU27-wide general purpose central (median) value of €3.0 million in 2005 prices [61]
The internalisation of these costs must take into account the causes of the accidents and the responsibilities taken for these causes. The EU Directive 2008/96/EC [62] on road safety requires Member States to carry out the calculation of average social accident costs. The internalisation of these costs will result in a substantial reduction in road accident costs and a fairer compensation for those affected.

2.2.3 Pollution costs

The impacts of transport air pollutant emissions are highly location-specific and depend on many factors such as the local traffic conditions, vehicle type, air pollutant emission type, population density etc. Pollution effects seriously affect both health and the ecosystem. These effects must be evaluated and estimated in monetary values. A series of studies and research projects have pointed out the pollution sources, their effects and the costs calculated according to the Euro 0-6 standards, traffic (urban, suburban, rural) etc. [63] [64] [65] [56]

2.2.4 Noise costs

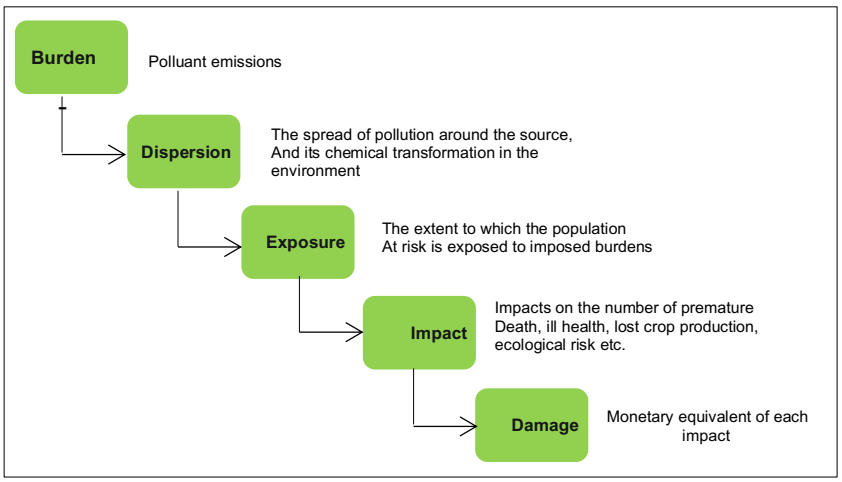
Noise emissions from traffic pose an environmental problem of growing importance, with serious consequences on health, labour productivity and leisure. A series of studies and research projects have pointed out the noise effects and the costs calculated according to various parameters. [66] [67] [56] [31]

2.2.5 Climate change costs

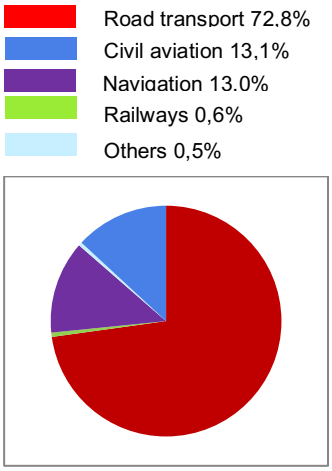
Annex A 2.2. External transport costs

Climate change induced by worldwide greenhouse gas (GHG) emissions is currently one of the key topics of global research output. The climate models and the connected economic impact assessment models are being continuously improved and the results of new scenarios are made public. Cost estimation for various transport modes involves the following steps [56] :

- quantification of GHG emissions for various vehicles, expressed in tons of CO2 equivalent per vkm [vehicle-km]
- the value of the costs of climatic changes per tons of CO_2 equivalent
- calculation of marginal climate change costs for different vehicle (and fuel) types.



The Impact Pathway Approach (IPA) [56]. *Source: EEA 2011.*



Greenhouse gas emissions (GHG) from transport by mode in 2014. [42]

The studies conducted put forward values calculated for various vehicle categories, energy source (gasoline, diesel fuel), cylinder capacity, EURO-class, traffic area (urban, rural, high streets, railway) [42] [68] [69], [70] [71]

2.2.6. Costs of up- and downstream processes [56]

They refer to indirect effects due to the production of energy, vehicles and transport infrastructure that cause additional external costs. In principle, the most relevant processes engendering these costs are the production of energy of any type, vehicle production, maintenance included, infrastructure construction and maintenance. Just like for the other costs, the specialty studies provide values of these costs according to processes and various parameters.

2.2.7. Marginal infrastructure costs [56], [72], [73]

This category of costs corresponds to the increase in the costs for the transport infrastructure maintenance and repairs as a result of an increased traffic level.

2.3. Economic tools for the internalisation of external costs

The main economic tools used to result in the internalisation of external costs are:

levies, taxes (or utilisation tariffs) and, under certain circumstances [68], emission rights trading.

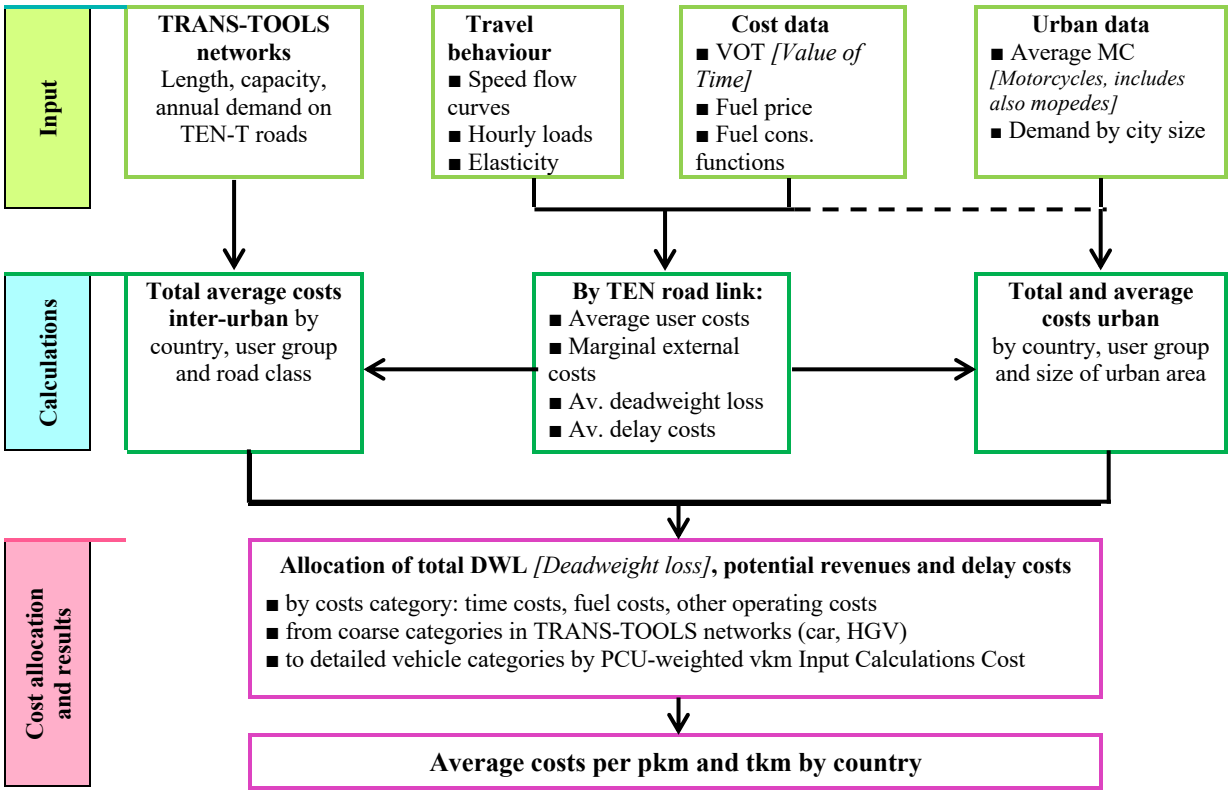
A good knowledge of the particularities of each category of external costs, of the parameters it depends on, and of the local conditions are necessary and important in order to analyse the adequate economic tools. The economic tools should be applied in a differentiated way, according to this information, so that cost internalisation may be efficient, support fair competition among transport modes, and protect the domestic market good operation. The general internalisation principle is: 'pricing at the social marginal cost' in keeping with the 'polluter pays' and 'user pays' principles.

Besides the numerous studies dedicated to external costs and their internalisation, we recommend the European Commission's synthesis documents [53], [54], [7], [8], 'Guidelines to Innovative Financing' [58], as well as the other selected documents referred to in the Bibliography.

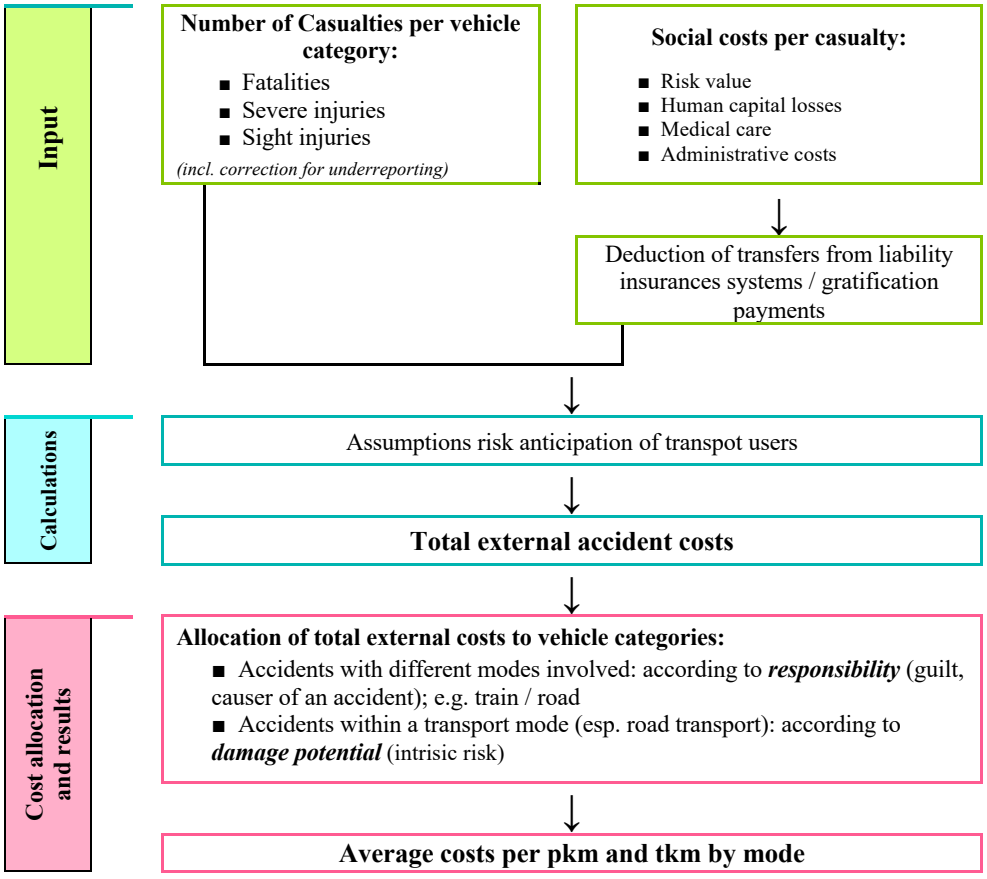
2.4. Methodologies for calculating External Costs (examples). [36]

2.4.1. Estimation procedure for Congestion Costs

Annex A 2.2. External transport costs

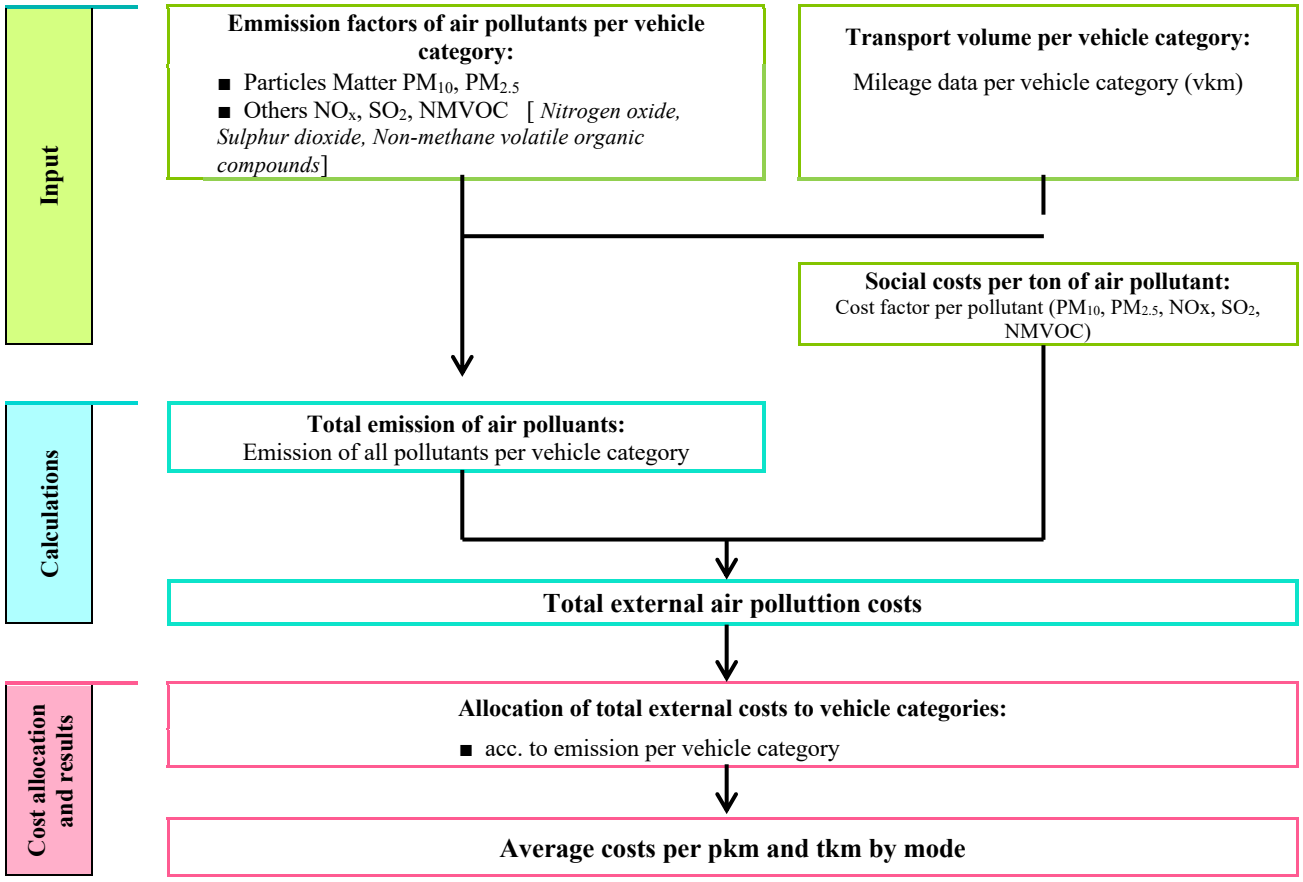


2.4.2. General approach to calculating external accidents costs.

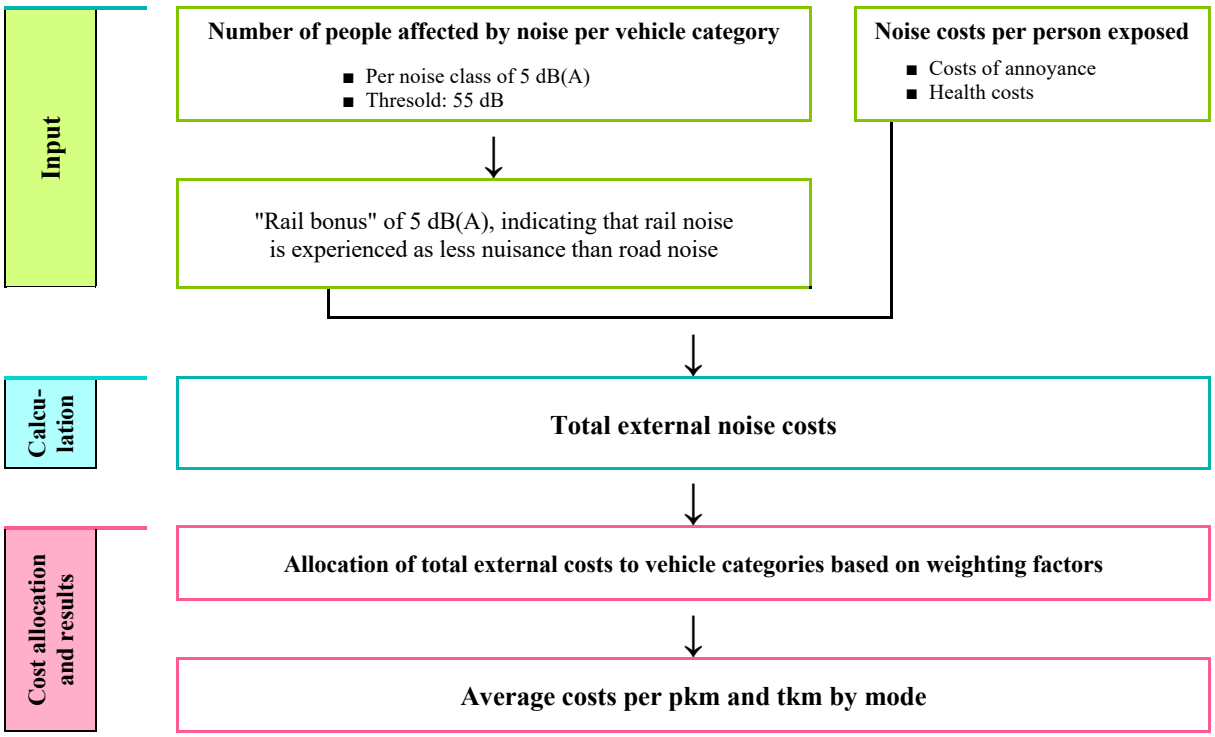


2.4.3. Methodology for Air Pollution costs.

Annex A 2.2. External transport costs

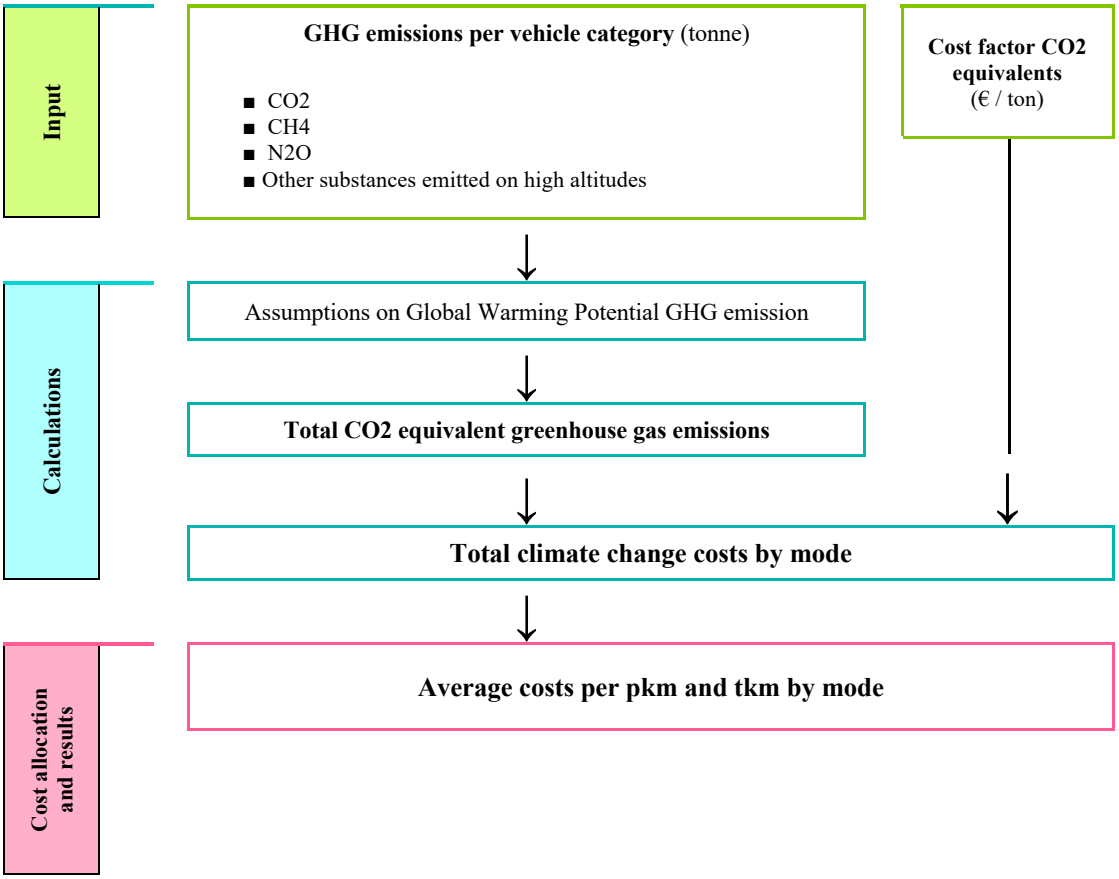


2.4.4. Methodology for Noise Costs



2.4.5. Methodology for Climate Change Costs

Annex A 2.2. External transport costs



2.5. Case Study–Bucharest. Methodolgy proposal for external cost evaluation

Bucharest is a congested city, suffocated by the high number of cars, which would call for urgent and efficient mobility policies. The table below showing a comparison among three European cities is illustrative of the statement above. The table was presented by the team of experts within the works for developing the SUMP for Bucharest and its bordering area – Ilfov [74] :

Road Network – Configuration and Connectivity			
	Bucharest	Vienna	Prague
Area (km^2)	228	414	496
Population (2012)	1.883.425	1.717.084	1.241.664
Population Density	**8.260**	4.148	2.503
KM of roads (2012)	**4.251**	7.108	6.006
KM of roads per area	18,64	17,17	12,11
KM of arterials	258	309	141
KM of highways	**19**	121	114
Passenger cars (2012)	**1.125.591**	680.000	697.000
Car / Person (2012)	0,60	0,40	0,56
KM of roads per 1000 vehicles	3,78	10,45	8,62

Note – We have highlighted in yellow certain cells, as we consider them relevant for the causes of traffic congestions in Bucharest

The statistical data provided on a yearly basis by TomTom International BV, rank Bucharest 8th out of 146 cities worldwide analysed in terms of the congestion level index (1st place in Europe) in year 2014, and 5th (1st) in 2015. In 2018, Bucharest still maintains its 1st place in Europe and 11th worldwide (*out of 403 cities under study, from 56 countries*). [75]

Bucharest features a railway belt, but the infrastructure needs repairing and upgrading to make traffic on it possible. Within the discussions in the Mobility Group pertaining to Bucharest Municipality, this modernization project was one of those proposed in order to remove traffic congestion in Bucharest. During the preliminary analyses in order to develop Bucharest SUMP, a cost-benefit analysis was

conducted based on the estimation of the number of passengers likely to travel on this railway belt. Following this analysis, the project was deemed as non-feasible.

During a presentation given within the Bucharest Municipality Mobility Group [76], in the presence of the group of experts elaborating Bucharest – Ilfov SUMP, it was stated that the project on the Bucharest City railway belt rehabilitation is important and compulsory for traffic systematisation, as the railway ring, completed by intermodal nodes (underground, tramcar, advantageous parkings etc.) with a major impact on developing high-capacity, fast, safe, comfortable public transport which – correlated with other measures – would have considerably reduced daily commuter traffic (approx. 400.000 cars getting into / out of Bucharest). In this light, a cost-benefit analysis based on the estimation of a number of passengers based on current traffic data is neither relevant nor important. It is by far more important to reduce external costs as a result of a major shift of the travellers driving their own cars to the public transport focused on the railway belt + intermodal transport stations leading to the underground trains, tramcars etc. A substantial cut down on the external costs would highly benefit the society as a whole, outweighing the gain / losses likely to result from the train fares paid by the passengers using the railway belt. Implicitly, conducting such a project would increase the number of passengers on the railway belt, much above the estimates made based on the current traffic, featuring non-performant public transport with a high level of traffic congestions. In favour of these ideas, the presentation proposes a system of evaluating the reduction in external costs. The more complex the evaluation of external costs, the more it can serve as a basis for grounding the feasibility of a project which, at a mere cost-benefit analysis, may not be regarded as feasible. For information purposes, and to serve as an example for further such approaches, we are attaching the above mentioned presentation.

We do hope that this example, correlated with both the brief information above and the detailed information in the bibliographical references below, will enable the developers of sustainable mobility-oriented public strategies and policies to ground their approaches on reducing and internalising external costs to the major benefit of the society as a whole.

EU Concepts R&D

Comparison among external costs of transport modes

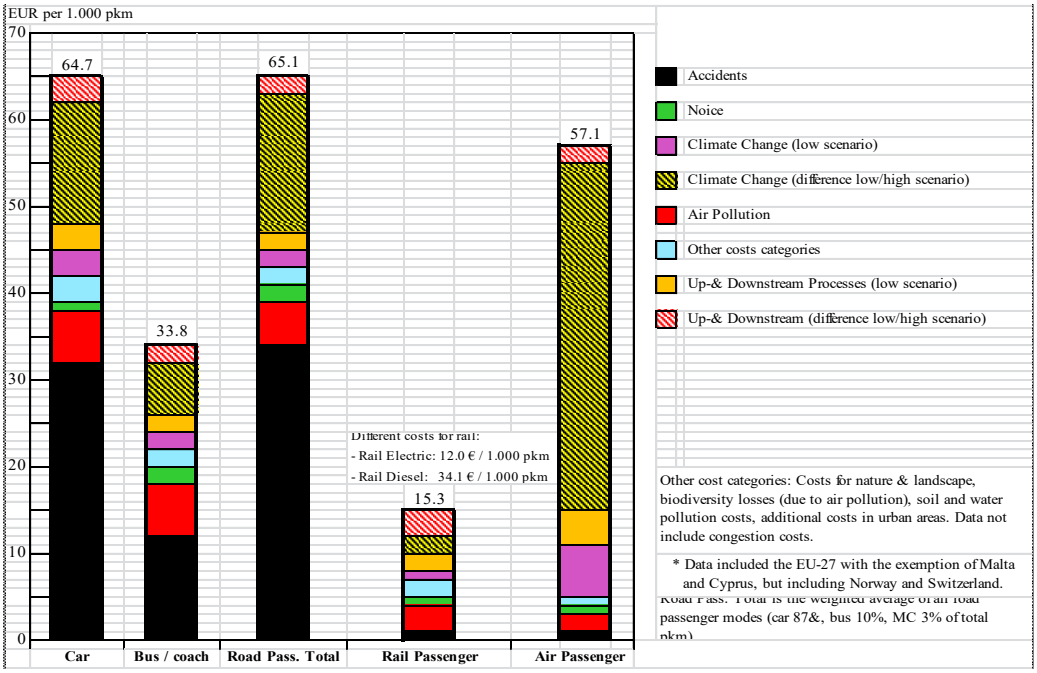
- case study Romania

EU Concepts E&D – Dan Caraman, Laura Panea
dan.caraman@euconcepts.ro

Presentation in the Mobility Committee of Bucharest Municipality, 5.05.2015

1

Average external costs in 2008 for EU-27: passenger transport (congestion excluded)



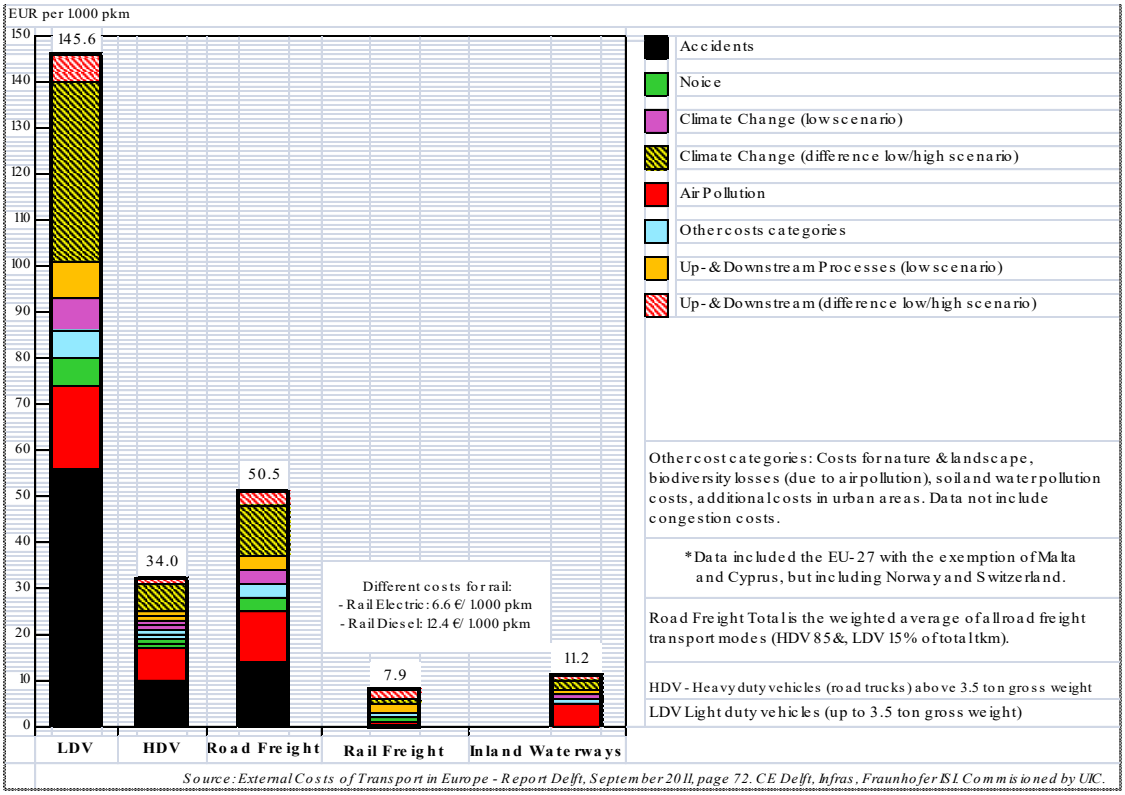
SOURCE: CE Delft/Infras/Fraunhofer ISI, September 2011, page 71 – a study commissioned by UIC in 2011
(other cost categories refer to nature and scenery, biodeviersity losses, soil-and water pollution cost additional costs in urban areas)
* The data refer to EU-27 except for Malta and Cyprus, yet including Norway and Switzerland

Presentation in the Mobility Committee of Bucharest Municipality, 5.05.2015

2

Annex A 2.2. External transport costs

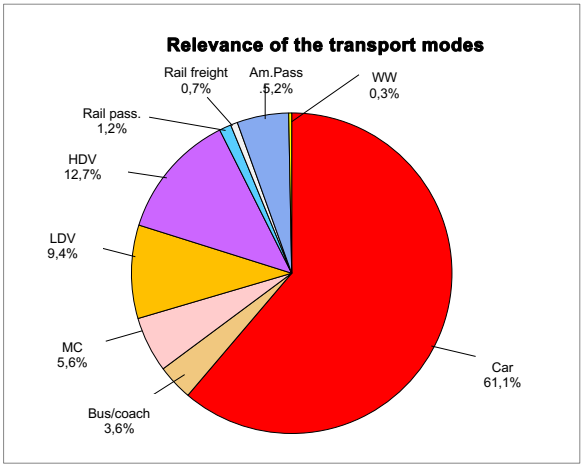
Average external costs in 2008 for EU-27: freight transport (heavy freight excluding congestion)



Source: External Costs of Transport in Europe - Report Delft, September 2011, page 72. CE Delft, Infras, Fraunhofer ISI Commissioned by UIC.

Presentation in the Mobility Committee of Bucharest Municipality, 5.05.2015 3

Share of various transport modes in overall external costs in 2008 for EU-27 (congestion excluded)



Source: 'External costs in Europe', a study commissioned by UIC in 2011
CE/INFRAS/ISI, 2011, p.80

Presentation in the Mobility Committee of Bucharest Municipality, 5.05.2015 4

Annex A 2.2. External transport costs

Average external costs generated by the transport sector in 2008

Passenger Transport (€/1.000 pkm)						
Road				Rail	Air	Total
Private cars	Buses & coaches	Motor bikes & mopeds	Total passengers Road	Passengers Transport	Passengers Transport	
61,5	19,5	89,1	56,7	34,7	54,0	55,1

Source: 'External costs in Europe', a study commissioned by UIC in 2011CE/INFRAS/ISI, 2011, p.83

Freight Transport (€/1.000 tkm)					
Road			Rail	Air	Total
Light utility vehicles	Heavy utility vehicles	Total Freight Road*	Freight Transport	Freight Transport	
206,0	19,5	34,9	13,1	7,2	28,2

Source: 'External costs in Europe', a study commissioned by UIC in 2011CE/INFRAS/ISI, 2011, p.83
* Total Road freight – calculated as weight average

Presentation in the Mobility Committee of Bucharest Municipality, 5.05.2015 5

Case study – Possible impact of Bucharest City Railway Belt in terms of external costs (I)

Travel needs of the inhabitants in the proximity of the Railway Belt:

Overall population (area covered by the study)	100%	256.150	inhabitants
out of whom, active population	60%	153.690	inhabitants
with a degree of job occupancy of the active population	60%	92.214	inhabitants
out of whom, the degree of employment in activities generating home-to-office and office-to-home travels (constructions, administration, trade, services, industry, etc.) which means travel for only:	40%	**36.886**	passengers
Passengers estimated to travel by train, out of the total number of passangers	30%	**11.066**	Passengers/day And travel directrice

Having in view that in Ilfov county there are 12.779 companies with an average number of 20 employees per company, there results: a num ber of **255.570** available job vacancies.
Out of the above jobs, a number of 55.328 are taken by residents in Ilfov County.
There results that the remaining 200.242 jobs in Ilfov County are taken by residents in Bucharest.
Out of them, we estimate that only 5% will travel by train, namely **10.012 passengers / day**.

There results a daily traffic of	21.078	gers / day and travel direction.

Source: Prefeasibility study on Bucharest Belt Railway rehabilitation and modernisation with a view to putting into operation passenger trains, conducted by Metroul S.A. and ISPCP S.A. in 2012.

Presentation in the Mobility Committee of Bucharest Municipality, 5.05.2015 6

Case study – Possible impact of Bucharest City Railway Belt in terms of External Costs (II)

Considering its capacity to attract 21.078 passengers/day and travel direction, the Bucharest City railway Belt has the potential to achieve the following savings:

Total average external costs generated in road traffic € / year	Total average external costs generated in rail traffic € / year	Savings resulted from passengers shift to rail traffic € / year
(21.078 passengers * 2 directions * 250 days * 15 km/day * 2 directions) * 56,7 E/1000pkm/year = 17,9 mil. E	(21.078 passengers * 2 directions * 250 days * 15 km/day * 2 directions) * 34,7 E/1000pkm/year = 10,9 mil. E	17,9 mil. E – 10,9 mil. E = 7 mil. E

Presentation in the Mobility Committee of Bucharest Municipality, 5.05.2015 7

The feasibility of rehabilitating and modernising Bucharest City railway belt

- **According to the Pre-Feasibility Study conducted by Metroul S.A. and I.S.P.C.F. S.A. in 2012 l.078 passengers / day/ directions of travel will use the railway belt**
- **International experience shows that daily traffic amounting to 15 – 20 thousand passengers / ay / direction of travel stands for real success**
- **According to the external transport costs as published in the UIC study, shifting 21.078 assengers from road to rail transport would generate yearly savings of approx. 7 million €**
- **According to: "Sustainable Transport – a viable evolution perspective" published by the omanian Academy in 2015, the level of the congestion- generated external costs (case study rance, 20007), accounts for approximatively 26% of the level of total external costs. In the case of the analysis conducted for Romania, further 1,8 million Euro would add to the 7 million Euro.**
- **Apart from the reduction in transport sector- generated external costs, the project on the ilway belt modernisation and rehabilitation would also impact positively the mobility ndicators foreseen in the SUMP, such as: enhanced accessibility , higher saety and security, leaner environment, economic efficiency and better urban environment.**

Presentation in the Mobility Committee of Bucharest Municipality, 5.05.2015 8

Annex A 2.2. External transport costs

Bucharest case study: external transport costs

No.	External transport costs	correction index	GDP 2010	Overall external costs		Road transport		Rail transport		Road-Rail
			Billion €	Billion €/year	of GDP	of total	Billion €/year	of total	Billion €/year	Billion € /year
0	EU+ Norway + Switzerland			**500**	**4%**	**93%**	**465**	**< 2%**	**10**	**455**
1	Bucharest-Ilfov		**31,26**	**1,25**			**1,16**		**0,03**	**1,14**
2	Bucharest-Ilfov	K1		**3,45**			**3,21**		**0,07**	**3,14**
3	Bucharest-Ilfov	K2		**1,94**			**1,80**		**0,04**	**1,77**
4	Bucharest-Ilfov	K3		**2,24**			**2,08**		**0,04**	**2,04**
5	**Bucharest-Ilfov total**						**2,54**			

Explanatory notes:

In line 0, the data highlighted in green correspond to the source 'External costs of transport in Europe, update study" CE Delft, September 2011.

In line 1, the values for Bucharest – Ilfov have been calculated against Bucharest – Ilfov GDP (according to NIS data), by applying the same percentages as in line 0.

Actually, we consider that in Bucharest, the congestion costs, as well as all the other costs (related, but also the extra ones generated by travelling in very busy traffic and in the infrastructure poor conditions), are much higher. For instance:

- The indicator best associated with the congestion risk is the number of km of roads / 1000 vehicles. In keeping with the SUMP presentation made at Bucharest Municipality on 15.02.2015, this indicator for Vienna = 10,45, while for Bucharest = 3,78.

The ratio between these two values is K1 = 10,45 / 3,78 = 2,76

- According to the ranking of congestion levels as measured in 2014 (the Tom Traffic Index (http://www.tomtom.com/en_gb/trafficindex/#list), Bucharest comes in 8th worldwide in terms of congestions, with 45% congestion level, while Vienna is ranked 57th, featuring a level of 29%.

The ratio between the two levels is: K2 = 45 / 29 = 1,552.

- Road accidents. In 2013, Romania was ranked 1st in EU, with 93 deaths / million of inhabitants, as compared to the EU average of 52.

There results K3 = 93 / 52 = 1,79. In 2012, 2.042 fatalities were recorded in road accidents, and 4 fatalities in rail accidents.

- In the table above, the values on lines 2, 3 and 4 have been calculated by multiplying the values on line 0 by correction index K1, K2, K3.

No.	Official statistical data road accidents in 2012	Deaths	Serious injuries	Deaths + Serious injuries	Costs of deaths + serious injuries [billion €]
	Ilfov County	64	293	357	
	Bucharest	79	946	1.025	
5	**Total Bucharest + Ilfov County**	**143**	**1.239**	**1.382**	**2,54**

Note: According to the FPV (Fatality Prevention Value) statistical formula indicated through the European Council Report for Traffic Safety (ETSC), a human life lost in a road accident is worth 1,84 million €.

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Annex A3
Innovative procurement procedures

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The present document contains annexes A3.1÷A3.5 to the "Guidelines to Innovative Procurement" – a research document developed by SUITS (Supporting Urban Integrated Transport Systems; Transferable Tools for Authorities) Project under the HORIZON 2020 research programme.

These Annexes complete the data in the Guidelines with additional information, examples and selected bibliographical references we consider useful for understanding these concepts of some Innovative procurement procedures and the modality to use them in the strategy and policies aimed at developing sustainable mobility.

In case the potential beneficiaries have questions or need clarifications referring to the Annexes A3.1÷A3.5, they are requested to address to: office@integralconsulting.ro

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23.03.18	INTECO - Stefan Roseanu	Elaboration of Annex A3.1 - Innovative procurement procedures in the context of Public Service Contracts for urban passenger transport	V0.1 - Draft	RE
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Annex A3.1 - Innovative procurement procedures in the context of Public Service Contracts for urban passenger transport

1. Introduction

The European Union members are characterized by an increasing tendency towards urbanization. Larger and smaller human settlements across EU have introduced, and are expected to introduce even further, basic social and economic elements that define urban areas. Due to historic reasons there is no single recipe to include all characteristics of such administrative organizations and we may encounter highly dense or sprawled areas when it comes to residential areas or day-to-day social and economic points of interest.

Provision of access to education, health services, public administration and others is required across EU member states starting with the Treaty on the Functioning of the European Union[1], and one solution to answer to this requirement is by providing services of general economic interest in the area or transports. In our paper we shall cover aspects related to mass transport or providing transport solutions to human groups, rather than systems for individual forms of transportation or for goods transportation and delivery.

The tradition in this economic field spans over a multitude of organization forms of transport, from more liberal approach to more public control. As the researchers Matthias Finger and Dominique Finon have synthetised back in 2011, mass transport in European Union countries fall now under the concept of universal service and it is regulated at European level mainly by EU Regulation 1370/2007 (amended and updated by EU Regulation 2338/2016). The researchers have identified four major thinking-schools across Europe, each of them providing a different degree of input to regulating the newly liberalized passenger mass transport market: 'we distinguish here between the Latin, the Anglo-Saxon, the German and the Scandinavian traditions'. The provisions of EU regulatory and legal framework in this field have tried to accommodate these visions [1, pp. 54-69].

To provide EU citizens with increasing instruments to access better quality, more affordable public transport services the stress is moved today towards opening urban transport markets to transparent regulated competition. With the new legal documents that regulate the land transport sector (mainly EU Reg. 1370 [2] and EU Reg. 2338 [3]) we are witnesses to more competition between public transport operators and an increased concern towards respecting the state aid rules [4].

[1] Treaty on the Functioning of the European Union, Protocol (No 25) on the Exercise of Shared Competence, Article 1:
The shared values of the Union in respect of services of general economic interest within the meaning of Article 14 of the Treaty on the Functioning of the European Union include in particular:
- the essential role and the wide discretion of national, regional and local authorities in providing, commissioning and organising services of general economic interest as closely as possible to the needs of the users;
- the diversity between various services of general economic interest and the differences in the needs and preferences of users that may result from different geographical, social or cultural situations;
- a high level of quality, safety and affordability, equal treatment and the promotion of universal access and of user rights.

Public Service Contracts are awarded by public authorities to their public service suppliers and issues like operational costs compensation and capital investment are dealt with in a transparent and foreseeable way.

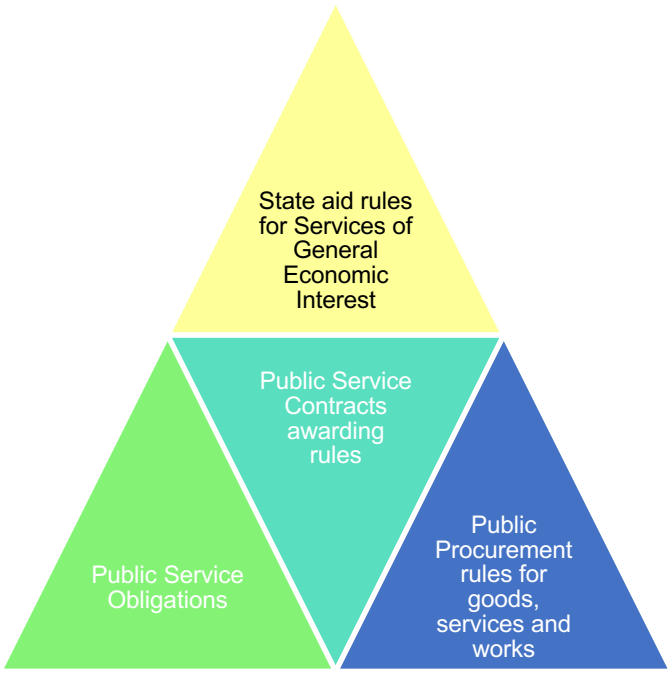


Fig. 1 - Main concepts governing innovative procurement processes in urban public transport area

As such, we can see a strong link between the business working conditions included in the Public Service Contract and public procurement strategies and procedures.

2. State aid rules and compatibility with internal market

When national, regional and/or local decision makers, based on their respective traditions take the step towards introducing 'public service obligations' and the market is not able to provide economic solutions by itself, a contractual relationship is to be established between the competent public authority and the service provider.

The contract may cover financial or of other nature compensations to net losses, including investment provisions to provide the contract. With a growing competitive market in this business field the compensation is subject to state aid rules and European legislator has provided the legal

framework to link this state aid with general market conditions and the concept of services of general economic interest[2].

Laying stress on the social and territorial cohesion of EU citizens to provide increased European integration, sometimes the market forces are not enough to provide transport services at the adequate level to answer to all collective needs. 'Services of general economic interest (SGEIs) are essential building blocks of the European social model that is both highly competitive and socially inclusive.' [5, pp. 16-18]

The SGEIs are part of services of general interests (SGIs) together with the services of social general interests (SSGIs). Due to the four major traditions that govern the relationship between public authority and market in what we call today SGIs (the Latin, the Anglo-Saxon, the German and the Scandinavian ones) there is no clear list of activities included in the scope of each of the three concepts. The meaning and scope of SGIs are still evolving and EU competition authorities check against evident errors in defining a (level of) service in the scope of an SGI. 'The Court of Justice has established that SGEIs are services that exhibit special characteristics as compared with those of other economic activities'. [6, p. 11]

Contracting public transport services in the new context of the market raises concerns from public transport stakeholders regarding the respect of state-aid market rules, especially in countries like Romania, Spain, Italy, Portugal or Greece where the Latin tradition of running public services ('public service is defined at a national level as a service that the government, via the public enterprises and its public administration, provides to all citizens, regardless of geographical location, gender, origin, social status and so on. [...] Overall, in this tradition, public service is a political science and a legal concept' [1, p. 56]). There are open debates on how to meet the new challenge of answering to the state aid rules and to continue being an active investor in increasing the quality of service in public transport sector.

One cornerstone in evaluating the working relationship between the competent authority and the public transport operator has been set by the EU Court of Justice in the Altmark decision, back in 2003 [7]. The results are used by competition authorities when they investigate or rule over state aid procedures in the context of SGEIs.

'In Altmark, the Court of Justice held that public service compensation does not constitute State Aid within the meaning of Article 107 of the TFEU provided that four cumulative criteria are met:

[2] Main EU legal documents in this area:

- Treaty on the Functioning of the European Union, art. 14, 93, 106-108;
- Commission Decision of 20 December 2011 on the application of Article 106(2) of the Treaty on the Functioning of the European Union to State aid in the form of public service compensation to certain undertakings entrusted with the operation of services on general economic interest;
- Communication from the Commission. European Union framework for State aid in the form of service compensation (2011);
- Communication from the Commission on the application of the European Union State aid rules to compensation granted for the provision of services of general economic interest (2012);
- Communication from the Commission on 'A Quality Framework for Services of General Interest in Europe' (2011)

- First, the recipient undertaking must actually have public service obligations to discharge, and the obligations must be clearly defined.
- Second, the parameters on the basis of which the compensation is calculated must be established in advance in an objective and transparent manner.
- Third, the compensation cannot exceed what is necessary to cover all or part of the costs incurred in discharging the public service obligations, taking into account the relevant receipts and a reasonable profit.
- Finally, where the undertaking which is to discharge public service obligations, in a specific case, is not chosen pursuant to a public procurement procedure which would allow for the selection of the bidder capable of providing those services at the least cost to the community, the level of compensation needed must be determined on the basis of an analysis of the costs which a typical undertaking, if well run and adequately equipped, would have incurred.' [8, p. 46]

The European Commission has issued new guidelines on how these four criteria should be met by public transport contracts working parties. To avoid a low level of service provided to citizens, the Commission makes a difference between 'lowest price' and 'most economically advantageous tender' accepting the second path as also answering the Altmark criteria provided that the award criteria, including environmental or social ones, are closely related to the subject-matter of the service provided and allow for the most economically advantageous offer to match the value of the market.

Where such circumstances occur, a claw-back mechanism may be appropriate to minimise the risk of overcompensation ex ante. The awarding authority must predict setting qualitative standards to be met by all economic operators or from taking qualitative aspects related to the different proposals into account in its award decision. [6, p. 13]

Therefore, it is not for the Commission to provide a list of criteria for determining the general interest in a particular service. It is for the public authorities in the Member States to determine whether or not a service is in the general interest.

Guide to the application of the EU rules public procurement and the internal market to services of general interest SWD(2013) 53 final/2. [8]

3. Public transport procurement procedures stakeholders

In the area of public procurement for goods, services and works that are requested to run public transport services in an urban area we have a series of stakeholders:

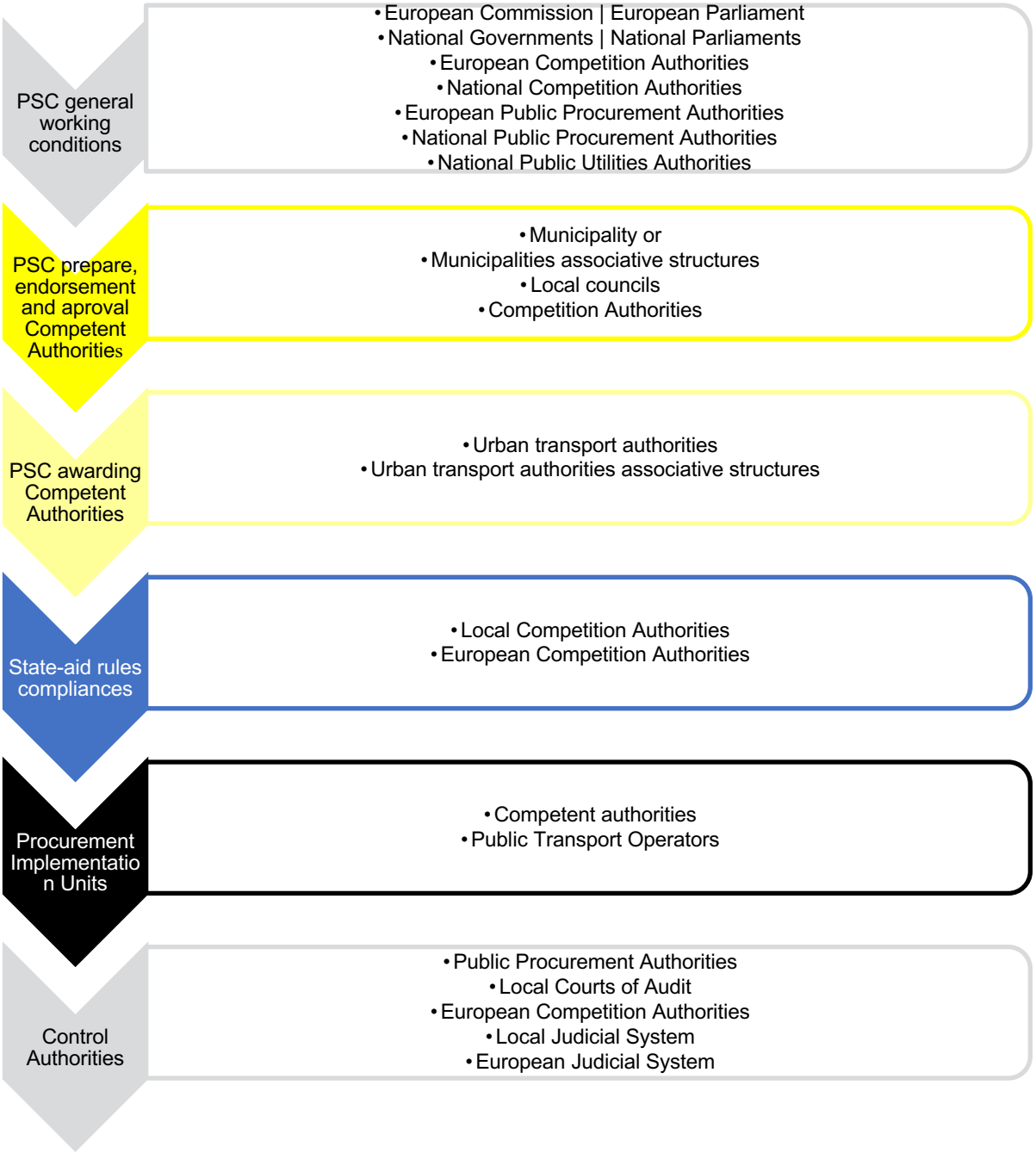


Fig. 2 - Main stakeholders in the public procurement process for public transport assets and services

4. Innovative procurement solutions in the Public Service Contract framework

To implement innovative solutions for procurement procedures for goods, services and works in the context of Public Service Contracts for urban mass transport, the public authorities should implement a series of procedures to define the scope of SGEIs and, at a later stage, of public acquisitions.

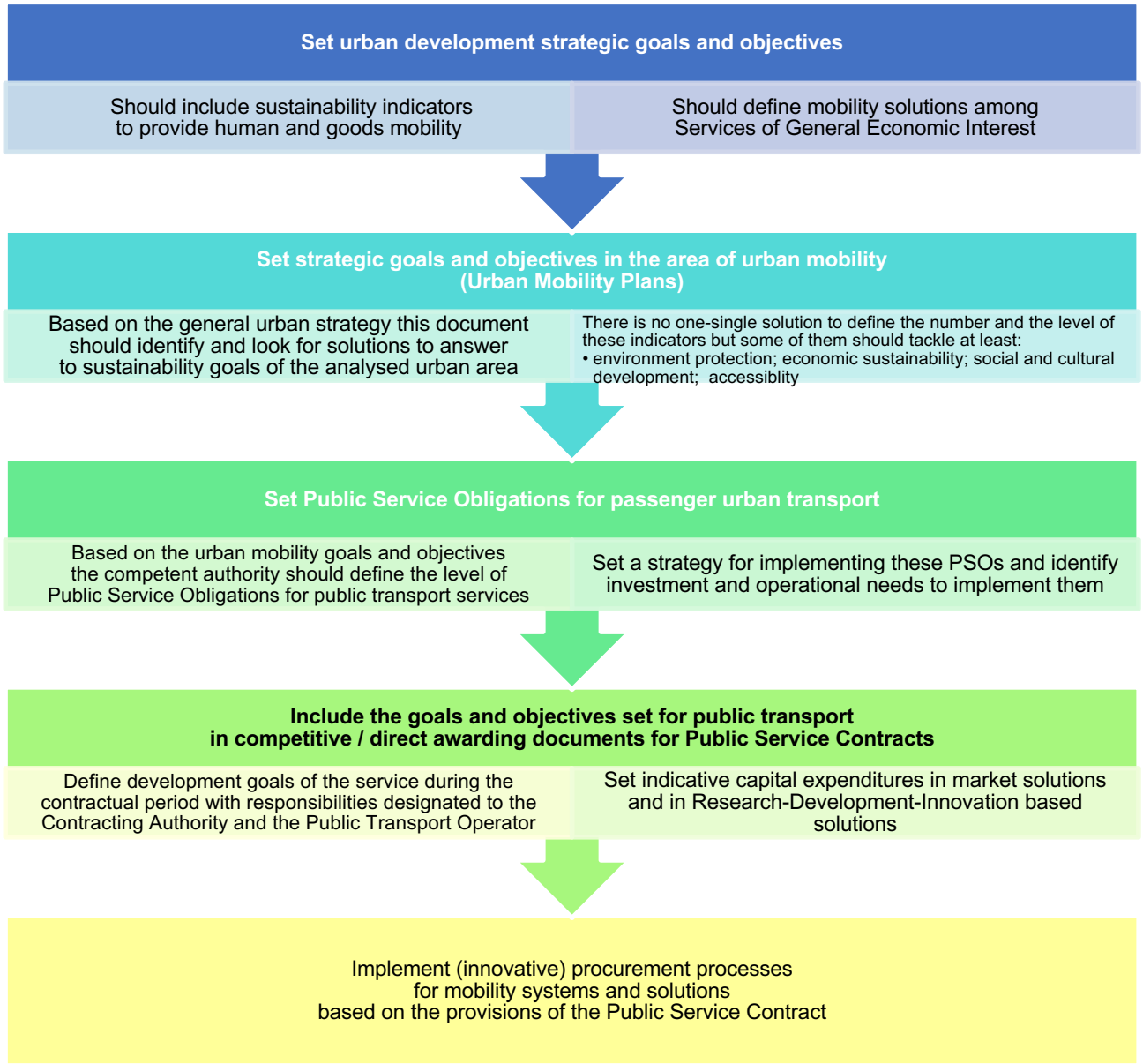


Fig. 3 - Innovative procurement procedures building process to answer to State aid rules to Services of General Economic Interest

5. Summary and conclusions

In the European Union member states, public transport activities are considered part of Services of General Economic Interests as they provide access to citizens to the fundamental rights of mobility and accessibility. We are in the middle of a long-term reform process, where monopoly public services are gradually replaced by regulated markets and public transport undertaking are about to replace public transport administrations.

These regulated markets are subject to public funds expenditures as direct revenues do not cover all operational costs and the public authorities award Public Service Contracts to public transport operators where would-be operational losses are covered by compensations in exchange of fulfilling the requirements of Public Service Obligations.

National and European competition authorities check the compliance of these contractual relationships with state-aid rules to avoid over- or under-compensation of the undertakings and to build market competition conditions. Should the contract answer to clear Public Service Obligations the public funds spent for running the public transport services (to cover both operational and capital expenditures) are considered compliant with internal market conditions and they are not subject to state-aid investigations.

The procurement processes should concern operations included in such Public Service Contracts.

To allow the procurement implementation units, established at the level of both the public authority and the public transport operator, to implement the modern and innovative public procurement procedures foreseen in public procurement legal framework the provisions of the Public Service Contracts should include clear Public Service Obligations with objectives to develop the level of service during contractual period like, and not limited:

1. reduce environmental impact of the service;
2. increase service frequency and coverage;
3. increase service reliability;
4. provide multimodal and multi-operator services;
5. lower operational costs per user;
6. increase the comfort and safety levels for users and employees;
7. increase money expenditure transparency;
8. increase indicators monitoring and reporting transparency and reliability;
9. research-development-innovation objectives.

The Public Service Obligations accompanied by a correct compensation scheme would generate the operational framework to develop and run public acquisition procedures for goods, services and works that go beyond financial savings and generate economic savings.

Annex A3.2 Joint procurement for a group of cities/regions/cross-border

1. Introduction

Joint procurement means combining the procurement actions of two or more contracting authorities (CA). The key defining characteristic is that there should be only one tender published on behalf of all participating authorities [9].

Such joint procurement activities do not stand for a completely new concept in European Union legal and regulatory framework. The Directive 2004/18/EC [10] and Directive 2004/17/EC [11] included provisions related to joint procurement procedures and joint procurement agencies have been organised in the past in EU Member States. On the territory of UK, Netherlands, Germany, public authorities have been buying together for a number of years - though in many European countries, especially in the South, there is often very little or no experience in this area [9] [12]. The 2016 Public Procurement Directives provide better clarifications and rules in setting the procedures.

However, the new Directives are not intended to prescribe either joint or separate contract awards and CAs have to evaluate the proper form to organise the procurement process. [13, p. 66] [14, p. 244]

Centralised purchasing activities represent those conducted on a permanent basis, either for the acquisition of supplies and/or services intended for contracting authorities or for the award of public contracts or the conclusion of framework agreements for works, supplies or services intended for CAs." [13, p. 96]

The Central purchasing body stands for a CA providing centralised purchasing activities and, possibly, ancillary purchasing activities. [13, p. 96]

Countries	Total procurement (Mil. EUR)	Procurement (% GDP)	Joint purchase (%)	Central purchasing
Malta	700	10	71	Yes
United Kingdom	274.600	14	21	Yes
Belgium	52.010	14	15	Yes
Cyprus	1.090	7	15	No
Latvia	2.660	11	15	No
Denmark	33.800	14	14	Yes
Slovenia	4.450	13	12	No
Sweden	68.680	16	10	Yes
Finland	34.460	18	10	Yes
Italy	157.230	10	10	Yes
Hungary	13.730	14	10	Yes
Ireland	15.540	9	9	Yes
Croatia	5.300	12	9	Yes
Slovakia	8.480	12	6	Yes
Lithuania	3.420	10	6	Yes
France	306.980	15	5	Yes

Countries	Total procurement (Mil. EUR)	Procurement (% GDP)	Joint purchase (%)	Central purchasing
Austria	35.180	11	5	Yes
Czech Republic	21.480	14	5	No
Luxembourg	5.470	12	5	No
Germany	401.730	15	4	Yes
Estonia	2.450	13	4	Yes
The Netherlands	136.320	23	3	No
Poland	46.970	12	3	No
Spain	99.600	10	2	Yes
Portugal	17.290	10	2	Yes
Romania	15.980	11	1	No
Bulgaria	4.810	12	1	Yes
Greece	16.230	9	0	No

Table 1 - Joint Procurement process approach in EU Member States **[15]**

The 2016 Public Procurement Directives take into account the diversity of public works contracts. In such a condition, CAs should be able to make provisions for contracts for the design and execution of work to be awarded either separately or jointly.

CAs are rarely buying together – only 11% of the procedures are carried out through cooperative procurement. This is a missed opportunity as buying in bulk can result in better prices and higher quality goods and services and also help to exchange know-how [16].

According to the fact sheet developed by ICLEI, applying for joint procurement procedures may represent:

- an entry-door for introducing sustainable procurement;
- a launching platform for customers for environmentally innovative solutions;
- a solution to reduce the price of environmentally sound products and services;
- a way to introduce new products into national markets;
- a solution to standardise environmental demands;
- a key to pooling environmental expertise;
- an answer to encourage suppliers to develop new products. [9]

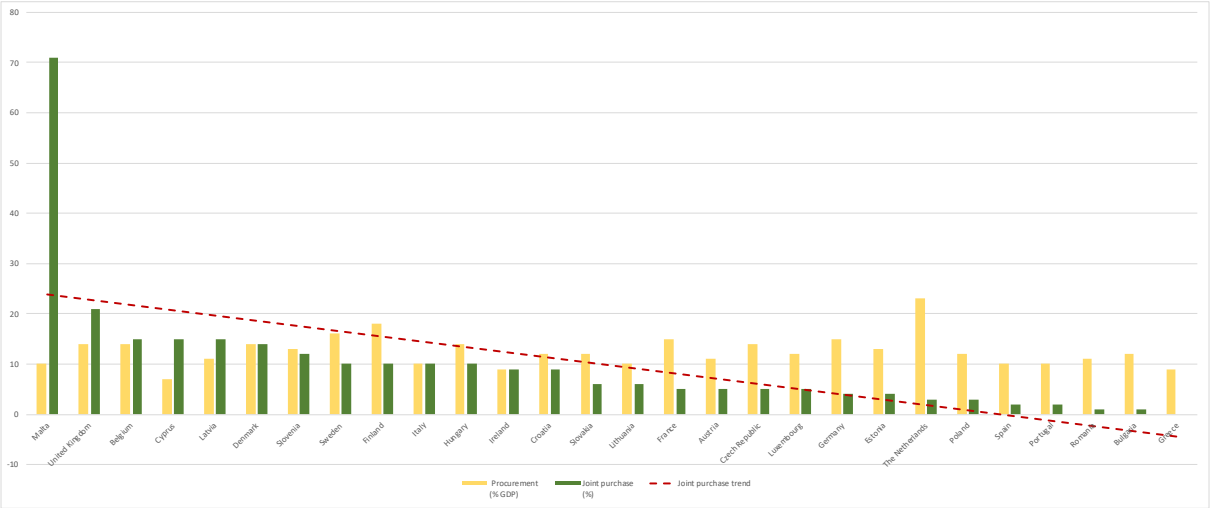


Fig. 1 - Joint Procurement Trend in EU Member States **[15]**

Cross-border joint procurement can lead to savings and better results by taking full advantage of the EU's single market. The new public procurement rules facilitate the bundling of purchases by contracting authorities by:

- using cross-border and joint procurement procedures or
- purchasing through a central purchasing body. [17]

Prior information notices, contract notices or contract awarding notices should include, “where appropriate, indication that the contracting authority is a centralised purchasing body; or that any other form of joint procurement is or may be involved.” [13, pp. 210-219]

The SPICE project has identified four different types of cooperation in Public Procurement:

1. Joint Procurement
2. Procuring in Parallel
3. Procurement Based on a Common Specification
4. Joint Procurement via a Central Body. [18]

According to BuyZET project the joint procurement actions may be performed:

- among contracting authorities within the same country
- as international/cross-border joint procurement among contracting authorities from different countries (central purchasing bodies at the European level; cities in other European countries).

One of the key findings of the BuyZET project is that one of the most popular practices is ‘joint procurement’, which combines the procurement actions of two or more CAs. In the transportation sector, joint procurement can be an effective way to increase the level of services and vehicles to procure and to reduce their price, by ordering large quantities and even sharing them among different buyers. However, in the case of vehicles and infrastructures, different buyers have different needs [19].

2. Joint procurement processes on domestic markets

Joint procurement procedures organised by CAs from the same member state can take different forms:

- CAs may coordinate their procurement through the preparation of common technical specifications that will be later procured by a number of CAs, each conducting a separate procurement procedure.
- CAs jointly conduct one procurement procedure either by acting together or by entrusting one contracting authority with the management of the procurement procedure on behalf of all contracting authorities.

When implementing joint procurement procedures, CAs are jointly responsible for fulfilling their obligations required by the Public Procurement Directives. This applies also in cases where one contracting authority manages the procedure, acting on its on behalf and on the behalf of the other contracting authorities concerned.

The responsibility is linked only to the procedure implemented by the respective CA and, where only parts of the procurement procedure are jointly conducted by CAs, the joint responsibility is applicable only to those parts of the procedure that have been carried out together. For the procedures or part of procedures one CA is implementing separately, the respective CA is full responsible. [13, pp. 78, 119] [14, pp. 257, 307]

2.1. Joint procurement organizations

ESPO (Eastern Shires Purchasing Organisation, UK) is a public sector owned professional buying organisation (PBO), specialising in providing a wide range of goods and services to the public sector for over 35 years. The organization provides a comprehensive, one-stop shop solution of over 25,000 catalogue products, 120 frameworks and bespoke procurement services, all with free support and advice available from ESPO experts.
Being 100% owned by the public sector means that any surplus the agency is generating after recovering their costs is returned to the public purse. [20]

Umweltverband (Gemeindeverband für Abfallwirtschaft und Umweltschutz - Vorarlberger Gemeindehaus, Austria) coordinates the supra-regional environmental tasks of its members, the 96 municipalities in the Austrian province of Vorarlberg. The association supports them in environmental activities and represents their environmental interests vis-à-vis the state, the federal government and the private sector [21].
Nederlands Inkoopcentrum (NIC, Netherlands) has had experience as a purchasing specialist since 1921. The organization is active in the field of many demanding purchasing segments, such as: facility, information and automation, healthcare and social domain, professional services, landscaping and construction and infrastructure works [22].
Germany has not one, but four central purchasing bodies at the federal level, which are thematically specialised:

- The Federal Financial Directorate Southwest (BFD Südwest) procures for the tax administration.
- The Federal Institute for Materials Research and Testing concludes framework agreements for specific technical product groups.
- The Federal Office for Equipment, IT Technology, and Use of the German Armed Forces is mainly responsible for procurement for the German military.
- The **Central Purchasing Body of the Ministry of the Interior** plays the most important role as it procures for all federal agencies, manages the main e-procurement platform and carries out other supportive functions.

Furthermore, there are central purchasing bodies at regional level, too, such as the **Central Purchasing Body in Rheinland Pfalz** [23].

The **Union of Public Purchasing Groups (L'Union des groupements d'achats publics, UGAP, France)** is a public industrial and commercial establishment (EPIC) placed under the supervision of the Minister of Budget and the Minister of Education. It is the only "generalist" public purchasing centre in France, distinguished by its partnership policy, its commitment to public policies (innovation, SMEs, Sustainable Development) and its "purchase for resale" operation [24] .

2.2. Joint procurement initiatives

In Sweden, the City of Stockholm and the state-owned utility company Vattenfall – with the help of procurement specialists SKL Kommentus Inköpscentral AB, initiated a joint procurement. Swedish procuring entities (municipalities and county councils) and private organisations were also invited to participate in the process. The buyers' group consisted of 296 organisations who aimed in total to purchase 5 000 vehicles over four years. The Swedish Energy Agency provided €6 000 for the group to buy the first 1 000 vehicles [25].

3. Central purchasing bodies

Centralised purchasing activities are governed by Directive 2014/24/EU and, as a consequence, they do not apply to public procurement organised following Directive 2014/25/EU.

In most of EU Member States, central purchasing bodies (CPB) are responsible for making acquisitions, managing dynamic purchasing systems or awarding public contracts/framework agreements for other CAs, with or without remuneration. The CAs for whom a framework agreement is concluded are expected to use the framework for individual or repetitive purchases.

The EU legislators ask the Member States that strengthening the provisions concerning CPBs should in no way prevent the current practices of occasional joint procurement. On the contrary, certain features of joint procurement should be clarified because of the important role joint procurement may play, not least in connection with innovative projects. [13, p. 78]

The legal relationship between CAs and CPBs may be established based on a public service contract for the provision of centralised purchasing activities that may also include the provision of ancillary purchasing activities. The contract is not subject to public procurement rules. [13, p. 118]

CPBs are expected to act as:

- wholesalers by buying, stocking and reselling or,
- intermediaries by awarding contracts, operating dynamic purchasing systems or concluding framework agreements to be used by CAs.

Should the CPBs act as an intermediary role, they should implement:

- by conducting the relevant award procedures autonomously, without detailed instructions from the contracting authorities concerned;
- by conducting the relevant award procedures under the instructions of the contracting authorities concerned, on their behalf and for their account.

The CPBs and CAs are required to lay down rules for allocating responsibility for the observance of the obligations pursuant to the Public Procurement Directives:

- if CPBs have sole responsibility for the conduct of the procurement procedures, they should also be solely and directly responsible for the legality of the procedures.
- if CAs conduct certain parts of the procedure they should continue to be responsible for the stages it conducts." [13, p. 77]

CAs that are parties to a specific framework agreement from the outset are required to be clearly indicated, either by name or by other means. On the other hand, a framework agreement should not be open to entry of new economic operators once it has been concluded." [13, pp. 77-78]

A CA fulfils its obligations pursuant to public procurement laws when:

- it acquires supplies or services from a CPB offering the centralised purchasing activities;
- it acquires works, supplies or services by using:
    - contracts awarded by the CPB,
    - dynamic purchasing systems operated by the central purchasing body, or
    - a framework agreement concluded by the CPB offering the centralised purchasing activity.

However, the CAs concerned shall be responsible for fulfilling the legal obligations in respect of the parts it conducts itself, such as:

(a) awarding a contract under a dynamic purchasing system, which is operated by a CPB;
(b) conducting a reopening of competition under a framework agreement that has been concluded by a CPB;
(c) determining which of the economic operators, party to the framework agreement, shall perform a given task under a framework agreement that has been concluded by a CPB. [13, p. 118]

Special attention is, once again paid to increasing the role of SMEs in EU economy and CPBs have to support participation of these economic players in the public procurement process. The CAs concerned are expected to articulate the system in objectively defined categories of products, works or services. Such categories should be defined by reference to objective factors which might for instance include the maximum allowable size of specific contracts to be awarded within the category

concerned or a specific geographic area in which specific contracts are to be performed. Where a dynamic purchasing system is divided into categories, the contracting authority should apply selection criteria that are proportionate to the characteristics of the category concerned. [13, p. 76]

4. Joint cross-border procurement

In the context where joint procurement procedures organised by CAs in the same Member State, cross-border associations raise even more legal challenges due to potential conflicts of national laws. The 2016 Public Procurement Directives introduce a better regulated framework for such procedures as compared to the former Directive 2004/18/EC, which implicitly allowed for cross-border joint public procurement.

Besides the rules set in Directive 2014/24/EU and Directive 2014/25/EU, the European legislators ask for new one to determine:

- the conditions for cross-border utilisation of central purchasing bodies
- the applicable public procurement legislation:
  - the applicable legislation on remedies, in cases of cross-border joint procedures,
  - the conflict of law rules of Regulation (EC) No 593/2008 of the European Parliament and the Council [26]
- procedures for CAs from different Member States to be able to set up joint entities established under national or Union law.
- the specific rules for such forms of joint procurement.

Cross-border joint procurement procedures are conceived by the legislator to provide opportunities for economy of scale and better technologies and should not be used by CAs for the purpose of circumventing mandatory public law rule [13, p. 78] s. [14, p. 258]

4.1. Rules on joint cross-border procurement

CAs from different Member States are allowed to act jointly in the process of awarding public contracts, using different means:

1. several CAs from different Member States may jointly award a public contract, conclude a framework agreement or operate a dynamic purchasing system;
2. several CAs from different Member States may set up a joint entity, including European Groupings of Territorial Cooperation[3] or other legal entities [13, pp. 119-120] [14, pp. 307-308].

In the case when several CAs from different Member States are looking to jointly award a public contract, the participants shall conclude an agreement that determines:

- the responsibilities of the parties and the relevant applicable national provisions;

[3] For more details regarding rules and procedures for EGTC see Regulation (EC) No 1082/2006 of the European Parliament and of the Council of 5 July 2006 on a European grouping of territorial cooperation (EGTC) [60]

- the internal organisation of the procurement procedure, including the management of the procedure, the distribution of the works, supplies or services to be procured, and the conclusion of contracts.

When determining responsibilities and the applicable national law, the participating contracting authorities shall allocate specific responsibilities among them and determine the applicable provisions of the national laws of any of their respective Member States.

The allocation of responsibilities and the applicable national law shall be referred to in the procurement documents for jointly awarded public contracts.

In the second case, when several CAs from different Member States set up a joint entity the participants shall agree on the applicable national procurement rules of one of the following Member States:

- the national provisions of the Member State where the joint entity has its registered office;
- the national provisions of the Member State where the joint entity is carrying out its activities.

The agreement is based on the decision of the competent body of the joint entity.

The agreement may apply:

- for an undetermined period, when fixed in the constitutive act of the joint entity, or
- to a certain period of time, certain types of contracts or to one or more individual contract awards.” [13, pp. 119-120] [14, pp. 307-308]

4.2. Cross-border procurement by central purchasing bodies

A Member State shall not prohibit its CAs from using centralised purchasing activities offered by CPBs located in another Member State.

The provision of centralised purchasing activities by a CPB located in another Member State shall be conducted in accordance with the national provisions of the Member State where the CPB is located.

The national provisions of the Member State where the CPB is located shall also apply to the following:

(a) the award of a contract under a dynamic purchasing system;
(b) the conduct of a reopening of competition under a framework agreement;
(c) the determination of which of the economic operators, party to the framework agreement, shall perform a given task [13, pp. 119-120].”

Annex A3.3 Innovative partnerships in procurement procedures

1. Introduction

The strategy for transport- and mobility sustainable development should meet the society's economic and strategic requirements, while also minimising the undesired impact on the environment.

These major desiderata can be achieved only through a competitive development of innovation in line with the sustainable development objectives.

Competitive innovation can be ensured only through corresponding financing able to provide the technical conditions and the research team's development and stability.

Of course, there are national / regional policies and / or companies' policies in support of innovation, but financing is often not enough, or they are not oriented to meeting the society's long-term requirements, but rather to providing solutions to urgent needs.

Public procurements are usually organised in a relatively short time, and the procurement documentation requirements focus on the technical- and economic characteristics of the products / services to be purchased.

However, modalities in favour of innovation to support the acquisition of the future products / services necessary to sustainable development of mobility and transport are also referred to in the spirit of the public procurement reform initiated by the European Commission.

The first necessary condition is that the general- and specific middle- and long- term operational objectives should be set at the global, national, regional and local level.

These objectives mainly refer to increasing energy efficiency, reducing accidents, traffic jams, air pollution and hothouse gases, the internalisation of external costs, reducing noise pollution, providing all the people general access to public transport, measures intended to generally enhance mobiliity and recreational-, social-, cultural- and tourist activities.

These major objectives can be reached only by correlating local strategies and activities with national and European ones, to which complementary specific activities and objectives should add on.

Accomplishing alternative transport possibilities, an adequate and highly performant infrastructure, competitive and accessible services, a complex, user-friendly real-time system of information requires complex developments based on technological innovation.

Technological innovation stands for a necessary prerequisite for long-term competitiveness and economic prosperity, social cohesion, employment quality and a better protection of the environment.

2. Innovative procurement procedures

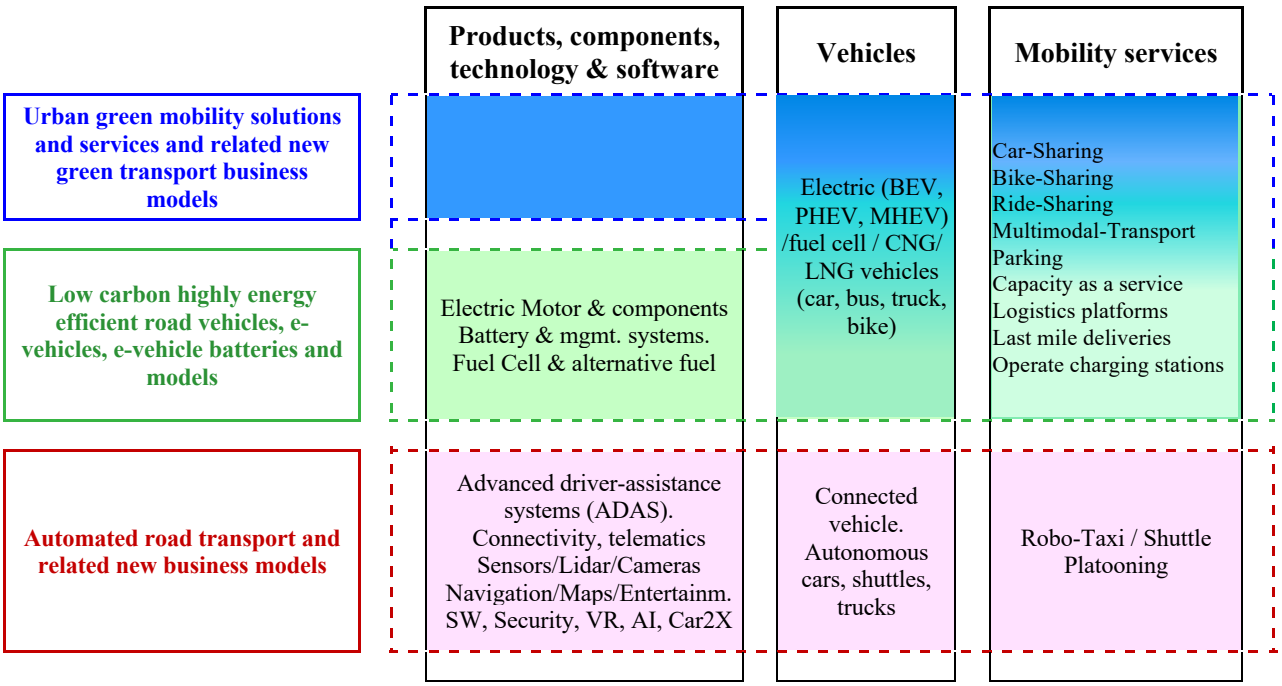
Cleaner and more sustainable mobility is one of the great challenges of our time.

Consequently, the Research – Development Programme HORIZON 2020, The European Investment Bank (EIB) and other European Union financial bodies or national programmes support innovation in these great challenges.

Easier access to finance could benefit the sector in the following three emerging areas, which represents the scope of this work and have a high potential to contribute to the Commission's objectives:

- Urban green mobility solutions and services
- Low carbon highly energy efficient road vehicles
- Automated and connected road transport

The EIB Study on access to finance for the innovative road transport sector [27] focused on the technology aspects of Innovative Transport as summarised in the figure below:



Products, tehnologies and services within Innovative Transport

The purpose of this study is to provide a comprehensive analysis of the competitiveness of the European Innovative Transport sector and on the access-to-finance conditions of the various market participants. By doing so, this study aims to contribute constructively to the development of European Innovative Transport policy.
The financings are intended to support particularly the SMEs and the Start-ups with innovative activities in the field of transport.
In order to promote innovation in the field of urban Green mobility solutions and services, low carbon highly energy efficient road vehicles, the EIB study makes important recommendations out of which we list as follows:

- Incentivise Public Transport Operators (PTOs) and Authorities (PTAs) to open up to third party digital mobility platforms
- Tailor flexible grants for fast growing service companies
- Push the build-up of charging infrastructure through blending grants with flexible debt
- Support the uptake of alternative fuels in public fleets and the related value
- Support and enhance ecosystems of existing and emerging mobility hubs
- Address the growth-phase financing gap by supporting dedicated Innovative Transport or multi-corporate funds
- Raise awareness about existing financial instruments.

The HORIZON 2020 Research-Development Programme is an important tool providing financial support to innovation in the field of Smart Green and integrated transport [28]. In this field alone, the H2020 Programme allocates a budget of 1088 million Euro for the innovation projects which will be admitted in the period 2018-2020.

The main objectives of the innovation projects financed under HORIZON 2020 Programme are:

- Resource efficient transport that respects the environment. The aim is to minimise transport's systems' impact on climate and the environment (including noise, air and water pollution) by improving its efficiency in the use of natural resources, and by reducing its dependence on fossil fuels and energy imports.
- Better mobility, less congestion, more safety and security. The aim is to reconcile the growing mobility needs with improved transport fluidity, through innovative solutions for seamless, inclusive, affordable, safe, secure and robust transport systems that make full use of modern information and communication technologies (ICT) capabilities.
- Global leadership for the European transport industry. The aim is to reinforce the competitiveness and performance of European transport manufacturing industries and related services on global markets including logistic processes.
- Socio-economic and behavioural research and forward looking activities for policy making. The aim is to support improved policy making which is necessary to promote innovation and meet the challenges raised by transport, including the internalisation of external costs, and the societal needs related to it. Socio-economic research is also an important instrument for reaching the objectives under this programme.

Apart from the innovation projects, the H2020 Programme provides financial support to innovative procurement procedures.
The three financing tools, supported under the H2020 Programme are listed in what follows.
These procedures are not mutually exclusive; on the contrary, it is recommended they should be applied in a complementary way.

2.1 Pre-Commercial Procurement (PCP)

As early as 2007, the European Commission, through the Communication COM(2007) 799 final - Pre-commercial Procurement: Driving innovation to ensure sustainable high quality public services in Europe [29] , emphasised the importance of this procedure, and set the aim and the approach modalities.
In this Communication it is mentioned as follows:
“The Communication on a "broad based innovation strategy for the EU" highlighted the importance of public procurement in reinforcing the innovation capabilities of the Union whilst improving the quality and efficiency of public services”.
“*The US public sector is spending $50Bn14 per year in procurement of R&D, an amount which is 20 times higher than in Europe and represents approximately half of the overall R&D investment gap between the US and Europe. This has often played an important role in improving the quality of public services and in the emergence of globally competitive companies”.*

PCP refers to public procurement of research- and development services, not including their implementation into the final commercial products.

PCP can be used when the market fails to provide solutions able to meet the purchasers’ requirements. The procurement is conducted in order to get new solutions, developed and tested so as to meet the procurement needs. PCP allows for a comparison across alternative approaches to solutions, by designing the solutions, developing and testing the model / prototype. [30]

PCP directs innovative development towards the public sector needs, allowing for a comparison / validation of the various approach solutions. PCP achieves market opening to SMEs and an acceptable maintaining of innovation risk through small contracts, gradually growing in size. [31]
In PCP the public purchaser chooses not to keep the R&D results exclusively for their use. This approach is based on:

- Risk-benefit sharing according to market conditions (both for the public purchaser and for the companies involved in PCP).
- Competitive development in phases
- Separation of the R&D phase from deployment of commercial volumes of end-products.
  For instance, the phases may refer to defining the research, exploring the solutions, prototype, originally developing a small series of products / services for test in order to prove that the respective product / services developed are ready for production / delivery at acceptable quality standards. R&D does not include commercial development activities such as quantity production, supply to establish commercial viability or to recover R&D costs.

The procurement procedures are organised per stages, by evaluating each R&D stage in order to progressively select the best solutions. At the last stage, at least two competitors are maintained, to ensure a competitive market.
The challenge is to enable public purchasers to collectively implement PCPs in order to close the gap between supply and demand for innovative ICTs. The objective is to bring radical improvements to the quality and efficiency of public services by encouraging the development and validation of breakthrough solutions through Pre-Commercial Procurement. PCP actions targeting consortia of procurers with similar procurement needs that want to procure together the development of innovative ICT based solutions to modernize public services whilst creating growth opportunities for industry and researchers in Europe in new markets. [32]

The FABULOS project [33] seeks new solutions and technologies to prepare cities for the future of mobility, including concepts such as self-driving buses. Novel transport solutions will be developed and acquired by utilising a Pre-Commercial Procurement (PCP), which allows the Procuring Partners to share the risks and benefits with the suppliers. The expected outcome of the FABULOS project is the demonstration of automated minibus service as part of the public transport system.
For the companies, the FABULOS pre-commercial procurement process offers the first instance of their solution in use, in addition to financial assistance. The end result, including the Intellectual Property Rights (IPR), remain with the suppliers. For the other stakeholders, the FABULOS pre-commercial procurement serves as a source of new information on regulations and the practical implementation, covering the type of technology required, benefits and overall impact, including on a societal level.
The pre-commercial procurement process consists of three clearly defined phases: concept design, prototype development and field testing. Prior to the concept design phase is the open market consultation in which the scope of the FABULOS pre-commercial procurement will be refined through a dialogue with potential suppliers and other stakeholders. The outcome of this phase is the preparation of a request for tenders.
At the end of pre-commercial procurement process, the suppliers are expected to continue the refinement of the tested prototypes in order to make them into market-ready solutions that can be procured by additional public procurers.

The Commission's Communication referring to Pre-Comercial Procurement [29] is accompanied by a working document: SEC(2007) 1668 - Example of a possible approach for procuring R&D services applying risk-benefit sharing at market conditions, i.e. pre-commercial procurement [34]

According to this document, the sections subsequent to the pre-commercial procurement organisation are:

a) Identifying candidate projects from public sector needs
The best modality is to organise an initial open dialogue prior to the procurement procedure. The aim is to develop a better understanding of the available option, and to clarify the market gaps with respect to actual needs. According to this dialogue, the public purchaser can decide on starting a pre-commercial procurement for developing new solutions not available on the market.

b) Deciding on the pre-commercial procurement contract structure
A framework contract for R&D services as structured per stages is recommended, each stage with a contract. Thus costs are risks are reduced, and the framework is set for subsequent selections of the best R&D solutions. The stages refer to:

- Stage 1 - Exploring solutions. Aim: check the proposals in terms of their feasibility. The required stage results: technological evaluation, a first solution design, organisation plan for stage 2 and a cost-benefit analysis of the proposed solution;
- Stage 2 - prototyping. Stage results; a prototype specification and demonstration, a plan in order to develop a limited production and testing, the cost-benefit analysis update;
- Stage 3 – original development of a first lot and test validation. Stage results: test specification, cost-benefit analysis update. The stage should allow for the solutions to be tested and compared for the actual operation conditions of the targeted public service.

Of course, the number of the stages (or sub-stages) and the results required can be adapted according to the complexity and specific character of each project.
For each stage, the best solutions are selected, and minimum two companies will take part at the final stage, thus providing competitiveness.

c) Deciding up front whether or not the project shall contain a state aid element.
As a rule, the relationship between the public purchaser and the company within the precommercial procurement should not include an aid element, and this should be excluded through the appropriate design of the contract. Where public authorities buy R&D from companies at market price, there is no advantage and consequently no element of State aid.

d) Defining risk-benefit sharing contract arrangements according to market conditions.
In pre-commercial procurement the contracting authority does not assume all the results and benefits of the R&D services performed in the contract exclusively for itself for use in the conduct of its own affairs, but shares them with others (companies participating in the project). Of course, it is necessary that the risk-benefit sharing contract arrangements should be according to market conditions.

e) Launching, evaluating and contracting in a transparent, objective, non-discriminatory way.
The pre-competitive procurement notice, the procedure and the criteria should be published on a large scale, and these principles should be complied with. The following award criteria can be used to award the contracts: 'ability to address the problem posed in the tender',

'technological quality & innovativeness of the proposal', 'added value for society/economy of the proposal'.

f) Follow-up public procurement for deployment of commercial volumes of final end-products
Leaving a clear separation between the pre-commercial R&D phase and the roll-out of commercial end-products resulting from R&D enables public purchasers to filter out technological R&D risks before committing to procuring a full-blown innovative solution for large-scale commercial roll-outs.

Example of EU funded cross-border PCPs Traffic Management:
CHARM Project – a cooperation between 3 road authority purchasers: Rijkswaterstaat (NL), Highways Agency (UK), Department Mobility and Public Works - MOW (BE). CHARM contracting authorities jointly procure R&D services via the PCP to move towards an open modular traffic management architecture by getting modules developed that will optimise network performance, increase road safety and reduce CO2 emissions by improving network management, incident prediction and prevention and cooperative ITS. Value PCP: Euro 2,88M. [35]

2.2 Procurement of Innovative Solutions (PPI)

PPI can be used when challenges of public interest can be approached through innovative solutions which are almost finalised, and do not require the funding of research to develop new solutions. In this case, suppliers can purchase the existing solutions in order to test and deliver them at the set deadlines, integrating them into the products / services they provide.
PPI can thus be used when there is no need for procurement of new R&D to bring solutions to the market, but a clear signal from a sizeable amount of early adopters/launch customers that they are willing to purchase/deploy the innovative solutions if those can be delivered with the desired quality and price by a specific moment in time. A PPI may still involve conformance testing before deployment. [36]

Differences between PCP and PPI: [36]

Category	**PCP**	**PPI**
Consortium	3 legal entities, minimum 2 of them public procurers	3 legal entities, minimum 2 of them public procurers
Funding	90%	35%
When?	Requires R&D to get new solutions developed. Problem clear, but pros/cons of competing solutions not compared/validated yet. No commitment to deploy yet.	Requires solution which is almost on the market/already on the market in small quantity, but not meeting public sector requirements for large scale deployment yet. No R&D involved
What?	Public sector buys R&D to steer development of solutions to its needs, gather knowledge about pros/cons of alternative solutions, to avoid supplier lock-in later.	Public sector acts as launching customer/early adopter/first buyer for innovative products and services that are newly arriving on the market.
How?	Public sector buys R&D form several suppliers in parallel (comparing alternative solution approaches), in the form of competition evaluating progress after critical milestones, risks and benefits of R&D) shared with suppliers to	Public sector acts as a facilitator establishing a buyers group with critical mass that triggers industry to scale up its production chain to bring products on the market with the desired quality/price ratio within a specific time. After

	maximise incentives for wide commercialisation.	a test and/or certification, the buyers group purchases a significant volume of products.
Eligible activities	▪ Joint procurement of the R&D services ▪ Implementation of procurement contracts ▪ Assessment of outcomes of the procurement ▪ Confirmation of "after PCP" strategy form dissemination /exploitation of results	▪ Joint procurement of innovative solutions ▪ Implementation of procurement contracts ▪ Assessment of outcomes of the procurement ▪ Confirmation of "after PPI" strategy for dissemination /exploitation of results

Numerous studies enlarge upon the theoretical aspects or case studies related to the Public Procurement of Innovative Solutions. We are listing some of them: [37] [38] [39] [40] [41] [42] [43] [44] [45]

2.3 Coordination and Support Actions (CSA)

There are financed coordination activities, for instance preparing a PCP or PPI by a group of purchasers (identification of common challenges, consultancy between the open market and the industry, before initiating an actual PCP or PPI etc.).
CSA- type actions can be financed in the H2020 Programme. [28] [46].
Therefore, on 21.04,2020, CSA- type offers will be submitted for 3 Calls in the section 'Building a low carbon, climate resilent future: green vehicle' [28]:

- MG-2-13-2020 _Coordination and support for an integrated freight transport and logistics system
- MG-3- 8-2020 _ 'First of a Kind' solutions for sustainable transport and mobility: EU initiative for accelerating EU-wide market access, scale up and derisking
- MG-4-10-2020 _ Improving impact and broadening stakeholder engagement in support of transport research and innovation.

3. Conclusions

- Using R&D activities in preparing the procurement procedures is the only modality to progress by applying innovative solutions in support to reaching the set objectives in order to develop a sustainable modality, to the major benefit of the whole society.
- The described procedures can be complemented with local specific elements able to foster the development of partnerships with R&D companies (particularly SMEs and small entrepreneurs), under competitive conditions, which should allow for the main desiderata to be identified and carried out in the perspective of the future public procurements.
- Innovative partnerships and the described procedures include elements which are different from those in the usual procurements. With a view to their efficient and correct developing, the public administrations should understand their importance and prepare an operative- and management team able to carry out the required activities in a creative way and with much determination.
- Providing the necessary funding is a complex activity. However, a good organisation and perseverance will make it always possible to find funding sources for competitive R&D activities.

Annex A3.4 Long-term procurement strategies and plans

Investment in goods, services and works is time and money demanding for any LA. Planning on long term may save money to the public budget through better integration of existing resources and introducing new ones in the organization. [47, pp. 15-54]

Fig. 1 - Long term public procurement planning benefits **[48, p. 2]**

Mobility measures involve in general complex decisions as technologies and planning principles evolve dramatically by the adoption of digitalization and the new human-centric approach. Public procurement strategies should rely on the interactivity between different departments in the same LA and with market players and stakeholders.

Public Procurement planning is an on-going process, where new procurement procedures should build on the experience gained in the organization by implementing similar projects and on the experience gained by the market. [49]

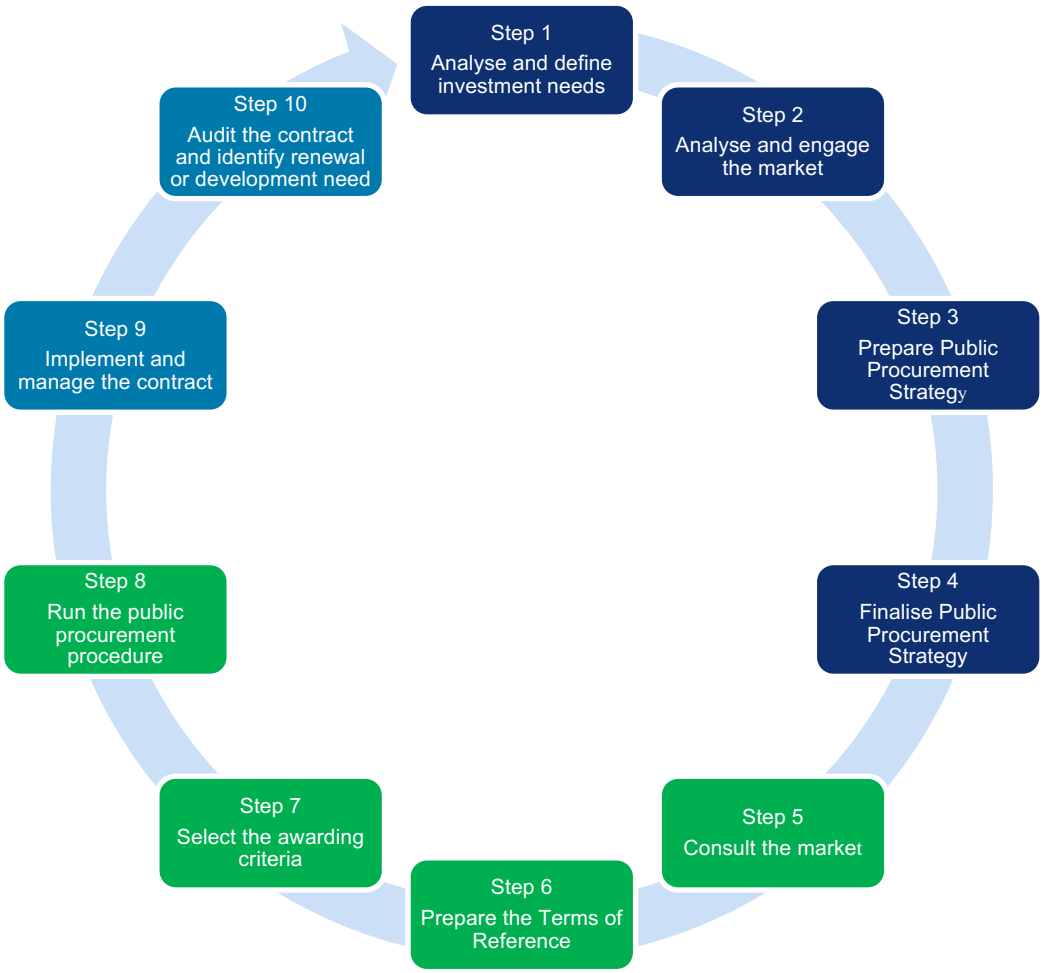


Fig. 2 - Public Procurement Planning Approach[4]

[4] Based on the methodology developed by New South Wales Government [49]

Annex A3.4 Long-term procurement strategies and plans

Tasks and key milestones	Person in charge	Stakeholders involved	Systems and tools	Record keeping	Timing/ Expected completion
1. Preparation and planning					
Detect future need					
Engage stakeholders (appoint working group)					
Analyse market					
Define the subject matter					
Choose the procedure					
2. Publication and transparency					
Draft procurement documents					
Publish contract notice					
Provide clarifications to potential tenderers					
3. Evaluation and award					
Open and evaluate tenders					
Award the contract					
Sign the contract					
Publish the contract award notice					
4. Contract implementation					
Manage and monitor the execution					
Issue payments					
If relevant, modification of contract					
If relevant, termination of contract					

Fig. 3 - Dashboard structure for procurement planning **[47, p. 53]**

Annex A3.5 Procurement procedures with multiple financing sources

Sustainable mobility and transport projects and measures require complex and risky investments on behalf of LAs. To cope with these risks, especially related to investment in heavy infrastructures with low rate of return, LAs may look for various funding and financing sources that are able to cover such risks[5].

Regardless the original source of funding and financing, LAs are spending public funds in this process. Transparent and accountable tools are supposed to be implemented by LAs to check that public funds are properly spent [50, p. 15].

LAs may implement a scheme similar to the following while looking to merge extensively various funding and financing sources[6]:

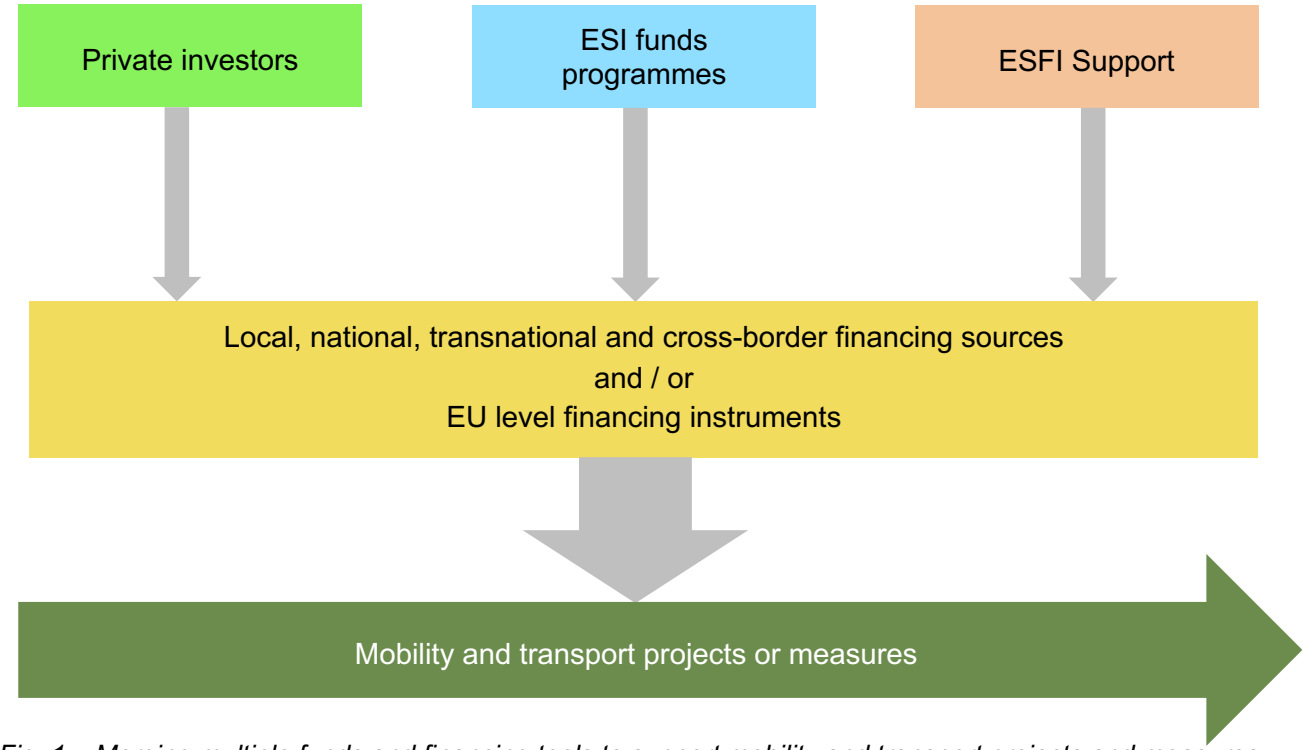


Fig. 1 – Merging multiple funds and financing tools to support mobility and transport projects and measures

European Structural and Investment Funds (the ESI Funds) "is a common designation for five European funds: the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund (CF), the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF), which operate under a common framework (i.e. the CPR) as well as under fund-specific regulations" [51, p. 8].

European Fund for Strategic Investments (EFSI) [52] "is an EU initiative launched jointly by the Commission and the EIB Group to assist in overcoming the current investment gap in the EU by mobilising private financing for strategic investments and SMEs. Legally speaking, EFSI takes the

[5] For more information on funding and financing sources to invest in mobility and transport projects and measures available to LAs see the SUITS project document Olga Feldman, Aleksei Lugovoi, Alice Parker and Shaista Farooq, ***Guidelines to Innovative Financing***, 2019

[6] Scheme developed based on [51, pp. 10-13]

form of a contractual arrangement between the Commission and the EIB, consisting of an EU guarantee (Euro 16 billion) complemented by an EIB capital contribution (Euro 5 billion)" [51, p. 6].

Main EU level financing institutions and managers of financing tools are:

1. European Investment Bank (EIB) - the Union's financing institution which contributes to European integration, development and cohesion by financing projects in support of EU policies;
2. European Investment Fund (EIF) - the EU's specialist vehicle for private equity, guarantees and microfinance, primarily in support of SMEs, micro- and social enterprises;
3. European Bank for Reconstruction and Development (EBRD) - an international financial institution designed to foster transition towards open market-oriented economies and to promote private and entrepreneurial development. [53]

Rules and procedures related to transparency in awarding contracts for services, goods and works while using the public funding and financing tools are laid down in a series of documents developed by each financing institution. Below is a list of such regulatory documents[7]:

1. European Commission, ***European Structural and Investment FUNDS and European Fund for Strategic Investments complementarities - Ensuring coordination, synergies and complementarity***, Brussels, February 2016 [51];
2. European Commission – DG BUDG, ***A guide to EU funding***, Publications Office of the European Union, Brussels, 2017 [50];
3. European Investment Fund, ***EIF Procurement Guide. Policy for the procurement of services, supplies and works by the EIF***, Luxembourg, June 2017 [54];
4. European Bank for Reconstruction and Development, ***Procurement Policies and Rules***, London, 1 November 2017 [55];
5. European Commission, ***Financial Regulation applicable to the general budget of the Union. And a selection of legal texts relevant to the EU budget***, Publications Office of the European Union, Brussels, July 2018 [56];
6. European Parliament, Council of the European Union, ***Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union, amending Regulations (EU) No 1296/2013, (EU) No 1301/2013, (EU) No 1303/2013, (EU) No 1304/2013, (EU) No 1309/2013, (EU) No 1316/2013, (EU) No 223/2014, (EU) No 283/2014, and Decision No 541/2014/EU and repealing Regulation (EU, Euratom) No 966/2012***, Official Journal of the European Union L 193/1, 30 July 2018 [57];
7. European Investment Bank, ***Guide to Procurement for projects financed by the EIB***, Luxembourg, September 2018 [58];
8. European Commission, ***Transparent procedures for all***, https://ec.europa.eu/info/funding-tenders/how-eu-funding-works/rules-and-principles_en [59]

[7] Some of the documents are updated regularly by their issuers. Similar regulatory documents may be issued by other international financing institutions and are published on their official websites.

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