CORVERS Chair
on Innovation Procurement
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WHITE PAPER

HOW TO PROCURE e- MOBILITY SOLUTIONS

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ABSTRACT

This White Paper provides a step-by-step approach on how to procure e-mobility solutions. Chapter 1 covers the implementation of a so-called innovation procurement. Chapter 2 covers all relevant aspects that are related to the Government Procurement Agreement (GPA) of the World Trade Organization with a link to the most relevant aspects of EU Trade Agreements that enhance the competitiveness of European companies. The chapter also presents an overview of the most recent and relevant EU initiatives to maintain a level playing field in public procurement within and across the boundaries of the EU Internal Market. Chapter 3 covers the possibilities to include social and environmental criteria within government procurements. Chapter 4 concludes on the findings of the e-Mobility paper and provides the reader with useful practices and tools to follow up on the procurement of e-mobility solutions.

For the context of this White Paper, e-mobility solutions are transport solutions which are based on heavy duty vehicles with a zero-emission tailpipe pollution, which are a category under article 4 (5) of the *Directive 2009/33/EC of 23 April 2009 on the promotion of clean road transport vehicles in support of low-emission mobility* amended by *Directive (EU) 2019/1161 of the European Parliament and of the Council of 20 June 2019:*

> *Article 4. Definitions*
>
> *(4)* ***'clean vehicle'*** *means:*
>
> *(a) a vehicle of category M1, M 2 or N 1 with a maximum tail-pipe emission expressed in CO 2 g/km and real driving pollutant emissions below a percentage of the applicable emission limits as laid down in Table 2 of the Annex; or*
>
> *(b) a vehicle of category M 3, N 2 or N 3 using alternative fuels as defined in points (1) and (2) of Article 2 of Directive 2014/94/EU of the European Parliament and of the Council (1), excluding fuels produced from high indirect land- use change-risk feed stock for which a significant expansion of the production area into land with high-carbon stock is observed in accordance with Article 26 of Directive (EU) 2018/2001 of the European Parliament and of the Council (2). In the case of vehicles using liquid biofuels, synthetic and paraffinic fuels, those fuels shall not be blended with conventional fossil fuels;*
>
> *(5) '****zero-emission heavy duty vehicle'*** *means a clean vehicle as defined in point 4(b) of this article without an internal combustion engine, or with an internal combustion engine that emits less than 1 g CO 2 /kWh as measured in accordance with Regulation (EC) No 595/2009 of the European Parliament and of the Council and its implementing measures, or that emits less than 1 g CO 2 /km as measured in accordance with Regulation (EC) No 715/2007 of the European Parliament and of the Council and its implementing measures.*

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LIST OF ABBREVIATIONS

COTS – Commercial Off-The-Shelf

DSCR - Debt Service Cover Ratio

EU - European Union

GPA - Government Procurement Agreement

ILO – International Labour Organisation

IP - Innovation Partnership

IPR - Intellectual Property Rights

IRR - Internal Rate of Return

LCA - Life Cycle Assessment

LLCV - Long Life Cover Ratio

NPV - Net Present Value

PCP - Pre-Commercial Procurement

PPI - Public Procurement of Innovative solutions

PTA - Public Transport Authority

PTO - Public Transport Operator

R&D – Research and Development

SBIR - Small Business Innovation Research

SOTA – State-Of-The-Art

TCO - Total Cost of Ownership

TRL – Technology Readiness Level

US - United States

WTO - World Trade Organization

PREFACE

This e-Mobility Paper is one of the series of documents published by the Corvers Chair on Innovation Procurement at the University of Zaragoza (Spain) on different topics.[1]

European Member States are realizing more and more the importance and power of public procurement to solve global challenges, increase productivity, boost innovation, create jobs and ensure value for money in Europe.

In particular, Innovation Procurement should be strategically implemented in order to tackle beforehand future and pressing needs of public buyers and contracting authorities/entities, as well as current challenges that the aforementioned institutions face, such as budgetary restrictions combined with increasing demands from well informed citizens. In other words, Innovation Procurement is key to meet not only current demands, but the future ones, and be ready well in advance. It brings in innovative ideas and concepts into the organisation which help to further steer the innovation cycle.

When it comes to the field of e-Mobility, Innovation Procurement plays a key role, as the TRL of some of the technologies embedded in the final solution (e.g., batteries) still have a low TRL in Europe, which indicates a huge potential for R&D services and investment, that could be IPR protected in due time.

Moreover, even for technologies embedded in e-Mobility solutions that are close to the market or already available on the market, economic operators originating from third countries are benefitting for unfair competitive advantages in comparison to their European counterparts (such as compliance of the latter with strict social, labour and environmental standards).

Even though Innovation Procurement can be challenging and complex, maximising the value of public sector spending and harnessing that spending power to drive innovation will support Europe´s state-of-the-art industries. In the case of e-mobility and unless Europe wishes to be left behind and depend on third countries in this strategic field, measures need to be taken with immediate effect.

And this is the purpose of this White Paper: to provide interested stakeholders with the available tools to move in the right direction.

This e-Mobility Paper has been elaborated with utmost care and taking into account the view of experts from various disciplines, in order to tackle the subject from a cross functional perspective. In order to further improve this guidance, we would like to hear from you, your feedback, inputs, experiences and lessons learnt. Please do not hesitate to contact us in info@corvers.com, subject: *e-Mobility Paper.*

EXECUTIVE SUMMARY

This White Paper provides guidance to contracting authorities in Europe on how to prepare and design the procurement of innovative e-mobility products and solutions or the procurement of e-mobility concessions, in line with the Public Procurement Directives 2014/24/EU and 2014/23/EU, respectively. It also provides guidance on how to ensure that secondary objectives such as fostering a level playing field and compliance with the high social and environmental EU-standards are met.

Innovation Procurement is extremely relevant in the field of e-Mobility as the TRL of some of the technologies embedded in the final solution (e.g., batteries) still have a low TRL in Europe, which indicates a huge potential for R&D services and investment, that could be IPR protected in due time.

Moreover, even for technologies embedded in e-Mobility solutions that are close to the market or already available on the market, economic operators originating from third countries are benefitting for unfair competitive advantages in comparison to their European counterparts (such as compliance of the latter with strict social, labour and environmental standards).

Unless Europe wished to be left behind and dependent on third countries in the strategic field of mobility, measures need to be taken. This guidance provides interested stakeholders with the available tools to move in the right directions and showcases the latest initiatives to foster a level playing field.

Innovation Procurement is not only relevant from a strategic perspective, but from a practical point of view as it supports organizations to:

- Develop improved business cases, by using new or improved technologies, services and products.
- Improve the relationship with the market - by targeting “non-usual” suspects and/or partnering with the market to explore its strengths.
- Become a more agile, flexible and innovative organization tackling the fast, constant and changing challenges – this is due to the multidisciplinary/cross functional approach and the need to “thinking outside the box” that Innovation Procurement demands, as well as the enhanced interaction with the end user to understand his needs.

Innovation Procurement is key to meet not only current demands, but the future ones, and be ready well in advance. It brings in innovative ideas and concepts into the organisation which help to further steer the innovation cycle.

The White Paper, which also explains how to introduce innovation in the procurement of e-Mobility solutions, is a very comprehensive document and therefore, the reading of the whole White Paper is highly recommended.

Chapter 1 explains how to prepare in a step by step approach an Innovation Procurement (both a PCP and a PPI). Following these guidelines will increase the chances of successful implementation of the procurement procedure and decrease the risks linked to innovation. This chapter is especially useful for public buyers and contracting authorities/entities.

Chapter 2 intends to foster the competitiveness of the European Union. Facilitating an equal level playing field with non-EU companies becomes more and more relevant as increasing evidence is available that companies from outside the European Union receive large public subsidies in their home countries, originate from countries that do not reciprocate the EU’s opening of its procurement market or that do not meet European’s social, labour and environmental requirements or standards. The chapter is directed to public buyers, but policy makers and political actors at European and national level will also find it enlightening.

Chapter 3 explains how to introduce social and environmental considerations into the procurement procedure, in order to ensure that companies from non-EU countries do not benefit from unfair competitive advantages compared to EU companies and guarantee that high social and environmental standards are held across Europe. The chapter explains how to include these considerations as technical specifications, exclusion, selection and award criteria and as contract performance clauses, so it is especially useful for public buyers, contracting authorities/entities, technical and legal staff. However, policy makers and political actors at national and local level should also be aware of these possibilities in order to disseminate this knowledge to different interested stakeholders.

Lastly, chapter 4 concludes with a series of recommendations and a list of Do´s & Don´ts that summarizes the contents of this White Paper.

INTRODUCTION

Driven by European policy targets and legislation as well as national and regional policy targets, a growing number of European public authorities are purchasing e-mobility solutions that enable them to address their Sustainable Development Goals. These solutions cover full electric transportation vehicles (e.g. buses) including charging infrastructure.[2] Moreover, as of 2nd of August 2021, public procurers need to procure zero-emission solutions under the obligations of the Clean Vehicles, Directives 2014/23/EU, 2014/24/EU and 2014/25/EU.

When switching from a diesel/gasoline transportation fleet to e-mobility solutions, contracting authorities have important choices to make. From the selected business model (e.g. to purchase and operate the fleet and infrastructure itself or to outsource through a concession contract), to the specification of the relevant technical requirements (including data security, personal data protection etc.) to all relevant secondary objectives it would like to include (e.g. compliance with human and labour rights during the production, supporting a level playing field vis-à-vis non-EU companies, fostering and stimulating European employment and environmental ambitions analysed by Life Cycle Assessments (LCA)[3], etc.). In the context of growing concerns regarding unfair competition from heavily subsidized foreign companies, it becomes increasingly important that European Public Authorities are aware of the important role they play in enhancing the competitive advantages of European companies through their procurement strategy. Particularly in the context of the recovery from the Covid-19 crisis and the enormous investments in the European Green Deal a smart connection with already existing options within Public Procurement Law can help relaunch the economy and help maintain and even create new jobs.[4] Last but not least, through public procurement, public authorities can build or break important and valuable innovation ecosystems within the European Union and their regions.

This White Paper provides guidance to contracting authorities in Europe on how to prepare and design the procurement of innovative e-mobility solutions.[5] It also provides guidance on how to ensure that secondary objectives such as fostering a level playing field and compliance with the high social and environmental EU-standards are met. The guidance provided by this White Paper is tailored to the procurement of e-mobility products and solutions or the procurement of e-mobility concessions, in line with the Public Procurement Directives 2014/24/EU and 2014/23/EU, respectively. An e-mobility solution is defined in this document as clean public transport vehicles (full electric/hydrogen) including the related charging infrastructure.

The guidance provided in this White Paper is based on the European Assistance for Innovation Procurement (Eafip) methodology, which comprises evidence based good practices of innovation procurement across Europe. The Eafip methodology clarifies the pre-requisites and key steps to design and implement so called Pre-Commercial Procurement (PCP) and Public Procurement of Innovative solutions (PPI). Public authorities can follow these practical 'how-to' guidelines to obtain pioneering, innovative solutions customised to their specific needs, providing taxpayers with the best possible quality services, while at the same time saving costs.

This White Paper is structured as follows. Chapter 1 introduces the Eafip methodology and covers five sections in which the potential of PCP and PPI public procurements is explained. Section 1.1. explains STEP 1 of the Eafip methodology on how a public procurer can define and assess its needs for e-Mobility solutions. Section 1.2 explains how the public procurer can perform STEP 2 of the Eafip methodology concerning the SOTA analysis, which enables to conclude on whether the desired solution is available off-the-shelf or whether it requires additional research and development (R&D) and validation before being ready for deployment. Section 1.3 describes how STEP 3 Open Market Consultation can be performed in order to validate the previous findings and check whether the

market has the capabilities and capacity needed. Section 1.4 outlines how the public procurer can define STEP 4 Business Case, in order to get an overview of the costs and benefits of the desired solution. Section 1.5 describes STEP 5 Definition of the procurement strategy. This Section also elaborates on the possibility to enhance the competitive edge of EU companies in R&D procurement and to level the playing field regarding non-EU companies, by embedding labour rights and environmental requirements in the procurement documentation. Chapter 2 explains the legal framework governing international agreements on public procurement. The purpose of the chapter is to help contracting authorities to design the procurement documentation in such a way that EU companies can increase their competitiveness and compete on an equal level playing field with non-EU companies that may have received large public subsidies in their home countries, that originate from countries that do not reciprocate the EU's opening of its procurement market or that do not meet our minimum social, labour and environmental requirements or standards. It also presents the EU initiatives to level the playing field in public procurement. Chapter 3 explains how to incorporate social and environmental considerations into the procurement process to ensure that companies from non-EU countries do not benefit from unfair competitive advantages compared to EU companies, such as lower social and environmental standards. Finally, Chapter 4 draws conclusions, recommendations and Do´s & Don´ts for contracting authorities in order to level the playing field and support European companies that comply with all the environmental and social standards.

CHAPTER 1: THE EAFIP METHODOLOGY

The Eafip-methodology is a public procurement framework designed to facilitate the purchase of innovative solutions within the European Union and consists of the following nine steps: step 0. Informal contacts with innovative parties are established via e-Pitching events[6], trade fairs, match-making events, etc.; step 1. Needs´ are identified and assessed through workshops with end-users; In step 2, a State-Of-The-Art (SOTA) analysis will be performed and in step 3, an Open Market Consultation will take place. In step 4, all relevant aspects of the Business Case are described and in step 5, the definition of the procurement strategy and documentation is established. Step 6 includes the actual procurement procedure (PCP, PPI). In step 7 the contract is managed (including value engineering). Post-contractual management (e.g. monitoring compliance with obligations concerning standardization and commercialization of the developed solution) takes place as step 8 and in step 9 the lessons learnt are evaluated and communicated.

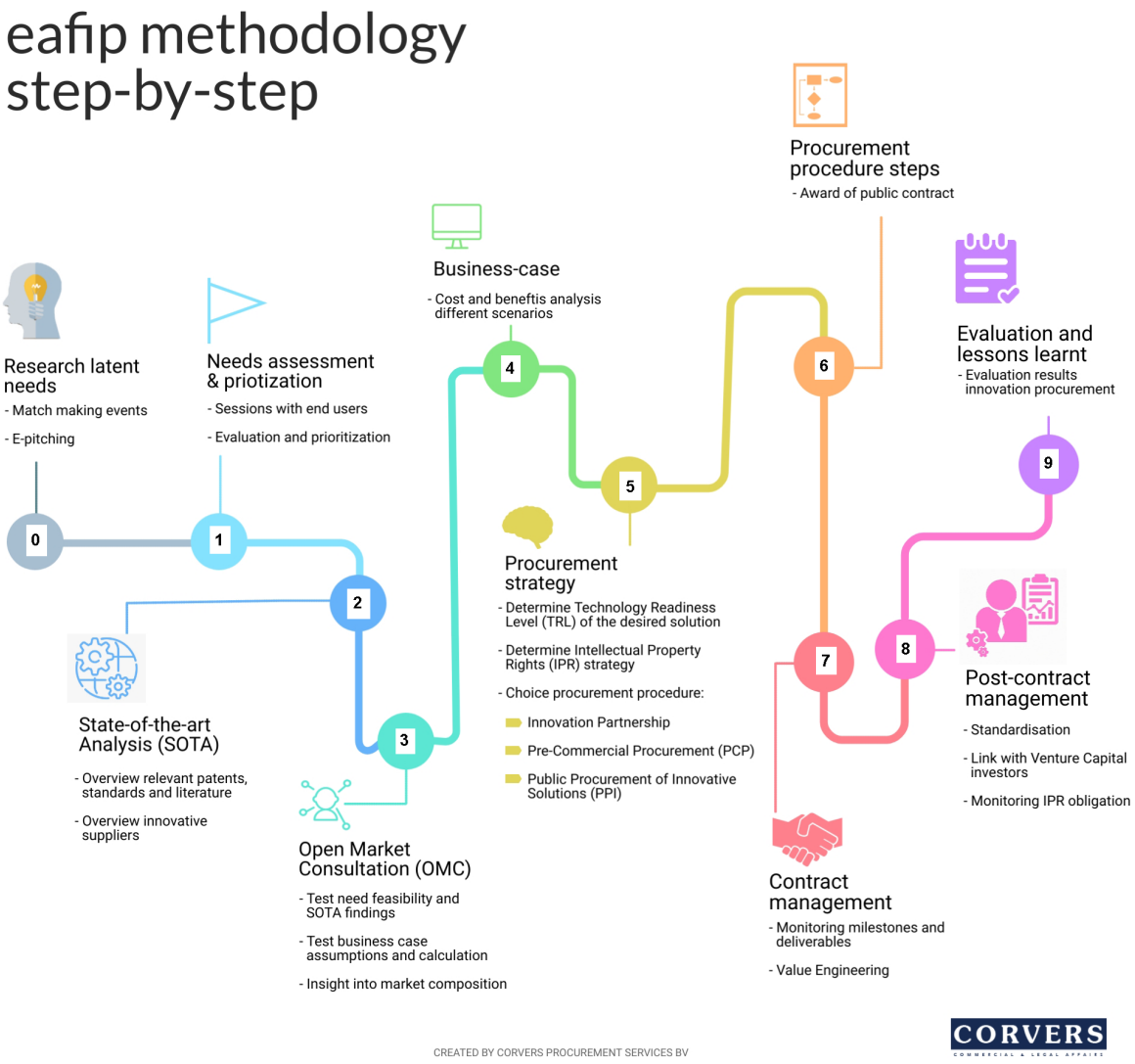


Figure 1: Eafip-methodology

STEP 1 DEFINING AND ASSESSING THE NEED FOR E-MOBILITY SOLUTIONS

The first step in any procurement project is to clearly define *the need* for which any future action might yield an *innovative* solution. For this, an internal procedure can be used, by which procurers gather information from end-users regarding their needs (e.g. drivers or travellers that would eventually use the new buses). In cases of co-operative or joint procurement, - i.e., when procurers associate with other procurers who deliver similar public transportation services - needs definition can become more complex as the number of actors, and their related needs, may increase. Benefits and needs of a joint procurement are also amplified due to the potential for, e.g., interoperability and more value for money. The main outcome of step 1 is an outline of the scope, performance and functionalities of the desired solution. Another important outcome of this first step is the estimation and valuation of negative impacts that the current transportation services might have (e.g., emissions that generate pollution; health issues; noise pollution, etc.). This valuation can be done by a comparison of the estimation of the business-as-usual costs if the same solution would be implemented again with the new envisioned solution. This valuation can be monetary, as well as non-monetary.

Currently, there are around 4,000 electric buses running in public transportation operations in Europe (including plugin hybrids, trolleybus IMC and fuel cell buses). This is a small part of the global circulating of 500,000 units of e-buses.[7] At this moment, roughly 98 per cent of all electric buses in the world are deployed in Chinese cities.[8] Driven by public policies to reduce (CO2) emissions and improve air quality, European authorities are increasingly switching to e-mobility solutions. The Dutch electric bus market, for example, is on the rise and at the forefront in Europe. In 2015, the leaders of the Public Transport Authorities (PTAs) in the Netherlands came to an agreement, deciding that from 2025 onwards, all newly bought buses for public transport can only be emission free. In early 2020, 10 percent of the Dutch fleet is already electrified. Europe is, however, trailing behind other countries such as China, that have adopted aggressive subsidy policies to electrify their public transportation and give their industry in this sector a competitive edge.[9]

STEP 2 PERFORMING A SOTA ANALYSIS

Performing a State-of-the-Art (SOTA) analysis is crucial for distinguishing between technological trajectories that require a procurement that includes the performance of R&D (also called a Pre-Commercial Procurement or PCP) or innovation procurement where the solution has recently been developed by R&D but needs to be demonstrated in real life environments and/or needs minor adjustments to make it to the market or to suit the public buyer´s needs (also called Public Procurement of Innovative Solutions or PPI) versus a regular procurement where products are commercially available without the necessity of further R&D. Last but not least to select an Innovation Partnership (IP), when bundling the R&D phase and the deployment phase.

It entails the examination of publicly available information on existing products and on ongoing research or any other published information that is relevant. An Intellectual Property Rights (IPR) search, conducted as part of the SOTA, focuses on the analysis of registered intellectual property from national or international databases. As part of the SOTA analysis, the results of European programs aimed to achieve a European transport system that is resource-efficient, climate-and-environmentally-friendly, safe and seamless for the benefit of all citizens, the economy and society, may provide additional insight into the state-of-the-art of available technologies and further R&D efforts.[10]

The SOTA analysis search helps to verify how innovative the R&D (for PCP and/or for IP) or the innovative solutions (for PPI and/or for IP) to be purchased actually are and whether there is still scope for protecting innovative efforts done in the procurement of the e-mobility solution. It also reveals

whether there are already entities on the market who own "key IPR" that cannot be avoided to address the identified need(s), and whether the licensing policy of those entities is introducing such high risks/costs that there is no good business case to start the innovation procurement. In the SOTA analysis, searches can be conducted for patents, standards, and literature. Most publications (literature) are concerned with early-stage results (e.g. at earlier Technology Readiness Levels (TRL). (See below figure 2).

2.1. RATIONALE FOR EXAMINING PATENTS

A patent is a technical and legal document granting the right to prohibit others to bring one's product on the market and to put it to use. A patent shows that an organization has made a commitment to protect the invention. Due to the costs associated with filing and maintaining patents, it is often large companies who file for and own patents. Patent law in all countries in the world adheres to a so-called 'absolute novelty' standard. This means that the 'state-of-the-art' is defined by all inventions both in the public domain and patent protected, whatever the country and whatever their antiquity. This entails that a patent is only granted when the invention passes the test of 'absolute novelty'. In order to get a good overview of state-of-the-art, patent databases which include data from as many other countries as possible are strongly preferred over national databases.[11] Private platform based on Artificial Intelligence technologies can be used to perform the SOTA analysis. The IPlytics platforms, for example, covers over 67 patent offices worldwide,13 resulting in about 80 million patents for 98 countries, from 1990.

2.2. RATIONALE FOR EXAMINING STANDARDS

Standardisation refers to the tacit (for de facto standards) or explicit (for de jure standards) development of technical consensus. Standardization can include agreement upon features between technologies to foster interoperability between devices, data or software. A SOTA analysis should include a search for standards relevant to the envisaged innovation, as these may help to meet user needs (such as regarding interoperability issues). In the technical specifications for the procurement, the procurer may request suppliers to evidence their compliance with these existing standards as means of proof for specific desired solution characteristics. As well, standards for defining, measuring, and testing are relevant to various stages of the R&D process and can be applied at different phases of the PCP.

If relevant standards exist, the public procurer may conclude that these are important to comply to or that existing standards are not sufficiently open, applicable or comprehensive and new standards or test procedures should be created. There are many situations where one can find a plethora of redundant and competing standards (e.g., proprietary, consortia, or non-harmonized standards). If a more radical innovation (in PCP or in IP) is justified, there may be no existing standard, label or certification applicable to the innovation. The PCP (or IP) can then foster faster standardization by first creating de facto standards – or market driven standards – which can later be transformed into a de jure standard. This can be achieved by requiring via the PCP (or IP) tender specifications that vendors ensure interoperability on critical parts of the solutions and that vendors license IPR over the latter under FRAND conditions. Alternatively, or later on, suppliers may be required to engage with formal standardization bodies to form de jure standards where standardization agreements may be reached. Examples of bodies include ETSI, CEN, CENELEC, IETF, ITU.

2.3. INTERPRETING RESULTS OF THE SOTA ANALYSIS

During the SOTA analysis, the Contracting Authority will gather information on potential solutions that can subsequently be assessed and compared as part of the Business Case. Areas of assessment include estimated costs/costs-savings of solutions as well as remaining risks such as estimated risk of failure during follow-up R&D and subsequent implementation. The available budget will also determine the choice of the solution to be pursued. Depending on the particular situation, a procurer may be interested in selecting a project area in which a PCP (or an IP) has the potential to result in IPR and wider market revenues that may help to mitigate the risks associated with a high investment in R&D services. Whenever the analysis reveals that relevant solutions are still at the R&D stage (TRL3 – TRL8), a PCP or an IP can be considered (see figure 2 below). When relevant solutions have moved beyond R&D but are not widely commercialized and may necessitate conformance testing, a PPI can be considered by the procurer. Finally, whenever SOTA reveals that the desired solution is readily available on the market, the procurer will proceed with a normal procurement. Additionally, the IPR search will indicate whether market entities already possess IPR that is needed to develop the desired innovative solution. This will prompt the procurer to investigate whether designing around the blocking IPR is possible or whether licensing agreements can be reached (e.g. during the open market consultation). When neither of these two options are viable, the procurer may decide not to proceed with assessment and comparison between these technological trajectories.

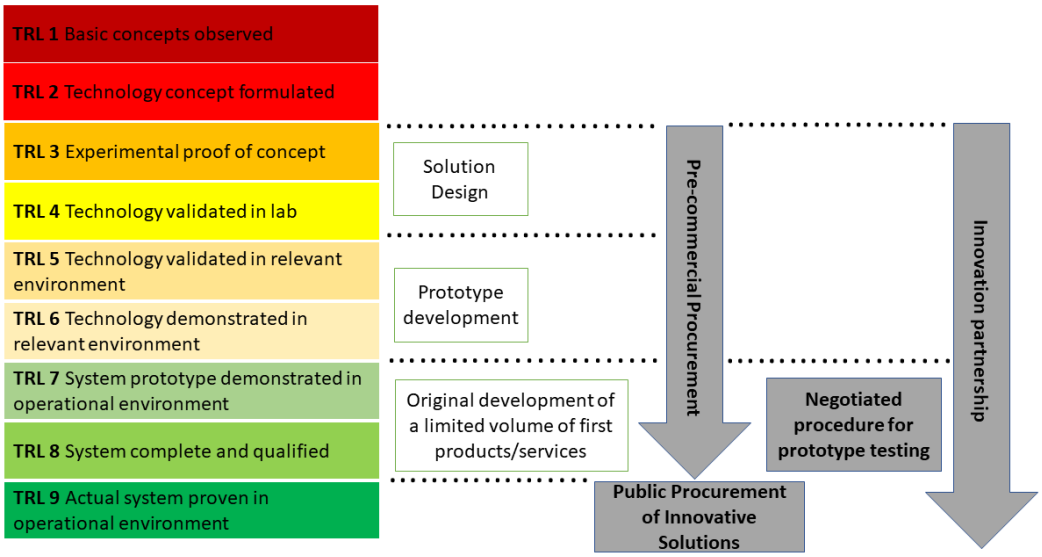


Figure 2: Technology Readiness Level and development maturity. Adapted from EAFIP (2018). European Assistance for Innovation Procurement (Eafip) Module 2 Toolkit. Retrieved from https://eafip.eu/toolkit/module-2/ The terms that appear next to the TRLs are the results that are reached.

This section briefly discusses the relevance of the outcome of a SOTA analysis at a high level. Based on the results of the SOTA analysis, three possibilities may arise:[12]

- For some user requirements certain solutions already exist (e.g. some companies already developed particular components relevant to an interoperable solution). In this case, it would make more sense to focus the PCP (or the IP) on those aspects of the unmet need for which there are no solutions yet, and possibly require (based on any associated costs of applying proprietary components) the uptake of a low power solution which already exists into the forthcoming innovation.

- Solutions exist which each individually would meet separate user needs. The procurement can focus on retesting suppliers to integrate/combine the solutions together, and this activity may constitute a PPI (with adaptation or design changes to exiting solutions) rather than a PCP (or an IP).
- Solutions exist and are available on the market which can each themselves fully meet the user need, then there is no more need for an innovation procurement and an existing solution can be procured instead. This would then call for an off-the-shelf procurement.

Identifying relevant or 'overlapping IPR' needed to address the procurement need, may mean that a) the need is not sufficiently novel to justify the PCP, the PPI or the IP in the first place (i.e. existing patents were found which meet the needs already); or b) Pre-existing IPR may end up being 'novelty destroying' against any subsequent IPR applications/registration; meaning PCP/PPI/IP contractors may face IPR barriers when attempting to supply their solutions to the procurer (for a PPI) and commercialize their solutions after the PCP/PPI/IP to other customers. This issue could be dealt with in advance by either designing around the blocking IPR in drafting the tender requirements (for PCP, PPI and IP) and in the development of solutions while still in the R&D stage (for PCP and IP); or negotiating a license with the IPR holder in advance, well before commercialization. If there is only one holder of IPR, the public buyer will have to start negotiations with just one owner, so the risk of not reaching an agreement is relatively low. However, if the IPR holder is unwilling to negotiate a license and it is not possible to design around blocking IPR, then it might be concluded that the IPR risk is too great to start the project.

Number of needs met	Each need is met…		Some needs are met	No needs are met
Number of patents meeting the needs	By a single patent	By multiple patents	By some patents	No relevant patents exist
Recommended strategic action	Buy Off-the-Shelf if the patent is embedded in a market-ready solution	Conduct a PPI for a supplier to integrate the IPR into one solution; with desired adaptation/design changes	Conduct a PCP beginning at later TRLs	The need is 'novel'; Conduct a 3 phase PCP beginning at TRL 3 or 4.
Risk regarding blocking IPR	Low; purchase from a single supplier	High; agreement required between many patent owners plus the solution integrator; IPR may be "novelty destroying" and market is "saturated"	Moderate; IPR must be integrated into a new solution or worked around	Low; there is no IPR to infringe upon; a "white space" enabling innovation.

Table 1- Summary of the relevance of prior art findings to an innovation procurement project

2.4. Relevance to the Procurement of e-Mobility Solutions

Performing a SOTA analysis is crucial when a Contracting Authority decides to drive innovation in the area of e-mobility. Preliminary results of the SOTA, as based on desk research, are to be checked by a technical expert to ensure their relevance and to identify any areas which should be further focused on or removed. This is based on the scope of the project as well as the technical and innovative relevance of the identified IPR. The SOTA can be performed by using Artificial Intelligence tools that search most patent databases in the world (e.g. IPlytics tool). For example, when searching on the keywords hydrogen transport, a number of 278 patents are found. The public authority, or its

(external) expert will review the abstracts of these standards and conclude on which are pertinent to the innovative solution it desires. Based on these findings the public authority will have a good overview of the areas in which companies are actively innovating and the origin of these innovative companies.

STEP 3 OPEN MARKET CONSULTATION

Based on the information collected during the previous steps the procurer could then perform preliminary calculations to estimate whether the foreseen project is sufficiently attractive to continue to more in-depth analyses. For those projects where preliminary calculations suggest investing further time and money has sufficient value, the procurer may organize an open market consultation to gain more detailed information to contribute to planning. This consultation is open in the sense that many suppliers are invited by the contracting authority.

The intention of the market consultation is to gather information from market players / innovators regarding the cost, quality, performance and efficiency of existing and potential solutions, such as ongoing research and their potential to yield solutions relevant to procurer's problem / need. This will help the procurer to check whether the first estimations made in the Business Case (e.g. expected benefits, expected costs, remaining risks) reflect realistic prospects. As such, there is a degree of overlap between the market consultation and calculating the value of a project. Testing the preliminary model through the market consultation adds a degree of rigor and provides additional information for more accurate estimates.

The OMC also provides with other relevant information, such as whether or not the planned distribution and management of the IPR is adequate.

The ability for market consultation to reveal sufficient information to support a rigorous Business Case depends to a large extent on the readiness of the market players to share information (always bearing in mind confidentiality issues). Within the legal boundaries meant to prevent distortions of competition (e.g. the same information is conveyed to all participants; the market players are not agreeing on price fixing or market sharing), different strategies can be deployed by the procurer in designing market consultations that are conducive to information sharing. Some examples of these are one-on-one discussions, market surveys, poker planning techniques, and the use of an intermediator to act as a facilitator of discussions between public and private actors. The market consultation will also provide insight into the market structure (e.g. number and size of competitors, available capabilities, etc.). Based on this knowledge, the procurer will be able to refine its procurement strategy in STEP 5, including the choice for a PCP followed by a PPI, or an Innovation Partnership. During the market consultation, it is also important to gain insights into the distribution of R&D and deployment capabilities in market operators. For example, when innovative SMEs have valuable R&D capabilities but no deployment capabilities, the public authority may adopt auxiliary measures to enable match-making and consortia forming with larger companies that possess deployment capabilities.[13] This will be done in compliance with the equal treatment principle.

STEP 4 DRAFTING THE BUSINESS CASE

The Business Case for the procurement of e-mobility solutions is a useful tool to understand the financial consideration of such procurement. This section discusses the Business Case for Scenario 1 Full Ownership of the e-mobility Solution and Scenario 2 Concession of the e-mobility Solution.

4.1. SCENARIO 1: FULL OWNERSHIP OF THE E-MOBILITY SOLUTION[14]

The Business Case can often take the form of a Total Cost of Ownership (TCO) assessment, in which all the costs to be sustained in the entire life-cycle of the procured buses are considered.[15] The TCO can be used also as a means to compare different technologies employed in the same product. In this case, it can be used to compare diesel, electric and hydrogen engines, on urban public buses. A similar Business Case has the potential not only to reveal the most cost-effective solution for the public authority, but also to identify elements which are normally not considered in a traditional tender (e.g. new infrastructures such as charging stations). For these additional items, the public authority might need to build additional expertise and combine this expertise when procuring new buses.

4.1.1. PRELIMINARY CONSIDERATIONS: THE EFFICIENCY COMPARISON AND EXPECTED LIFE-CYCLE

When comparing different technologies employed on the same product, the Contracting Authority shall be careful to compare *apples with apples*. In particular, the first effort is to define the operational level of the fleet. Namely, to assess the Public Transport offer by the Public Transport Operators (PTOs) required to meet the demand of their clients (e.g. the citizens of a given municipality). The definition of the operational level is functional to the procurement, as different technologies deliver different operational and performance levels. For example, an electric fleet would need a higher refueling time compare to a diesel one. In other instances, two different technologies may address the same requirements in a different way. For example, a lighter bus would employ less engine power in carrying the same capacity of passengers, compared to an existing heavy diesel bus.

Therefore, the comparison between different technologies shall not be conducted on a unit basis, rather on a fleet basis considering the operation level required, and thus, responding to the same functional characteristics and performance levels.

The characteristics and functionalities shall be assessed before the Business Case, in the Needs Assessment exercise described in section 2 above.

Another preliminary consideration is the *expected life-cycle* of the to-be-procured urban bus. In other words, how many years the bus will be in service. Normally the life-cycle is expressed in the maximum mileage of a bus. On reaching such threshold, the bus should be disposed of and replaced. Therefore, in order to translate the mileage threshold in effective life-cycle, the Contracting Authority needs to assess the average number of kilometers driven per year by its fleet. Different average kilometers driven means different life-cycles. Let us imagine a bus manufacturer stating that its product has a maximum mileage of 1 million kilometers. In order to understand the life-cycle of this bus, a Contracting Authority should divide the mileage threshold for the city's average. For example: if in a given city a bus has a daily mileage of 200 km per day, thus, around 70.000 km per year, the life cycle of purchasing a new bus would be about 14 years. Having a realistic average mileage is crucial as it has a drop-down effect on the whole Business Case.

4.1.2. COST CATEGORIES

The Contracting Authority should examine all the potential costs that will be sustained in the whole lifecycle of the bus. In this case, the CA can distinguish between **acquisition costs**, strictly related to the purchasing of the buses and **operating costs**, the ones related to the structure that support the daily operations. These costs are described below.

Acquisition Costs (CAPEX)	Operating Costs (OPEX)
Procurement of the fleet	Fuel or energy consumption
Depreciation	Battery cost (for electric) and replacement
Financing rate	Infrastructure costs - Acquisition costs - Start-up costs to connect the fleet to the new recharging systems (e.g. state/municipal grid in case of an electric solution)
Assets salvage value	Maintenance and repair costs (including tyres)
Recycling	Road tax
	Insurance
	Other costs

Procurement of the fleet

While the cost of traditional diesel solutions is fairly standard across manufacturers, the purchase price of e-mobility solutions can vary from industry listing. This depends on the size of the purchase from the PTO, which may grant different discount rates. In any case, capital expenses of e-mobility solutions can heavily increase the unit-cost of a bus. For example, the cost of an electric solution could reach a price which is between 75% to 150% higher than a diesel bus. This figure may depend on the main characteristics of the electric solutions, such as battery size, charging methods, etc. In this calculation, Contract Authorities should also include potential government financial or fiscal incentives which might push down the unit-cost overall cost.[16] For example, countries may grant tax incentives to municipalities which lower their carbon footprint by introducing a greener public transport system. In other cases, the same municipalities may even refrain from collecting road taxes from green vehicles.

Depreciation

Depreciation is used in accounting to allocate the cost of a tangible or physical asset over its life expectancy. In particular, it represents the part of value that has been used up. Depreciation clearly depends on the type of bus to be purchased. In particular, its life cycle and the type of engine would influence the discount rate. Normally, for new vehicles with a 15-year life-cycle, a 10-15% depreciation rate of the original purchase price can be assumed. This consideration should be also part of the Business Case. In addition, the depreciation should be accounted for the related infrastructures such as charging stations. In this case, the Public Transport Operators (PTOs) can decide to depreciate the entire infrastructure over its entire life-cycle (e.g. 20 years). PTOs can also use the depreciation of the fleet to establish funds for future bus replacements or for additional purchases.

Fuel or energy consumption

To gain an understanding of the cost of fuel consumption, the life cycle expectancy is critical. Let us consider three buses with three different engine technologies: diesel, electric and hydrogen. These buses have the same maximum mileage of 1 million km. According to the Contracting Authority's estimate, this threshold will be reached in 14 years. Having these data, the Contracting Authority should make an assumption on the cost of the fuel per the entire life-cycle. This also depends on the efficiency of the solution: in the case of a diesel bus, the number of km per liter of fuel. However, such assessment is not an easy endeavour as utilities prices are rarely fixed and can consistently change from one year to the other. Nonetheless, the Contracting Authority can timely establish long-term contracts to countervail unfavorable price fluctuations.

Example of average energy cost per kilometer

On average the energy cost for a diesel bus is much higher than for an electric bus:

- City diesel bus: 45 liter/100km = appr. 45 x 1,00 Euro /100 = 0,45 Euro/km
- City electric bus: 1,1 kWh/km = appr. 1,1 x 0,15 Euro = 0,165 Euro/km

This means that a city bus which runs 1.000.000 km during its life, results in a cost difference of approximately 285.000 Euro.

** These figures are very depending on energy cost per country. But in principle the energy cost of a diesel bus is 2,5 to 3,5 times higher than electric. I.e., this cost parameter has an important effect on the TCO.*

Infrastructure cost: charging stations

The cost of infrastructures for any urban bus relate to the acquisition, installation and maintenance of charging stations. PTOs are generally already equipped with refueling stations for diesel buses at their depots. If a PTO opted for electric or hydrogen solutions, the current infrastructures would have to be replaced altogether with dedicated charging stations for electricity or hydrogen. In addition, a PTO may assume a higher off-the-shelf cost of these new stations compared to well-established and mature technologies connected to diesel engines.[17] Additionally, the low capacity of these new technologies may also require charging *substations* at the buses' end of the lines, for halfway charging. The PTO has also to take into account the efficiency of the new charging stations. In a traditional diesel one, tens of buses can share the same infrastructure. However, this capacity cannot be currently matched by electric chargers. Thus, the infrastructure cost for an electrified fleet becomes significantly higher with the specific charging time. Most likely, the PTO would have to increase the total number of charging stations.

Maintenance Costs

In a Business Case the maintenance costs are normally expressed in Euro per Kilometer. Maintenance costs are a range of expenses that a Contracting Authority needs to take into account along the life of its fleet to preserve its performance and functions and guarantee the transport services. The cost of maintenance refers to: average maintenance, cost of spare or replacing parts, but also to the related personnel employed in the PTO's depots. According to many studies by PTOs and Contract Authorities especially in the US, the degree and the cost of maintenance for e-mobility solutions is considered to

be considerably lower than the one of diesel buses. Some reports point that for electric buses the cost of maintenance per kilometer can be significantly reduced.[18]

However, in order to obtain a fair comparison between different vehicles, the PTO shall understand the cost structure of the maintenance costs, which are often divided into several categories: predicting maintenance, unforeseen maintenance, damage and repair costs, tyres replacements and lubricants, etc. For example, considering the tyres lifetime, the added weight of a battery pack for the electrified powertrains will results in a higher tyre wear compared to a diesel engine.[19]

Here it is worth pointing out that while the cost of preventive maintenance and the labor cost in the ordinary maintenance of an e-fleet is lower than a traditional diesel one, the cost of the spare parts is still significantly higher. Nevertheless, these costs are estimated to be pushed down in the future along with an increase scale of e-mobility solutions sold in Europe and in the rest of the world.

Other costs

In a comparison between two identical solutions but with different technologies, some cost categories may not be taken into consideration in the Business Case, for example because the potential technology change is not likely to greatly influence the occurrence and the degree of these costs. These costs include amortization, drivers' costs, insurance, taxes, depot's costs, etc. It is recommended to do a comparison on a fleet level.

4.1.3. ENVIRONMENTAL CONSIDERATIONS

Electric or hydrogen solution, when compared to traditional diesels buses, might still not pass the financial evaluation of a Business Case. McKinsey in 2017 predicted that electric bus will become effectively cost-competitive compared to a diesel bus only in 2023.[20] This is due to the *relative* technological immaturity of these solutions and a market that has still not reached the right scale to compete with traditional engines. This consideration shall be based on a mileage drive per vehicle assessment, whose cost in case of an electric fleet is currently comparable or even cheaper than a diesel fleet. As pointed out before for the maintenance cost, the mileage costs if forecasted to decrease even more in the future because of the higher maturity and sales volume.

Environmental considerations can tip the scale in favor of these new technologies which are *carbon neutral*. A recent study by Transport & Environment (see figure) even suggests a positive case if external outcomes are assessed (in a 8-year TCO calculation).[21] These external outcomes are climate costs in terms of GHG per km, but also the Health costs, in terms of air quality and noise. If GHG or CO2 is considered, the PTO could use appropriate indicators to translate the emission into financial terms and adding them to the Business Case.

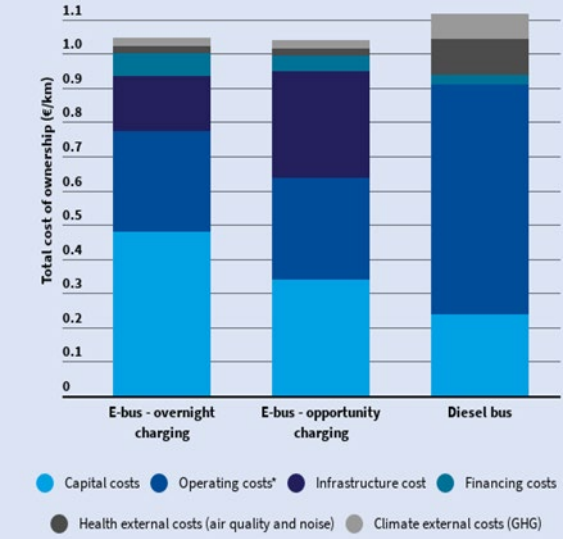


Figure 10: TCO comparison Diesel vs Electric. Source: Transport & Environment.

For example, when taking into account the emissions derived from the electricity production, the cost of externalities in the case of electric buses is significantly reduced. Factors to ponder are the height and the sparsely populated areas in which the air pollutants released upstream by the power plants are usually emitted (leading to lower contribution to air quality issues in urban areas) versus the low levels and the urban areas in which traffic emissions occur. Another element to consider is that the Life-Cycle Cost of the electric buses is reduced about 2.5 - 6 % if taxes are included, due to the inclusion of costs of externalities.[22]

4.2. SCENARIO 2: CONCESSION OF THE E-MOBILITY SOLUTION[23]: A RISK CASE

In the planning phase, a Business Case can be used by a Contracting Authority in charge of the public transport service of a given city to understand the economic and financial feasibility of a concession compared to a traditional contract. In fact, the choice to resort to these forms of partnerships must be preceded by an adequate investigation.

The Business Case, in this particular circumstance, is rather a **risk case**. In determining the most convenient form of contract, the Contracting Authority shall perform a thorough assessment concerning the nature and intensity of the various potential risks inherent in the execution of the contract. Such a risk analysis gives the Contracting Authority greater awareness of the critical issues that may emerge during the implementation and contributes to the preparation of a solid procurement documentation. Normally, in a concession, the risk related to the whole process (procurement and execution of the service) is shared among the parties on the basis of their relative risk management skills. A Risk-Business Case can be used not only in the planning phase but could become an integral part of the tender documents. Additionally, it can be used during the execution phase for monitoring purposes, as it identifies the risk sharing balance between the parties and allows that such equilibrium is maintained throughout the duration of the contract. See Annex 6 for a detailed risk assessment approach.

STEP 5 DEFINING THE PROCUREMENT STRATEGY - BASED ON TRL

Following the preparatory steps described in the sections above, a contracting authority will decide whether it will pursue a public contract or a concession and will therefore apply Directive 2014/24/EU governing public contracts, or Directive 2014/23/EU governing public concessions, respectively. When innovation is the objective, the contracting authorities will conclude based on the previously performed preparatory steps on the TRL of the desired solution. The various procurement approaches available, depending on the TRL of the desired solution, are illustrated below:

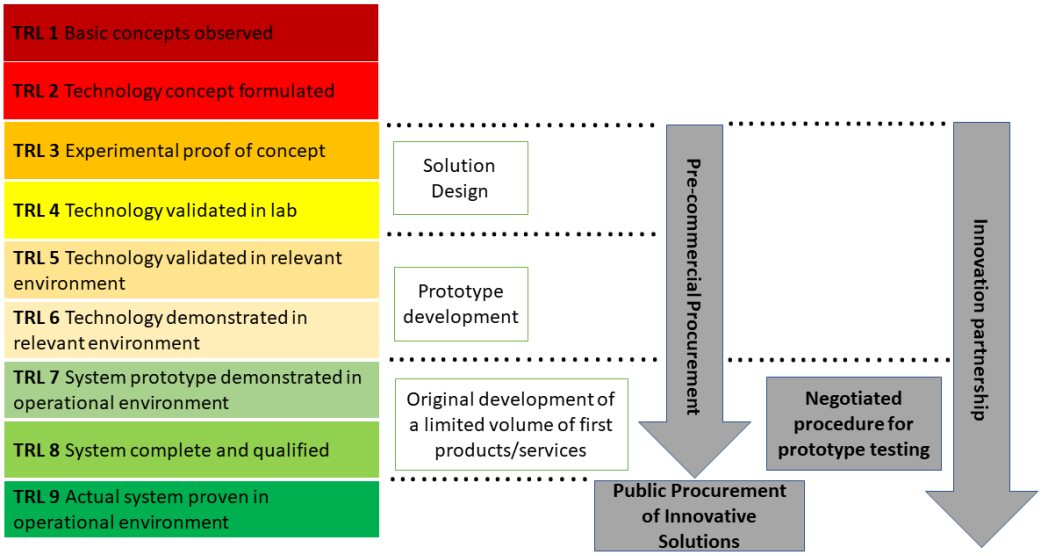


Figure 11: Innovation procurement by TRL

When the desired **solution is between TRL3 and TRL8**, the public buyer may choose between:

1. Pre-Commercial Procurement (PCP) followed by a Public Procurement of Innovative Solutions (PPI);
2. Innovation Partnership;
3. PPI preceded by forward commitment.

When the **solution finds itself at TRL7**, the public buyer may choose to deploy

4. Negotiated procedure without prior publication for prototype testing[24] followed by a PPI.

When the **solution finds itself at TRL9**, the public buyer may deploy

5. PPI. [25]

5.1. PCP FOLLOWED BY A PPI

PCP is "*a specific approach to procure R&D services that involves competitive development in phases, risk-benefit sharing under market conditions, and where there is a clear separation between the PCP and the deployment of commercial volumes of end-products (potential follow-up PPI)*".[26] PCP was defined in 2007 in the PCP Communication in full compliance with the legal framework. Parts of the PCP Communication have been included in later legislation. The 2014 public procurement directives clarify that PCP is exempted from its remit and the 2014 State aid framework for Research and

Development and Innovation clarifies the conditions under which PCP is done according to market conditions and therefore does not constitute State aid.[27]

As R&D services are also exempted from the scope of the GPA, **a Pre-Commercial Procurement can be restricted to participation of European companies or to companies that are willing to locate their R&D activities within the EU**. This approach is favoured by the European Commission as it allows participation of non-EU companies, as long as they are performing the R&D in the EU, which will ensure knowledge spill-over to the benefit of the European economy.[28] When a public procurer chooses to restrict a PCP to participation by European companies, the determination of the nationality of the owners of a company is important. It is possible to set the condition – following the example of the US Small Business Innovation Research (SBIR) program in the United States (US) – that the company is **more than 50% directly owned and controlled by one or more individuals who are citizens or permanent residents of the European Union**, or are directly owned by companies that fulfil the previous condition or a combination of both. Additional conditions could be imposed in relation to the location of the headquarters of the company in the EU or that operates primarily in the EU or that makes a significant contribution to one EU country through payment of taxes or use of European products, materials or labour. For obvious reasons, the determination increases in complexity in the case of large companies and becomes impossible in case of listed companies.

PPI means procurement of innovative goods or services which are not yet available on commercial basis or are only available in small quantities on the market. This includes solutions based on existing technologies that are used in a new, innovative way. The solutions may have been (partially) demonstrated with success on a small scale (e.g. field testing of a first batch of products) and may be nearly or already available in small quantity on the market. However, due to residual risk or market uncertainty, the innovations are not yet being produced at large scale and do not yet meet market price/quality requirements of procurers for wide deployment. Market readiness prior to deployment can be verified using methods including conformance testing, certification or quality labelling of solutions. A quick transition from a PCP to a PPI will help to decrease the risk of the product not making it to the market.

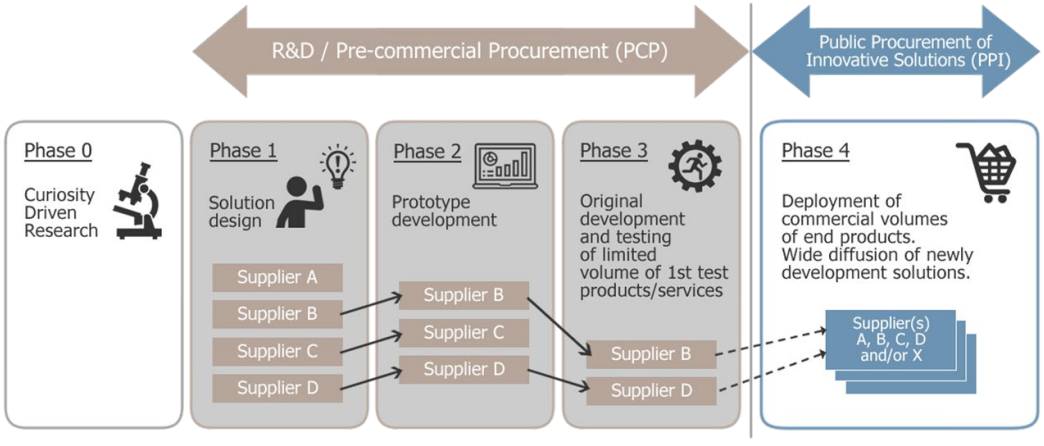


Figure12: PCP followed by a PPI. Source: European Commission

In the case of a PCP followed by a PPI, the situation could arise where at the end of the PCP, the envisaged solution still requires additional R&D before it can reach commercialization. The Public buyer may consider in this case the deployment of a sequential PCP to advance the state of development of the solution. When PPI is not preceded by a PCP, the Public buyer should announce well in advance the intention to buy a significant volume of innovative solutions, in order to trigger industry to bring to the market solutions with desired quality / price ratios within a specific time (see

the PPI with Forward Commitment, described below). Based on data from finalised PCPs performed by consortia of contracting authorities with EU funding, PCP is particularly suitable for participation of young and small companies and unusual suspects.[29]

5.2. Innovation Partnership

The Innovation Partnership is an award procedure which entails a long-term contractual relation with one or several private undertakings, concerning the R&D and the subsequent purchase of commercial volumes of the developed innovative solution, if delivered at the performance levels and costs which were initially agreed upon.[30] The R&D stage of an Innovation Partnership may be designed similarly to a PCP, with multiple partners conducting separate research and development activities in parallel. The deployment stage could be continued with the partner that develops the most valuable and cost-effective innovative solution. The deployment stage could also be continued in the form of a framework agreement with more than one partner. In this last case, the contracting authority will encourage the development of an interoperable solution and will ensure competition and choice. The procurement legislation does not define restrictive grounds for applying an innovation partnership. However, in relation to the state aid legal framework, innovation partnerships will benefit of the presumption that no state aid has been granted, only when the procedure covers both the development and the subsequent purchase of unique or specialised products or services.[31]

From a legal perspective, SMEs and start-ups can participate in an Innovation Partnership by joining forces and submitting bids in consortia or associations, relying on the capacity of third parties, etc. However, and based on an analysis of innovation partnerships published on TED until May 2019, the European Commission shows that innovation partnerships favour large companies. This is due to the fact that from the beginning of an innovation partnership, the bidding companies need to demonstrate both R&D and production / delivery capabilities. Innovation Partnership also receive on average a considerably lower number of tenders (1,5 on average compared to 14,8 in PCPs). [32]

5.3. PPI with Forward Commitment

This PPI model entails informing the market well in advance of the future procurement needs of a purchasing authority and granting this market sufficient time to develop an innovative solution. In this model, the public entity commits to purchasing the developed solution at quality and prices which were initially agreed upon. The contracting authority minimizes the investment risks for the market (by committing to purchase) but does not carry investment costs (the Public buyer doesn't invest in R&D; this is the task of the economic operator). This approach is suitable when the market is willing to invest in development without financial support from the government and the commitment of the Public buyer is sufficient.

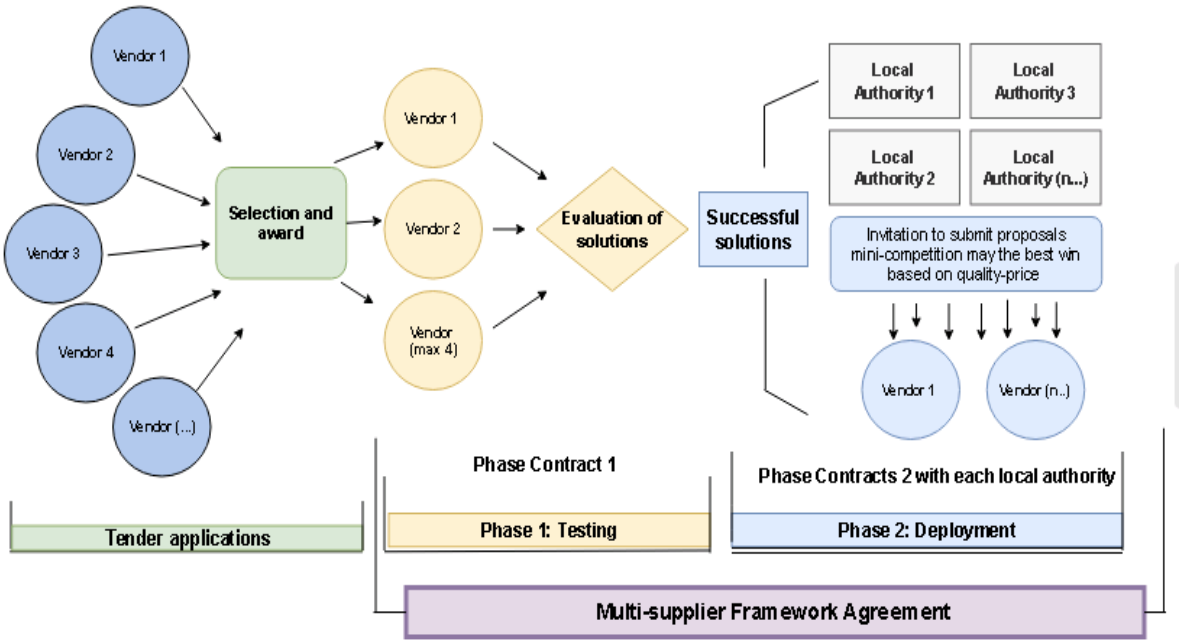
5.4. Negotiated procedure for prototype testing

When the solution is a product that finds itself at TRL7 (system prototype demonstration in operational environment), the Public buyer may perform a prototype testing through a negotiated procedure without prior publication or through a competitive procedure.[33]

5.5. PPI

When the solution finds itself at TRL9, it has ended its R&D cycle and is ready for commercialisation but has not been placed on the market yet. It may still need to undergo conformity testing for being granted the CE-mark and being allowed to place the product on the EU market. In this case, a PPI may be applied. The prior commitment of the procurer is in this case not necessary. For this approach, the Public buyer will conduct a procurement procedure in accordance with the applicable procurement legislation. Currently, public authorities/entities may use these procurement instruments based on the TRL level of potential solutions. For example, electric bus deployment, which represents a major trend in the international landscape of urban public transportation, at TRL 9 could require to undergo testing under a PPI procedure. If, for example there is a need to develop better performing batteries, a procedure such as PCP to procure R&D services may be used.

Below you can see an example of an open procedure with an R&D and deployment phase using framework agreements and contracts for phase 1 (R&D) and phase 2 (purchase of solution). Here, the TRL level of the solution is 9 but testing of the solution before the large-scale deployment is deemed necessary. Technology vendors submit proposals for the testing phase, they are selected and from those that successfully prove their solution in a relevant environment, only a few are chosen to sell their solution to a certain predefined number of contracting entities.



The procurement procedures, in general, require setting selection and award criteria related to the subject-matter of the contract. For the selection criteria, regarding technical and professional capacity, for example, references of previous projects in Europe or abroad may be considered. For the award criteria, considerations of quality, accessibility, design for all users, social, environmental and innovative characteristics are relevant.

HOW COULD A CONTRACTING AUTHORITY TRANSFORM ITS FLEET? EXAMPLE CASE DESCRIPTION	
1.	**STEP 1 of the Eafip methodology: DEFINING AND ASSESSING THE NEED** - Refer to the Clean Vehicles Directive (*Directive 2009/33/EC of 23 April 2009 on the promotion of clean road transport vehicles in support of low-emission mobility* amended by *Directive (EU) 2019/1161 of the European Parliament and of the Council of 20 June 2019*) and the need to achieve minimum procurement targets for the share of clean light-duty vehicles and for the share of clean heavy-duty vehicles.
2.	**Perform STEP 2 of the Eafip methodology: A SOTA ANALYSIS** – To find out who are the relevant market players and where they are located, as well as where patents are being filled and relevant standards. If the players and patents of the solution are mainly located in China or the EEUU (as a matter of example), this indicates a low TRL of the solution in Europe, which justifies a PCP approach.
3.	**Conduct STEP 3 of the Eafip methodology: OPEN MARKET CONSULTATION** - To find out if the previous findings are aligned with the market and discover potential new solutions and/or market parties. In the case of batteries, it well maybe that there is a company in Europe already developing this technology, and the contracting authority wasn´t aware of this.
4.	**Implement STEP 4 of the Eafip methodology: DRAFT A BUSINESS CASE** Compare the costs of the current transportation service to the costs of developing and implementing the envisages solution, taking into account the whole life cycle of the solutions. Environmental considerations play an important role.
5..	**According to STEP 5, you have to decide now on the PROCUREMENT STRATEGY** If the TRL of the solution is low a PCP or an IP would be justified. Once the PCP is implemented, and - if successful - a PPI for the deployment of the novel solution (now on TRL 9) can be started.

CHAPTER 2: ENHANCING THE COMPETITIVENESS OF EUROPEAN COMPANIES BY GUARANTYING A LEVEL PLAYING FIELD

Following the choice of the procurement approach, the Public buyer will also need to specify the right criteria and requirements to include in the procurement documentation. This section provides guidance on the design of the procurement documentation in such a way that public procurements also enable the competitiveness of the European Union. Facilitating an equal level playing field with non-EU companies becomes increasingly relevant as increasing growing evidence is available that companies from outside the European Union receive large public subsidies in their home countries, originate from countries that do not reciprocate the EU's opening of its procurement market or that do not meet European's social, labour and environmental requirements or standards. Besides the efficient and transparent use of public funds, the public procurement legal framework also targets the achievement of strategic goals in such a way that it stimulates industry to provide innovative and resource-efficient, energy-efficient and circular solutions. Due to its sheer size (i.e. estimated at EUR 2000 billion every year[34]), public procurement thus makes an important part of public investment that can lever the competitiveness, innovativeness and sustainability of the European industry.

To this end, section 2.1 explains some basic instrumentation outlined within the Government Procurement Agreement (GPA) and 2.2. explains the legal framework governing international trade agreements on public procurement; 2.3 focusses on the EU initiatives to level the playing field in public procurement. The chapter concludes on the possibilities for EU contracting authorities arising from these frameworks to enhance the competitiveness of European companies by enabling an equal level playing field, which in some instances lead to the exclusion of non-EU companies from public procurement procedures.

1. GOVERNMENT PROCUREMENT AGREEMENT (GPA)

The GPA is a multilateral agreement within the framework of the World Trade Organization (WTO) that governs the mutual opening of the government procurement markets of its members to competition.[35] All WTO members are eligible to accede to the GPA whereby these governments open their public procurements to other Member States. However, not all of the 164 members of the WTO have signed the GPA and thus are parties to the GPA. Currently, the GPA has been signed by 20 parties (including the EU for its Member States). Besides these 20 countries, another 35 WTO members participate in the GPA Committee as so-called observers and another 12 members are in the process of acceding to the Agreement, but are not partners in the GPA, and hence, did not open their own markets to foreign companies within their public procurements (Albania; Brazil; China; Georgia; Jordan; Kazakhstan; Kyrgyz Republic; North Macedonia; Oman; Russian Federation and Tajikistan;).[36] The accession process consists of two main aspects: (a) bilateral negotiations between the acceding member and each of the parties of the GPA on the extent to which each open their procurement markets to competition, and (b) verification that the acceding member's procurement legislation is consistent with the GPA's requirements (e.g. regarding transparency, procedural fairness for suppliers and domestic review). The GPA annexes list each country's central government authorities, sub-central government entities, goods and services. The GPA applies to contracts above certain thresholds, set in the GPA and expressed as special drawing rights.[37] The thresholds laid down by Directive 2014/24/EU correspond to the euro equivalents of the thresholds of the GPA.[38]

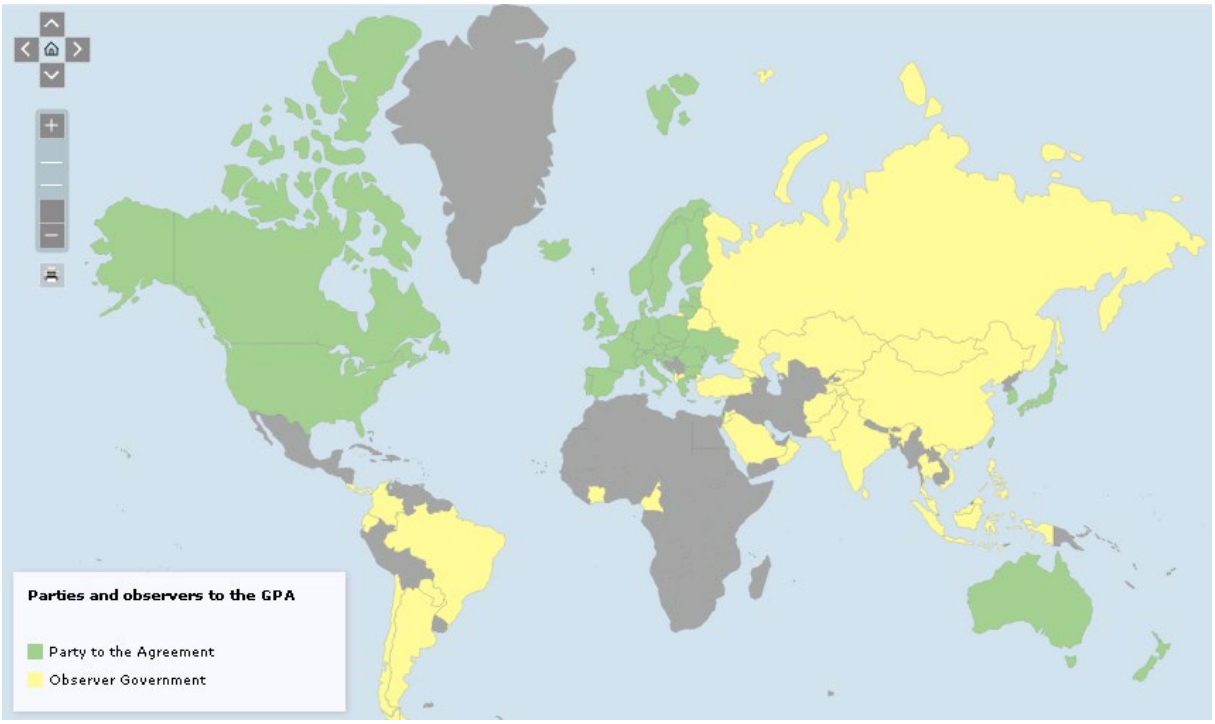


Figure 13: Parties and Observers of the GPA - Source: WTO[39]

The text of the GPA establishes rules requiring that open, fair and transparent conditions of competition be ensured in government procurement. The rules of the GPA do not automatically apply to all procurement activities of each party. The coverage schedules – that are bilaterally negotiated between the parties – determine whether a procurement activity is covered by the Agreement or not. Only those procurement activities that are carried out by covered entities purchasing listed goods, services or construction services of a value exceeding specified threshold values are governed by the GPA. The EU has the obligation to grant to the works, supplies, services and economic operators of the signatories to those agreements, such a treatment that is no less favourable than the treatment granted to the works, supplies, services and economic operators of the EU, in so far as the procurement in question is covered by these agreements.

The enforcement of the GPA is realized through two mechanisms: the domestic review mechanism at the national level and the WTO dispute settlement mechanism at the international level. The EU procurement directives are aligned with the GPA provisions. Contracting authorities are mandated to apply the rules provided by Directives 2014/24/EU and 2014/23/EU to contracts covered by Annexes 1,2,4 and 5 and the General Notes to the European Union's Appendix I to the GPA.[40] European contracting authorities are not mandated to open their procurements to companies from countries that are not party to the GPA. A bidder that originates from a country that is not a signatory of the GPA and has no other bilateral trade agreement with the EU, may be excluded from a procurement procedure. China is an example of a country that has not accessed to the GPA and that has no other bilateral agreement with the EU regarding the reciprocal opening of their government procurement markets.[41] This leads to unbalanced in trade between the EU and China and results in an uneven playing field for the EU companies. More details on the trade relation between the EU and China are provided in Annex 1 below.

2. TRADE AGREEMENTS

As stated in section 2.1, contracting authorities that award contracts falling under the scope of Directive 2014/24/EU, are bound to apply the same rules to economic operators of third countries that are signatories of relevant international agreements by which the Union is bound. Conversely contracting authorities should be aware that **they are allowed to exclude parties** coming from a country which is **not** a signatory of the GPA from a procurement procedure.[42] The EU has trade agreements in place with 76 countries.[43] Some of these agreements include clauses on the opening of government procurement markets. Each agreement should be assessed individually to identify whether there are provisions on government procurement.[44] Trade agreements may prohibit their Parties to (a) treat a locally established supplier less favourably than another locally established supplier on the basis of the degree of foreign affiliation or ownership; or (b) discriminate against a locally established supplier on the basis that the goods or services offered by that supplier for a particular procurement are goods or services of the other Party. In addition, trade agreements may include provisions in the sense that, in establishing the conditions for participation in a tender, if relevant prior experience is essential to meet the requirements of the procurement, a procuring shall not impose the condition that such prior experience must have been acquired within the territory of the other Party to the agreement. Furthermore, a trade agreement may have provisions by which a procuring entity shall not exclude a supplier established in the other country (Party to the specific trade agreement) from participating in a tendering procedure on the basis of a legal requirement. Trade agreements of the EU with countries not Party to the GPA may establish the obligation of parties to ensure the effective and reciprocal opening of their government procurement markets. Third countries not parties to the GPA may be granted equal treatment in government procurement under provisions and commitments similar to those in the GPA.

In this regard it is important to take into account that two big players, China and the US have no trade agreements with the EU.[45] However, the US is a party to the GPA, while China is not.[46]

3. EU INITIATIVES TO LEVEL THE PLAYING FIELD IN PUBLIC PROCUREMENT

More than half of the world's procurement market is currently closed due to protectionist measures and this share is only growing. For example, only a fraction of the Chinese public procurement market is open to foreign business.[47] Moreover, concerns have grown in recent years regarding the Chinese Sstate sponsored unfair trading practices.[48] In this context, EU has in recent years adopted a model that aims for openness to trade and investment, while ensuring fair access and predictable rules for European companies to foreign procurement markets.

In June 2020, the European Commission has launched the *'White Paper on levelling the playing field as regards foreign subsidies'*, in which it proposes the creation of new legal instruments to minimize the negative effects of foreign subsidies on the internal market. The European Commission recently signalled that companies that benefit from subsidies granted by third countries where access to EU companies is closed or restricted are distorting the EU internal market by undermining the competitiveness of European companies. Participation of such companies in the EU internal market results in '*an uneven playing field in which less efficient operators grow and increase market share at the expense of more efficient operators*'.[49] Such foreign companies enjoy an undue and unfair advantage compared to European companies.[50]

This is also the case in the area of public procurement, where companies benefiting from foreign subsidies are able to make more advantageous offers and win the public contracts, both when the public procurer awards on the basis of lowest cost and on the basis of price quality ratio. In some cases,

foreign subsidies are granted with the strategic goal of enabling foreign companies to win public contracts and gain competitive position in strategic markets, regions or get access to critical and major infrastructure. To achieve this, the companies bid below market price or even below cost.[51] Although problematic, foreign subsidies, up until now, fall outside EU State aid control.[52] Applying additional extra import duties is only possible in the case of goods and do not address all kinds of foreign subsidies. The public procurement legislation does not expressly provide rules to counteract distortions to competition caused by foreign subsidies, either. Contracting authorities are not mandated to investigate the existence of foreign subsidies or to apply a sanction in such a situation. Even when aware and willing to embed such considerations in their tenders, the contracting authorities have limited possibilities to exclude from the procurement procedures companies that are subsidiaries of foreign companies but are located in the EU. It is therefore important to ensure that these companies compete on an equal footing for public contracts.

Against this background, the European Commission is proposing the creation of a competent authority in the area of public procurement who investigates cases of foreign subsidies granted to beneficiaries active in the EU. In addition, it proposes the introduction of a new ground for exclusion of economic operators that have received foreign subsidies. Such an exclusion ground could be applied in each procurement procedure or could be applicable for a period of time in subsequent procedures. This ground for exclusion would be defined in compliance with EU's international obligations related to public procurement, namely the GPA and relevant bilateral agreements that govern access to the EU procurement market.

In practice, the approach would work as follows. The economic operators participating in public procurement procedures would have to inform the contracting authority whether they or any of their consortium partners or subcontractors have received foreign subsidies within the last three years before the submission of an offer or whether such a subsidy is expected to be received during the execution of the contract. Subsidy will be defined in the broad sense, to include different types of direct or indirect public financial contributions.[53] The economic operators will also have to submit legal information regarding ownership and governance, including consortium partners and subcontractors. The information submitted by the economic operators would be sent by the contracting authority to the competent supervisory authority for checking and assessing the existence of a foreign subsidy. Sanctions such as fines, exclusion from the procurement procedure or termination of contract could be put in place. To prevent circumvention of the obligation of notification, third parties and competitors will also be allowed to signal to the contracting authority the breach of the notification obligation. The investigation by the competent authority will be conducted in parallel with the procurement procedure. When the contracting authority intends to award the contract to a company that submitted a notification that is under investigation, the award will be suspended until the decision of the supervisory authority becomes available.[54] The final decision to exclude the tenderer based on the decision of the supervisory authority belongs to the contracting authority. An exclusion from future procurement procedures for a period of three years is also envisaged.

4. Conclusion

A Contracting Authority may exclude an economic operator from a non-EU country when there is no international agreement in place with the respective country (such as the GPA or FTAs) that includes provisions related to the opening of the public procurement market. For example, as China is not part of the GPA and has no trade agreement in place with the EU, Chinese economic operators can be excluded from public procurement processes.

Contracting authorities should take into account all the possibilities offered by the current legal framework in order to ensure the level playing field and give a fair chance to European companies. To foster the positive spill overs of public procurement in Europe (such as increase of R&D, innovation, job creation, etc.), price shouldn´t be the unique award criteria when purchasing services, supplies or works.

A relevant initiative launched in 2012 by the EU is the International Procurement Instrument (IPI). IPI has the objective to incentivize trading partners to negotiate with the EU the opening of their procurement markets to EU countries. Following a legislative deadlock, the Commission presented an amended proposal in 2016. IPI is complementary to the initiative foreseen in the White Paper, as the IPI is not tackling distortions of the procurement process arising from foreign subsidies granted to companies that bid in EU procurement contracts. The IPI is an instrument to react to the restricted access EU companies get to foreign public procurement markets, including the parties to the GPA. According to the Commission, non-EU countries are insufficiently opening their procurement markets to EU companies. According to estimations made in 2012, while the EU opened some €352 billion of EU public procurement to economic operators from member countries to the GPA, the US only made €178 billion of US procurement contracts available to foreign bidders and Japan €27 billion. In addition, only a fraction of Chinese procurement is open to foreign bidders.[55] IPI proposes a procedure that consists of the following basic steps:

1. The Commission launches a public investigation in cases of alleged discrimination of EU companies by a third country in foreign procurement markets.
2. In case the investigation confirms the existence of discriminatory restrictions vis-à-vis EU goods, services and/or suppliers, the Commission invites the respective country to consult on the opening of its procurement market or negotiate on an international agreement.
3. If the consultation does not yield expected results, the Commission may approve the application of a price penalty to bids from the targeted country with a total value of at least € 5 million of which at least 50 % consists of goods and services originating from the targeted country. Such a penalty would give EU and non-targeted countries' bids a competitive advantage on EU public procurement markets.

The instrument would apply to all procurement and concessions which are covered by the EU procurement and concession directives adopted in February 2014 (which excludes for example concessions regarding water supply services).

At the moment the proposal is being negotiated between the EU Member States.[56]

CHAPTER 3: REQUIREMENTS CONCERNING SOCIAL AND ENVIRONMENTAL CRITERIA: HOW TO INCORPORATE SOCIAL AND ENVIRONMENTAL CONSIDERATIONS INTO THE PROCUREMENT PROCESS?

Contracting authorities still have several possibilities to ensure that companies from non-EU countries do not benefit from unfair competitive advantages compared to EU companies. In 2019, the European Commission has issued guidance on the participation of third country bidders and goods in the EU procurement market.[57] The Public Procurement Directives encourage contracting authorities in the EU to require high social and environmental standards in their procurement and to ensure that EU and third country bidders are held to these high standards.[58] To this end – and as long as they are expressly stated in the tender, linked to the subject matter of the contract and proportionate - they can use technical specifications, exclusion, selection and award criteria as well as define contract performance clauses that ensure the respect of standards that are applied in the EU. Such requirements might in practice help to create a level playing field.

1. SUBJECT-MATTER

As contracting authorities are free to define the subject matter of each contract, they can refer here at the desired social and environmental aspects. For example, e-mobility solutions that ensure compliance with the international conventions dealing with environmental issues described in Annex X of both Directive 2014/24/EU and Directive 2014/23/EU and Annex XIV of Directive 2014/25/EU. This will ensure that social and environmental criteria set as technical specifications and award criteria in the tender documentation relate to the subject matter of the contract and include environmental, social and/or labour considerations that will ensure a level playing-field in public procurement for companies throughout the EU and that competition at EU level is not distorted.

2. ELECTION CRITERIA

As long as they are expressly stated in the tender, are linked to the subject matter of the contract and are proportionate, a contracting authority can include social, environmental and labour requirements as selection criteria. A potential approach would be to refer those to the 'technical knowledge and/or professional ability'.[59]

Examples of social criteria as selection criteria could be the human and technical resources, the experience and references and educational and professional qualifications of staff. In the field of e-mobility, a selection criterion for a concession contract could request as evidence a reference case of the constructions of the recharging facilities, the manufacturing of the electrical and/or hybrid buses and the provision of the service.[60] As this is a highly demanding request, interested bidders should be allowed to meet this requirement partnering up with other companies.[61]

Supply chain management measures addressing specific environmental concerns[62] and environmental management systems[63] can demonstrate a company's ability to meet environmental criteria and can be requested at the selection stage, as far as it is proportionate to the nature of the contract.[64] The Directive 2014/24/EU specifically mentions the Eco-Management and Audit Scheme (EMAS) of the Union.[65] In any case, contracting authorities shall recognise equivalent certificates from bodies established in other Member States and accept other evidence of equivalent quality assurance measures where the economic operator had no possibility of obtaining such certificates. Also relevant is the selection of award procedure. In the case of environmental requirements, selecting, for example,

an open procedure will give access to the maximum choice of potential environmentally friendly solutions, but will not allow to preselect tenderers based on their environmental technical capacity.[66] However, limiting the number of candidates that are invited to submit a bid might lead to missing out offers with high environmental performance.

3. EXCLUSION GROUNDS

Both Directive 2014/24/EU and Directive 2014/23/EU allow contracting authorities and Member States to exclude a candidate from a procurement procedure where they can demonstrate that the participant is in violation of obligations in the fields of environmental, social and labour law established by EU law, national law, collective agreements or by the international environmental, social and labour law provisions listed in their Annex X.[67] Subcontractors must also comply with these requirements. All the conventions described in Annex X of both Directives must be ratified by the States for them to be applicable in their territory: in so far as a product is manufactured or a service is provided by a company in a country which has not ratified **an International Labour Organisation (ILO) Convention** or an international convention dealing with environmental issues, its obligations don't bind that company.[68] **In practical terms, this means that an economic operator from a country that hasn't ratified the Conventions won't comply with their conditions and can be directly excluded from an procurement procedure.**[69] For example, China hasn't signed the ILO Convention 87 on Freedom of Association and the Protection of the Right to Organise[70] (although it is a member of the ILO), which would lead to exclude Chinese economic operators, or operators manufacturing and assembling parts in China , as they don't have to comply with the provisions of the aforementioned convention.[71] However, unless this exclusion is regulated in the national law, the Public buyer will have to state this up front in the tendering documents.[72] Therefore, contracting authorities wishing to procure e-mobility solutions that have the highest respect for social and labour rights and that ensure the level playing field with European companies - which must respect these regulations - should:

- First, check whether this exclusion ground is mandatory according to their national transposing law.
- Second, if not, include this exclusion ground in the tendering documents.

In case of an abnormally low tender, a Public buyer will ask the tenderer to explain the low price and/or costs.[73] The Public buyer will reject the tender where the evidence supplied does not satisfactorily account for the low level of price or costs proposed. For example, a Public buyer can exclude a tenderer that has obtained illegal EU State aid, which enabled it to offer a low price.[74] Moreover, contracting authorities shall reject an abnormally low tender if the applicable obligations in the fields of environmental, social and labour law are not complied with.[75]

4. AWARD CRITERIA

The Public Procurement Directives from 2014 foster the selection of the Most Economically Advantageous Tender on the basis of various criteria, including: *'**quality,** including technical merit, aesthetic and functional characteristics, accessibility, design for all users, **social, environmental and innovative characteristics**'* among others.[76] The award criteria, which must be in any case linked to the subject matter of the contract[77], can be based on the cost only (using a cost-effectiveness approach, such as life-cycle costing), or the best price/quality ratio that might include:[78]

- Life cycle costing[79] allows contracting authorities to take into account the social impact of the product, work or service, as it includes social criteria such as job creation, decent work, democratic

ownership, social and professional inclusion of persons with disabilities and disadvantaged persons, etc.[80] Directive (EU) 2019/1161 of the European Parliament and of the Council of 20 June 2019 amending Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles (also known as Clean Vehicles Directive) highlights the importance of life-cycle costing:

> *"(24)* ***Life-cycle costing is an important tool for contracting authorities and contracting entities to cover energy and environmental costs during the life-cycle of a vehicle****, including the cost of greenhouse gas emissions and other pollutant emissions on the basis of a relevant methodology to determine their monetary value. Given the scarce use of the methodology for the calculation of operational lifetime costs under Directive 2009/33/EC and the information provided by contracting authorities and contracting entities on the use of own methodologies tailored to their specific circumstances and needs,* ***no mandatory methodology should be required to be used, but contracting authorities and contracting entities should be able to choose any life-cycle costing methodology in order to support their procurement processes on the basis of the most economically advantageous tender ('MEAT') criteria as described in Article 67 of Directive 2014/24/EU*** *and Article 82 of Directive 2014/25/EU,* ***taking into account cost-effectiveness over the lifetime of the vehicle, as well as environmental and social aspects****."*

A cost-effectiveness approach can also include all the environmental impacts across the product lifecycle and every environmental externality, whether positive or negative (pollution caused when manufacturing or exporting the product for example), to choose the Most Economically Advantageous Tender. For example, when it comes to e-mobility, the total cost of ownership (TCO) of passenger cars is decreasing fast due to more efficient and affordable batteries.[81]

⚠ If the Contracting Authority decides to take advantage of this possibility, they must establish the methodology well before hand, in an objective, non-discriminatory and general manner (not just for one procurement procedure) and make it accessible. Moreover, the Directives stress the importance of developing common methodologies to calculate life-cycle costs at EU level.

- Where the contract is awarded on the basis of the best price/quality ratio, social and environmental requirements can be incorporated into the technical specifications and/or award criteria, as long as they are linked to the subject matter of the contract. [82] For example, public authorities/contracting entities could reward longer battery warranty periods via award criteria.[83] Using this option to evaluate the tenders introduces more possibilities to incorporate social considerations. In this case, quality should be given a weight of at least 50% compared to other criteria such as price. This ensures that Value for Money is achieved.[84] Environmental management systems, mentioned above in the selection of the tenderers, may also serve as evidence when assessing award criteria.

Examples
Use of lower-impact materials for vehicle construction.
Life cycle costing including monetised emissions and fuel costs.
Maintenance programmes which reduce environmental impact.

Source: Elaboration based on The Procura+Manual. A Guide to Implementing Sustainable Procurement. 3rd Edition. 2016. Page 99

5. PERFORMANCE CLAUSES

Article 18(2) of Directive 2014/24/EU (Contracts Directive) and article 30(3) of Directive 2014/23/EU (Concessions Directive) demand that Member States take *'appropriate measures to **ensure that in the performance of public contracts/concession contracts economic operators comply with applicable obligations in the fields of environmental, social and labour law** established by Union law, national law, collective agreements or by the international environmental, social and labour law provisions listed in Annex X'.* Subcontractors must also comply with these requirements.[85]

Consequently, a contract can include performance clauses, which require the contractors to abide by specific social, labour or environmental obligations.[86] They are part of the contract and tenderers must accept these conditions in order to be awarded the contract/concession and must meet all of them during the execution of the contract. Performance conditions can be used to ask compliance with fundamental International Labour Organisation (ILO) Conventions.[87] Annex X of both Directive 2014/24/EU (Contracts Directive) and Directive 2014/23/EU (Concessions Directive) refers to some of these conventions.[88] Performance clauses are also a good way to introduce environmental considerations.[89] As long as they are not disguised as selection criteria, technical specifications and/or award criteria and are linked to the subject matter of the contract.[90]

⚠ Contracting authorities should be aware that **local preferences** (such as setting aside specific types of contracts so that only a specific group of economic operators may tender located in certain areas), **price preferences** (where a financial advantage is given to certain economic operators or products of a specific region - AKA domestic preference schemes) or **offer-back** (in which there is a competitive tender, but when tenders are received, the best performing tenderer from a favoured group is awarded the contract if it can match the best tender overall) provisions are not permitted as they are considered to be in breach of the TFEU and the EU procurement law.

6. LABELS

It is important to consider labels as a source to ask/proof social and environmental considerations in technical specifications, award criteria and contract/concession performance conditions.[91] Labels can help defining and verifying the environmental aspects of a tender in a fast, more efficient way.[92] For example, tyre energy labels provide a clear and common classification of tyres performance for rolling resistance, braking on wet surfaces and external noise: the energy efficiency class ranges from A (most efficient) to G (least efficient). A top-class tyre has less rolling resistance and therefore requires less energy to move the vehicle, which means into lower energy costs (fossil fuels or electricity). In general, the EU energy labels provide a clear indication of the energy efficiency of products at the point of purchase, leading to money savings on (household) energy bills and reductions in greenhouse gas emissions across the EU.[93] In some other cases, test reports or certificates can serve as proof of environmental performance introduced in the technical specifications, the award criteria or the contract performance conditions.[94]

However, in order not to unduly restrict competition, when a label is requested, the economic operator should also have the possibility to present equivalent labels or to demonstrate by other means that he fulfils the conditions that would enable him to obtain the label and/or to comply with the conditions requested in the tender.

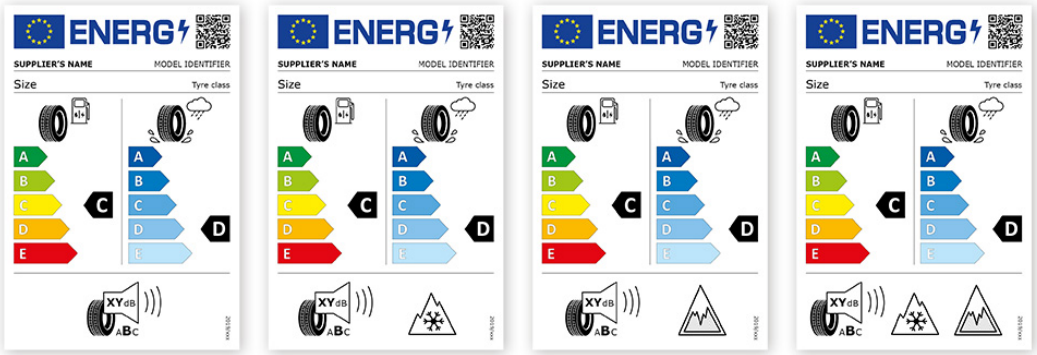


Figure 14: Tyre Energy Labels. Source: European Commission. Clean mobility: Commission welcomes agreement on tyre labelling to save energy. 14 November 2019 (Energy label)

7. CONTRACT MANAGEMENT/MONITORING

For social, labour and environmental considerations to be effectively implemented by the successful bidder and have a real impact, monitoring the contract/concession execution is key. Monitoring clauses and the consequences following the lack or incorrect implementation, such as penalties – but also bonuses for good performance – should be included in the tendering documents. For example, it should be clearly stated which penalties apply when the contractor and/or his subcontractors breach the obligations in the fields of environmental, social and labour law as described in article 18(2) of Directive 2014/24/EU and article 30(3) of Directive 2014/23/EU. Clear and effective contract performance measurement is vital, as proper monitoring and control is impossible without it.[95] Key Performance Indicators (KPIs) linked to payment can be a good monitoring tool. These KPIs should indicate, for example, if the contractor is complying with the environmental criteria set in the tendering docs and to which degree, or if he is polluting over the permitted levels when manufacturing the e-Vehicle or when providing the transport service. In any case, it is better to have a small number of effective controls that provide a summary of the relevant information in a timely manner.

Social responsibility standards in Oslo, in Norway

Procura+ Participant Oslo requires that all of its suppliers follow either the eight ILO Fundamental Conventions on the freedom of association and right to collective bargaining, forced labour, discrimination and child labour, or the broader ten principles of the United Nation's Global Compact, which include human rights, labour, environment and anti-corruption standards. Failure to comply with these can result in breach of contract with the municipality. In 2013 Oslo established a framework agreement for monitoring compliance which can also be used by all other Norwegian public bodies.

Source: Elaboration based on The Procura+Manual. A Guide to Implementing Sustainable Procurement. 3rd Edition. 2016. Page 65

CHAPTER 4: CONCLUSIONS. FINAL TIPS & TRICKS

This final chapter summarises the main lessons learnt from each of the previous chapters and gives contracting authorities practical advice on how to choose, develop and implement their procurements in order to foster the European level playing field and guarantee high social and environmental standards. *Please see Annex 7 for practical tips.*

1. When procuring e-mobility innovative solutions it is important to establish whether R&D is needed or whether the solutions are closer to the market, e.g. at a TRL9. This will determine the type of procedure and the conditions of the tender documents. Contracting authorities, on one hand, can exclude from the procurement those suppliers that do not comply with these conditions, and on the other hand, are not obliged to open their procurement to suppliers from third countries that are not party to the GPA neither to trade agreements covering public procurement. To tap into technological capabilities that strengthen the European market, contracting authorities can use the right instruments and conditions to avoid suppliers that do not meet standards.

> **The EU public procurement market is open only to companies from countries who are parties to the GPA and/or trade agreements. Consequently, European contracting authorities are not mandated to open their procurements to companies from countries that are not party to the GPA neither to trade agreements that cover public procurement.**

2. Contracts of R&D services (where the benefits and risks are shared with the contactor) are in principle excluded both from the scope of the European Public Procurement Directives and from the GPA.[96] This means that PCP (where the service provided is not remunerated in full by the contracting authority) allows to restrict the participation to European companies or to companies that are willing to perform their R&D activities within the EU, which will ensure knowledge spill-over to the benefit of the European economy.

> **An economic operator from a country that hasn't ratified the Conventions won't comply with their conditions and can be directly excluded from a procurement procedure.**

3. Foreign subsidies fall outside EU State aid control, but the European Commission is recently taking steps in order to publish new legal instruments to minimize the negative effects of foreign subsidies on the internal market. In June 2020, the European Commission has launched the *'White Paper on levelling the playing field as regards foreign subsidies'*, in which it proposes the creation of new legal instruments to minimize the negative effects of foreign subsidies on the internal market.
4. Both Directive 2014/24/EU and Directive 2014/23/EU allow contracting authorities and Member States to exclude a candidate from a procurement procedure where they can demonstrate that the participant is in violation of obligations in the fields of environmental, social and labour law established by Union law, national law, collective agreements or by the international

environmental, social and labour law provisions listed in their Annex X. Subcontractors must also comply with these requirements.

5. Furthermore, contracting authorities have several possibilities to ensure that companies from non-EU countries do not benefit from unfair competitive advantages compared to EU companies, by using technical specifications, exclusion, selection and award criteria as well as contract performance clauses that ensure the respect of high social and environmental standards that are a cornerstone of the European policies and the cultural heritage.

The Public Procurement Directives encourage contracting authorities in the EU to require high social and environmental standards in their procurement and to ensure that EU and third country bidders are held to these high standards.

The selection and award criteria are fundamental to the choice of providers and solutions, both to have the technical capabilities and the desired energy, social and environmental requirements.

6. Within the procurement of E-Mobility solutions, there are several options to procure new, innovative solutions. By following a standardized step-by-step approach (such as the Eafip methodology) before, during and after the procurement procedure and by assessing the Technology Readiness Level (TRL), the need for an innovative solution can be justified. Depending on the TRL level of the technology, a contracting authority can decide which option is the best one.

   When the desired **solution is between TRL3 and TRL8**, the Public buyer may choose between: a) Pre-Commercial Procurement (PCP) followed by a Public Procurement of Innovative Solutions (PPI); b) Innovation Partnership and c) PPI preceded by forward commitment.

   When the **solution finds itself at TRL7**, the Public buyer may choose to deploy a negotiated procedure without prior publication for prototype testing[97] followed by a PPI.

   Lastly, when the **solution finds itself at TRL9**, the Public buyer may deploy a PPI. [98]

There are several approaches to purchase innovative solutions. The most appropriate instruments should be chosen based upon the TRL of the desired e-mobility solution.

7. Public procurement could be used as a strategic instrument to enable the competitiveness of the European Union. Facilitating an equal level playing field with non-EU companies is becoming increasingly relevant. This is part of the current political discussion at EU level which could lead to future guidelines and legislation on EU and national level.

Contracting authorities and policy makers should follow the political developments at EU level in the context of enhancing the competitiveness of the European Union.

ANNEX 1 TRADE WITH CHINA

The European Union (EU) is the biggest trading partner of China.[1] In 2018 China was the largest exporter and the third largest importer in the world.[2]

The trade and investment links between the EU and China are very important. They are strategic markets for each other, trading on average over a billion euro a day.[3] The EU's main imports from China are industrial and consumer goods, machinery and equipment, and footwear and clothing. EU main exports to China are machinery and equipment, motor vehicles, aircraft, and chemicals. EU-China trade in services amounts to more than 10% of total trade in goods, and the EU's exports of services make up 19% of EU's total exports of goods.[4] However, opening trade relations with China depends upon the assurances of fair trade, the respect for intellectual property rights[5] and compliance to the obligations of members of the World Trade Organization[6] (WTO).

EU-China: Economic and trade indicators, 2014 (CEPS)[7]

- GDP: €16,556.9 billion for the EU and €9,014.7 billion for China
- GDP per capita: €32,307.7 for the EU and €6,468.2 for China
- Total bilateral trade in goods and services: €518.8 billion
- FDI-EU position with China (2013): Outward €130 billion, Inward €27 billion
- Average applied tariffs in industry: 3.8% for the EU and 8% for China
- Average applied tariffs in agro-food: 7.2% for the EU and 13.9% for China

China's market represents significant business opportunities for European companies, but it is considerably less open than the EU market. Foreign investors' access to a number of sectors is restricted or prohibited. European companies operating in China do not benefit from the same levels of transparency and fair competition as those enjoyed by Chinese companies in the EU market. Therefore, a Comprehensive Agreement on Investment (CAI) with China is seen as a key tool to address this lack of balance.

The EU is negotiating a Comprehensive Agreement on Investment (CAI)[8] with China with the aim to create new investment opportunities for European companies by opening China's market and

[1] In 2019, the Netherlands was the largest importer of goods from China and Germany was the largest exporter of goods to China (Eurostat) https://ec.europa.eu/eurostat/statistics-explained/index.php/China-EU_-_international_trade_in_goods_statistics

[2] https://ec.europa.eu/eurostat/statistics-explained/index.php/China-EU_-_international_trade_in_goods_statistics

[3] https://trade.ec.europa.eu/doclib/press/index.cfm?id=2115

[4] https://ec.europa.eu/trade/policy/countries-and-regions/countries/china/

[5] In 2019 Chinese spies stole trade secrets from Dutch chip machine maker ASML, causing hundreds of millions of euros worth of damage. https://nltimes.nl/2019/04/11/chinese-spies-stole-trade-secrets-dutch-chip-maker-asml-report

[6] China is negotiating its accession to the WTO GPA.

[7] Tomorrow's Silk Road: Assessing an EU-China Free Trade Agreement Executive Summary A study conducted by the Centre for European Policy Studies (CEPS)April 2016https://www.amfori.org/sites/default/files/CEPS%20-%20EU-China%20agreement%20-%20Summary.pdf

[8] https://trade.ec.europa.eu/doclib/press/index.cfm?id=2115

eliminating discriminatory laws and practices that prevent them from competing in the Chinese market on an equal basis with Chinese companies and companies from other third countries.[9]

The EU and China started the negotiations for an Investment Agreement in 2013, with the purpose to provide investors with a predictable and long-term mechanism to access to their markets and to protect investors and their investments. The Council authorised the Commission[10] to initiate negotiations for a comprehensive EU-China investment agreement on 18 October 2013.[11] These negotiations were formally launched at the EU-China Summit of 21 November 2013 in Beijing. The EU conducted an impact assessment in 2013[12] and a Sustainability Impact Assessment[13] was carried out between 2015 and 2018[14] to assess the potential economic, social and environmental impacts of the agreement[15].

In 2016, EU and China agreed on the scope of the future agreement. The EU and China negotiators reached clear conclusions on an ambitious and comprehensive scope for the EU-China investment agreement and established a joint negotiating text. They agreed that it would go beyond a traditional investment protection agreement to cover market access for investment and a number of important disciplines. It would also include provisions on sustainable development and dispute resolution.

The 26th round of the EU-China investment agreement negotiations took place in Brussels between 16-17 and 20-21 January 2020[16]. The discussions continued on investment liberalisation and level playing field, with focus on the disciplines applicable to state owned enterprises. Further work was done on sustainable development, notably on climate, and discussions continued on labour related provisions and mechanism to resolve differences in this area. The 27th round discussions advanced on sustainable development, notably environment and climate related provisions, and constructive exchanges took place with regard to State-to-State Dispute Settlement.[17] The 28th round discussions further advanced on sustainable development, notably on Corporate Social Responsibility and on the mechanism for addressing the differences. Decisive progress was made in the chapter on State-to-State Dispute Settlement. [18]

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[9] https://www.europarl.europa.eu/legislative-train/theme-a-stronger-europe-in-the-world/file-eu-china-investment-agreement

[10] Brussels, 23.5.2013 COM(2013)297 final Recommendation for a Council Decision authorising the Commission to open negotiations on an investment agreement between the European Union and the People's Republic of China. https://ec.europa.eu/transparency/regdoc/rep/1/2013/EN/1-2013-297-EN-F1-1.PDF

[11] https://trade.ec.europa.eu/doclib/docs/2006/december/tradoc_118238.pdf

[12] European Commission, Impact Assessment Report on the EU-China Investment Relations, SWD(2013)18.

[13] European Commission, Brussels, 23.5.2013 SWD(2013) 185 final Commission Staff Working Document impact Assessment Report On The Eu-China Investment Relations. https://ec.europa.eu/smart-regulation/impact/ia_carried_out/docs/ia_2013/swd_2013_0185_en.pdf

[14] https://ec.europa.eu/trade/policy/policy-making/analysis/policy-evaluation/sustainability-impact-assessments/

[15] European Commission, Civil Society Dialogue, Meeting on sustainable impact assessment in support of an investment agreement between the European Union and the People's Republic of China, 2 October 2017.

[16] Separate negotiations with China for an upgrade of the 1985 Trade and Economic Cooperation Agreement were launched in 2007 but have been stalled since 2011 due to divergences between the mandates and expectations of the parties. https://trade.ec.europa.eu/doclib/docs/2006/december/tradoc_118238.pdf

[17] https://trade.ec.europa.eu/doclib/docs/2020/march/tradoc_158663.pdf

[18] https://trade.ec.europa.eu/doclib/docs/2020/april/tradoc_158727.pdf

On 25-29 May 2020, the 29th round of the EU-China investment agreement negotiations took place by videoconference.[19] The investment negotiations focused on market access, including sector specific market access requests, and on disciplines related to investment liberalisation and level playing field, notably, the rules for State Owned Enterprises and reinforced disciplines tackling forced technology transfers. It has been reported a progress made on Sustainable Development, in particular, provisions on Corporate Social Responsibility and the discussions continued on the mechanism for addressing the differences. There was also progress regarding State-to-State Dispute Settlement. The following negotiations will be held between 29 June and 3 July.[20]

Ulrich Weigl, head of the trade section of the EU's delegation to China, told European parliamentarians that the end of the year 2020 will be the deadline to conclude the EU-China investment negotiation, *"but only if China commits to a level of ambition in substance for an agreement that is worth having."*[21] According to EU trade official Ulrich Weigl, the EU investment agreement with China is likely to depend on three key elements. The European demands include subsidies to state-owned enterprises, access to the Chinese market and environmental issues.

However, '(…) *China will continue being what it is, all at the same time – a partner, a competitor and a systemic rival'*[22] Moreover, the Covid-19 pandemic crisis has caused a breakdown in trust and the resort to nationalistic postures.[23]

Objectives of the CAI:[24]

- *Improve market access conditions for European companies beyond China's existing commitments under the World Trade Organization. The EU's key objective is to significantly improve EU investors' access to the Chinese market, in particular by eliminating quantitative restrictions, equity caps or joint venture requirements.*
- *Ensure that EU companies compete on an equal footing when operating in China, compared to Chinese and third-country companies. To that end, the EU seeks to achieve non-discriminatory treatment, prohibition of performance requirements – in other words, measures requiring investors to behave in a certain way or to achieve certain outcomes (including those leading to forced technology transfer) – and equal participation in standard-setting work.*
- *Transparency, predictability and legal certainty of the investment environment. The agreement should ensure that European companies in China have proper access to information affecting their businesses and the opportunity to comment on relevant laws and regulations. It should also ensure clear, transparent and objective licensing and authorisation procedures and requirements, as well as guarantee procedural fairness and due process.*
- *Reach commitments disciplining the behaviour of state-owned enterprises and increasing transparency of subsidies.*

[19] https://trade.ec.europa.eu/doclib/cfm/doclib_section.cfm?sec=120

[20] https://trade.ec.europa.eu/doclib/docs/2020/may/tradoc_158765.pdf

[21] https://asiatimes.com/2020/05/eu-china-investment-pact-in-covid-19-jeopardy/

[22] https://www.scmp.com/news/world/europe/article/3084288/eu-trade-official-says-investment-deal-china-likely-hinge-two-key

[23] https://asiatimes.com/2020/05/eu-china-investment-pact-in-covid-19-jeopardy/

[24] https://trade.ec.europa.eu/doclib/press/index.cfm?id=2115

- *Stress that sustainable development is an overarching objective of EU-China bilateral investment relations – to this end, it should include adequate commitments regarding labour and the environment.*
- *Ensure a high level of protection for European companies, while preserving governments' right to regulate. The agreement should reflect the EU's reformed approach to investor-to-state dispute settlement (Investment Court System)*[25].
- *Include provisions for dispute settlement (state-to-state) and an institutional framework to monitor its implementation.*

If concluded, the Investment Agreement will replace the 26 existing Bilateral Investment Treaties between 27 individual EU Member States and China by one single comprehensive investment Agreement.

[25] The 3d Vienna Investment Arbitration Debate22 June 2018The European Union's approach to investment dispute settlement. https://trade.ec.europa.eu/doclib/docs/2018/july/tradoc_157112.pdf

ANNEX 2 EU TRADE AGREEMENTS IN PLACE [26]

Albania (Western Balkans)	Stabilisation and Association Agreement
Algeria	Association Agreement
Andorra	Customs union
Antigua and Barbuda (CARIFORUM)	Economic Partnership Agreement
Armenia	Partnership and Cooperation Agreement
Azerbaijan	Partnership and Cooperation Agreement
Bahamas (CARIFORUM)	Economic Partnership Agreement
Barbados (CARIFORUM)	Economic Partnership Agreement
Belize (CARIFORUM)	Economic Partnership Agreement
Bosnia and Herzegovina (Western Balkans)	Stabilisation and Association Agreement
Botswana (SADC)	Economic Partnership Agreement
Cameroon (Central Africa)	Interim Economic Partnership Agreement
Canada	Comprehensive Economic and Trade Agreement (CETA)
Chile	Association Agreement and Additional Protocol
Colombia (with Ecuador and Peru)	Trade Agreement
Comoros (ESA)	Interim Economic Partnership Agreement
Costa Rica (Central America)	Association Agreement with a strong trade component
Côte d'Ivoire (West Africa)	Stepping stone Economic Partnership Agreement
Dominica (CARIFORUM)	Economic Partnership Agreement
Dominican Republic (CARIFORUM)	Economic Partnership Agreement
Ecuador (with Colombia and Peru)	Trade Agreement

[26] https://ec.europa.eu/trade/policy/countries-and-regions/negotiations-and-agreements/#_in-place

Egypt	Association Agreement
El Salvador (Central America)	Association Agreement with a strong trade component
Eswatini (SADC)	Economic Partnership Agreement
Faroe Islands	Agreement
Fiji (Pacific)	Interim Partnership Agreement
Georgia	Association Agreement
Ghana (West Africa)	Stepping stone Economic Partnership Agreement provisionally applied
Grenada (CARIFORUM)	Economic Partnership Agreement
Guatemala (Central America)	Association Agreement with a strong trade component
Guyana (CARIFORUM)	Economic Partnership Agreement
Honduras (Central America)	Association Agreement with a strong trade component
Iceland	Economic Area Agreement
Israel	Association Agreement
Iraq	Partnership and Cooperation Agreement
Jamaica (CARIFORUM)	Economic Partnership Agreement
Japan	Global agreement
Jordan	Association Agreement
Kazakhstan	Enhanced Partnership and Cooperation Agreement
Kosovo *	Stabilisation and Association Agreement
Lebanon	Association Agreement
Lesotho (SADC)	Economic Partnership Agreement
Liechtenstein	Economic Area Agreement

Madagascar (ESA)	Economic Partnership Agreement
Mauritius (ESA)	Economic Partnership Agreement
Mexico	Global Agreement
Moldova	Association Agreement
Montenegro (Western Balkans)	Stabilisation and Association Agreement
Morocco	Association Agreement
Mozambique (SADC)	Economic Partnership Agreement
Namibia (SADC)	Economic Partnership Agreement
Nicaragua (Central America)	Association Agreement with a strong trade component
North Macedonia (Western Balkans)	Stabilisation and Association Agreement
Norway	Economic Area Agreement
Palestinian Authority	Interim Association Agreement
Papua New Guinea (with Fiji)	Interim Partnership Agreement
Madagascar (ESA)	Economic Partnership Agreement
Peru (with Colombia and Ecuador)	Trade Agreement
Samoa (Pacific)	Economic Partnership Agreement
San Marino	Customs union
Serbia (Western Balkans)	Stabilisation and Association Agreement
Seychelles (ESA)	Economic Partnership Agreement
Singapore	Free Trade Agreement
Solomon Islands (Pacific)	Economic Partnership Agreement
South Africa	Economic Partnership Agreement
South Korea	Free Trade Agreement

St Kitts and Nevis (CARIFORUM)	Economic Partnership Agreement
St Lucia (CARIFORUM)	Economic Partnership Agreement
St Vincent and the Grenadines (CARIFORUM)	Economic Partnership Agreement
Suriname (CARIFORUM)	Economic Partnership Agreement
Switzerland	Agreement
Trinidad and Tobago (CARIFORUM)	Economic Partnership Agreement
Tunisia	Association Agreement
Turkey	Customs union
Ukraine	Deep and Comprehensive Free Trade Agreement Association Agreement
Zimbabwe (ESA)	Economic Partnership Agreement

** This designation is without prejudice to positions on status, and in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.*

ANNEX 3 LIST OF INTERNATIONAL SOCIAL AND ENVIRONMENTAL CONVENTIONS REFERRED TO IN ARTICLE 18(2)

ANNEX X *(of both Directive 2014/24/EU and 2014/23/EU)* **ANNEX XIV** *(of Directive 2014/25/EU)*

- ILO Convention 87 on Freedom of Association and the Protection of the Right to Organise[27]
- ILO Convention 98 on the Right to Organise and Collective Bargaining[28]
- ILO Convention 105 on the Abolition of Forced Labour[29]
- ILO Convention 138 on Minimum Age[30]
- ILO Convention 111 on Discrimination (Employment and Occupation)[31]
- ILO Convention 100 on Equal Remuneration[32]
- ILO Convention 182 on Worst Forms of Child Labour[33]
- Vienna Convention for the protection of the Ozone Layer and its Montreal Protocol on substances that deplete the Ozone Layer[34]
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention)[35]
- Stockholm Convention on Persistent Organic Pollutants (Stockholm POPs Convention)[36]

[27] See here the countries that have not ratified this Convention: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11310:0::NO:11310:P11310_INSTRUMENT_ID:312232:NO

[28] See here the countries that have not ratified this Convention: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11310:0::NO:11310:P11310_INSTRUMENT_ID:312243:NO

[29] See here the countries that have not ratified this Convention: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11310:0::NO:11310:P11310_INSTRUMENT_ID:312174:NO

[30] See here the countries that have not ratified this Convention: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11310:0::NO:11310:P11310_INSTRUMENT_ID:312283:NO

[31] See here the countries that have not ratified this Convention: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11310:0::NO:11310:P11310_INSTRUMENT_ID:312256:NO

[32] See here the countries that have not ratified this Convention: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11310:0::NO:11310:P11310_INSTRUMENT_ID:312245:NO

[33] See here the countries that have not ratified this Convention: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11310:0::NO:11310:P11310_INSTRUMENT_ID:312327:NO

[34] See the status of ratification here: https://ozone.unep.org/all-ratifications and see here a summary of both documents: http://publications.europa.eu/resource/cellar/607feb06-39d3-11ea-ba6e-01aa75ed71a1.0001.02/DOC_1

[35] Here you can find the status of ratifications: http://www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/4499/Default.aspx

[36] See here the status of ratifications: http://www.pops.int/Countries/StatusofRatifications/PartiesandSignatoires/tabid/4500/Default.aspx

- Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (UNEP/FAO) (The PIC Convention) Rotterdam, 10 September 1998, and its 3 regional Protocols[37]

[37] See here the status of ratifications: http://www.pic.int/LosPa%c3%adses/Estadodelasratificaciones/tabid/1953/language/es-CO/Default.aspx

ANNEX 4 BRIEF EXPLANATION ON DATA ASPECTS

Depending on the outcome of the needs´ analysis and the subject matter of the procurement, data may be part of the scope of the project. If so, who gathers, controls and processes data, as well as the rights and obligations of the different data subjects and stakeholders may become relevant and this legislation should be taken into account. It could, amongst others affect specifications, companies eligible to submit a proposal, and the respective rights, obligations and liabilities.

If data is going to be included in the scope of the procurement project, the following aspects should be considered:

- GDPR - Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).
- NIS Directive - Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union According.
- ITS Directive- Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport.
- FFD - Regulation (EU) 2018/1807 of the European Parliament and of the Council of 14 November 2018 on a framework for the free flow of non-personal data in the European Union.
- Open Data Directive - Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information.

ESSENTIAL SERVICES AND CRITICAL INFRASTRUCTURE

Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union According (hereafter NIS Directive) aims to improve national cybersecurity capabilities, while achieving a high common level of security of network and information systems within the EU.[38]

According to article 5 of the aforementioned Directive, it is for Member States to identify the operators of essential services with an establishment on their territory. The Directive provides in Annex II a list of entities in different critical sectors and three criteria that the operators must comply in order to be identified as an operator of essential services by the Member State:

1. An entity provides a service which is essential for the maintenance of critical societal and/or economic activities;
2. The provision of that service depends on network and information systems;
3. An incident would have significant disruptive effects on the provision of that service.

[38] See the document Making the most of NIS – towards the effective implementation of Directive (EU) 2016/1148 concerning measures for a high common level of security of network and information systems across the Union. Communication from the Commission to the European Parliament and the Council. Brussels, 4.10.2017 COM (2017) 476 final/2.

If an activity is enlisted in Annex II of the NIS Directive and fulfils these three aspects, an entity providing the service can be considered an operator of essential services, depending on the national legislations.[39]

I.e. the NIS Directive does not define explicitly which particular entities will be considered operators of essential services under its scope. Instead, it provides common grounds, so that Member States via their national legislation "decide" who are operators of essential services. In fact, one of the main complaints is that the effectiveness of the EU's response to growing cyber threats is inhibited, due to the fact that the NIS Directive is not fully transposed in all EU Member States. In this regard, the Directive aims for a minimum harmonization, but allows Member States to adopt or maintain provisions with a view to achieving a higher level of security of network and information systems.[40]

When it comes to e-mobility and e-mobility solutions, the providers of such services can be considered as operators of essential services according to the Directive, as road transport is included in point 2.d) of Annex II of the NIS Directive, if the Member State where they are established has regulated in this direction. Contracting authorities need to check their national regulations.

In order to for these services to qualify as essential services they also need to comply with the definition of article 4.1 of Directive 2010/40/EU of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport:

> "'*Intelligent Transport Systems' or 'ITS' means systems in which information and communication technologies are applied in the field of road transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport*."

(PERSONAL) DATA PROCESSING

In these essential services, the processing of personal data can be very relevant. Consequently, the Directive warns that Directive 95/46/EC should be followed.[41] As this Directive is no longer in force and has been repealed, processing of personal data in shall be done in accordance with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation or GDPR).
Personal data includes any information relating to an identified or identifiable natural person (also known as "data subject"). An identifiable natural person *"can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental,*

[39] See also ANNEX to the Communication from the Commission to the European Parliament and the Council. Making the most of NIS – towards the effective implementation of Directive (EU) 2016/1148 concerning measures for a high common level of security of network and information systems across the Union. Brussels, 4.10.2017 COM (2017) 476 final/2. ANNEX 1

[40] See article 3 of Directive (EU) 2016/1148.

[41] See article 2 of Directive (EU) 2016/1148.

economic, cultural or social identity of that natural person".[42] In the context of e-mobility, this could be any person making use of an electric bus, for example.
In the case of an e- Mobility service, the GDPR will apply if the service provider is also the controller or the processor of the data and: [43]

- it is established in the European Union (regardless of where the processing takes place), or
- it is not established in the EU, but the data subjects are and the processing activities are related to: "(*a) the offering of goods or services, irrespective of whether a payment of the data subject is required, to such data subjects in the Union; or (b) the monitoring of their behaviour as far as their behaviour takes place within the Union*".
- it is not established in the EU, but in a place where Member State law applies by virtue of public international law.[44]

(PERSONAL) DATA SHARING WITH THIRD COUNTRIES

What about transferring the processed data internationally? Is it allowed? Restricted?
In general lines transferring personal data to third countries or international organisations outside EU/EEA is allowed **if the level of protection ensured by the GDPR is respected**.
The GDPR provides a hierarchical set of instruments to ensure these levels of protection:

1. The Commission can take a decision, allowing the transfer of personal data to a third country, a territory or one or more specified sectors within that third country, or the international organisation, as long as they ensure an adequate level of protection. Such a transfer does not require any specific authorisation. This is also known as an adequacy decision, which has to be reviewed at least every four years.
   In order to take this decision, the Commission assesses:[45]

   *(a) **the rule of law, respect for human rights and fundamental freedoms, relevant legislation**, both general and sectoral, including concerning public security, defence, national security and criminal law and the **access of public authorities to personal data,** as well as the implementation of such legislation, **data protection rules, professional rules and security measures, including rules for the onward transfer of personal data to another third country or international organisation** which are complied with in that country or international organisation**, case-law, as well as effective and enforceable data subject rights and effective administrative and judicial redress for the data subjects whose personal data are being transferred**;*
   *(b) the **existence and effective functioning of one or more independent supervisory authorities** in the third country or to which an international organisation is subject,*

[42] See 4.1 of the GDPR.

[43] *'Controller' means the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data; where the purposes and means of such processing are determined by Union or Member State law, the controller or the specific criteria for its nomination may be provided for by Union or Member State law.*

'Processor' means a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller. See article 4 of the GDPR for the definitions.

[44] See article 3 of the GDPR.

[45] See article 45 of the GDPR.

*with responsibility for ensuring and enforcing compliance with the data protection rules, **including adequate enforcement powers**, for assisting and advising the data subjects in exercising their rights and for cooperation with the supervisory authorities of the Member States; and*

(c) the international commitments the third country or international organisation concerned has entered into, or other obligations arising from legally binding conventions or instruments as well as from its participation in multilateral or regional systems, in particular in relation to the protection of personal data.

However, this is not the usual situation. In fact, the European Commission has so far only recognised Andorra, Argentina, Canada, Faroe Islands, Guernsey, Israel, Isle of Man, Japan, Jersey, New Zealand, Switzerland and Uruguay as providing adequate protection. Discussions are ongoing with South Korea.[46]

2. In case no adequacy decision has been issued, the transfer of data can be made - if it is subjected to appropriate safeguards.

   A controller or processor in the EU or in the EEA may transfer personal data to a third country or an international organisation only if the controller or processor located there provides adequate safeguards, the rights of the data subjects are enforceable and legal remedies are available.

   The safeguards above-mentioned do not require a specific authorisation from a supervisory authority if they are included in:

   (a) a legally binding and enforceable instrument between public authorities or bodies;
   (b) binding corporate rules (…);[47]
   (c) standard data protection clauses adopted by the Commission (…);
   (d) standard data protection clauses adopted by a supervisory authority and approved by the Commission (…);
   (e) an approved code of conduct (…) together with binding and enforceable commitments of the controller or processor in the third country to apply the appropriate safeguards, including as regards data subjects' rights; or
   (f) an approved certification mechanism (…) together with binding and enforceable commitments of the controller or processor in the third country to apply the appropriate safeguards, including as regards data subjects' rights.

   Appropriate safeguards can also be implemented via contractual clauses between the controller or processor and its counterpart in the third country or international organisation, as well as via administrative provisions between public authorities or bodies including enforceable and effective data subject rights. In these latter cases, the competent supervisory authority will have to authorise the safeguards.

3. In case nor an adequacy decision has been issued, nor appropriate safeguards have been implemented, personal data can only be transferred to a third country or an international organisation under certain exceptional conditions, which need to be interpreted restrictively, as all exceptions under EU law.[48]

[46]Adequacy decisions. How the EU determines if a non-EU country has an adequate level of data protection. https://ec.europa.eu/info/law/law-topic/data-protection/international-dimension-data-protection/adequacy-decisions_en

[47] To know more about the binding corporate rules, please see article 47 of the GDPR.

[48] See article 49.1 of the GDPR:

If none of these derogations for a specific situation apply and nor an adequacy decision has been issued, nor appropriate safeguards have been implemented, a transfer of personal data may take place only if four cumulative apply:

1) It is not repetitive.
2) It concerns only a limited number of data subjects.
3) It is necessary for the purposes of compelling legitimate interests pursued by the controller, not overridden by the interests or rights and freedoms of the data subject.
4) The controller has assessed all the circumstances surrounding the data transfer and provided suitable safeguards.

The controller will inform the supervisory authority and the data subject of the transfer.

"*a)* ***the data subject has explicitly consented to the proposed transfer, after having been informed of the possible risks of such transfers*** *for the data subject* ***due to the absence of an adequacy decision and appropriate safeguards****;*

(b) the transfer is ***necessary for the performance of a contract between the data subject and the controller*** *or the implementation of pre-contractual measures taken at the data subject's request;*

(c) the transfer is ***necessary for the conclusion or performance of a contract concluded in the interest of the data subject*** *between the controller and another natural or legal person;*

(d) the transfer is ***necessary for important reasons of public interest****;*

(e) the transfer is necessary for ***the establishment, exercise or defence of legal claims****;*

(f) the transfer is necessary in order to ***protect the vital interests of the data subject or of other persons****, where the data subject is physically or legally incapable of giving consent;*

(g) the transfer is ***made from a register which according to Union or Member State law is intended to provide information to the public and which is open to consultation either by the public in general or by any person who can demonstrate a legitimate interest****, but only to the extent that the conditions laid down by Union or Member State law for consultation are fulfilled in the particular case."*

ANNEX 5 CLEAN VEHICLES DIRECTIVE

Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean road transport vehicles in support of low- emission mobility (also known as Clean Vehicles Directive) was amended by Directive (EU) 2019/1161 of the European Parliament and of the Council of 20 June 2019. The revised version will only apply to contracts whose awarding procedure starts after August the 2nd 2021 (which is the end date for national transposition).

Recital 1 and 2 of the amending Directive explain the ambitious objectives of the EU:

- Further reduce greenhouse gas emissions by at least 40 % by 2030 as compared to 1990 levels.
- Improve the Union's energy security, competitiveness and sustainability.
- Share of energy from renewable sources of at least 32 % of the Union's gross final consumption of energy by 2030.
- New energy efficiency target for the Union by 2030 of at least 32,5 %.
- Accelerated decarbonisation of the transport sector to put greenhouse gas emissions and air pollutant emissions from transport on the path towards zero by 2050.

Innovation is already a major contributor to lowering vehicle CO2 emissions, as well as to supporting the decarbonisation of the transport sector.

With these overall objectives in mind, the goal of the consolidated version of the Clean Vehicles Directive is to "*ensure that contracting authorities and contracting entities take into account lifetime energy and environmental impacts, including energy consumption and emissions of CO 2 and of certain pollutants, when procuring certain road transport vehicles with the objectives of promoting and stimulating the market for clean and energy-efficient vehicles and of improving the contribution of the transport sector to the environment, climate and energy policies of the Union*".[49]

I.e., it promotes clean mobility solutions in public procurement tenders and gives Member States minimum procurement targets for the share of clean light-duty vehicles and for the share of clean heavy-duty vehicles.[50]

Member State	Buses (vehicle category M3) – half of the target to be fulfilled by procuring zero-emission buses	
	From 2 August 2021 to 31 December 2025	From 1 January 2026 to 31 December 2030
Luxembourg	45%	65%
Sweden	45%	65%
Denmark	45%	65%
Finland	41%	59%
Germany	45%	65%
France	43%	61%
United Kingdom	45%	65%
Netherlands	45%	65%
Austria	45%	65%
Belgium	45%	65%
Italy	45%	65%

[49] See article 1 of Directive 2009/33/EC.

[50] Half of the minimum target for the share of clean buses has to be fulfilled by procuring zero-emission buses as defined in point 5 of Article 4 of the Clean Vehicles Directive. This requirement is lowered to one quarter of the minimum target for the first reference period if more than 80% of the buses covered by the aggregate of all contracts referred to in Article 3 of the Clean Vehicles Directive, awarded during that period in a Member State, are double-decker buses.

Ireland	45%	65%
Spain	45%	65%
Cyprus	45%	65%
Malta	45%	65%
Portugal	35%	51%
Greece	33%	47%
Slovenia	28%	40%
Czechia	41%	60%
Estonia	31%	43%
Slovakia	34%	48%
Lithuania	42%	60%
Poland	32%	46%
Croatia	27%	38%
Hungary	37%	53%
Latvia	35%	50%
Romania	0,24	0,33
Bulgaria	0,34	0,48

The targets are calculated on the basis of the aggregate public procurement - within the scope of the Directive - across a Member State. This means that Member States have the power to decide the targets for different contracting authorities, as long as the target is reached.

The Commission will monitor the achievement of the targets using the Tenders Electronic Daily database (TED). In this regard, specific codes in the Common Procurement Vocabulary will facilitate the registration and monitoring under TED.[51]

The Directive covers:[52]

1. Contracts for the purchase, lease, rent or hire-purchase of road transport vehicles awarded under the EU Public Procurement Directives.[53]
2. Public service contracts for the provision of passenger road transport services within the meaning of Regulation (EC) No 1370/2007.
3. Services contracts for public road transport services, special-purpose road passenger-transport services, non-scheduled passenger transport, refuse collection services, parcel transport services, mail delivery services, parcel delivery services awarded under the EU Public Procurement Directives.[54]

[51] One example of used are the services covered by CPV codes 60112000-6 (Public road transport services).

[52] It excludes coaches among others. See article 3 (2) of Directive 2009/33/EC.

[53] Article 3 (1) (a) of Directive 2009/33/EC only refers to Directives 2014/24/EU and 2014/25/EU. So concessions would be out of the scope of the Directive.

[54] Article 3 (1) (c) of Directive 2009/33/EC only refers to Directives 2014/24/EU and 2014/25/Eu. So concessions would be out of the scope of the Directive.

ANNEX 6 RISK ASSESSMENT

Risk Matrix

The analysis of the risks and their impact on the contract execution can be assessed and measured using a classic *risk matrix*. This tool is generally used to visually identify risks related to a given project. In particular, the risks are assessed depending on their likelihood of occurrence and their effects or the extent of damage, so that the worst-case scenario can be immediately defined.[99] The more detailed the matrix, the lesser the chances of neglecting significant aspects in the correct allocation of risks. In this type of procurement choice, the matrix shall include the following aspects:

- **Risk identification**, or the identification of all those events, whose liability is not necessarily attributable to the parties, which could affect the procurement and the execution of the contract. These risks are further described in paragraph *'Different types of risks'* below;
- **Risk assessment**, or the evaluation of the probability that an event associated with a risk will occur (if it is not possible to indicate a precise value than give indications such as minimum, low, high, etc. can be used) and the costs that may derive from it. It is also important to define the moment when the negative event could occur and evaluate its effects;
- **Risk management**, or identification of the mechanisms that allow to minimize the effects of such an event;
- **Risk allocation** to the public or private entity. In order to achieve a suitable risk allocation, the Contracting Authority will identify in the matrix the circumstances under which the risk is borne by the public entity and/or by the private entity;
- **Correspondence** between the identified risk and the related mitigating measures.

It is also possible to divide the risk matrix in relation to the different phases of the life cycle of the contract.

Different types of risks

As anticipated in the previous paragraph, a risk matrix is a useful tool to assess the viability of a Concession over a traditional contract. The first step in building a risk matrix is identifying the risks related to the type of procurement and service, such as the procurement of buses and related infrastructure for the public transport service of a given city.

A. Procurement risks

In a Concession, the Contract Authority outsources the entire service to an economic operator.[100] However, the economic operator might be asked not only to handle the service (e.g. the public transport), but also procure the related infrastructure (e.g. buses, depots, charging infrastructures, etc.). Therefore, the economic operator shall be capable to handle the inherit procurement risks. Those risks are related to the purchasing activities of that infrastructure that allows the normal execution of the service, as stated in the contract. In a public transport contract, we can think of different procurement risks:

- Procurement design risks: for example, the number of buses is not sufficient to meet the promised demand criteria.
- Outcome risks: the procured infrastructure does not meet the criteria indicated during the design of the tenders.
- Financial risks: cost overruns, for example, due to an erroneous TCO assessment.
- Time risks: as cost may overrun, so the time required for the infrastructure to be operative, even in case of maintenance.
- Technological risks: unreliability and inadequacy of the used technology.

B. Demand risk

Demand risks represent one the element of the traditional *economic risk* borne by any business in a market economy. There is a demand risk whenever the request for a certain product or service declines. This might be due to market conditions in which the economic operator witnesses a falling demand for the specific service in the whole sector where he operates.

C. Availability risks

These risks relate to the availability of the promised service due to a number of different risks. For example:

- Emergency or extraordinary maintenance maybe derived from an inadequate planning.
- Performance risk: the risk that the infrastructure and the related services do not comply with the agreed KPIs in the contract (e.g. time schedule, number of passengers per day, etc).

D. Financial risks

Concession contracts significant upfront cost relate to the procurement of the whole infrastructure (including vehicles) to run the service. An economic operator normally finances its enterprise through bank financings and it will repay these through the cash-flow derived from the execution of the contract (e.g. tickets), gaining also a profit. Financial risks may result in failure to find financial resources to cover costs and within the timelines set in the contract. In some other cases, an increase in interest rates and/or failure to repay one or more loan instalments, might damage the liquidity of the operator up to the point where it might be unable to sustain the normal operations.

E. Other risks

- **Administrative risk:** the risk connected to the granting of all the necessary authorizations from the related public authorities and administration to start the execution of contract. In case of a transport operator, the local or national transport authority, for example, must check the new bus fleet for safety, security and environmental standards. This may create delays in the service provision and can also have a significant financial impact on the economic operator.
- **Regulatory risks:** deriving from changes in the regulatory framework and from policy decisions that cannot be foreseen contractually with a consequent increase in costs for the related adjustment. For example: environmental policies and/or subsidy schemes related to the procurement of e-mobility solutions.
- **Obsolescence risk**: linked to a more rapid technical obsolescence of the infrastructure than foreseen, which impacts on the maintenance costs and/or on pre-established technical and functional standards.
- **Outsourcing risks:** connected to the correct availability of products or services (e.g. spare parts) procured from third-parties. In the transport sector, is common practise to outsource the maintenance, sometime even to the same manufacturer. However, in this latter case the operator will have a leasing contract of the buses.

Financial Plan

In relation to the financial risk above, the Contract Authority shall verify that economic operators have formulated a realistic **financial plan** including a cost of the capital at market values, and not overestimated, for example predicting an excessive prudential interest rate. In the financial plan, the ultimate goal of the economic operator is the achievement of the **financial equilibrium**. Namely, when the cash flows deriving from the contract's revenues cover the cash flows deriving from its costs. These costs include those relating to the amortization of the net invested capital and the remuneration of

the same at a congruous rate, as well as those required to pay taxes. There are different indicators to assess the viability of the financial plan of the economic operator:

- Indicators to generate revenues, such as the **Internal Rate of Return (IRR)**, which indicates in percentage terms the rate of return of the cash flows associated with the Project.[101]
- Indicators of profitability, such as the **Net Present Value (NPV)**, which represents, in monetary terms, the value created or dispersed by the investment made by the shareholders for the contract duration.[102]
- Indicators of financial sustainability, such as the **Debt Service Cover Ratio (DSCR),** which represents the ratio between the amount of cash flow available in a given period to pay the current debt obligations; the **Long Life Cover Ratio (LLCV),** which indicates the ratio between the net present value of the available cash flow and the amount of the outstanding debt.[103]

Generally speaking, the economic operator reaches the financial equilibrium when the IRR is equal to zero. At the same time, the NPV should be equal to the Weighted Average Cost of Capital (WACC). The WACC represents the maximum rate to be applied to net invested capital. If the project's IRR and NPV is greater than zero, it means that the contract contains margins of extra-profitability for the private operator which reduce the allocation of the operational risks. These situations must be carefully evaluated by the public administrations, possibly using appropriate benchmarks.

ANNEX 7 DO'S & DON´TS

Do's & Don'ts	
Take into account relevant "secondary" objectives that your procurement should include, such as compliance with human and labour rights during the production, supporting a level playing field vis-à-vis non-EU companies, fostering and stimulating European employment and environmental ambitions analysed by Life Cycle Assessments (LCA).	Do not go for the lowest price offer. Quality and compliance with high European standards are important to protect European companies that do comply with these requirements.
Follow the Eafip step-by-step approach to implement Pre-Commercial Procurement (PCP) and/or Public Procurement of Innovative solutions (PPI). **Obtain pioneering, innovative solutions customised to your specific needs, providing taxpayers with the best possible quality services, while at the same time saving costs.** Define clearly *the need/problem* which can yield to an *innovative* solution. You can gather information internally and/or from end users. Compare the business-as-usual costs with the costs of the envisioned solution. Take into account the costs during the whole life cycle of the solution. Be aware that the valuation can be monetary and non-monetary. Consider joint procurement with other procurers who provide similar public transportation services. The definition of the need might become more complex, but on the other hand interoperability and value for money (due to synergies and economies of scale) increase. Perform a SOTA analysis to verify the TRL level of the solution to be purchased. This analysis helps to decide and justify the procurement approach: PCP, PPI, IP or Commercial Off-The-Shelf (COTS).	Do not start your procurement procedure without following the preparatory steps. These help to decrease the risks linked to innovation and to increase the chances of success and uptake of the developed solution: 1. A clear need (defined with other potential procurers in case of joint procurement); 2. A SOTA analysis to see what is already available and justify your procurement approach. 3. An open consultation with market parties to ensure that your demands are realistic and aligned with the market and that the market can deliver a solution in time. 4. A business case comparing the costs of keeping the service as is, and different potential solutions; 5. With all the information, take a reasonable decision on the best procurement approach.

It also reveals whether there are already entities on the market who own "key IPR" that cannot be avoided to address the identified need(s). Establish if the licensing policy of those entities is introducing such high risks/costs that there is no good business case to start the innovation procurement.
Preliminary results of the SOTA, as based on desk research, are to be checked by a technical expert to ensure their relevance. Based on these findings, you will have a good overview of the areas in which companies are actively innovating and their origin.
Organize an open market consultation to acquire information from the market operators regarding the cost, quality, performance and efficiency of existing and potential solutions and their potential to yield solutions relevant to your need. This helps to check whether the first estimations are realistic.
Develop a business case of the life cycle of the procured mobility solutions. Be sure to take environmental considerations into the equation (such as carbon neutrality).
You can also use the business case to compare different technologies employed in the same product (e.g. diesel, electric and hydrogen engine, on urban public buses), in order to discover the most cost-effective solution (including elements which are normally not considered in a traditional tender e.g. new infrastructures such as charging stations). In this case, the solutions to be compared should have the same performance levels: “Compare *apples with apples”.*
If you are considering a concession for the provision of the transport service (and or works – if you are also interested in the charging infrastructure) develop a risk-business case. Make sure that the operational risk is transferred and that the increased cost is justified based on a better provision of the service.
Decide the procurement approach based on the TRL of the solution.

You may need to include experts on different areas in your team. Make sure that you have the support of the top management as well as the staff that will be in charge of the procedure (and the solution) on a day-to-day basis	Do not take the capabilities and support of your current team for granted.
Design the procurement documentation to ensure an equal level playing field. Non-EU companies may have received large public subsidies in their home countries. The EU public procurement market is open only to companies from countries who are parties to the GPA and/or trade agreements. Ensure that companies meet EU minimum social, labour and environmental requirements or standards. European contracting authorities are mandated to apply the rules provided by Directives 2014/24/EU and 2014/23/EU to contracts covered by the GPA or to economic operators of third countries that are signatories of relevant international agreements by which the Union is bound. Conversely, they are not mandated to open their procurements to companies from countries that are not party to the GPA or to international agreements.	Do not support uneven playing field with non-EU companies with practices that might be legal (such as considering the unique award criteria price), but that allow for companies receiving large public subsidies in their home countries. Do not select companies that do not meet our minimum social, labour and environmental requirements or standards.
Be aware of the latest developments in the legal framework in the field of third country subsidies. In 2020 the European Commission launched the '*White Paper on levelling the playing field as regards foreign subsidies*' - creation of new legal instruments to minimize the negative effects of foreign subsidies on the internal market. The International Procurement Instrument (IPI) launched in 2012 and modified in 2016 is being further negotiated between the EU Member States.	Do not allow for the latest developments in the legal framework to go unnoticed.
Bear in mind that both Directive 2014/24/EU and Directive 2014/23/EU allow contracting authorities and Member States to exclude a candidate from a procurement procedure	Do not forget to include a provision – if your national transposition law doesn´t include it – allowing to exclude a candidate from a procurement procedure where it is demonstrable

where they can demonstrate that the participant is in violation of obligations in the fields of environmental, social and labour law established by Union law, national law, collective agreements or by the international environmental, social and labour law provisions listed in their Annex X. Subcontractors must also comply with these requirements. **An economic operator from a country that hasn't ratified the Conventions won't comply with their conditions and can be directly excluded from a procurement procedure.** ⚠ Unless this exclusion is regulated in your national law, you will have to state this up front in the tendering documents: 1. Check whether this exclusion ground is mandatory according to your national transposing law. 2. If not, include this exclusion ground in the tendering documents.	that the participant is in violation of obligations in the fields of environmental, social and labour law established by Union law, national law, collective agreements or by the international environmental, social and labour law provisions listed in their Annex X of both Directives. Clarify that subcontractors must also comply with these requirements.
For social, labour and environmental considerations to be effectively implemented by the successful bidder and have a real impact, monitoring the contract/concession execution is key.	Do not forget to include monitoring mechanisms, and once included make sure to follow up on them.
Purchase zero-emission solutions to address Sustainable Development Goals. **Achieve the minimum procurement targets for the share of clean light-duty vehicles and for the share of clean heavy-duty vehicles of *Directive 2009/33/EC of 23 April 2009 on the promotion of clean road transport vehicles in support of low-emission mobility* amended by *Directive (EU) 2019/1161 of the European Parliament and of the Council of 20 June 2019.***	Do not expect things to change, if you do not do something different.

ANNEX 8 ENDNOTES. LEGISLATION. RELEVANT INFORMATION

European legislation

- "Pre-commercial procurement: driving innovation to ensure sustainable high quality public services in Europe", COM(2007) 799 final, 14.12.2007 (PCP Communication).
- "Framework for state aid for R&D&I", COM(2014) 3282 (2014 EU State Aid Framework).
- European Commission Communication 'Making Public Procurement Work in and for Europe' COM(2017) 572 final
- Comprehensive Economic and Trade Agreement (CETA) between Canada and the European Union and its Member States. 14.1.2017. L 11/116 Official Journal of the European Union.
- EU-Japan Economic Partnership Agreement. Updated on 18 April 2018.
- Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions. The European Green Deal. Brussels, 11.12.2019. COM(2019) 640 final
- European Commission. White Paper on levelling the playing field as regards foreign subsidies. Brussels, 17.6.2020. COM(2020) 253 final

Relevant information

- Clean Vehicles Directive: https://ec.europa.eu/transport/themes/urban/clean-vehicles-directive_en
- Countries and regions: Japan. https://ec.europa.eu/trade/policy/countries-and-regions/countries/japan/
- European Clean Bus deployment Initiative: https://ec.europa.eu/transport/themes/urban/cleanbus_en
- King County Metro Battery Electric Bus Demonstration - Preliminary Project Results: https://afdc.energy.gov/files/u/publication/king_county_be_bus_preliminary.pdf
- Paying for Electric Buses. Financing Tools for Cities and Agencies to Ditch Diesel: https://mopirg.org/reports/usp/paying-electric-buses
- Smart, Green and Integrated Transport: https://ec.europa.eu/programmes/horizon2020/en/h2020-section/smart-green-and-integrated-transport
- Sustainable bus: https://www.sustainable-bus.com/category/electric-bus/

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[1] See here for more information on the Corvers Chair on Innovation procurement: https://www.corvers.com/chair-on-innovation-procurement/position-papers

[2] For Example: The Netherlands has a national plan (Green Deal) to electrify the country's entire public transport bus fleet (5000+ buses) by 2030. Starting from 2025, all newly purchases transportation buses have to be powered by renewable energy and have zero-emission at the exhaust pipe.

[3] "*Life cycle assessment is a cradle-to-grave or cradle-to-cradle analysis technique to assess environmental impacts associated with all the stages of a product's life, which is from raw material extraction through materials processing, manufacture, distribution, and use*". From: Environmental Management, 2017. https://www.sciencedirect.com/topics/earth-and-planetary-sciences/life-cycle-assessment#:~:text=Life%20cycle%20assessment%20is%20a,manufacture%2C%20distribution%2C%20and%20use.

[4] Electromobility Platform. European Green Deal and Green Recovery: time to focus on Electromobility. Page 3. June 2020 https://www.platformelectromobility.eu/wp-content/uploads/2018/02/European-Platform-for-electromobility%E2%80%99s-position-on-Green-Deal_FINAL-2.pdf

[5] The White Paper mainly focusses on e-Mobility solutions and not on related data aspects. Data aspects and provision of essential services are briefly explained in ANNEX 4.

[6] These events are online events in which people, companies can present their ideas. See here an example of e-Pitching: https://ec.europa.eu/easme/en/eic-epitching-covid-19

[7] The figure is taken from the Electric Vehicle Outlook 2020 by Bloomberg New Energy Finance https://bnef.turtl.co/story/evo-2020/?teaser=yes See also: https://www.sustainable-bus.com/news/electric-vehicle-outlook-2020-bnef-electric-buses/

[8] https://www.sustainable-bus.com/electric-bus/electric-bus-public-transport-main-fleets-projects-around-world/

[9] The city of Shenzhen had reached by the end of 2017 100 percent of electric bus vehicles in operation (16,500 buses), Beijing aims at the goal of 10,000 by 2020. In September 2018, the Chinese producer Yutong Bus declared it had achieved a total sales volume of 90,000 new energy buses in France, UK, Bulgaria, Iceland, Chile, and China Macau among others (Yutong's annual sales volume, including every kind of bus and coach, exceeds 70,000 units). See https://www.wti.org/media/filer_public/92/59/92591824-dce9-4077-9d3d-8a6112a9a23d/euchina_fta_final.pdf.

"In order to have access to subsidies, foreign automakers should develop NEVs (new energy vehicles) with their Chinese joint-venture partners". Electric Vehicle Platform Strategies by Chinese Automakers: What's Going On in the EV Arena In China?. Belzowski, Bruce; Muniz, Sergio; Cu, Camille.

"*On January 18, 2016, the "Electric Community Action Plan" was initiated. The plan aims to select 500 residential communities to install charging facilities for demonstration purpose. The Beijing government subsidizes RMB 10,000 for each participating community. In addition, 500 moving charging stations carried by vehicles will be provided for those old residential communities in which no space exists for the installation of charging facilities. Users can use mobile apps to find the charging vehicles, to make an appointment, and to receive charging services". Incentive policies from 2006 to 2016 and new energy vehicle adoption in 2010–2020 in China.* Xiang Zhang, Xue Bai. Renewable and Sustainable Energy Reviews 70. Page 19. November 2016.

See also *Electric vehicles in China: BYD strategies and government subsidies*. Gilmar Masiero, Mario Henrique Ogasavara, Ailton Conde Jussani, Marcelo Luiz Risso. RAI Revista de Administração e Inovação. Volume 13, Issue 1, January–March 2016, Pages 3-11

[10] For more information see *Smart, Green and Integrated Transport* https://ec.europa.eu/programmes/horizon2020/en/h2020-section/smart-green-and-integrated-transport

[11] Here a tool to find patent lawyers by country: https://www.cipa.org.uk/find-a-patent-attorney/ and here the official directories of national registered patent attorneys of the EPO: https://www.epo.org/service-support/useful-links/attorneys.html

[12] For example, when analysing the state-of-the-art of bus related technologies, it is important to take into account the bus as a platform with specific elements. A new platform can be developed but also the elements can be renewed (e.g. batteries, seats, HVAC, etc).

[13] Waterschapsbedrijf Limburg has paid attention to the need to match small companies with valuable R&D capabilities to the larger companies with deployment capabilities, during the preparation of its recent PCP on Artificial Intelligence (AI) models for the sewage water system.

[14] Full ownership of the e-mobility solution is equivalent to the award of a contract where the contracting authority doesn't transfer the operating risk to the economic operator. I.e. a traditional contract in which the contractor receives a "fixed" remuneration for the provision of the services, supplies or works. They are under the scope of *Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC.*

[15] Please bear in mind that in the context of Innovation Procurement – including TCO approaches - the risks and benefits are shared between the buyer and the seller, so that costs and payments are also linked to this sharing.

[16] The depreciation of a bus lasts for 15 years. However, the majority of the contracts last a maximum of 8 to 10 years. This is an added risk for the e-mobility vendors and providers of the services who have no guarantee about the future market to resell those buses. A solution would be that the Public Buyers and/or Contracting Entities would include in their contracts a clause indicating that the (second) provider of the transport service after the end of that initial contract is mandated to purchase and use those buses. This would decrease the risk not only for the PTO but also for the e-mobility vendor and would result in cost reduction.

[17] Bear in mind that "*The technology of electric vehicles is evolving very quickly towards more durable and reliable batteries*". Commission Staff Working Document *EU green public procurement criteria for road transport* Brussels, 8.1.2019 SWD(2019) 2 final.

[18] See recital 6 of Directive (EU) 2019/1161 of the European Parliament and of the Council of 20 June 2019 amending Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles "*Market forecasts estimate that the purchase prices of clean vehicles will continue to fall. Lower operational and maintenance costs already contribute towards competitive total cost of ownership. The expected reduction of purchase prices will further reduce barriers to market availability and uptake of clean vehicles in the next decade*."

[19] The reality is that acceleration and deceleration curves are influencing the wear of the tyres. This can however be minimized by optimizing these curves on parametric level.

[20] https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/whats-sparking-electric-vehicle-adoption-in-the-truck-industry

[21] https://www.transportenvironment.org/press/just-one-10-urban-buses-sold-europe-now-fully-electric-%E2%80%93-analysis

[22] Commission Staff Working Document. EU green public procurement criteria for road transport. Brussels, 8.1.2019 SWD (2019) 2 final. Pages 71 – 73.

[23] Concessions of the e-mobility solution implies a works or services contract in which the remuneration for the contractor consists either solely in the right to exploit the works/services that are the subject of the contract or in that right together with a payment as defined in *Directive 2014/23/EU of the European Parliament and of the Council of 26 February 2014 on the award of concession contracts.* For a concession to take place, the contracting authority has to transfer the concessionaire the operating risk. "*The concessionaire shall be deemed to assume operating risk where, under normal operating conditions, it is not guaranteed to recoup the investments made or the costs incurred in operating the works or the services which are the subject-matter of the concession. The part of the risk transferred to the concessionaire shall involve real exposure to the vagaries of the market, such that any potential estimated loss incurred by the concessionaire shall not be merely nominal or negligible*".

[24] See Article 32 oof Directive 2014/24/EU: *"3. The negotiated procedure without prior publication may be used for public supply contracts: (a) where the products involved are manufactured purely for the purpose of research, experimentation, study or development; however,*

contracts awarded pursuant to this point shall not include quantity production to establish commercial viability or to recover research and development costs."

[25] If the TRL is very high a public buyer can resort to Commercial Off-the-Shelf procurement by implementing one of the standards procedures of the Public Procurement Directives.

[26] This means that the value of the R&D services should be at least 50% of the total contract value. When prototypes (which qualify as R&D products) are retained by the public procurer at the end of the PCP, the value of the prototypes should not exceed 50% of the total contract value. See in particular article 3.2 *in fine* of Directive 2014/24/EU: "*In the case of mixed contracts consisting partly of services within the meaning of Chapter I of Title III and partly of other services or* ***of mixed contracts consisting partly of services and partly of supplies, the main subject shall be determined in accordance with which of the estimated values of the respective services or supplies is the highest***." See also H2020 Programme Guidance PCP procurement documents, page 32, A) Compliance with the definition of R&D services: *"Tenders that go beyond the provision of R&D services will be excluded. (…)* ***The definition of services means that the value of the total amount of products covered by the contract must be less than 50 % of the total value of the PCP framework agreement****. (…) The following evidence is required: (…)* ***the total value of products offered in phase 1 respectively phase 2 must be less than 50 % of the value of the phase 1 respectively phase 2 contract and the total value of products offered in phase 3 must be so that the total value of products offered in all phases (1,2 and 3) is less than 50% of the total value of the PCP framework agreement*** *(…)* ***Both percentages for the product value inside phase 1 and phase 2 must be set at less than 50 % to ensure that tenders that do not go through to phase 2 or 3 still satisfy the definition of an R&D services contract****."*

The public procurer and the PCP supplier share the Intellectual Property Rights (IPR) generated during the PCP. The PCP supplier typically retains the ownership and the public procurer receives a free usage license. Eafip Toolkit Module 1. https://eafip.eu/toolkit/

[27] PCP is exempted from the application of the European public procurement directives, but remains subject to the applicable provisions of the Treaty on the Functioning of the European Union and the EU competition rules.

[28] EU-funded PCPs are required to apply these requirements.

[29] 61,5% of the total value of all PCP contracts and 73,5% of the number of PCP contracts were awarded to Small and Medium Enterprises (SMEs). 89% of these had less than 50 employees. 60% of the awarded companies were younger than 10 years. Lieve Bos, Update on results from completed and ongoing FP7 and Horizon 2020 funded Pre-Commercial Procurements (PCPs), available at https://ec.europa.eu/digital-single-market/en/news/impacts-eu-funded-pre-commercial-procurements.

For 70% of the vendors it was the first time they had won a contract from the respective procurers. Lieve Bos, Update on results from completed and ongoing FP7 and Horizon 2020 funded Pre-Commercial Procurements (PCPs), available at https://ec.europa.eu/digital-single-market/en/news/impacts-eu-funded-pre-commercial-procurements.

[30] Article.31. Directive 2014/24/EU; Article 49 Directive 2014/25/EU. Section 2.2.1.6. Aanbestedingswet.

[31] See Framework for State aid for Research and Development and Innovation, para.33 and footnote 29.

[32] Lieve Bos, Update on results from completed and ongoing FP7 and Horizon 2020 funded Pre-Commercial Procurements (PCPs), available at https://ec.europa.eu/digital-single-market/en/news/impacts-eu-funded-pre-commercial-procurements.

[33] Art.2.33 onder a Aanbestedingswet.

[34] Eurostat. See also: Becker, J. e al, Contribution to Growth. European Public Procurement. Delivering Economic Benefits for Citizens and Businesses, Study for the Committee on the Internal Market and Consumer Protection, Policy Department for Economic ic, Scientific and Quality of Life Policies, European Parliament, Luxembourg, 2018.

[35] https://www.wto.org/english/tratop_e/gproc_e/gp_gpa_e.htm. The GPA is administered by the Committee on Government Procurement which is composed of representatives of all its parties. The GPA was last revised and entered into force on 6 April 2014.

[36] At an informal meeting of the WTO's Government Procurement Agreement (GPA) Committee on 23 October 2019, China introduced to the parties to the Agreement its sixth revised market access offer in the context of its negotiations to join the GPA. The revised offer was circulated to GPA parties on 21 October. Chairman Carlos Vanderloo of Canada called this "a very significant development" and the parties also welcomed China's revised offer while saying they needed more time to review it. China identified the following improvements, among other things: the revised offer covers additional government entities and their subordinated entities, both at the central and provincial levels. It also covers additional state-owned enterprises operating in the areas of railways, highways, ports, airports, urban transportation, water supply, etc. China has further included additional services sectors and all construction services are now covered by the offer. China also proposed that after a transition period, it would apply standard GPA threshold values for the proposed goods and services covered. https://www.wto.org/english/news_e/news19_e/gpro_23oct19_e.htm

[37] See the GPA thresholds here: https://e-gpa.wto.org/en/ThresholdNotification/FrontPage

[38] Directive 2014/24/EU. Preamble, recital 18.

[39] https://www.wto.org/english/tratop_e/gproc_e/memobs_e.htm

[40] Under the revised GPA, the schedule of each party contains seven annexes: Annex 1: central government entities; Annex 2: sub-central government entities; Annex 3: other entities; Annex 4: goods; Annex 5: services; Annex 6: construction services; Annex 7: general notes. See the GPA annexes here: https://www.wto.org/english/tratop_e/gproc_e/gp_app_agree_e.htm

[41] At the 11th Ministerial Conference of the World Trade Organization (WTO) in December 2017, the United States, European Union, and Japan agreed to work together in an effort to confront the Chinese economic model, based on industrial subsidies, state-owned enterprises (SOEs), and the forced transfer of technology. See Pieterson Institute for International Economics. 19-17 WTO'ing a Resolution to the China Subsidy Problem, Chad P. Bown and Jennifer A. Hillman, October 2019.

[42] Directive 2014/24/EU. Preamble, recital 17.

[43] https://trade.ec.europa.eu/tradehelp/free-trade-agreements

[44] Annex 2 provides an alphabetical list of countries that have trade agreements in place with the EU and the links to the relevant text.

[45] The EU and China have been negotiating a Comprehensive Agreement on Investment. https://trade.ec.europa.eu/doclib/press/index.cfm?id=2115 Currently, China has bilateral trade agreements with several countries but not with the EU. See agreements here: http://fta.mofcom.gov.cn/topic/ennewzealand.shtml

The Transatlantic Trade and Investment Partnership (TTIP) negotiations between EU and US were launched in 2013 and ended without conclusion at the end of 2016. A Council decision of 15 April 2019 states that the negotiating directives for the TTIP are obsolete and no longer relevant. https://ec.europa.eu/trade/policy/in-focus/ttip/

US has Free Trade Agreements with 20 countries: https://ustr.gov/trade-agreements/free-trade-agreements.

[46] https://ec.europa.eu/trade/policy/countries-and-regions/countries/hong-kong-sar/

[47] Brussels, 29.1.2016 COM(2016) 34 final 2012/0060 (COD) Amended proposal for a Regulation of the European Parliament and of the Council on the Access of third-country goods and services to the Union's internal market in public procurement and procedures supporting negotiations on access of Union goods and services to the public procurement markets of third countries. Page 2. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016PC0034&from=EN

[48] Such as 'shielding [Chinese] industries from competition through selective market opening, licensing and other investment restrictions, as well as providing subsidies which undermine the level playing field to both state-owned and private sector companies'. See European Commission, 'White Paper on levelling the playing field as regards foreign subsidies' COM(2020) 253 final.

[49] White Paper page 7.

[50] White Paper page 8: '*Foreign states may also give a subsidy to a parent company located outside the EU (e.g. corporate tax regimes providing selective incentives), which then in turn finances the subsidiary located in the EU through intragroup transactions. An undertaking in the EU may also receive financing at preferential terms from foreign banks directly upon instruction of foreign states. Furthermore, third countries might have cooperation arrangements with EU local authorities or EU development banks, and may thus channel foreign subsidies through these authorities or banks to undertakings in the EU*.'

[51] White Paper p.8.

[52] The EU State aid rules have been temporarily eased in the context of the recent COVID-19 crisis.

[53] White paper p.31.

[54] Strict time limits would be put in place for the performance of the notification review, namely no more than 15 working days for the preliminary review and no more than 3 months for the in-depth review.

[55] European Parliament https://www.europarl.europa.eu/legislative-train/theme-a-balanced-and-progressive-trade-policy-to-harness-globalisation/file-international-procurement-instrument-(ipi)

[56] European Parliament, Briefing EU international procurement instrument (March 2020) available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/649403/EPRS_BRI(2020)649403_EN.pdf

[57] Communication of the European Commission, "Guidance on the participation of third-country bidders and goods in the EU procurement market", COM(2019) 5494 final

[58] See recitals 98 and 99 of Directive 2014/24/EU and recitals 65 and 66 of Directive 2014/23/EU.

[59] As it is very difficult to relate them to either the suitability to pursue the professional activity nor the economic and financial standing. See article 58(1) of Directive 2014/24/EU and 38(1) of Directive 2014/23/EU.

[60] See here an example of disproportionate selection criteria that restricts and limits competition in an unnecessary and distortive way: https://www.nieuwsblad.be/cnt/dmf20210120_96275993

[61] GPP Training toolkit. *Module 3: Legal Aspects of GPP*. Page 8. https://ec.europa.eu/environment/gpp/toolkit_en.htm

[62] However, a general requirement that a company should engage in 'sustainable purchasing' without further definition) is not correct. GPP Training toolkit. *Module 3: Legal Aspects of GPP*. Page 5. https://ec.europa.eu/environment/gpp/toolkit_en.htm

[63] Environmental management systems are tools aiming to improving the overall environmental performance of the organisation. 'Relevant areas for improvement may be the use of natural resources, such as water and energy; training of employees; the use of environmentally-friendly production methods and purchasing greener office materials'. Buying green! A handbook on green public procurement. 3rd Edition. © European Union, 2016. Page 46. ISBN: 978-92-79-56848-0 https://ec.europa.eu/environment/gpp/pdf/Buying-Green-Handbook-3rd-Edition.pdf

[64] They can also be evaluated as award criteria, to proof that the selected tender can perform the environmental aspects of the contract.

[65] See Article 62(2) on *Quality assurance standards and environmental management standards*. Another option is the European/international standard on environmental management systems (EN/ ISO 14001). The ISO scheme is used by organisations all over the world, but EMAS incorporates additional elements to the requirements of EN/ISO 14001.

[66] *Buying green! A handbook on green public procurement*. 3rd Edition. © European Union, 2016. Page 22. ISBN: 978-92-79-56848-0. https://ec.europa.eu/environment/gpp/pdf/Buying-Green-Handbook-3rd-Edition.pdf

[67] See article 57(4a) of Directive 2014/24/EU and 38(7a) of Directive 2014/23/EU.

[68] In particular ILO Conventions are directed at Member States.

[69] I.e. at the level of public international law, whether a country is subject to a conventional obligation depends on whether that obligation has been accepted by that country. If not, it doesn't bind neither the country nor a company subject to its jurisdiction. *The use of social criteria in public procurement procedures*. Report of the TMC Asser Institute. Commissioned by Senternovem. 23 July 2008.

[70] See here the countries that have not ratified this Convention: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11310:0::NO:11310:P11310_INSTRUMENT_ID:312232:NO

[71] See *"'Re-education', forced labour and surveillance beyond Xinjiang"* (https://www.aspi.org.au/report/uyghurs-sale) on the mass transfer of Uyghur and other ethnic minority enabled by the Chinese government.

[72] A good example of this is the European Procurement Document (ESPD).

[73] The explanation may relate to '(*a) the economics of the manufacturing process, of the services provided or of the construction method; (b) the technical solutions chosen or any exceptionally favourable conditions available to the tenderer for the supply of the products or services or for the execution of the work; (c) the originality of the work, supplies or services proposed by the tenderer; (d) compliance with obligations referred to in Article 18(2); (e) compliance with obligations referred to in Article 71; (f) the possibility of the tenderer obtaining State aid'*

[74] White Paper page 11. The Public Buyer does not need to obtain the information necessary to investigate whether bidders benefit from foreign subsidies or to assess to what extent the subsidies have the effect of causing distortions in procurement markets. It is sufficient for the Public Buyer to conclude, for example, that the tenderer has provided unsatisfactory evidence regarding compliance with the obligations referred to in article 18(2) Directive 2014/24/EU.

[75] See article 68(3) of Directive 2014/24/EU. See also recitals 40 and 103. Directive 2014/23/EU does not provide a similar article regarding the possibility to exclude abnormally low tenders. However, Concessions Directive also highlights the importance of ensuring compliance with obligations in the fields of environmental, social and labour law.

[76] See article 67(2) of Directive 2014/24/EU.

[77] See judgment of 10 May 2012, European Commission v Kingdom of the Netherlands, C-368/10 (ECLI:EU:C:2012:284): '*compliance with the principles of equality, non-discrimination and transparency requires that the award criteria are objective, ensuring that tenders are compared and assessed objectively and thus in conditions of effective competition. That would not be the case for criteria having the effect of conferring on the contracting authority an unrestricted freedom of choice'*. See also judgment of 26 September 2000, Nord-Pas-de-Calais, C-225/98 (ECLI:EU:C:2000:494) para. *71* and judgment of 18 October 2001 SIAC Construction Ltd v County Council of the County of Mayo (ECLI:EU:C:2001:553) para.*42: 'the award criteria must be formulated, in the contract documents or the contract notice, in such a way as to allow all reasonably well-informed and normally diligent tenderers to interpret them in the same way'*.

[78] See article 67(3) of Directive 2014/24/EU. See also SIGMA, *Incorporating Social Considerations into Public Procurement*. Public Procurement Brief 14. September 2016. Page 9. http://www.sigmaweb.org/publications/Public-Procurement-Policy-Brief-14-200117.pdf

[79] According to recital 96 of Directive 2014/24/EU: *'The notion of life- cycle costing includes all costs over the life cycle of works, supplies or services. This means internal costs, such as research to be carried out, development, production, transport, use, maintenance and end-of-life disposal costs but can also include costs imputed to environmental externalities, such as pollution caused by extraction of the raw materials used in the product or caused by the product itself or its manufacturing, provided they can be monetised and monitored.* More on LCC and tools here: https://ec.europa.eu/environment/gpp/lcc.htm

[80] *A Social Platform guide to the EU Public Procurement Directive*. October 2015. Page 16. https://www.socialplatform.org/wp-content/uploads/2015/10/Public_procurement_for_social_progress.pdf

[81] ¨*The 4-year cost of running an electric car in most of the EU Member States is currently lower of a petrol car7, while the purchase parity of an average model is expected in the mid-2020s aided by the hundreds of new models coming to market as a result of EU CO2 standards. For electric buses, the TCO parity is already there today*¨. Electromobility Platform. European Green Deal and Green Recovery: time to focus on Electromobility. Page 2. June 2020 https://www.platformelectromobility.eu/wp-content/uploads/2018/02/European-Platform-for-electromobility%E2%80%99s-position-on-Green-Deal_FINAL-2.pdf

See also https://www.avere.org/economic-sustainability/ on the Total Cost of Ownership (TCO)/Affordability of Zero Emission Vehicle (ZEV), Battery Electric Vehicle (BEV) and an Internal Combustion Engine Vehicle (ICEV).

[82] In this case, it is important to take a few factors into account: (1) The minimum levels of environmental performance already required in the technical specifications. If the specifications have high environmental requirements, they may have a lower weight in the award criteria, and vice versa. (2) The specific environmental impacts of the contract and areas where bidders may be able to offer solution. (3) The way in which criteria will be assessed/verified. This is important because it can motivate bidders to compete on environmental factors. For example,

if more weight is given to environmental criteria, they will know in advance that this is an important factor for the contracting authority. Moreover, candidates who don't care much about environmental issues will be likely to drop out of the tender. GPP Training toolkit. *3. Legal Aspects of GPP*. Slide 30 https://ec.europa.eu/environment/gpp/toolkit_en.htm

[83] Commission Staff Working Document. EU green public procurement criteria for road transport. Brussels, 8.1.2019 SWD (2019) 2 final. Page 33.

[84] Examples of social and labour requirements that can be defined as award criteria (or as contract performance conditions), as long as they are related to the subject matter of the contract, are measures such as the health protection of the staff involved in the production process or the employment of long-term job-seekers.

[85] See article 71(1) of Directive 2014/24/EU and 42(1) of Directive 2014/23/EU.

[86] See article 70 of Directive 2014/24/EU and recital 64 of Directive 2014/23/EU.

[87] Performance conditions linked to social considerations usually refer to the employment of long-term job-seekers for the execution of the contract and the provision of education to formerly unemployed and/or young people hired to implement the contract.

[88] *ILO Convention 87 on Freedom of Association and the Protection of the Right to Organise, ILO Convention 98 on the Right to Organise and Collective Bargaining, ILO Convention 105 on the Abolition of Forced Labour, ILO Convention 138 on Minimum Age, ILO Convention 111 on Discrimination (Employment and Occupation), ILO Convention 100 on Equal Remuneration, ILO Convention 182 on Worst Forms of Child Labour*. In order to assure that these conventions have been signed and are being applied one solution would be to ask bidders to provide proof that their country is a signatory of the agreements or that they have regulations in place that comply with the minimum requirements of the Conventions. This could be asked as compliance criteria and done via a self-declaration.

[89] Examples of performance conditions related to environmental concerns are how goods are packaged and delivered or how waste and recycling are managed. GPP Training toolkit. *3. Legal Aspects of GPP*. https://ec.europa.eu/environment/gpp/toolkit_en.htm

[90] For example, the CJEU stated in Case C-448/01 that an award criterion based on the total amount of renewable electricity which a company could provide was not linked to the subject-matter, as greater amounts would receive a higher score, even if this exceeded the authority's own requirement.

[91] As long as all the following cumulative conditions are fulfilled: (i) *The label requirements only concern criteria which are linked to the subject-matter of the contract and are appropriate to define characteristics of the works, supplies or services that are the subject-matter of the contract*; (ii) *The label requirements are based on objectively verifiable and non-discriminatory criteria;* (iii) *The labels are established in an open and transparent procedure in which all relevant stakeholders, including government bodies, consumers, social partners, manufacturers, distributors and non-governmental organisations, may participate;* (iv) *The labels are accessible to all interested parties; (v) The label requirements are set by a third party over which the economic operator applying for the label cannot exercise a decisive influence;* (vi) If the contracting authority does not require the works, supplies or services to meet all of the label requirements, they will indicate to which they refer; (vii) If the contracting authority demands *a specific label,* it shall accept *all labels that confirm that the works, supplies or services meet equivalent label requirements.* In other words, if a contracting authority would like to mention a label, it should clarify that equivalent ones will also be accepted. Using the word 'equivalent' will avoid restricting competition and legal controversies; (viii) *Where an economic operator had demonstrably no possibility of obtaining the specific label indicated by the contracting authority or an equivalent label within the relevant time limits for reasons that are not attributable to that economic operator, the contracting authority shall accept other appropriate means of proof* (e.g. a technical dossier from the manufacturer). (ix) Where a label also sets out requirements not linked to the subject-matter of the contract, the contracting authority shall not require the label as such but can define the technical specifications and/or award criteria referring to those detailed in the label. See article 43 of Directive 2014/24/EU. With less detail see also article 36(1) of Directive 2014/23/EU.

[92] See article 43 of Directive 2014/24/EU. With less detail see also article 36(1) of Directive 2014/23/EU. When it comes to certifying compliance with certain environmental management systems or standards, Directive 2014/24/EU asks Contracting Authorities to refer to the Eco- Management and Audit Scheme (EMAS) of the Union or to other environmental management systems as recognised in accordance with Article 45 of Regulation (EC) No 1221/2009 or other environmental management standards based on the relevant European or international standards by accredited bodies. See article 62 of Directive 2014/24/EU. See also judgment of 10 May 2012, European Commission v Kingdom of the Netherlands, C-368/10 (ECLI:EU:C:2012:284): *'the province of North Holland: established award criteria incompatible with Article 53(1)(a) of Directive 2004/18 by providing that the fact that certain products to be supplied bore specific labels would give rise to the grant of a certain number of points in the choice of the Most Economically Advantageous Tender, without having listed the criteria underlying those labels and without having allowed proof that a product satisfies those underlying criteria by all appropriate means'*

[93] The 'car labelling Directive' (Directive 1999/94/EC) aims to help consumers buy or lease cars which use less fuel and thereby emit less CO2 and to encourage manufacturers to reduce the fuel consumption of new cars. According to this Directive, EU countries must require a label showing a car's fuel efficiency and CO2 emissions. When it comes to electric motors (not integrated in other products), there are mandatory rules on ecodesign for all manufacturers and suppliers wishing to sell their products in the EU. From July 2021, Regulation on ecodesign for electric motors (EC) No 640/2009 will be repealed and replaced by Regulation on electric motors and variable speed drivers (EU) 2019/1781. Under the new rules, several induction motors that were previously not covered will be regulated. See https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/energy-efficient-products/electric-motors_en

[94] See article 44 of Directive 2014/24/EU.

[95] SIGMA, *Contract Management*. Public Procurement Brief 22. September 2016. Page 4. http://www.sigmaweb.org/publications/Public-Procurement-Policy-Brief-22-200117.pdf

[96] If falling under the 2 conditions for exclusion of article 25 of Directive 2014/23/EU, of article 14 of Directive 2014/24/EU and of article 32 of Directive 2014/25/EU.

[97] See Article 32 oof Directive 2014/24/EU: *"3. The negotiated procedure without prior publication may be used for public supply contracts: (a) where the products involved are manufactured purely for the purpose of research, experimentation, study or development; however, contracts awarded pursuant to this point shall not include quantity production to establish commercial viability or to recover research and development costs."*

[98] If the TRL is very high a public buyer can resort to Commercial Off-the-Shelf procurement by implementing one of the standards procedures of the Public Procurement Directives.

[99] The term matrix has at this point a conceptual connotation only. That is why there is no risk matrix attached.

[100] See article 5(1) of Directive 2014/23/EU.

[101] The internal rate of return (IRR) is a metric used in capital budgeting to estimate the profitability of potential investments. The internal rate of return is a discount rate that makes the net present value (NPV) of all cash flows from a particular project equal to zero.

[102] Net present value (NPV) is the difference between the present value of cash inflows and the present value of cash outflows over a period of time. NPV is used in capital budgeting and investment planning to analyze the profitability of a projected investment or project.

[103] The debt-service coverage ratio (DSCR) is a measurement of the cash flow available to pay current debt obligations. The ratio states net operating income as a multiple of debt obligations due within one year, including interest, principal, sinking-fund and lease payments.

The loan life coverage ratio (LLCR) is a financial ratio used to estimate the solvency of a firm, or the ability of a borrowing company to repay an outstanding loan. LLCR is calculated by dividing the net present value (NPV) of the money available for debt repayment by the amount of outstanding debt.