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EU green public procurement criteria for road transport

EU GPP Criteria road transport

1 INTRODUCTION

EU green public procurement (GPP) criteria are designed to make it easier for public authorities to purchase goods, services and works with reduced environmental impacts. The use of the criteria is **voluntary**. The criteria are formulated in such a way that they can, if deemed appropriate by the individual authority, be (partially or fully) integrated into the authority's tender documents with minimal editing. Before publishing a call for tender, public authorities are advised to check the available offer of the goods, services and works they plan to purchase on the market where they are operating. When a contracting authority intends to use the criteria suggested in this document, it shall do so in a manner which ensures compliance with the requirements of EU public procurement legislation (see, for instance, Articles 42, 43, 67(2) or 68 of Directive 2014/24 and similar provisions in other EU public procurement legislation). Practical reflections on this matter is also provided the 2016 handbook on buying green, available at http://ec.europa.eu/environment/gpp/buying_handbook_en.htm

This document lists the EU GPP criteria revised for road transport. An accompanying technical report provides the full rationale for selecting these criteria and gives references for further information. The criteria are split into selection criteria, technical specifications, award criteria and contract performance clauses. The criteria are of two types:

- ***Core criteria*** — which *are designed to allow for easy application of GPP, focusing on the key area(s) of environmental performance of a product and aimed at keeping administrative costs for companies to a minimum*.
- ***Comprehensive criteria*** — *which take into account more aspects or higher levels of environmental performance, for use by authorities that want to go further in supporting environmental and innovation goals*.

The formulation 'same for core and comprehensive criteria' is inserted if the criteria are identical for both types.

1.1 Definition and Scope

The product group 'road transport' includes the following categories of vehicles and services:

Category 1: 'Purchase, lease or rental of cars, light commercial vehicles (LCVs) and L-category vehicles':

- 'Cars and LCVs': M_1 and N_1 vehicles, as defined by Directive 2007/46;
- 'L-category' vehicles as defined by Regulation 168/2013.
  Special-purpose vehicles such as armoured vehicles are excluded from the scope.

Category 2: 'Mobility services':

- 'Special-purpose road passenger-transport services' as covered by common procurement vocabulary (CPV) code 60130000-8
- 'Non-scheduled passenger transport' as covered by CPV code 60140000-1. This should cover contracted public transport services (public transport contracted out to taxi companies, i.e. transport carried out for pupils/students who are not able to travel by themselves).
- 'Hire of buses and coaches with driver' as covered by CPV code 60172000-3
- 'Taxi services' as covered by CPV code 60120000-5.
- 'Car sharing': in this category, an organisation owns the vehicles and the platform. It is usually more standardised and reliable than the peer services, and some carmakers have an associated car sharing company.
- 'Combined mobility services' (CMS); services based on a new business model that offer a wide range of combined mobility options and offer it to users based on subscription and unified invoicing, possibly also with the services offered as packages adapted to the customer's needs, for example, a package of the trips usually done along the week. CMS are supported by some form of digital interface for the customer (app, web-based service etc.).
- 'Cycles': Bicycles (CPV codes 34430000-0 and 34431000-7), cycle trailers, electrically power-assisted cycles (CPV code 34420000-7),
- 'Light electric vehicles and self-balancing vehicles' whose specific definitions are under development by CEN/TC 354 /WG 4.
- Definitions of cars, LCVs, L-category vehicles and buses also apply to this category

Category 3 'Purchase or lease of buses':

- 'M_2 and M_3 vehicles, as defined by Directive 2007/46.

- Category M_2: Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass not exceeding 5 tonnes.
- Category M_3: Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 tonnes

Category 4: 'Bus services':

- 'Bus services' or 'Public transport services': The services should be defined as those covered by CPV codes 60112000-6 (Public road transport services).

Category 5: 'Waste collection trucks':

- Vehicles of category N_2 and N_3, or heavy duty vehicles (HDVs), as defined by Directive 2007/46, that are designed to provide services that fall into the CPV categories of 'Refuse collection services' (CPV code: 90511000-2) and 'Refuse transport services' (90512000-9).

Category 6: 'Waste collection services':

- Services that fall into the CPV categories of 'Refuse collection services' (90511000-2) and 'Refuse transport services' (90512000-9)

Category 7: 'Post, courier and moving services':

- Services that fall into the CPV categories for various postal, courier and moving services:
  - Group 641 Post and courier services, with the exception of rail, airmail and mail transport over water
  - 79613000-4 Employee relocation services
  - 63100000-0 Cargo handling and storage services
  - 98392000-7 Relocation services

(Please refer to the technical report for details and further technical definitions)

1.2 General note on verification

For a small number of criteria, the proposed means for verifying is to provide test reports. For each of the criteria, the relevant test methods are indicated. It is up to the public authority to decide at which stage such test results should be provided. In general, it does not seem necessary to require all tenderers to provide test results from the outset. To reduce the burden on tenderers and public authorities, a self-declaration could be considered sufficient when submitting bids. Then, there are different options for if and when these tests could be required:

a) At tendering stage:

For *one-off supply contracts*, the bidder with the most economically advantageous tender could be required to provide this proof. If the proof is deemed to be sufficient, the contract can be awarded. If the proof is deemed insufficient or non-compliant then:

i) where the means of verification concerns a technical specification, the proof would be requested from the next highest scoring bidder who would then be considered for contract award;

ii) where the means of verification concerns an award criterion, the additional points awarded would be removed and the tender ranking would be recalculated with all the ensuing consequences applying.

A test report verifies that a sample product has been tested for certain requirements, not the items actually delivered under the contract. For framework contracts, the situation may be different. This scenario is covered further in the next point on contract execution and in the additional explanations below.

b) During contract execution:

Test results could be requested for one or several items delivered under the contract, either in general, or if there are doubts about false declarations. This is particularly important for framework contracts which do not stipulate an initial order.

It is recommended to explicitly set contract performance clauses. These should stipulate that the contracting authority is entitled to carry out random verification tests at any time during the term of the contract. If the results of such tests show that the delivered products do not meet the criteria, the contracting authority is entitled to apply penalties and may terminate the contract. Some public authorities include conditions that if, following the tests, the product is meeting their requirements, the testing costs have to be borne by the public authority; but if the requirements are not met, the costs have to be borne by the supplier.

For *framework agreements*, the point at which proof has to be provided will depend on the specific set-up of the contract:

i) For framework agreements with a single operator where the individual items to be delivered are identified when awarding the framework agreement, and where it is just a question of how many units will be needed, the same considerations apply as for the one-off supply contracts described above;

ii) For framework agreements that pre-select several potential suppliers with ensuing competitions among those pre-selected, tenderers will only need to show at this initial pre-selection stage their capability to deliver items meeting the minimum performance requirements of the framework agreement. For ensuing call-down contracts (or orders) that are awarded following the competition among the pre-selected suppliers, in principle the same considerations as under a) and b) above apply, if additional requirements have to be proven under the competition. If the competition is decided only on the basis of price, then a check at the contract execution stage should be considered.

Please also note that, according to Art. 44 (2) of Directive 2014/24/EU, contracting authorities must accept other appropriate means of proof. This could include a technical dossier of the manufacturer where the economic operator concerned had no access to test reports or no possibility of obtaining them within the relevant time limits. This is under the condition that the lack of access was not attributable to the economic operator concerned and that the economic operator concerned proves that the works, supplies or services provided by it meet the requirements or criteria set out in the technical specifications, the award criteria or the contract performance conditions. In case there is a reference to a certificate/test report drawn up by a specific conformity assessment body for the execution of the tests, contracting authorities must also accept certificates/test reports issued by other equivalent assessment bodies.

2 KEY ENVIRONMENTAL IMPACTS

Based on the available scientific evidence, the main environmental impacts of road transport from the lifecycle perspective are summarised in the table below (for further details, see the technical report). The same table also presents the EU GPP approach to mitigate or reduce those impacts.

Key environmental impacts during product lifecycle	EU GPP approach
• Greenhouse gas (GHG) and air pollutant emissions produced by energy consumption during the use phase • GHG and air pollutant emissions produced along the supply chain of the energy carriers • Environmental impacts produced during the manufacture of batteries of electric vehicles • Noise emissions produced by the vehicle and tyres during the use phase	• Require criteria on type-approval CO_2 emissions for cars and LCVs, and specific technologies for heavy duty vehicles and L-category vehicles • Require criteria based on air pollutant emissions performance for cars and LCVs, and specific technologies for heavy duty vehicles and L-category vehicles • Require criteria on rolling resistance of tyres • Require criteria on energy efficiency for electric cars and LCVs • Require criteria on battery warranties • Require criteria on vehicle and tyres noise emissions • Require key competences and the application of key environmental management measures and practices from service providers • Require adequate and frequent training for the staff of service providers • Require criteria on tyres and lubricants for maintenance activities

The order of impacts does not necessarily reflect their magnitude.

Detailed information about road transport, including information about related legislation, standards and technical sources used as evidence, can be found in the technical report.

3 EU GPP CRITERIA FOR THE PURCHASE, LEASE OR RENTAL OF CARS, LIGHT COMMERCIAL VEHICLES (LCVS) AND L-CATEGORY VEHICLES (CATEGORY 1)

3.1 Subject matter

SUBJECT MATTER
Purchase, lease or rental of cars, light commercial vehicles (LCVs) and L-category vehicles with low environmental impact. Special purpose vehicles such as armoured vehicles are excluded from the scope.

3.2 Technical specifications and award criteria

Important: Common criteria for vehicle categories (Section 10) also apply to this category

<table>
<tr><th>Core criteria</th><th>Comprehensive criteria</th></tr>
<tr><th colspan="2">TECHNICAL SPECIFICATION (TS)</th></tr>
<tr><td>TS1. Type-approval CO_2 value
Type-approval CO_2 emissions of vehicles must not exceed the following values:
<table><tr><th>Vehicle type[1)]</th><th>CO_2 g/km</th></tr><tr><td>Cars — Small (M_1)</td><td>2018: 86 (NEDC)[2)]
2019: 103 (WLTP)[2)]
2020: 99 (WLTP)
2021: 95 (WLTP)</td></tr><tr><td>Cars — Mid-size (M_1)</td><td>2018: 94 (NEDC)
2019: 104 (WLTP)
2020: 100 (WLTP)</td></tr></table></td><td>TS1. Type-approval CO_2 value
Type-approval CO_2 emissions of vehicles must not exceed the following values:
<table><tr><th>Vehicle type</th><th>CO_2 g/km</th></tr><tr><td>All M_1 and N_1 vehicles</td><td>2018: 45 (NEDC)
2019: 40 (WLTP)
2020: 35 (WLTP)
2021: 25 (WLTP)</td></tr></table>
L-category vehicles must be battery electric.</td></tr>
</table>

	2021: 97 (WLTP)		**Verification:** The tenderer must provide the vehicle's certificate of conformity.
Cars — Large (M_1)	2018: 107 (NEDC) 2019: 111 (WLTP) 2020: 106 (WLTP) 2021: 102 (WLTP)		
LCV — Small (diesel, N_1 class I)	2018: 93 (NEDC) 2019: 116 (WLTP) 2020: 113 (WLTP)		
LCV — Small (petrol, N_1 class I)	2018: 117 (NEDC) 2019: 135 (WLTP) 2020: 131 (WLTP)		
LCV — Mid-size (N_1 class II)	2018: 127 (NEDC) 2019: - From 01/01 to 31/08/2019: 124 (NEDC) - From 01/09/2019: 157 (WLTP) 2020: 153 (WLTP)		
LCV — Large (N_1 class III)			
2018: 151+0.096*(M — 1766.35) (NEDC) 2019: - From 01/01 to 31/08/2019: 147+0.096*(M — 1766.35) (NEDC) - From 01/09/2019: 193 +0.096*(M — 1766.35) (WLTP) 2020: 188 +0.096*(M — 1766.35) (WLTP) Where M is the mass of the vehicle			

Verification: The tenderer must provide the vehicle's certificate of conformity.	
TS2. Air pollutant emissions *Note: this criterion applies to M_1 and N_1 vehicles with a reference mass[1)] not exceeding 2 610 kg. M_1 and N_1 vehicles with a reference mass exceeding 2 610 kg will have to comply with TS2 Air pollutant emissions of category 3 (Section 5.2).* From 1 September 2019, all new cars and LCVs must comply with a real driving emission (RDE) performance which is at most the Euro 6 limit values for NOx and PN (not including the applicable measurement margin[2)]). From 1 January 2021, all new cars and LCVs must comply with an RDE emission performance which is at most equal to 0.8 times the Euro 6 limit values for NOx and PN (not including the applicable measurement margin[2)]). *If purchasing vehicles to be used in areas with air quality issues[3)]:* Vehicles must have zero tailpipe emissions. *If there is no charging infrastructure available, or the expected use profile requires large ranges:*	**TS2. Air pollutant emissions** *If purchasing vehicles to be used in areas with air quality issues:* Vehicles must have zero tailpipe emissions. *If there is no charging infrastructure available, or the expected use profile requires large ranges:* The vehicles may at the least be zero tailpipe emissions capable, meaning a car that can travel a minimum range without emitting any tailpipe emissions. *The contracting authority will set the minimum zero tailpipe emissions range according to the expected use profiles in the call for tender (a proposed default range could be 40 km). From 2019, the range without emitting any tailpipe emissions will be the electric range over WLTP.* **Verification:** The tenderer must provide the vehicle's certificate of conformity.

The vehicles may at the least be zero tailpipe emissions capable, meaning a car that can travel a minimum range without any tailpipe emissions. *The contracting authority will set the minimum zero tailpipe emissions range according to the expected use profiles in the call for tender (a proposed default range could be 40 km). From 2019, the range without emitting any tailpipe emissions will be the electric range over WLTP* **Verification:** The tenderer must provide the vehicle's certificate of conformity.	
TS3. Gear shift indicators (GSI) *Note: this criterion does not apply to automatic vehicles. The criterion is not relevant for electric and plug-in hybrid vehicles, so it is not part of the comprehensive criterion.* LCVs must be equipped with a gear shift indicator, meaning a visible indicator recommending that the driver shift gear. **Verification:** The tenderer must provide the technical sheet of the vehicle where this information is stated.	
TS4. Energy consumption display (*Same for core and comprehensive)* The vehicles must be equipped with a mechanism to display to the driver fuel consumption figures. **Verification:** The tenderer must provide the technical sheet of the vehicle where this information is stated.	
	TS5. Traffic information and route optimisation

	Note: This criterion may be requested by contracting authorities if the vehicle is to be used in urban areas with congestion issues, or to be driven to places that the drivers are not familiar with and no other information system (e.g. smartphones) is available. *Note: This criterion will not apply to vehicles used for special purposes that require a high level of floating car data protection, e.g. security forces fleets, official vehicles used by members of the government, etc.* Vehicles must be equipped with traffic information and route optimisation systems meant to interact with the driver providing pre-trip information services to help avoid congestion and make other journey choices to optimise the trip route. The system must be an embedded system, meaning a complete communication module, consisting of a modem and a subscriber identity module (SIM), permanently integrated into the car **Verification:** The tenderer must provide the technical sheet of the vehicle where this information is stated.
TS6 Minimum warranty (*Same for core and comprehensive)* *If the contracting authority is requiring battery electric vehicles:* The tenderer must provide a minimum warranty of the battery of 150 000 km or 8 years against capacity loss below 70 % of its original value at delivery according to EN 62660[1)]. **Verification:** The tenderers must present a declaration with the warranty terms.	

<table>
<tr><th colspan="2">AWARD CRITERIA (AC)</th></tr>
<tr><td colspan="2">AC1. Lower CO_2 emissions(same for core and comprehensive)
Points will be awarded to vehicles presenting lower type-approval CO_2 emissions than those required in TS1 Type-approval CO2 value, in proportion to the reduction achieved.
Verification:
See above TS1</td></tr>
<tr><td></td><td>AC2 Energy efficiency
If the public authority is requiring battery electric vehicles:
Points will be awarded to those vehicles with higher energy efficiency expressed in kWh/100km according to the NEDC test procedure[3)] in 2018 and WLTP test procedure in 2019 and beyond.
Verification:
The tenderer must provide the vehicle’s certificate of conformity.</td></tr>
<tr><td colspan="2">AC3. Improved air pollutant emissions performance (Same for core and comprehensive)
Note: this criterion applies to M_1 and N_1 vehicles with a reference mass not exceeding 2 610 kg. M_1 and N_1 vehicles with a reference mass exceeding 2 610 kg will have to comply with AC3 Improved air pollutant emissions performance of category 3 (Section 5.2).

Points will be awarded proportionally to the air polluting emissions performance to vehicles that have an RDE performance better than Euro 6 limit values for NOx and PN (not including the applicable measurement margin).

Points will be awarded according to the following formula:</td></tr>
</table>

$$Points = \left(\frac{NOx_{high} - NOx}{NOx_{high} - NOx_{low}}\right) \times PNOx_{max} + \left(\frac{PN_{high} - PN}{PN_{high} - PN_{low}}\right) \times PPN_{max}$$

Where

- NOx_{high} and NOx_{low} is the highest and lowest NOx emissions in mg/km among the offers presented to the call for tender.
- PN_{high} and PN_{low} is the highest and the lowest PN emissions in #/km among the offers presented to the call for tender
- *NOx and PN* are the NOx and PN emissions of the offer evaluated
- $PNOx_{max}$ *and* PPN_{max} are the maximum points to be awarded for each air pollutant.

Verification:

The tenderer must provide the vehicle's certificate of conformity.

AC4. Zero tailpipe emission capability (*Same for core and comprehensive)*

Note: this criterion applies to M_1 and N_1 vehicles with a reference mass not exceeding 2 610 kg. M_1 and N_1 vehicles with a reference mass exceeding 2 610 kg will have to comply with AC3 Improved air pollutant emissions performance of category 3 (Section 5.2).

Points will be awarded to those vehicles that can demonstrate a minimum zero tailpipe emission capability, meaning the range the car can travel without any tailpipe emissions, in proportion to the capability of the vehicle. *The contracting authority will set the minimum zero tailpipe emissions range reference threshold according to the expected use profiles in the call for tender (a proposed default range could be 40 km).*

Verification:

The tenderer must provide the vehicle's certificate of conformity.	
	AC5. Speed limiter Points will be awarded to those vehicles equipped with a speed limiting device, meaning an on-board device that automatically limits a vehicle's speed to a certain maximum speed as set in the device. **Verification:** The tenderer must present the technical sheet of the vehicle where this information is stated
AC6 Extended warranty (*Same for core and comprehensive)* *If the contracting authority is requiring battery electric vehicles:* Points will be awarded to those tenders offering an extension of the minimum warranty set by the TS6 Minimum warranty in proportion to the value of the extension. **Verification:** Same as TS7	

3.3 Explanatory notes

Explanatory notes
TS1. Type-approval CO_2 value [1)] *The definitions of the three vehicle types for cars are provided in the table below.*

Passenger car types used in	***Corresponding segments according to segmentation used by the European Commission***

GPP criteria	***(http://ec.europa.eu/competition/mergers/cases/decisions/m1406_en.pdf)***
Small	*A: mini cars* *B: small cars*
Mid-size	*C: medium cars*
Large	*D: large cars* *E: executive cars* *F: luxury cars* *S: sport coupés* *M: multi-purpose cars* *J: sport utility cars (including off-road vehicles)*

[2] *Since September 2017, the new worldwide harmonised light vehicle test procedure (WLTP) is in place and type approval of all new vehicles will fully change to the new test by 2019. The Commission recommends that until the end of 2018 new European driving cycle (NEDC) type approval data be used for the purpose of communicating to consumers (Commission Recommendation (EU) 2017/948). According to the provisions of this recommendation, from beginning 2019 onward, only the CO2 type approval measured with WLTP should be communicated to consumers for all cars and vans except. N1 Class II and Class III, for which the date of implementation is deferred to September 2019.*

[3] *A reduction of 10 Wh/km in the energy efficiency of a battery electric vehicle travelling an average of 10 000 km/year can save from EUR 15 to EUR 20 per year, depending on the electricity price.*

TS2. Air pollutant emissions

[1] *'Reference mass' means the mass of the vehicle in running order, as declared in the certificate of conformity, minus the uniform mass of the driver*

of 75 kg, plus a uniform mass of 100 kg;

[2)] The RDE max values will be declared in the certificate of conformity as mg/km or particle number/km, as appropriate, and will not include the measurement margin which is only linked with the uncertainties of the measurement equipment. This is because the uncertainty margin of 0.5, currently set in legislation, is under review and thus bound to change. Therefore, if a manufacturer declared a value today with the applicable margin added (i.e. value+margin 2017), and the margin was subsequently lowered in 2018, that declaration would be at a disadvantage compared to a manufacturer who would declare in 2018 (i.e. value+margin 2018), although the two cars would have the same emissions.

The table below lists the RDE NOx max and PNmax limit values to qualify under the EU GPP criteria, which the values declared in the vehicle's certificate of conformity will have to comply with.

NOx max/ PNmax limit values to qualify for EU GPP (light-duty vehicles covered by RDE), not including the applicable measurement margin						
1 September 2019 to 31 December 2020	M and N_1 Class I		N_1 class 2		N_1 class III	
	Diesel	Gasoline	Diesel	Gasoline	Diesel	Gasoline
NOx (mg/km)	80	60	105	75	125	82
PN (#/km)	6×10^{11}	6×10^{11}	6×10^{11}	6×10^{11}	6×10^{11}	6×10^{11}

From 1 January 2021	M and N_1 Class I		N_1 class 2		N_1 class III	
	Diesel	Gasoline	Diesel	Gasoline	Diesel	Gasoline
NOx (mg/km)	64	48	84	60	100	66
PN (#/km)	5×10^{11}	5×10^{11}	5×10^{11}	5×10^{11}	5×10^{11}	5×10^{11}

[3)]Areas with air quality issues are those areas where traffic restriction measures are put in place to comply with the air pollutant emissions limits set by the Air Quality Directive (Directive 2008/50/EC)
TS6 Minimum warranty *[1)] The technology of electric vehicles is evolving very quickly towards more durable and reliable batteries. For that reason, the thresholds proposed in this criterion should be cross-checked with the options available in the market at the moment of the call for tenders.*

4 EU GPP CRITERIA FOR MOBILITY SERVICES (CATEGORY 2)

4.1 Subject matter

SUBJECT MATTER
Purchase of special-purpose bus services, non-scheduled bus services, hire of buses and coaches with driver services, taxi services, car sharing services and combined mobility services with low environmental impact.

4.2 Technical specifications and award criteria

Important: Common criteria for service categories (Section 11) also apply to this category

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATION	
TS1. Air pollutant emissions *Note: the contracting authority will set in the call for tender what types of vehicles are required to provide the service.*	**TS1. Air pollutant emissions** *Note: the contracting authority will set in the call for tender what types of vehicles are required to provide the service.*

All buses used in carrying out the service must meet at least Euro V. 2018: 40 % of buses must meet Euro VI. 2019: 48 % of buses must meet Euro VI. 2020: 56 % of buses must meet Euro VI. 2021: 64 % of buses must meet Euro VI.	TS1.1. All buses used in carrying out the service must meet at least Euro V. 2018: 60 % of buses must meet Euro VI. 2019: 68 % of buses must meet Euro VI. 2020: 76 % of buses must meet Euro VI. 2021: 84 % of buses must meet Euro VI.
Where vehicles are not certified as meeting Euro V or higher, but technical after-treatment has achieved the same standard, this should be documented in the tender. All cars and LCVs used in carrying out the service must meet at least Euro 5. 2018: 40 % of cars and LCVs must meet Euro 6. 2019: 50 % of cars and LCVs must meet Euro 6. 2020: 60 % of cars and LCVs must meet Euro 6. 2021: 70 % of cars and LCVs must meet Euro 6.	Where vehicles are not certified as meeting Euro V or higher, but technical after-treatment has achieved the same standard, this should be documented in the tender. All cars and LCVs used in carrying out the service must meet at least Euro 5. 2018: 60 % of cars and LCVs must meet Euro 6. 2019: 70 % of cars and LCVs must meet Euro 6. 2020: 80 % of cars and LCVs must meet Euro 6. 2021: 90 % of cars and LCVs must meet Euro 6.
All L-category vehicles used in carrying out the service must meet at least Euro 3. 2018: 40 % of L-category vehicles must meet Euro 4. 2019: 50 % of L-category vehicles must meet Euro 4. 2020: 60 % of L-category vehicles must meet Euro 4. 2021: 70 % of L-category vehicles must meet Euro 4. The tier applicable will correspond to the year that the call for tender	All L-category vehicles used in carrying out the service must meet at least Euro 3. 2018: 60 % of L-category vehicles must meet Euro 4. 2019: 70 % of L-category vehicles must meet Euro 4. 2020: 80 % of L-category vehicles must meet Euro 4. 2021: 90 % of L-category vehicles must meet Euro 4. The tier applicable will correspond to the year that the call for tender is

is launched. **Verification:** The tenderer must provide the technical sheets of the vehicles where emission standards are defined. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must have been verified by an independent third party	launched. TS1.2. *In the case of mobility services to be used in areas with air quality issues:* *[the contracting authority may set a percentage, all the vehicles of the fleet, specific vehicle categories or sub-categories or the vehicles to be used in specific routes, see explanatory note]* cars, LCVs and L-category vehicles must have zero tailpipe emissions. *If there is no charging infrastructure available, or the expected use profile requires large ranges:* the vehicles may at the least be zero tailpipe emissions capable, meaning they can travel the minimum range of 40 km without emitting any tailpipe emissions. **Verification:** the tenderer must present the list of vehicles of the service fleet and their certificates of conformity.
AWARD CRITERIA	
AC1. CO_2 emissions (*Same for core and comprehensive)* *Note: the contracting authority will set in the call for tender what types of vehicles are required to provide the service.* ***For cars and LCVs*** Points will be awarded to those tenders offering a service fleet whose average CO_2 type approval is equal or below the core TS1 CO_2 emissions of category 1 (Section 3.2), proportionally to the average CO_2 type approval of the fleet.	

For buses

Points will be awarded to those tenders offering a service fleet composed of *[the contracting authority may set a percentage, all the vehicles of the fleet, specific vehicle categories or sub-categories or the vehicles to be used in specific routes, see explanatory note]* vehicles equipped with one of the eligible technologies set by the core TS1 of category 3 (Section 5.2).

Verification: the tenderer must present, in a spreadsheet, the list of vehicles of the service fleet, their CO_2 emissions type approval (supported by the respective certificates of conformity) and the calculation of their average, for cars and vans, or the technical sheet of the vehicle where these technologies are stated, for buses.

AC2. Air pollutant emissions (*Same for core and comprehensive, not applicable if zero tailpipe emissions required for all vehicles in the technical specification TS1.2.)*

Points will be awarded to those tenders offering either:

(a). a higher percentage than the one set by the TS1, or

(b). cars and vans and L-category vehicles that have an emission performance better than Euro 6/4, or

(c). natural gas buses and zero-emission capable vehicles, meaning with a minimum range of 40 km without emitting any tailpipe emissions for cars and LCVs, and plug-in hybrid electric vehicles (PHEV), battery electric vehicles (BEV) for buses and L-category vehicles, and fuel cell electric vehicles (FCEV) for buses.

(to be detailed to what extent points will be attributed to higher percentages, better performance and zero tailpipe vehicles. Zero tailpipe vehicles must be given more points than vehicles with better performance than Euro 6/4 and natural gas buses).

Verification:

See TS1 above

4.3 Explanatory notes

Explanatory notes
Combined mobility services *Combined mobility services (CMS) offer a wide range of combined mobility options which usually include public transport and renting bicycles. A key feature of CMS is the capacity to meet the travel demands of customers using the most appropriate and efficient transport mode, or combination of modes. The mobility solutions are optimised to reduce the ratio energy consumed per distance and passenger (energy/[km.passenger]); this is achieved by prioritising the non-motorised vehicles and public transport modes. Therefore, the level of multi and intermodality is a crucial element in meeting the travel need in the most efficient way. The level of multi and intermodality of the mobility service could be defined as the different types of transport modes that the service is able to offer, and its combinations in one trip. Transport modes are understood to mean: private cars, L-category vehicles, electric bikes, bikes, public transport, ride sharing, etc. The combined mobility services are still at a very early stage of development. However, the potential of this type of service to stimulate the modal shift towards non-motorised and public transport services is very significant, and it is recommended that public procurers explore the possibility of procuring combined mobility services instead of other mobility services that do not offer intermodality, if there are operators available.*

5 EU GPP CRITERIA FOR THE PURCHASE OR LEASE OF BUSES (CATEGORY 3)

5.1 Subject matter

SUBJECT MATTER
Purchase or lease of city buses and coaches defined as M_2 and M_3 vehicles by Directive 2007/46 with low environmental impact.

5.2 Technical specifications and award criteria

Important: Common criteria for vehicle categories (Section 10) also apply to this category

<table>
<tr><th>Core criteria</th><th>Comprehensive criteria</th></tr>
<tr><th colspan="2">TECHNICAL SPECIFICATION</th></tr>
<tr><td>

TS1 Technological improvement options to reduce GHG emissions

City buses

The vehicle must be equipped with one of the technologies classified as A or B in Table 1

Table 1: List of eligible technologies for city buses — core level

Technology	Class
Mild hybrid	B
Flywheel hybrid	B
Full Series hybrid	B
Full Parallel hybrid	B

</td><td>

TS1 Technological improvement options to reduce GHG emissions

City buses

The vehicles must be equipped with one of the technologies classified A in Table 3

Table 3: List of eligible technologies for city buses — comprehensive level

Technology	Class
Full electric and plug-in vehicle	A
Hydrogen fuel cell vehicle *)	A under the conditions set in the note below
OEM dual-fuel natural gas vehicle	A under the conditions

</td></tr>
</table>

Full electric and plug-in vehicle	A
High pressure direct injection natural gas vehicles	B by default, A under the conditions set in the note below
Original Equipment Manufacturer (OEM) dual-fuel natural gas vehicle with a gas energy ratio over the hot part of the world harmonised transient Cycle (WHTC) test-cycle of at least 50 % *)	B or A under the conditions set in the note below
Hydrogen fuel cell vehicle*)	B or A under the conditions set in the note below
Dedicated natural gas vehicles*)	B or A under the conditions set in the note below

**) Hydrogen and natural gas vehicles require a minimum percentage of renewable fuel supply to be classified B (see Explanatory notes, Section 5.3)*

Coaches and inter-urban buses

with a gas energy ratio over the hot part of the WHTC test-cycle of at least 50 % *)	set in the note below
High pressure direct injection natural gas vehicles *)	A under the conditions set in the note below
Dedicated natural gas vehicles *)	A under the conditions set in the note below

**) Hydrogen and natural gas vehicles require a minimum percentage of renewable fuel supply to be classified A(see Explanatory notes, Section 5.3)*

Coaches and inter-urban buses

The vehicle must be equipped with one of the technologies classified A in Table 4

Table 4: List of eligible technologies for coaches and inter-city buses — comprehensive level

Technology	**Class**
Hydrogen fuel cell vehicle *)	A under the conditions set in the note below
OEM dual-fuel natural gas vehicle with a gas energy ratio over the hot part of the WHTC test-cycle of at least 50 % *)	A under the conditions set in the note below
High pressure direct injection	A under the conditions

The vehicle must be equipped with one of the technologies in Table 2

Table 2: List of eligible technologies for coaches and inter-city buses — core level

Technology	**Class**
Active flow control	C
Boat tails/ extension panels	C
Mild hybrid (only for inter-city buses)	C
Flywheel hybrid (only for inter-city buses)	C
Full Series hybrid (only for inter-city buses)	C
Full Parallel hybrid (only for inter-city buses)	C
OEM dual-fuel natural gas vehicle with gas energy ratio over the hot part of the WHTC test-cycle of at least 50 %.	C by default, B or A under the conditions set in the note below
High pressure direct injection natural gas vehicles	B by default, A under the conditions set in the note below
Dedicated natural gas vehicles *)	A under the conditions set in the note below
Full electric and plug-in vehicle**[*)]	A

**) Hydrogen and natural gas vehicles require a minimum percentage of renewable fuel supply to be classified A (see Explanatory notes, Section 5.3)*

***) Currently, plug-in hybrid technology is not being used for inter-city buses and coaches, and although its future use cannot be discarded, there is not a clear usage pattern visible at the moment*

Verification:

The tenderer must present the technical sheet of the vehicle where these technologies are stated.

	the note below
Hydrogen fuel cell vehicle	C by default, B or A under the conditions set in the note below
Dedicated natural gas vehicles*)	C, B or A under the conditions set in the note below
Full electric and plug-in vehicle*[*)]	A

**) Dedicated natural gas vehicles require a percentage of renewable methane supply to be qualified as eligible (see Explanatory notes, Section 5.3)*

***) Currently, plug-in hybrid technology is not being used for inter-city buses and coaches, and although its future use cannot be discarded, there is not a clear usage pattern visible at the moment*

Verification:

The tenderer must present the technical sheet of the vehicle where these technologies are stated.

TS2. Air pollutant emissions performance (*Same for core and comprehensive)*

M_3 vehicles and M_2 vehicles with a reference mass[1)] exceeding 2 610 kg must meet Euro VI.

M_2 vehicles with a reference mass[1)] not exceeding 2 610 kg must comply with the TS2 Air pollutant emission performance of category 1 (Section

<table>
<tr><td colspan="2">3.2).

Verification:
The tenderer must present the vehicle’s certificate of conformity. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must be verified by an independent third party.</td></tr>
<tr><td colspan="2">TS3. Exhaust pipes (location) (Same for core and comprehensive)
Vehicles’ exhaust pipes must be located on the opposite side of the passenger door at the rear of the vehicle.
Verification:
The tenderer must provide the technical sheet of the vehicle.</td></tr>
<tr><td colspan="2">AWARD CRITERIA</td></tr>
<tr><td>AC1. Technological improvement options to reduce GHG emissions

Points will be awarded to those vehicles equipped with one of the technologies classified A, in Table 1 for city buses, and A or B in Table 2 for coaches. This technology does not have to be additional to the technology compliant with the TS1 Technological improvement options to reduce GHG emissions

Verification: same as TS1.</td><td></td></tr>
<tr><td></td><td>AC2. Air conditioning gases</td></tr>
</table>

	Points will be awarded to those vehicles equipped with an air conditioning system that uses a refrigerant whose global warming potential (GWP), as a factor of CO2 and over a time horizon of 100 years, is below 150.**Verification**: The tenderer must provide the name, formula and GWP of the refrigerating gas used in the air conditioning system. If a mixture of gases is used (n number of gases), the GWP will be calculated as follows: GWP= Σ(Substance X1 % x GWP(X1)) + (Substance X2 % x GWP(X2)) + … (Substance Xn % x GWP(Xn)) where % is the contribution by weight with a weight tolerance of +/- 1 %. GWP of gases can be found in Annexes I and II of Regulation (EU) No 517/2014 (http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.150.01.0195.01.ENG)
AC3. Improved air pollutant emissions performance M_3 vehicles and M_2 vehicles with a reference mass exceeding 2 610 kg: Points will be awarded to the following technologies: • natural gas • plug-in hybrid electric vehicles (PHEV)[2)] • battery electric vehicles (BEV) and • hydrogen fuel cell electric vehicles (FCEV). *(to be detailed to what extent more points will be attributed to zero tailpipe capable vehicles, i.e. plug-in hybrid electric vehicles (PHEV),*	

battery electric vehicles (BEV), and fuel cell electric vehicles (FCEV). Zero tailpipe emissions capable vehicles must be given more points than natural gas buses). M_2 vehicles with a reference mass not exceeding[1)] 2 610 kg: the formula of the AC3 Improved air pollutant emissions performance and AC4 Zero tailpipe emission capability of category 1 (Section 3.2) will be applied. **Verification:** The tenderer must provide the vehicle's certificate of conformity. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must be verified by an independent third party.	

5.3 Explanatory notes

Explanatory notes
TS1 Technological improvement options to reduce GHG emissions <u>*Upgrading and qualification of technologies*</u> *The contracting authorities may classify fuel cell electric vehicles as class B, if they have a supply of hydrogen produced with renewable sources generated on-site, meeting at least 5 %, or A, if they have a supply of hydrogen produced with renewable sources generated on-site, meeting at least 15 % of their demand.* *The contracting authorities may classify an OEM dual-fuel natural gas vehicle as class B or A, if they have a supply of renewable methane meeting at least 15 % or 35 % of their demand, respectively* *The contracting authorities may classify high pressure direct injection natural gas vehicles as class A, if they have a supply of renewable methane*

meeting at least 10 % of their demand, respectively.

The contracting authorities may qualify dedicated natural gas vehicles as class C, B or A, if they have a supply of renewable methane meeting at least 10 %, 15 % or 25 % of their demand, respectively.

Renewable methane means biomethane and synthetic methane produced with a surplus of renewable electricity, meaning the renewable electricity production that exceeds the demand during certain periods and creates a surplus production of electricity (power-to-gas).

Description of some technologies

Mild hybrid: System uses an electric motor mounted to the crankshaft to operate stop / start and recover braking energy; recovered energy is used to boost acceleration and for electrified ancillaries.

Flywheel hybrid: An additional high speed flywheel that stores and releases energy from/to the vehicle driveline. The flywheel stores energy while braking, releasing it to supplement or temporarily replace the engine output. Flywheel technology does not include stop / start functionality.

Full parallel hybrid: Electric/diesel hybrid where electrical power is routed to/from the wheels in parallel to the mechanical drive from the engine. Direct drive via a relatively conventional transmission remains between the engine and wheels.

Full series hybrid: Electric/diesel hybrid without conventional transmission, engine generates electricity that is stored in a battery and used to power a separate traction motor. Electrical machines and battery are higher power than in equivalent parallel.

Active flow controls: Active flow control is a system that actively pressurises the lower pressure-vortex or vacuum that develops behind the vehicle.

Boat tail / extension panels: Panels at the rear of the vehicle that assist in the pressure equilibrium between the front and the rear of the vehicle facilitating the air flow and reducing the air drag.

TS2. Air pollutant emissions

[1)] 'Reference mass' means the mass of the vehicle in running order, as declared in the certificate of conformity, minus the uniform mass of the driver of 75 kg, plus a uniform mass of 100 kg;

[2)] In the case of plug-in hybrid electric vehicles, the total daily hours that a city bus is operated in full electric depends on the specific duty cycle and

the charging strategy. Therefore, the contracting authorities need to ensure that the plug-in hybrid buses will be able to maximise their daily hours of operation in full electric mode along their daily cycles using the charging infrastructure available.

Information to set the warranty terms of the batteries for battery electric vehicles

(If the contracting authority is requiring battery electric vehicles)

According to the ZeEUS eBus report 'An updated overview of electric buses in Europe', the suppliers of LiFePO4 batteries usually offer warranty periods ranging from 2 to 5 years, 4-5 years being the most frequent period. There is less data on lithium nickel manganese cobalt oxide (LiNiMnCoO2 or NMC) batteries, which range from 2 to 6 years. Lithium titanate batteries show higher warranty periods, up to 15 years, and graphene ultracapacitors from 8 to 11 years. Other suppliers offer tailored warranties depending on the leasing contract, which may include performance monitoring over an agreed timeframe.

Further details can be found in the ZeEUS eBus report 'An overview of electric buses in Europe': http://zeeus.eu/uploads/publications/documents/zeeus-ebus-report-internet.pdf

The technology of electric vehicles is evolving very quickly towards more durable and reliable batteries. For that reason, the public authority should look at the latest available information on what the market can deliver when formulating the call for tenders.

Public authorities could also reward longer warranty periods via an award criterion.

6 EU GPP CRITERIA FOR THE PURCHASE OF BUS SERVICES (CATEGORY 4)

6.1 Subject matter

SUBJECT MATTER
Purchase of public bus services with low environmental impact, covered by CPV codes 60112000-6 using M_2 and M_3 vehicles by Directive 2007/46.

6.2 Technical specifications and award criteria

(These criteria apply only if the operators own or lease the service fleet)

Important:

Common criteria for service categories (Section 11) also apply to this category

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATION	
TS1. Technological options to reduce GHG emissions **Option 1** The bus route/s *[the contracting authority will insert the identification of the route/s]* must be operated using vehicles *[the CA will choose one of the following]:* (a). Equipped with one of the eligible technologies listed among the core TS1 Technological improvement options to reduce GHG emissions of category 3 (Section 5.2). (b). Equipped with the technology X *[the contracting authority will*	**TS1. Technological options to reduce GHG emissions** **Option 1** The bus route/s *[the contracting authority will insert the identification of the route/s]* must be operated using vehicles *[the contracting authority will choose one of the following]:* (a). Equipped with one of the eligible technologies listed among the core TS1 Technological improvement options to reduce GHG emissions of category 3 (Section 5.2). (b). Equipped with the technology X *[the contracting authority will*

select the technology among the eligible technologies listed as one of the core TS1 Technological improvement options to reduce GHG emissions of category 3 (Section 5.2)]	*select the technology among the eligible technologies listed as one of the core TS1 Technological improvement options to reduce GHG emissions of category 3 (Section 5.2)]*
Option 2: The fleet must be composed of the following shares of vehicles equipped with one of the eligible technologies listed among the core TS1 Technological improvement options to reduce GHG emissions of category 3 (Section 5.2): 2018: 12 % 2019: 20 % 2020: 28 % 2021: 36 % The tier applicable will correspond to the year that the call for tender is launched.	**Option 2:** The fleet must be composed of the following shares of vehicles equipped with one of the eligible technologies listed among the core TS1 Technological improvement options to reduce GHG emissions of category 3 (Section 5.2): 2018: 24 % 2019: 32 % 2020: 40 % 2021: 48 % The tier applicable will correspond to the year that the call for tender is launched.
Verification: Same as TS1 Technological improvement options to reduce GHG emissions of category 3 (Section 5.2) together with the list and technical sheets of the whole fleet.	**Verification:** Same as TS1 Technological improvement options to reduce GHG emissions of category 3 (Section 5.2) together with the list and technical sheets of the whole fleet.

TS2. Tyre Pressure Monitoring Systems (TPMS) (*Same for core and comprehensive)* All the vehicles must be equipped with systems compliant with TS1 on TPMS as defined in Section 10.2 of Common criteria for vehicle categories **Verification:** Same as TS1 on TPMS in Section 10.2 of Common criteria for vehicle categories together with the list and technical sheets of the whole fleet.	
TS3. Vehicle tyres — rolling resistance (*Same for core and comprehensive)* All the vehicles must be equipped with tyres compliant with TS2 on vehicle tyres as defined in Section 10.2 of Common criteria for vehicle categories **Verification:** Same as TS2 on vehicle tyres in Section 10.2 of Common criteria for vehicle categories together with the list and technical sheets of the whole fleet.	
TS4. Fuels (*Same for core and comprehensive)* *Note: this criterion is applicable only if the contracting authority qualifies or upgrades a technology according to the note of the TS1 Technological improvement options to reduce GHG emissions of category 3 (Section 5.2) and the tenderer offers that technology to comply with TS1. The contracting authority may set higher percentages of renewable fuel supply according to the available supply in their national or regional market.* The share of renewable fuel supply must comply with the percentages set in the note of the TS1 Technological improvement options to reduce GHG emissions of category 3 (Section 5.2). **Verification:** The tenderer must provide a copy of the contract(s) that has (have) been signed with the supplier(s) and the description and technical specifications of the production and the dedicated fuel supply system.	
TS5. Air pollutant emissions All buses used in carrying out the service must meet at least Euro V. 2018: 40 % of buses must meet Euro VI. 2019: 48 % of buses must meet Euro VI. 2020: 56 % of buses must meet Euro VI.	**TS5. Air pollutant emissions** All buses used in carrying out the service must meet at least Euro V. 2018: 60 % of buses must meet Euro VI. 2019: 68 % of buses must meet Euro VI. 2020: 76 % of buses must meet Euro VI.

2021: 64 % of buses must meet Euro VI. The tier applicable will correspond to the year that the call for tender is launched. Where vehicles are not certified as meeting Euro V or higher, but technical after-treatment has achieved the same standard, this should be documented in the tender. **Verification:** The tenderer must present the list of vehicles of the service fleet and their certificates of conformity. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must be verified by an independent third party.	2021: 84 % of buses must meet Euro VI. The tier applicable will correspond to the year that the call for tender is launched. Where vehicles are not certified as meeting Euro V or higher, but technical after-treatment has achieved the same standard, this should be documented in the tender. **Verification:** The tenderer must present the list of vehicles of the service fleet and their certificates of conformity. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must be verified by an independent third party.
AWARD CRITERIA	
AC1. Technological options to reduce GHG emissions (*Same for core and comprehensive)* Points will be awarded to tenders offering: Option 1: more routes than the ones set by the TS1 (see above) to be operated with vehicles compliant with core TS1 of category 3 (Section 5.2). Option 2: fleet to be used under the contract with the proportion of vehicles (%) larger than TS1 (see above), in proportion to the excess over the TS1 (see above). If the fleet is composed of technologies of different classes, triple points than class C will be granted to class A, and double points to class B. **Verification:** See above TS1	

<table>
<tr><td colspan="2">AC2. Air pollutant emissions (same for core and comprehensive)

Points will be awarded to the fleet to be used under the contract with the proportion of vehicles used in carrying out the service (%) larger than TS5, in proportion to the excess over the TS5, or if the vehicles comply with the AC3 Improved air pollutant emissions performance of category 3. (To be detailed to which extent points will be attributed to higher percentages, improved performance and zero tailpipe vehicles. Zero tailpipe emissions capable vehicles must be given more points than natural gas buses)

Verification:
See TS5 above</td></tr>
<tr><td></td><td>AC3. Noise emissions
Points will be awarded to those tenders offering a service fleet totally composed of vehicles compliant with the AC1 on vehicle noise emissions set in Section 10.2 of Common criteria for vehicle categories.
Verification:
The tenderer must present the list of vehicles of the service fleet and their certificates of conformity.</td></tr>
</table>

6.3 Contract performance clauses

(this only applies if the operators own or lease the service fleet)

Core criteria	Comprehensive criteria
CONTRACT PERFORMANCE CLAUSES	
CPC1. New vehicles (*Same for core and comprehensive)* If a vehicle of the service fleet is replaced, the new vehicle must help in keeping or improving the service fleet features (composition and technologies) in terms of GHG emissions and air pollutant emissions as offered in the tender. The contractor will keep records which must be made available to the contracting authority for verification purposes. The contracting authority may set rules for penalties for non-compliance.	

7 EU GPP CRITERIA FOR THE PURCHASE OR LEASE OF WASTE COLLECTION TRUCKS (CATEGORY 5)

7.1 Subject matter

SUBJECT MATTER
Purchase or lease of N_2 and N_3 vehicles, as defined by Directive 2007/46, that are designed to provide waste collection services and waste transport services, with low environmental impact.

7.2 Technical specifications and award criteria

Important: Common criteria for vehicle categories (Section 10) also apply to this category

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATION	
TS1. Technological options to reduce GHG emissions The vehicle must be equipped with one of the following technologies: • Hybrid vehicles, both diesel and natural gas • Vehicles equipped with energy accumulation/recovery systems • Vehicles equipped with load-sensing hydraulic systems • Vehicles equipped with electric bin lifts • Plug-in hybrid: Vehicle equipped with a battery pack which can be charged from the grid and provides the energy for the electrical drive of the body and lifter	**TS1. Technological options to reduce GHG emissions** The vehicle must be equipped with one of the following technologies: • Plug-in hybrid: Vehicle equipped with a battery pack which can be charged from the grid and provides the energy for the electrical drive of the body and lifter • OEM dual-fuel natural gas vehicle with a gas energy ratio over the hot part of the WHTC test-cycle of at least 50 %. • High pressure direct injection natural gas vehicles • Full electric vehicles

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- OEM dual-fuel natural gas vehicle with a gas energy ratio over the hot part of the WHTC test-cycle of at least 50 %.
- High pressure direct injection natural gas vehicles
- Full electric vehicles
- Hydrogen fuel cell electric vehicles.
- Dedicated natural gas vehicles under the conditions set in the note below.

Note: The contracting authorities may include dedicated natural gas vehicles if they have a supply of renewable methane meeting at least 15 % of their demand.

Verification:

The tenderer must present the technical sheet of the vehicle where these technology specifications are stated.

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- Hydrogen fuel cell electric vehicles.
- Dedicated natural gas vehicles under the conditions set in the note below.

Note: The contracting authorities may include dedicated natural gas vehicles if they have a supply of renewable methane meeting at least 15 % of their demand.

Verification:

The tenderer must present the technical sheet of the vehicle where these technology specifications are stated.

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TS2. Auxiliary units (*Same for core and comprehensive)*

The vehicle's emissions from the separate engines for auxiliary units (e.g. compactor, lifter, etc. to be defined by the contracting authority) must meet the exhaust emission limits according to Regulation (EU) No 2016/1628, Stage V.

Verification:

The tenderer must present either a type approval certificate, or a test report from an independent laboratory according to Regulation (EU) No

</td>
</tr>
</table>

2016/1628.	
TS3. Air pollutant emissions performance (*Same for core and comprehensive)* N_3 vehicles and N_2 vehicles with a reference mass[1)] exceeding 2 610 kg must meet Euro VI. N_2 vehicles with a reference mass[1)] not exceeding 2 610 kg must comply with the TS2 Air pollutant emission performance of category 1 (Section 3.2). **Verification:** The tenderer must present the vehicle's certificate of conformity. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must be verified by an independent third party.	
AWARD CRITERIA	
	AC1. Air conditioning gases Points will be awarded to those vehicles equipped with an air conditioning system that uses a refrigerant whose global warming potential (GWP), as a factor of CO_2 and over a time horizon of 100 years, is below 150. **Verification**: The tenderer must provide the name, formula and GWP of the refrigerating gas used in the air conditioning system. If a mixture of gases is used (n number of gases), the GWP will be calculated as follows: GWP= Σ(Substance X1 % x GWP(X1)) + (Substance X2 % x GWP(X2)) + …

	(Substance Xn % x GWP(Xn)) where % is the contribution by weight with a weight tolerance of +/- 1 %. GWP of gases can be found in Annexes I and II of Regulation (EU) No 517/2014 (http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.150.01.0195.01.ENG)
	AC2. Electrification of auxiliary engines Points will be awarded to those vehicles equipped with electric auxiliary units. **Verification:** The tenderer must present the technical sheet of the vehicle where this information is stated.
AC3. Improved air pollutant emissions performance N_3 vehicles and N_2 vehicles with a reference mass exceeding 2 610 kg: Points will be awarded to the following technologies: • natural gas • plug-in hybrid electric vehicles (PHEV)[2)] • battery electric vehicles (BEV) and • hydrogen fuel cell electric vehicles (FCEV). *(to be detailed to which extent more points will be attributed to zero tailpipe capable vehicles, i.e. plug-in hybrid electric vehicles (PHEV), battery electric vehicles (BEV), and fuel cell electric vehicles (FCEV. Zero tailpipe emissions capable vehicles must be given more points than natural gas vehicles).*	

N_2 vehicles with a reference mass not exceeding[1)] 2 610 kg: the formula of the AC3 Improved air pollutant emissions performance and AC4 Zero tailpipe emission capability of category 1 (Section 3.2) will be applied. **Verification:** The tenderer must provide the vehicle's certificate of conformity. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must be verified by an independent third party.	

7.3 Explanatory notes

Explanatory notes
TS2. Air pollutant emissions *1) 'Reference mass' means the mass of the vehicle in running order, as declared in the certificate of conformity, minus the uniform mass of the driver of 75 kg, plus a uniform mass of 100 kg;* *2) In the case of plug-in hybrid electric vehicles, the total daily hours that a truck is operated in full electric depends on the specific duty cycle and the charging strategy. Therefore, the contracting authorities need to ensure that the plug-in hybrid trucks will be able to maximise their daily hours of operation in full electric mode along their daily cycles using the charging infrastructure available.*

8 EU GPP CRITERIA FOR THE PURCHASE OF WASTE SERVICE SERVICES (CATEGORY 6)

8.1 Subject matter

SUBJECT MATTER
Purchase of waste collection services with low environmental impact, covered by the CPV categories of 'Refuse collection services' (90511000-2) and 'Refuse transport services' (90512000-9).

8.2 Technical specifications and award criteria

(These criteria apply only if the operators own or lease the service fleet)

Important:

Common criteria for service categories (Section 11) also apply to this category

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATION	
TS1. Technological options to reduce GHG emissions **Option 1** The waste collection route/s *[the contracting authority will insert the identification of the route/s]* must be operated using vehicles *[the contracting authority will choose one of the following]:* (a). Equipped with one of the eligible technologies listed among the core TS1 Technological options to reduce GHG emissions of category 5 (Section 7.2). (b). Equipped with the technology X *[the contracting authority will*	**TS1. Technological options to reduce GHG emissions** **Option 1** The waste collection route/s *[the contracting authority will insert the identification of the route/s]* must be operated using vehicles *[the contracting authority will choose one of the following]:* (a). Equipped with one of the eligible technologies listed among the core TS1 Technological options to reduce GHG emissions of category 5 (Section 7.2).. (b). Equipped with the technology X *[the contracting authority will*

select the technology among the eligible technologies listed as one of the core TS1 Technological options to reduce GHG emissions of category 5 (Section 7.2)]	*select the technology among the eligible technologies listed as one of the core TS1 Technological options to reduce GHG emissions of category 5 (Section 7.2)]*
Option 2: The fleet must be composed of the following shares of vehicles equipped with one of the eligible technologies listed among the core TS1 Technological options to reduce GHG emissions of category 5 (Section 7.2): 2018: 12 % 2019: 20 % 2020: 28 % 2021: 36 % The tier applicable will correspond to the year that the call for tender is launched. **Verification:** same as the core TS1 Technological options to reduce GHG emissions of category 5 (Section 7.2) together with the list and technical sheets of the whole fleet.	**Option 2:** The fleet must be composed of the following shares of vehicles equipped with one of the eligible technologies listed among the core TS1 Technological options to reduce GHG emissions of category 5 (Section 7.2): 2018: 24 % 2019: 32 % 2020: 40 % 2021: 48 % The tier applicable will correspond to the year that the call for tender is launched. **Verification:** same as the TS1 Technological options to reduce GHG emissions of category 5 (Section 7.2) together with the list and technical sheets of the whole fleet.

TS2. Tyre Pressure Monitoring Systems (TPMS) (*Same for core and comprehensive)* All the vehicles must be equipped with systems compliant with TS1 on TPMS as defined in Section 10.2 of Common criteria for vehicle categories. **Verification:** Same as TS1 on TPMS in Section 10.2 of Common criteria for vehicle categories together with the list and technical sheets of the whole fleet.	
TS3. Vehicle tyres — rolling resistance (*Same for core and comprehensive)* All the vehicles must be equipped with tyres compliant with TS2 on vehicle tyres as defined in Section 10.2 of Common criteria for vehicle categories. **Verification:** Same as TS2 on vehicle tyres in Section 10.2 of Common criteria for vehicle categories together with the list and technical sheets of the whole fleet.	
TS4. Fuels (*Same for core and comprehensive)* *Note: this criterion is applicable only if the contracting authority qualifies dedicated natural gas vehicles as eligible technology and the tenderer offers dedicated natural gas vehicles to comply with TS1 (see above). The contracting authority may set higher percentages of renewable fuel supply according to the available supply in their national or regional market.* At least 15 % of the methane supply must be renewable methane. **Verification:** The tenderer must provide a copy of the contract(s) that has (have) been signed with the supplier(s) and the description and technical specifications of the production and the dedicated fuel supply system.	
TS5. Air pollutant emissions All HDVs used in carrying out the service must meet at least Euro V. 2018: 40 % of HDVs must meet Euro VI. 2019: 48 % of HDVs must meet Euro VI. 2020: 56 % of HDVs must meet Euro VI. 2021: 64 % of HDVs must meet Euro VI	**TS5. Air pollutant emissions** All HDVs used in carrying out the service must meet at least Euro V. 2018: 60 % of HDVs must meet Euro VI. 2019: 68 % of HDVs must meet Euro VI. 2020: 76 % of HDVs must meet Euro VI. 2021: 84 % of HDVs must meet Euro VI

The tier applicable will correspond to the year that the call for tender is launched. Where vehicles are not certified as meeting Euro V or higher, but technical after-treatment has achieved the same standard, this should be documented in the tender. **Verification:** The tenderer must present the list of vehicles of the service fleet and their certificates of conformity. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must be verified by an independent third party.	The tier applicable will correspond to the year that the call for tender is launched. Where vehicles are not certified as meeting Euro V or higher, but technical after-treatment has achieved the same standard, this should be documented in the tender. **Verification:** The tenderer must present the list of vehicles of the service fleet and their certificates of conformity. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must be verified by an independent third party.
AWARD CRITERIA	
AC1. Technological options to reduce GHG emissions (*Same for core and comprehensive)* Points will be awarded to tenders offering: Option 1: more routes than the ones set by the TS1 (see above) to be operated with vehicles compliant with core TS1 Technological options to reduce GHG emissions of category 5 (Section 7.2). Option 2: fleet to be used under the contract with the proportion of vehicles (%) larger than the TS1, in proportion to the excess over the TS1 (see above). **Verification:** See TS1 above	
AC2. Air pollutant emissions (*Same for core and comprehensive)* Points will be awarded to the fleet to be used under the contract with the proportion of vehicles used in carrying out the service (%) larger than TS5,	

in proportion to the excess over the TS5 (see above), or if the vehicles comply with the AC3 Improved air pollutant emissions performance of category 5 (Section 7.2) *(to be detailed to which extent points will be attributed to higher percentages, improved performance and zero tailpipe vehicles. Zero tailpipe emissions capable vehicles must be given more points than natural gas vehicles)* **Verification:** See TS5 above	
AC3. Auxiliary units (*Same for core and comprehensive)* Points will be awarded based on the proportion of vehicles that comply with the TS2 Auxiliary units of category 5 (Section 7.2) **Verification:** See TS2 of category 5 (Section 7.2).	
	AC4. Noise emissions Points will be awarded to those tenders offering a service fleet totally composed of vehicles compliant with the AC1 on vehicle noise emissions set in Section 10.2 of Common criteria for vehicle categories. **Verification:** The tenderer must present the list of vehicles of the service fleet and their certificates of conformity.

8.3 Contract performance clauses

(This only applies if the operators own or lease the service fleet)

Core criteria	Comprehensive criteria
CONTRACT PERFORMANCE CLAUSES	
CPC1. New vehicles (*Same for core and comprehensive)* If a vehicle of the service fleet is replaced, the new vehicle must help in keeping or improving the service fleet features (composition and technologies) in terms of GHG emissions and air pollutant emissions as it was offered in the tender. The contractor will keep records which must be made available to the contracting authority for verification purposes. The contracting authority may set rules for penalties for non-compliance.	

8.4 Explanatory notes

Explanatory notes
Route optimisation *There are route optimisation systems incorporating computerised vehicle routing and scheduling (CVRS) technology that are able to reduce fuel consumption by 5 % to 15 %. These systems may use:* *(a). models that predict the level of filling of bins, based on data from Pay-as-you–throw systems or by means of weight systems installed in the trucks* *(b). sensors set inside the bins that monitor real time data of the level of filling of bins.* *Both technologies are currently mature and available on the market. Therefore, it is recommended that the contracting authority explore the possibilities of implementing these route optimisation systems within their waste collection systems.*

9 EU GPP CRITERIA FOR THE PURCHASE OF POST, COURIER AND MOVING SERVICES (CATEGORY 7)

9.1 Subject matter

SUBJECT MATTER
Purchase of post, courier and moving services with low environmental impact, which comprise: - Group 641 Post and courier services, with the exception of rail, airmail and mail transport over water - 79613000-4 Employee relocation services - 63100000-0 Cargo handling and storage services - 98392000-7 Relocation services.

9.2 Technical specifications and award criteria

(These criteria apply only if the operators own or lease the service fleet)

Important:

Common criteria for service categories (Section 11) also apply to this category

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATION	
TS1. Cyclelogistics (*Same for core and comprehensive)*	

<table>
<tr><td colspan="2">Note: this TS will apply to vehicles used in post and courier urban deliveries. Public authorities could also prescribe for what kind of deliveries cyclelogistics have to be used.

(in cities where the urban infrastructure is suitable and there are sufficient cyclelogistics operators).

The tenderer must offer a service fleet that includes cycles and cycle trailers, which may be electrically power assisted cycles. The cycles and cycle trailers will be aimed at minimising the use of motorised vehicles and addressing last mile issues, according to the emissions reduction plan set by the TS1 Environmental management practices within the common criteria for service categories (Section 11.2).

This criterion may be fulfilled by means of a partnership with an urban consolidation centre whose fleet is composed of bikes and cargo bikes.

Verification: The tenderer will present the specifications of the service fleet, and where applicable the partnership agreement with the urban consolidation centre.</td></tr>
<tr><td>TS2. Air pollutant emissions
All HDVs used in carrying out the service must meet at least Euro V.
2018: 40 % of HDVs must meet Euro VI.
2019: 48 % of HDVs must meet Euro VI.
2020: 56 % of HDVs must meet Euro VI.
2021: 64 % of HDVs must meet Euro VI.

Where vehicles are not certified as meeting Euro V or higher, but technical after-treatment has achieved the same standard, this should be documented in the tender.
All cars and LCVs used in carrying out the service must meet at least Euro 5.
2018: 40 % of cars and LCVs must meet Euro 6.</td><td>TS2. Air pollutant emissions
TS2.1. All HDVs used in carrying out the service must meet at least Euro V.
2018: 60 % of HDVs must meet Euro VI.
2019: 68 % of HDVs must meet Euro VI.
2020: 76 % of HDVs must meet Euro VI.
2021: 84 % of HDVs must meet Euro VI.
Where vehicles are not certified as meeting Euro V or higher, but technical after-treatment has achieved the same standard, this should be documented in the tender.
All cars and LCVs used in carrying out the service must meet at least Euro 5.
2018: 60 % of cars and LCVs must meet Euro 6.</td></tr>
</table>

2019: 50 % of cars and LCVs must meet Euro 6. 2020: 60 % of cars and LCVs must meet Euro 6. 2021: 70 % of cars and LCVs must meet Euro 6. All L-category vehicles used in carrying out the service must meet at least Euro 3. 2018: 40 % of L-category vehicles must meet Euro 4. 2019: 50 % of L-category vehicles must meet Euro 4. 2020: 60 % of L-category vehicles must meet Euro 4. 2021: 70 % of L-category vehicles must meet Euro 4. The tier applicable will correspond to the year that the call for tender is launched. This criterion may be fulfilled by means of a partnership with an urban consolidation centre whose fleet meets the requirements. **Verification:** The tenderer must provide the technical sheets of the vehicles where emission standards are defined. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must be verified by an independent third party.	2019: 70 % of cars and LCVs must meet Euro 6. 2020: 80 % of cars and LCVs must meet Euro 6. 2021: 90 % of cars and LCVs must meet Euro 6. 2018: 10 % of cars and LCVs must meet the Euro 6d-TEMP or Euro 6d standard. 2019: 15 % of cars and LCVs must meet the Euro 6d-TEMP or Euro 6d standard. 2020: 20 % of cars and LCVs must meet the Euro 6d-TEMP or Euro 6d standard. 2021: 25 % of cars and LCVs must meet the Euro 6d-TEMP or Euro 6d standard. This criterion may be fulfilled by means of a partnership with an urban consolidation centre whose fleet meets the requirements. All L-category vehicles used in carrying out the service must meet at least Euro 3. 2018: 60 % of L-category vehicles must meet Euro 4. 2019: 70 % of L-category vehicles must meet Euro 4. 2020: 80 % of L-category vehicles must meet Euro 4. 2021: 90 % of L-category vehicles must meet Euro 4. The tier applicable will correspond to the year that the call for tender is launched. TS2.2. *In case of post and courier deliveries in urban areas with air*

	quality issues: Cars and LCVs and L-category vehicles must have zero tailpipe emissions. *If there is no charging infrastructure available, or the expected use profile requires large ranges:* The vehicles may at the least be zero tailpipe emissions capable, meaning a car or LCV that can travel the minimum range of 40 km without emitting any tailpipe emissions. **Verification:** The tenderer must provide the technical sheets of the vehicles where emission standards are defined, and where applicable the partnership agreement with the urban consolidation centre. For those vehicles having achieved the standard mentioned above following a technical upgrade, the measures must be documented and included in the tender, and this must be verified by an independent third party.
AWARD CRITERIA	
AC1. CO_2 emissions (only applicable to LCVs and L-category vehicles) (*Same for core and comprehensive)* Points will be awarded to those tenders offering a service fleet where: - For cars and LCVs: the average CO_2 type approval must comply with core TS1 of Category 1 (Section 3.2), tier corresponding to the year of the call for tender. Points will be awarded proportionally to the average CO_2 type approval of the fleet. - For L-category vehicles: all the L-category vehicles used in the service must be electric. Verification: the tenderer must present, in a spreadsheet, the list of vehicles of the service fleet, their CO2 emissions type approval (supported by the	

respective certificates of conformity) and their average calculation.
AC2. Air pollutant emissions (*Same for core and comprehensive, not applicable if zero tailpipe emissions required for all vehicles in the technical specification TS2.2)* Points will be awarded to those tenders offering: (a). A higher percentage than the one set by the TS2 (see above), OR (b). Cars and LCVs and L-category vehicles that have an emission performance better than Euro 6/4 OR (c). Natural gas HDVs and zero-emission capable vehicles, meaning with a minimum range of 40 km without emitting any tailpipe emissions for cars and LCVs, and plug-in hybrid electric vehicles (PHEV), battery electric vehicles (BEV), and fuel cell electric vehicles (FCEV) for buses *(to be detailed to what extent points will be attributed to higher percentages, better performance and zero tailpipe vehicles. Zero tailpipe emission capable vehicles must be given more points than vehicles with better performance than Euro 6/4 and natural gas HDVs).* **Verification:** See TS2 above

10 COMMON CRITERIA FOR VEHICLE CATEGORIES

10.1 Subject matter

SUBJECT MATTER
Purchase of the following road transport vehicles with low environmental impact: – ‘Cars, light commercial vehicles (LCVs) and L-category vehicles’ – ‘Buses’ – ‘Waste collection trucks’.

10.2 Technical specifications and award criteria

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATION	

TS1. Tyre Pressure Monitoring Systems (TPMS) (*Same for core and comprehensive)*

LCVs and heavy duty vehicles must be equipped with tyre pressure monitoring systems, meaning a system fitted on a vehicle which can evaluate the pressure of the tyres or the variation of pressure over time and transmit corresponding information to the user while the vehicle is running, or, in the case of buses and waste collection trucks, with systems that transmit corresponding information to the operator site.

Verification:

The tenderer must provide the technical sheet of the vehicle where this information is stated.

TS2. Vehicle tyres — rolling resistance (*Same for core and comprehensive)*

(not to be used if, for safety reasons, tyres with the highest wet grip class, snow tyres or ice tyres are needed)

The vehicles must be equipped with:

a) Tyres that comply with the highest fuel energy efficiency class for rolling resistance expressed in kg/tonne, as defined by Regulation (EC) No 1222/2009 of the European Parliament and of the Council of 25 November 2009 on the labelling of tyres with respect to fuel efficiency and other essential parameters

OR

b) Retreaded tyres.

Note: Regulation (EC) No 1222/2009 is currently under revision, and as part of this process, the European Commission has put forward proposal COM(2018) 296. This criterion will need to be updated according to the new legislation, once it is in force.

Verification:

The tenderer must provide the label of the tyre according to Regulation (EC) No 1222/2009 for tyres under case a, or the notice of approval according to Annex 1 of UNECE Regulation 109 for retreaded tyres (case b).

TS3. Vehicle specific eco-driving information (*Same for core and comprehensive)*

Vehicles must be equipped with information/ instructions on eco driving. In the case of ICEV, the user manual of the vehicle must include guidelines on early shifting, maintaining a steady speed at low revolutions per minute (RPM) and anticipating traffic flows. In case of hybrid and electric vehicles, the information must include information on the use of the regenerative braking to save energy. For plug-in hybrid electric vehicles and range extender electric vehicles, the instructions must include specific instructions to maximise the kilometres driven electrically. This information / instructions may be provided in the form of training sessions (if the public authority choses this option, it needs to prescribe a minimum amount of hours of training to be provided). **Verification:** The tenderer must provide the technical sheet of the vehicle where this information is stated or a description and the contents of the training sessions.	
	TS4. Tyre noise *(not to be used if, for safety reasons, tyres with the highest wet grip class, snow tyres or ice tyres are needed)* The vehicles must be equipped with: *a)* tyres whose external rolling noise emission levels are 3dB below the maximum established in Annex II, Part C of Regulation (EC) No 661/2009. This is equivalent to the top category (of the three available) of the EU tyre label external rolling noise class. OR b) retreaded tyres *Note: Regulation (EC) No 1222/2009 is currently under revision, and as*

	part of this process, the European Commission has put forward proposal COM(2018) 296. This criterion will need to be updated according to the new legislation, once it is in force. **Verification:** The tenderer must provide the label of the tyre according to Regulation (EC) No 1222/2009 for tyres under case a) or the notice of approval according to Annex 1 of UNECE Regulation 109 for retreaded tyres (case b).
AWARD CRITERIA	
	AC1. Vehicle noise Points will be awarded to vehicles whose noise emissions are compliant with the Phase 3 limits of Regulation (EU) No 540/2014. The noise emissions will be tested according to Annex II of Regulation (EU) No 540/2014. **Verification:** The tenderer must provide the vehicle's certificate of conformity.

11 COMMON CRITERIA FOR SERVICE CATEGORIES

11.1 Subject matter and selection criteria

<table>
<tr><th colspan="2">SUBJECT MATTER</th></tr>
<tr><td colspan="2">Purchase of the following road transport services with low environmental impact:
– ‘Mobility services’
– ‘Bus services’
– ‘Waste collection services’
– ‘Post, courier and moving services’.</td></tr>
<tr><th>Core criteria</th><th>Comprehensive criteria</th></tr>
<tr><th colspan="2">SELECTION CRITERIA</th></tr>
<tr><td colspan="2">SC1. Competences of the tenderer (Same for core and comprehensive)

The tenderer must have relevant experience in each of the following areas:
- identifying, evaluating and implementing the available technologies and measures to reduce well-to-wheels GHG emissions and air pollutants emissions
- monitoring and reporting procedures of the GHG emissions.

Verification:</td></tr>
</table>

Evidence in the form of information and references related to relevant contracts (possibly of a similar size) carried out in the previous 5 years which included the above elements.

11.2 Technical specifications and award criteria

Core criteria	Comprehensive criteria
TECHNICAL SPECIFICATION	
TS1. Environmental management measures (*Same for core and comprehensive)* The tenderers must have written procedures to: 1. monitor and record the GHG and air pollutant emissions of the service. The indicators used must be emissions and energy consumption of the service both in total per year and per passenger/tonne/unit transported-kilometre or another unit that reflects the performance of the service. 2. implement an emissions reduction plan with measures aimed at reducing the GHG emissions and air pollutants emissions. 3. evaluate the deployment of the emission reduction plan by tracking any changes in the indicators and the implementation of the measures of the plan in real practice. 4. implement the necessary actions to correct any deviations from the plan or any increase of the indicators, and if possible prevent them in the future. **Verification:** The tenderer must provide: 1. the procedure for monitoring and recording the indicators listed in Section 1) 2. the emissions reduction plan 3. the evaluation procedure to ensure implementation of the emissions reduction plan	

4. the correction procedure to correct the deviations found in the evaluation, and if possible prevent them in the future. Environmental management systems certified against ISO 14001 or EMAS will be deemed to comply if they cover the environmental objective of reducing GHG and air pollutant emissions of the service fleet. The tenderer must provide the environmental policy showing the commitment to achieve this objective, together with the certificate issued by the certification body. *Note: the contracting authority may award points to those tenders offering significant improvements in their environmental management measures.*	
AWARD CRITERIA	
	AC1 Lubricant oils, hydraulic fluids and grease Points will be awarded to those tenders including the use of the following for the maintenance of the service vehicles: - Re-refined lubricant oils, meaning oils derived from used oils that underwent a process that returns the oil to a quality suitable for its original use. - Hydraulic fluids and greases that have no health or environmental hazard statement or R-phrase at the time of application (Lowest classification limit in Regulation (EC) No 1272/2008 or Council Directive 99/45/EC). The cumulative mass percentage of substances present in the hydraulic fluids and greases that are both nonbiodegradable and bioaccumulative must not be more than 0.1 % (w/w). **Verification:** The tenderer must provide the technical sheets of lubricants and hydraulic fluids and greases. Hydraulic fluids and greases that are compliant with the EU Ecolabel or equivalent type 1 ecolabel

	that includes the requirements set by AC1 will be deemed to comply.

11.3 Contract performance clauses

Core criteria	Comprehensive criteria
CONTRACT PERFORMANCE CLAUSES	
CPC1. Drivers training (*Same for core and comprehensive)* *Note: This contract performance clause will only apply if the service includes a driver and where drivers are not requested to have the driver certificate of professional competence (driver CPC) according to Directive 2003/59/EC* All drivers involved in carrying out the service for the duration of the contract period must be trained in a recognised institution on environmentally-conscious driving on a regular basis to increase fuel efficiency. Adequate training, with a minimum duration of 16 hours, must be provided to all new staff working under the contract within 4 weeks of starting employment, and an update on the above points, with a minimum duration of 4 hours, must be provided for all other staff at least once a year. The service provider must document and report yearly the amount (hours) and subject of training provided to each member of staff working on the contract to the contracting authority. All drivers involved in carrying out the service for the duration of the contract period must regularly receive information on their fuel efficiency performance (at least once per month). The yearly staff training records must be made available to the contracting authority for verification purposes. The contracting authority may set rules for penalties for non-compliance.	
CPC2. Environmental management measures (*Same for core and comprehensive)*	

The service provider must document and report, over the contract duration:
- the results of the monitoring of indicators and
- the results of the evaluation and the correction and prevention actions, where applicable,
according to the written procedures provided for verifying the TS1 Environmental management measures.
These reports must be made available to the contracting authority for verification purposes.
The contracting authority may set rules for penalties for non-compliance and bonuses for exceeding the objectives set by the emissions reduction plan.

CPC3. Low viscosity lubricant oils (*Same for core and comprehensive)*

Unless the manufacturer of the vehicle recommends another type of lubricant, the contractor must replace the lubricants of the vehicles providing the service with low viscosity engine lubricant oils (LVL). LVL are those corresponding to SAE grade number 0W30 or 5W30 or equivalent.

The contractor will keep records which must be made available to the contracting authority.

CPC4. Vehicle tyres — rolling resistance (*Same for core and comprehensive)*

(not to be used if, for safety reasons, tyres with the highest wet grip class, snow tyres or ice tyres are needed)

The contractor must replace the worn tyres of vehicles providing the service with:

a) new tyres that comply with the highest fuel energy efficiency class for rolling resistance expressed in kg/tonne, as defined by Regulation (EC) No 1222/2009 of the European Parliament and of the Council of 25 November 2009 on the labelling of tyres with respect to fuel efficiency and other essential parameters

   OR

b) retreaded tyres.

The contractor will keep records which must be made available to the contracting authority.

Note: Regulation (EC) No 1222/2009 is currently under revision, and as part of this process, the European Commission has put forward proposal COM(2018) 296. This criterion will need to be updated according to the new legislation, once it is in force.

	CPC5. Tyre noise *(not to be used if, for safety reasons, tyres with the highest wet grip class, snow tyres or ice tyres are needed)* The contractor must replace the worn tyres of vehicles providing the

	service with: a) new tyres whose external rolling noise emission levels are 3dB below the maximum established in Annex II, Part C of Regulation (EC) No 661/2009. This is equivalent to the top category (of the three available) of the EU tyre label external rolling noise class OR b) retreaded tyres. The external rolling noise emissions of the tyre model must have been tested according to Annex I of Regulation (EC) No 1222/2009. The contractor will keep records which must be made available to the contracting authority *Note: Regulation (EC) No 1222/2009 is currently under revision, and as part of this process, the European Commission has put forward proposal COM(2018) 296. This criterion will need to be updated according to the new legislation, once it is in force.*

11.4 Explanatory notes

Explanatory notes
CPC3. Low viscosity lubricant oils, CPC4. Vehicle tyres — rolling resistance and CPC5. Tyre noise *The contracting authority may include these criteria within the call for tenders of vehicle maintenance services. However, these criteria only cover a small part of the maintenance activities and cannot be considered as EU GPP criteria for vehicle maintenance services.* *The contracting authority may set rules for penalties for non-compliance with the different contract performance clauses.*

CPC4. Vehicle tyres — rolling resistance

Article 6 and Annex III of the Energy Efficiency Directive (2012/27/EU), which had to be transposed into national law by June 2014, set out specific obligations for public authorities to procure certain energy efficient equipment. This includes the obligation to purchase only those tyres that:

'comply with the criterion of having the highest fuel energy efficiency class, as defined by Regulation (EC) No 1222/2009 of the European Parliament and of the Council of 25 November 2009 on the labelling of tyres with respect to fuel efficiency and other essential parameters. This requirement must not prevent public bodies from purchasing tyres with the highest wet grip class or external rolling noise class where justified by safety or public health reasons'

This obligation is limited to central government and for purchases above the thresholds set out in the procurement directives. Moreover, the requirements have to be consistent with cost-effectiveness, economic feasibility, wider sustainability, technical suitability and sufficient competition. These factors can differ between public authorities and markets. For more guidance on the interpretation of this aspect of Article 6 and Annex III of the EED regarding procurement of energy-efficient products, services and buildings by central government authorities, see Commission guidance document COM/2013/0762 final, Communication from the Commission to the European Parliament and the Council, Implementing the Energy Efficiency Directive — Commission Guidance[1)].

Regulation (EC) No 1222/2009 is currently under revision, and as part of this process, the European Commission has put forward proposal COM(2018) 296. This CPC will need to be updated according to the new legislation, once it is in force.

Fleet composition requirements

Whenever a contracting authority requires a service provider to use a fleet with a certain percentage of the vehicles compliant with criteria on CO_2 emissions or air pollutant emissions, the contracting authority should consider the means of verification. It can be cumbersome for the contractor to provide information and for the public authority to verify information about which vehicles were used for which distances on which day and calculate the average. Therefore, if it is not considered feasible to ask for all vehicles to meet the requirement, the contracting authority could determine that on specific routes, only compliant vehicles can be used (e.g. in areas with air quality issues), or that one or several vehicle categories has to be compliant. These issues may be less relevant for the outsourcing of public bus services and waste collection services, where the planning and the monitoring of the services facilitate the verification of the fleet performance used to provide the services.

12 LIFE CYCLE COSTING

Life cycle cost analysis (LCC) is a method for assessing the total costs of the product group or service under study. It takes into account all costs related to the purchase, the use and maintenance operations and the disposal of any generated waste. The purpose of the LCC is to estimate the overall costs of project alternatives and to select the option that ensures the purchase or the service, or both, that will provide the lowest overall costs consistent with its quality and function. The LCC should be performed early in the purchase process.

LCC use in GPP procedures can help determine the lowest costs for evaluating offers. In fact, LCC can help authorities consider not only the acquisition costs of a product or service (e.g. raw material and manufacturing costs) but also other costs that usually have to be identified and calculated by the purchaser (e.g. maintenance costs, running costs, disposal and recycling costs, etc.). These kinds of costs should be added to the selling price to have a comprehensive estimate of the LCC of a product or service.

In addition, LCC considers the environmental externalities of a product or a service during its life cycle, when it is possible to determine a monetary value. The use of LCC can provide a more thorough view of the costs of a service through its life cycle stages, including, for example not only the cost of supplies, accessories and machinery but also the cost of running the service (e.g. energy consumption during operations) and labour costs.

Directive 2014/24/EU on Public procurement identifies the costs to be considered in an economic analysis of the purchase to be performed. For further information, please refer to the technical report.

Public authorities can provide the industry with real incentives for developing green technologies through green procurement. In some service sectors, the impact can be particularly significant, as public purchasers command a large share of the market (e.g. energy efficient buildings, public transport, facilities management). If the whole life costs of a contract are considered, green public procurement can save money while also having fewer impacts on the environment. By purchasing wisely, one can save materials and energy, reduce waste and pollution, and encourage sustainable patterns of behaviour.

In the case of road transport, a life cycle cost assessment has been carried out for different case studies applying some of the EU GPP criteria:

- Case study 1: purchase of passenger cars with strict CO2 emissions

- Case study 2: purchase of electric buses and other alternative technologies instead of diesel buses for a share of the vehicle fleet
- Case study 3: training on eco-drive for drivers of a post and courier service.

The costs of the case scenarios are compared to a business-as-usual scenario without the EU GPP criteria.

The following types of costs have been estimated:

a) Total cost of ownership:
   - Acquisition costs
   - Fuel costs
   - Maintenance costs
   - Insurance
   - Taxes
b) Cost of externalities: emissions of carbon dioxide (CO2), and emissions of oxides of nitrogen (NOx), non-methane hydrocarbons (NMHC) and particulate matter (PM), which are the ones covered by the Clean Vehicle Directive (Directive 2009/33/EC).

The life cycle cost assessment carried out for these case studies allows for the following conclusions (see the technical report for greater detail):

Case study 1: purchase of passenger cars with strict CO2 emissions — The results show that acquisition costs are higher for the more fuel efficient cars but that fuel costs are lower during the lifetime of these cars. The costs of externalities decrease proportionally for more fuel efficient cars. The additional cost (including taxes) would be paid off in terms of fuel savings and cost of externalities if the mileage is above 20 000 km/year.

Case study 2a: purchase of electric buses instead of diesel buses for a share of the vehicle fleet — The analysis shows that the fuel taxes have a high impact on the LCC calculation. When taxes are taken into account in the LCC, the total cost of electric buses including the cost of externalities is at the same level, or lower, compared to diesel buses. The investment costs are relatively high in comparison to the rest of costs. Maintenance costs are expected to be lower for electric vehicles, because there are fewer moving parts in the engine, less wear and tear and fewer components that break

down. However, as the technology for electric buses is on a learning curve, some technical failures can be expected. The cost of externalities, which include the emissions derived from the electricity production, is significantly reduced. Moreover, it is worth highlighting that the air pollutants released upstream by the power plants are usually emitted at considerable heights and often in sparsely populated areas. The emissions are mixed with large volumes of air and their contribution to air quality issues in urban areas is relatively small. Conversely, traffic emissions occur at low levels, in the ambient air layer, and they are the main source of pollution in urban areas. Since electric vehicles do no produce tailpipe emissions they are able to improve the air quality of cities. Besides, the GHG emissions and air pollution linked with electricity generation will go down further in the coming decades due to decarbonisation of the EU electricity mix.

Case study 2b: purchase of buses with alternative technologies instead of diesel buses for a share of the vehicle fleet — the results show that the investment costs of compressed natural gas (CNG) and biofuels are comparable to diesel buses, but hydrogen buses are much more expensive, also due to infrastructure costs. Additionally, the fuel costs of hydrogen are much higher than the rest of fuels. The use of biomethane in natural gas buses significantly reduces the cost of externalities.

Case study 3: training on eco-drive for drivers of a post and courier service — the results show that the training is relatively expensive compared to the cost savings due to the trainer fee and the loss in man hours. For higher mileages, the criterion is more favourable, and as a bonus, it is also likely that drivers will improve their driving behaviour when they use their private cars.

12.1 Cost implications for some of the proposed criteria set

Newly proposed GPP criteria	Estimated impact on acquisition costs	Estimated impact on the life cycle cost for the vehicle or service
Cars and LCVs with strict CO_2 emissions	The purchase cost is about 5 – 15 % more expensive depending on the size and fuel of the vehicle.	The life cycle cost of the vehicle is reduced by about 15 - 20 % if taxes are included, due to a reduction of fuel consumption and cost of externalities. If taxes are excluded, life cycle cost savings are only achieved if the annual mileage is higher than 30 000 km.

Electric buses	According to TNO and Civitas report "Clean buses for your city"(TNO Civitas, 2013)[1], the investment cost for the electric bus is about 80 % higher compared to the diesel bus. This concerns only the vehicle costs. TNO and Civitas estimated the infrastructure cost of opportunity charging as EUR 10 000 per bus, including charging points within the bus depots and along the routes at bus stops. However, the effective costs will depend on a series of factors, including local conditions, type of infrastructure, as well as the number of buses making use of the same infrastructure. Besides, battery costs will decrease over time, and some analysis estimate the parity with diesel will be achieved very soon (Bloomberg, 2018) [2]	The life cycle cost of the vehicle is reduced by about 2.5 - 6 % if taxes are included, due to a reduction of energy costs and costs of externalities. If taxes are excluded, electric buses do not attain life cycle cost savings.
Training on eco-drive for drivers of a post and courier service	The estimated cost of the driving course EUR 300 to EUR 1 000 per driver including both the trainer fee and the loss in man hours.	The life cycle cost of the service is reduced by about 0.5 % and 2 % due to a reduction of fuel consumption and cost of externalities if taxes are included.

(See the technical report for greater detail)

[1] *http://civitas.eu/sites/default/files/civ_pol-an_web.pdf*
[2] *https://bnef.turtl.co/story/evo2018?utm_source=blpblog&utm_medium=web*