

Framework agreement on sustainable mobility

From supply of vehicles to sustainable mobility



Purchasing body:	Catalan Association of Towns and Counties
Contract:	<p>Framework agreement on sustainable mobility: supply of service and police vehicles for Catalan local entities</p> <p>Awarded: October 2017</p>
Savings:	<ul style="list-style-type: none"> • 17.4 tons of CO₂ emissions saved • Primary energy savings of 0.26 GWh • Air quality improvement (87% reduction in diesel consumption)

SUMMARY

- Agreement makes electric, hybrid and petrol vehicles, as well as electric motorbikes and bicycles, available (purchase or lease) to all Catalan general and police services in place of diesel vehicles
- As part of the sustainable mobility approach charging stations for electric vehicles, training on efficient driving and the vehicle transformation services are also offered.
- Tender value for 4 years (included contract extensions): 57,654,539 €
- 24 suppliers contracted, offering more than 50 products.

Procurement Approach

Since 2014, Catalan municipalities have been able to acquire their vehicles through the Central Purchasing Body of ACM. The framework agreement for the supply of these vehicles includes different options for general or police services, both in purchase and leasing schemes.

In recent years, several administrations in Catalonia have begun to make significant steps to greening their fleet:

- Barcelona City Council has approved technical requirements to apply environmental criteria on vehicle purchase;
- The General Directorate of Environmental Quality and the Catalan Institute for Energy of the Catalan Government have developed criteria and guides on sustainable mobility as well as an ecolabel for environmentally-friendly vehicle fleets.
- Environmental authorities have set plans for improving air quality that include measures to incentivise the renewal of vehicle fleets, including public fleets.



These goals, among others, have spurred local authorities to demand the inclusion of environmental criteria in the current joint procurement for vehicles supply for different municipal services. With this aim, on April 14, 2016, the Catalan Association of Towns and Counties (ACM) initiated the tendering process for a new framework agreement for the supply of vehicles for general and police services for local authorities in Catalonia based on the best environmental options to promote the transition towards a more sustainable mobility model. Preliminary consultations with the market were conducted before finalizing the tendering documents. The process culminated eighteen months later - on October 19, 2017 - with the awarding of the different lots to a total of 24 suppliers. Each lot was awarded to one or more suppliers, depending on the forecasted volume of demand and the market possibilities.

The previous framework agreements from 2014, one for police cars, and another for general services vehicles, included only diesel vehicles. The new framework agreement not only adds options for electric, hybrid or petrol vehicles in each category, but also includes electric bicycles, electric motorbikes in different categories, charging stations for electric vehicles, training on efficient driving and the vehicle transformation services.

The framework agreement is divided into four main groups (vehicles for general services; vehicles for police services; services and supplies associated to vehicles; leasing services for technical machinery and transportation elements). Each group comprises lots and sub-lots based on the category and type of vehicles, the acquisition mode and the type of associated services. Generally, the adjudication unit is the sub-lot, although for certain contracting concepts only lots have been defined.

LOT	SUB-LOT
LOT 1. Cars	Sub-lot 1.1. Electric passenger car
	Sub-lot 1.2. Electric van
	Sub-lot 1.3. Hybrid urban passenger car
	Sub-lot 1.4. Hybrid interurban passenger car
	Sub-lot 1.5. Hybrid SUV*
	Sub-lot 1.6. Petrol urban passenger car
	Sub-lot 1.7. Petrol interurban passenger car
	Sub-lot 1.8. Petrol large MPV
	Sub-lot 1.9. Petrol SUV
	Sub-lot 1.10. Petrol light-weight All Road 4x4*
	Sub-lot 1.11. Diesel All Road 4x4
	Sub-lot 1.12. Diesel Pick-Up
	Sub-lot 1.13. Diesel van
LOT 2. Bicycles and motorbikes	Sub-lot 2.1. Electric bicycle

LOT	SUB-LOT
	Sub-lot 2.2. Electric urban scooter motorcycle
	Sub-lot 2.3. Electric interurban motorcycle I*
	Sub-lot 2.4. Electric interurban motorcycle II
	Sub-lot 2.5. Electric All Road motorcycle
	Sub-lot 2.6. Petrol interurban scooter motorcycle
LOT 3. Car leasing companies -with or without purchasing option-	<i>No sub-lots are defined</i>
LOT 4. Motorcycle leasing companies -with or without purchasing option-*	<i>No sub-lots are defined</i>
LOT 5. Leasing of police cars	Sub-lot 5.1. Electric police passenger car
	Sub-lot 5.2 Electric police van*
	Sub-lot 5.3. Hybrid police passenger car
	Sub-lot 5.4. Hybrid police SUV
	Sub-lot 5.5. Petrol multipurpose police car*
	Sub-lot 5.6. Petrol police MVP
	Sub-lot 5.7. Petrol police SUV
	Sub-lot 5.8. Diesel police van for police statements
LOT 6. Leasing of unmarked police cars*	<i>No sub-lots are defined</i>
LOT 7. Leasing of police motorcycles	Sub-lot 7.1. Electric urban scooter for police
	Sub-lot 7.2. Electric interurban scooter for police
	Sub-lot 7.3. Electric All Road police motorcycle
	Sub-lot 7.4. Petrol interurban scooter for police
LOT 8. Charging stations for electric vehicles	Sub-lot 8.1. Study and supply of charging points
	Sub-lot 8.2. Energy managers, management and maintenance of the charging points
LOT 9. Training on efficient and safe driving of motorcycles and cars*	<i>No sub-lots are defined</i>
LOT 10. Vehicle (<3500 kg) transformer companies for general, police and emergency services	<i>No sub-lots are defined</i>
LOT 11. Leasing -with and without purchasing option- of the lots awarded in the mix framework agreement relative to the supply of technical machinery and transportation elements in purchasing modality and maintenance services for Catalan local entities*	<i>No sub-lots are defined</i>

* Unawarded lots and sub-lots

The new framework agreement tendered in 2016 represents a general re-orientation of the contract subject matter compared to previous frameworks agreements since 2012. In short, it goes from a framework agreement for vehicles supply (mainly based on economic criteria and an almost exclusive offer of diesel vehicles) to a contract scheme for sustainable mobility. The new framework agreement widens the offer of vehicles and includes for each vehicle type, the least polluting options available. It follows a hierarchical priority criterion based on the potential pollution of each vehicle: 100% electric vehicles, hybrid vehicles, petrol vehicles (with bi-fuel petrol/natural gas variant); and finally diesel vehicles relegated to the last option, and only for specific categories of vehicles with no alternative in the market.

Compared to previous tenders (exclusively for cars and vans), the new framework agreement incorporates electric bicycles and electric and gasoline motorcycles. This allows municipalities to apply power-resizing criteria as a means for greening their fleets still within the agreement (for example, replacing cars with motorcycles and bicycles to perform certain services such as community policing).

PROCUREMENT INNOVATION

Instead of a conventional framework - limited to the simple supply of vehicles-, the new tender promotes an offer of product and services focused on sustainable mobility.

In addition, it includes associated services and supplies such as the study and provision of recharging stations for electric vehicles as well as their management and maintenance. Finally, the agreement includes companies that provide vehicle transformation services (with equipment, furniture, machinery) to adapt them to specific functions. This option allows municipalities to acquire conventional vehicles and adapt them to their needs (police, civil protection, medical assistance, forest and beach cleaning brigades, etc.), or transform vehicles from their own fleet.

Widening the offer of products and the application of environmental criteria to select them has allowed the framework agreement to go from the procurement of vehicles to the procurement of sustainable mobility services.

Joint procurement

The Central Purchasing body of ACM is a centralised procurement service for associated local authorities and their public companies. On a voluntary basis, associated authorities can contract a variety of products and services through the central purchasing body, such as the supply of electricity, natural gas, insurance services, vehicles, technical machinery, IT equipment, paper or video-minutes services. The objective of ACM's central purchasing body is to ensure that small public authorities can contract with the same price and quality conditions as big municipalities. In this regard, centralised procurement is an essential instrument for the rationalisation of resources and public expenditure, thanks to the optimisation of procurement processes, ensuring at the same time the highest level of legal certainty.

The joint procurement has several advantages:

- Economies of scale allow for a reduction of the cost of the contracted vehicles.
- Local authorities are more efficient and reduce their administrative costs with ensured compliance with the procurement legislation.
- The adequacy and quality of the contracted vehicles is ensured thanks to the professional competency that ACM provides.
- Compliance with environmental commitments adopted by local authorities is facilitated through the inclusion of environmental criteria in the tendering documents.
- A greater promotion of the low polluting vehicles market is achieved.

Market engagement

Prior to the approval of the tendering documents, preliminary consultations with the market were conducted where up to 32 potential bidders participated. Market consultation has been a regular procedure in all framework agreements and centralized purchases by ACM since 2014 in order to promote the principles of transparency, equality and competition.

Needs Analysis

The type of vehicles needed and the equipment to consider in the tender were determined by different working groups involving managers of police forces, technicians and politicians.

In parallel to market consultations, there were direct consultations with technicians from different authorities such as Barcelona City Council, LIVE platform, General Directorate of Environmental Policies of the Catalan Government or the Catalan Institute for Energy. In addition, ACM has participated in several events related to electric and sustainable mobility in Catalonia. Finally, ACM organised a test event to verify that the vehicle segment and proposed equipment to include in the framework agreement were those that local police forces require.

Tender Clauses and Verification

TECHNICAL SPECIFICATIONS

Prescriptions that appear in the technical specifications have a minimum mandatory nature. Offers by bidders are considered as basic, without prejudice that derived tenders require improvements or modifications. Given the high amount of lots with specific technical specifications, only those that are most significant in environmental terms are listed below.

- Electric vehicles must hold the “0 emissions” vehicle label (from the Spanish General Directorate of Traffic) and minimum range of 200 km for tourism cars and 160 km for vans

according to NEDC.

- Mandatory supply of semi-rapid charging equipment for electric vehicles.
- Hybrid vehicles must hold the “Eco” vehicle label (from the General Directorate of Traffic), and, depending on the type of vehicle (urban cars, interurban cars or SUV), fuel consumption must be maximum 3.7-5 l/100 km and CO₂ emission less than 85-125 g CO₂/km in combined cycle.
- Petrol vehicles must have Euro 6 classification. Bi-fuel vehicles must have a minimum capacity of 30 litres for natural gas.
- Electric bicycles must have a minimum range of 50 km, maximum charging time of 6h and battery lifetime of a minimum of 500 charging cycle.
- Electric motorcycles must have a minimum range of 70-125 km depending on the type.

AWARD CRITERIA

Depending on the lot, several criteria referring to safety, equipment and comfort, maintenance and dissemination of the framework agreement are evaluated. The list below highlights those that are more relevant:

- Price
- Extended warranty period for more than the mandatory 24 months or 40,000 km.
- Working plan to disseminate awarded lots, specific customised services for local authorities and conducting satisfaction surveys.

Regional approach to SPP

As explained above, the preparation of the tendering documentation has been conducted jointly with other administrations, both with regard to technical consultations and the alignment of expected environmental results with regional environmental policies.

Results

Environmental Impact

The agreement is expected to led to annual savings of at least **17.37 tonnes of CO₂**.

The impacts, in terms of environmental benefit, are outlined in the table below. They are calculated only for the vehicle categories that are comparable with the previous framework agreement, and only for one year. These vehicles represent the 63.8 % of the total vehicles included in the tender. As

such, this is a conservative estimate of the benefits, which does not consider the shift to motorcycles and bicycles enabled by the new agreement, nor the benefits derived from the promotion of electric mobility through public charging stations, which are expected to be a positive externality of this tender. Calculations are based on the expected demand for each type of vehicle. This forecast for the demand is inferred from the tendering budget of each lot or sub-lot and the maximum price for each vehicle awarded. In order to build the benchmark scenario, the vehicles awarded in the last framework agreement have been classified according the structure of the new framework agreement. For the benchmark scenario, the fuel consumption factors that have been taken into account correspond to the version of the vehicles in 2014 market.

Table 1: Environmental savings

Tender	Annual fuel consumption (l or kWh)		CO ₂ emissions (tonnes/year)	Primary energy consumption (GWh/year)
Benchmark	Diesel	347,558 l	957.35 t	3.48 GWh
Low carbon solution	Diesel	45,263 l	939.99 t	3.21 GWh
	Petrol (conventional engine)	118,233 l		
	Petrol (hybrid engine)	162,983 l		
	Electricity	103,800 kWh		
Annual savings			17.37 t (1.8%)	0.26 GWh (7.6%)

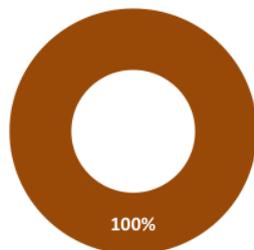
CALCULATION BASIS

- Results based on 4-wheel vehicles (63.8 % of total vehicles tendered)
- Proportions for each vehicle type for each lot have been established by ACM as result of the consultations during the tendering process are established; in the case of Lot 5, police vehicles the proportions are 10% electric vehicles, 71% hybrid vehicles, 19% conventional petrol vehicles.
- The number of vehicles expected to be sold under the new framework agreement has been calculated on the basis of the budget of each sub-lot tendered.
- CO₂ emissions factor of conventional electricity: 0.308 g/kWh
- Energy content for diesel: 36 MJ/l
- Energy content for petrol: 32 MJ/l
- The calculation has been conducted using the tool developed in the GPP 2020 project

(www.gpp2020.eu), and adjusted in the SPP Regions project (www.sppregions.eu). The detailed calculations can be found in the Annex.

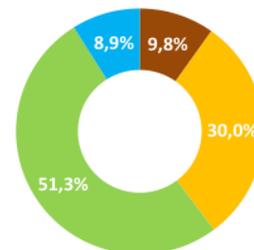
As can be seen, the CO₂ emissions resulting from the new tender are slightly lower than the benchmark scenario. Despite the reduced savings achieved the real win of the new framework agreement is the replacement of diesel vehicles with electric, hybrid and petrol vehicles, achieving an expected reduction of 87% in diesel consumption, and consequent major air quality benefits.

Annual distance per motorisation type
(2012 Framework agreement)



■ Diesel

Annual distance per motorisation type
(Current Framework agreement)



■ Diesel ■ Gasoline ■ HEV ■ EV

With the progressive incorporation of electric vehicles, it is expected that in the future there will be environmental benefits both in terms of air quality, energy consumption and CO₂ emissions.

Market response

The market consultation favours the technical viability of the offered vehicles and services and, in turn, respond to the real needs of local authorities, both for police and general services. This is reflected in the wide range of possibilities offered in the framework agreement, both in terms of variety of vehicles and supplying companies.

In order to guarantee the availability and competitiveness of bids, the tender required that at least two offers should be presented to each lot. In some cases, due to the specificity of some lots, this threshold was not reached and they were not awarded.

Contract management

Awarded companies are in charge of promoting the framework agreement and establishing a system to control the quality and satisfaction of local authorities, whom they supply vehicles to.

Lessons learnt and future challenges

Vehicles technical specifications for certain services are highly specialised. The framework agreement facilitates this task in many municipalities where the demand is low and there is not enough technical knowledge or the ability to evaluate effectively to select the most advantageous offer in economic, functional and environmental terms.

The great diversity of lots is an element of complexity. However, in most cases, sufficient volume of bids has been achieved in order to tender them with guarantees.

In certain segments, it is still difficult to find solutions in the market adapted to certain services. For example, in the case of electric vans for police services, the minimum number of bids have not been reached due to the little experience in the vehicles' transformation, basically in what refers to electric circuits.

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Annex 1 – Calculation of the environmental savings

The calculation has been conducted using the tool developed in the GPP 2020 project (www.gpp2020.eu), and adjusted in the SPP Regions project (www.sppregions.eu).

CO₂ emissions and primary energy consumption

Input	% Green electricity for Electro engine (if any) 0%				% Green electricity for Electro engine (if any) 0%			
	Baseline				Green tender			
	Quantity of vehicles	Average distance per vehicle per year (km/yr)	Kind of fuel	Amount of fuel per 100 km	Quantity of vehicles	Average distance per vehicle per year (km/yr)	Kind of fuel	Amount of fuel per 100 km
Standard Engine - Diesel	317	24.188	Diesel	4,5 l/100 km	130	5.788	Diesel	6,0 l/100 km
Standard Engine - Petroleum			Diesel	l/100 km		17.673	Petroleum	5,1 l/100 km
Electro Engine			Electricity	kWh/100km	37	18.514	Electricity	15,2 kWh/100km
Hybrid Engine								
Electricity (combined test cycle)			Electricity	kWh/100km	150	26.217	Electricity	0,0 kWh/100km
Fuel (combined test cycle)			Petroleum	l/100 km			Petroleum	4,1 l/100 km
TOTAL	317	7.667.500			317	7.667.500		

Total consumption and emissions	Baseline			Green tender		
	Annual fuel consumption	Energy consumption (GWh/yr)	CO ₂ -emissions per year (t)	Total amount of fuel during the life time of the vehicles	Energy consumption (GWh/yr)	CO ₂ -emissions per year (t)
Standard Engine - fuel 1	347.558 l	3,48	957,35	45.283 l	1,50	124,68
Standard Engine - fuel 2	0 l	0,00	0,00	118.233 l	1,50	329,34
Electro Engine	0 kWh	0,00	0,00	103.800 kWh	0,26	31,97
Hybrid Engine						
Electricity (combined test cycle)	0 kWh	0,00	0,00	0 kWh	1,45	0,00
Fuel (combined test cycle)	0 l	0,00	0,00	162.983 l		454,00
TOTAL		3,48	957,35		3,21	939,99

Savings	Total savings (Baseline / Green tender)			
	Energy savings (GWh/yr)	CO ₂ -savings (t/yr)	% of energy savings	% of CO ₂ -savings
Standard Engine - fuel 1	1,97	503,33	57%	53%
Standard Engine - fuel 2				
Electro Engine	-0,26	-31,97	#DIV/0!	#DIV/0!
Hybrid Engine				
Electricity (combined test cycle)	-1,45	-454,0	#DIV/0!	#DIV/0!
Fuel (combined test cycle)				
TOTAL FOR THE PROJECT	0,26	17,37	7,6%	1,8%

About SPP Regions

SPP Regions is promoting the creation and expansion of 7 European regional networks of municipalities working together on sustainable public procurement (SPP) and public procurement of innovation (PPI).

The regional networks are collaborating directly on tendering for eco-innovative solutions, whilst building capacities and transferring skills and knowledge through their SPP and PPI activities. The 42 tenders within the project will achieve 54.3 GWh/year primary energy savings and trigger 45 GWh/year renewable energy.

SPP REGIONS PARTNERS



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 649718. The sole responsibility for any error or omissions lies with the editor. The content does not necessarily reflect the opinion of the European Commission. The European Commission is also not responsible for any use that may be made of the information contained herein.