

Vehicles and Transport

Demonstrator Electric Vehicles



Purchasing body:	North Somerset Council
Contract:	Provision of three electric vehicles Awarded: October 2017
Savings:	<ul style="list-style-type: none"> • 4.423 tons of CO₂ emissions saved per year • Primary Energy saving of 0.01 GWh/yr

SUMMARY

- Provision of three demonstrator electric vehicles
- Vehicles will be available to individuals and business to drive the uptake of purchasing of electric vehicles in the West of England Region
- Tender value: €103,500; Published: 30 August 2017; Duration: 41 months.
- Awarded to E-Car; vehicles to identified at start of contract

Procurement Approach

Go Ultra Low¹ is a ground-breaking joint UK government and industry campaign which aims to increase purchase consideration of electric vehicles. The campaign intends to help motorists and fleets understand the benefits, cost savings and capabilities of the wide range of electric vehicles on the market. The campaign is funded by the Office for Low Emission Vehicles (OLEV) and eight vehicle manufacturers working in association with the Society of Motor Manufacturers and Traders (SMMT). The vehicle manufacturers currently supporting the campaign are: Audi, BMW, Kia, Mitsubishi, Nissan, Renault, Toyota and Volkswagen. The UK government's aspiration is that, by 2040, every new car in the UK will be an ultra-low emission vehicle.

The purpose of this tender is to invite car rental companies to support the Demonstrator Vehicles project for the West of England authority (WoE) as part of the Go Ultra Low campaign. The project is in partnership with the Go Ultra Low West project team consisting of Officers and Managers from the four neighbouring local authorities (North Somerset Council, South Gloucestershire Council, Bristol City Council and Bath and North East Somerset Council). North Somerset Council has been nominated to lead on this work.

The objective for this contract is to create enthusiasm for emerging vehicle technology and encourage the public and local businesses to consider purchasing electric vehicles in the future. As a result, contributing to the target of 5,000 new vehicle registrations within the West of England by 2021.

The scope of the contract is to provide a minimum of three electric vehicles, available to the public and local businesses for hire across North Somerset, South Gloucestershire, Bristol, Bath and North East Somerset. The Contractor manages this service and provides additional information to customers and conduct promotional activities to help aid the overall objective. This includes promotional, behaviour change and incentive activities. Individuals or business will be able to hire a vehicle for a maximum of two weeks. The vehicle hire costs are paid for by the Council and the hirer pays for the electrical charging of the vehicle.

In order to target as many individuals and businesses as possible, the Contractor will provide three vehicles. These will be one BMWi3 and two Nissan Leafs. The make and size of vehicles could change during the contract subject to demand.

The contract was awarded to E-Car Club who have a significant electric vehicle infrastructure in place. They already run a successful operation whereby individuals can belong to the car club and pick up/drop of vehicles at specific locations around the region. These points are not always car hire premises but individual parking bays in various neighbourhoods.

¹ for more information on the Go Ultra Low project see <https://travelwest.info/drive/electric-vehicles/go-ultra-low-west>

Market Engagement

Market engagement was undertaken by the project team through attendance at relevant events, proactively engaging with car hire companies, and exploring different options with those companies prior to developing the specification. This included gauging the market's ability and willingness to deliver the contract including how the pricing structure and individual and business engagement could work. The market was positive, responsive and receptive to the proposed contract with a clear indication that they would be interested in bidding for the subsequent contract.

PROCUREMENT INNOVATION

Instead of procuring electric vehicles for their own fleet, the Council is raising awareness of the advantages of electric vehicles to individuals and businesses with the aim of driving up new electric vehicle registrations.

Joint procurement

North Somerset Council let this contract as a joint contract on behalf of themselves, Bristol City Council, Bath & North East Somerset Council and South Gloucestershire Council. All four councils are part of the Go Ultra Low West project.

Tender specifications and Verification

TECHNICAL SPECIFICATIONS

- Provision of a minimum of three electric vehicles for use by individuals and businesses in the West of England region. The vehicles must be a maximum of two years old and must contain the most up to date electric vehicle technology
- Provision of user guides which not only cover the operation of the make and model of vehicle being trialled but also the benefits of the Go Ultra Low scheme, charging point availability, where to buy a suitable electric vehicle, etc
- The contractor will need to participate in promotional activities

VERIFICATION

- Confirmation of range of vehicles
- Identification in bid of the support which will be provided
- Confirmation of types of promotional activity that the contract will engage in

A regional approach to SPP

As the four authorities are part of the Go Ultra Low West project, the specification was agreed between the four authorities and they will work together on the implementation of the contract and the subsequent management of the contract whilst North Somerset Council will retain the lead role. The tender process was run by North Somerset Council.

Results

Environmental impacts

4.42 tons of CO₂ will be saved per annum, compared to 2016 (assuming the same volume as estimated for the 2017 contract).

Whilst three extra electrical vehicles on the road during this contract period will not significantly address any air quality issues immediately, the impetus provided by this contract should encourage individuals and businesses to switch to electric vehicles when purchasing new vehicles. The overall social impact, in terms of carbon emission reductions, should be large over time, but not immediately. The improvement in air quality will have significant health benefits, particularly in the more densely populated areas of the region. The greatest benefit will be felt when more people swap to electric vehicles from petrol/diesel vehicles over the next few years.

Table 1: Environmental savings

Tender	Consumption	CO ₂ emissions (tonnes/year)	Primary Energy consumption (GWh)
Benchmark	2,434 litres/year	6.779	0.022
Low carbon solution (2017 tender)	4,680 kWh/year	2.356	0.012
Savings		4.423 (65%)	0.010 (46%)

CALCULATION BASIS

- CO₂ emissions for conventional electricity set at 0.503 g/kWh
- For primary energy consumption a PEF (Primary Energy Factor) of 2.5 was assumed for electricity produced from fossil fuels²
- The existing vehicles used in the comparison were one BMW 1 series and two Ford Focus
- Average consumption of petroleum with the existing vehicles - 6.5 l/100km
- The vehicles used for the green tender were one BMWi3 and two Nissan Leafs
- Electricity consumption of the new vehicles - 12.5 kWh/100km
- Calculation made using the tool developed within the GPP 2020 project (www.gpp2020.eu), and refined within the SPP Regions project. Available on the SPP Regions website. (More detailed calculation tables are included in the Annex below).

Financial impacts

The vehicles are being hired out a competitive rate and the contractor will be paid for the hire costs by North Somerset but the hirer will pay for the charging costs. The contract value was capped at €126,500 but the bid came in at €23,000 below the capped value.

Market response

The market response to the market engagement and potential contract was very favourable with car hire companies expressing an interest in bidding for the contract when it was published. However, only one bid was received. The project team asked the other companies why did not bid and the overall response was that because E-Car were bidding, it was not worth submitting a bid. It is felt, in the market, that E-Car has all the right infrastructure in place which the other potential bidders do not have. Subsequently more investment would be needed by the other potential bidders. The market response was disappointing as the pre-tender engagement had been positive. However, it does mean that competition needs to be developed in this vehicle sector, particularly as the purchase, hire and use of electric vehicles will become more mainstream.

Contract management

North Somerset Council will manage the contract on behalf of the four authorities. The council and the contractor will agree reporting procedures and management information. The contractor

manages the booking procedure in accordance with the agreed procedures including customer satisfaction research. As part of the contract, the contractor will need to develop awareness raising campaigns and material, not only for the immediate hire of vehicles but providing additional support for those who then wish to purchase an electric vehicle. Vehicles are booked through an online enquiry portal which went live on 1 March 2018. There have already been 30 bookings confirmed up to October, with a further 7 expressions of interest. The consortium is looking to increase the number of cars available in the summer.

Lessons learned and future challenges

The procurement process went as well as could be expected for an innovative approach. Allowing more time prior to publication might have resulted in additional bids. Overall, the project team were satisfied with the process.

CONTACT

Rachel Sanders

Procurement Officer

Rachel.Sanders@n-somerset.gov.uk

North Somerset Council

tel +44 1275 888179

www.n-somerset.gov.uk



Annex 1 - Calculation of environmental savings (if relevant)

Location	United Kingdom	CO ₂ -emissions per kWh (kg CO ₂ /kWh)	0,503							
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 - fuel 1	3	12 480	Petroleum	6,5	l/100 km	Petroleum	l/100 km		
	Standard Engine - fuel 2			Diesel		l/100 km	Diesel	l/100 km		
	Electro Engine			Electricity		kWh/100km	Electricity	12,5	kWh/100km	
	Hybrid Engine									
	Electricity (combined test cycle)			Electricity		kWh/100km	Electricity		kWh/100km	
	Fuel (combined test cycle)			Petroleum		l/100 km	Diesel		l/100 km	
	TOTAL	3	12 480				3	12 480		
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	2 434	l	7	0	l	0	0		
	Standard Engine - fuel 2	0	l	0,02	0	l	0,00	0		
	Electro Engine	0	kWh	0,000	0,00	4 680	kWh	0,012	2,36	
	Hybrid Engine									
	Electricity (combined test cycle)	0	kWh	0,00	0	0	kWh	0,00	0	
	Fuel (combined test cycle)	0	l	0	0	0	l	0	0	
	TOTAL			0,022	6,779			0,012	2,356	
	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		0,02	7	100%	100%					
Standard Engine - fuel 2										
Electro Engine		-0,01	-2	#DIV/0!	#DIV/0!					
Hybrid Engine										
Electricity (combined test cycle)		0,00	0	#DIV/0!	#DIV/0!					
Fuel (combined test cycle)										
TOTAL FOR THE PROJECT		0,010	4,423	46%	65%					

Vehicle comparison assumptions:

- (i) Kilometres/per annum is based on the UK Government's Travel Survey July 2016
- (ii) Cars currently being driven and substituted:

Vehicle	Fuel	l/100km	Three vehicle average	Age
BMW 1 series (x 1)	Petrol	6.1	6.5	8 years old
Ford Focus (x 2)	Petrol	6.7		8 years old

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.