



Northumberland County Council

Communities and Place Overview and Scrutiny Committee 7th December 2022

Electric Vehicle Charging Tariff Setting Methodology - *For Information only*

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Report of Cabinet Member: Cllr Glen Sanderson, Leader of the Council, Cllr John Riddle, portfolio holder for Local Services.

Purpose of report

This report follows the Electric Vehicle Charging Strategy, approved by Cabinet in June 2022 which authorised the service Director for Local Services in consultation with the Member for Environment and Local Services to make in-year adjustments to the tariff.

This paper, as requested by the chair of Communities and Place OSC, sets out the methodology and process by which the tariff is calculated and set.

Executive Summary

1. The Council currently owns and operates 195 EV charging outlets.
2. Funding has recently been secured from the Office of Zero Emissions Vehicles towards an additional 150 outlets. This funding is matched by NCC capital from both the Local Services EV Charging budget and Climate Change Capital Fund.
3. Since 2021, customers have been charged 35p per kWh excluding VAT (42p inc VAT). Since this tariff was set, electricity prices have increased by over 80% from around 18p/kWh to 35p/kWh and we are seeing a revenue deficit from EV charging.
4. Accurately forecasting the precise wholesale cost of electricity to NCC across all EV chargepoints is extremely complex.
5. When reviewing the tariff, we will calculate the cost to customers based on the most recent electricity price point plus the cost of maintenance and ensure that the tariff is adjusted in a timely manner so that the service is self-financing.
6. NCC will also monitor the tariff set by equivalent private sector companies (e.g. BP Pulse).
7. This approach has been reached through collaboration between the Climate Change Team, Technical Services, and the Energy Team.

The following **key challenges** should be noted:

1. Due to the way NCC purchases electricity through the North East Procurement Organisation (NEPO), it is extremely challenging to forecast the wholesale cost to NCC in a reliable way.

2. There are some inconsistencies between the data we receive from the EV charging back-office system and the data we receive from the meters supplying the electricity. This is being investigated.

By increasing our tariff, there is a risk that usage and consequently revenue from our EV chargers will fall.

Note that the approach adopted to setting the EV charging tariff is to calculate based on the cost of wholesale electricity plus the cost of maintenance. The approach to recalculating the tariff has been agreed by the Climate Change Team, Technical Services and the Energy Team. The tariff can be changed as often as is necessary through delegated authority already assigned to the director of Local Services to be exercised in consultation with Cabinet Member for Environment and Local Services. The costs of electricity and maintenance will be reviewed on a regular basis.

1. EV Charging Tariff

1.1 EVCPs maintenance, repair and electricity costs

The approximate maintenance cost (repairs/damaged excluded) for the chargers owned by Northumberland County Council is circa £35,000 yearly. Including some repair, replacement and installation costs (guns, screens), the total maintenance costs could be increased up to £57,000 yearly, which is circa £4,750 monthly. Table 1 provides a summary of these costs.

Concept	Cost/price (£, VAT included)
Maintenance costs (repairs/damage excluded) yearly	~ 35000
Repair costs (guns and screens replacement and installation others) yearly	~ 22000
Total maintenance and repair costs	~ 57000
Total maintenance and repair costs per month	~ 4750

Table 1

The above costs have been aligned to the kwh cost of electricity to ensure we can apply them alongside this rate. They come out at 17p/kwh.

The electricity costs across all chargepoints come to an average of 35p/kWh. This number was reached using the energy management system and the rate values for all the rapid chargers owned by NCC.

Since 2021 the tariff has been set at the following rate:

Electricity cost per kWh : 18p

Maintenance Cost per kWh : 17p

Total Cost : 35p (+VAT = 42p/kWh)

The tariff charged to the customer since 2021 of 35p/kwh exc. VAT is therefore not enough to cover both the cost of electricity and the cost maintenance.

1.2 Increasing the tariff

A deficit across our EV chargers is not sustainable. Considerable work has taken place to forecast the cost of electricity to NCC in order to set a charging tariff accordingly. However, due to the way electricity is purchased dynamically through the North East Procurement Organisation (NEPO), this has proven impossible.

We must therefore be reactive in setting a tariff which must be based on known costs rather than forecast costs.

In addition however, it is extremely complex to calculate the exact costs of every EV charger across our estate as they are metered in different ways depending on their type and installation. A manual, time consuming process would be needed at a minimum once a month to do this.

An approximate average cost along with overall revenue generation can however, be calculated using the back office systems of the charging network.

At the time of writing costs are as follows:

Current electricity cost per kWh : 35p

Maintenance Cost per kWh : 17p

Total Cost : 52p (+VAT = 62p/kWh)

It costs more to maintain rapid chargers than fast chargers, we also want to keep costs as low as possible for residents who use fast chargers overnight, particularly if they need to do so because they have no off-street parking of their own. Therefore the cost will be split with rapid chargers becoming more expensive and fast chargers, subsidised slightly by the rapids.

The cost charged to the user based on current prices therefore would be **57p/kWh for fast chargers and 65p/kWh for rapid chargers**. At this rate, Northumberland County Council will see sufficient revenue to break even and make a surplus to cover other expenses.

Monitoring will also take place of private sector competitors who invest considerable resource into adjusting their tariffs to cover costs and generate profit without putting off users with unattractive costs. Private sector tariffs at time of writing can be seen below.

Company	AC cost (£/kWh, VAT included)	Rapid DC cost (£/kWh, VAT included)
BP pulse	0.57	0.65
Shell	0.45	0.59
Instavolt	N/A	0.66
Tesla	N/A	0.67

NCC should aim to offer prices lower than the private sector if at all possible in order to provide value for money for our residents and visitors and to encourage uptake of electric vehicles as part of our climate change strategy. NCC is not driven to create profit in the same way as the private sector.

It can be concluded then that by ensuring that the tariff is reviewed on a monthly basis and that the cost to the customer reflects the cost of electricity to the Council plus the cost of maintenance, enough revenue will be generated to ensure costs are covered.

1.3 Ongoing monitoring

The EV tariff working group will continue to liaise on a monthly basis and monitor the following:

1. Private sector tariff changes
2. Cost of electricity to NCC (as accurately as possible)
3. Cost of maintenance
4. Surplus/deficit.

The EV charging tariff will be changed accordingly to ensure any surplus generated is not disproportionate and residents and visitors to Northumberland are assured of value for money when charging their electric vehicles.

Implications

Policy	Decisions on EV Charging tariff changes can be made through existing delegated authority.
Finance and value for money	Sets out mitigation for revenue deficit currently incurred across EV chargers.
Legal	The Climate Change Act 2008 establishes a legally binding target to reduce the UK's greenhouse gas emissions by at least 80% in 2050 from 1990 levels. The Local Authorities (Functions and Responsibilities) (England) Regulations 2000 confirm that the matters within this report are not functions reserved to Full Council
Procurement	None
Human Resources	None
Property	EV chargers are Council property
Equalities (Impact Assessment attached) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	None
Risk Assessment	See corporate risk register
Crime & Disorder	N/A

Customer Consideration	Value for money will continue to be a priority balanced against the need to cover operating costs.
Carbon reduction	Building a sustainable and well maintained EV charging network is essential to the Council's climate change action plan
Wards	All

Background papers:

Climate Change Action Plan 2021-23

Northumberland Climate Change Update Feb 2022

EV Charging Strategy June 2022.

Report sign off.

Authors must ensure that relevant officers and Members have agreed the content of the report:

	Full name of officer
Monitoring Officer/Legal	Suki Binjal
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