Agenda Item	**8**
Report No	**CCC/05/22**

THE HIGHLAND COUNCIL

Committee: Climate Change Committee

Date: 03 November 2022

Report Title: Electric Vehicle Infrastructure Network – Tariff Review

Report By: Executive Chief Officer – Performance & Governance

1. Purpose/Executive Summary

1.1 This paper sets out the business justification for an increase in the Highland Council electric vehicle (EV) charge point tariff and outlines a proposed tariff structure to enable a sustainable model for recovery of costs associated with the operation and upkeep of the network.

1.2 The target date for introducing the tariff is 01 December 2022.

2. Recommendations

2.1 Members are asked to:

i) Note that Highland Council EV charge points current tariff has been in place since 01 June 2021;
ii) Note the budget pressure the current tariff rate places on the Council;
iii) Note the business justification as laid out in this paper; and
iv) Approve a tariff increase based on the recommendation of Option 3 within Appendix 1, as of 01 December 2022 in order to
- Alleviate an existing revenue pressure
- Bring Highland Council tariff charging policy in line with other Scottish Local Authorities, the private market and recent energy increases
- Ensure vital income to maintain low carbon transport connectivity assets for, and to, our city and rural communities
- Provide resource to maintain management of EV Infrastructure (6.1)
- Ensure the income budget remains in line with rising operational costs.

3. Implications

3.1 Resource:

Personnel - The tariff increase, and ongoing management, will be administered by existing officers within the EV Infrastructure Team (part of the wider Climate Change & Energy Team).

Financial - Providing electricity at a below-market rate to EV users is a budget pressure for the Council; the increase of a usage tariff will seek to mitigate this pressure in line with the Council's policy on full cost recovery.

It should be noted that LAIP is within its final year of Scottish Government funding and any funds available have been allocated to specific sites.

3.2 Legal and Risk: There are no legal implications arising from this report.

Risk - The main risk is the level of uncertainty surrounding future energy prices and the maintenance and replacement costs associated with aging EV charge points of the Highland Council's network.

External influences such as technological developments and actual EV uptake are out with the Council's control however all will shape the usage profile and associated electricity consumption. Additionally, further analysis is required to truly understand post-covid travel patterns and the impact on usage. Annual reviews on usage profiles, operating costs and electricity consumption are recommended as part of BAU operations to ensure ongoing business justification.

3.3 Community (Equality, Poverty and Rural) - Increasing the tariff will have a financial impact on those currently utilising the EV infrastructure to charge their vehicles. It may also disincentivise Highland residents from transitioning from petrol and diesel cars to an EV. Several key organisations are undertaking initial analysis to better understand the impact this may have on lower income households; officers will continue to monitor this as part of the recommended annual review process.

Additionally, to help promote equality and ensure sustainable transport solutions are available to everyone, various initiatives are being trialled and developed around Scotland such as electric car clubs, which offer businesses, the public sector, and local communities the opportunity to benefit from shared low carbon transport systems. It is anticipated that electric car clubs will be a critical mechanism if Scotland is to completely decarbonise transport by 2045. Car club access is a great solution for many journeys and can bring significant benefits to householders and businesses by reducing the cost of travel and reduced emissions.

3.4 Climate Change / Carbon Clever - Increasing the tariff supports the Climate Change and Energy Team vision by using insights, experience, and data driven evidence to inform policy development for both climate change mitigation and adaptation. By approaching climate focussed projects in a more sustainable way, we are ensuring that the infrastructure is maintained over the longer term therefore supporting low carbon transition to a net zero economy.

3.5 Gaelic - None arising from this report.

4. Background & Progress to Date

4.1 The Scottish Government has pledged to end Scotland's contribution to climate change no later than 2045. All public bodies have a duty to support and work towards this target under the Climate Change (Scotland) Act 2009, as amended by the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. Both the Scottish and UK

Government have pledged to phase out the need for new petrol and diesel cars and vans by 2030.

4.2 A key project that has contributed positively towards the above targets is The Highland Council's Local Authority Installation Programme (LAIP). Funded by Transport Scotland, this annual programme has further developed the EV public charging network so that EV drivers can confidently travel throughout Scotland – in both urban and rural locations. The Highland Council has been awarded over £3m since the first EV charge point was installed in 2012 (~£2.1m of which has been awarded since 2018).

4.3 The Highland Council currently hosts 85 EV charge points on the public network around the region, of which 49 are Journey (43kW & above) charge points and 36 are Destination (22kW & below) charge points. There are additional projects in progress which will see a further 23 installed by Autumn 2023.

4.4 It should be noted that LAIP is within its final year of funding and any funds available have been allocated to specific sites.

4.5 Committee approval to introduce a usage tariff was obtained as part of the Economy and Infrastructure Committee on 5th May 2021. The tariff was introduced on 1st June 2021. The current tariff is:

Journey (43kW+) Chargers:	Destination (22kW or less) Chargers:
• 30p per kWh • £1 minimum charge • Overstay charge applied after 45 minutes (+15 min grace period, £1/min thereafter)	• 20p per kWh • £1 minimum charge

4.6 Introduction of the EV tariff enabled the EV Management team to identify utilisation, encourage better EV etiquette within the region and analyse faults associated with individual charge points.

4.7 The EV network in the Highlands and throughout Scotland is continuously developing and is expected to increase significantly in the near future to meet the surging demand in EV charging. To support this, Transport Scotland recently announced a new vision statement for public EV charging in Scotland and a £60 million funding package over the next four years (2022-26).

4.8 As a result, The Highland Council is currently undertaking a Pathfinder Project, in collaboration with Aberdeen City Council and Aberdeenshire Council. The project identifies future charge point requirements across the region and the preferred delivery model that can attract private sector investment. It is anticipated that a commercial partnership will be formed to develop and operate EV infrastructure in the region, and that the existing Council EV infrastructure and future fleet charging requirements could be incorporated within this agreement. This is explained in more detail in a separate report also on the Committee agenda.

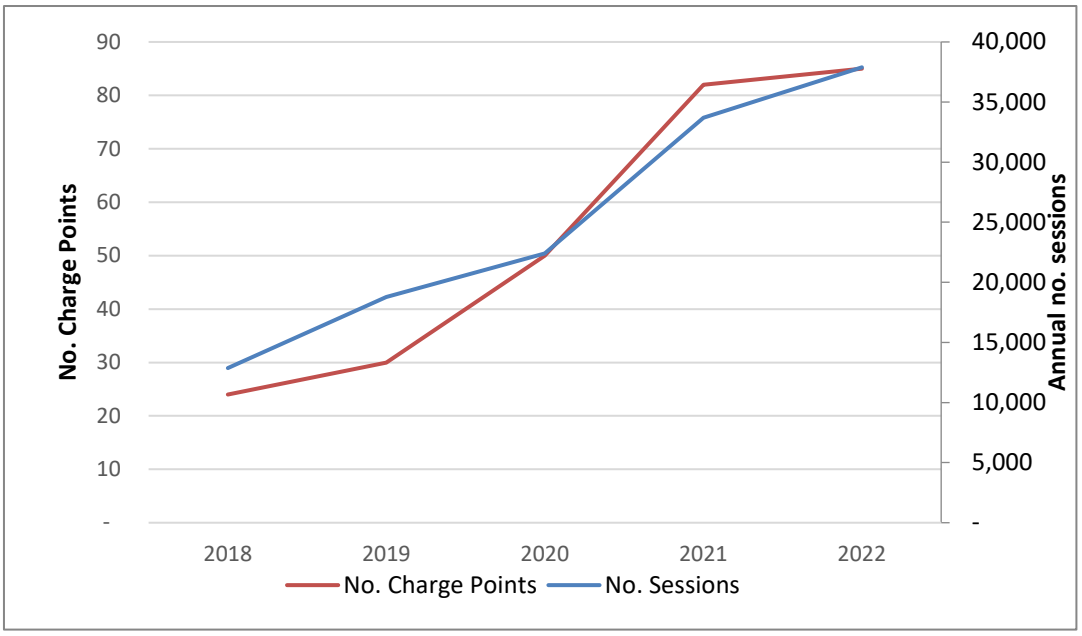
4.9 To meet future demand, EV charging provision is expected to evolve into a combination of home, workplace, public and private network infrastructure. Technology, operating models, and configurations are developing at pace; the profile of how EV users choose to charge their cars will change; therefore, any strategic planning requires to be appropriately flexible to take account of this.

The Pathfinder project analyses the EV network and recommends that the Council focus on the deployment of rapid hubs and solutions for those without access to off-street parking, leaving the private sector to focus on the mixed hubs and destination charge points.

5. Highland Council Charge Point Usage and 2021-22 tariff revenue

5.1 Alongside The Highland Council, several other organisations and bodies install publicly accessible EV charge points which are registered on the ChargePlace Scotland (CPS) network (Scotland's national EV charging network). Charge Place Scotland offers a fully managed service including making charge points visible and accessible to all EV drivers on the network and enabling tariffs to be set and managed through their back-office system.

5.2 The number of charging sessions on the Highland Council EV network has increased steadily over the past number of years, indicating a healthy increase in uptake of electric vehicles and additional demand for publicly accessible charging capacity across the network. The number of charging sessions increased by 50% from 2020 to 2021.



Highland Council charge points and charger sessions 2018-21 (Source – Charge Place Scotland)

For 2021-22, approximately 85% of all sessions were using a journey charge point and consumed 94% of the total energy supplied. Only 16% of charging sessions were using a Destination charge point and consumed just 6% of the total energy supplied.

5.3 A financial summary of the Council EV public network for July 2021 to June 2022 is shown below.

Income: July 2021 – Jun 2022

Charge Point Revenue	£	160,200

Expenses

Electricity Supply	£	133,600
Unplanned maintenance	£	10,950
Gross Profit	**£**	**15,650**

The public network generated an overall profit of £15,650, however, this does not include an asset replacement cost, or annual revenue costs which are currently subsidised by Transport Scotland.

Excluded expenses		Estimated Annual Cost	
Asset Replacement Cost	£	120,000	No allocated budget.
Warranty & Maintenance	£	188,350	Currently funded by Transport Scotland.
SIM & Data Costs	£	14,900	
Staff Costs	£	40,000	
Total	**£**	**363,250**	

6. EV Charge Point Tariffs

6.1 Currently, as the table above shows, the tariff applied for using Highland Council EV charge points does not cover the full total amount of costs associated with management and future of the estate. Grant funding is coming to an end, which previously funded the maintenance and operational costs associated with the management of EV infrastructure. The number of EVs (Electric Vehicles) on the roads has more than doubled in the last year, so the risk in faults, maintenance and repairs is enhanced. This will also require a dedicated officer to manage the EV infrastructure estate.

6.2 The use of these chargers incurs several fixed and variable costs. With the network continuing to grow and EV uptake continuing to increase, costs to the Council are expected to follow a similar trajectory.

6.3 In 2020, Highland Council's EV charge points incurred electricity supply costs estimated to be more than £50,000. Electricity supply costs are now in excess of £130,000, a 160% increase in comparison to 2020. This is partially due to installations over 2021/22 contributing to the Highland Council network (the number of EVs on the road in the past year has also doubled, further increasing the cost risk). In the current financial climate, this is an unbudgeted revenue burden to the Council.

6.4 Although supportive of the introduction of tariffs, it is important to note that no nationally agreed tariff structure has been set by the Scottish Government or Transport Scotland. All local authorities are now required to have a tariff in place for charge points, to support the infrastructure due to the end of LAIP with the expectation that EV charging is self-sufficient.

6.5 Many Scottish local authorities have introduced a tariff for using their charge points. Figure 1 displays the difference in tariffs throughout all of Scotland's local authority areas. The graph shows the average cost per 12 kWh session including any connection or minimum charges, for easy comparison. Tariff structures vary among local authorities with some incorporating connection fees, minimum charges and overstay fees.

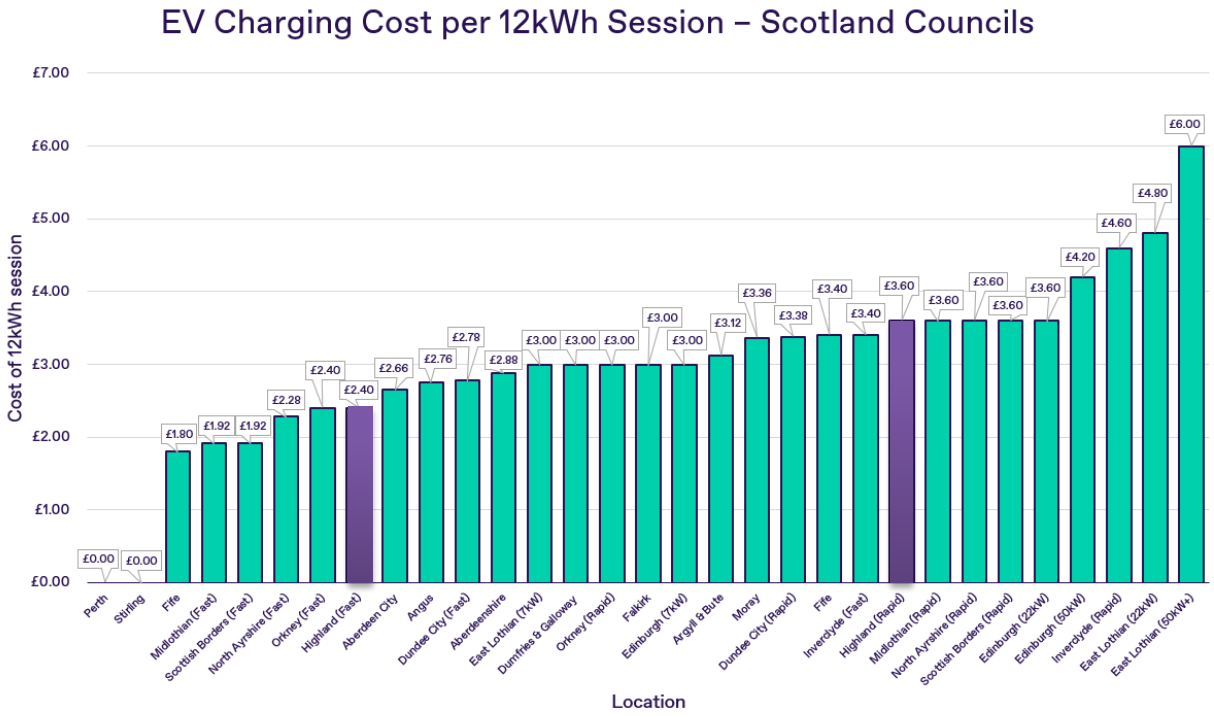


Figure 1: Tariff Breakdown Throughout Scottish Local Authorities per 12kWh Session

6.6 It is widely recognised that the majority of current tariffs charged by Local Authorities in Scotland are not at a commercially sustainable level and have been set with the use of significant capital and revenue support from Transport Scotland and other funders over the years. These findings are consistent with data recently provided by Scottish Futures Trust showing that the private sector is charging significantly higher rates in most cases (Figure 2).

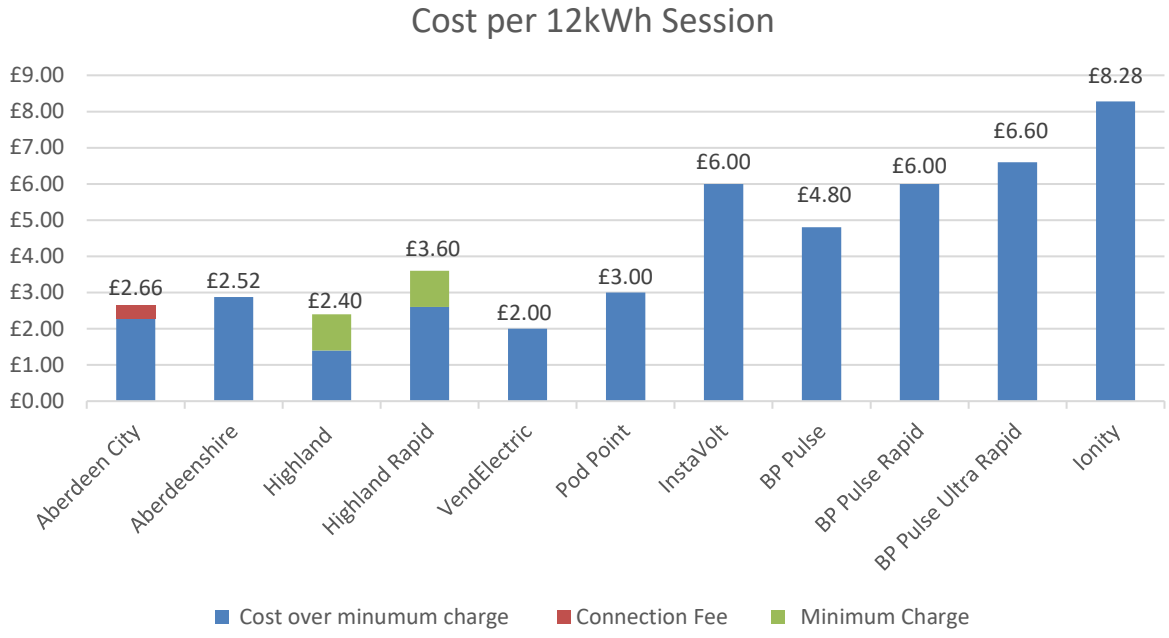


Figure 2: Tariff Comparison with Private Providers

7. EV Charge Point Tariffs – Highland Council Approach

7.1 It is important to note that the approach taken will require to be reviewed regularly to reflect the evolution of the EV charging network and actual usage patterns as more data becomes available, and the current electricity market.

7.2 Three common themes for the approach to introducing a tariff were captured whilst conducting research and engagement with stakeholders and our peer network:

- **Simple** – easily understood for all (Highland Council and EV charge point users)
- **Fair** – enables effective usage patterns for users
- **Sustainable** – covers cost as a minimum and is regularly reviewed as data improves

These have been applied as key principles when assessing the options for introducing a tariff.

7.3 A SWOT analysis (included in Appendix 1) has been carried out and was presented to the EV Infrastructure Board for the following 3 options:

- Option 1: Do nothing
- Option 2: Incorporate operational and maintenance costs into tariff pricing structure
- Option 3: Develop a sustainable tariff structure to incorporate operation and management costs and future replacement.

Option 2 and 3 were selected by the Board to take forward for modelling. Option 3 aligned best with the key principles set out above and the benefits were far higher than the other options.

7.4 The tariff structure proposed will follow precedent set by other local authorities in Scotland to allow consistency to grow within the Scottish public charging network and local authority networks. It follows the broad concepts set out in the Electric Vehicle Association Scotland (EVAS) Tariff Guidance. The EVAS represent the interests of electric vehicle users in Scotland.

7.5 It is proposed any tariff must cover electricity costs, maintenance and operation costs, and tariff management fees. Option 3 would also include asset replacement costs.

The tariff options are outlined the table below. All options include a minimum charge of £1, and an overstay fee of £1/min after 45 minutes (+ 15 minutes grace period) up to the maximum of £30.

	Option 1	Option 2	Option 3
Journey Chargers (43kW+)	30p/kWh £1 minimum charge £1/min overstay fee	71p/kWh £1 minimum charge £1/min overstay fee	86p/kWh £1 minimum charge £1/min overstay fee
Destination Chargers (22kW or less)	30p/kWh £1 minimum charge	30p/kWh £1 minimum charge	30p/kWh £1 minimum charge
Annual budget surplus/deficit	-£227,600	£0	£120,000
Recommended	No	No,	Yes.

7.6 The EV charge points have a design lifespan of 10 years and the estimated asset replacement cost of the Council network is £1.2 million. Only option 3 generates an annual surplus budget to cover this replacement cost and creates a sustainable model. If any surplus is generated this should be reinvested into EV Infrastructure network operations.

Given the lack of national charging policy, the prices above are based on soft market intelligence. Additional factors have been taken into consideration such as:

- Other local authority pricing structures and feedback since implementation
- Current cost to Highland Council for supplying electricity, maintenance and operation cost, and asset replacement cost.
- Average domestic electricity tariff
- Commercial pricing structures

Further details can be found in Appendix 1.

7.7 It is proposed that the tariff will be reviewed on a minimum annual basis and any adjustment will be evidence driven supplemented by engagement with an external peer network. Existing governance will be used to examine financial reports to ensure the tariff price point remains fair and enables swift action to be taken in the event the tariff fails to recoup costs or surplus levels are excessive. Proposed adjustments will be presented to the EV Infrastructure Board for approval and notified via an update paper to committee.

7.8 The tariff will be managed by the Climate Change & Energy Team and governed by the EV Infrastructure Board. Authorisation for an increase above the agreed tariff structure can be applied, with the decision made and governed by the EV Infrastructure Board to ensure adherence to the full cost recovery policy. This is to ensure that energy costs are recouped in the event of another significant increase and tariffs are in line with other Local Authorities and private operators.

8. EV Bay Management – Highland Council Approach

8.1 There are no proposed changes to the Council's approach to EV bay management. This section provides an overview of the current approach.

8.2 Proper use of EV bays and charge points is essential to operate an efficient and reliable network. A range of EV bay etiquette guides are available to EV users online and measures for controlling usage of the bays will continue to develop as EV uptake increases and we learn more about usage patterns and user groups.

8.3 Highland Council EV bays are classified as follows:

Highland Council EV Bay Classification
Highland Council EV bays are not classed as parking spaces therefore no parking charges apply.
Leaving an electric vehicle in an EV bay is permitted for the purposes of charging an EV only.
Once charging is complete or the maximum stay period expires, the bay must be vacated.
This classification will be reviewed to reflect the evolution of the EV charging network and usage.

8.4 To enable the charge point types to be utilised in the most efficient and effective way, it is proposed that EV bay usage will be managed/controlled in the following way:

Charge point Type	Max Stay Period	No Return Period	Misuse of bays
Journey (43kW+)	45 minutes (+ 15-minute grace period)	30 minutes	Only EVs should occupy EV bays EVs must be charging whilst occupying an EV bay
Destination (22kW or less)	Not currently applied		
Penalty	£1/minute overstay charge (up to a maximum of the Local Penalty Charge Notice). This is intended to be administered automatically through the Charge Place Scotland back-office system, alongside the tariff. Penalty applies to all sockets on Journey charge point.	Policed by Parking Enforcement Officers. Penalty Charge Notice as per the Highland Council Parking Policy applies	

The management and control of EV bays will be regularly reviewed with any proposed changes evidence-based through data gathering and engagement exercises. This will be predominantly to ensure that provision meets demand well and that high usage charge points in particular are utilised in a fair way by EV users.

Normal parking fees are not applied to an EV bay where vehicles are charging.

8.5 The above EV bay management approach is endorsed by the Electric Vehicle Association Scotland.

9 Communication

9.1 To help embed the concept of transitioning to EVs among the public and within communities, it is important that common and simple terminology is continued to be used to describe EV charging infrastructure.

An increasingly common way to describe familiar charge point types is as follows:

Journey Chargers:	Destination Chargers:
• 43kW+ • Often referred to as 'rapid' • Common units are 50kW	• 22kW or less • Often referred to as 'slow', 'standard' or 'fast' • Common units are 7kW and 22kW

These simplified terms are currently in use by several Local Authorities including

East Lothian Council, Midlothian Council and Scottish Borders Council. This approach is widely supported among key user and stakeholder groups (including the EVAS).

It is recommended that Highland Council continue to support this terminology and build on the good practice set by helping to provide a consistent message for EV users across Scotland.

9.2 There will be 4 key communication channels to support the change of tariffs, they are:

1. Official press release and associated social media announcements in the weeks leading up to the change (this will be disseminated among an established peer network in an effort to maximise coverage).
2. Tariff and bay management information will be available on the CPS map which is the official data source for the charging network.
3. Clear, consistent signage will be rolled out on current charge point sites outlining the tariff and bay management approach and signpost EV users to Council website or CPS website.
4. Current information will be available on the Highland Council website.

10 Next Steps

10.1 Following committee approval, the change of tariff is clearly communicated as set out in Appendix 1.

Designation: Executive Chief Officer – Performance & Governance

Date: 24th October 2022

Authors: Rachael Anderson EV Project Manager
Roslyn Clarke Project Manager Fleet decarbonisation

Appendix 1

Electric Vehicle Charging Points: Proposed Approach to Tariff Implementation

Supporting Paper

IMPORTANT NOTE: The approach taken will require to be reviewed regularly to reflect the evolution of the EV charging network and actual usage patterns as more data becomes available.

1. Background

The Scottish Government has pledged to end Scotland's contribution to climate change no later than 2045. All public bodies have a duty to support and work towards this target under the Climate Change (Scotland) Act 2009, as amended by the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019.

Both the Scottish and UK Government have pledged to phase out the need for new petrol and diesel cars and vans by 2030.

In October 2020, The Highland Council published an Electric Vehicle (EV) Infrastructure vision to support and accelerate its contribution to these targets.

In June 2021, Councillors approved the introduction for a tariff to be applied on all EV Charge Points (Economy and Infrastructure Committee).

> ***Vision**: Factoring in the unique challenges of the region, we will deliver Highland solutions for Highland challenges. Our ambition is to create Scotland's greenest transport system across its largest area.*

A key project that has contributed positively towards the national targets is The Highland Council's Local Authority Installation Programme (LAIP). Funded by Transport Scotland, this annual programme further develops the EV public charging network so that EV drivers can confidently travel throughout Scotland – in both urban and rural locations. LAIP funding would cover costs for installation and associated maintenance & repairs contract for 5 years of the charge point.

The Highland Council has been awarded over £3m since the first EV charge point was installed in 2012 (~£2.3m of which has been awarded since 2018).

Transport Scotland have confirmed the end of LAIP funding, with accrued funding to be claimed by January 2023. Electric Vehicle Infrastructure Fund was announced in January 2022, which will look at the future of EV infrastructure whilst encouraging more private installations across the region. As part of this, The Highland Council are currently undertaking a Pathfinder Project, in collaboration with Aberdeen City Council and Aberdeenshire Council. The project will help identify future charge point requirements across the region and the preferred delivery model that can attract private sector investment.

2. The EV Charging Network

ChargePlace Scotland Network

ChargePlace Scotland (CPS) is Scotland's national EV charging network to which most Scottish Local Authority owned charge points are connected, as required by Scottish Government under grant offer conditions used to part or fully fund the purchase, installation, and maintenance. It is required to be connected to CPS until March 2023.

The CPS network has grown from 55 public charge points in 2013 to over 2000 in 2022. All publicly available charge points are displayed on a live map which provides details about the location, type, status, and availability of each unit.

SWARCO eVolt are the appointed as back-office operator for the CPS network since July 2021.

The Highland Council Charging Network

Prior to 2020, the Highland Council public EV charging network consisted of 30 charge points. By the end of 2020 this had increased to 50. Currently, the Highland Council have 85 charge points, however once the current programme is complete the Highland Council public EV charging network will have 94, and likely to surpass 100 in early 2023 with the support of other projects.

This rapid progress has been because of more focussed, strategic planning enabling streamlined and confident delivery which has been underpinned by the development and implementation of a strategic control plan (SCP). The SCP established a vision, values, and focus areas along with structured governance through the initiation of the EV Infrastructure Board.

The number of individual charging sessions on the Highland Council CPS charging network increased by 50% from 2020 to 2021, indicating an increase in uptake of electric vehicles and additional demand for publicly accessible charging capacity across the network. 85% of sessions on Journey charge points recorded during July – December 2021 was less than 1 hour.

	2018	2019	2020	2021
No of Charge Points	24	30	50	82
No of Sessions	12,868	18,793	22,399	33,707

Table 1: Number of Highland Council charge points and charger sessions 2018-20 (Source - ChargePlace Scotland)

To meet future demand, EV charging provision is expected to evolve into a combination of home, workplace, public and private network infrastructure. Technology, operating models, and configurations are developing at pace; the profile of how EV users choose to charge their cars will change therefore any strategic planning requires to be appropriately flexible to take account of this. Destination (22kW or less) charge points make up a larger percentage on our network (currently 37%) at strategic locations where an EV user is more likely to stay for longer.

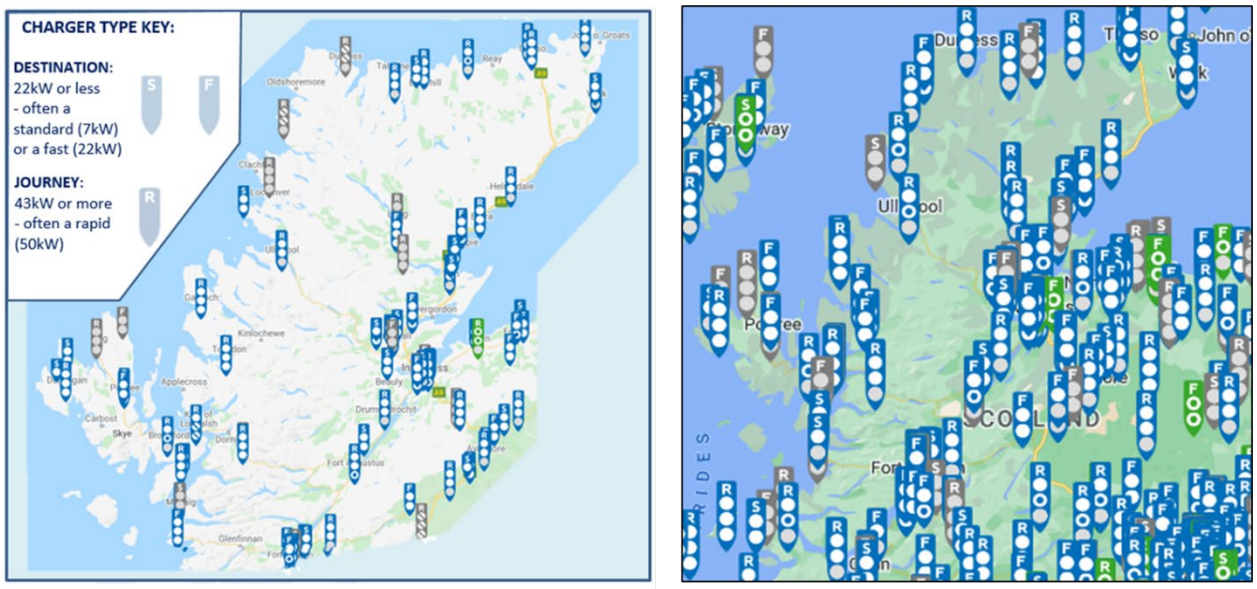


Figure 3: Charge Place Scotland Map 2021 vs 2022

Additionally, to help promote equality and ensure sustainable transport solutions are available to everyone, various initiatives are being trialled and developed around Scotland such as electric car clubs, which offer businesses, the public sector, and local communities the opportunity to benefit from shared low carbon transport systems. It is anticipated that electric car clubs will be a critical mechanism if Scotland is to completely decarbonise transport by 2045. Car club access is a great solution for many journeys and can bring significant benefits to householders and businesses by reducing the cost of travel and reduced emissions.

3. SWOT Analysis of Options

Three common themes for the approach to the tariff review were captured whilst conducting research and engagement with stakeholders and our peer network:

- **Simple** – easily understood for all (Highland Council and EV charge point users)
- **Fair** – enables effective usage patterns for users
- **Sustainable** – covers cost as a minimum and is regularly reviewed as data grows

These have been applied as key principles when assessing the options for a tariff change.

Option 1: No tariff Change

This option proposes no change to the current tariff structure in place.

Strengths	Weaknesses
• No action required • Current tariff structure remains in place • Encourages uptake of EVs within the region	• Budget pressure to Highland Council • User profile will create illusion of demand with potential to drive over investment in infrastructure in some locations. • The low tariff undermines the private market and potentially is delaying private investment in the region. • Unsustainable model
Opportunities	**Threats**
• Can continue to review regularly in future when private market is better developed, and more robust dataset exists	• Cost increase due to unprecedented energy costs and maintenance, operation, and replacement costs for aging assets. • Costs increase due to EV uptake increases and charge remains minimal • Unsustainable model could affect funder confidence and negatively impact funding bids

Option 2: Incorporate operational and maintenance costs into tariff pricing structure

Operation and maintenance contracts have previously been covered by Transport Scotland as part of the grant funding for 5 years post-installation, and this has recently been extended by Transport Scotland to the end of 2022. As many of The Highland Council units are nearing the end of the 5 years, contracts will need renewed, and repairs are more likely as the units age.

This option could have a standard rate across all infrastructure, although it is preferred to continue with a two-tier structure for Journey and Destination charging.

Strengths	Weaknesses
• Tariffs supported by Transport Scotland • Recoup costs over lifetime of the asset • Precedent has been set • Supported by data analysis	• Cost to EV users will be high • High level of uncertainties = high risk model • Creates inequitable pricing for residents without access to home charging, likely to impact most on the least affluent. • No additional budget for replacement or future EVCPs.
Opportunities	**Threats**
• Ensures all current EVCPs continue to be well maintained (whilst reducing higher cost to the Council over time) • Reinvest into long term retention of units • Can be reviewed to reflect change of market	• Approach likely to be unwelcomed by users and stakeholder groups • Attract negative publicity • Reputational damage • Likely to be higher unit price than fossil fuel vehicles • Uncertainty surrounding future asset management and ownership remains high

	• Unknown energy cost increases could create imbalance of budget

Option 3: Develop a sustainable tariff structure to incorporate operation and management costs and future replacement.

A typical EV charge point has a lifespan of 10 years, and as with any aging asset, the maintenance and repair cost increases over time. When a charge point is redundant, the above ground asset would be replaced and for the current Council EV public network, it is estimated that the gross replacement cost of the **units only** would be more than £1.2m.

This option includes a replacement budget within the tariff structure.

Strengths	Weaknesses
• Sustainable model that follows advice provided through external consultants on Highland EV network • Recoups costs over lifetime of the asset • Surplus will be used for unexpected maintenance and replacement of aging units • EV users may be encouraged to charge at home enabling efficient utilisation of the infrastructure • Market comparable rate	• Creates inequitable pricing for residents without access to home charging, likely to impact most on the least affluent.
Opportunities	**Threats**
• Improve network through reinvestment • Introduction of consistent approach could boost funder confidence and positively impact funding bids • Annual review would ensure costs incurred can be evaluated and tariff adjusted accordingly • Higher quality data on usage will help inform future infrastructure business cases	• Usage could reduce as higher rate is implemented leaving charge points under utilised • Reputational impact – could appear that Council is profiteering • Costs may be higher than the income generated • Attract negative publicity
Recommended *Option 3: Develop tariff pricing structure to incorporate costs and future replacement of units*	

Energy costs continuing to rise becomes a risk for any tariff options discussed. EV Management will continue to review data, out-with formal review periods to the tariff is appropriately proportional to the operational costs. With any of the above options, it is proposed that EV Management can increase or decrease the tariff by maximum 10% without formally requesting approval. This will be governed by the EV Infrastructure Board, and any changes will be documented with Councillors notified prior to the introduction.

4. EV Charge Point Tariffs

Overall response to the tariff introduction was positive. The majority of EV users understood the need to move from a free model, the overstay fee took more adjustment however we anticipated this and gave a 1-month limit to those questioning the additional fee. This was also an option for those who had incurred a fee at EVCPs without signage, as EV Management felt it necessary to provide leeway to EV users adapting to the change.

Utilisation was higher in 2021 vs 2020, however this could be for several reasons, possibly the difference in timings for lockdowns and the uptake on EVs.

Electricity Costs: *In 2020, Highland Council's EV charge points incurred electricity supply costs estimated to be in excess of £50,000. Electricity supply costs are now in excess of £130,000, a 160% increase in comparison to 2020. This is partially due to installations over 2021/22 contributing to the Highland Council network (the number of EVs on the road in the past year has also doubled, further increasing the cost risk). In the current financial climate, this is a revenue burden the Council can little afford to bear.*

Operations and Maintenance Costs*: In 2021 the amount for unplanned EV charge point costs totalled £10,441. Operational costs (including connectivity costs and maintenance contract) totalled £51,850 and this was covered by Transport Scotland, however it should be noted that an extended warranty is recommended for aging units at £3000 annually. Staff costs within the EV management team has been estimated as £76,105.*

All Scottish Local Authorities have been required to introduce a tariff to their charge points as a condition of the last LAIP funding. Standardisation is improving and Highland Council can benefit from the emergent pattern by aligning the model, however it should be considered that Highland has a wider variety of utilisation due to a combination of urban, rural, and remote-rural locations.

Better intelligence and lessons learned has helped to inform the proposed approach. A summary of various tariff structures in operation is shown in the table below:

Local Authority	Tariff (destination)	Tariff (journey)	Unit or flat rate cost?	Additional info
Moray Council	£0.28	£0.28	kWh	£1 minimum charge
Dumfries and Galloway	£0.25	£0.25	kWh	£1.50 minimum charge
Dundee	£0.20	£0.25	kWh	Connection fee £0.38
Orkney	£0.20	£0.25		£1/2 minimum charge Overstay fees apply
Aberdeen	£0.19	£0.19	kWh	Connection fee £0.38
Fife	£0.15	£0.15	kWh	Connection fee £1.60
Midlothian	£0.16	£0.30	kWh	£1.00 minimum charge £1/min overstay charge after 1hr (journey)
East Lothian	£0.25	£0.40 / £0.50	kWh	£1/2.00 minimum charge £1/min overstay charge after 45 mins (journey charger)
Aberdeenshire	£0.21	£0.21	kWh	
Argyll & Bute	£0.25	£0.25	kWh	£1.80 minimum charge
Comhairle na Eilean Siar	£0.20	£0.20	kWh	£1.00 minimum charge
Falkirk	£0.25	£0.25	kWh	£1.00 minimum charge
City of Edinburgh	£0.25 / £0.30	£0.35	kWh	£1.00 minimum charge

Table 2: Summary of Scottish Local Authority tariff structures (taken from local authority websites and CPS network data)

5. Tariff Structure (based on SWOT Option 3)

The tariff structure proposed will follow precedent already set by The Highland Council through the tariff introduction in June 2021. It follows the broad concepts set out in the EVA (Electric Vehicle Association) Scotland Tariff Guidance.

A summary of the approach to tariff structure elements can be found in the table below:

Element	Approach
Unit Rate Tariff	Applied. Users achieve value for money by paying only for units of energy used.
Flat Rate Tariff	Not Applied. A flat rate tariff would have to be set high to cover costs which could discourage use of the charge points. A flat rate encourages behaviour that is unlikely to support optimum utilisation and availability of charge points. Users tend to maximise their stays to minimise the unit cost.
Connection Fee	Not applied. Connection fees encourage behaviour that is unlikely to support optimum utilisation and availability of charge points. Users tend to maximise their stays to minimise the unit cost.
Minimum Charge	Applied. This encourages steady use of the charge points and ensures users achieve value for money.
Differential tariff	Applied. A lower cost for destination charge points helps to promote fair usage and supports the higher cost associated with the installation and upkeep of journey charge points.
Rounding of energy use	Rounding down applied. Rounding down usage to the nearest kWh will help to mitigate failed connection issues and/or interrupted sessions.

Given the lack of national charging policy, the prices above are based on soft market intelligence. Additional factors have been taken into consideration such as:

- Other local authority pricing structures and feedback since implementation
- Current cost to Highland Council for supplying electricity
- Average domestic electricity tariff
- The expectation that current funding streams will continue to decrease/cease over the coming months
- The current asset portfolio and how the charge point types may change
- Commercial pricing structures
- Expected maintenance/upkeep of sites not covered by existing contracts

Taking the above into account, it is proposed that the increase in tariff pricing is set at the following rates:

Journey (43kW+) Chargers:	**Destination (22kW or less) Chargers:**
• 86p per kWh • £1 minimum charge • Overstay charge applied after 45 minutes • (+15 min grace period, £1/min thereafter)	• 30p per kWh • £1 minimum charge

NOTE: The above pricing structure will require regular review (annual recommended).

It is proposed any tariff must cover operation and maintenance costs. Any surplus would be reinvested into EV Infrastructure network, focusing particularly on the replacement of units. Funding from Transport Scotland has previously covered:

- Full supply and installation of charge point units and electricity supply
- 5 years charge point maintenance (excluding some items)
- A proportion of staff management time

LAIP has now ceased after the end of the financial year 21/22, meaning the above costs will no longer be covered. A regular review of the tariff pricing set will be required to ensure costs associated with the above are adequately covered. Various commercial models are also in development and may be available for consideration during the review stage.

6. EV Bay Management

There is no proposed change to EV bay management. As summary of the current system in place is outlined below.

The Highland Council promotes Traffic Regulation Orders (TRO) to support all parking regulation and enforcement. The implementation of all Traffic Regulation Orders is subject to statutory procedures and specific service operating procedures[1]. TROs (Traffic Regulation Orders) are applicable to all parking violations including the misuse of EV bays.

Proper use of EV bays and charge points is essential in order to operate an efficient and reliable network. A range of EV bay etiquette guides are available to EV users online and measures for controlling usage of the bays will continue to develop as EV uptake increases and we learn more about usage patterns and user groups.

Highland Council EV Bay Classification

Highland Council EV bays are not classed as parking spaces therefore no parking charges apply.

Leaving an electric vehicle in an EV bay is permitted for the purposes of charging an EV only.

Once charging is complete or the maximum stay period expires, the bay must be vacated.

This classification will be reviewed to reflect the evolution of the EV charging network and usage.

To enable the charge point types to be utilised in the most efficient and effective way, EV bay usage is managed/controlled in the following way:

<table>
<tr><th rowspan="2">Charge point Type</th><th colspan="3">Control Measure</th></tr>
<tr><td>Max Stay Period</td><td>No Return Period</td><td>Misuse of bays</td></tr>
<tr><td>Journey (43kW+)</td><td>45 minutes
(+ 15-minute grace period)</td><td rowspan="2">30 minutes</td><td rowspan="2">Only EVs should occupy EV bays
EVs must be charging whilst occupying an EV bay</td></tr>
<tr><td>Destination (22kW or less)</td><td>Not currently applied</td></tr>
<tr><td>Penalty</td><td>£1/minute overstay charge (up to a maximum of the Local Penalty Charge Notice). This is intended to be administered automatically through the Charge Place Scotland back-office system, alongside the tariff.
Penalty applies to all sockets on Journey charge point.</td><td colspan="2">Policed by Parking Enforcement Officers.
Penalty Charge Notice as per the Highland Council Parking Policy applies.

EV users charging within an EV bay is not liable to normal parking fee conditions (as long as EV conditions are met).</td></tr>
</table>

NOTE: The management and control of EV bays will be regularly reviewed with any proposed changes evidence-based through data gathering and engagement exercises. This will be to ensure that provision meets demand well and that high usage charge points are utilised in a fair way by EV users.

This approach has encouraged the wider EV community to adhere to better behaviours when staying in one area for a longer period of time. The Highland Council have received positive feedback from visitors to the area pleased that Journey charge points have not been unnecessarily occupied.

The above EV bay management approach is endorsed by the Electric Vehicle Association Scotland.

[1] https://www.highland.gov.uk/downloads/file/19425/thc_parking_policy_2018_to_2023

7. Communication

To help embed the concept of transitioning to EVs among the public and within communities, it is important that common and simple terminology is used to describe EV charging infrastructure.

An increasingly common way to describe familiar charge point types is as follows:

Journey Chargers:	**Destination Chargers:**
• 43kW+ • Often referred to as 'rapid' • Common units are 50kW	• 22kW or less • Often referred to as 'slow,' 'standard' or 'fast' • Common units are 7kW and 22kW

These simplified terms are currently in use by several Local Authorities including East Lothian Council, Midlothian Council and Scottish Borders Council. This approach is widely supported among key user and stakeholder groups (including the EVAS).

It is recommended that Highland Council continue to use this terminology and build on the good practice set by helping to provide a consistent message for EV users across Scotland.

There will be 4 key communication channels to support the change of tariffs, they are:

1. Official press release and associated social media announcements in the weeks leading up to the introduction (this will be disseminated among an established peer network in an effort to maximise coverage).
2. Tariff and bay management information will be available on the CPS map which is the official data source for the charging network.
3. Clear, consistent signage will be rolled out on current charge point sites outlining the tariff and bay management approach. Signage will be changed to incorporate a future-proofed method of directing users to the Council website or Charge Place Scotland. This will remove the risk of replacing signage at each tariff review.
4. Current information will be available on the Highland Council website.

8. Summary of Recommended Approach

1. The Council is not allowed to realise a profit from the introduction of any tariff; therefore, it is proposed any tariff must cover electricity costs and tariff management fees. Any surplus should be reinvested into EV Infrastructure network operations. This tariff is:

Journey Chargers:	**Destination Chargers:**
• 86p per kWh • £1 minimum charge • Overstay charge applied after 45 minutes (+15 min grace period, £1/min thereafter**)**	• 30p per kWh • £1 minimum charge

2. The tariff will be reviewed on a minimum annual basis and any adjustment will be evidence driven supplemented by engagement with an external peer network. Existing governance will be used to examine financial reports to ensure the tariff price point remains fair and enables swift action to be taken in the event the tariff fails to recoup costs or surplus levels are excessive. Proposed adjustments will be presented to the EV Infrastructure Board for approval and notified via an updated paper to committee.
3. The structure will adhere to the guidance set out by the EVAS and follow good practice set by other local authorities in Scotland.
4. Going forward, simple terminology as outlined in section 7 is adopted to the description of common charge point types.
5. The tariff will be managed by the Climate Change & Energy Team and governed by the EV Infrastructure Board.

These recommendations support the 3 key principles outlined in section 3:

Simple:	Fair:	Sustainable:
• Consistency - follow other successful approaches • Apply a simple tariff • Apply easily understood terminology • Communicate information clearly to users	• Strict and effective bay management • Encourage considerate EV bay etiquette • Apply a lower tariff to destination charge points • Incorporate grace period into bay management controls • Equitable for users without access to home charging	• Set tariff at a rate expected to cover costs with a small surplus • Review regularly (annual recommended) • Gather feedback and engage with stakeholders to inform reviews

9. Acknowledgements

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- Urban Foresight
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