

Scottish Futures Trust

ELECTRIC VEHICLE INFRASTRUCTURE FUND

PUBLIC EV CHARGING – MORAY STRATEGY & EXPANSION PLAN

20 January 2023

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Glossary

BEV	Battery electric vehicle
COSLA	Convention of Scottish Local Authorities
DNO	Distribution Network Operator
EST	Energy Savings Trust
EV	Electric Vehicle
EVI	Publicly available electric vehicle infrastructure including charging posts as well as any solar panels, battery storage and associate works.
HiTRANS	Highlands and Islands Transport Partnership
PHEV	Plug in hybrid vehicle
PIV	Plug in Vehicle which includes BEVs and PHEVs
RCV	Refuse Collection Vehicle
SCOTS Network	Society of Chief Officers of Transport in Scotland (scotsnet.org.uk)
SoTC	Switched on Towns and Cities
SFT	Scottish Futures Trust
SPEN	Scottish Power Energy Networks
SSEN	Scottish and Southern Energy Networks
TS	Transport Scotland

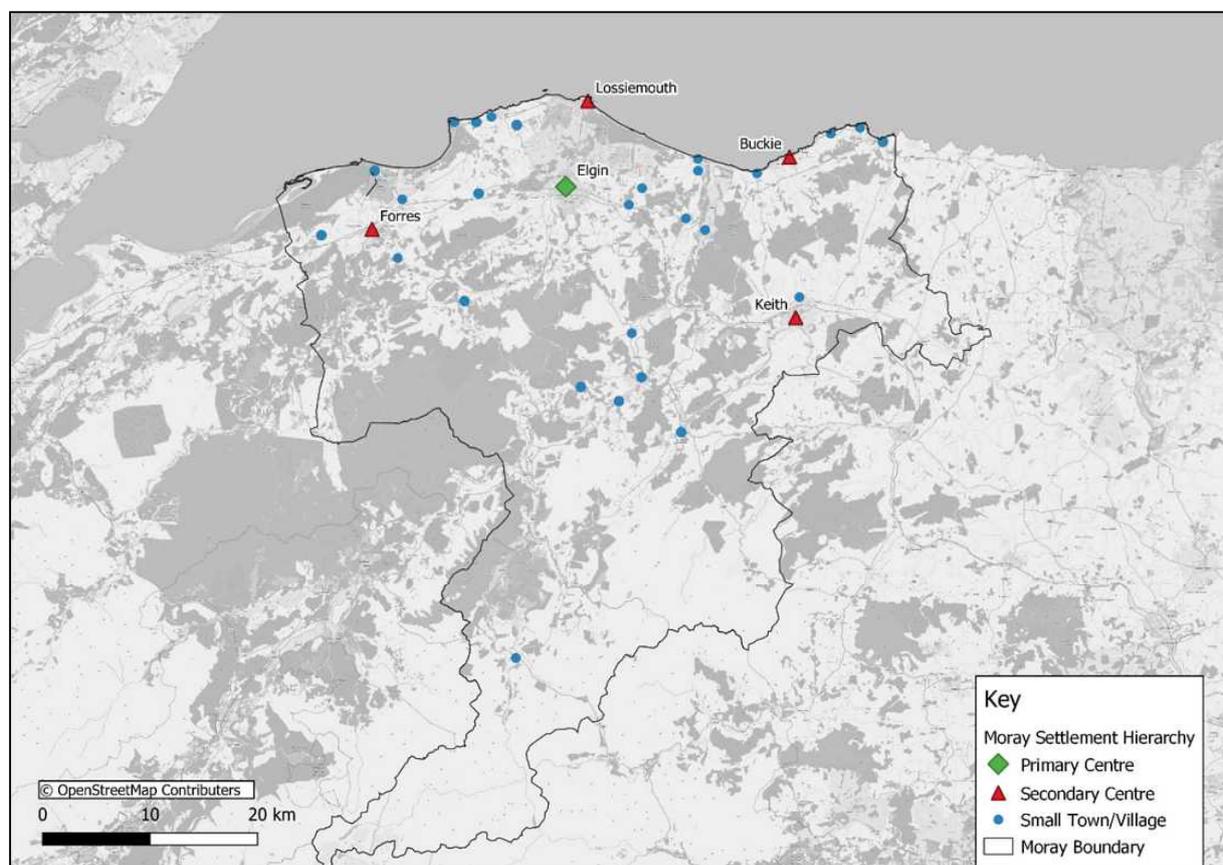
1 Executive Summary

1.1 Background & Scope

Moray is a local authority area located in the north east of Scotland, Moray is located between the Highlands and Aberdeenshire counties and the cities of Inverness and Aberdeen.

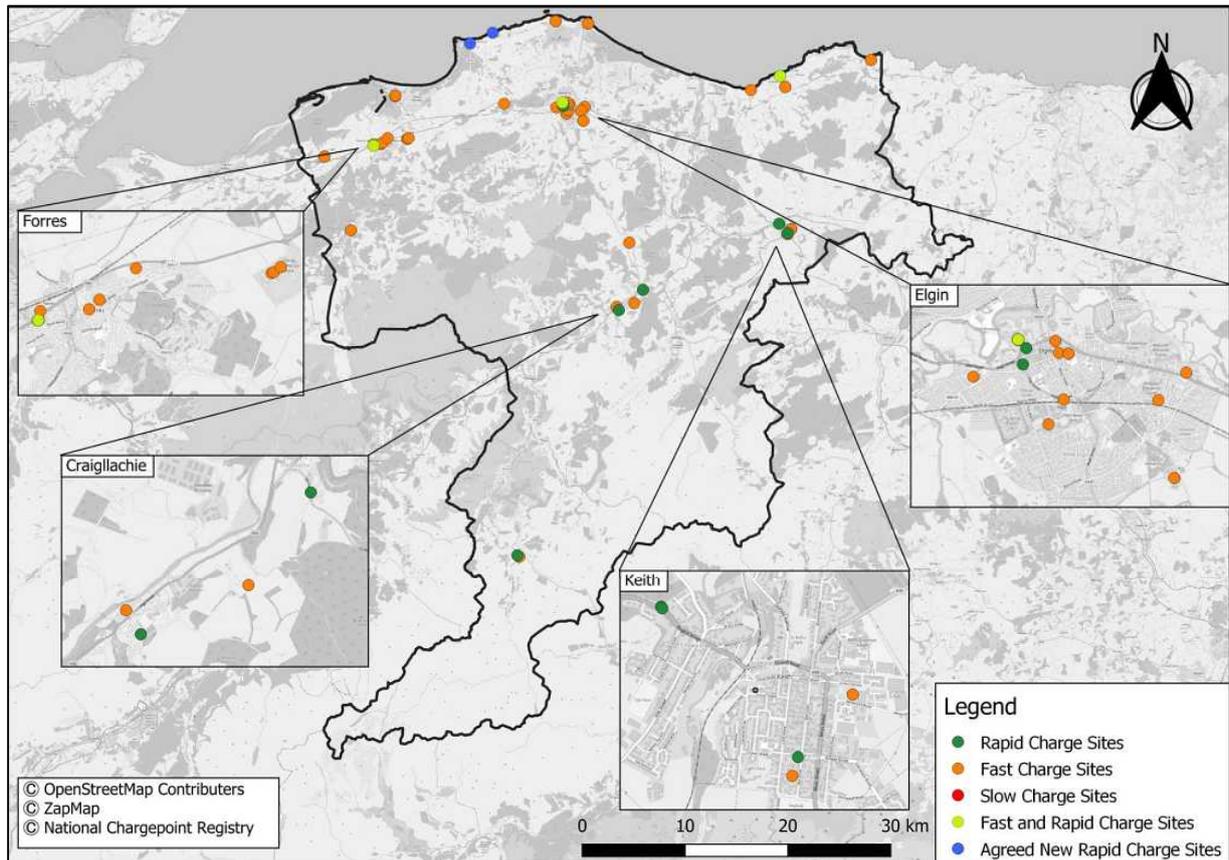
A large part of Moray’s demographic is rural areas. The local authority area contains no major cities with its primary centre being the town of Elgin. Elgin has a population of approximately 23,000 people which is 25% of the total population of Moray. In addition to Elgin, Moray hosts several other towns which are considered secondary centres. Moray’s settlement hierarchy is shown below in Figure 1.

Figure 1: Moray Settlement Hierarchy



The figure below shows the overall existing charging infrastructure across Moray, with 23 ‘rapid’ charging posts, 65 ‘fast’ charging posts and 2 ‘slow’ charging posts in operation at the time of writing.

Figure 2: Existing Charging Infrastructure in Moray



1.2 Baseline Position at March 2022

The current electric vehicle charging posts are operated through ChargePlace Scotland. The control of assets has been devolved to Moray Council who oversee day-to-day operations with an overarching service and operation contract with SWARCO which encompasses the entire network, which has been funded through Transport Scotland. This contract is currently a 2+1+1 contract with the end of the first period in March 2025 and at this point the infrastructure will fall under the purview of Moray Council.

1.3 Vision, Outcome and Priorities

A series of workshops have been undertaken to define

- 22nd March 2022 - Facilitated by the Moray Climate Assembly
- 23rd August 2022 - Moray Council officers and Jacobs Consultants

Comments and key considerations discussed at both these workshops have been summarised help steer the future vision of the EV infrastructure in Moray.

The considerations around accessibility have been discussed and this an approach to infrastructure can be categorised in three different ways:

- Existing infrastructure that may not be fully accessible, which will need to be fully communicated to the public
- New infrastructure that would adhere to government accessibility guidance
- Charging posts in specifically designated disabled parking bays, which will seek to adhere to BSI standards

The principles of a just transition have also been discussed highlighting two key areas in Moray which will need to be addressed to establish an equitable network and possible steps to approach them.

- Low Income terrace housing that will not have access to off street charging
- Rural areas of Moray with no council owned parking facilities

Some initial discussion has also been held with Charge Point Operators (CPO's) which has indicated some interest in operating within Moray and some idea of the key factors they would consider for investing in infrastructure.

The provision and support of public transport and active modes is an important focus within Moray Council and considerations around how the EV infrastructure can influence Car Clubs, Mobility Hubs, Public Transport and Active Modes.

1.4 The Economic Case

A geospatial modelling exercise has been undertaken using Jacobs in house EV Uptake model but incorporating key elements from the EV forecasting work undertaken by Field Dynamics. This model has been used to predict EV growth in Moray as well as forecast an estimate of the energy requirements in each settlement.

For the first tranche of funding the initial focus is on the most efficient use of the available council owned car parking sites. Using the results from the geospatial modelling as well as additional qualitative assessment around security and lighting and a power assessment using the SSEN GIS tool, a short list of council owned sites and predicted infrastructure requirements has been identified.

Table 1: Shortlist of sites and infrastructure requirements

Car Park	Area	Residential On Street (Slow)	Destination (Fast)	On Route (Rapid)
North Pringle Street	Buckie	2	2	1
Cluny Square	Buckie	2	0	0
Newlands Lane	Buckie	1	2	1
Station Road	Burghead	2	2	0
The Square	Cullen	2	0	1
The Square	Dufftown	2	0	1
The Hall	Dyke	1	2	1
North Port	Elgin	1	2	1
Elgin Railway Station	Elgin	1	0	1
Hall Place	Elgin	1	2	1
Cooper Park	Elgin	1	2	1

The Square	Fochabers	2	0	1
Tulloch Park	Forres	2	0	1
Leask Road	Forres	2	0	1
Leys Road	Forres	2	2	1
Mid Street	Keith	1	0	0
Innes Lane	Keith	1	0	0
Bankers Lane	Keith	1	0	0
Gregory Place	Lossiemouth	1	0	1
East Beach	Lossiemouth	1	0	1
Station Park	Lossiemouth	0	0	1

A costing exercise has then been undertaken on these sites assuming default SFT recommendations for EVI Capital and Installation costs, Capital Enabling Costs and Maintenance Costs. The estimated cost of connection to the power network is taken on a site-specific basis taken from the power assessment.

1.5 The Commercial Case

The sites identified within the site assessment have been further reviewed as to their level of commercial attractiveness based on forecast utilisation levels and criteria suggested through discussion with CPO's

Moray Council does not expect to have the money to fund/continue funding and subsidise charging post infrastructure due to various financial pressures, therefore the most appropriate approach is a concession commercial model which will transfer the short to medium term risk to the private sector and with grant funding to support the upfront capital costs.

Moray Council currently owns a significant amount of public infrastructure and associated DNO connections and it is recommended that as part of a concession approach, a portfolio of council owned assets could be offered to help leverage private investment.

Moray Council are currently considering whether to join with the Highland/Aberdeenshire/Aberdeen City Pathfinder project given our geographical location directly between the Aberdeenshire and Highland which are already signed up to the project. Moray Council's inclusion in this project would be facilitated through HiTRANS in conjunction with several other Local Authorities in the north and north-west of Scotland.

The Pathfinder project operates a concession/partnership model, which entails a joint approach to the procurement process across Pathfinder members, but packages of lots are specific to the individual regions.

An example of key contract considerations has been outlined which highlight the need to ensure a range of standards are specified to meet Moray's expectations for the installation and operation of future EV infrastructure.

1.6 The Financial Case

The expected funding sources for the delivery of Morays planned EV infrastructure expansion has been outlined and includes Private Investment Funding and Scottish Government Grant Funding. There is

currently no funding available from council revenue to subsidise operation of infrastructure. Capital investment is expected to be focused on EV infrastructure to service the Councils own fleet of vehicles.

The inputs into the SFT EVI Feasibility Model have been outlined and highlight that assuming that 17 of the 44 identified charging posts have the potential to be funded by CPO's, then grant funding of approximately £828,500 will be required to deliver the full proposal of EV infrastructure expansion in council owned car parks as outlined in this Strategy and Expansion Plan.

1.7 The Management Case

The management case sets out how the expansion project will be delivered using project management best practice and demonstrates an appropriate governance structure and assurance framework to oversee the project.

A risk register has been compiled highlighting a RAG assessment of the key risks to the delivery of Morays proposed infrastructure before and after proposed mitigation.

The next steps and example timescales have been set out to deliver the project.

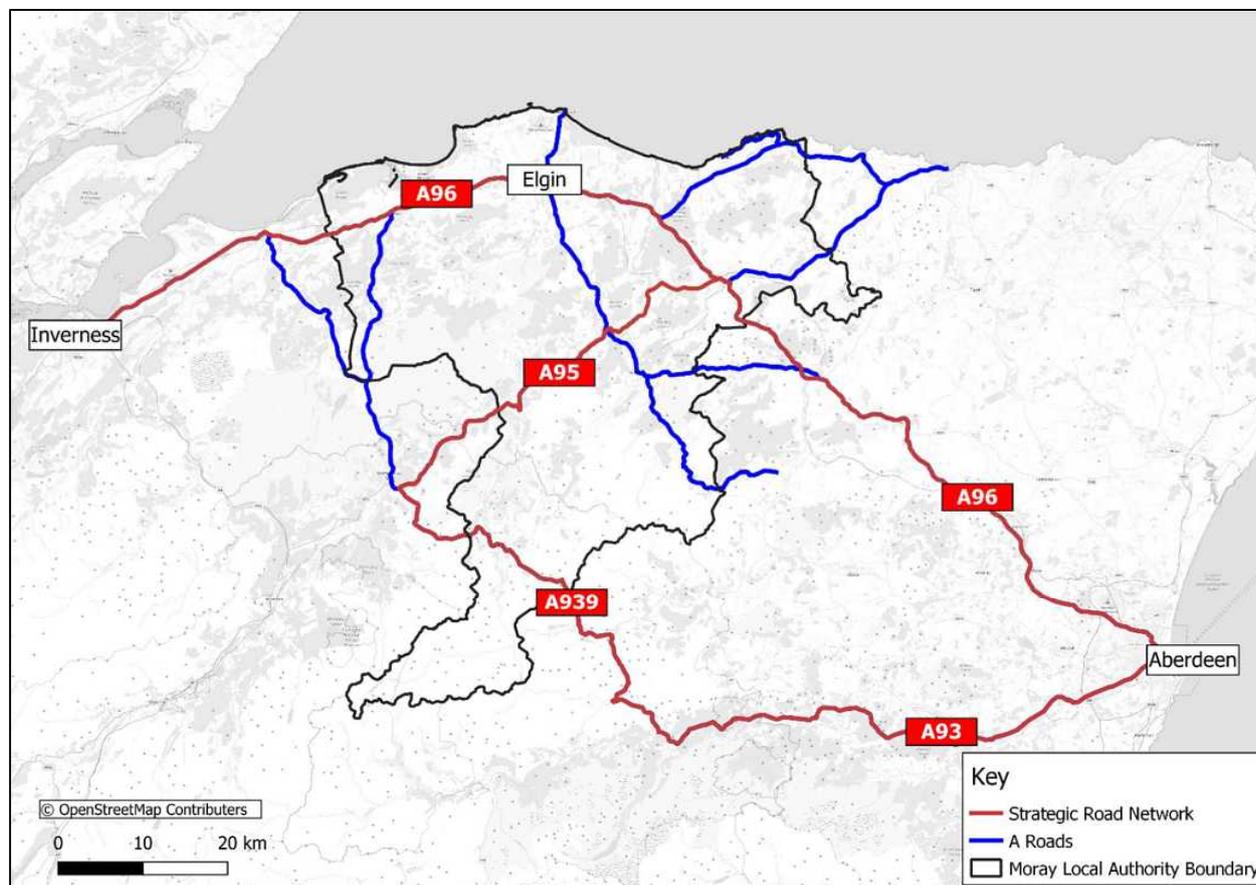
2 Background & Scope

2.1 Study Area

Moray is a local authority area located in the north east of Scotland, Moray is located between the Highlands and Aberdeenshire counties and the cities of Inverness and Aberdeen. As shown in Figure 3 below, Aberdeen and Inverness are connected by the A96 which forms an east-west transport corridor that runs through Moray, passing through several towns within the local authority. The rest of Moray's strategic road network is made up of several A class roads which run through the local authority, connecting the main settlements and tourism areas within the local authority.

Moray is a predominantly rural council with tourism accounting for over 10% of the total employment. There are two main tourism areas in Moray; the 45 miles of coast line located on the northern Moray Firth coast and the Cairngorms Mountain range located to the south of the county. These tourist attractions create an increase of trips across Moray's strategic road network.

Figure 3: Moray Study Area and strategic road network



2.1 Population overview

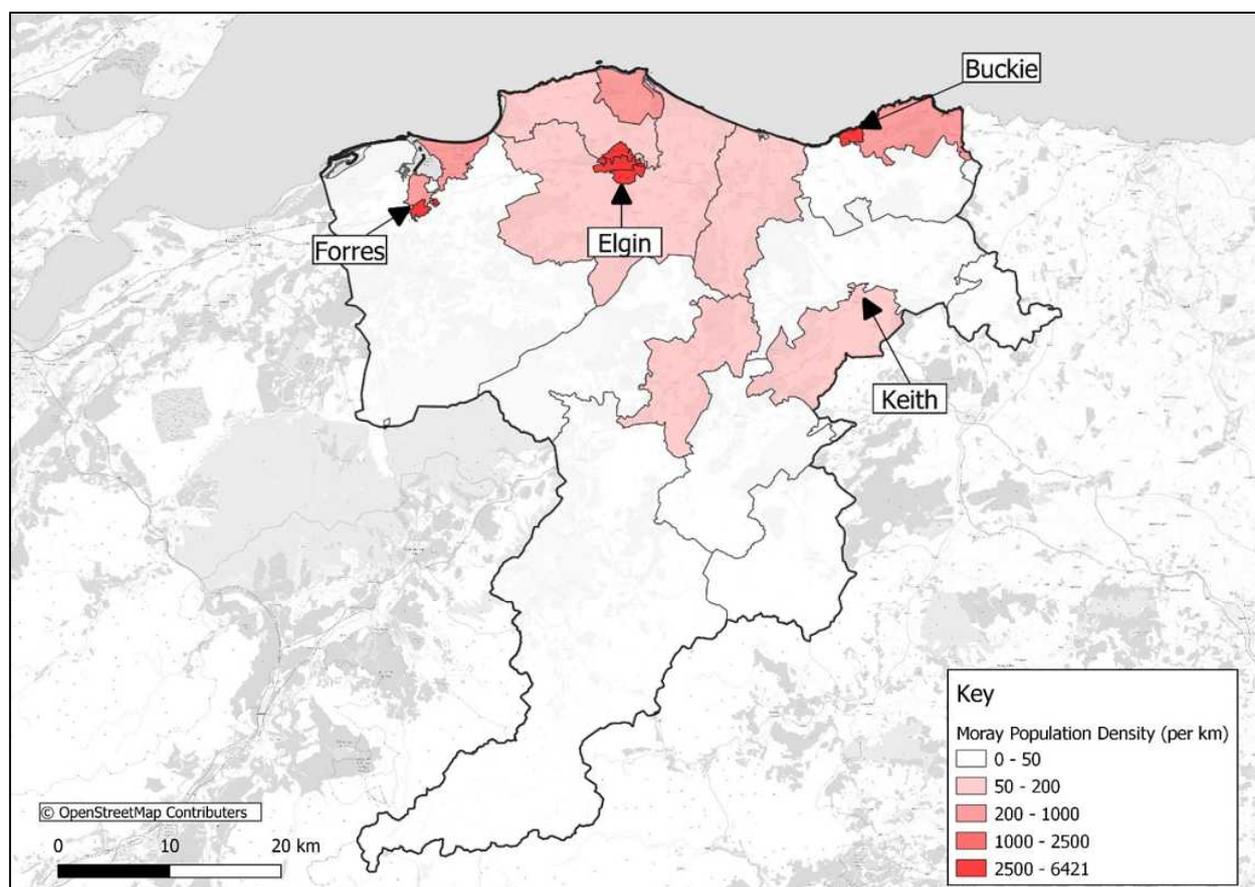
Mid-year population estimates data from the National Records of Scotland has been analysed to compare population trends in Moray with those across Scotland. Table 2 **Error! Reference source not found.** presents the population of Moray and Scotland from 2014 to 2021. Moray has seen an increase in population of 1.75% over this 7-year period; a slower rate of increase when compared to the Scottish average, which saw population growth of 2.50% over the same period.

Table 2: Moray and Scotland Population ¹

Area	2014	2015	2016	2017	2018	2019	2020	2021
Moray	94,770	95,510	96,070	95,780	95,520	95,820	95,710	96,410
Scotland	5,347,600	5,373,000	5,404,700	5,424,800	5,438,100	5,463,300	5,466,000	5,479,900

Moray is made up predominantly of rural areas with low population density with several small towns and villages around the local authority. Figure 4 **Error! Reference source not found.** shows the population density of the different postcode areas in Moray. The figure shows that in large parts of Moray there is a low population density between of 0-50 per km. The population in Moray is centred around larger towns of Elgin, Forres and Buckie.

Figure 4: Moray Population Density ²



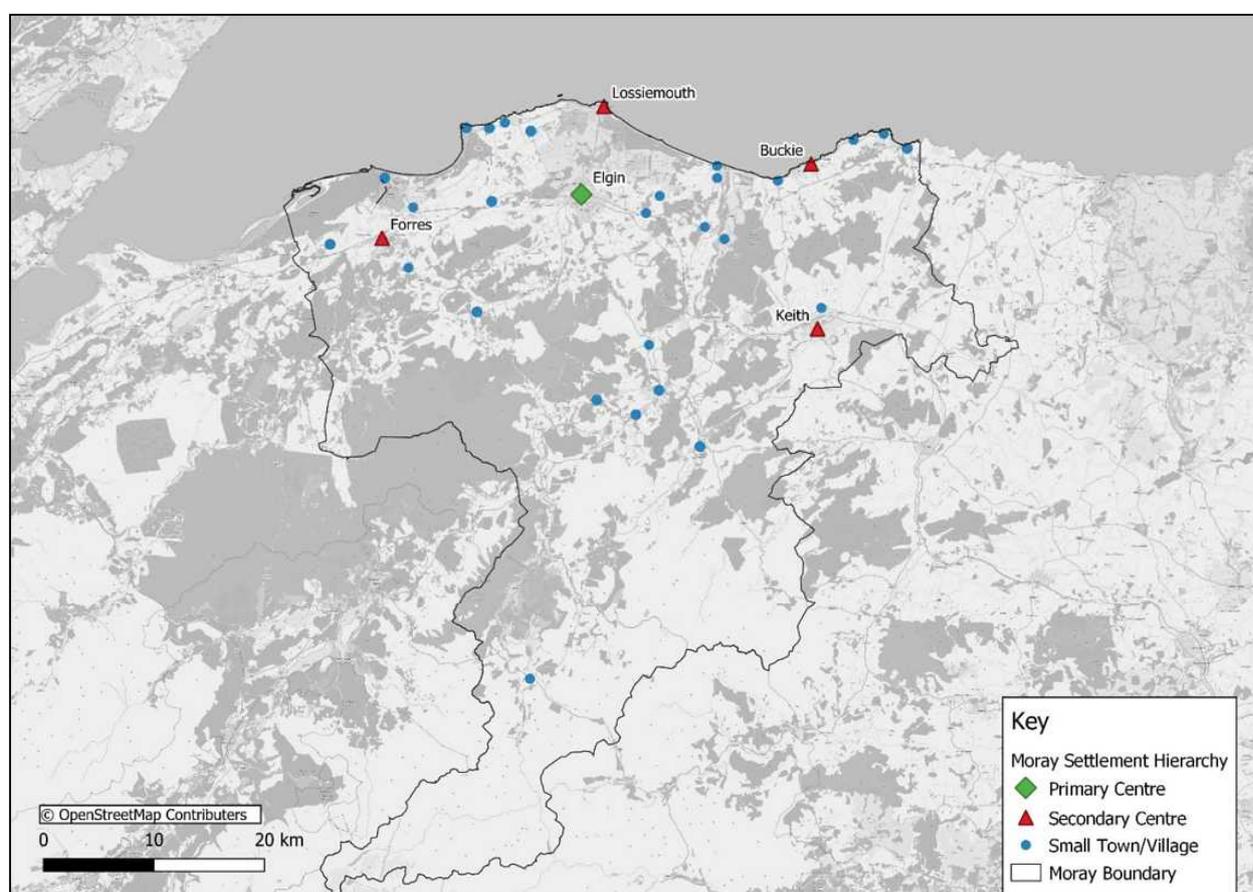
¹ [Mid-2021 Population Estimates Scotland | National Records of Scotland \(nrscotland.gov.uk\)](https://www.nrscotland.gov.uk/publications/mid-2021-population-estimates-scotland)

² <https://www.scotlandscensus.gov.uk/>

2.2 Settlement Hierarchy

As noted in **Section 2.1** a large part of Moray's demographic is rural areas. The local authority area contains no major cities with its primary centre being the town of Elgin. Elgin has a population of approximately 23,000 people which is 25% of the total population of Moray. In addition to Elgin, Moray hosts several other towns which are considered secondary centres. Moray's settlement hierarchy is shown in

Figure 5: Moray Settlement Hierarchy



2.3 Proportion of Housing without access to off street parking

The 2011 Scottish census shows that Moray contains approximately 40,062 homes with 68% of these being houses or bungalows which are detached or semi-detached and therefore assumed to have access to off street parking.

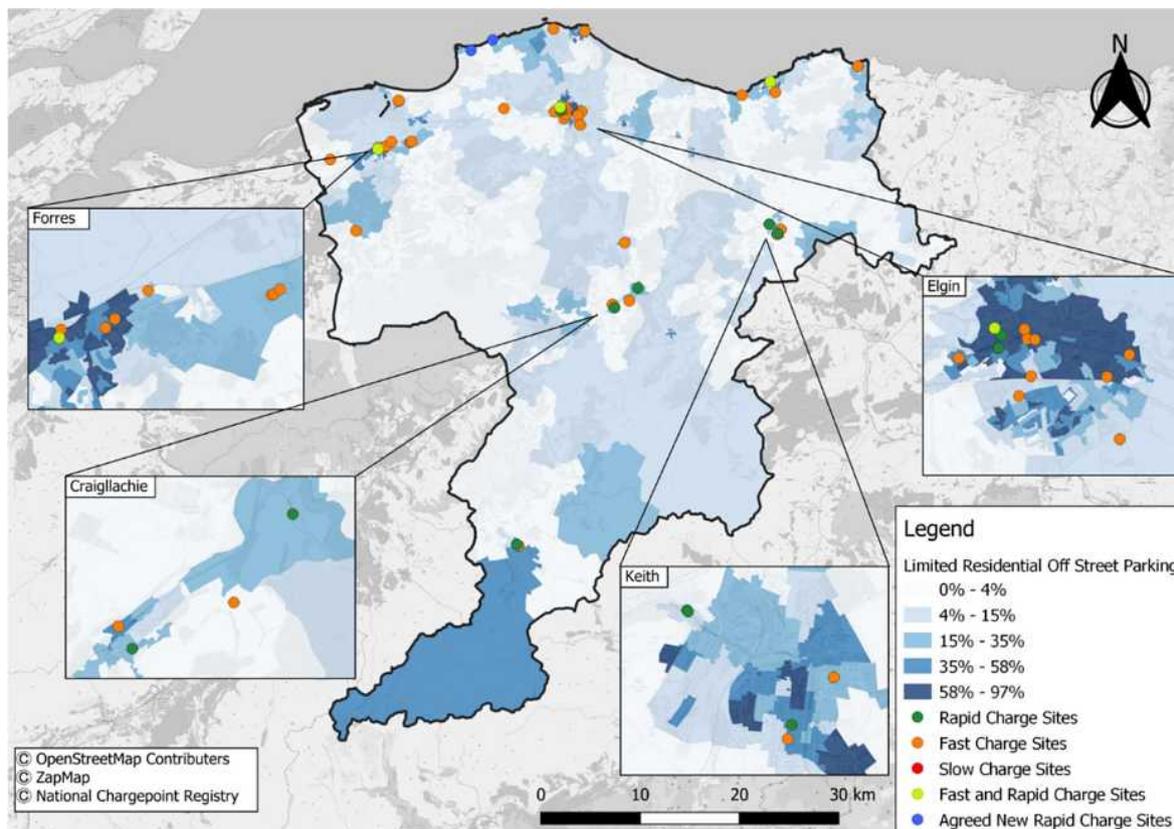
Table 3: Moray Accommodation by Household Tenure ³

Accommodation Type	Housing Stock in Moray	
	Absolute	%
Whole house or bungalow: Detached	14910	37%
Whole house or bungalow: Semi-detached	12579	31%
Whole house or bungalow: Terraced (including end-terrace)	7355	18%
Flat, maisonette or apartment: Total	5071	13%
Caravan or other mobile or temporary structure	147	0%
Total	40062	100%

Most areas without off-street parking in Moray are concentrated in denser urban areas, including Elgin, Forres and Keith. In comparison, there is a lower concentration of areas without off-street parking in the less dense rural areas across Moray including Rothes, Findhorn, and Tomintoul where the population is more dispersed. The southern areas of Moray near the Cairngorms National Park are predominately rural in nature and exhibit higher concentrations of properties without off-street parking. This is due to lower numbers of properties and the presence of rural terraced cottages.

³ <https://www.scotlandscensus.gov.uk/>

Figure 6: Existing Charging Posts and Limited off-street parking



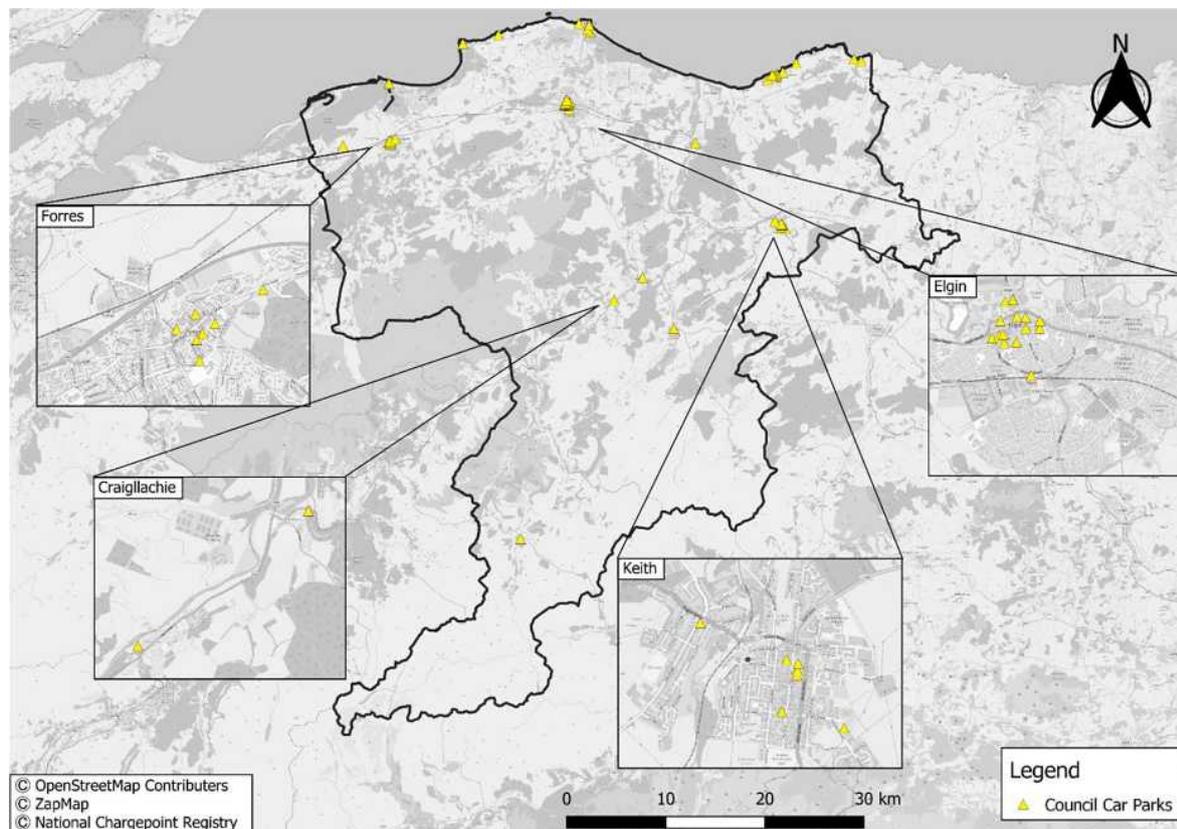
2.4 Parking Areas

Figure 7 illustrates the analysis and mapping of car parks owned by Moray Council taken from the Council website⁴ and Google Maps⁵. Council owned car parking areas in Moray are focused on the main towns, villages, and tourism areas in Moray. There are clusters of council owned car parks in Elgin, Forres and Keith as well as on the coast.

⁴ http://www.moray.gov.uk/moray_standard/page_58746.html

⁵ <https://www.google.com/maps>

Figure 7: Moray Council Owned Car Parks



2.5 Method of travel to work

Table 4 shows the most common method of commuting in Moray is driving to work, with 57% of people opting to drive over any other mode of transport. This is higher than the national average of Scotland which is 56%. This emphasises the reliance these residents have on private car use for commuting, and therefore as the demand of electric vehicles in the area increases, the importance EV infrastructure grows too.

Table 4: Method of travel to work for those who are employed in Moray and Scotland ⁶

Method of travel to Work	Proportion of people in employment	
	Moray	Scotland
Driving in a car/van	57%	56%
Passenger in a car/van	6%	6%
Underground, Metro, Light Rail	0%	0%
Train	2%	4%

⁶ <https://www.scotlandscensus.gov.uk/>

Method of travel to Work	Proportion of people in employment	
	Moray	Scotland
Bus	3%	10%
Taxi	1%	1%
Cycling	3%	1%
Walking	12%	10%
Motorcycle/Scooter	0%	0%
Other (Include. Work at home)	16%	12%
Total	100%	100%

2.6 Vehicle Groups

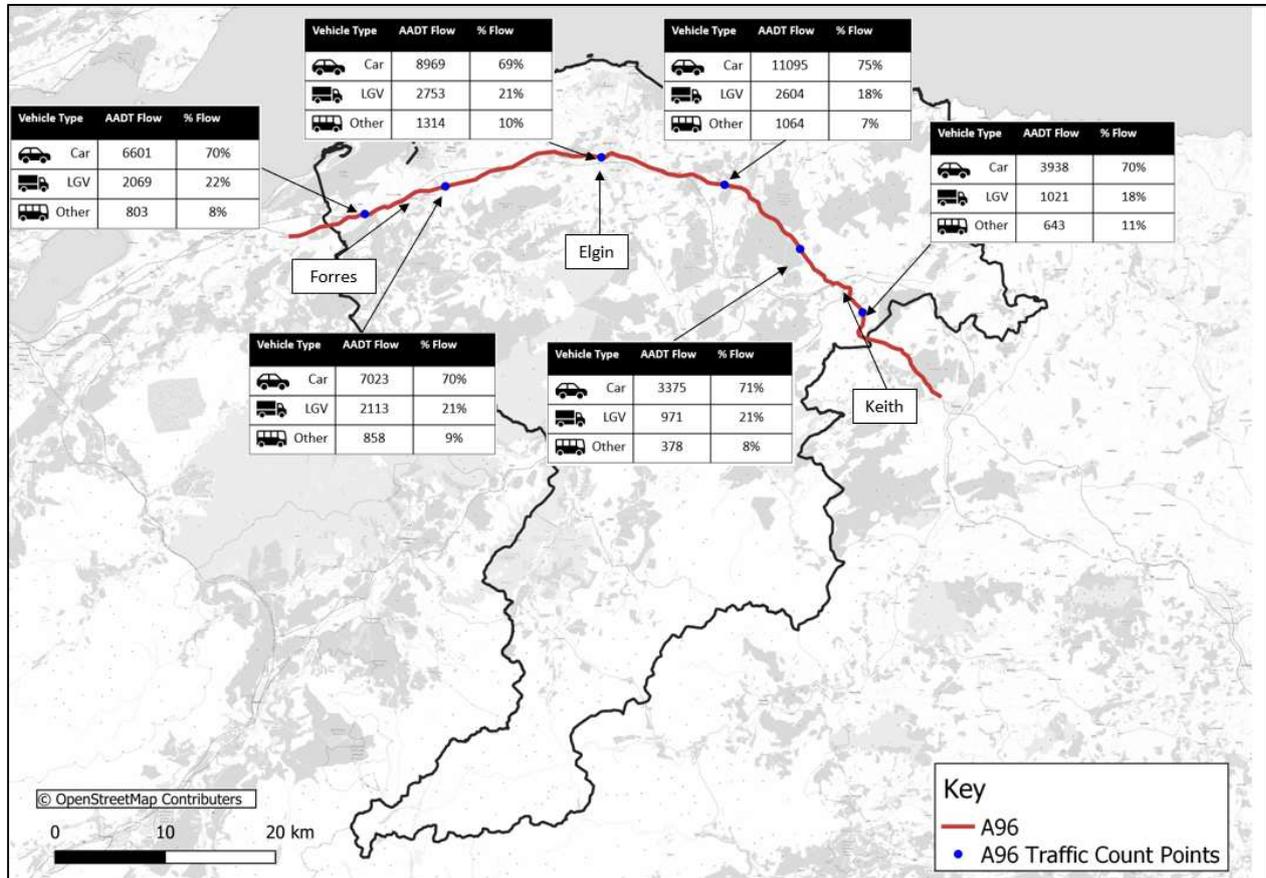
The A69 forms the main east-west transport corridor between Inverness and Aberdeen. Figure 8 shows the estimated AADT traffic flow for several points of the A96 throughout county, this shows that the level of traffic on the A96 varies throughout the county.

The flows presented in Figure 8 **Error! Reference source not found.** are grouped into the following categories:

- Cars – Cars, Vans, Taxis and Private Hires
- LGVs
- HGVs and Buses

It can also be seen that cars make up approximately 70% of the traffic travelling along the A69.

Figure 8: A96 AADT Traffic Flows⁷



2.7 Charging Types

Figure 9⁸ shows the locations of existing EV charging sites in Moray. The map has been created using data from ChargePlace Scotland, National Charge Point Registry and Zap-Map⁸ and shows the overall charging infrastructure across Moray, with 23 ‘rapid’ charging posts, 65 ‘fast’ charging posts and 2 ‘slow’ charging posts in operation at the time of writing.

In Moray, EV charging infrastructure is predominantly concentrated within the main strategic settlements of Elgin, Keith and Forres, while rural settlements/areas have less coverage including Buckie, Dufftown, Kinloss and Tomintoul. Charging infrastructure is also found near the main strategic routes, the A95 and A96.

It is worth noting that there are multiple fast charging posts in some locations in the western and northern regions of Moray including Forres and Elgin, with fewer located in Lossiemouth, Buckie and Keith. The current distribution of charging infrastructure is expected given the population density of the areas but

⁷ <https://roadtraffic.dft.gov.uk/local-authorities/46>

⁸ <https://www.zap-map.com/live/>

may also reflect limited access to off-street parking. Areas associated with a lower population such as the southern region of Moray near the Cairngorms will have a lower demand for charging infrastructure, however it is crucial a balanced network is provided that provides for all residents and visitors.

Figure 9: Existing Charging Infrastructure in Moray

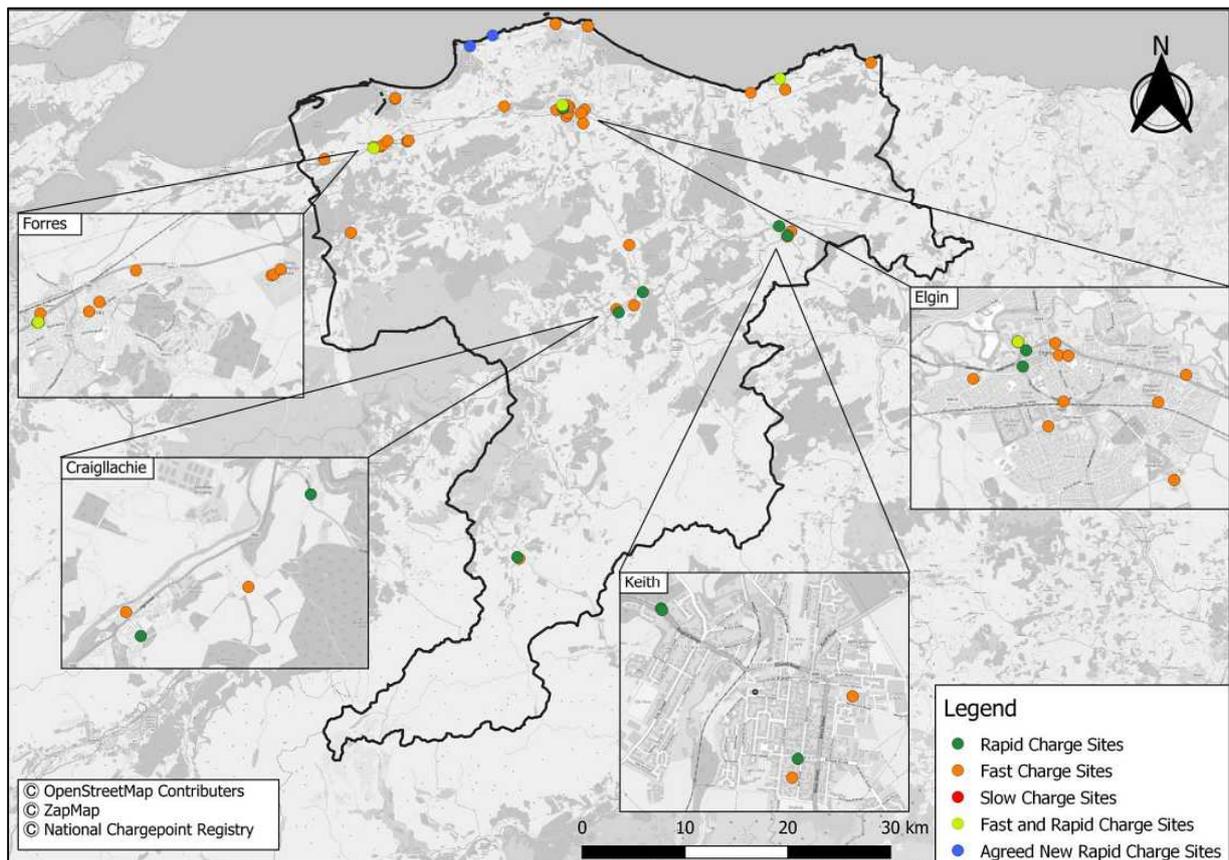
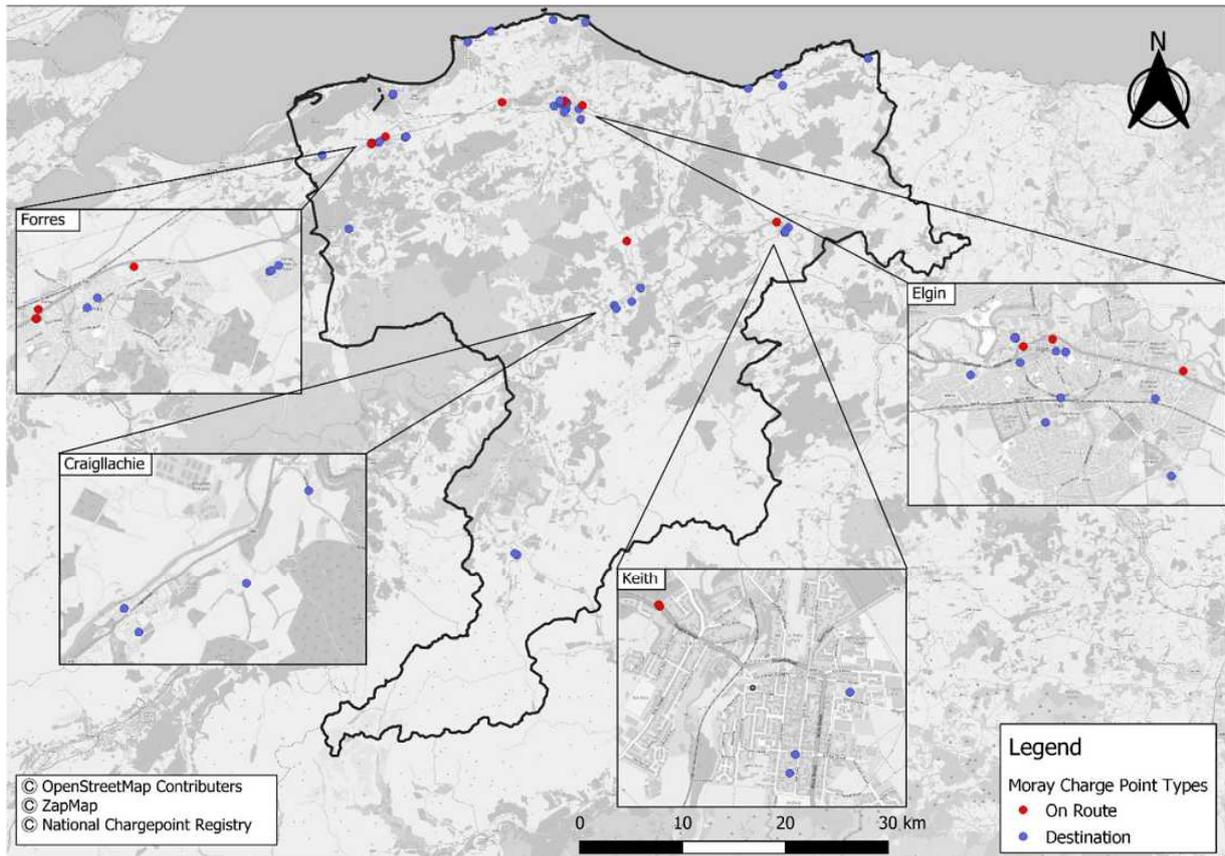


Figure 10 shows the existing charging posts by type with a large proportion of the charging posts in Moray being categorised as destination charging posts rather than on route charging. Moray would benefit from a more rapid on-route charging posts to facilitate the through traffic identified in the sections above.

At present there are no electric vehicle charging hubs or charging forecourts in Moray.

Figure 10: Existing Charging Infrastructure in Moray by type



3 Baseline Position at March 2022

3.1 Current Approach to Service Delivery

Within Moray, a network of electric vehicle charging points to encourage the use of electric vehicles on the strategic road network are operated through ChargePlace Scotland. The control of assets has been devolved to Moray Council and who oversee day-to-day operations.

To ensure the continued functionality of the charging post network, there is an overarching service and operation contract with SWARCO which encompasses the entire network, which has been funded through Transport Scotland. This contract is currently a 2+1+1 contract meaning that there is an agreed contract on place for two years and likely two one-year extensions. The end of the first contract is in March 2025 and at this point the infrastructure will fall under the purview of Moray Council, this gives flexibility in the future of these existing sites and their possible inclusion in a future contract with a commercial operator.

3.2 Electric Vehicle Infrastructure (EVI)

The below table summarises the total EVI position and key statistics within Moray as of March 2022, the table is based on the format within the Strategy and Expansion plan template as provided by SFT.

Table 5: Moray Electric Vehicle Infrastructure Summary

Local Authority Area	Moray
LA Tariff	0.28 per kWh
LA Tariff AC	0.28 per kWh
LA Tariff DC	0.28 per kWh
Population	96,410
Public Devices (All)	90
CPS Public	23
% Non-CPS	74%
Public Devices (50kW) +	23
% 50kW+	26%
Run Rate Last Qtr (All)	Not Available
Run Rate Last Qtr (50kW+)	Not Available
Current Estimated Charging Sockets	116
Current EVCP per 100k Population	93
Current Opportunities per 100k Population	120
Dwellings	40062
% Off street parking	69%

3.3 Revenue and Operations

Section 3.1 outlines the approach to service delivery of the charging post network. As Moray Council does not own the infrastructure the only cost Moray Council covers is the cost of the service and operation contract and the direct cost of electricity from their electricity supplier. Moray Council's approach to date has been not to focus on making a profit from this infrastructure only to cover operational costs to ensure infrastructure is available for residents and tourists.

Since the introduction of the first public charging points owned by Moray Council in 2014, Moray Council has leveraged a flat tariff to cover the operational costs of running the EV infrastructure. A flat tariff is a tariff by which the consumer pays a fixed tariff for connecting to a charge post no matter the kW's extracted. Moray had originally been using a flat tariff of £3.80 to generate the revenue required to cover the operational costs of the infrastructure.

In 2021 Moray Council recognised that the flat tariff structure may not be the most appropriate way in which to charge the EVI users. Analysis was done to compare the tariff structures with those adopted by surrounding local Councils, in particular Aberdeenshire and Highland Councils, which indicated there should be a review of Moray Council's tariff structure to broadly align with their neighbours.

To assess the implications of transitioning away from a flat tariff, Moray commissioned a tariff review to evaluate the financial options of alternative tariffs. This analysis was used to identify the tariff structure which would most effectively cover the EVI costs without creating excess profit. Thus, allowing Moray Council to provide accessible charging infrastructure with competitive and fair prices.

The analysis concluded that, given current cost and demand, a transition to a Consumption-based tariff of £0.28 per KWh would be a financially viable option to ensure operational costs were covered. This new tariff has been in operation since 1 April 2022.

Part 1 – Public EV Charge Point Strategy

4 Vision, Outcomes and Priorities

4.1 A well-designed, comprehensive and people- focused network.

Several stakeholder engagement exercises have been undertaken as part of the wider Moray Electric Vehicle Strategy to explore the future of Moray's EV infrastructure and its place in the wider transport and environmental strategy.

An initial workshop was undertaken on 22nd March 2022 facilitated by the Moray Climate Assembly. An additional workshop was undertaken on the 23rd of August 2022, this was an internal event with Moray Council officers and Jacobs Consultants Comments and key considerations discussed at both these workshops in terms of the future vision of the EV infrastructure in Moray are summarised below:

- Moray Council's view is that our role is less about operating charging sites and making money and more about influencing wider private investment plans to ensure an equitable role out across the county.
- Electric car charging points should eventually be provided at all commercial and community parking facilities. Charging infrastructure should also be provided for residential properties, with access to communal charging facilities available in the case that off street parking is not available.
- There is need to ensure equitable provision of EV infrastructure across Moray, which needs to consider the more low-income terrace housing areas that do not have suitable off-street parking to allow for home charging points. These locations have been identified as part of the wider Moray EV Strategy and given the geographical spread of the proposed site locations some of these areas will be covered by proposals.
- The focus on equitable provision also needs to consider the lack of EV infrastructure in the more rural areas of Moray, where no council owned car parking is located. Again, these areas have been identified as part of the Moray EV Strategy and there is

potential to address these gaps through community engagement and the use of community owned assets (e.g., village halls) to host infrastructure.

- It is important to ensure accessibility of the pavement is retained with the installation of future EV infrastructure, and there is the possibility of introducing a blanket ban on stretching cables over the pavement from homes to roads. There are various technology options to addressing this (e.g., bollards/coverings/gulley's) which can be sought during procurement exercises.
- The need for accessibility also needs to consider that no new obstacles are created due to charging infrastructure and that accessibility is enshrined within the design and location of EV charging posts.
- The importance of ensuring there is an element of upskilling within the community of Moray through operators to provide local maintenance and repair staff.
- Communal Car share and E-bike facilities are already present within Moray, and they are seen as a key resource going forward for both expanding the transition to electric vehicles but also reducing the overall level of car ownership.

At present there is no current sources of engagement with the wider public and EV users within Moray, however, as part of the writing of the future Local Plan, EV considerations will be discussed in sessions with the public within the wider context of 20-minute neighbourhoods.

4.2 An accessible, and reliable public network of charging posts that works for everyone.

It is important to consider how future EV infrastructure will be accessible to all public groups and this has been assessed within the **Section 5** of the Wider Moray EV Strategy to identify the potential impacts of policy or strategy choices for the provision of EV infrastructure on different protected and health characteristics. The characteristics listed in Table 6 have been identified as characteristics that may potentially be impacted on, whether positively and/or negatively, by the installation of EV charging infrastructure.

The rural nature of Moray can create social disadvantages for the communities living there due to isolation from urban areas and services. The urban areas are more likely to have easier and more convenient access to public EV charging posts, whereas in the rural areas, commercial operators are less likely to install infrastructure due to the lack of perceived demand due to the less dense population, The characteristics of gender reassignment, race, marriage and civil partnership, religion and belief and sexual orientation are not deemed to have an impact.

Table 6: A summary of the potential positive and negative impacts on each applicable characteristic

Characteristic	Potential Positive Impacts	Potential Negative Impacts
Age	EV uptake will contribute toward reducing the occurrence of extreme weather events such as heatwaves that disproportionately impact older people. People aged between 16-49 are most likely to switch to an EV.	Trailing cables on the footway can cause a trip hazard for both older and younger pedestrians. Older people with less exposure to new technology may find charging post technology difficult to use.
Disability	Charging posts can be installed in blue badge bays. Potential for innovative products that have less impact on the surrounding footways.	Trailing cables on the footway can cause a hazard for wheelchair users and those with sight loss. Charging posts can be difficult for some disabled people to use if not designed appropriately, i.e., not on a dropped kerb.

Characteristic	Potential Positive Impacts	Potential Negative Impacts
Pregnancy & Maternity	Local and convenient locations allow for easier and less stressful access for parents with small children.	Trailing cables on the footway can cause a barrier for pushchairs and prams.
Sex	n/a	Women could feel unsafe using charging posts at charging hubs located in car parks or off-street car park locations in remote and unlit areas.
Other vulnerable & disadvantaged groups	Identify areas of deprivation and ensure a geographically balanced charging post network is provided. Second hand car market can increase affordability of EVs for lower income households. Commercial suppliers offer fully funded solutions (including build outs and car clubs) and can offer a solution for residents in social housing with limited off-street parking.	Lower income households are less likely to own an EV due to the high cost. Lower income households are more likely to live in homes without access to off-street parking, therefore must pay the cost of charging at a public charging post. Car club memberships can be expensive.
Health inequalities	Air quality along major roads will improve due to EV uptake. A reduction in extreme weather events will also reduce pollution.	n/a
Social & economic	Aims to create a balanced and fair network across Moray ReCharge Parklet – constrained pedestrian spaces can be transformed by creating a parklet that would contain EV and e-bike charging facilities, seating, a bicycle stand etc all within a parking bay. This would boost levels of activity and promote social interaction.	Potential for demand for EV charging posts in rural areas to be low, meaning less attractive to CPO's installing infrastructure. Some people may be required to use an EV for work and therefore may incur the financial responsibility of charging the EV using the public network.
Physical Health	Shift to EVs will result in improving air quality, improving health.	No health benefits without shift from ICEs to EVs.
Mental health & wellbeing	EVs are more affordable to operate.	Stress associated with inability to charge EV in a convenient/suitable location.
Access to services	n/a	A lack of charging infrastructure may result in people being unable to access services as they are unable to charge their EV.

There are current examples of fully accessible charging posts currently operating in the UK, such as Duku, which are a product design consultancy based in the UK that specialises in EV charging post infrastructure. Where feasible, Moray will seek to install new infrastructure to the highest accessibility standards.

There may be some existing infrastructure that cannot fully meet this guidance; the key to addressing this is to fully communicate this to users so expectations are at a correct level. The approach to infrastructure accessibility can be categorised in three different ways, which each have a slightly difference approach:

Existing infrastructure that may not be fully accessible, which will need to be fully communicated to the public

New infrastructure that would adhere to government accessibility guidance

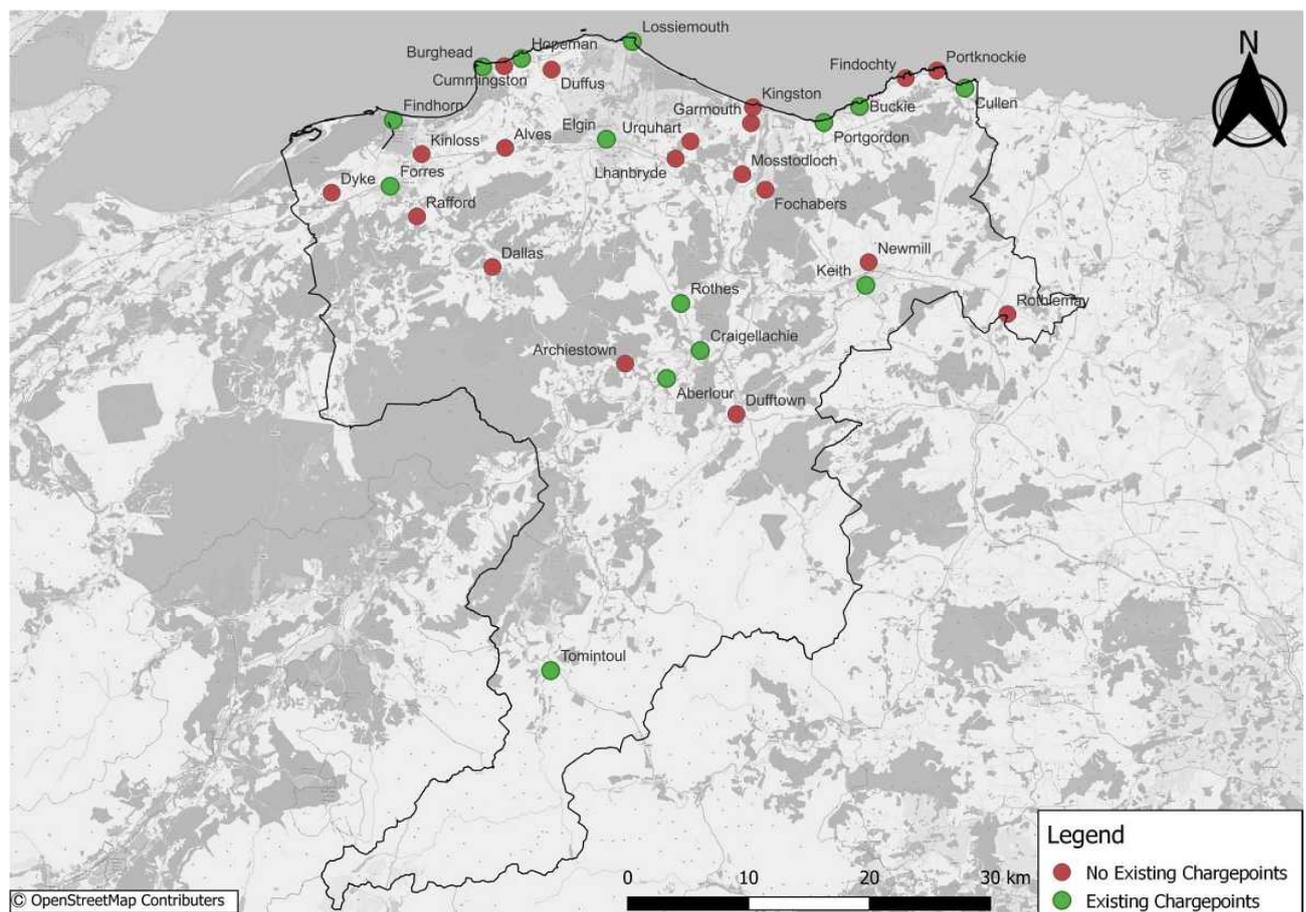
Charging post's in specifically designated disabled parking bays, which will seek to adhere to BSI standards

4.3 Supporting the principle of a Just Transition.

It is important to consider how the expansion of new EV infrastructure in Moray can be introduced while following the principles of a Just Transition and that it will evolve to become a balanced network, offering infrastructure for all users. This has been assessed within the **Section 5** of the Wider Moray EV Strategy and initial strategies formed for addressing a just transition. Moray has a variety of geographies within its jurisdiction and so a solution will need to be tailored for each area.

The current picture of the EV charging post network in Moray illustrates there is a geographic imbalance in the network as most charging posts are currently situated in the north and along the coast. The current network favours the main settlements in Moray such as Elgin, Keith, Forres, Buckie and Lossiemouth however, there are some gaps in the more rural areas, most notably to the south. The following figure sets out which settlements in Moray currently have public charging infrastructure.

Figure 11: Moray Settlement Hierarchy Split by Existing Charging Infrastructure



The following

Table 7 sets out the Moray settlement hierarchy and identifies which settlement currently has or does not have public charging infrastructure. The table highlights that Elgin, the primary centre, and all secondary centres in Moray have existing public charging infrastructure. In contrast, over two thirds of the smaller towns and villages in Moray have no public charging infrastructure.

Table 7: Settlement existing charging infrastructure assessment

Existing Charging Infrastructure?	Yes	No
Primary Centre	Elgin	
Secondary Centres	Forres, Buckie, Keith, Lossiemouth	
Small Towns and Villages	Aberlour, Burghead, Craigellachie, Cullen, Dufftown, Findhorn, Hopeman, Portgordon, Rothes, Tomintoul.	Alves, Archiestown, Cummington, Dallas, Duffus, Dyke, Findochty, Fochabers, Garmouth, Kingston, Kinloss, Lhanbryde, Mosstodloch, Newmill, Portknockie, Rafford, Rothiemay, Urquhart.

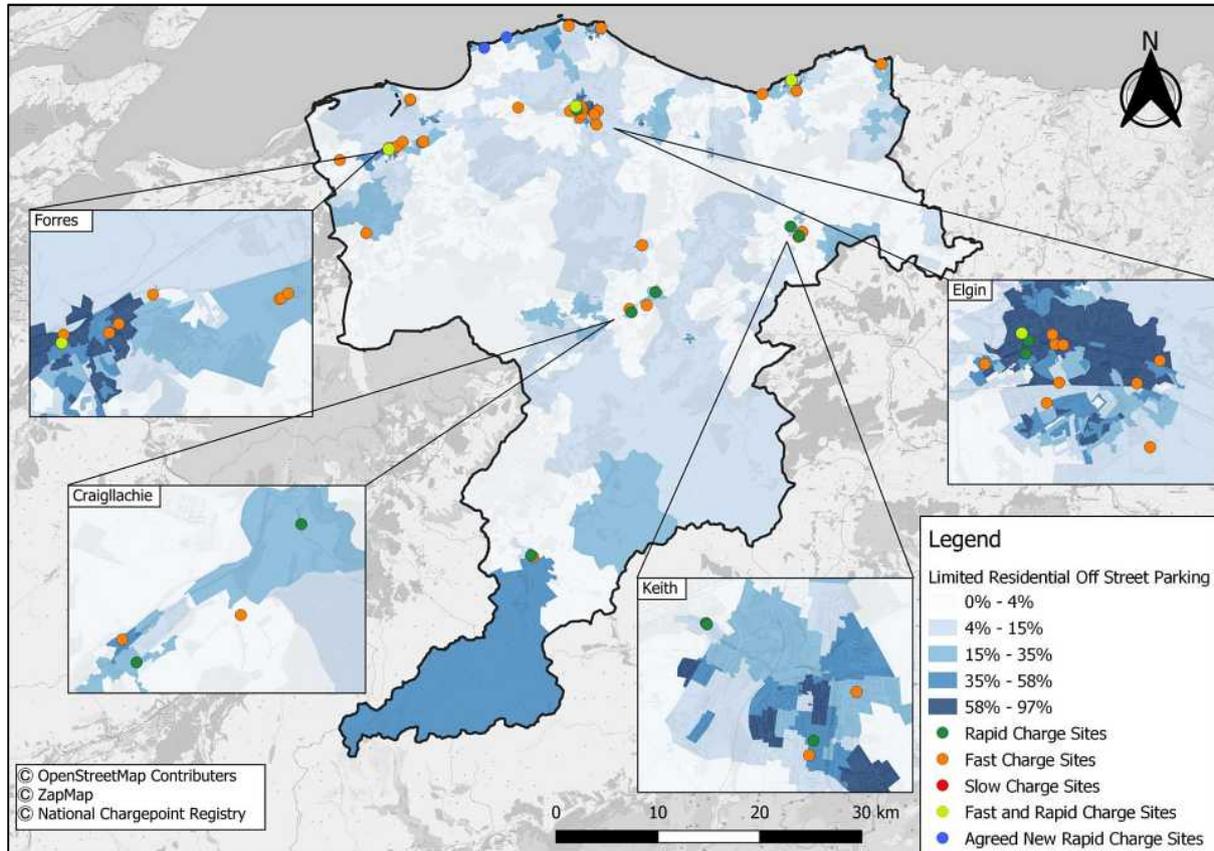
As part of delivering an equitable network, charging post infrastructure gaps in some of the smaller towns and villages will need to be addressed to create a balanced network. The exact answer to these gaps is not currently obvious, however there is a desire by Moray Council to work proactively with community groups in these areas to understand the possibility of utilising community owned infrastructure and the potential for a financially stable model.

However, it will not necessarily be economically viable to deliver public charging post infrastructure in every small town and village. Instead, most EV charging should occur at private homes or where there is existing charging post provision.

Although Moray, has relatively high access to off street parking for home charging, there are several locations with a low % of off-street parking as outlined below in

Figure 12.

Figure 12: Access to Off Street Parking within Moray



The areas of Moray which will not have access to home charging, are often terrace housing where households are typically on lower incomes and do not have access to a drive. A lack of off-street parking creates more demand for on-street parking and therefore an inconvenience if the on-street EV charging post cannot be accessed. To ensure a Just Transition, consideration will need to be given to future provision of on-street parking to cover areas with no access to home charging and how the tariffs can impact the transition to a fair and equitable network.

For low-income areas, with limited off-street parking, some will be addressed by the council owned car parking sites identified in this business case for future infrastructure, as this has been assessed with a view of geographical balance by settlement. Going forward, it is expected that a demand led approach will be followed, responding to requests for infrastructure.

4.4 Attracts private sector investment.

We understand the importance of private sector investment to expand the future EV infrastructure within Moray. There are a few factors which can be used to attract and leverage private sector investment which are outlined below:

- Moray Council’s preference is to retain the connection of the EVCI and therefore initially cover electricity costs. This will then be passed onto the operator.
- There is the option to package up the existing 27 assets once the contract ends in March 2025 within a singular package as part of a future CPO contract, in line with approaches around other Scottish local authorities. Assets are currently devolved but will be returned to Council ownership once the contact ends. There is a maintenance

contract with SWARCO in place for most sites, which has recently been extended until June 2023.

- The current EV infrastructure within Moray is Open Charge Point Protocol (OCPP) 1.6 compliant, with an upgrade to OCPP 2.0 currently being undertaken and so meet the industry standard.
- Moray's preference will be a portfolio approach which seeks to offer high utilisation sites alongside low utilisation sites to enable wider infrastructure coverage, this is line with the approach being undertaken in the Highland/Aberdeenshire/Aberdeen City Pathfinder project.

As part of the wider Moray EV Strategy some information gathering, and soft market testing has been undertaken through conversations with charging post operators. Conversations were held on a 1 to 1 basis with SWARCO, Ubitricity, LibertyCharge, Trojan Energy, ChargePoint and Instavolt. These discussions indicated that there is some interest in operating within Moray while acknowledging the rural nature of some parts of the county. Some of the key points from these conversations in relation to attractiveness are outlined below:

- Preference for longer term contract, with 15+ years noted by several CPOs.
- Acknowledgement that there will be a need to address areas with low utilisation as part of any offer.
- There is initial indication that a portfolio led approach would be acceptable, with a mix of high and low utilisation sites. High level quotes of % of low utilisation sites in conversations have been in the region of 10-15%
- Possible opportunities for profit share and/or site rental agreements with the council
- Several CPO's offer potential for investment and fully funded models, high level discussions around the key factors that would influence the decision to invest is related to population, local amenities, vicinity to major roads.
- Rapid charging posts specifically are broadly seen as more commercially attractive to operators if they meet the factors listed above.

4.5 Supporting active and public transport choices

The provision and support of public transport and active modes is an important focus within Moray Council and is a key objective within the Active Travel Strategy (2022 – 2027) and Local Transport Strategy (2011). There are several ways in which the location of EV charging posts in Moray can support these aspirations. It is important that EV uptake does not detract from active travel and/or public transport, which should remain the priority.

Car clubs

The Moray Car share scheme was founded in 2007. The community-based car club's mission is to provide convenient and affordable transport options that minimise environmental damage and encourage social cohesion. The scheme enables users to book and drive in Findhorn, Forres, Kinross, and Aberlour/Craigellachie. A third of the fleet is electric and all other vehicles are low emission. There are now 15 vehicles available and over 300 members. The Moray E-bike scheme also sits alongside this, allowing users to travel greater distances in comparison to regular cycling. 14 E-bikes can be found in Findhorn, Forres, Kinross, and Aberlour/Craigellachie.

Mobility hubs

There are currently no mobility hubs operating within Moray, however they should be considered as part of the future strategy. Mobility hubs are highly visible, safe, and accessible spaces where public, shared, and active travel modes are co-located alongside improvements to public realm and where relevant enhanced community facilities. The redesign and reallocation of space from the private car, is intended to enhance the experience of travellers as well as benefiting residents and businesses.

As noted, E-car clubs and mobility hubs will be considered to complement EV charging post infrastructure and not embed EV dependency.

Public Transport

As noted above, mobility hubs should be considered, and these often are located around rail stations or other public transport interchanges. There is a need for the level of parking to be considered and managed at public transport interchanges, and this could include prioritising space for EVs, and/or car clubs. There is a need to strike a balance between encouraging public transport uptake, walking, and cycling, whilst also providing space for cleaner vehicles for those that need to drive to access public transport nodes. There has been some provision for increased EV infrastructure in public transport parking locations at Elgin Rail Station in the Economic Case.

Moray Council currently have plans to transition their bus fleet to electric and will progress the transition as more EV charging posts are installed. Demand Responsive Transport is a key consideration for enabling public transport to the more rural areas of Moray and charging post infrastructure at key locations will be needed to enable this.

Active modes

To support active modes of travel, the location and nature of future infrastructure, especially on street charging posts, should be considered to ensure there are no adverse impacts on the paths of pedestrians or cyclists. At public transport interchanges, accessibility for those walking and cycling should be the priority and the most convenient options.

Moray Council's Active Travel Strategy highlights the importance on building upon recent walking and cycling growth, especially in the main settlements where many journeys can be less than 5km. However, the rural nature of many parts of Moray means that a certain level of personal car use will still be expected in the smaller, less accessible villages.

Part 2 - Public EV Infrastructure Expansion Plan

5 The Economic Case

5.1 Forecasting Demand

A forecast modelling exercise has been undertaken to provide future predictions around charging behaviour and subsequent infrastructure requirements. This provides a quantitative output at various levels of disaggregation to give more context for the wider EV strategy and predicted infrastructure requirements. Full details of the modelling process and outputs can be found within **Section 7** of the wider Moray EV Strategy, which will be provided alongside this bid document.

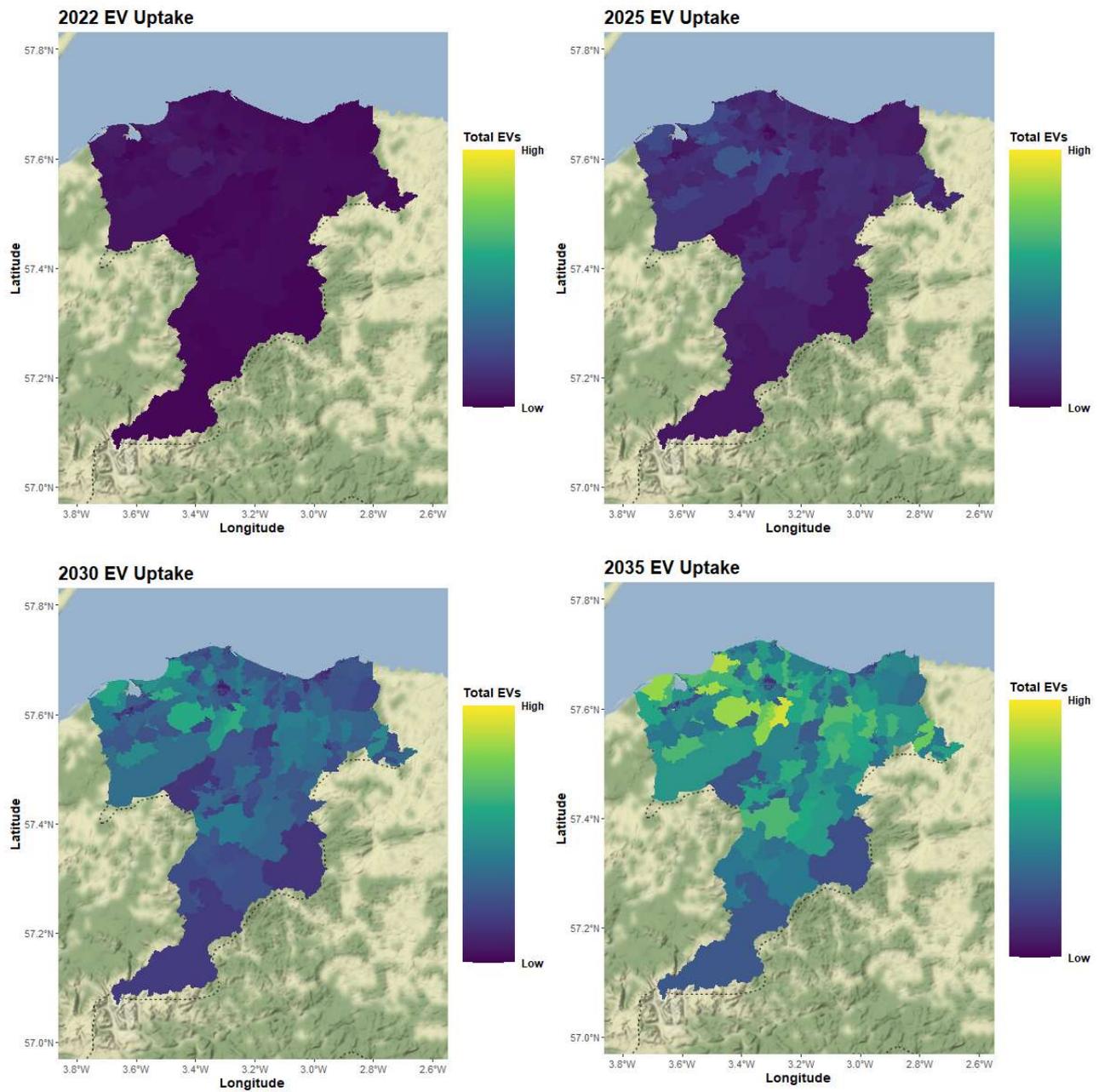
The forecasting has been undertaken for three distinct scenarios for 'Low', 'Medium' and 'High' uptake apply the Government policy targets, banning different vehicle types in 2030 and 2035, and the varying levels of expected ULEV (PHEV) and ZEV (BEV) uptake on the following basis:

- High – assumes an optimistic ZEV (BEV) uptake, at the upper end of the projected range, reaching 100% of all new car sales by 2030
- Medium – assumes a more moderate ZEV (BEV) uptake, in the middle of the projected range, reaching 100% of all new car sales by approximately 2032
- Low – assumes that ZEV (BEV) uptake will be at the lower end of the projected, reaching 100% of all new car sales by approximately 2035. This is the latest by which all new vehicles will be ZEV (BEV)

To determine if an individual household had a parking space or not, the supplied data from Field Dynamics which had pre-labelled each UPRN in Moray by the number of parking spaces was used. A UPRN is a Unique Property Reference Number, and is a single unique number assigned to every property in the UK. The publicly available UPRN data includes all commercial properties, whilst the data provided by Field Dynamics had been pre-filtered to just residential. This allowed both identification of the residential properties, determine if they needed on-street charging and, by a cross comparison with the global UPRN list, identify non-residential properties in Moray.

Figure 13 below shows the distribution of electric vehicles in Moray, forecasted through to 2035 using the geospatial modelling tool. The figure shows that the greatest increase in vehicle numbers occurs in the 2025 to 2030 period.

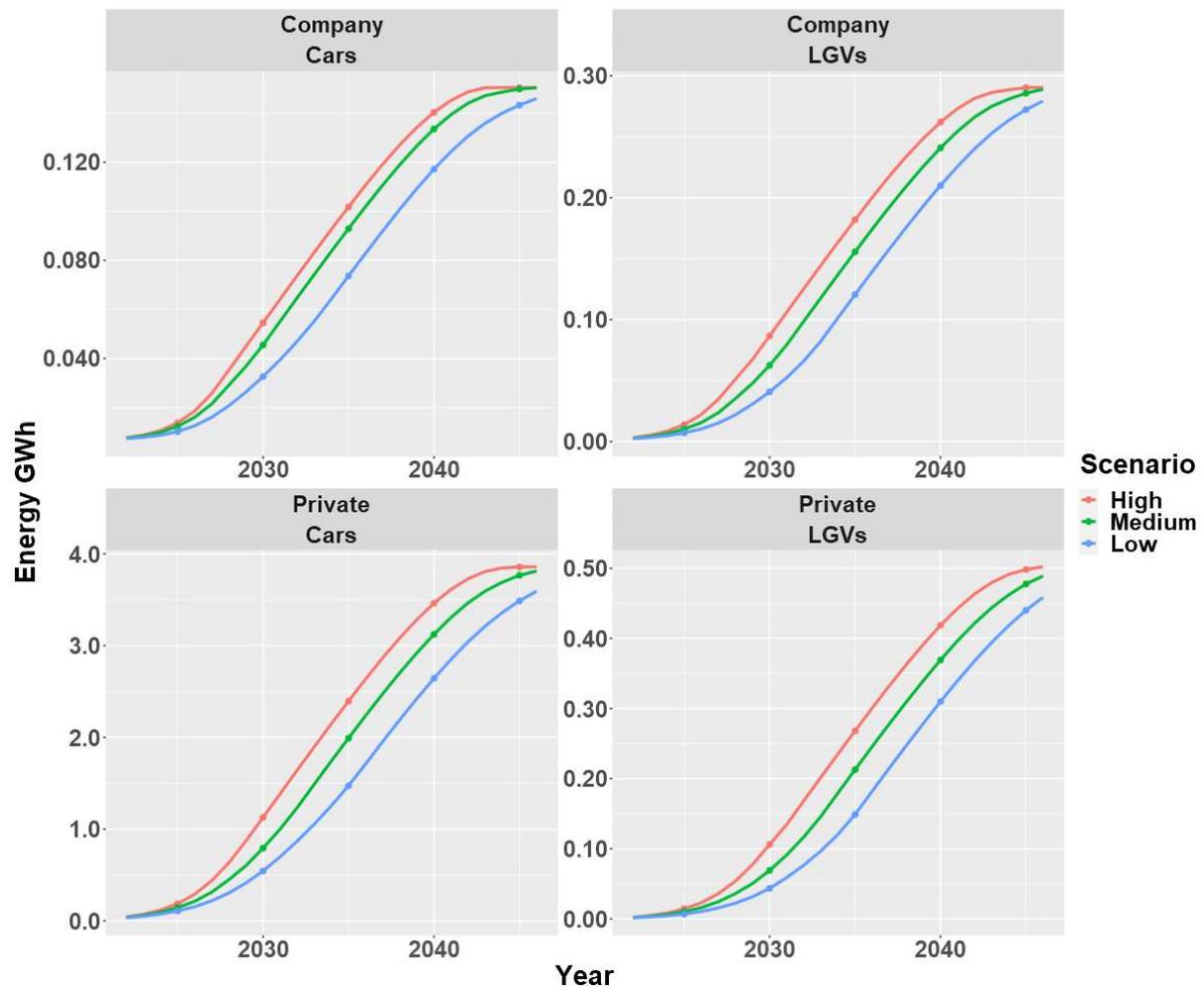
Figure 13: Spatial Uptake Forecasting



In

Figure 14 **Error! Reference source not found.** we can see the overall forecast energy demand for Moray across the different scenarios, keepership, and body types. The total energy demand reaches approximately 5 GWh per year in 2045.

Figure 14: Energy Forecasts



For the future need for EV provision in Moray, the energy forecasts have been used to estimate the energy requirements for different types of charging speeds across Moray in 2026. This has been done by predicting the annual kWh at each of the available council owned sites for three different use cases.

- Residential Charging: This uses an assumed vehicle km driven per year, combined with vehicle efficiency, to derive an overall energy demand. This is then proportionally distributed to those sites with no off-street parking.
- Destination Charging: Similarly, to Residential Charging, this generates an assumed energy for destination charging, based on the likely movement patterns.
- On Route Charging: This assumes that all current expected on-route charging is distributed amongst those charging posts near the main roads.

5.2 Preferred Charge Point Mix

As noted in the previous section outlining of the forecasting work undertaken in Moray, energy requirements by charging speed have been forecast for Moray on a settlement basis and this has been translated into charge post infrastructure in order to present an estimate of the total required charge post types by settlement in 2026, which has been outlined below in Table 8.

Table 8: Predicted charge post requirements by Settlement

Moray Settlement	Residential Off Street (Slow)	Residential On Street (Slow)	Destination (Fast)	On Route (Rapid)
Aberlour	3	2	2	2
Alves	3	2	2	2
Archiestown	2	2	2	2
Buckie	9	3	2	2
Burghead	7	2	2	2
Craigellachie	2	2	2	2
Cullen	4	2	2	2
Cummingston	2	2	2	2
Dallas	2	2	2	2
Dufftown	4	2	2	2
Duffus	2	2	2	2
Duffus/Cummingston	2	2	2	2
Dyke	2	2	2	2
Elgin	35	7	3	2
Findhorn	5	2	2	2
Findhorn/Kinloss	2	2	2	2
Findochty	3	2	2	2
Fochabers	5	2	2	2
Forres	16	5	2	2
Garmouth	3	2	2	2
Hopeman	6	2	2	2
Keith	6	3	2	2
Kingston-on-Spey	2	2	2	2
Kinloss	6	2	2	2

Lhanbryde	6	2	2	2
Lossiemouth	10	4	2	2
Mosstodloch	5	2	2	2
Newmill	2	2	2	2
Portgordon	3	2	2	2
Portknockie	3	2	2	2
Rafford	3	2	2	2
Rothies	3	2	2	2
Rothiemay	2	2	2	2
Tomintoul	2	2	2	2
Urquhart	3	2	2	2

The forecast infrastructure which represents public EV charging has then been compared to the existing infrastructure within Moray as below:

Table 9: Predicted and existing charge post requirements by Settlement

Moray Settlement	Residential On Street (Slow)		Destination (Fast)		On Route (Rapid)	
	Existing	Forecasted	Existing	Forecasted	Existing	Forecasted
Aberlour	0	2	4	2	3	2
Alves	0	2	0	2	0	2
Archiestown	0	2	0	2	0	2
Buckie	0	3	6	2	3	2
Burghead	0	2	0	2	2	2
Craigellachie	0	2	2	2	0	2
Cullen	0	2	2	2	0	2
Cunningston	0	2	0	2	0	2
Dallas	0	2	0	2	0	2
Dufftown	0	2	2	2	0	2
Duffus	0	2	0	2	0	2
Duffus/Cunningston	0	2	0	2	0	2
Dyke	0	2	2	2	0	2
Elgin	0	7	14	3	3	2
Findhorn	0	2	4	2	0	2
Findhorn/Kinloss	0	2	0	2	0	2
Findochty	0	2	0	2	0	2
Fochabers	0	2	0	2	0	2
Forres	0	5	6	2	0	2
Garmouth	0	2	0	2	0	2
Hopeman	0	2	0	2	1	2
Keith	0	3	6	2	5	2

Kingston-on-Spey	0	2	0	2	0	2
Kinloss	0	2	0	2	0	2
Lhanbryde	0	2	0	2	0	2
Lossiemouth	2	4	0	2	0	2
Mosstodlock	0	2	0	2	0	2
Newmill	0	2	0	2	0	2
Portgordon	0	2	2	2	0	2
Portknockie	0	2	0	2	0	2
Rafford	0	2	0	2	0	2
Roths	0	2	2	2	0	2
Rothiemay	0	2	0	2	0	2
Tomintoul	0	2	2	2	2	2
Urquhart	0	2	0	2	0	2

This is summarised as across the entirety of Moray County in Table 10 below:

Table 10: Summary of forecast infrastructure requirements across Moray

Location	Residential On Street (Slow)		Destination (Fast)		On Route (Rapid)	
	Existing	Forecasted	Existing	Forecasted	Existing	Forecasted
Moray County	2	82	54	71	19	70

This forecasting highlights the need for more public infrastructure across various speed types that will be needed to meet the predicted demand in 2026. Note, the total number of existing charge posts mentioned here is 75 which is 15 less than mentioned above in **Section 2.7**. This is because 15 charge posts fall outside the settlement boundaries.

5.3 Site Identification and Grid Connection

The introduction of new EV infrastructure within Moray is being considered as a stepped approach, with the initial step being on the most efficient use of the available council owned car parking sites. As noted within the **Section 4.3**, there will be a need to address EV infrastructure needs in both low-income areas with limited access off street parking and rural areas that do not contain council owned parking locations in future, and these will be addressed in future funding tranches.

The work undertaken in **section 9** of the wider Moray EV Strategy has formed the foundation for the site identification in this document and full details of the assessment can be found within that document. The strategy makes use of available forecasting modelling to score a longlist of council owned sites using the following categories:

Table 11: Site Assessment Categories

Criteria	Description
Security of Location	Sites were scored 1-3 for security based on factors such as lighting, fencing, security barriers, CCTV, and proximity to surrounding developments. Sites scoring 3 were most secure, whilst sites scoring 1 were least secure and lacked the listed security measures.

Commercial Charging Potential	Sites were scored 1-3 on their potential for conflict with current and future commercial charging post investment. Sites located near current charging posts, or close to companies with future plans for charging post investment such as Shell and BP scored lower.
Power Connection Rating	Following an assessment on the implementation of costs for each site, sites were scored using a red-amber-green (RAG) approach, red being the costliest (above £30k), amber being medium (between £10k and £20k) and green being the least costly likely to be less than £10k).
Residential Charging Potential	The expected charging demand that would be driven by lack of access to off-street residential parking.
Destination Charging Potential	Proximity to key facilities such as retail and employment locations.
On-Route Charging Potential	Whether the site is near routes used by fleet vehicles and/or high volumes of traffic.
EV Uptake of Wider Area	Projected EV uptake of the Data Zone Area and travel catchment.

The resulting shortlist of sites and their related scoring is outlined below in Table 12.

Table 12: Short Listed Site Assessment and Scoring

Car Park	Area	Spaces	Total Score	Residential Demand	On-Route Demand	Destination Demand	EV's in Wider Area	Security	Commercial Conflicts
North Pringle Street	Buckie	35	11	2	1	2	2	2	2
Cluny Square	Buckie	67	10	1	1	2	2	2	2
Newlands Lane	Buckie	81	9	1	1	2	2	2	1
Station Road	Burghead	20-50	12	3	1	1	2	2	3
The Square	Cullen	37	13	3	3	1	1	2	3
The Square	Dufftown	12	13	3	3	1	1	2	3
The Hall	Dyke	28	12	3	2	1	1	2	3
North Port	Elgin	98	14	2	3	3	3	2	1
Elgin Railway Station	Elgin	56	15	3	2	3	3	3	1
Hall Place	Elgin	29	16	3	3	3	3	3	1
Cooper Park	Elgin	110	13	1	3	3	3	2	1
The Square	Fochabers	23	13	3	3	1	1	2	3
Tulloch Park	Forres	76	12	1	3	1	1	3	3
Leask Road	Forres	66	13	2	3	1	2	3	2
Leys Road	Forres	61	11	1	2	1	2	2	3
Mid Street	Keith	42	14	3	2	3	2	2	2
Innes Lane	Keith	37	14	3	2	3	2	2	2
Bankers Lane	Keith	16	14	3	2	3	2	2	2
Gregory Place	Lossiemouth	50-100	12	2	1	2	3	1	3
East Beach	Lossiemouth	20-50	11	3	1	1	2	1	3
Station Park	Lossiemouth	20-50	11	1	1	2	2	2	3

A detailed power assessment has been undertaken on the shortlisted sites using the SSEN GIS tool and the publicly available network data. The GIS tool shows the map of the existing low voltage infrastructure (substations, lines/cables etc) while the public data source reveals the available power capacity in the low voltage substations. This has highlighted the costs ranges below on a site basis.

Table 13: Shortlisted Sites Power Assessment

Car Park	Area	Power Assessment (50 and 100 kVA demand)
North Pringle Street	Buckie	20.4k - 26.4k
Cluny Square	Buckie	1.9k - 13.4k
Newlands Lane	Buckie	8.9k - 16.4k
Station Road	Burghead	29.4k - 35.4k
The Square	Cullen	17.9k - 20.9k
The Square	Dufftown	17.9k - 20.9k
The Hall	Dyke	15.3k - 19.8k
North Port	Elgin	1.9k - 10.9k
Elgin Railway Station	Elgin	1.9k - 15.3k
Hall Place	Elgin	13.4k - 19.4k
Cooper Park	Elgin	30.8k+
The Square	Fochabers	17.9k - 20.9k
Tulloch Park	Forres	3.9k - 16.8k
Leask Road	Forres	10.9k - 24.3k
Leys Road	Forres	10.9k - 19.8k
Mid Street	Keith	26.3k - 30.9k
Innes Lane	Keith	19.3k - 23.8k
Bankers Lane	Keith	24.9k - 29.4k
Gregory Place	Lossiemouth	32.8k - 37.3k
East Beach	Lossiemouth	36.2k
Station Park	Lossiemouth	29.4k - 36.8k

With these sites identified, a further qualitative assessment has been undertaken looking at geographical balance, power cost, existing and potential future commercial site infrastructure (BP and

Shell Service Stations, Supermarkets, and other retail) to identify the best use of the shortlisted sites on a settlement basis. The modelled energy requirement forecasting has also been undertaken at a site level to provide a predicted number of charging post types required in 2026 as well as levels of utilisation. This results in the following list in Table 14 which has been used to populate the SFT EVI Feasibility Model.

Table 14: Shortlisted Sites Forecast Infrastructure Requirements

Car Park	Area	Residential On Street (Slow)	Destination (Fast)	On Route (Rapid)
North Pringle Street	Buckie	2	2	1
Cluny Square	Buckie	2	0	0
Newlands Lane	Buckie	1	2	1
Station Road	Burghead	2	2	0
The Square	Cullen	2	0	1
The Square	Dufftown	2	0	1
The Hall	Dyke	1	2	1
North Port	Elgin	1	2	1
Elgin Railway Station	Elgin	1	0	1
Hall Place	Elgin	1	2	1
Cooper Park	Elgin	1	2	1
The Square	Fochabers	2	0	1
Tulloch Park	Forres	2	0	1
Leask Road	Forres	2	0	1
Leys Road	Forres	2	2	1
Mid Street	Keith	1	0	0
Innes Lane	Keith	1	0	0
Bankers Lane	Keith	1	0	0
Gregory Place	Lossiemouth	1	0	1
East Beach	Lossiemouth	1	1	0
Station Park	Lossiemouth	0	1	0

5.4 Capital Investment Pipeline & Estimated Costs

The costs for the installation of the EV infrastructure identified during the site assessment have been formulated with the below assumptions:

- Selected sites are council owned and therefore assumed unlikely to need access/land purchase costs.
- Default costs provided by SFT have been used for EVI Capital and Installation costs, Capital Enabling Costs and Maintenance Costs. The default costs provided by SFT have been compared to costs derived from market experience and were found to be similar.
- The estimated cost of connection to the power network is taken on a site-specific basis taken from the power assessment shown in **Section 5.3**. For 7kW and 22kW infrastructure the lower boundary given in **Section 5.3** is taken, for robustness of financial assessment if this value is lower than the default values provided SFT, then the default cost has been used. For 50kW infrastructure the midpoint of the values given in **Section 5.3** has been used.

This results in the following base values as outlined in Table 15.

Table 15: Base cost assumptions

Charging Post Type	EVCP Capital EVI + Installation Costs (ex VAT)	DNO Costs	Capital Enabling Costs	Maintenance Cost
7 kW (Residential)	£5,650.00	Site specific	£2,200.00	£400.00
22 kW (Destination)	£6,000.00	Site specific	£2,200.00	£400.00
50 kW (On Route)	£33,400.00	Site specific	£4,000.00	£1,800.00

EV infrastructure in Moray. The total estimated cost of all 44 charging posts in this proposal is £1,595,950.

A detailed cost breakdown on an individual site basis is provided in the SFT EVI Feasibility Model which is included alongside this strategy and expansions plan.

6 The Commercial Case

6.1 Contract Structure and Risk Allocation

6.1.1 Identification of Commercially Viable Sites

As outlined in **Section 5.3**, a site assessment has outlined the best use of council owned car parking sites in order to meet predicted demand for the future EV infrastructure in Moray.

The expected level of private sector investment capital is currently unknown, however based on current and forecast low levels of EV infrastructure utilisation in Moray, there is limited profit to be gained by the private sector in short/medium term. Discussions with CPO's have also identified specific criteria around charging post type and location that are preferable for in order to provide investment.

In order to estimate the proposed need for grant funding for EV infrastructure that is unlikely to attract commercial investment, a further assessment has been undertaken utilising the feedback that has been received from CPO's in terms of the attributes of sites which are commercially attractive, as outlined in **Section 4.4**, as well as predicted utilisation levels from the forecast modelling

The expected utilisation for the sites has come from the medium uptake scenario, as set forth in **Section 5.1** and with more detail provided in the wider Moray EV Strategy, with the outputs produced

for the base year of 2024. This results in an assumption that 17 charging posts have potential to be funded from CPO's and 27 will require grant funding.

The sites identified as not being expected to be able to attract a fully funded approach via commercial investment have been input into the SFT EVI Feasibility Model, which shows the output below in Figure 15 for dividends, retained earnings and retained cash. Further details of the inputs into the SFT EVI Feasibility Model can be found in **Section 7**

Figure 15: Dividends, retained earnings, and retained cash from the SFT EVI Feasibility Model



6.1.2 Commercial Model Approach

Moray Council does not expect to have the money to fund/continue funding and subsidise charging post infrastructure due to various financial pressures, therefore the most appropriate approach is a concession commercial model which will transfer the short to medium term risk to the private sector and with grant funding to support the upfront capital costs.

Moray Council currently owns a significant amount of public infrastructure and associated DNO connections and it is recommended that as part of a concession approach, a portfolio of council owned assets could be offered to help leverage private investment. Contract terms should be agreed along this basis to encourage investment from CPOs by offering a balanced package of high demand on-routes sites near the A95/A96 and rural less lucrative sites.

The preferred approach is for Moray Council to retain ownership of the DNO connection but not to take ownership of any charging post infrastructure as this helps ensure future flexibility around upgrades to technology. Contracts will specify the CPOs own from the feeder cabinet / pillar onwards to the charging post and cover ongoing management, operation, repair, and maintenance. Additionally, although the DNO connection will be owned by Moray Council, maintenance of the DNO connection will be passed to the CPO within any contracts established

Initial engagement with CPOs has indicated that there is interest in operating within Moray and that there is the potential for a portfolio-based approach to a concession model, mixing high and low utilisation sites. Initial discussions with CPOs have indicated a willingness to follow this approach with

quoted examples of 10-15% of the network being suitable as low utilisation sites which are subsidised by other high demand sites.

Moray Council's vision for the EV charging network is that charging posts should be accessible to all residents and visitors. As a result, should there be potential for Moray Council to receive revenue share in the medium to long term as part of contracts with CPOs, this will be reinvested in seeking to lower as much as feasible the differential between the tariff paid by homeowners who have access to home charging and the tariff paid by residents using the public network such as on-street charging posts.

6.1.3 Expected Funding Requirements

This strategy and expansion plan has set out a plan for the best use of Moray Council owned carparks to meet the forecast demand and help ensure an equitable transition to electric vehicles. It is expected that grant funding of approximately £828,500 will be required to deliver this infrastructure. This will represent a level of funding where commercial investment from CPOs have been predicted to fully fund sites which have been identified as attractive based on utilisation levels and the criteria for charger post type and location derived through discussion with CPO's

6.2 Local Authority Retained Works and Services

As noted above in **Section 6.1**, our preferred approach is for Moray Council to retain ownership of the DNO connection and underground assets and for the contract to specify that the CPO own the feeder cabinet / pillar onwards to the charging post and cover ongoing management, operation, repair, and maintenance of assets. Therefore, details of local authority retained works and services is not applicable in this case.

6.3 Procurement Options

It should be noted that Moray Council are currently considering whether to join with the Highland/Aberdeenshire/Aberdeen City Pathfinder project given our geographical location directly between the Aberdeenshire and Highland which are already signed up to the project. Moray Council's inclusion in this project would be facilitated through HiTRANS in conjunction with several other Local Authorities in the north and north-west of Scotland.

The Pathfinder project operates a concession/partnership model, which entails a joint approach to the procurement process across Pathfinder members, but packages of lots are specific to the individual regions. The rates are set within the overall contract, and any member call off contracts will use these rates, but the procurement offer is individual to the specific local authority, e.g., sites are not combined across the councils.

The benefits from being part of this larger organisation is to have more scope for dedicated staff working specifically on EV procurement and management and to create a greater combined "prize" to attract private investment.

If Moray Council does not join with the wider Pathfinder project, then it is expected that a framework call off contract will be used to source commercial operators for charging post infrastructure. This option will significantly reduce the time and resource requirements on Moray in comparison to an in-house procurement approach if the offers available from providers through a framework are acceptable.

6.4 Specification, Standards & Contract Terms

The required specification for standards within any contract with Moray Council for EV infrastructure needs to consider the following key elements

- A standard specification of what Moray Council is looking to achieve, there are some benefits to not being overly prescriptive due to the constantly evolving nature of the field of electric vehicles and charging infrastructure.
- The use of the Open Charge Point Protocol (OCPP) is promoted as the best way to enable the functionality required for widely available and accessible recharging networks of the future.
- Compliance with all relevant legislation (e.g., Data Protection Act 2018) and standards for processing financial information.
- Data that the CPO shall provide to Moray to assist it with managing its charging post portfolio, notably the exact format requirements.
- Compliance with minimum business management standards as set by Moray Council e.g., environmental management and quality management. This can be ISO standards but does not necessarily have to be.
- Contract to ensuring the availability of local staff from private providers available to repair charging infrastructure.
- Cover of management, operation, repair, and maintenance of charging post infrastructure by the operators.
- Best practise around minimum requirements for accessibility and pedestrian access for any installed infrastructure.

7 The Financial Case

7.1 Funding sources

This section summarises the expected funding sources for the EV infrastructure as outlined within this strategy and expansion plan

Private Investment Funding

As outlined in this strategy and expansion plan and the wider Moray EV Strategy, there has been some interest shown in operating and potentially investing in Moray through initial discussion with CPOs. However, there is currently no confirmed committed commercial investment until a full procurement exercise is undertaken. Discussions with CPO's have provided a steer on the types of sites and infrastructure that is likely to be attractive for fully funded models. Given the rural nature and low population density in Moray, combined with the current and forecast low utilisation levels of some sites there is limited demand to make it financially attractive to commercial providers and so assumptions around commercial investment in the SFT EVI Feasibility Model should be conservative.

Scottish Government Grant Funding

Given the likely shortfall in commercial investment to cover some of the required infrastructure in towns that will likely see low utilisation levels, it is expected that in order to ensure an equitable network, there will be a need for charging infrastructure in the areas of Moray with low expected utilisation and private companies are unlikely to fully fund this and so some government funding will be required in the short to medium term to cover initial infrastructure and ongoing maintenance of some sites.

Moray Council Funding

There is currently no funding available from council revenue to subsidise operation of infrastructure. Capital investment is expected to be focused on EV infrastructure to service the Councils own fleet of vehicles.

7.2 Financial Viability of Service/Concession Type Contracts

As outlined in **Section 6.1**, the infrastructure identified within the site assessment and their forecast utilisation levels have been input into the SFT EVI Feasibility Model and a range of inputs scenarios have been undertaken to find a balanced, realistic scenario for future funding. Through this process the optimum mix of tariff structure, operating period, and capital subsidy has been identified and is summarised below:

Table 16: SFT EVI Feasibility Model Inputs

Input	Value	Rationale
Contract Operating Period	15 years	Relatively standard contract length and highlighted in soft market testing as a preferred length by operators
AC Consumer tariff	0.32 £/kWh	AC/DC tariffs are reasonable, Base tariff represents an increase
DC Consumer tariff	0.38 £/kWh	
Base Electricity cost	0.25 £/kWh	
Assumed general inflation Rate	2.5%	Although lower than 2022, this represents a long-term forecast
Development & Advisory costs	£2,000	Standard
Useful life of existing enabling works	15	Standard
Useful life of existing DNO works	20	Standard, longer than term of contract
Useful life of planned enabling works	15	Standard
Useful life of planned DNO assets	20	Standard, longer than term of contract
Projected utilisation growth rate	5%	Modest growth, but incorporates growth in competing charging posts
Debt funding	No	All investment funded by assumed available capital
Capital Subsidy	0	Determined by scenario

A level of funding where CPOs have been assumed to finance 17 of 44 of the total sites has been applied within the inputs into the SFT EVI Feasibility Model and based on this it is expected that grant funding in the range of approximately £828,500 will be required to deliver the full suite of planned EV infrastructure within Moray Council owned car parks.

8 The Management Case

8.1 Governance and Management

This section sets out the Management Case. It describes how the expansion project will be delivered using project management best practice and demonstrates an appropriate governance structure and assurance framework to oversee the project.

To enable efficient assessment of the proposals and to demonstrate the Council's management capability for successful delivery of the schemes the following elements of project management are in place:

- Evidence of similar projects
- Programme/project dependencies
- Governance, organisational structure, and roles
- Outline Programme/Project Plan
- Assurance and approvals plan
- Communications and stakeholder management
- Programme/project reporting

8.1.1 Evidence of Similar Projects

Since 2014 Moray Council has installed a series of Electric Vehicle charging posts throughout the Council area, in public car parks and on the public road which have been completed successfully within budget and on time. The charging posts are at the locations listed in the Electric Vehicle Strategy document in **Section 4** and Table 5-1.

8.1.2 Project Dependencies

The delivery of new electric vehicle charging infrastructure has a series of dependencies which include utilities diversions/upgrades and in some cases access to third party land.

Utility Diversions/Upgrades

It is anticipated that some utility diversions/upgrades may be required because of the installation of the new charging posts. Should these diversions/upgrades involve some engineering challenges, early contractor involvement will mitigate against any potential utility or construction risks. Furthermore, investigation by trial holes will be undertaken to establish the location of apparatus in key areas to ensure an accurate assessment of impacts and costs can be made at this stage of the project.

Third Party Land

Third party land may be required for the siting of charging posts within smaller communities. These locations are likely to be car parking areas associated with community assets such as Halls. Early discussions will take place with the communities and the boards responsible for the community assets.

8.1.3 Governance, Organisational Structure and Roles

Moray Council would establish a clear and robust structure to provide accountability and an effective decision-making process for the management of the Electric Vehicle Infrastructure expansion and development of the partnerships with private operators. The following members of staff would have dedicated roles on the project:

- (Vacant Post): Moray Council Transportation Manager – Project Delivery Manager
- Diane Anderson: Moray Council Senior Engineer Transportation – Project Manager
- Colin Matheson: Moray Council Traffic Engineer – Project Engineer
- Janis Hepburn: Moray Council Procurement Manager – Procurement Officer
- Aileen Scott: Moray Council Legal Services Manager – Legal Advisor
- Stuart Beveridge: Moray Council Estates Manager – Property and Leases
- Debra O'Shea: Moray Council Principal Finance Officer – Finance Advisor
- Rod Lovie: Moray Council Climate Change Principal Officer – Steering Group
- Representative from Scottish Futures Trust – Steering Group

- Gemma Robinson: HiTRANS – Steering Group

The responsibility for delivery of the schemes rests with Moray Council, who will assume an overall project management role and establish a Steering Group chaired by an officer from the Council's Economic and Commercial Services department. The Steering Group will meet on a regular basis to review progress, update the risk register and make key strategic decisions.

The day-to-day management and delivery of the project will be the responsibility of the Transportation Section. They will work closely with any appointed contractors and other delivery partners, and form the point of contact for stakeholders.

The usual Council governance procedures will apply to all aspects of the project management, with issues being escalated in accordance with Council protocols as necessary. Copies of the Council's governance procedures can be provided upon request.

8.1.4 Project Plan

A Provisional Project Plan will be developed. It will cover each key stage of the project and the critical path. The tasks that have a critical end date that affect the delivery timescale will be highlighted on the Project Plan. The plan will be reviewed and updated on a regular basis and will be considered at fortnightly Steering Group meetings.

The Project Manager will have overall responsibility for delivering the tasks required to achieve key milestones.

8.1.5 Assurance and Approvals Plan

Project assurance and approvals are the main responsibility of the Steering Group Chair and supported by the Steering Group who will also ensure the quality of the work carried out. The schemes will be managed in line with the Project Plan and the Steering Group will sign off each stage and give the 'go' / 'no go' decision to start the following stage.

8.1.6 Communications and Stakeholder Management

Moray Council regularly undertake Stakeholder Engagement for plans, strategies and projects and have an established process. Effective use of the process has resulted in limited adverse feedback from the public and ensured successful delivery of schemes both from a project management and public relations perspective.

The main aim of the Stakeholder Engagement is to ensure that stakeholders and members of the public are kept informed throughout the development and implementation of the schemes. This can range from keeping key stakeholders update with critical information, essential to the successful delivery of the schemes to providing information to the public.

A range of target audiences will be identified, including those who will benefit (directly or indirectly) from the schemes; those affected (directly or indirectly); those who may have an interest without being directly affected; those with a statutory role; and those involved with the funding of the schemes.

The level of information provided to each group will vary based upon the specific needs ranging from intensive consultation, general consultation, through to information provision.

A detailed stakeholder management strategy will be developed that identifies specific stakeholders and interest groups, categorises them in terms of impact, and establishes the required level of engagement.

8.1.7 Project Reporting

Progress Reports will be produced by the Project Manager and comprise updates on:

- General progress
- Project finances
- Issues
- Risk and governance meeting dates

The report will identify areas of concerns or where decisions are required by the Steering Group.

8.2 Risk Management and Mitigation

A risk register has been outlined below in Table 17 to highlight potential risks and associated mitigations in the delivery of Morays EV infrastructure.

Table 17: Risk Register

Risk	Consequence	RAG Before	Mitigation	RAG After
Uncertainty around exact value of private sector funding	Potential shortfall in required EV infrastructure funding	R	A robust assessment has been undertaken on the likelihood of private investment and a conservative estimate included	A
Handing Operation of all sites to a single supplier	Supplier not performing to required standard	A	Performance metrics stipulated within contract	G
There is expected to be a lot of infrastructure required across UK in the next few years	The market cannot supply all the required infrastructure, larger counties are prioritised	A	Joining with the HITRANS Pathfinder project offers a bigger prize for operators	G
Longer contract lengths	Suppliers do not keep pace with future EV technology	A	This can be specified within contract conditions	G
Sites do not yield the expected demand and revenue	Sites are less attractive to the private sector	R	Conservative approach to forecast utilisation predictions and subsidy requirements	A
Future detailed costing of infrastructure by SSEN	Assumptions on DNO costs are low	R	A range of costs have been calculated and a conservative approach taken	A
Detailed planning indicates site not practical	Site could not proceed	A	The site selection process has focused on a large range of metrics and in most cases, alternatives are available in the long list of sites	G

Detailed Design	Design process extended because of complications e.g., in ground conditions or utilities	A	Installation at all locations is on existing Moray owned property, no 'virgin ground'	G
Procurement route not confirmed	Potential for delays to programme	R	Consideration of both currently possible procurement options in timetables	A
Inflation	Project costs increase unexpectedly	R	Apply different contingency scenarios to costs	A

8.3 Timetable and Next Steps

This section sets out an indicative timetable of next steps as outlined below in Table 18 to progress the expansion of Morays EV infrastructure as outlined in this report:

Table 18: Indicative next steps

Task	From	To
Strategy and Expansion Plan submitted	Dec-22	
Strategy and Expansion review period	Dec-22	Mar-23
Awaiting formal DNO quotes	Mar-23	May-23
Confirm procurement route (HiTRANS Pathfinder) *	May-23	Aug-23
Tender Process	Aug-23	Sep-23
Detailed design	Sep-23	Oct-23
Operational Safety Review	Sep-23	Oct-23
Prepare and advertise TROs	Sep-23	Dec-23
Confirm DNO connection costs	Oct-23	Dec-23
Confirm site installation and costs	Oct-23	Dec-23
Confirm programme	Dec-23	
Install 21 sites	Dec-23	Jan-24
Prepare and submit evidence to SFT	Jan-24	Mar-24

* Estimate, some uncertainty around procurement route timescales

The Council will utilise future enabling grants from Scottish Government to review the need and options for on-street charging infrastructure, along with the potential use of any other emerging charging technologies.

Annex 1 – Strategy and Expansion Plan Assessment and Review

The joint TS/ SFT Programme Team will review Strategies set out in Part 1 against the following headings:

- Contributes to a comprehensive consumer focussed network
- Promotes an accessible and reliable network that works for all
- Supports the principle of a Just Transition
- Supports communities without home charging and rural areas
- Supports active and public transport choices

The joint TS/ SFT Programme Team will review Expansion Plans set out in Part 2 against the following headings:

- The scope of works to be publicly procured complements the expansion of the public network by the private sector
- The capital and operational cost estimates and income forecasts are realistic
- The capital funding being sought from Transport Scotland enables private finance to be crowded in; and
- charging post provision in areas which would not be commercially viable on their own
- The likely commercial viability of the proposed delivery model
- The robustness of the proposed approach to procurement
- The approach to delivery is coordinated with DNOs to minimise the necessity for grid upgrades.
- There is co-ordination and/or collaboration with other local authorities or public bodies

These are not pass/fail criteria. It is recognised that approaches across Scotland will vary, and that private provision of the public network will play a key role in overall expansion of the public charging post network.

The assessment of submitted Strategies and Expansion Plans will be presented to the Programme Board. The Programme Board comprises representation from TS, COSLA, EST, SFT and the SCOTS network. The Programme Board will make recommendations to TS as to capital funding to be allocated of the four-year period.