CHARGE MY STREET

Business Plan supporting the Charge My Street Share Offer

February 2021

CHARGE MY STREET LIMITED

A Community Benefit Society registered with the FCA number 7704

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1. Executive Summary

1.1. The Business

Charge My Street is a community benefit society that installs electric vehicle (EV) charging points for homes without off street parking. Most owners charge their electric vehicles overnight, so we use parking spaces that tend to be empty at night for charge points. Residents pay Charge My Street to fill up their electric vehicle's battery. A secondary market is tourists who need to charge up during their stay.

1.2 The Challenge

The requirement for EV charging will expand markedly over the next 10 years as prices of EVs drop and range improves, leading to increased uptake. Governments, the car industry and councils have identified that electric vehicles can tackle rising air pollution and greenhouse gas emissions. However, a lack of charging points is holding back the adoption of electric vehicles.

1.3. The Solution

Charge My Street is working with site owners from the public, private and community sectors to provide local residents with points to charge their electric vehicles overnight. Schools, shops, village halls, community centres, churches, scout huts, pubs and a host of other sites have car parks which are empty overnight. By installing charging points in these venues, local people and visitors will be able to charge up their electric vehicles overnight. The chargepoints can also be used during the day by tourists and other residents, depending on the parking policies of the host site.

1.4. The Benefits

- More people switching to EVs will lead to improvements in air quality, reduced traffic noise and reduced greenhouse gas emissions.
- With greater availability and visibility of chargepoints, residents are more likely to consider switching to an EV.
- By building chargepoints where there is demand from local people, there is a better chance that chargepoints will go into places where they are most needed.

1.5. The Investment

Charge My Street is looking for investment of £200,000 to fund additional chargepoints. Pledged funds will be spent on chargepoints featured on the website and to support larger projects delivered with Local Authorities.

2. Introduction

2.1. This Document

Access to charging points is a key factor in the adoption of Electric Vehicles (EVs). This business plan sets out an innovative community owned model for funding, installing and operating chargepoints in areas where potential users do not have access to off street parking, or there is a lack of existing chargepoint provision. It covers the period between January 2021 and December 2021 and primarily focuses on supporting groups to install chargepoints in their own neighbourhoods, building on the success of the previous share offer.

2.2. Charge My Street

Charge My Street is a community benefit society that installs electric vehicle charging points for homes without off street parking. Most charging happens overnight so we use car parking spaces that are empty overnight to charge up electric vehicles. The Society has successfully installed 10 chargepoints in Lancashire and Cumbria.

The Society:

a) Installs & operates charging points around Lancaster and Cumbria but also in other parts of the UK.

b) Gives people the tools to locally finance a community chargepoint.

c) Encourages the take up of electric vehicles, allowing people to save money on fuel costs;

d) Reduces air pollution and CO_2 emissions.

e) Explores storage of renewable energy and integration with renewable generation to reduce reliance on fossil fuels.

2.3. Background

In Spring 2017 Daniel Heery applied for funding from Innovate UK's Infrastructure Fund Round 2 which led to the establishment of Charge My Street. Charge My Street was established as a Community Benefit Society in January 2018 and raised funding through community shares and grants to install four chargepoints (two in Cumbrian villages and two in Lancaster). Installing and operating these chargepoints has provided an insight into usage patterns, operating issues, challenges and opportunities. In November 2019, the Society was awarded funding from Innovate UK to install a further 100 chargepoints through the Scaling On Street Charging Infrastructure (SOSCI) project working in partnership with Cumbrian Local Authorities and our suppliers (see Appendix 8 and www.sosci.co.uk for more information). Feasibility studies were carried out in Q1 2019 and the project started in Q4 2019. It is set to complete at the end of Q3 2021. Up to the end of January 2021, 313 sites for charging points had been suggested by residents and partner organisations. 80 sites for chargepoints were under investigation, 29 agreements have been signed and 12 chargepoints have been installed.

Key learning points from our experiences so far are:

- There is a big role to educate people before they buy an EV (charging, range, costs) and after (where to charge, how to charge, types of chargepoints etc)

- Demand builds slowly as residents want to see a chargepoint available before buying an electric car.
- Agreeing contracts with site owners is time consuming as there are often multiple parties that need to be consulted.
- There is a high rate of attrition with sites - 22 sites which are possible but unlikely to go ahead took 22 days to survey. 29 sites which have been discounted took 15 days to survey. Sites sometimes withdraw late in the process when surveys have been conducted and quotations obtained.

These issues are being addressed in part by working with Cumbria Action for Sustainability (www.cafs.org.uk) to engage communities and to increase awareness. This has involved reaching out to village halls, Housing Associations and renewable energy groups.

This share offer builds an investment pot to finance new chargepoints and carry out development work on the pipeline of new sites for installation.

2.4 Track Record

The society has 121 members, 120 of whom invested £149,000 between them in the first two share offers, in February 2018 and February 2020.

The society has developed online systems to enable citizens to suggest chargepoint sites and see them progress to be successfully installed and operational.

The charging points are growing in popularity and usage, up to 30/12/21 there were 313 charging sessions at the 12 chargepoints, delivering a total of 4000kWh of energy to 60 different customers. The management of the installation process has improved and agreements have been reached with electricity supply companies to speed up the installation of chargepoints.

COVID has had a big impact on the Society's revenues during 2020 as fewer miles have been driven and travel restrictions have reduced the numbers of visitors to Cumbria. However, this has been mirrored by sales of petrol which were down 45% in Q2 2020.

The Community Benefit Performance can be found in section 7.8.

2.5 Future Plans

Charge My Street's vision is for every home to be within 5 minutes' walk of an EV charging point. This will support the adoption of EVs among residents of flats and terraced houses without their own driveways. The Directors feel that the Charge My Street approach could be attractive to communities across the UK. It is also attractive to other sectors – such as renewable energy groups and car clubs such as Tisbury in Hampshire which has recently had a chargepoint installed.

The Society is aiming to instal more community owned chargepoints across other areas of the Country and tapping into grant funding from the UK Government and Local Authorities. Expanding the network of chargepoints will have an impact on members' ability to withdraw share capital as the Board may decide to invest profits in expanding the network of chargepoints beyond those funded by grants.

3. The Business Model

3.1. The Challenge

- The requirement for EV charging will expand markedly over the next 10 years as prices of vehicles drop and range improves.
- Local Authorities are stretched due to cutbacks and have limited capacity to organise on-street charging points because of the number of permissions required and planning restrictions.
- Alternatives are

1) run a power cable across the pavement between the home and car – this is a trip hazard and unpopular with most Highways Authorities.
2) use a rapid charger at a destination like a motorway services (this may require a special journey and can cost more per kWh.)

3.2. The Need

Cumbria is used as a reference point for the needs, as Charge my Street has carried out most resident surveys in the area and has analysed data. It is assumed that there is a similar picture in other predominantly rural areas in the North of England.

- 35% of homes nationally are in flats and terraces, which do not have a driveway where they can plug in a vehicle. In parts of Cumbria, many villages have terraced streets with a lack of off-street parking (11% of rural homes[1]).
- Lack of nearby charging points is slowing take-up of EVs by these households. Our survey work (An example of which can be found in See Appendix 6) showed that access to chargepoints was the biggest barrier to adoption of EVs (over 30% of respondents). According to the "On the Move Report"[2], interviewing respondents across four EU countries, 40% of respondents cited this reason (after vehicle purchase cost, at 47%).
- The chargepoint network in Northern England is patchy outside larger towns – see https://www.zap-map.com/ for current coverage. In Cumbria there are 38 public chargepoints and 224 are needed to deliver the same coverage (per head of population) as London has now (see Appendix 6)
- The North West, has 7.3% of the UK's chargepoints (down from 2019) but is the third most populous region in the UK (after South East and London), with 11% of the population[3].

[1] https://www.gov.uk/government/statistical-data-sets/nts99-travel-by-region-and-area-type-of-residence#parking

[2] https://www.onthemove.eu.com/

[3] https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/lowersuperoutputareamidyearpopulationestimates

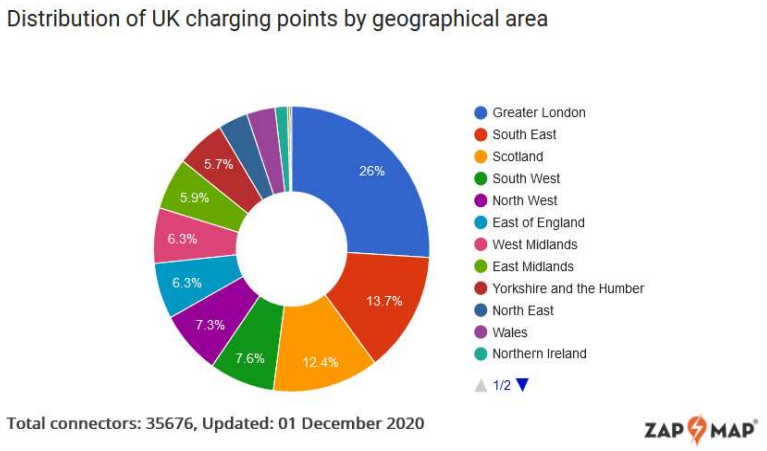


Figure 1 - Profile of charging connectors across the UK regions: Zap-Map, December 2020

4. Target Community

Charge My Street, is working with renewable energy organisations such as Community Energy Cumbria, who are delivering chargepoints on the West of the Pennines in Cumbria and Lancashire, targeting households with no off-street parking which are unable to install a home charger.

4.1. Community Demographic

35% of homes in the UK have only on-street parking, so are unable to install a home chargepoint. Flats or terraces tend not have an off-street parking space at which an EV can be charged. The percentage of these homes is higher in the North West at 29% and specifically in Cumbria at 42%..[4]

Currently 75% of EV owners are aged 39-69 with an average age in the mid-40s. They are split 89%/11% male/female. 72% are in the DfT segment "Educated suburban families" with a majority having an income over £35K and a quarter an income over £60K. In terms of Social Grade, which is a classification system for households, a third are AB and 25% are C1. Motivations of the target segment are: a desire to save money, interest in new technology and pro environmental attitudes.[5] Private owners charge their EVs primarily overnight at home and currently have a strong preference for doing this rather than using public or workplace charging.

Figure 2 shows the increase in EV ownership in Cumbrian Local Authorities which show the overall trends are upwards. Charge my Street is working closely with South Lakeland District Council and Carlisle City Council, which currently have the highest take up of EVs. However, we are also discussing working with other local authorities in the region.

There was a large decrease in new vehicle registrations in April and May 2020 because of the COVID-19 lockdown measures, but relatively, sales of Battery EVs were less hard hit, so that in April

[4] www.cumbriaobservatory.org.uk/housing/

[5] From Uptake of Ultra Low Emission Vehicles in the–UK - A Rapid Evidence Assessment for the Department for Transport, 2015

they were 30% of new car registrations. As car sales overall recovered the proportion of EV sales went back to its pre-pandemic trajectory, of a gradually increasing proportion of total car sales. (See Figure 3).

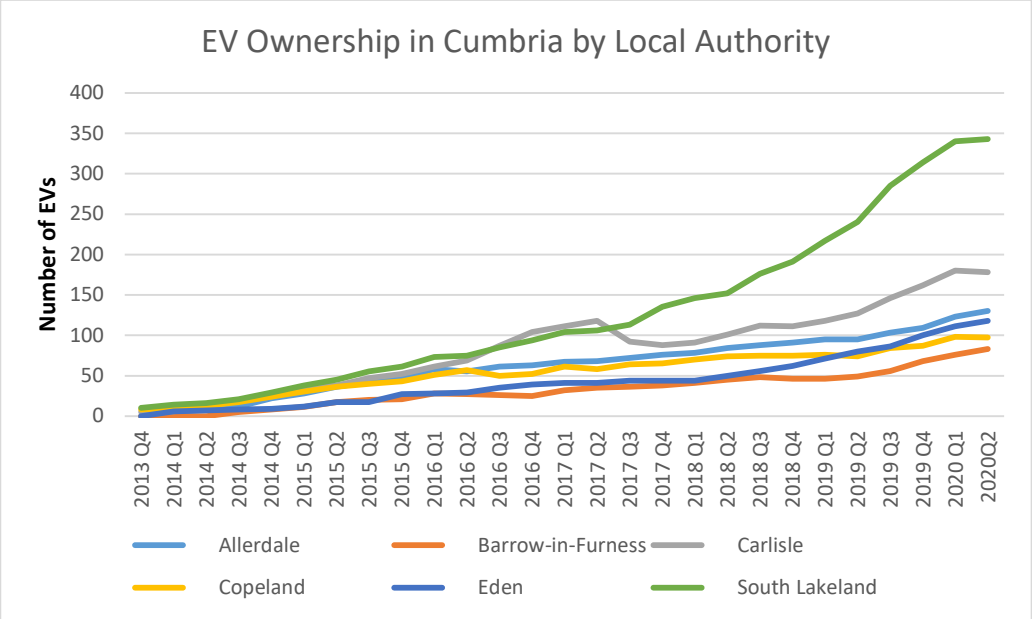


Figure 2 - EV owners in Cumbria by Local Authority

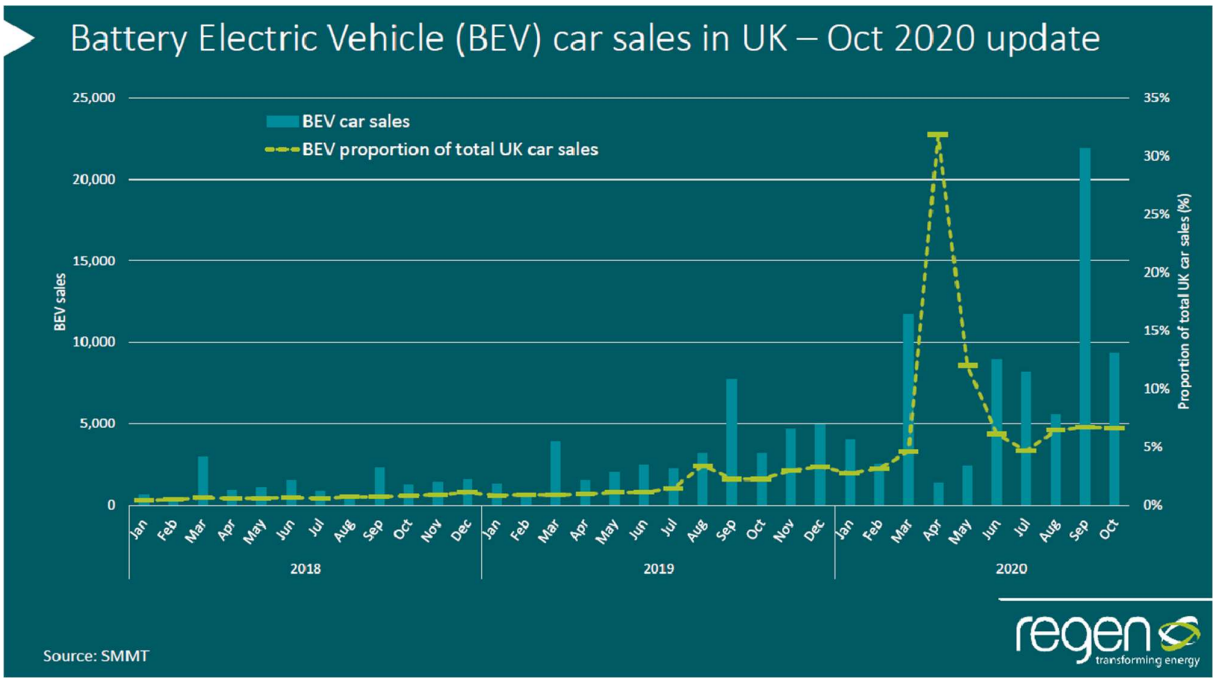


Figure 3 – Battery Car Sales in the UK Oct 20

In line with the London Boroughs and Transport for London report by WSP and Parsons Brinckerhoff[6], we forecast that 10% of new EV owners in target areas will need our solution

[6] WSP | Parsons Brinckerhoff (2017), A REVIEW OF OPTIONS FOR CHARGING AT HOMES WITHOUT OFF-STREET PARKING ELECTRIC - FINAL REPORT - A Consortium of London Boroughs and Transport for London – including Hackney,

increasing year on year as EV demand rises.

There are currently 12,974 public charging locations (Zapmap, 1/12/20) in the UK. There are 2,602 in the North West and 1,239 in the North East[7]. By 2030 it is estimated that there will be 14 million EVs in the UK (Delta-EE)[8]. Charge my Street estimates that if 20% adopt EVs using on street charging, then that represents 2.8 million households.

Other markets that could be developed are around vehicle-to- grid (V2G), where stored energy is supplied back into the grid with members receiving a revenue share on profits that are made. This is currently outside the scope of our work as the capital cost of a V2G chargepoints (~£5K) does not make them commercially attractive for the annual revenue generated (~£300)[9]. However, we are looking at this for the future as the technology prices come down and for specific use cases at community resilience centres and car clubs.

4.2. Community Engagement Plan

Since spring 2019, Charge My Street has been engaging with organisations across the community, public and private sector to gauge their views on the Charge My Street concept. A full list of those organisations is shown in Appendix 7. As the share offer develops, it will be promoted to groups around the country, working with local partners like Cumbria Action for Sustainability (CAfS).

This project moves beyond previous engagement in working with local groups at street and neighbourhood level to deliver charging infrastructure. It empowers local people who want to have a local chargepoint without having to necessarily work their way through the complexities of Local Government.

5. The Society and its People

5.1. Legal Structure

Charge My Street was registered as a Community Benefit Society in early 2018. It has a Board of volunteer Directors. There is a standing invitation for new members to join the board and it is hoped that as more chargepoints are deployed in the future, more people will come forward. The rules of the society are available on its website, www.chargemystreet.co.uk.

5.2. Governance

The board comprises of six members with a mix of skills and meets monthly.

Directors were elected by the members at the first AGM, and the latest AGM was held on 20 January 2021. In accordance with co-operative principles, each member has one vote at general meetings, regardless of the number of shares they own.

Haringey, Kensington & Chelsea, Brent, Greenwich, Merton and Hounslow

[7] https://www.zap-map.com/statistics/#region recorded on 3/12/20

[8] Discussion with John Murray, Head of EVs at Delta-EE (8/12/20) https://www.delta-ee.com/

[9] Meeting with EA Technology November 19

5.3 Board & Team Competences

The Board is made up of is made up of volunteers who are passionate about EVs and the transition away from fossil fuels. They have a background in project management, funding, energy management, renewable energy, engineering and software development (see Appendix 1 for Biographies)

The team developing chargepoints for Charge My Street includes people employed by Charge My Street and people employed by our partner organisations.

Adrian Powell is managing the SOSCI project for Charge My Street (see Appendix 4). His role involves finding sites, managing the delivery partners and setting up site owner contracts. He has a background in delivering projects on autonomous vehicles and has been a volunteer on village hall committees and a local foodbank.

Axel Fensom is developing the website platform to manage the site identification, demand stimulation & aggregation and community shares. The website now has the ability to store data on many more sites as CMS has scaled up. A key challenge been changing the way information is presented in a clear and simple way for end users. Axel has also spent time updating the share offer sections to allow people to pledge against individual sites. He gsraduated from university with a First Class Honours in Physics.

Tom Barker is a Marketing Masters Student who is doing a one year placement from Lancaster University carrying out marketing activities to promote the switch to EVs at each chargepoint location.

Daniel Heery is supervising the Charge My Street team. He is a Director of both Cybermoor and Charge My Street.

Kevin Wood (Cybermoor) – is managing the Innovate UK funding on the SOSCI project. Kevin has a wealth of project management experience, such as delivering broadband and working with major industrial partners.

Sue Gilbertson (Cybermoor) is supporting the Cumbrian Local Authorities with delivery of the project – identifying sites, working with contractors and liaising with Council Officers.

Jenny Snowden (Cybermoor) is supporting the installation of charge points post contract. This draws on her 15 years experience of building community fibre optic networks, managing groundworkers and connectivity.

6. Charging Points

6.1. Locations

Locations of current and intended future chargepoints are shown on the map at www.chargemystreet.co.uk
An extract showing the locations in Cumbria can be seen below.

Selected sites need to sign a hosting agreement with Charge My Street. This has a peppercorn rent of £1 per year (reviewed annually). The agreement sets out times when drivers can use the parking spaces adjacent to charging points to charge their vehicles. It does not give Charge My Street

complete control of the parking place. The details of the agreement vary from site to site depending on the nature of the organisation. The template agreement can be downloaded from the Charge My Street website in the "Get Involved" section.

Sites need to meet a set of criteria before investment is confirmed:

a) Technical – availability of suitable electricity supply and internet connectivity.

b) Commercial – local demand.

c) Community – signed agreement and commitment to support availability of parking spaces.

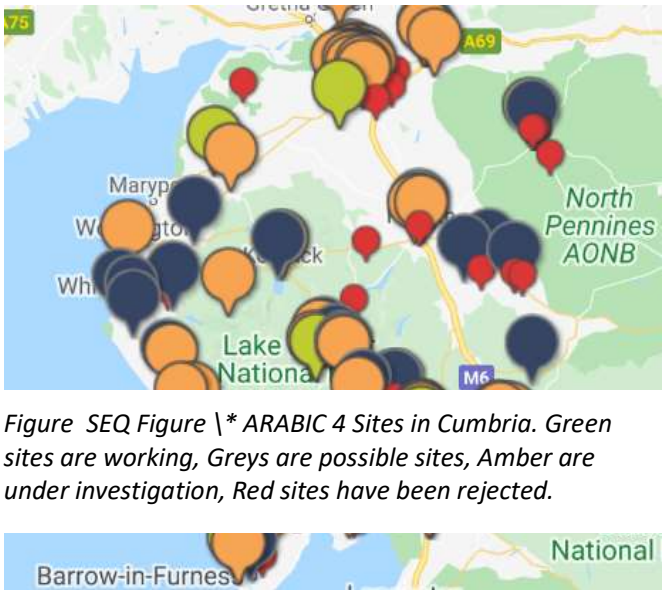


*Figure SEQ Figure * ARABIC 4 Sites in Cumbria. Green sites are working, Greys are possible sites, Amber are under investigation, Red sites have been rejected.*

The website indicates which other locations have been considered and the different development stages each location falls into:

1) Site has been proposed.

2) Site is under investigation.

3) Site is open for investment.

4) Site is available for use.

5) Site has been rejected.

6) Site is in hibernation – has not been able to progress but may be able to progress in the future.

Charge My Street works with local Chargepoint Champions who want a chargepoint installed in their neighbourhood. They suggest the sites, reach agreement with the site owner and then help to promote the project to their friends and neighbours to raise the share capital to deliver the charging point.

6.2. How it Works

The members of Charge My Street can use the chargepoints at a lower cost than non-members, through a smartphone app or an RFID card at some sites. Non-members can also use the chargepoints by downloading the smartphone app and registering with their credit card details. Instructions are shown on the chargepoint). For non-members the price is higher.

Example - Maxine decides that her car needs to be charged up ahead of a trip to Preston the following day. She checks her local chargepoint is free that night using the app on her phone and books a space. In the evening she parks at the chargepoint and plugs in her car. She uses her phone app to start charging. She collects her fully charged car the following morning. She is billed at the end of the month and she can view how much electricity she has used.

Some chargepoint operators accept contactless payments with a card reader on a chargepoint. This adds to the cost of an installation and increases the payback period so is not currently part of Charge my Street's plans, although the technology is constantly reviewed. We will provide payment methods that do not require a download of the App in the future. Our target audience is people who charge regularly, close to their home, at the same chargepoint. The app has lower transaction charges, is easy to use and allows us to deliver smart charging - reducing costs and

optimising the use of renewable electricity.

7. Project Delivery

7.1. Marketing

The service is marketed to potential users through:

- Launch events to promote the benefits of EVs.

Figure 5 - West Point House Launch event

- Presentations at 176 meetings and events around Cumbria and Lancashire (mostly online due to COVID restrictions).

- Social media has been used to promote charge points via host social media accounts and general local groups.

- Local press has featured chargepoint launches. There has been coverage on BBC Radio Cumbria and Lancashire. TV coverage has ranged from features on ITV Border News through to the national news programme BBC Click in a package on rural charging networks[10]..

- Leaflets and information have been provided to EV dealers in the areas around charging points so they can promote the charging points to potential customers, (although this has been hampered by COVID-19 and showroom closures).
- Charge point maps – EV drivers look up charging points mainly on Zap-Map and PlugShare. Charging points are submitted to these directories and users are encouraged to record charges to

[10] https://www.bbc.co.uk/iplayer/episode/m000pr0y/click-the-electric-vehicle-revolution

demonstrate that the equipment is working.

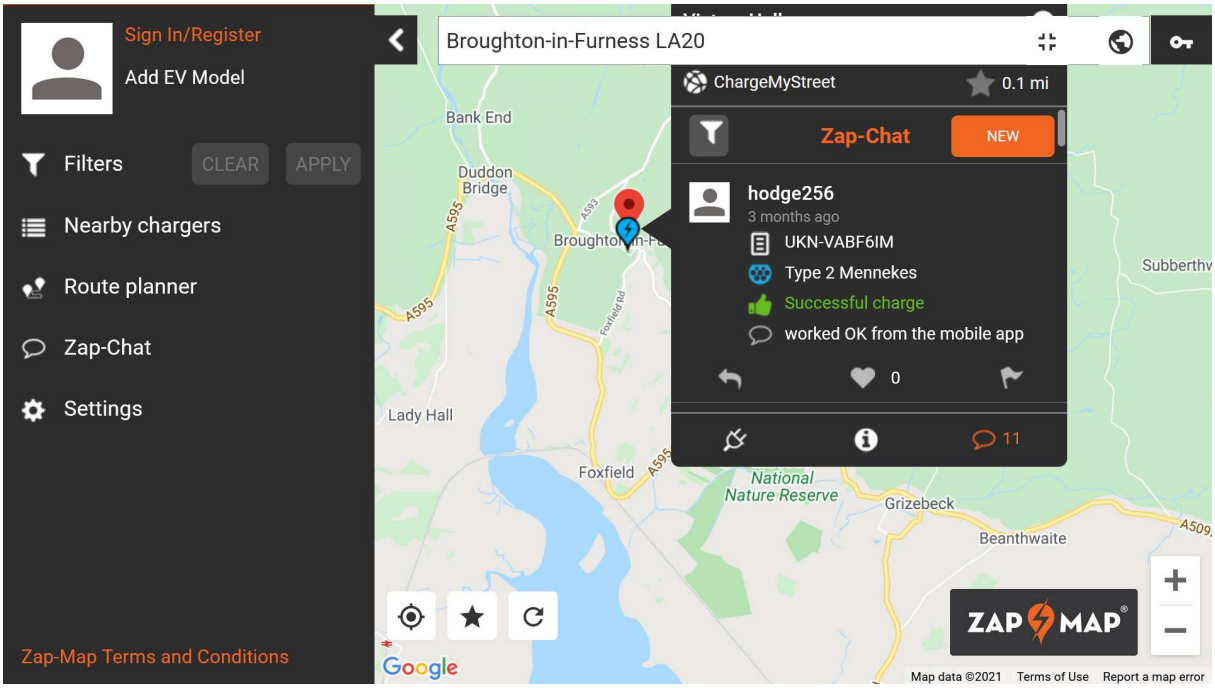


Figure 7 -Zap-Map allows EV drivers to search out charging points

The marketing has targeted two distinct segments:

1) those people without off street parking who are considering purchasing an EV and are within 5 minutes' walk of a chargepoint (see Appendix 5 for more details). Targeted ads through social media, and events are the preferred way of growing the use of the chargepoints.
2) In more rural areas, tourism businesses like Langdale Leisure have been approached to promote chargepoints to their guests and visitors.

The success has been limited through 2020 due to COVID restrictions. This has stopped face to face meetings with prospective customers and it was felt that distributing leaflets door to door was not appropriate. We have a member of the team dedicated to promoting ongoing usage of the chargepoints and identifying the best solutions for raising awareness of local people. They have had some early success promoting the chargepoints on site hosts' social media. However, it has been harder to engage with other potential partners like BAE Systems in Barrow who could promote the Walney Island chargepoint to their contractors. Our competitive advantage in the long term will be to have discussions with local people through our network of chargepoint champions.

7.2. Capital Costs

The main components of the capital costs are:

1) Installation of new electricity supply from Electricity NW (not necessary where the existing supply to a building is suitable).
2) Wiring from the meter board to the Chargepoint.

3) Feeder Pillar – cabinet containing the meter and RCDs.
4) Chargepoint – post or wall mounted.
5) Groundworks for bollards / bays / signs.
6) Project management.

Installed chargepoints cost between £5,000-£10,000 each, depending on both the location and the existing electricity supply at the chargepoint site. Costs of connecting a new electricity supply to a chargepoint vary from £3K to £5K. The SOSCI project assumes a cost of £10,000 per chargepoint. 100 charge points means a total capital cost of £1 million. Of this, £438,000 is being met by Charge My Street, with other costs covered by other partners in the SOSCI project who will receive grants directly for the work they will be carrying out (more details in Appendix 8). The chargepoint infrastructure will be owned by Charge My Street. CMS will receive all revenues from each charge point and will hold long-term lease agreements with the site owners.

7.3. Sources of Capital

The Charge My Street's element of the capital costs for the chargepoints to be installed in the SOSCI project is met by grant funding of £438,000 from Innovate UK. This grant is paid quarterly in arrears. Once all the SOSCI project grants have been received, funds from this share offer will be used by Charge My Street to install further charge points. The aim will be to work with local authorities, with Charge My Street using funds raised from the share offer to match grants available to local authorities, such as OZEV On Street Charging (https://www.gov.uk/government/publications/grants-for-local-authorities-to-provide-residential-on-street-chargepoints).

One of the aims of the SOSCI project is to assess the appetite for community investment in installing chargepoints. This share offer will provide a mechanism for the people to pledge their own funds towards local charging points. It will aim to give us a better understanding about whether community investment can make up 1%, 10%, 50% or 100% of the costs of installing chargepoints. The results will inform Charge My Street's and Government plans for financing public charging for people without their own off-street parking.

7.4. Share offer

The target for the share offer is £200,000. This would bring the total share capital raised by Charge My Street to £350,000. The purchase of shares under this offer should be eligible for the Enterprise Investment Scheme (EIS), which gives tax-paying investors tax relief of up to 30%. The shares issued following Charge My Street's previous share offers in 2018 and 2020 were eligible for Seed EIS but that allowance has now been used up.

The £200,000 to be raised in this share offer will be used to:

1) install and operate chargepoints at 10 locations identified by local chargepoint champions. When a site goes live and is opened for funding, residents, neighbours and local businesses can all pledge their support to their local chargepoint. If and when the target is reached, the chargepoint will be installed.
2) work with Local Authority partners to obtain OZEV (Office for Zero Emission Vehicles) funds

and install 40 chargepoints as part of the On-Street Charging programme. £100K would support 40 chargepoints at £10K per chargepoint with Charge My Street contributing 25% funding (£2,500 per chargepoint). This is not without risks – Local Authorities will procure on the open market or through closed frameworks which means that bids may go to other chargepoint providers. Charge My Street has successfully tendered to deliver 4 charging points for Lancaster City Council in Autumn 2020 and is in discussions with 7 other Local Authorities. If Local Authority support cannot be obtained, the £100,000 of capital from the share offer will be invested in ten more chargepoints, or more if match grant funding can be obtained from Innovate UK or OZEV.

If the share offer is not fully subscribed, the charging points would not be installed.

This is an open share offer and will open on 1st March 2021.

If this share offer is fully subscribed, Charge My Street will launch another offer in 2022 which will be EIS compliant. The scale of that share offer will be informed by the success of this current offer but it is hoped that it would raise a further £200K. This target is informed by our experience of identifying, securing and installing chargepoints at sites and the costs.

7.5. Income

Projected income is based on the assumptions which have been taken from existing Charge My Street usage data and can be found in section 7.8. Forecast growth of EVs up to 2035 is based on Electricity North West (ENWL) forecasts from Autumn 2020[11] according to their "Green Ambition" scenario which reflects the Government's The Ten Point Plan for a Green Industrial Revolution[12]. The ENWL projections have been derived from their modelling systems developed with other Electricity Distribution Network Operators.

We forecast that charge points would generate revenues of approximately £31K in 2021, £94K in 2022 and £172K in 2023. Associated electricity and management costs will be approximately £15K in year 2021, £47K in 2022 and 86K in 2023. See appendix 3 for more details of the usage assumptions.

7.6. Operating Costs

Operating 100 chargepoints, the revenues for the organisation are £94K with fixed costs approximately £98K by 2022. Overheads include insurance, staff, accounting and maintenance contracts. Cost of sales consist mainly of the cost of electricity. This assumes that the work of managing the society is carried out by staff and contractors with the existing team (see section 5.3).

Should the revenues allow and the workload increase in the future, then the society would pay more staff to manage the organisation and operation of more chargepoints. Conversely, if revenues are lower, the staffing would be reduced to cover core activities.

The other operating costs are fixed per chargepoint – electricity standing charges £112 / year, maintenance £100 / year and monthly data connection fees £20 / year. Insurance, website, supplier

[11] https://www.enwl.co.uk/get-connected/network-information/dfes/

[12] https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution/title

software and marketing costs are also taken into account. Assumptions around costs can be found in section 7.9.

7.7. Comparison with other Operators

Following discussions with Tesla about experience of similar schemes in the Netherlands, the average prices are a 45p connection fee and 27 p/kWh for electricity.

- Charge My Street sells power at 35 p/kWh to visitors and subscriptions at £20 per month (up to 86kWh then 23p/kWh) or £30 per month (up to 136kWh then 22p/kWh).
- Charges for similar services are:
    - char.gy[13] (£38.99 per month and 19.5 p/kWh).
    - Shell owned Ubitricity[14] (£299 for a cable then £7.99 per month and 16.2 p/kWh with a 19p plug in fee).
    - Gronn Kontakt 30 p/kWh.

7.8. Community Benefit

Charge My Street measures the following indicators:

- Number of EVs purchased due to our chargepoints becoming available in a community.
- Number of premises 5 minutes' walk from a chargepoint.

We are working with Energy Lancaster at Lancaster University and Durham University to develop methodologies to quantify other benefits. A Community Benefit section appears in the annual report.

- **EV Adoption**

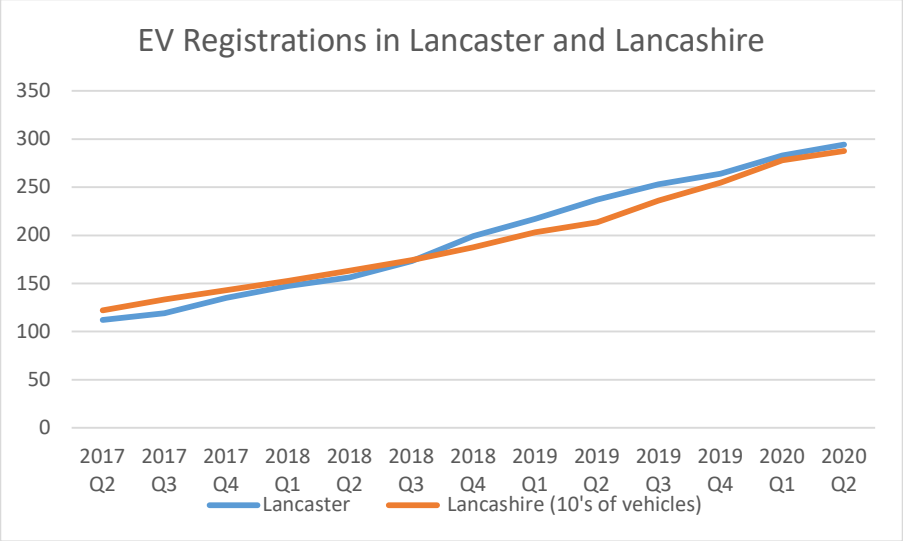


Figure 8 - Comparison of Registrations of EVs in Lancaster and Lancashire before and after Charge My Street established

[13] https://char.gy/drivers

[14] https://www.ubitricity.co.uk/product/smartcable/

There was an increase in the rate of EV registrations in Lancaster City Council area after the installation of the first Charge My Street charger. This increase has been faster than Lancashire County as a whole, possibly because of the engagement work carried out by Charge My Street.

- **Premises within 5 minutes' walk of a chargepoint**

When Charge My Street was established, there were some chargepoints at Lancaster University and a handful around Lancaster District. Charge My Street supported the Lancaster City Council OLEV bid and other chargepoint providers have now installed several more chargepoints so that 38.5% of homes without off street parking are now within 5 minutes' walk of a chargepoint, up from 21.9% in January 2020.

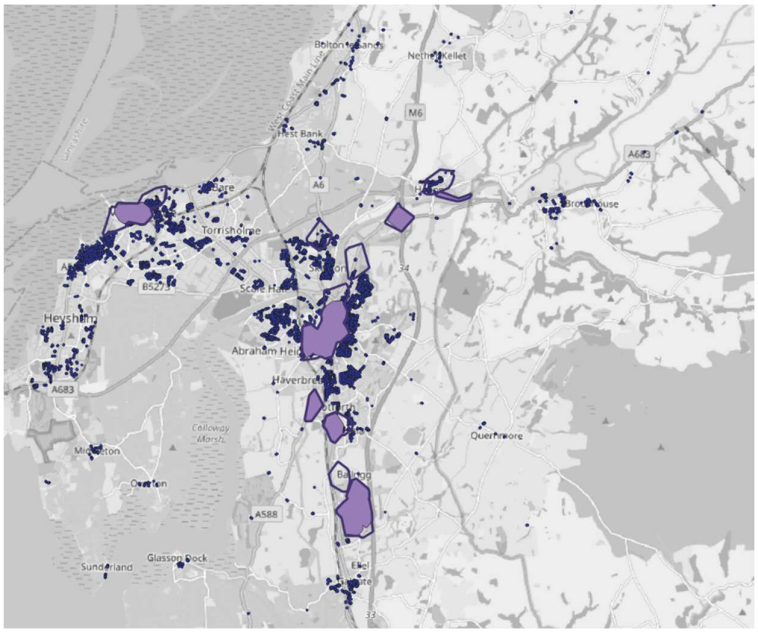


Figure 9 - Purple polygons show the 5 minute walk area around chargepoints

7.9. Financial Projections

The financial and usage projections in Appendix 3 are based on the following assumptions:

7.9.1 Installations

- 20 chargepoints installed per quarter from Q1 2021 to Q4 2021.

7.9.2 Income

- Use of chargepoints is based on the usage in 2019 of the Charge my Street chargepoints in Lancaster and Cumbria, adjusted to reflect lower usage during the pandemic. The revenues are based on actual subscriber numbers and visitor usage. For urban chargepoints this is three subscribers on the light user package and two on the medium user package. For rural, this is one on light and one on medium. Rural charge points have guest charging value of ~£30 (rural) and £20 (urban) per month, calculated from guest usage during 2020. It is anticipated that 50% of chargepoints will be in urban areas and 50% in rural areas.
- Grants are shown in the sales line of the profit and loss forecast (as advised by our auditor).

- Projected increase in usage in 2021 and 2022 is based on Electricity North West Ltd projections[15]. This is lower than Society of Motor Manufacturers' (SMMT) increase in Battery EVs & Plug in Hybrid EVs[16].
- Analysts Delta-EE, have revised up our forecast to 2030 due to 3 key drivers:
    - 10-point plan that will phase out Internal Combustion Enging cars by 2030, and all non-Battery Electric Vehicles by 2035
    - A quickening of the pace of car manufacturers announcing the transition to electric, in part as a result of stimulus funding announced by European governments to prop up car makers during COVID.
    - Much higher than expected UK EV sales in 2020, despite COVID.
- Delta-EE expect around 14M plug-in vehicles to be on our roads by the end of 2030. (Battery Electric Vehicles, Plug in Hybrid Electric Vehicles and extra Low Carbon Vehicles). A significant increase on previous views, and a testament to how much the industry has moved on in the last year or so.

Vehicle Type	2020	2021
Battery EV Registrations	Rise 147.1%, pushing market share up to 5.6%	Rise 52.9% on 2020 increasing market share to 7.7%.
Plug in Hybrid EV Registrations	Rise 72.9%, and pushing market share up to 3.6%.	Rise 52.9% pushing market share up to 4.6%.

Figure 10- Society of Motor Manufacturers (SMMT) EV sale forecasts

7.9.3 Costs

- Chargepoints are valued according to the cost to Charge My Street of their installation e.g. 100 chargepoints in SOSCI will cost £336K (the Innovate UK grant to CMS).
- In line with industry standards, chargepoints are depreciated by:
    - 15 years for infrastructure elements – electricity connections, poles, cabinets, cabling.
    - 8 years for the chargepoint heads and hub.
- Overheads & fixed site costs increase 2% each year. Half of the sites will be able to use the site's internet connection and half will use a separate connection. Half will use the power at the site and half will need a new power connection. 1 support visit per year per chargepoint is envisaged.
- The approximate cost of a chargepoint installation is £10K.

7.9.4 Share Capital

- 5% of share capital will be withdrawn each year from three years after shares are purchased (during which time it cannot be withdrawn).

[15] https://www.enwl.co.uk/get-connected/network-information/dfes/

[16] https://www.smmt.co.uk/wp-content/uploads/sites/2/WEBSUM-SMMT-CARLCV-MARKET-OUTLOOK-Q4-02112020-FINAL.pdf

7.9.5 Profit and Loss Forecast

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Sales		10,160	1,248	30,921	94,103	172,994	252,464	341,584	443,718	560,416
Less Cost of Sales		1,499	625	15,460	47,051	86,497	126,232	170,792	221,859	280,208
Gross Profit		**8,661**	**623**	**15,460**	**47,051**	**86,497**	**126,232**	**170,792**	**221,859**	**280,208**
Total Overheads		**19,330**	**45,670**	**82,969**	**98,802**	**107,834**	**114,030**	**85,613**	**87,325**	**89,071**
Operating Profit		**(10,669)**	**(45,047)**	**(67,508)**	**(51,751)**	**(21,338)**	**12,202**	**85,180**	**134,534**	**191,136**
Other income										
Management contracts				48,000						
Capital Grants		2,597	75,335	330,589	200,000	200,000				
Interest received		17	5							
Less Interest on Shares		-	-	380	380	2,999	7,007	27,813	27,536	26,159
Less Depreciation		4,015	9,188	37,433	63,311	88,413	84,398	79,383	79,383	79,383
Profit Before Tax		7,930	21,105	273,267	84,558	87,250	(79,202)	(22,017)	27,616	85,595
less CT @ 19%		0	0	0	0	0	0	0	0	0
Profit transferred to reserves		7,930	21,105	273,267	84,558	87,250	(79,202)	(22,017)	27,616	85,595

7.9.6 Balance Sheet Forecast

	2019	2020	2021	2022	2023	2024	2025	2026	2027
Fixed Assets									
	16,060	32,740	325,895	563,782	767,534	683,136	603,753	524,370	444,988
Current Assets									
	10,873	145,302	325,794	371,895	257,442	262,194	319,852	399,315	538,133
Current Liabilities									
(deferred grant released next year)	0	0	0	0	0	0	0	0	0
Net Current Assets	10,873	145,302	325,794	371,895	257,442	262,194	319,852	399,315	538,133
Long Term Liabilities									
(deferred grant)	0	0	0	0	0	0	0	0	0
Net Worth	26,933	178,042	651,689	935,677	1,024,976	945,330	923,606	923,685	983,121
Made up of									
Profit and Loss Account	7,930	29,035	302,302	386,860	474,110	394,908	372,891	400,506	486,101
Community shares	19,003	149,007	349,387	548,817	550,866	550,422	550,715	523,179	497,020
	26,933	178,042	651,689	935,677	1,024,976	945,330	923,606	923,685	983,121

7.9.7 Cash Flow Forecast

				Actual				
		2018	2019	2020	2021	2022	2023	2024
Operating cash flow								
	Operating Profit		(10,669)	(45,047)	(67,508)	(51,751)	(21,338)	12,202
	Less CT owed		0	0	0	0	0	0
	management contracts				48,000			
			(10,669)	(45,047)	(19,508)	(51,751)	(21,338)	12,202
Investment cash flow								
	Purchases		(20,075)	(25,868)	(330,589)	(301,198)	(292,166)	0
	Disposals							
Total investment cash flow			(20,075)	(25,868)	(330,589)	(301,198)	(292,166)	0
Finance Cash flow								
	Capital Grant Received		22,597	75,335	330,589	200,000	200,000	0
	Interest Received		17	5				
	share interest paid			0	0	0	0	0
	Shares invested		19,003	130,004	200,000	200,000	0	0
	Shares withdrawn		0	0	0	(950)	(950)	(7,450)
Total Finance cash flow			41,617	205,344	530,589	399,050	199,050	(7,450)
Total Cash Flow			10,873	134,429	180,492	46,101	(114,453)	4,752
Opening cash balance			0	10,873	145,302	325,794	371,895	257,442
Closing cash balance			10,873	145,302	325,794	371,895	257,442	262,194

7.10. Tax reliefs

Charge My Street has received advanced assurance that investment in our shares will qualify for Enterprise Investment Scheme relief. Investors will be able to obtain 30% tax relief on their investment, provided they qualify. The shares on which tax relief has been obtained cannot be withdrawn for 3 years. The Advanced Assurance letter from HMRC can be downloaded from the share offer section of the CMS website.

7.11. Legal and Planning Constraints

Planning guidance recommends one chargepoint for every 10 new homes, so based on a home charging model, the UK would need approximately 800,000 chargepoints.

The only parts of the General Permitted Development Order that relate to electrical charging points

are at Part 2, Class D[17] and Part 2, Class E[18]. Class D relates to wall-mounted chargepoints. Class E

Class D – electrical outlet for recharging vehicles

Permitted development

D. ***The installation, alteration or replacement, within an area lawfully used for off-street parking, of an electrical outlet mounted on a wall for recharging electric vehicles.***

Development not permitted

D.1 Development is not permitted by Class D if the outlet and its casing would—

(a) exceed 0.2 cubic metres;

(b) face onto and be within 2 metres of a highway;

(c) be within a site designated as a scheduled monument; or

(d) be within the curtilage of a listed building.

Conditions

D.2 Development is permitted by Class D subject to the conditions that when no longer needed as a charging point for electric vehicles—

(a) the development is removed as soon as reasonably practicable; and

(b) the wall on which the development was mounted or into which the development was set is, as soon as reasonably practicable, and so far as reasonably practicable, reinstated to its condition before that development was carried out.

relates to electrical upstands. Within areas "lawfully used for off-street parking" installation of chargepoints is generally permitted (so does not require an application for planning permission) unless one of the conditions listed in D.1 (see below) applies. There are similar conditions for electrical upstands.

7.12. Risks and Mitigation

A full risk assessment has been carried out looking at the commercial, environmental, technical, managerial, health and safety risks. A risk register with mitigations can be found in Appendix 10.

[17] https://www.legislation.gov.uk/uksi/2015/596/schedule/2/part/2/crossheading/class-d-electrical-outlet-for-recharging-vehicles/made

[18] https://www.legislation.gov.uk/uksi/2015/596/schedule/2/part/2/crossheading/class-e-electrical-upstand-for-recharging-vehicles/made

APPENDIX 1 – Director Biographies

The Board of Directors contains individuals with a rich mix of skills and experience.

Paul Fisher has over 20 years of experience in Senior Project Management and Controls roles in the Defence industry in the North West of England. Paul is also a board member and presenter on community radio station, Beyond Radio in Lancaster and Morecambe. He has always been interested in green technology and particularly electric cars but living in a terraced house with no off street parking in the centre of Lancaster originally limited his aspiration. Since the original share offer, Paul has now purchased a hybrid plug in electric vehicle (Hyundai Ioniq) and is a regular user of the Charge my Street facility at the Lancaster Boys and Girls Club on Dallas Road. Paul's ambition is to own a fully electric vehicle in the next couple of years given the increasing range available in the market place.	
Alex Hulley (Secretary) is a committed EV and low carbon technology enthusiast with an encyclopaedic knowledge of his Nissan Leaf! He is interested in the development of the EV sector and formerly worked as a Systems Engineer for EDF Energy. He is based in Blackpool and currently works for an energy and environmental consultancy at Lancaster University.	
Nicola Mortimer is a consultant who has worked extensively across the renewable energy sector. Her experience covers wind energy, particularly around mapping and identifying sites then supporting the design of technical solutions. She has managed Innovate UK projects which have successfully looked at battery storage and EV chargepoints.	
Will Maden (Chief Technology Officer) has over 15 years' experience operating as a consultant specialising in logistics & transport. He is currently Director of Analytics for Miralis Data, a specialist algorithm and machine learning data agency. Will developed the first commercial algorithms in the UK to schedule and route electric commercial vehicles. More recently, he has been working with a multinational company developing a "smart charge" algorithm which allows electric vehicles to schedule more efficiently and to have the least impact on the national grid. His professional interest in electric vehicles has carried over to his personal life where and he now drives an electric car.	

Angela Wakefield is a member of Charge My Street and has been helping to find potential sites for the installation of community charge points in her home town of Keswick. With the support of the local Sustainability Group ('SusKes'), she is keen to put Keswick on the map when it comes to sustainable transport. The CMS initiative has really inspired Angela to do something proactive about the climate emergency. She works full time for the Environment Agency as a Senior Advisor working on the regulation of radioactive substances, in particular the way waste is managed. She is passionate about how we best achieve a sustainable future for all.	
Daniel Heery has 20 years' experience of funding and delivering projects focused on communities. He set up the award winning Cybermoor social enterprise in Cumbria and has worked on community owned infrastructure projects, focused on broadband. His experience of trying to get a charging point installed on his street in Lancaster gave him the idea to use community shares to bring local people together for a co-operative solution. He is passionate about using community assets to find solutions to environmental problems.	

APPENDIX 3 – Chargepoint Usage

All costs / prices EX VAT	charge out	cost						
kWh charge	£ 0.28	£ 0.16						
Connection fee	£ -							
Charge Point Usage								
Urban	Members	Individual Revenue	Total Revenue	Costs	Commission	Rev less costs	Annual Revenues	Cost of sales
Light	1	16	16	£ 6.43	0.30	£ 9.27		
Medium	1	24	24	£ 15.30	0.30	£ 8.40		
Heavy	0	32	0	£ -	0.00	0		
Guests	1	20.00	20.00	9.14	4.00	6.86		
Total Monthly		92	60	31	4.60	24.52		
Total Annual	3	1,104	720	371	55.20	294.28	720	426
Rural								
Light	1	16	16	£ 6.43	0.32	£ 9.25		
Medium	1	24	24	£ 15.30	0.48	8.22		
Heavy		32	0	0	0.00	0.00		
Guests	1	30.00	£ 30.00	13.71	6.00	10.29		
Total Monthly		72	70.00	35.45	6.80	27.75		
Total Annual	3	864	840.00	425.37	81.60	333.03	840.00	507

APPENDIX 4 – Contractual agreements

Key contractual agreements are set out below.

Electrical connection provider

Electricity North West, the District Network Operator for North West England, will supply new connections to sites where there is no existing supply. We are also evaluating some Independent Distribution Network Operators who may be able to offer a better price. We will seek the best deal from electricity suppliers that sells renewable energy. We are currently ordering supplies from Octopus Energy as they can offer dynamic pricing at different times of the day. This has potential for us to offer cheaper rates for off peak charging or when renewable generation is plentiful. At sites where we are using the host's supply, we are not able to guarantee that this will be 100% renewable.

Chargepoint Supplier

Our chargepoints are supplied by EO Charging https://www.eocharging.com/ who provide web based systems for Charge My Street to monitor usage of the system.

Chargepoint Software Supplier

During the course of the SOSCI project, Charge My Street has worked closely with Miralis Data to develop an app and chargepoint management system. During 2021, we will migrate to the Miralis "Fuuse" platform which will manage access to chargepoints and better meet our specific requirements. They will provide the billing systems and collect payments from users who pay by credit card within the app. This will enhance Charge my Street's capabilities to deliver better charging experiences to both end users and site hosts.

Chargepoint Installer

Bay Camera & Communications are installing the EO chargepoints– they are registered with OLEV as certified installers and have the requisite expertise to carry out the installs. They are based in Lancaster and work closely with EO. They carry out electrical surveys, detailed cost estimates and options at each site, agree the best option with the local host, advise on chargepoints and carry out the installation and commissioning of the chargepoint as well as providing subsequent support. They are experienced in delivering chargepoints for Lancaster University, hotels and other visitor destinations in the area. We have also used another registered EO installer for the chargepoint in Tisbury for the Nadder Valley Car Club. This installation was successfully delivered, working closely with the car club to prepare the site. This offers a model for installations in other parts of the UK.

Local Authority partners

For the SOSCI project South Lakeland District Council and Durham County Council are providing sites and sundries associated with installation – cabinets, power supplies and cabling.

A full list of partners involved in the SOSCI project is in Appendix 8.

APPENDIX 5 – Marketing Plan

A large part of the marketing strategy will focus on raising awareness of EVs and be delivered by Cumbria Action for Sustainability. They have a part time marketing officer in post until the end of Q1 2021 to work with the local media to promote events. Charge My Street have a full time marketing person who is carrying out work on the chargepoint promotion.

There are 3 key areas in the strategy

1) Promoting the share offer;
2) Promoting the opportunity to site hosts and partner organisations;
3) Promoting the chargepoints to end users – in 2 segments (tourists and residents).

We use the Charge My Street website, social media and e-mailing list to promote the chargepoints. In the past, members of the team have successfully promoted CMS on BBC Radio Cumbria and in the local press. Using social media, we highlight the benefits of EVs and Charge My Street's approach.

We promote the charging service
through:

- The website.
- Leaflets & posters at local venues (see below for examples in Lancaster).
- Via social media (Facebook, Twitter).
- Press coverage in local newspapers.
- Events with local and regional EV dealers and EV publications / websites (e.g. zap-map).
- Media coverage on BBC Radio Cumbria & Lancashire, Heart, CFM, Beyond Radio.
- Regional and national social enterprise networks e.g. Co-ops UK.
- Public sector organisations e.g. public health teams, National Park.
- Social enterprises which share the same environmental and social objectives e.g. CAfS in Cumbria.

g) APPENDIX 6 - Resident Survey for Cockermouth

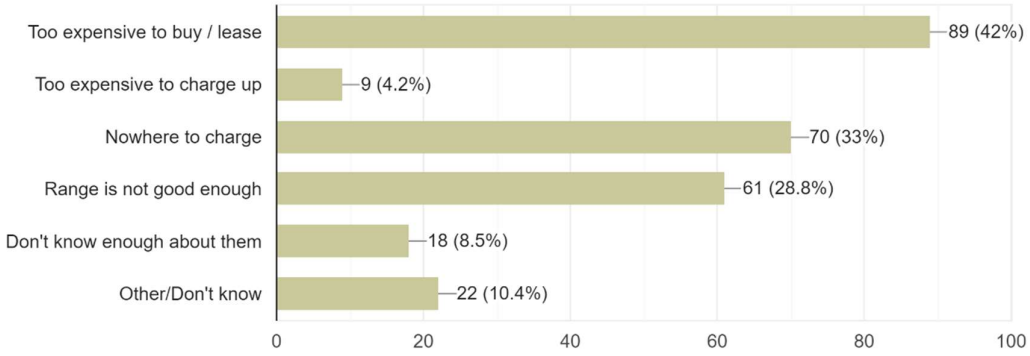
Surveys have been carried out with specific communities in Cumbria to identify what the local appetite is for a charging point. As the group is largely self-selecting, it is not representative of the whole population of Cumbria.

Cockermouth Responses

Do
224 r

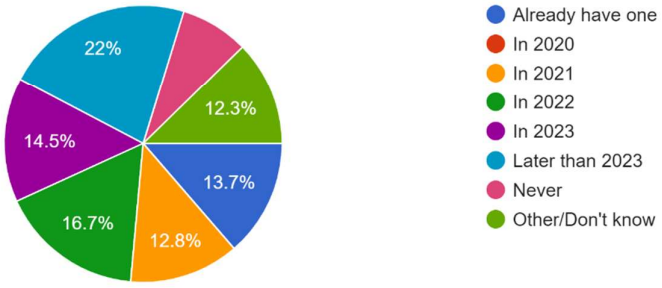
What are the reasons holding you back from having an electric vehicle today? (Choose one answer only)

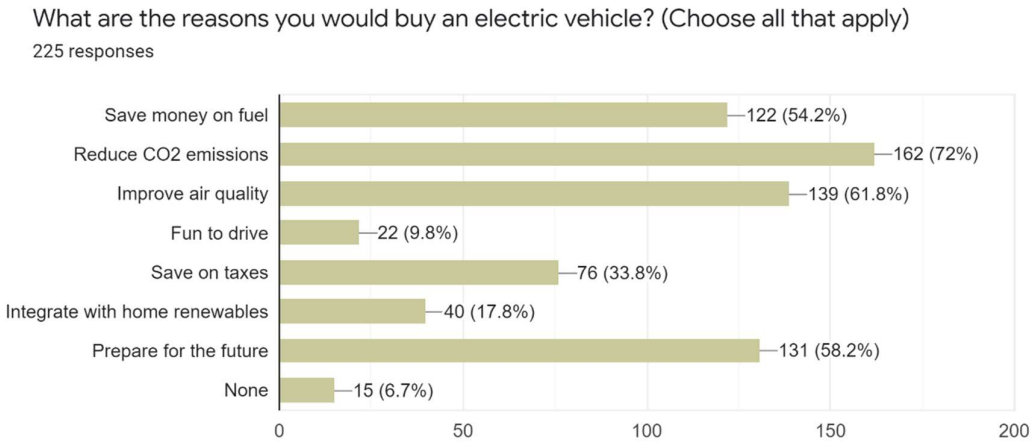
212 responses

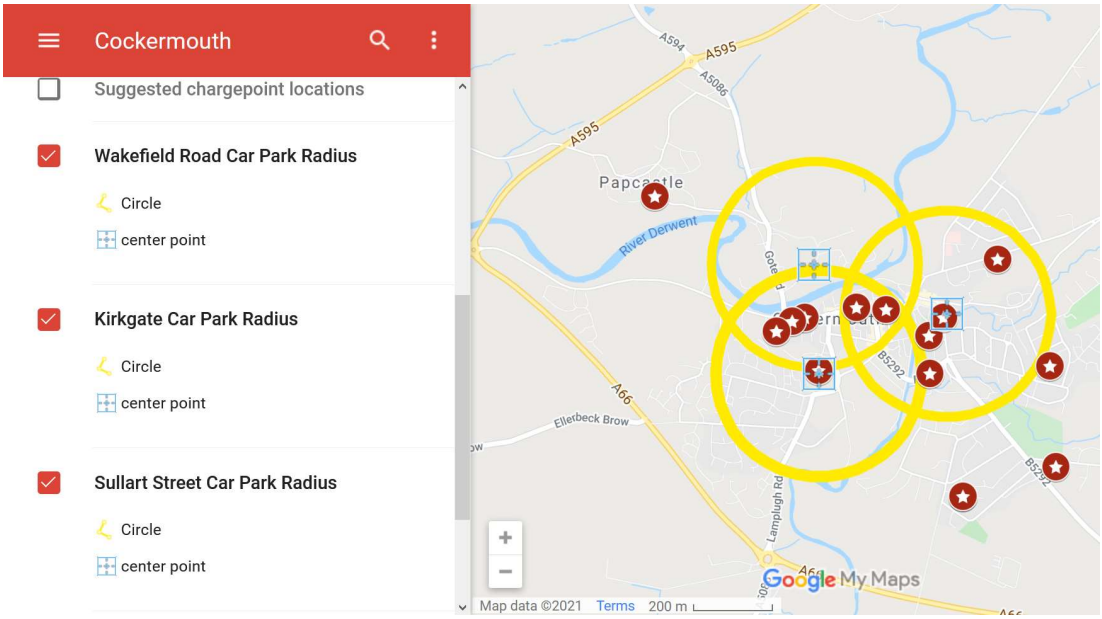


When might you consider buying a plug-in hybrid / electric car? (Choose one answer only)

227 responses



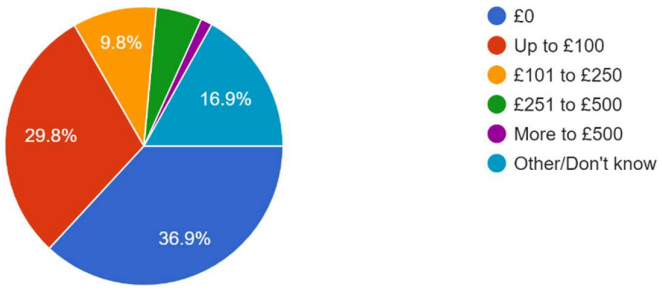




Map shows respondents by postcode who are both were planning on buying an EV soon and also did not have access to a driveway (represented in red with a star icon)

We have visually represented the radius around some chargepoints which would take in some of those individuals without a driveway. This is more complicated and so an online tool that only allowed certain distances to be mapped was used. A 500 metre radius has been used because it was the closest thing to the 400 metres that Google reckons an average human walks in 5 minutes. These radii can also be toggled on and off and are represented by a yellow circle.

We raise funds to install community-owned chargepoints through share offers. It typically costs from £5,000 to £10,000 for a communal chargepoi...oint near your house? (Choose one answer only)
225 responses

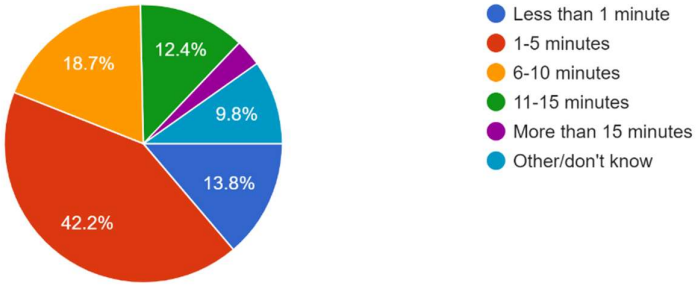


Which of these statements best describes how you feel about using a local community-owned chargepoint? (Choose one answer only)
224 responses

- Approximately two thirds of respondents would invest at least £100 in a charging point
- three quarters would walk 5 minutes to a chargepoint.
- Two thirds would use a public chargepoint

How long would you be willing to walk from your home to the nearest vehicle chargepoint? (Choose one answer only)

225 responses



7.12. Estimates of Chargepoints per Cumbrian District

Source https://www.greenhousethinktank.org/climate-jobs.html

Table 5.4 Estimate of number of chargepoints needed

	Public chargepoints		Workplace chargepoints		Home chargepoints	
District	**Number of Chargepoints in August 2020**	**Additional number needed**	**Number driving to work**	**Number needed for 20% to be charged at work**	**Number of properties**	**Chargepoints for 28% of properties**
	[1]	**[2]**	**[3]**		**[4]**	**[5]**
Allerdale	4	48	29,331	5,866	46,324	12,739
Barrow-in-Furness	1	32	17,475	3,495	31,915	8,777
Carlisle	10	23	32,456	6,491	31,174	8,573
Copeland	3	54	21,687	4,337	53,838	14,805
Eden	7	22	16,664	3,333	25,470	7,004
South Lakeland	13	45	30,695	6,139	50,068	13,769
Cumbria Total	38	224	148,308	29,662	238,789	65,667

[1] from National Chargepoint Registry - https://www.gov.uk/guidance/find-and-use-data-on-public-electric-vehicle-chargepoints

[2] In October 2019 there were 52.6 public chargepoints in London (including rapid charging ones) per 100,000 population https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/850417/electric-vehicle-charging-device-statistics-october-2019.pdf

[3] from Table QS701EW, ONS 2011 Census data

[4] total from Table 4.2

[5] 55% of dwellings in Cumbria are detached, semi-detached or bungalows (see https://www.cumbriaobservatory.org.uk/housing/). It is assumed that half of these will have domestic chargepoints

h) APPENDIX 7 – SOSCI Project Overview

Introduction

The Scaling on Street Charging Infrastructure (SOSCI) project is examining the feasibility of meeting our vision for 8 million homes without off street parking to be within 5 minutes' walk of an Electric Vehicle (EV) Chargepoint. This will deliver:

- increased take up of electric vehicles, allowing people to save money on fuel costs;
- reduced air pollution and CO2 emissions.

Charge My Street is demonstrating that community investment can provide chargepoints and stimulate demand for EVs in areas without off street parking. The challenge is to scale this up to other Local Authority (LA) areas by working within a bigger consortium.

Objectives & Features

The project builds on feasibility work to include the following elements:

a) planning community owned charging infrastructure. This is based on local demand, mapping data and engagement with local stakeholders;
b) incorporating a variety of additional uses into chargepoint infrastructure - including renewables integration and battery storage. The project will assess the social and financial value for stakeholders as well as technical / commercial implications of each of these technical scenarios;
c) consulting with local stakeholders from private, public and 3rd sectors in each of the target areas on sites for chargepoints and demand for EVs;
d) developing financial plans to scale up investment in the plans across the target areas;
e) building a coherent exploitation plan and business plan to scale up delivery across the target areas.

Details of Innovation

The innovation lies in the business model - giving local people the tools to identify and finance their own chargepoint with little reliance on LAs. It builds on earlier projects by assessing commercial impacts of integrating other technologies like solar panels on community centres to generate additional value. A demand-led approach - encouraging local people to invest - reduces the risk on public and private investors as they can target funding where chargepoints are most likely to be used. The project offers a new way for hard pressed LAs to stimulate chargepoints in their area and make the most of their limited resources.

The project explores the tensions between "top down roll out" programmes lead by multinationals and Local Authorities and the community initiatives led by people in their neighbourhoods. SOSCI develops a methodology that enables stakeholders to reach a consensus on where chargepoints should be located -balancing commercial, environmental and management factors.

Project Partners

Charge My Street (CMS) is a social enterprise focused on the financing, installing and operating chargepoints in neighbourhoods where there is a lack of off street parking.

Cybermoor (CYB) have developed community broadband solutions and worked with community finance of infrastructure. They bring 15 years of experience in locating, co-designing and installing

infrastructure solutions with communities.

Miralis Data (MIR) specialise in the mathematical modelling of complex situations and the designing and writing of algorithms to support business change. They develop charging apps and a website to support management of the chargepoints.

EO Charging (EO) supply chargepoint equipment and software and have been involved in previous trials with Charge My Street.

Bay Camera & Communications (BAY) have worked with Charge My Street on Phase 1 to carry out survey work and installations of their initial chargepoints. They are based in Lancashire and carry out work on smarthomes installing monitoring devices and online management systems for people with complex care needs. They are interested in expanding their chargepoint installation business as there is a good strategic fit with their smarthome business. They are carrying out installations of the chargepoints in Cumbria, Lancashire and other renewable energy clusters.

Blackhall Mill Community Association (BMCA) have an EV car club which was established in 2012. It was established to provide a rural service, given rural transport provision and a desire to demonstrate a model for rural EV car clubs. The community centre where it is based has 40 solar panels to offset usage, they also have a ground source heat pump for heating. Their experience and knowledge of the SOSCI model could be furthered by creating community charging hubs allied to Car Clubs in Derwent Valley. They are working with other sites for car clubs using EVs.

Cumbria Action for Sustainability (CAFS) is the leading organisation in Cumbria dedicated to transitioning the County to 'Zero Carbon.' With over 20 years of programme delivery, they have been at the forefront of identifying, sharing and showcasing pioneering low carbon technologies and systems to tens of thousands of members of the public, to public authorities and to businesses. This has been achieved through a series of engagement programmes (such as an annual 'Green Build Festival'), through training programmes (such as Level 4 Retrofit) and through their widely respected communication team's monthly newsletters and events. They have recently led an 'Eco-Innovation' dissemination programme on electric vehicles, as well as designing and managing events on battery storage and community energy generation. They have also recently been responsible for raising nearly £1million of community shares.

Cumbrian Local Authorities - **Carlisle City Council (CCC) and South Lakeland District Council (SLDC).** SLDC and CCC have urban centres surrounded by large rural hinterlands. CCC stretches across the sparsely populated Borderlands as well as having densely populated areas of terraced housing in the centre of Carlisle. In Kendal, SLDC has the most polluted road in Cumbria, as well as scattered villages and high tourism numbers. Part of its area is within the Lake District National Park, a World Heritage Site.

Durham County Council (DCC) is the local authority of the non-metropolitan County Durham. Since 2009 it has been a unitary authority, having the powers of a non-metropolitan county and district council combined. At the time of the 2011 census it served a population of 513,200, which makes it one of the most-populous local authorities in England. The County has established 14 area action partnerships (AAPs) to provide an interface with county community groups. Phase 1 liaised with a small number of these. Phase 2 will work with all of them to deliver 100 chargepoints across the County.

Gronn Kotakt offer Sustainable electric vehicle charging solutions for local authorities and businesses. They are owned by Statkraft AS, Europe's largest generator of renewable energy. They are active in Norway, Germany, Sweden, the UK and Ireland.

Project Details

The Consortium has developed a £4 million trial project funded by OLEV and Innovate UK. This large scale demonstrator will run from late 2019 to January 2022. Progress so far has seen 21 chargepoints in County Durham and 10 in the rest of the UK. It has also lead to a pipeline of sites for installation and additional funding secured for more sites in County Durham through the OLEV On Street Charging Programme.

Research Questions

A set of research questions have been developed to provide a coherent focus for the project's activities. These correspond to the project workpackages (WPs) – see below.

1. Evaluate the balance of community / private / public investment to deliver charging infrastructure and the effectiveness of different business models.
2. What are the strengths and weaknesses of EV charging infrastructure initiatives lead by public sector / private sector / 3rd sector at scale.
3. How can the top down approach of a unitary authority effectively integrate with the bottom up approach of a community-led solution?
4. Does the development of not-normally-public-parking (n2p2) spaces allow for faster deployment of chargepoints than other approaches?
5. Do the additional use cases (e.g. solar, battery storage, 5G) alter stakeholders' perceived benefits of hosting chargepoints and peoples' appetite to invest
6. What are the social, financial, technical barriers to chargepoint installation in rural and urban areas with different socio-economic profiles? How do these impact on take up of chargepoints?

Target Areas

- Council clusters - County Durham, Cumbria (Carlisle, South Lakeland District Council))
- Community Energy Organisations in North West England and Scotland.

Work Packages

The project activities are split across 6 work packages.

Work Package	Lead
1. Project Management	CYB
2. Stakeholder Engagement, Data Collection & Analysis	CAFS
3. Detailed Technical Specification, Design & Development	EO

4. Installation and Commissioning	**GK**
5. Finance	**CMS**
6. Exploitation, Dissemination Monitoring & Evaluation	**CYB**

i) APPENDIX 8 - Risks & Mitigation

The Society maintains a risk register which is updated quarterly. This is the current register with COVID related risks highlighted in grey.

Risk	Risk H/M/L	Like-lihood	Impact	Mitigation
Commercial				
1. Mainstream charging companies move into this space due to increased government subsidies.	M	L	Reduces attractiveness of Charge My Street model.	Stress the convenience and community ownership of this option as the USP.
2. Low take up of the service.	H	M	Reduced cashflow to pay bills	Work with local EV dealers & communities of interest. Work with local media to provide appropriate advertising. We are not paying interest on shares for the first 3 years.
3. Long period before it becomes cost effective.	H	M	Reduced cashflow to pay bills	Minimise running costs by working with partners.
4. Government withdrawal of subsidies for EV purchasing.	L	L	Fewer people interested in purchasing an EV.	Reduce costs until the market picks up. In view of recent announcement about future of EV – changes to subsidies are unlikely.
5. Lack of demand for a charge point / lack of interest from target groups of investors.	M	M	Unable to deliver a chargepoint in that community.	Identify alternative communities, carry out further community engagement.
6. Not sufficient momentum to continue with the delivery of chargepoints.	M	L	Charge points are left unused	Identify partner to take over the management of the installed charge points.
7. The website for collecting investments does not work well.	M	M	Time and costs exceed budget	This work is based on similar sites so work quantification can be accurately estimated.
8. Unable to persuade site owners to host charging points.	M	M	Lack of charging points in preferred area	Work with several (i.e. alternative location) site owners so that one dropping out will not stop the neighbourhood proceeding. Relocate to back-up location.
9. Societal changes following CV-19 have a significant effect on demand for EVs.	M	M	Changes could be positive or negative - to be	Revise and update plans and programmes for community interface meetings. Remain open to

			determined. Studies underway into possible effects.	continuing to revise/update as necessary.
10. Charge points become obsolete due to Government changes in legislation	L	L	Government may mandate contactless payment for fast chargers.	Work with charge point providers and industry associations to ensure that any legislation does not mandate upgrades of legacy equipment.
11. Risks of legal challenge associated with accessibility	L	L	Legal challenge due to poor accessibility of charge point for people with disabilities.	Develop policies and procedures to demonstrate that full consideration was given to accessibility issues during the design process.
Technical				
12. The web platform does not work well during trial phase.	M	M	Causes frustration and lack of interest in end users; false expectations.	Two strategies: a) AGILE methodology helps to divide the releases in very short iterations and in focusing in solving specific problems. Tools that register and manage end users' priorities will be used to improve the usability of the site.
13. Local maintenance - to fix is challenging / costly.	L	L	Frustration with users if there is a fault with the chargepoint.	Local champion who can quickly respond and reset the chargepoint. Work with local installers who have a 4 hour fix time.
14. Access to electricity unavailable at best sites - LV network does not have enough capacity.	L	L	Delays to installation and additional costs	Flexible installation plan to work with other sites. Alternate connection technology. e.g. 7kW chargepoints compatible with existing supply.
Environmental				
15. Weather - Adverse weather delays deployments.	L	L	Delays to installation and additional costs	Flexible installation plan to fit around adverse weather.
Managerial				
16. The use of new technology at community premises can be time consuming to arrange with different stakeholders.	H	M	Slow down deployment	Clear setting out of roles and responsibilities. Support for first organisations with designated contact to sort out issues. Publish plans to make people aware of installation.

17. Parking arrangements at sites is complex for organisations.	H	H	Slow down deployment	Show that system can manage use of the spaces.
18. Contracts - Public land owners and organisations (such as charities) not willing or able to respond accurately or timely.	M	L	Slow down deployment	Develop individual documentation to reflect individual needs. Provide a supportive role to help under-staffed organisations. Documentation is based on well-tried forms used for rural broadband projects.
19. Sub-contractor failure - Non-performance or inability to deliver (to time & cost).	L	L	Delay to project delivery	Select qualified installers registered with OLEV. Continue to monitor and provide support where required. Timely payment of their invoices. Ensure contracts are awarded within the capability of the contractor(s).
20. Spaces blocked by non EVs when member wants to charge.	M	H	Reduce attractiveness of the service	Put notices on the car and explain the problem to the motorist blocking the space. Speak with site owners and agree protocol for dealing with people that block places which is in line with their normal parking controls.
H&S				
21. Safety concerns expressed over 'new technology'	M	M	Delay to project	Use well proven and documented designs and equipment so any concerns can be quickly addressed. Use installers accredited by Office for Zero Emission Vehicles.
22. Risk of electrocution	M	H	Equipment is damaged and malfunctions. Member unable to charge	Installer will isolate power and repair within 4 hours. Alternative chargepoints available.
23. Risks about accessibility	H	H	People with disabilities unable to access charging points due to poor access and layout of bays and equipment.	Work with site owners to make more space available for fully accessible bays and ensure that the equipment is positioned for maximum accessibility.
24. Unable to carry out surveys due to COVID (unable to access buildings to assess electricity supply)	H	L	Building managers unwilling to give access so unsure whether sites can be	Work with building managers to ensure social distancing is followed.

			progressed.	
25. Installers cannot carry out work due to COVID restrictions	H	M	Installers cannot visit sites due to COVID restrictions.	Adapt policies and RAMS to reflect COVID risks and ensure people work at safe distances.
26. Site hosts unable to make decisions on hosting a chargepoint due to illness / shielding / low priority.	H	H	Sites unable to progress as decision makers e.g. parish councils focusing on COVID response	Work with groups that have good decision making processes. Get clarity of process up front.