Electric Vehicle Charging Strategy

Consultation – summary of responses

March 2021

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Executive Summary

Welsh Ministers have declared a climate emergency in Wales and have committed to strengthening Wales' climate ambitions to net zero by 2050. The transport sector, as one of the largest contributors to greenhouse gas emissions in Wales, has a significant role to play.

The Electric Vehicle Charging Strategy for Wales has been developed by Welsh Government and a draft subject to consultation. The strategy represents the first step for Wales to take target action to meet the unique requirements of electric vehicle charging in Wales. The strategy sets out the existing electric vehicle charging in Wales, charging needs for the decade and how these can be best met.

Welsh Government undertook a 12-week consultation period from 2nd December 2020 to 24th February 2021. The consultation provided stakeholders with the opportunity to feedback on the draft Electric Vehicle Charging Strategy. Welsh Government set up a designated area on the website to present all the available information on the strategy in a single place, online.

Feedback was facilitated through an online questionnaire and a dedicated email address was set up by Welsh Government allowing stakeholders to provide detailed comments on the strategy.

Around 335 people submitted their comments using the Welsh Government questionnaire, or by other online methods including email.

Interested individuals and organisations raised issues and opportunities about:

1) Convenient and accessible charge point locations;

2) Safe and secure charge point locations;

3) Spaces to be accessible and user friendly;

4) Confidence to rely on the infrastructure;

5) Planning and travel integration;

6) Impact of fast charging on the life of the car battery and potential safety risk profile;

7) Lessons learned from the roll-out of broadband in rural areas to the provision of chargers and relationship with private sector;

8) Relationship between tourism, electric vehicle usage and seasonality;

9) Perceived conflict between encouraging electric vehicle road vehicle prevalence and multi-modal travel; and

10) More complex delivery issues like liability for damage to car batteries and landlord consents.

Welsh Government has reviewed the feedback summarised in this consultation report for incorporation into the final Electric Vehicle Charging Strategy and to inform ongoing action planning.

1. Introduction

1.1 Project Context

Welsh Ministers have declared a climate emergency and have committed to strengthening Wales' climate ambitions to net zero by 2050. The transport sector, as one of the largest contributors to greenhouse gas emissions in Wales, has a significant role to play.

The Electric Vehicle Charging Strategy for Wales has been developed by Welsh Government in order to deliver charging that meets Wales' unique requirements and support the uptake of electric vehicles. At present, Wales has one of the lower levels of electric vehicle ownership in the United Kingdom. The strategy sets a vision for charging in Wales that seeks to provide users with confidence in electric vehicle charging infrastructure. The strategy details the existing charging provision for cars and vans across Wales, the required provision for the decade and how these can best be met.

Through the data analysis, user and stakeholder engagement and research undertaken in the strategy, four key themes were identified:

- Total charging provision: increasing the availability of slow, fast and rapid charging.

- Quality outcomes: achieving charging that provides quality user experiences.

- Sustainability outcomes: developing integrated cross sector planning for sustainable energy and transport to support decarbonisation.

- Localised benefits: providing infrastructure in the right place for users, businesses and capturing value opportunities for people in Wales.

The strategy is supported by an action plan which will set the framework and mechanisms for delivery.

1.2 Purpose of this Report

This report outlines the engagement activities and key findings from the consultation, both quantitatively and qualitatively. The findings have been incorporated within the strategy and are being used to inform action planning. The structure of this report contains:

- Chapter 2 – Engagement

- Chapter 3 – Feedback

- Chapter 4 – Summary

- Chapter 5 – Next steps

2. Engagement

2.1 Engagement Strategy

Welsh Government published the draft Electric Vehicle Charging Strategy for Wales as a consultation document on the website. Welsh Government created a designed area, https://gov.wales/electric-vehicle-charging-strategy, to present all available information in a single place, online.

The website allowed interested parties to view the draft consultation document and submit online feedback.

The consultation document was accompanied by an online questionnaire for feedback comprising 17 questions under eight themes. Questions were either multiple choice and/or open ended with the opportunity to include detailed comments. The questionnaire was open for responses from 2nd December 2020 to 24th February 2021.

The online format enabled participants to engage at any point during the 12-week period on a mobile, laptop, computer or tablet available to them.

The consultation document was published in line with Welsh Government accessibility standards.

Within the engagement strategy chargers are defined as the following:

- Rapid/Ultra Rapid: 43-350kW.
- Fast Charging: 7-22kW.
- Slow charging: <7kW.

2.2 Facilitating Feedback

2.2.1 Survey

Welsh Government asked participants to complete a questionnaire form in order to provide structured feedback on the draft strategy. The questionnaire provided the following information:

- Feedback on the strategy vision, key outcomes and charging demand.
- Feedback on the framework for action with the consultation document and any barriers foreseen in delivery.
- Understanding of participants ability to charge at home and current mileage as well as charging location preferences.
- Insights on how to create an equitable and accessible charging experience.
- Participant's understanding of opportunities to capture value of investment.
- Opinions on effects of the strategy relating to Welsh language and people who share protected characteristics.

In order to make the questionnaire as accessible as possible to all, the questionnaire was designed to Welsh Government's accessibility standards.

2.2.2　Non-Survey

A dedicated project email was hosted by Welsh Government. The email address 'EVCharging@gov.wales' allowed interested individuals and organisation to provide further detailed comments on the strategy. Comments received through this channel have been referenced within this document as 'non-survey' responses.

3. Feedback

3.1 Overview

A range of feedback has been received through survey responses and non-survey responses as part of the engagement exercise.

In total 335 responses were received and verified from individuals and organisations during the engagement period. The results are provided below.

3.2 Limitations

An online survey can exclude certain demographics that are unable to respond online.

3.3 Methodology

3.3.1 Survey Responses

Quantitative responses

The consultation questionnaire consisted of quantitative and qualitative responses. Where there is a clear quantitative response (yes/no etc.), the responses have been assessed numerically to provide conclusions against the respective questions.

Qualitative responses

In order to draw useable conclusions from the qualitative responses, the text has been reviewed and categorised against a pre-determined common set of 54 sub themes derived from an initial review of the consultation content. These themes were then mapped to the four key themes set out in the draft strategy – these are:

- Total charging provision: increasing the availability of slow, fast and rapid charging.
- Quality outcomes: achieving charging that provides quality user experiences.
- Sustainability outcomes: developing integrated cross sector planning for sustainable energy and transport to support decarbonisation.
- Localised benefits: providing infrastructure in the right place for users, businesses and capturing value opportunities for people in Wales.

Frequency of the sub-themes was then used to inform conclusions of the qualitative responses in the report.

3.3.2 Non-survey Responses

Where available, quantitative responses were collected and combined with the category 1 responses.

The key themes arising from the category 2 responses are included in Section 3.5.

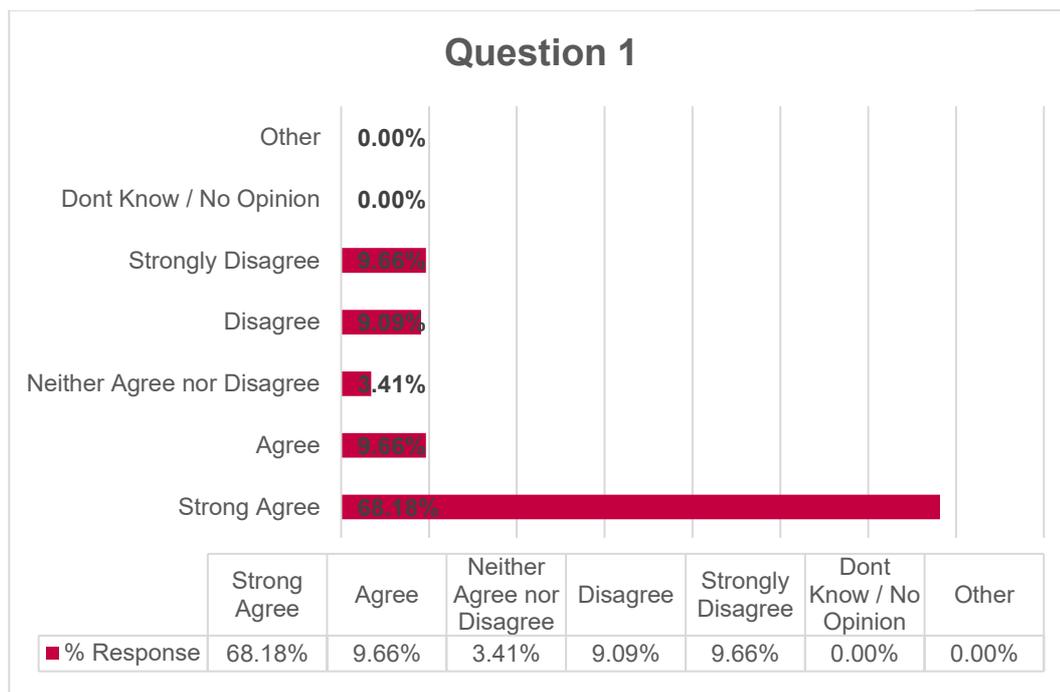## 3.4 Quantitative and Qualitative Responses

3.4.1 Question One

"This strategy sets out a vision for electric vehicle charging in Wales. It provides a strategic framework for how charging infrastructure will be installed in order to facilitate the uptake of

electric vehicles, supporting Wales' transition to net zero, whilst embedding the Well-being of Future Generations Act to ensure that charging is provided equitably. We would like to hear from you to shape the charging infrastructure system needed across Wales. It is clear that the need for electric charging infrastructure will rapidly increase. The decisions we make now will shape Wales' energy and transport system for the future.

A vision for charging in Wales: By 2025, all users of electric cars and vans in Wales are confident that they can access electric vehicle charging infrastructure when and where they need it.

To what extent do you agree with the vision?"

Table 1: Question 1 Survey Results

	Strong Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Dont Know / No Opinion	Other
■ % Response	68.18%	9.66%	3.41%	9.09%	9.66%	0.00%	0.00%

The majority of participants who answered this question agree with the vision (see Table 1), however, some would like to see it implemented sooner.

The key themes for this question include Quality outcomes and Total charging provision.

The participants expressed concern that the current grid infrastructure in Wales is poor, which is impacting on the availability and reliability of chargers. Lack of rapid chargers along key roads making charging away from home was perceived as a barrier. Current electric vehicle users expressed that they found it necessary to carefully plan their routes identifying how far the electric vehicle can travel on one charge and where the next charge point will be located.

Participants highlighted there was insufficient mention in the strategy of integration of public transport including cycling and other modes of public transport as a means of reducing overall traffic.

3.4.2   Question Two

"Users of electric vehicles access charging through charge points provided by private sector operators. What actions should the public sector take to ensure that sufficient chargers are

deployed, in the right locations, across Wales to meet the demand described in this strategy?"

The key theme for this question is Total charging provision.

The participants expressed that they would like to see the following types of chargers in which locations[1]:

- Fast chargers for domestic use.

- Fast chargers for public parking spaces (Local Councils, hospitals, supermarkets, hotels etc).

- A mixture of fast and rapid chargers at petrol stations.

- Fast chargers at tourist attraction sites.

Additionally, there was a preference for the public sector to work with the private sector towards a cohesive vision to identify gaps in the infrastructure and provide feasible charge point locations. The role of planning to support to encourage businesses and landowners to install charging points was highlighted.

Participants expressed that the reliability of chargers is important to aid confidence for local drivers and potential tourists when travelling around Wales. In some instances, participants living in Wales have had to travel via England to charge their electric vehicle when travelling north of Wales due to the lack of chargers. Furthermore, in some cases participants have turned up to a charger to find it not working or not in use.

3.4.3 Question Three

"What barriers do you foresee to the roll out of sufficient charging points across Wales to meet the predicted demand for charging over the next ten years described in this strategy?"

The key themes for this question are Total charging provision and Sustainable outcomes.

The main challenge the participants foresee in the roll out of sufficient charging points is enough funding around Wales. Particularly in rural areas of Wales where traffic flow is lower or there are less electric vehicle users. The participants stated that funding is crucial to creating lasting infrastructure.

Some participants believed there is a risk that people are less likely to consider buying an electric vehicle through lack of awareness and education. Lack of education and awareness could lead to reduced demand for charging points. The participants believe the infrastructure should be in place before the increase in uptake of electric vehicles to encourage buy-in from a greater number of people.

Another barrier highlighted by participants included planning permission, landowner's permissions, and the reluctance for the private sector to invest in less desirable areas. The suggestion was made for the Welsh Government to provide incentives.

3.4.4 Question Four - Part A

"Electric vehicle users are able to charge vehicles at varying speeds as set out in the graphic on page six of the strategy summarised in the table below. The use of such charging methods is dictated by the users' circumstance. As set out in the strategy it is

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[1] This may be viewed in the context of rapidly changing education and awareness (see question 3) and kept under review.

expected that charging could occur at home at slow speed assuming access to off street parking otherwise at destinations such as workplaces, car parks, destinations (supermarkets, leisure facilities, public locations, etc.) and on-street if practicable. Rapid/ultra-rapid charging would be expected to be used predominantly by those on long distance journeys.

Do you have access to off street parking?"

Table 2: Question 4A Survey Results

Question 4A

	Yes	No	Other
■ % Response	87.86%	12.14%	0.00%
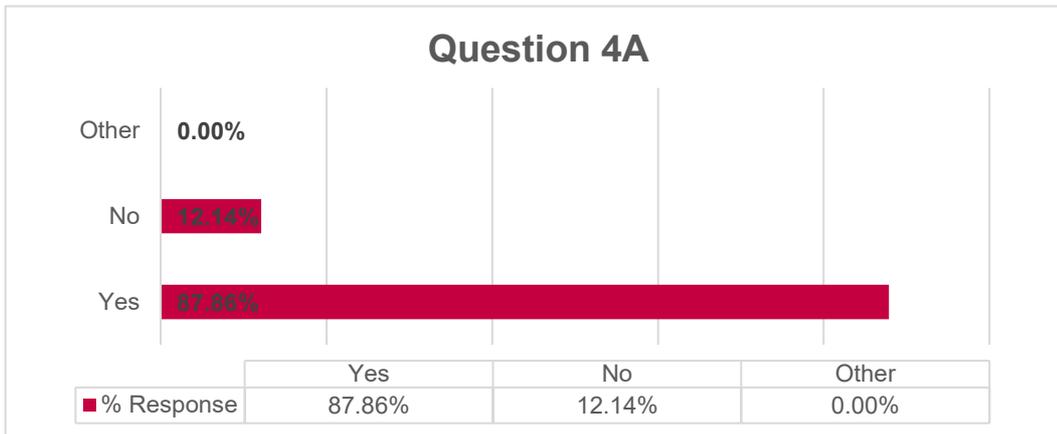
Table 2 shows that 87.86% of participants have access to off street parking and 12.14% do not.

3.4.5   Question Four – Part B

"Please estimate your annual mileage"

Table 3: Question 4B Survey Results

Question 4B

	Less than 10,000 miles per year	10,000 to 20,000 miles per year	More than 20,000 miles per year	Other
■ % Response	35.84%	54.34%	9.83%	0.00%

Table 3 suggests that the average participant drives 10,000 to 20,000 miles per year. 35.84% drive less than 10,000 miles per year and only 9.83% of participants drive more than 20,000 miles per year.

3.4.6 Question Four – Part C

"The need for fast charging is expected to quickly increase over the next five to ten years. It is especially important for people who are unable to charge at home (for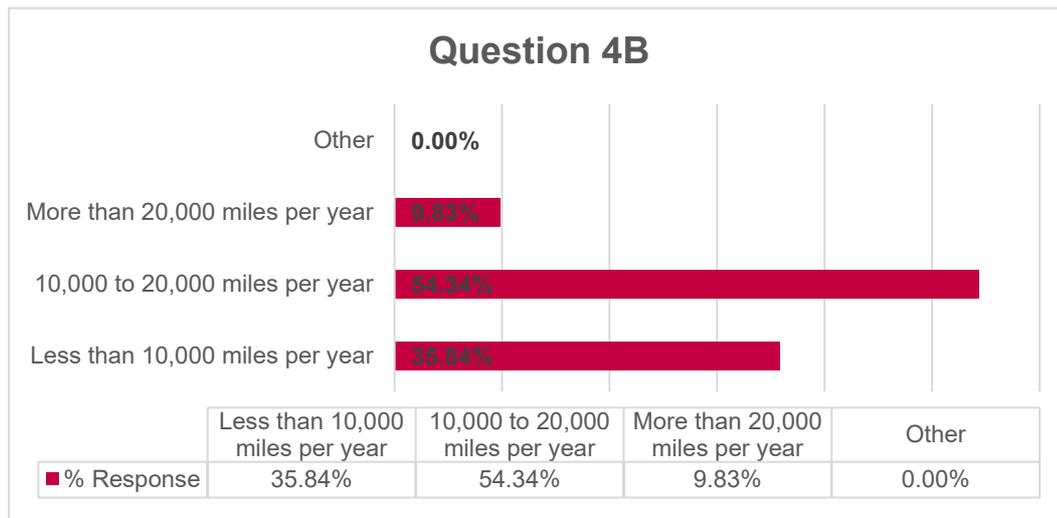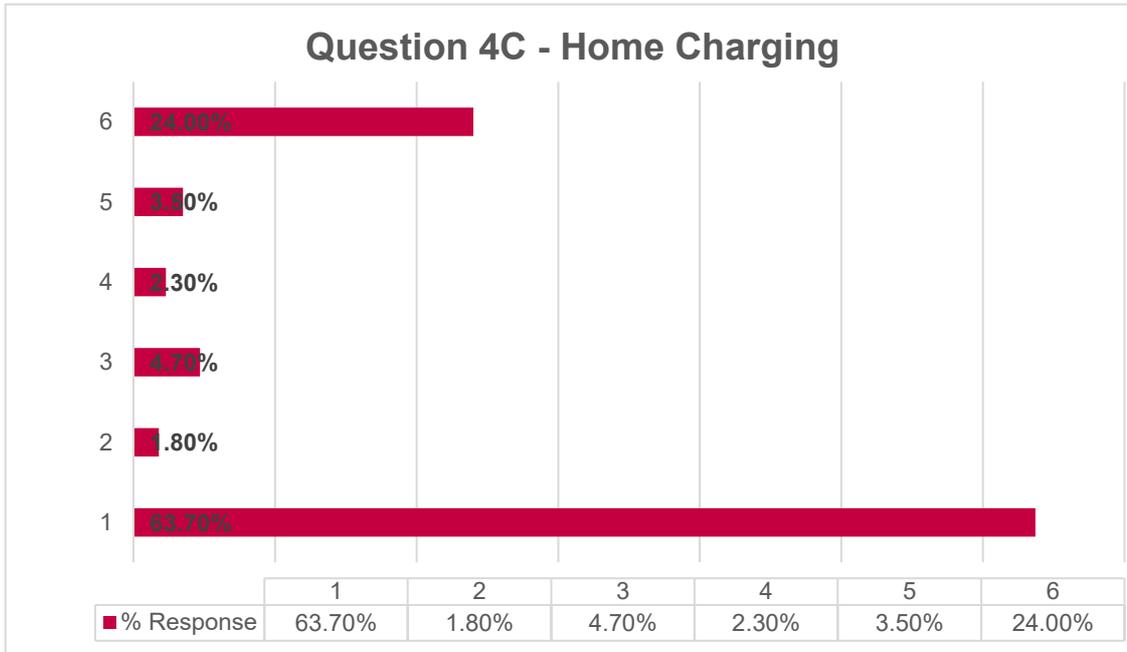 example due to lack of parking). Please rate in order of importance (1 to 6) your preferred location to charge an electric vehicle should you have access to one now or in the future? If you answered "No" to Q4a Home charging will rank as 6."

Table 4: Question 4C Survey Results - Home Charging

Question 4C - Home Charging

	1	2	3	4	5	6
% Response	63.70%	1.80%	4.70%	2.30%	3.50%	24.00%

Home charging is ranked as being the most important charging location for participants according to Table 4. However, 24% of participants stated it was their least importance location. This also accounts for participants who do not currently have access to off street parking (see Table 2).

Table 5: Question 4C Survey Results - Fast Charging at Supermarkets, Leisure Facilities etc.

Question 4C - Fast Charging at Supermarkets, Leisure Facilities etc.

% Response	1	2	3	4	5	6
	14.20%	23.70%	26.00%	10.10%	7.70%	18.30%
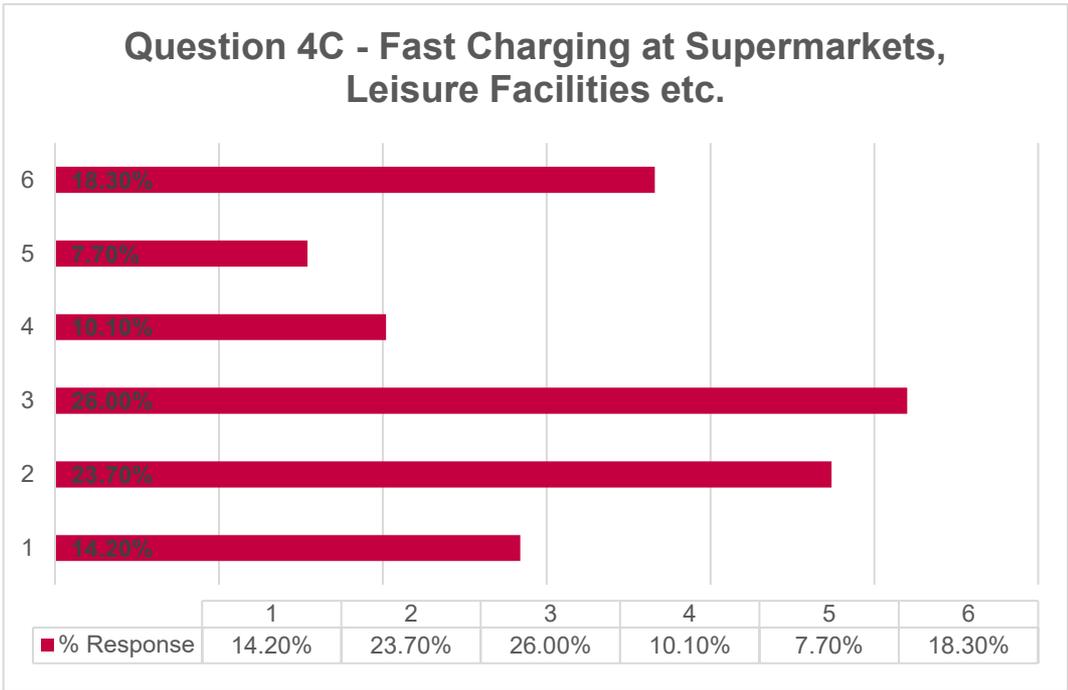
Only 14.2% of participants state fast charging in public parking spaces as most important (see Table 5). However, there are many middle range answers suggesting it is moderately important to many people.

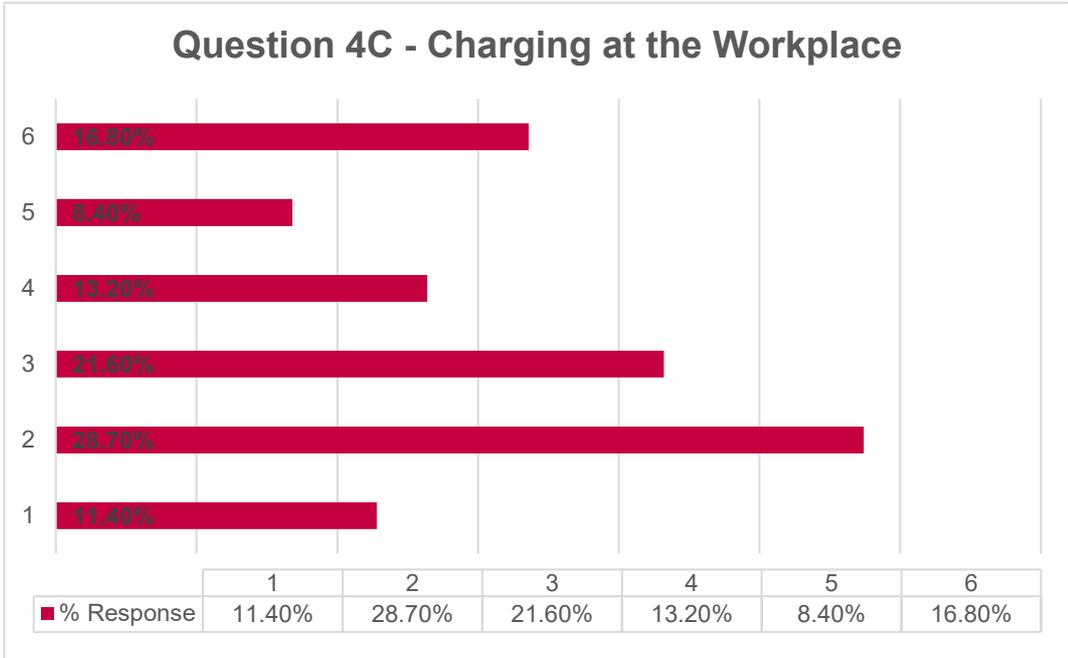Table 6: Question 4C Survey Results - Charging at the workplace

Question 4C - Charging at the Workplace

% Response	1	2	3	4	5	6
	11.40%	28.70%	21.60%	13.20%	8.40%	16.80%

Table 6 demonstrations that 28.7% of participants ranked charging in the workplace second in terms of importance. 16.8% of participants stated it was their least important location.

Table 7: Question 4C Survey Results - On-Street Parking

Question 4C - On-Street Charging

	1	2	3	4	5	6
■ % Response	13.10%	13.70%	20.20%	14.30%	17.30%	21.40%
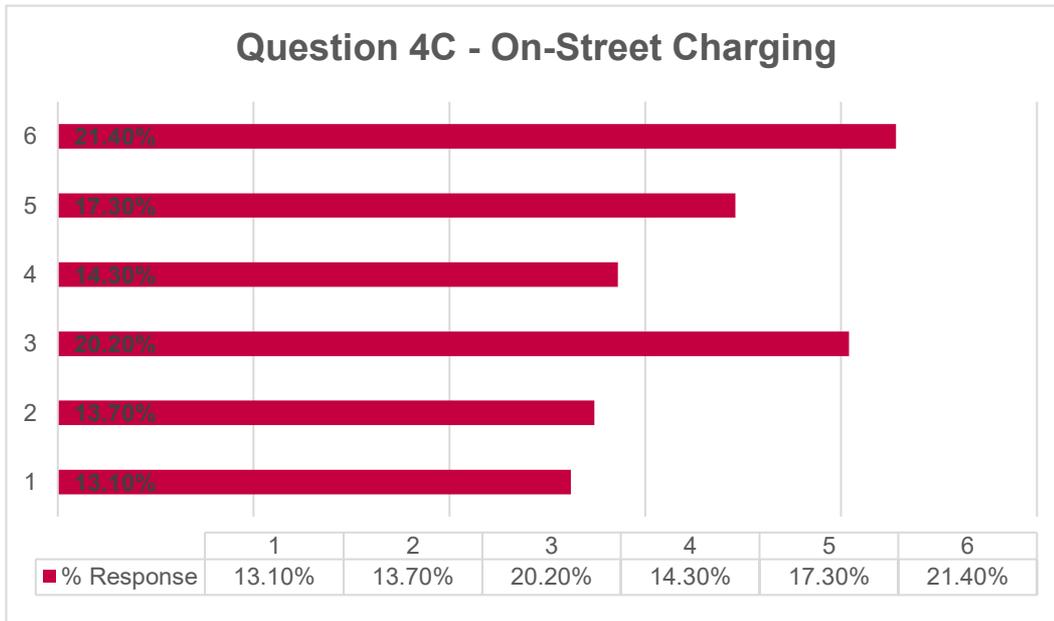
The findings in Table 7 represent varied preferences in terms of importance to be able to on street charge. The majority of participants (21.4%) state on street charging as the least important location, however 20.2% ranked it as third.

Table 8: Question 4C Survey Results - Charging at visitor attractions or destinations

Question 4C - Charging at Visitor Attractions or Destinations

	1	2	3	4	5	6
■ % Response	13.50%	18.10%	15.80%	18.70%	14.00%	19.90%
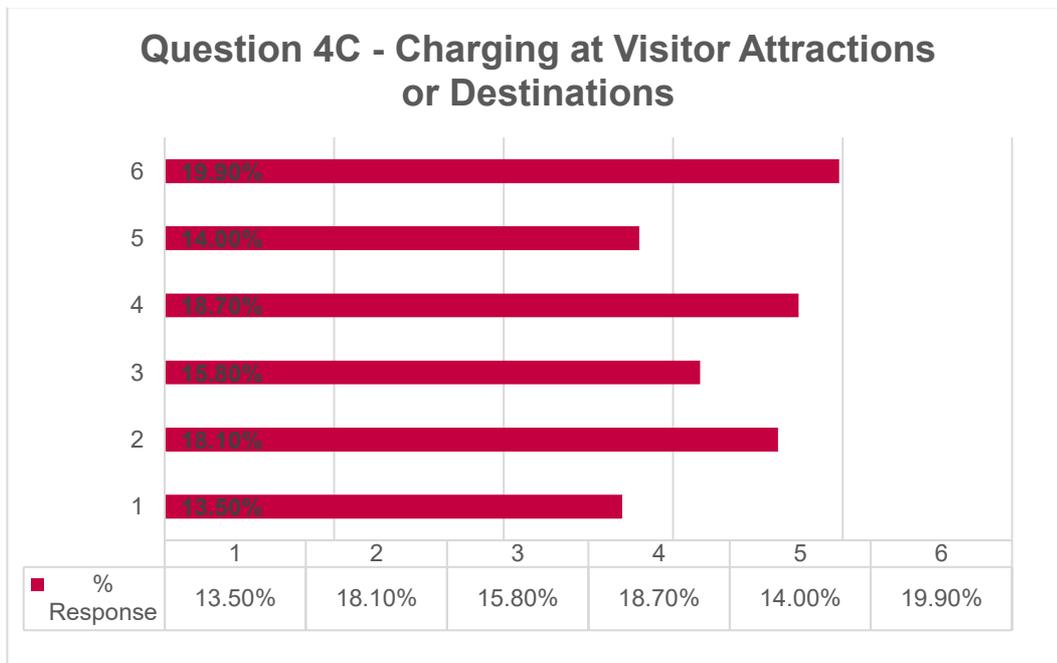
Chargers located at visitor attractions or destinations are ranked as being the least important according to the participants (see Table 8). However, 18.7% of participants ranked it as fourth and 18.1% ranked it as second importance.
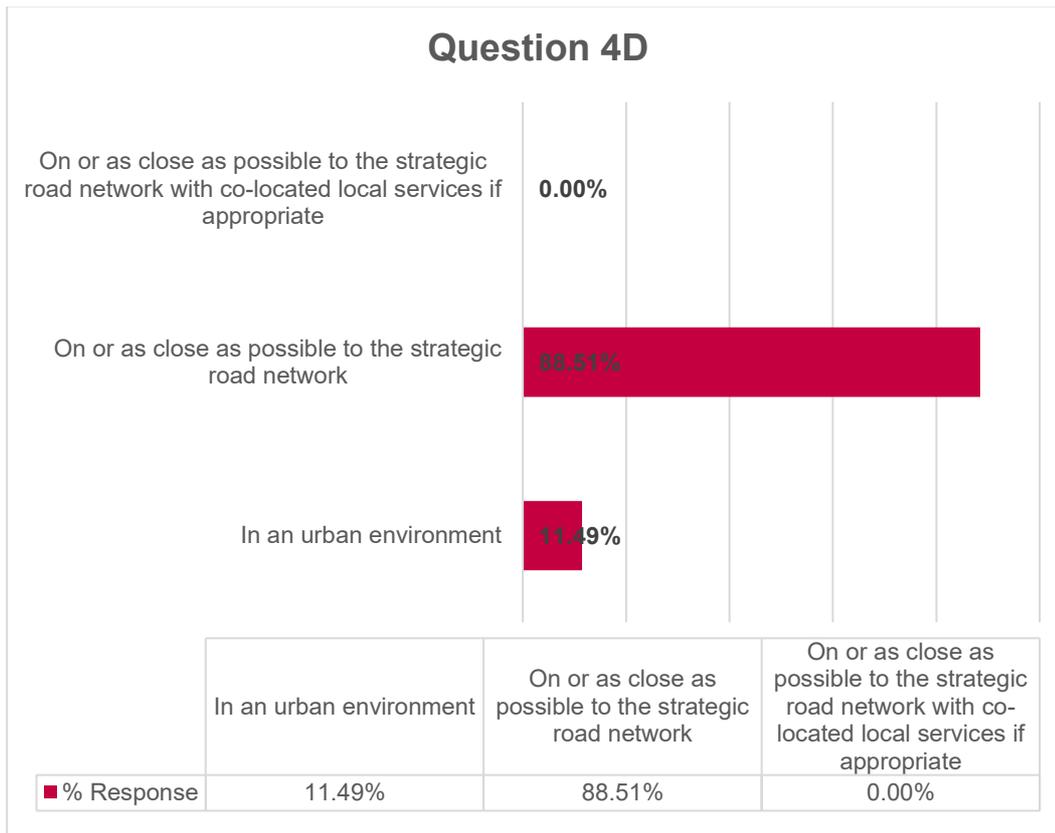
3.4.7   Question Four – Part D

"In respect of rapid/ultra-rapid charging locations these are influenced by availability of power and land but in general where would you prefer to see these located? Please select most preferable".

Table 9: Question 4D Survey Results

Question 4D

	In an urban environment	On or as close as possible to the strategic road network	On or as close as possible to the strategic road network with co-located local services if appropriate
■ % Response	11.49%	88.51%	0.00%

The majority participants expressed a preference to see more chargers located on or as close as possible to the strategic road network. Only 11.49% of participants expressed a preference for chargers to be located in an urban environment.

The key theme for this question is Total charging provision.

The findings suggest that the participants would like to see more chargers located on the strategic road network, particularly rapid chargers. Rapid chargers are essential to long journeys. Some participants suggested that if chargers were located away from the strategic road network, it would discourage users travelling there as they would be adding miles to their journey.

Additionally, many participants expressed a preference to see chargers located at petrol stations where there are amenities (e.g. coffee shop and toilets). The amenities would provide a place to wait while charging their electric vehicle. Being able to charge in a secure location where there is CCTV and lighting was highlighted as important.

Some participants noted that urban environments are already populated with cars and highlighted a risk that locating chargers in these areas could encourage high traffic flows.

3.4.8 Question Four – Part E

"Do you have any other views in respect of convenient locations for slow, fast or rapid/ultra-rapid charging infrastructure?"

Total charging provision is a key theme for this question including Localised benefits.

The findings in Question 4C indicate the relative importance of home charging for participants. Participants report being keen to use fast chargers for home charging despite slow charging being the traditional form of home charging. Many participants suggested that it should be mandatory for all new housing to provide such chargers. A solution proposed for existing residential areas with no access to off street parking could include having at least one public charger.

Many participants suggested that rapid chargers should be located on motorways and public parking spaces. Public parking spaces include supermarkets where electric car users will only be spending a short amount of time as captured in Question two.

Having easy access to chargers that are in a working condition was highlighted as important to the participants, in order for them to be able to rely on the infrastructure. Participants express support for setting standards that include the ability to access the chargers 24/7, and illustrated instances where the chargers have been located in locked car parks.

3.4.9 Question Five

"The strategy (at section 8) identifies 31 key outcomes for future charging in Wales, these are grouped into 4 themes. Do you agree with the key outcomes of each theme identified in Section 8?"

The participants in general agreed with the four identified themes stating they have a clear strategy to reach the overall vision.

Participants highlighted that Quality outcomes are important as charging electric vehicles needs to become easy and reliable. Observations were made that electric vehicle charging provides local operators with the opportunity to provide the services which in turn will benefit the local economy. Sustainable outcomes were highlighted as vital to supply sustainable and environmentally friendly solutions resulting in lower emissions.

Total charging provision was deemed essential by most participants to roll out enough chargers to increase the availability of chargers. There was a strong suggestion by many participants that more chargers are required. Participants noted however that localised benefits are just as important for users regarding location of chargers. The participants highlighted that the quality standards should consider the compatibility of charging sockets/plugs and whether they will be standard and a fit for all.

Most participants strongly agree (49.1%) with the Total charging provision theme and only 3% disagree (see Table 10).

Table 10: Question 5 Survey Results - Total charging provision

Question 5 - Total charging provision

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know / No Opinion
■ % Response	49.10%	32.50%	9.50%	3.00%	0.60%	5.30%
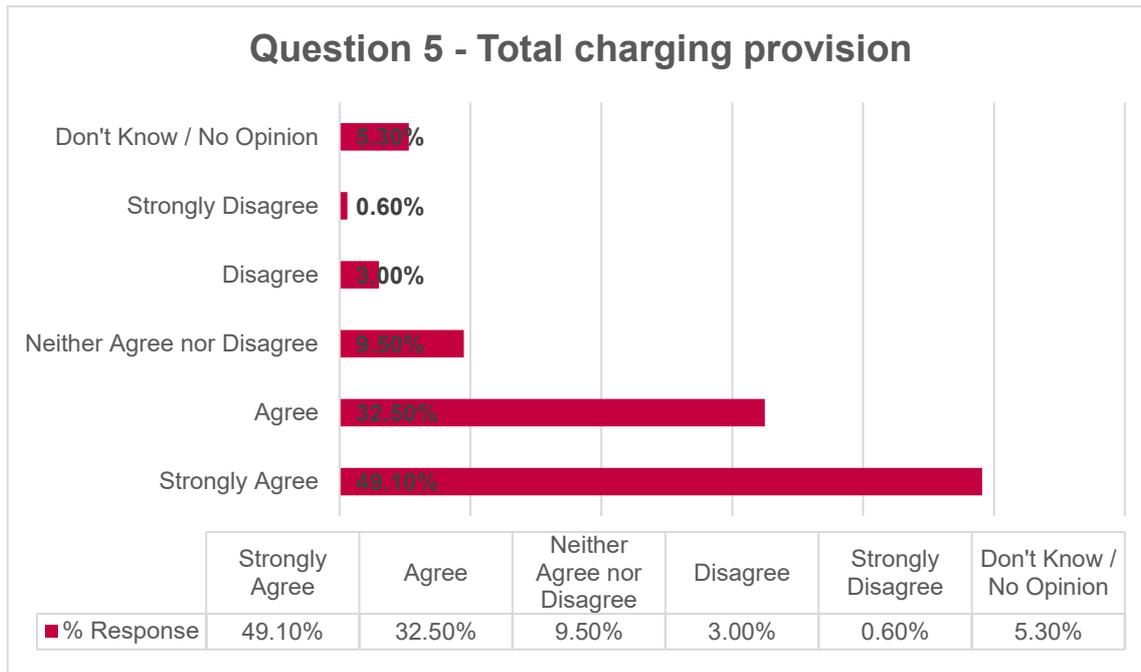
Table 11: Question 5 Survey Results – Quality outcomes

Question 5 - Quality outcomes

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know / No Opinion
■ % Response	45.00%	40.20%	7.70%	1.80%	0.00%	5.30%
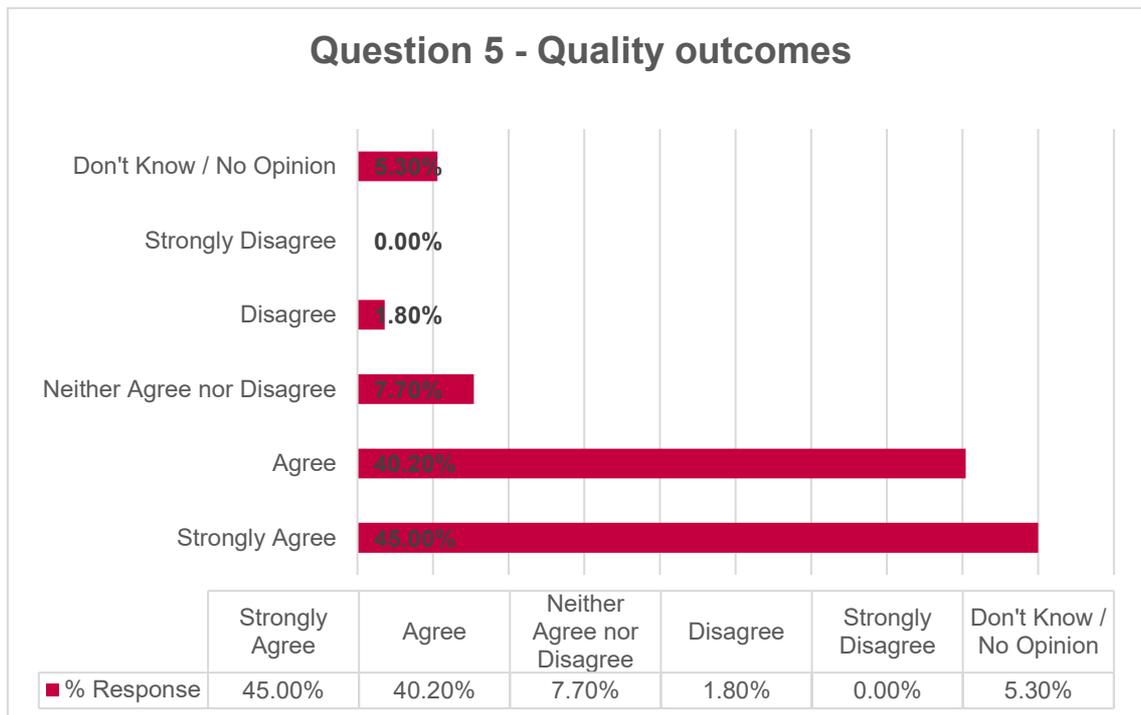
45% of participants strongly agree and 40.2% agree with the Quality Outcome theme (see Table 11). 1.8% of participants disagree with the theme.

Table 12: Question 5 Survey Results – Sustainable outcomes

Question 5 - Sustainable outcomes

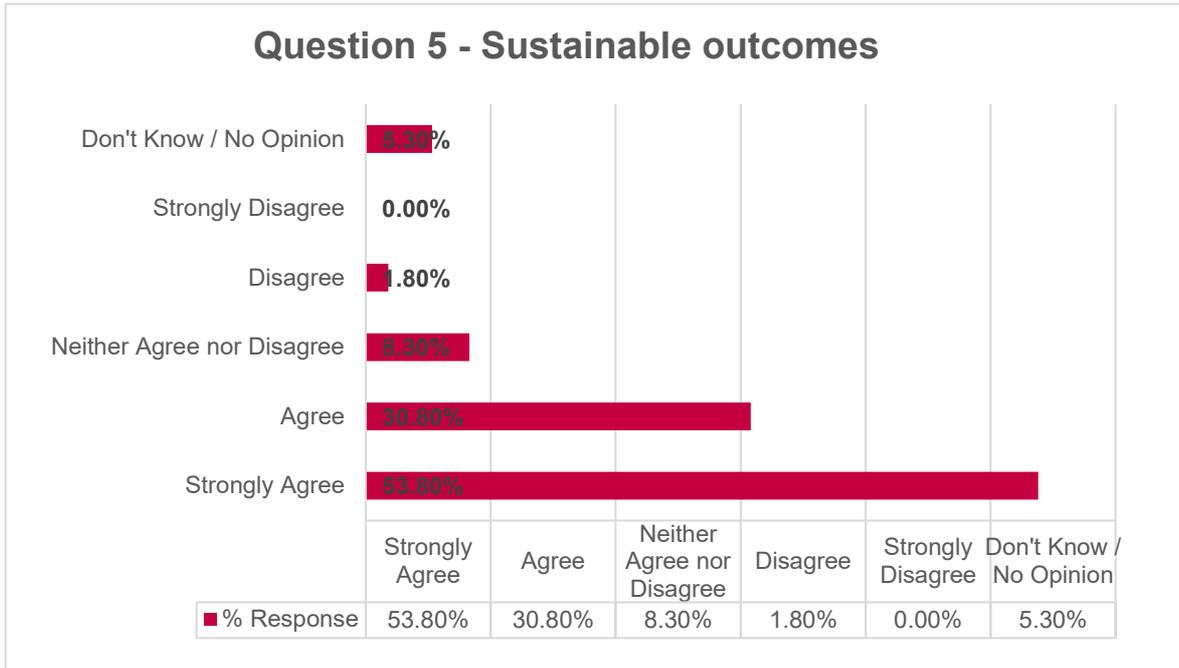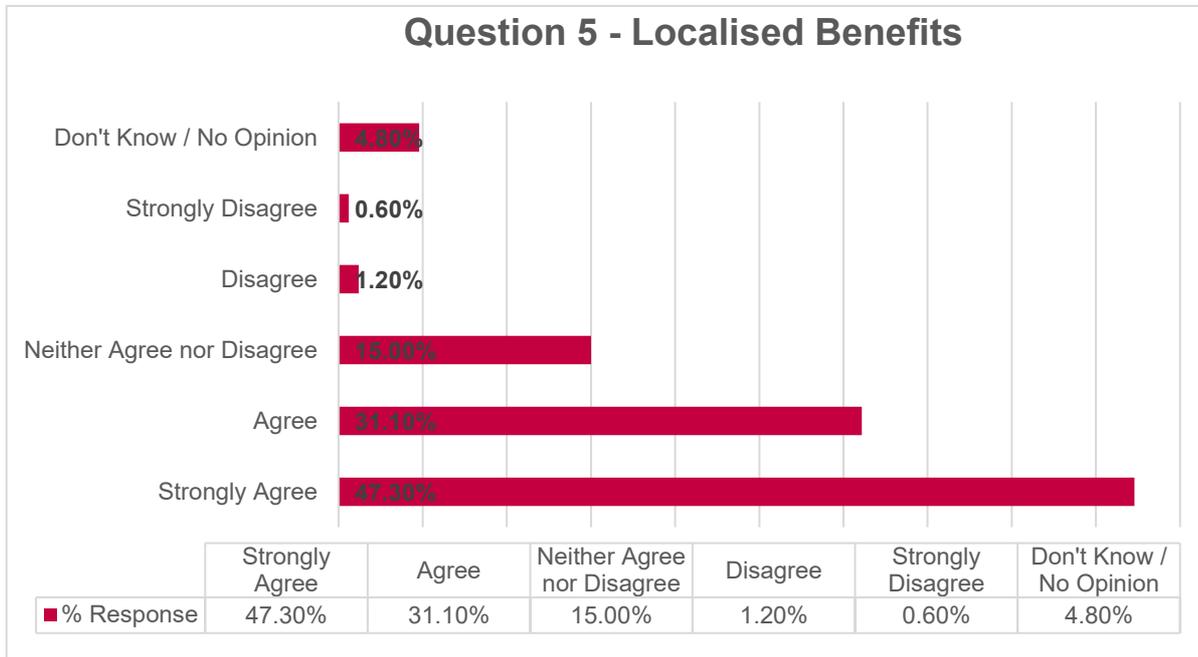|	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know / No Opinion
■ % Response	53.80%	30.80%	8.30%	1.80%	0.00%	5.30%

Table 12 shows that 53.8% of participants strongly agree with the Sustainable Outcome theme with only 1.8% disagree and 8.3% neither agree nor disagree.

Table 13: Question 5 Survey Results – Localised Benefits

Question 5 - Localised Benefits

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know / No Opinion
■ % Response	47.30%	31.10%	15.00%	1.20%	0.60%	4.80%

47.3 % of participants strongly agree with the Localised benefits theme and 31.1% agree (see Table 13). This is consistent with the qualitative responses as part of Question Five.

3.4.10   Question Six

"What actions do you think would help create a charging experience that is equitable and accessible for people in Wales?"

The key themes for this question are Quality outcomes followed by Total charging provision and Localised benefits.

Participants expressed concern that currently many charging points require a mobile app to be able to pay for the service. In the more rural areas in Wales there can often be no signal available making this payment method challenging and sometimes impossible. The ability to pay using contactless payment was highlighted as a priority for participants using a consistent and reasonable pricing structure.

Participants highlighted the need to ensure that the charging point locations are accessible to all including disabilities or the elderly. Modifications are required such as lowering the curb for wheelchair users. Additionally, locating chargers near amenities to provide shelter, food, and toilets for users was expressed as important. In particular, providing families a safe place to wait whilst charging their electric vehicle was mentioned.

Increasing the availability of chargers that are well maintained, ensuring reliability and aiding users with mobility difficulties with infrastructure were key suggestions. Participants noted the need for appropriate signage to state that charging spaces are for electric vehicles only and must be vacated when charging is finished. This will better allow other users to charge their electric vehicle.

3.4.11   Question Seven

"How do you think Wales might capture the value of investment in electric vehicle charging?"

The key themes for this question include Total charging provision, Quality outcomes and Sustainable outcomes.

Participants notes at Wales providing a good and reliable charging infrastructure will encourage tourism and provide confidence. Positioning charging points with other revenue generating streams, such as restaurants and retail outlets will help capture the benefit. Some participants have stated when visiting Wales, they will use their non-electric vehicle as they cannot guarantee they will be able to charge their electric vehicle in Wales. Participants highlighted that tourism aids the local economy including the creation of jobs for people in Wales in the electric vehicle infrastructure industry. This in turn will upskill Welsh based engineers leading to other technology projects and opportunities.

Another value of investment point was stressed in combating climate change providing good air quality and improving noise pollution resulting in health benefits. Encouraging green energy use could also enhance Wale's reputation and in turn help tourism.

3.4.12   Question Eight – Part A

"Our future work and action planning will be heavily informed by the predicted demand for electric vehicle charging points outlined within this strategy (i.e. increasing numbers of fast chargers to between 30,000 to 50,000, and increasing numbers of rapid chargers to up to 3500, over the next ten years), do you agree with these figures?"

The key theme for this question is Localised benefits and Total charging provision.

Most participants agree with the figures, however some concerns were expressed over the timescales and whether five years may be more suitable if demand for electric vehicles exceeds predictions. Participants expressed fears that the electricity network would not be able to manage the increased demand.

Concerns were highlighted regarding the prediction of rapid chargers, suggesting this prediction is potentially too low. Fast chargers were not viewed by participants as being as convenient as rapid chargers and more suited to locations where users will be spending a significant amount of time. The suggestion was made to make provision for expanding the number of fast chargers at places where rapid charging is planned to provide contingency if demand exceeds the number of rapid chargers available. It was further noted that the number of home chargers installed will result in less requirements for fast chargers.

A few participants stated that having the right number of chargers in convenient and accessible locations is just as important as the increase in chargers.

3.4.13   Question Eight – Part B

"Do you hold, or do you know of any evidence which would predict different demand?"

The key theme for this question is Total charging provision.

Participants have suggested reviewing the number of sales in electric vehicles over the last couple of years as an indicator and also current electric vehicle ownership.

It was suggested that reviewing Tesla and other electric vehicle manufacture strategies for the future of electric vehicles would assist.

Scotland's electric vehicle charging infrastructure was praised by some of the participants as something to strive for in Wales.

The following websites were mentioned as providing further information:

- BBC.
- Transport Environment.
- The Driven.

3.4.14   Question Nine

"Any further comments?"

The key theme for this question is Total charging provision.

The findings suggest participants would like to see incentives to encourage people to buy electric cars. Incentives suggested include the ability to use bus lanes and reduction in council tax when installing a home charger.

Many participants expressed a preference to see a greater density in the number of chargers within a car park rather than two or three in many car parks. This approach would increase the availability and reliability of the charge point being vacant.

Off street charging is perceived as one of the biggest barriers currently and participants have suggested an increase in lamppost charging, particularly for those who are unable to charge at home.

3.4.15   Question A

"We are under a duty to consider the effects of our policy decisions on the Welsh language, under the requirements of the Welsh Language (Wales) Measure 2011. We would like to know your views on the effects the strategy would have on the Welsh language, specifically on opportunities for people to use Welsh and on treating the Welsh language no less favourably than English.

What effects do you think there would be? How could positive effects be increased, or negative effects be mitigated?"

Localised benefits are the key theme for this question.

Participants have suggested bilingual signage to be used on charging points, such as instructions of how to use and how to pay, but also signs navigating to charging point locations. Participants highlighted the need for a Welsh and English operator to be available 24/7 for customer support if any issues are encountered when charging the electric vehicle. Participants do not see how any negative effects could be encountered if this recommendation was implemented.

3.4.16   Question B

"Please also explain how you believe the strategy could be formulated or changed so as to have positive effects or increased positive effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language, and no adverse effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language."

The key theme for this question is Localised benefits.

The findings for this question echo the results from Question A in terms of having both Welsh and English language options. A suggestion to have the Welsh at the top of signs and English underneath. However, some concerns have been raised regarding the difficulties in accessing languages when paying. Difficulties in access could be challenging for tourists in particular. Therefore, by providing bilingual options, the opinion was expressed that it needs to be accessible and easy to use.

3.4.17   Question C

"We have asked a number of specific questions. If you have any related issues which we have not specifically addressed, please use this space to report them."

The key theme for this question is Total charging provision.

Participants highlighted that one of the current barriers to availability of chargers is non-electric vehicles parking in charging point spaces or electric vehicles occupying spaces once finished charging. It was suggested that the introduction of financial penalties would help address this issue.

Participants mentioned linking charging locations with renewable power generations such as wind or hydrogen. It was highlighted that using renewable energy will support the ambition to meet net zero by 2050 declared by the Welsh Government as part of the climate emergency.

3.5   Non-survey Responses

There was a total of 34 non-survey responses received via email.

Key themes included:

- From the larger organisations, there is a general scepticism on the deliverability challenges and lack of confidence meeting the targets.

- Government regulation.

- Support for the exclusion of hybrid vehicles from the strategy.

- Skills expertise shortages and ability of the local and national markets to respond to the needs.

- The use of location of chargers to stimulate local economies.

- Rural/city dynamic impacting on charging capacity (lower power chargers in cities with the higher power chargers in rural areas), funding and payment models and spatial density.

- Cross subsidies or payment models to account for high or low profitability of chargers – being offset by location. Concern over the value of a charger in the middle of nowhere that is used once a week compared to an inner-city charge used daily – there is perceived high value in remoteness e.g. rural accessibility.

- "Useable by all", particularly focusing on disabled and elderly users.

- Electric vehicles are part of a wider strategy, particularly in relation to planning and integrated travel.

- Lessons learned from the roll-out of broadband in rural areas to the provision of chargers and relationship with private sector.

- Relationship between tourism, electric vehicle usage and seasonality.

- Impact of fast charging on the life of the car battery and potential safety risk profile.

- Predictability and range anxiety.

- Conflict between encouraging electric vehicle prevalence and multi-modal travel.

- More complex issues like liability for damage to car batteries (potentially mitigated by electric vehicle producers) and landlord consents.

4.   Summary

4.1   Key Opportunities

The Welsh Government consultation questionnaire exercise attracted 335 responses resulting in a range of themes. The most common themes and opportunities ascertained from the survey responses and non-survey responses is presented in Table 14 and Table 15, respectively.

Table 14: Most common themes and opportunities expressed by survey participants

Theme	Opportunity
Quality outcomes	The ability to pay contactless using a standard pricing structure.
Localised benefits	Electric charge points to be standard for all new housing developments.
Sustainable outcomes	Integration of public transport including cycling and other modes of public transport as a means of reducing overall traffic.
Total charging provision	To have the confidence to travel around Wales ensuring there is sufficient charge points and the reliability of them working.

Table 15: Most common themes and opportunities expressed by non-survey participants

Theme	Opportunity
Sustainable outcomes	Electric vehicles are part of a wider strategy, particularly in relation to planning and integrated travel.
Localised Benefits	Use the location of chargers to stimulate local economies.
Total charging provision	Non-discriminative based on socio-economic background.
Quality outcomes	Ensure spaces are inclusive and accessible for all including disability and elderly.

4.2   Key Issues

The most common issues or concerns expressed by survey participants were:

- Risk that demand for electric vehicles will exceed predicted increase in charging point locations.

- Access to chosen language when paying for charging use.

- More awareness and education surrounding electric vehicles required for information and to encourage up take in electric vehicles.

- Risk that urban environments could become more populated with cars and traffic if charge points are to be located there.

- Reluctance from private sector to invest in less profitable areas, creating rural inequality.

- Participants expressed fears that the electricity network would not be able to manage.

The most common issues or concerns expressed by non-survey participants were:

- Impact of fast charging on the life of the car battery and potential safety risk profile.

- Lessons learned from the roll-out of broadband in rural areas to the provision of chargers and relationship with private sector.

- Relationship between tourism, electric vehicle usage and seasonality.

- Perceived conflict between encouraging electric vehicle on the road and multi-modal travel.

- More complex delivery issues like liability for damage to car batteries and landlord consents.

- From the larger organisations, there is a general scepticism on the deliverability challenges and lack of confidence in meeting the targets.

- Government regulation.

- Support for the exclusion of hybrid vehicles from the strategy.

- Skills expertise shortages and ability of the local and national markets to respond to the needs.

5. Next steps

Welsh Government has reviewed the feedback summarised in this consultation report for incorporation into the final Electric Vehicle Charging Strategy and to inform ongoing action planning.