

# Proposed just transition baseline variables: transport sector

**SYSTRA**

November 2023

## 1 Introduction

### 1.1 Transport sector – key themes

The discussion paper for a just transition within the transport sector<sup>1</sup> highlighted priority **themes** that need to be addressed in order to achieve the draft outcomes for a just transition within the transport sector. These themes form the basis of our analysis of proposed baseline variables, as they have emerged as key themes during the stakeholder engagement and analysis that informed the transport sector Just Transition Plan (JTP) discussion paper.

The themes within the transport sector JTP discussion paper are as follows:

- Theme 1: Reducing inequalities through reducing car use
- Theme 2: Facilitating viable alternatives to car use (including public transport, place-based and digital solutions)
- Theme 3: Capturing opportunities from investment, trade and innovation
- Theme 4: The skills and jobs needed for the transport transition.

For the purposes of the analysis of proposed baseline variables presented within this report, we have combined Theme 3 and Theme 4, as they cover similar topic areas in the context of inequalities. As such, the themes presented within this report are as follows:

- Reducing inequalities through reducing car use
- Facilitating viable alternatives to car use
- Capturing innovation, support, trade, procurement, and the skills and jobs needed for the transport transition.

Within those themes, a number of sub-themes are discussed within the Transport sector JTP discussion paper (and subsequently within this report).

The document review and the stakeholder engagement has identified two additional sub-themes that are not currently present within the Transport sector JTP discussion paper,

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<sup>1</sup> Scottish Government (2023), 'Just transition for the transport sector: a discussion paper', <https://www.gov.scot/publications/transition-transport-sector-discussion-paper/>

which are “Transport poverty”, falling within the theme “Facilitating viable alternatives to car use”, and “Digital exclusion”, which also falls within the theme “Facilitating viable alternatives to car use”.

The analysis presented within this report is broken down into the sub-themes.

## 1.2 Understanding categories of inequalities

Our research framework investigates several dimensions (called “equality groups” in this report) that can be linked to inequalities within the transport sector’s transition to net zero. These dimensions have been grouped into three key “categories of inequalities”. These categories were developed through stakeholder consultation, as they encapsulate the types of inequalities that can affect different groups of individuals in the context of a just transition. The three key categories of inequalities to investigate that have been identified are:

- **Protected characteristics:** The UK Equality Act 2010<sup>2</sup> lists nine protected characteristics against which it is illegal to discriminate: age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation. A baseline of inequalities within the transport sector is needed to understand whether there are existing inequalities related to any of these protected characteristics.
- **Income disparities:** Income inequalities refer to the uneven distribution of income within a population. A baseline of inequalities can assess whether those on lower incomes may experience inequalities in aspects related to the transport sector.
- **Regional inequalities:** Regional disparities reflect differences between geographic areas in factors such as access to employment opportunities, levels of income, and public services like education or transportation. A baseline of inequalities can investigate whether there are any current regional disparities, comparing urban, rural, and islands communities.

The Fairer Scotland Duty (‘the Duty’), set out in Part 1 of the Equality Act 2010, also requires public bodies in Scotland to actively consider how they can reduce inequalities of outcomes caused by socio-economic disadvantage<sup>3</sup>, when making strategic decisions. People living with socio-economic disadvantages usually experience life on a low income compared to others in Scotland and have low wealth (including not having accessible savings), can experience factors which lead to material deprivation (being unable to access basic goods and services), and they can experience area deprivation (unhealthy living conditions due to geographic location). All of these factors contributing to socio-economic disadvantage have been investigated through our research framework and are captured by the three key categories of inequalities defined above.

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<sup>2</sup> UK Government (2010), ‘Equality Act 2010’, <https://www.legislation.gov.uk/ukpga/2010/15/contents>

<sup>3</sup> For more details on inequalities of outcomes and socio-economic disadvantage, please see The Fairer Scotland Duty. Guidance for Public Bodies (2021): <https://www.gov.scot/publications/fairer-scotland-duty-guidance-public-bodies/documents/>

### 1.3 Variables and data sources

For each transport sector sub-theme, one or more variable is identified to build a baseline for the current “state of the sector” in terms of inequalities, together with data sources suggested to measure it. For each variable we provide:

#### Notes / commentary on data source(s)

- What the variable measures.
- Why do we need to measure this variable to build a baseline?
- What is the suggested data source / dataset to measure the variable?
- Why we are suggesting to use this dataset and how to use the dataset, including comparing / contrasting with other datasets.

#### Discussion of the suitability / robustness / limitations of data chosen

- Suggest if the dataset should be included in the baseline. Is the dataset “baseline ready”?
- If yes, explain why it is suitable, robust and complete.
- If it is not ready, explain improvements to make the dataset “baseline ready”, e.g., combining different sources? Changing questions? More frequent data collection?
- If the dataset is not considered ready because of gaps in providing information for some equality group, explain:
  - If the gap should be filled and how
  - If the gap should not be filled, why there is no need to fill the gap.
- Mention any other dataset that was considered to build the baseline and explain why that dataset has been discarded.

Variables have been categorised as follows in terms of “baseline readiness”:

- **Green:** the dataset identified to quantify or represent the “state of the sector” can be used as it is to build a baseline.
- **Amber:** a dataset to quantify or represent the “state of the sector” has been identified; however, it is not ready to be used in the baseline as it needs modifications or contains gaps.
- **Red:** a suitable dataset has not been identified to quantify or represent the “state of the sector”. No data can be included in the baseline for such variable.

## 2 Overview of variables

Section	Theme	Sub-theme	Variable(s)	Data source(s)
3.1	Reducing car use	Car use reduction and disincentives (a)	Access to at least one car/van by household	Census 2021 Scottish Household Survey
3.2	Reducing car use	Car use reduction and disincentives (b)	Frequency of car travel	Scottish Household Survey
3.3	Reducing car use	Van and freight measures	Business ownership of vehicles	N/A
3.4	Reducing car use	Zero emission vehicles (a)	Zero emission vehicle ownership data in Scotland – regional spread  Zero emission vehicle ownership data in Scotland – spread across protected groups	Vehicle licensing statistics, Department for Transport  Scottish Household Survey
3.5	Reducing car use	Zero emission vehicles (b)	Geographic spread of publicly available electric vehicles charging points	Zap Map EV charging points dataset
4.1	Facilitating alternatives to car use	Public transport (a)	Trips made by public transport	Scottish Household Survey
4.2	Facilitating alternatives to car use	Public transport (b)	Public Transport perception of safety	Scottish Household Survey
4.3	Facilitating alternatives to car use	Public transport (c)	Public transport affordability	N/A
4.4	Facilitating alternatives to car use	Active travel	Trips made by active travel - walk/cycle under 2&5 miles	Scottish Household Survey
4.5	Facilitating alternatives to car use	Car sharing	Car club members demographics	Annual Car Club Scotland Report 2022, CoMoUK
4.6	Facilitating alternatives to car use	Bike and E-bike sharing	E-bike and non-e-bike sharing members demographics	N/A

Section	Theme	Sub-theme	Variable(s)	Data source(s)
4.7	Facilitating alternatives to car use	Transport Fuel Poverty	Transport fuel poverty rates defined as percentage of households with a combined income of less than £15,000 who spend more than 10% of their total expenditure on transport fuel,	Scottish Household Survey
4.8	Facilitating alternatives to car use	Transport Poverty Index	Transport Poverty Index	Scottish Index of Multiple Deprivation (SIMD) (Income and access domains)  Scotland Census 2021 (Car Availability and percentage of commuting to work by cycle)  Transport Scotland bus and coach statistics (Frequency of bus services)
4.9	Facilitating alternatives to car use	Digital exclusion (a)	Digital exclusion – use of internet by equality categories	Scottish Household Survey
4.10	Facilitating alternatives to car use	Digital exclusion (b)	Digital exclusion – people able to access internet from a portable device, such as a smartphone	Scottish Household Survey
5.1	Skills, jobs and opportunities from transport transition	Transport & labour market – attracting a diverse workforce	Transport sector workforce composition across inequality categories	Census 2011
5.2	Skills, jobs and opportunities from transport transition	Co-ordinating innovation, support, trade, procurement, skills, new tech and Scotland's strengths	Access to relevant qualifications providing skills required to support the shift towards manufacturing electric vehicles for inequality categories	Modern Apprenticeships Statistics (2023/2024) – Skills development Scotland  Higher Education Student Statistics, UK (2021/2022)

## 3 Reducing car use

### 3.1 Car use reduction and disincentives (a)

Variable	Data sources	Baseline readiness	Data subsets	Data gaps
Access to at least one car/van by household	Census 2021	● Green	Age Sex Disability Gender reassignment Sexual orientation Ethnicity Religion Marriage and civil partnership Region Income	Pregnancy and maternity
Access to at least one car/van by household	Scottish Household Survey	● Amber	Age Sex Disability Ethnicity Religion Marriage and civil partnership Region Income	Gender reassignment Sexual orientation Pregnancy and maternity

#### 3.1.1. Notes on data sources

This variable would measure whether policies to reduce access to a car/van are having a greater impact on households that include people within the different equality groups.

This variable helps understanding car dependency affecting people that do not commute (hence their travel habits are not captured by Census) or that travel rarely (hence their car trips may be missed by the Scottish Household Survey travel diary, which only refers to the day before the survey is undertaken).

The data to measure this variable (Census 2011) would need to be compared and contrasted with data for alternatives to car use (please see further below) in order to assess whether any groups are adversely impacted by losing access to vehicles without alternative public transport or active travel infrastructure being available.

#### 3.1.2. Discussion of the suitability / robustness / limitations of data chosen

**Census 2021 data on access to cars or vans should be used as the baseline for this variable.**

Census 2021 is the most up-to-date and granular dataset, covering all of the equality groups under consideration, and as such should be used for a baseline.

SHS data for this variable provide the same information, with a similar level of detail in terms of equality groups covered, but it is less granular compared to Census 2021, as it does not cover the entirety of the Scottish population. The target sample size for the SHS is 10,450 household interviews with a minimum per-local authority target of 250.

SHS can be considered as an alternative dataset to monitor changes in this variable in case the expected timescale of the policy impacts that the Scottish Government wants to measure using this variable are shorter than the ones that could be measured with Census data collected every 10 years.

In terms of data gaps identified, as Pregnancy and maternity is a short-term status, it may not be cost effective to add a question around this on either SHS or Census. Other sources of information, like dedicated academic studies or reports, should be undertaken or identified to understand if a reduction in access to privately-owned vehicles can have a negative impact on pregnant women.

## 3.2 Car use reduction and disincentives (b)

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Frequency of car travel	Scottish Household Survey	● Amber	Age Sex Disability Ethnicity Religion Marriage and civil partnership Region Income	Gender reassignment Sexual orientation Pregnancy and maternity

### 3.2.1. Notes on data source

This variable would measure whether policies to reduce frequency and number of trips made by car/van are having a greater impact on people from different equality groups.

This variable will help understanding impacts of policies aimed at reducing car use for those people using their car more frequently for their mobility needs.

The data to measure this variable (Scottish Household Survey) would need to be compared and contrasted with data for alternatives to car use (please see further below) in order to assess whether any groups are adversely impacted by losing access to vehicles without alternative public transport or active travel infrastructure being available.

### 3.2.2. Discussion of the suitability / robustness / limitations of data chosen

**SHS data on frequency of car travel should be used as the baseline for this variable; however, it currently has some gaps.**

SHS data are considered suitable as they provide data on car travel for every trip purpose, enabling an understanding of car use for different needs, as the travel diary used to collect SHS travel data would include trips for different travel purposes. Using the SHS, it is possible to track household composition by travel patterns and hence it is more robust to inform the baseline. Census data, on the other hand, only covers journeys to work, limiting the extent to which this dataset can be used to measure this variable

However, SHS data do not provide information on gender reassignment, sexual orientation, pregnancy and maternity groups. To address the lack of data around gender reassignment and sexual orientation, we suggest the “gender identity” question of SHS (HA6) to be split into two questions mirroring Q4 (gender reassignment) and Q8 (sexual orientation) of the Census 2021 questionnaire in future SHS surveys.

As pregnancy and maternity is a short-term status, it may not be cost effective to add a question around this on the SHS. Other sources of information, like dedicated academic studies or reports should be undertaken or identified to understand if a reduction in use of privately owned vehicles can have a negative impact on pregnant women.

### 3.3 Van and freight measures

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Business ownership of vehicles	Reducing car use	● Red	None	Region Income

#### 3.3.1. Notes on data source

This variable would measure the number of vehicles owned by businesses in Scotland, to understand whether policies to reduce access to a car/van are having a greater impact on businesses in certain regions and of certain size (e.g. small to medium sized enterprises (SME)).

This variable focuses on business-owned vehicles rather than on vehicles owned by individuals to understand the impact of specific policies addressing freight trips.

#### 3.3.2. Discussion of the suitability / robustness / limitations of data chosen

**A complete and robust data source to measure this variable has not been identified for a baseline.**

A suitable dataset to describe the current state of the sector in terms of business ownership of vehicles is currently not available.

Whilst the Scottish Household Survey covers accessibility of cars/vans to households, it does not cover accessibility to businesses. The Scottish Annual Business Survey (SABS) provides data on



business by region, industries and size, but this should be supplemented by data on vehicle ownership to provide a baseline. A survey section dedicated to company fleets or vehicles should be developed, with questions asking for data in the same format as per the vehicle licensing statistics, for comparability.

Information regarding other equality groups for this variable (i.e. protected characteristics) is not considered necessary to build a baseline, as the focus of this metric is to measure impacts on businesses rather than on individuals.

### 3.4 Zero emission vehicles (a)

Variables	Data sources	Baseline readiness	Data subsets	Data gaps
Zero emission vehicle ownership data in Scotland – regional spread	Vehicle licensing statistics, Department for Transport	● Green	Region	Age Sex Disability Ethnicity Religion Gender reassignment Marriage and civil partnership Pregnancy and maternity Sexual orientation Income
Zero emission vehicle ownership data in Scotland – spread across protected groups	Scottish Household Survey	● Green	Age Sex Disability Ethnicity Religion Marriage and civil partnership Region Income	Gender reassignment Sexual orientation Pregnancy and maternity

#### 3.4.1. Notes on data sources

This variable measures zero emission vehicle adoption, to understand the impacts of policies aimed at promoting the uptake of zero emission vehicles in different regions and across different equality groups.

#### 3.4.2. Discussion of the suitability / robustness / limitations of data chosen

**Vehicle Licensing Statistics from the Department for Transport and SHS data should be used as part of the baseline for the current state of the sector for this variable.**

The Vehicle licensing statistics are considered an adequate data source to indicate zero emission vehicle adoption on a regional basis, as it covers every vehicle registered in Scotland and is updated annually. The vehicle licensing statistics however, do not include details around protected characteristics of the owners of the vehicles.

This could be supplemented by SHS data, specifically in question GPAWR2C ('Would you consider buying a plug-in electric car or van?'), where respondents can state if they already own a vehicle. Responses to this question can provide a baseline of distribution of electric vehicles across equality groups.

A combination of vehicle licensing statistics and SHS data is therefore suggested to establish a baseline for this variable and to monitor changes over time.

Data gaps in terms of gender reassignment, sexual orientation and pregnancy and maternity are present in both datasets, but it is not deemed necessary to undertake additional data collection to cover these gaps as none of the evidence reviewed suggests that inequalities could be present under these variables for those three groups.

### 3.5 Zero emission vehicles (b)

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Geographic spread of publicly available electric vehicles charging points	Zap Map EV charging points dataset	● Green	Region Income	None

#### 3.5.1. Notes on data source

This variable would measure regional disparities related to access to public electric vehicle charging points, and can be used to measure if policies aimed at promoting zero emission vehicles may not be as beneficial for people living in certain regions, as availability of EV charging points may act as a barrier to EV uptake.

#### 3.5.2. Discussion of the suitability / robustness / limitations of data chosen

**The Zap Map EV charging point dataset should be used as part of the baseline for the current state of the sector for this variable.**

Zap Map provides a comprehensive and up-to-date database of EV charging points across Scotland. Zap Map constantly updates information on charging point status, including location, availability, compatibility, and pricing, making it the most comprehensive and up-to-date dataset available to provide a baseline for current access to EV charging points.

Zap Map data can be mapped against data showing deprivation (from SIMD) or average income (from Census or SHS) to show distribution of charging points in relation to these two aspects.

It is not deemed necessary to combine data on transport accessibility and protected characteristics, as it can be assumed that people from protected groups are equally distributed across Scotland for the purpose of the baseline assessment.

There are other data sources available for EV charging point locations, such as ChargePlace Scotland. The management of ChargePlace Scotland is expected to change within the coming years, and Zap Map is considered the industry-best data source, and as such Zap Map is considered the more reliable source. Of note, the [Public Charge Regulations 2023](#) mandate open data for all publicly available charge points.

## 4 Facilitating alternatives to car use

### 4.1 Public transport (a)

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Trips made by public transport	Scottish Household Survey	● Amber	Age Sex Disability Ethnicity Religion Marriage and civil partnership Region Income	Gender reassignment Pregnancy and maternity Sexual orientation Religion

#### 4.1.1. Notes on data source

This variable would measure trips made by public transport by people within different equality groups.

This variable will help identify if any equality groups use public transport less when compared to the general population, as this may evidence barriers in accessing public transport.

Other sources of information, such as dedicated academic studies or reports can be used to identify specific barriers to access to public transport for each group.

#### 4.1.2. Discussion of the suitability / robustness / limitations of data chosen

**SHS data should be used to build the baseline for the current state of the sector for this variable; however, it currently has some gaps.**

SHS data is considered a useful data source as it covers every trip purpose, is collected annually, and covers a representative sample size. Census 2021 was also considered as a possible data source but it was discarded as it only covers journeys to work.

However, SHS data is not granular enough in terms of protected categories. SHS data do not provide information on Gender reassignment, Sexual orientation, and Pregnancy and maternity

groups. This is a gap that needs to be filled before this dataset can provide a robust and granular baseline, as it is known that there are some barriers for those groups to use public transport, in terms of experience of using the bus and perception of safety. Evidence of barriers for these groups can be found in reports such as [Life in Scotland for LGBT Young People \(2018\)](#) and [LGBT Scotland: Hate Crime and Discrimination \(2017\)](#).

To address the lack of data around gender reassignment and sexual orientation, we suggest the “gender identity” question of SHS (HA6), to be split in two questions mirroring Q4 (gender reassignment) and Q8 (sexual orientation) of the Census 2021 questionnaire in future SHS surveys. This aligns with suggestions made to fill data gaps for other variables presented.

As pregnancy and maternity is a short-term status, it may not be cost effective to add a question around this on the SHS. Other sources of information, like dedicated academic studies or reports should be undertaken or identified to understand if barriers to access and use public transport can have a negative impact on pregnant women.

## 4.2 Public transport (b)

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Public transport perception of safety	Scottish Household Survey	● Amber	Age Sex Disability Ethnicity Religion Marriage and civil partnership Region Income	Gender reassignment Pregnancy and maternity Sexual orientation Religion

### 4.2.1. Notes on data source

This variable would measure perception of safety in public transport for people in different equality groups.

This variable will help identify if any equality groups may perceive safety as a barrier to access public transport.

### 4.2.2. Discussion of the suitability / robustness / limitations of data chosen

**The Scottish Household Survey should be used to build the baseline for the current state of the sector for this variable; however, it currently has some gaps.**

The SHS includes questions asking people why they would not use public transport for travel to work, and “Not safe” is one of the possible responses they can provide. Whilst this dataset provides a measurable and comparable metric to assess perception of safety on public transport, and could be potentially used to build a baseline of the state of the sector, it is limited by the fact that it only

covers travel to work; as such, SHS data will not provide a sufficiently robust and complete baseline to describe the state of the sector under this variable.

Also, as previously mentioned, data for some protected groups are not included such as sexual orientation and pregnancy. There is evidence suggesting that some of these protected groups not included in SHS may feel less safe than the general public on public transport, which can be found reports such as [Life in Scotland for LGBT Young People \(2018\)](#) and [LGBT Scotland: Hate Crime and Discrimination \(2017\)](#).

To close this data gap, it is suggested to revise the SHS question to cover every trip, and not only trips to work, and to split the “gender identity” question of SHS (HA6) in two questions mirroring Q4 (gender reassignment) and Q8 (sexual orientation) of the Census 2021 questionnaire in future SHS surveys.

### 4.3 Public transport (c)

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Public transport affordability	N/A	● Red	N/A	Age Sex Disability Ethnicity Religion Gender reassignment Marriage and civil partnership Pregnancy and maternity Sexual orientation Income Region

#### 4.3.1. Notes on data source

This variable would measure the impact of public transport costs to residents in Scotland, to help understanding if this has a disproportionate impact on specific equality groups.

Rising public transport costs are an issue for people in Scotland, as recently reported by the [BBC \(2023\)](#) and other reports by the [Institute for Public Policy Research \(2022\)](#) and [Transform Scotland \(2022\)](#).

#### 4.3.2. Discussion of the suitability / robustness / limitations of data chosen

**A complete and robust data source to measure this variable has not been identified.**

To fill the gap, a dedicated study could be undertaken, with a sample size sufficient to provide statistically significant results for all equality groups, asking people about their perception of affordability of public transport. Once a definition of “Public Transport Affordability” is agreed, questions can be framed to analyse this metric. It is expected questions will concern perception of public transport costs as a barrier to undertaking trips.

## 4.4 Active travel

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Trips made by active travel - walk/cycle under 2&5 miles	Scottish Household Survey	● Amber	Age Sex Disability Ethnicity Religion Marriage and civil partnership Income Region	Gender reassignment Pregnancy and maternity Sexual orientation

### 4.4.1. Notes on data source

This variable would measure trips made by active travel by people within different equality groups.

This variable will help identify if any equality groups use active travel less when compared to the general population, as this may evidence barriers in switching to active travel modes.

### 4.4.2. Discussion of the suitability / robustness / limitations of data chosen

**The Scottish Household Survey is the suggested data source but it is not considered a fully adequate data source to build the baseline for this variable.**

SHS is considered as the data source for this variable as it covers every trip purpose, is collected annually, and covers a representative sample size. Census 2021 was also considered as a possible data source but it was discarded as it only covers journeys to work. However, SHS data information is not granular enough in terms of some protected characteristic groups.

SHS data do not provide information on gender reassignment, sexual orientation, and pregnancy and maternity groups. This is a gap to be filled before this dataset can provide an adequately robust and granular baseline, as it is known that there are some barriers for those groups to utilise active travel. Evidence of barriers for these groups can be found in reports such as [Exploring gender and active travel \(2018\)](#).

To address the lack of data around gender reassignment and sexual orientation, we suggest the “gender identity” question of SHS (HA6), to be split in two questions mirroring Q4 (gender reassignment) and Q8 (sexual orientation) of the Census 2021 questionnaire in future SHS surveys, similar to previous suggestions.

As pregnancy and maternity is a short term status, it may not be cost effective to add a question around this on the SHS. Other sources of information, like dedicated academic studies or reports should be undertaken or identified to understand if pregnant women may experience inequalities in terms of active travel.

## 4.5 Car sharing

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Car club members demographics	Annual Car Club Scotland Report 2022, CoMoUK	● Amber	Age Disability Sex Ethnicity Income Region	Religion Gender reassignment Marriage and civil partnership Pregnancy and maternity Sexual orientation

### 4.5.1. Notes on data source

This variable describes the current demographic profile of car club members in Scotland.

This variable will help identify if any equality groups are less represented among car club members, as this may evidence barriers to accessing car clubs.

The suggested dataset to measure this variable is the Annual Car Club Scotland Report 2022, by CoMoUK. CoMoUK is the national organisation for shared transport, which works with national, regional, transport and local authorities as well as the private sector to develop understanding of the benefits of shared mobility, including car clubs and bike sharing.

### 4.5.2. Discussion of the suitability / robustness / limitations of data chosen

**Annual Car Club Scotland Report 2022, CoMoUK is the suggested data source but it is not considered a fully adequate data source to build the baseline for this variable.**

The data used in the CoMoUK report are collected through a car club members survey which is undertaken annually. In 2022, 1,236 car club members responded to the survey. This targeted survey is more representative than alternative data sources identified to measure this variable. SHS was considered as a possible data source, as it includes a question on car club membership (GPAWR2A). However, due to the sample being randomised every year, the representation of car club members may vary, whilst this won't happen in the targeted CoMoUK survey.

In addition, the aforementioned question in SHS is only included in the survey every two years and not annually. Given the expected quick rollout and uptake of car clubs, it is deemed necessary to collect data every year. As such the CoMoUK data have been preferred.

The CoMoUK data have a limitation in terms of providing granularity for a number of key inequalities groups such as sexual orientation and religion. Granular information of these groups is deemed necessary as data on them is likely to help investigate disproportionality in car club membership. To fill this gap, we recommend consulting with CoMoUK to review the sociodemographic section of their questionnaire to understand if some questions could be added or changed to enable the provision of data for every inequality group.

## 4.6 Bike and E-bike sharing

Variable	Data source	Baseline readiness	Data subsets	Data gaps
E-bike and non e-bike sharing members demographics	N/A	● Red	None	Age Sex Disability Ethnicity Religion Marriage and civil partnership Region Income Gender reassignment Pregnancy and maternity Sexual orientation

### 4.6.1. Notes on data source

This variable describes the current demographic profile of e-bike and non-e-bike share members in Scotland.

This variable will help identify if any equality groups are less represented amongst e-bike and non-e-bike sharing members, as this may evidence barriers accessing the services.

### 4.6.2. Discussion of the suitability / robustness / limitations of data chosen

**A complete and robust data source to measure this variable has not been identified.**

It can be noted that CoMoUK has reported they will provide a Scotland-specific report looking at the use, growth, and impact of bike and e-bike sharing in Scotland in 2022/23, as they have been collecting data on bike sharing schemes since 2016. When the report will be published, we suggest reviewing it to identify whether it could comprise a possible data source to measure this variable. A dataset would be needed to capture both e-bike and non e-bike demographics



## 4.7 Transport fuel poverty

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Transport fuel poverty rates defined as percentage of households with a combined income of less than £15,000 who spend more than 10% of their total expenditure on transport fuel, across inequality categories	Scottish Household Survey	● Amber	Age Sex Disability Ethnicity Religion Marriage and civil partnership Region Income	Gender reassignment Pregnancy and maternity Sexual orientation

### 4.7.1. Notes on data source

This variable measures the impact of transport fuel costs amongst different inequality categories, according to their income.

Whilst the definition of fuel poverty covering fuel needs within the home is defined in the [Fuel Poverty \(Targets, Definition and Strategy\) \(Scotland\) Bill](#), fuel poverty related to transport usage is not defined in Scottish law. As explained in the [Poverty and Equality Commission Report \(June 2019\)](#), unlike spending for food and fuel, spending on transport goes up as income rises, as people with higher income can travel more for discretionary activities, while people on low incomes may have to restrict their activities such as work, leisure and education trips because they cannot afford transport.

Nevertheless, even if a clear definition of transport fuel poverty is lacking, it is important to gain an understanding of the impact of fuel costs on people depending on their income, especially in light of the cost of living crisis and possible changes to fuel duties that can be introduced to discourage car use.

Fuel poverty is therefore measured as the percentage of households with a combined income of less than £15,000 (i.e. low income households) that spend more than 10% of their total expenditure on transport fuel. The definition of low income is the same used by the Institute for Public Policy Research in their 2022 report "[Fairly reducing car use in Scottish cities](#)", whilst the 10% of expenditure threshold is derived by the similar proportion of income used to define fuel poverty, as explained by the [RAC Foundation](#).

Measuring this variable will help understand if people within some inequality categories struggle to afford travelling by car or van because of fuel costs. This variable needs to be compared and contrasted with data on car dependency and car travel to identify which groups may be more disadvantaged by rising fuel costs, as well as data on accessibility to alternative to car travel.

### 4.7.2. Discussion of the suitability / robustness / limitations of data chosen

**Scottish Household Survey (2021) data on transport fuel spending per household can be used to build the baseline for this variable but it needs improvements.**

The Scottish Household Survey provides data on total household spending on fuel, number of vehicles per household, and income, which can be used to calculate transport fuel rates as defined for this variable. The fuel poverty rates can be, in theory, broken down by most inequality group – if the sample size allows for a statistically significant segmentation. However, if this segmentation is not possible, the dataset would not be considered fully sound.

Another gap identified, which would become more important as low emission vehicles become more common, would be the lack of information of spending for energy on electricity rather than fuel. This gap can be filled with some changes in question HD19 of the SHS, by asking people separately to provide an estimate of spending for fuel for ICE vehicles and for EV/low emission vehicles.

Additionally, SHS data do not provide information on Gender reassignment and Sexual orientation. This is a gap to be filled before this dataset can provide a robust and granular baseline. This would be covered by previous recommendations to add additional questions to the SHS.

## 4.8 Transport Poverty Index

Variable	Data sources	Baseline readiness	Data subsets	Data gaps
Transport Poverty Index	<p>Scottish Index of Multiple Deprivation (SIMD) (Income and access domains)</p> <p>Scotland Census 2021 (Car Availability and percentage of commuting to work by cycle)</p> <p>Transport Scotland bus and coach statistics (Frequency of bus services)</p>	<ul style="list-style-type: none"> <li>Green</li> </ul>	Region	None

### 4.8.1. Notes on data sources

This variable measures the potential for pressure on household finances as a result of reliance on private transport.

Measuring this variable would highlight areas where car ownership places pressures on income, potentially putting communities and individuals at risk from exclusion where alternatives to accessing key services are not convenient or attractive.

For this variable, the definition of transport poverty and the datasets used to create the index are the same utilised by Sustrans in their [Transport Poverty in Scotland report \(2016\)](#), which include the Scottish Index of Multiple Deprivation (SIMD), Census 2011 and Transport Scotland bus and coach statistics (of note Census 2021 data has since been released).

#### 4.8.2. Discussion of the suitability / robustness / limitations of data chosen

**The Transport Poverty index as defined by Sustrans (2016) should be used as part of the baseline for the current state of the sector for this variable.**

The datasets identified in the report to calculate the index are readily available. The Sustrans report provides a clear methodology for the calculation of the index that could easily be replicated to provide an up-to-date index using 2021 Census data.

The Transport Poverty index can be used as a relative measure to compare levels of transport poverty in different areas, but not as an absolute measure. It is not deemed necessary to combine data on transport poverty and protected characteristics, as it can be assumed that people from protected groups are equally distributed across Scotland for the purpose of the baseline assessment.

### 4.9 Digital exclusion (a)

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Digital exclusion – use of internet by equality categories	Scottish Household Survey	● Green	Age Sex Disability Ethnicity Religion Marriage and civil partnership Region Income	Gender reassignment Pregnancy and maternity Sexual orientation

#### 4.9.1. Notes on data source

This variable measures the percentage of people within each equality group that would normally use the internet for personal uses.

As a number of services and information linked to alternatives to car use can be accessed from the internet, it is important to understand how many people are currently able to access internet, and to make comparisons between people within different equality groups.

#### 4.9.2. Discussion of the suitability / robustness / limitations of data chosen

**Scottish Household Survey (2021) data on internet use should be used as a data source to build the baseline for this variable, noting that the data source can be considered a proxy.**

SHS data is collected annually and covers every equality category relevant for this variable.

As previously referenced, SHS data do not provide information on gender reassignment, sexual orientation, or pregnancy and maternity groups. However, it is not considered necessary to fill this

data gap as no evidence has been found linking lack of internet use to any of these protected characteristics groups.

## 4.10 Digital exclusion (b)

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Digital exclusion – people able to access internet from a portable device, such as a smartphone	Scottish Household Survey	● Green	Age Sex Disability Ethnicity Religion Marriage and civil partnership Region Income	Gender reassignment Pregnancy and maternity Sexual orientation

### 4.10.1. Notes on data source

This variable measures the percentage of people within each equality group that would normally be able to access the internet on the move via a personal device such as a mobile phone / smartphone / tablet.

As a number of transport alternatives to car use can now be accessed through a smartphone or another portable personal device, such as car clubs and bike sharing, it is important to understand how many people have the possibility to access internet from a personal device.

### 4.10.2. Discussion of the suitability / robustness / limitations of data chosen

**Scottish Household Survey (2021) data on devices used for internet access should be used as a data source to build the baseline for this variable noting that the data source can be considered a proxy.**

SHS data is collected annually and covers every equality category relevant for this variable.

As previously referenced, SHS data do not provide information on gender reassignment, sexual orientation, and pregnancy and maternity groups. However, it is not considered necessary to fill this data gap as no evidence has been found linking lack of internet use to any of these protected characteristics.

## 5 Skills, jobs and opportunities from transport transition

### 5.1 Transport and labour market – attracting a diverse workforce

Variable	Data source	Baseline readiness	Data subsets	Data gaps
Transport sector workforce composition across inequality categories	Census 2011	● Green	Age Sex Disability Gender reassignment Sexual orientation Ethnicity Religion Marriage and civil partnership Income Region	Pregnancy and maternity

#### 5.1.1. Notes on data source

This variable measures the representation of inequality categories in the transport sector job market. This variable needs to be measured to build a baseline to understand possible impacts of changes in the job market on inequality categories.

The suggested dataset to measure this variable is Census 2021. Workforce data are broken down by Standard Industrial Classification (SIC) 2007 codes. Whilst SIC classifications Section H does cover “Transport and Storage” industries, a few key transport-related occupations such as Maintenance and repair of motor vehicles are instead covered in Section G, “Wholesale and retail trade; repair of motor vehicles and motorcycles”. As such, in addition to industries in section H, we suggest including the following Section G industries to develop the baseline for this variable:

- 45111 Sale of new cars and light motor vehicles
- 45112 Sale of used cars and light motor vehicles
- 45190 Sale of other motor vehicles
- 45200 Maintenance and repair of motor vehicles
- 45310 Wholesale trade of motor vehicle parts and accessories
- 45320 Retail trade of motor vehicle parts and accessories
- 45400 Sale, maintenance and repair of motorcycles and related parts and accessories

#### 5.1.2. Discussion of the suitability / robustness / limitations of data chosen

**Census data should be used as part of the baseline for the current state of the sector.**

The Census provides more granular data than the Annual Population Survey thanks to its bigger sample size.

In terms of monitoring, according to the expected timescale of the policy impacts that the Scottish Government wants to measure using this variable, Census data can be used to monitor longer term

impacts as it is collected every 10 years, whilst the Annual Population Survey can be used to monitor impact on policies which are expected to have a greater impact in the shorter term, as it is collected annually.

As Pregnancy and maternity is a short-term status, it may not be cost effective to add a question around this protected characteristic on either Annual Population Survey or Census.

## 5.2 Co-ordinating innovation, support, trade, procurement, skills, new tech and Scotland's strengths

Variable	Data sources	Baseline readiness	Data subsets	Data gaps
Access to relevant qualifications providing skills required to support the shift towards manufacturing electric vehicles for inequality categories	Modern Apprenticeships Statistics (2023/2024) – Skills development Scotland  Higher Education Student Statistics, UK (2021/2022)	● Amber	Sex Region	Age Disability Gender reassignment Sexual orientation Ethnicity Religion Marriage and civil partnership Income Pregnancy and maternity

### 5.2.1. Notes on data source

This variable measures the accessibility of relevant qualifications providing skills required to support the shift towards manufacturing electric vehicles, looking at the number of Scotland's colleges offering either Institute of the Motor Industry (IMI) or City & Guilds (C&G) accredited hybrid and electric vehicle courses

Scottish Government's ULEV – Skills baselining [study](#), 2020 estimates 65,000 people could need to undertake training at various levels to provide full coverage of skills and support the uptake and manufacture of hybrid/electric vehicles in Scotland; as such, this variable will help understanding the geographical spread of courses and therefore their accessibility.

### 5.2.2. Discussion of the suitability / robustness / limitations of data chosen

**The data contained in the Modern Apprenticeships Statistics (2023/2024) – Skills development Scotland could be used to build the baseline for this variable but it needs improvements.**

This dataset cannot be used as it stands to build a baseline, as it only provides information on the overall update of courses relevant to transport and logistics. To build a baseline, data on people attending specific courses relating to electric vehicle manufacturing etc is needed and these courses and gaining qualifications broken down by inequality categories would be needed.

To fill this gap, Skills Development Scotland could be requested to expand their statistical calculation to include data on specific courses within the broadly classified industries and to further granulate the data by equality groups.

## 6 Appendices

### Appendix A - List of relevant data sources

1. Census (2021)
2. Draft Transport Strategy and Just Transition Plan (2023)
3. Scottish Annual Business Statistics (2020)
4. Scottish Household Survey (2021)
5. Fuel Poverty (Targets, Definition and Strategy) Scotland Act (2021)
6. Vehicle licensing statistics, Department for Transport (2023)
7. Zap Map EV statistics (2023)
8. Charge place Scotland
9. The Public Charge point regulations (2023)
10. Life in Scotland for LGBT Young People (2018)
11. LGBT Scotland: Hate Crime and Discrimination (2017)
12. Institute for Public Policy Research (2022)
13. Transform Scotland (2022)
14. Exploring gender and active travel (2018)
15. Annual Car Club Scotland Report, CoMoUk (2022)
16. Poverty and Equality Commission Report (June 2019)
17. Fairly reducing car use in Scottish cities (2022)
18. RAC Foundation, Transport Poverty (2012)
19. Sustrans Transport Poverty index (2016)
20. Scottish Index of Multiple Deprivations (SIMD)
21. Modern Apprenticeships Statistics (2023/2024) – Skills development Scotland
22. Higher Education Student Statistics, UK (2021/2022)
23. Annual Population Survey (2021)

### Appendix B – List of stakeholder organisations

1. Sustrans
2. Public Health Scotland
3. Transport Scotland
4. Disability Equality Scotland

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ClimateXChange  
Edinburgh Climate Change Institute  
High School Yards  
Edinburgh EH1 1LZ  
+44 (0) 131 651 4783

[info@climatexchange.org.uk](mailto:info@climatexchange.org.uk)  
[www.climatexchange.org.uk](http://www.climatexchange.org.uk)

**If you require the report in an alternative format such as a Word document, please contact [info@climatexchange.org.uk](mailto:info@climatexchange.org.uk) or 0131 651 4783.**