

# Putting the brakes on toxic air

Our transport plan for a cleaner, fairer future

April 2023

Impact  
on **Urban  
Health**

The logo for ASTHMA+ LUNG UK features a stylized cross shape composed of four overlapping rectangular blocks. The top block is purple, the bottom block is blue, the left block is green, and the right block is orange. The text "ASTHMA+" is positioned above "LUNG UK" in white, bold, sans-serif font, centered within the intersection of the blocks.

**ASTHMA+**  
**LUNG UK**



**24 million people  
across the UK are  
breathing in toxic air  
that is damaging their  
lungs and their ability  
to breathe.**

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# Forewords

Air pollution is the greatest environmental threat to public health.

It stunts children's lungs, causes lung diseases and contributes up to 43,000 early deaths every year in the UK. It's also a problem that we have the tools to solve, we just need the political courage to do so. Our new report sets out a policy that will help thousands of people at most risk of harm to toxic air, cut dangerous air pollution and help to transform the health of their communities.

We know that if we want to reduce air pollution, we need to get the most polluting vehicles off the roads, and our new policy will do this by resourcing local interventions to support people to switch to cleaner and more active transport options.

For people with lung conditions and those whose lungs are more at risk to damage from air pollution, cleaning up our toxic air is vital. People with lung conditions tell us that air pollution leaves them feeling trapped in their homes, because it can cause their condition to get worse. Exposure to air pollution can be deadly and cause life-threatening flare ups of conditions like asthma and chronic obstructive pulmonary disease (COPD).

Breathlessness, or shortness of breath, can be a terrifying experience. New data from Asthma + Lung UK published alongside this report shows that an estimated two million people may have experienced breathlessness caused by air pollution in the past six months, regardless of whether they have a diagnosed lung condition or not.

**"Our new report sets out a policy that will bring help to thousands of people at most risk of harm to toxic air, cut dangerous air pollution and help to transform the health of their communities."**

Reducing the number of cars on the road is critical to cleaning up our air, and that's what this policy can do. Strong clean air policies are needed, but it's also vital we engage with, listen to, and understand communities, helping them to access the solutions. Current delayed and unambitious air pollution targets will force another generation of children to grow up breathing air so dirty that it can affect their lungs for life. We hope this report will encourage policy makers to take air pollution seriously and protect the nation's lungs from harm.

**Sarah Woolnough**  
**Chief Executive, Asthma + Lung UK**

Air pollution isn't only a public health crisis, shortening the lives of tens of thousands of people across the country and costing the economy billions of pounds per year. It's also a social justice issue.

People who can't afford to drive are those who are most affected by air pollution from traffic. Time and time again, research shows us that, while everyone is affected by air pollution, it's those on the lower incomes, or those with existing health conditions, or children, or older people, who are most affected.

Yet, for decades, infrastructure has supported drivers. To save our climate and to protect people from deadly air pollution, now it's time to support people to travel in cleaner, more efficient, cheaper, and healthier ways. This report is a guide for doing that in a fair, equitable way.

Reducing car use is a monumental challenge, especially by the levels required to make a difference. This isn't just a case of making public spaces nicer places to be. It's about the urgent need to address the highest source of greenhouse gas emissions and deadly air pollution: transport. In London, for example, there is a need for a 27% reduction in the number of kilometres travelled by car by 2030.

**"But as the government, councils, and businesses meet this challenge, one thing is clear: those most affected by air pollution must be prioritised every step of the way. Solutions must be equitable and actively reduce the dire health, economic and social inequalities."**

This report is an invaluable guide to doing just that. It describes a practical, evidenced-based policy solution to equitably reduce car use across the country while protecting those whose health is most affected by air pollution.

**Anna Garrod**

**Director of Policy and Influencing, Impact on Urban Health**

# Executive summary

## At Asthma + Lung UK, we're fighting for everyone's right to breathe clean air.

Toxic air is a health emergency, causing new lung conditions like lung cancer, and worsening existing ones like asthma and chronic obstructive pulmonary disease. It can stunt the growth of children's lungs and travel deep into the lungs and brains of unborn babies. As well as lung conditions, toxic air has been linked to cardiovascular disease, cognitive decline, and poor mental health. Overall, air pollution contributes to up to 43,000 early deaths per year in the UK.

Despite the growing body of evidence showing the health impacts of toxic air, legal limits for nitrogen dioxide are still being breached across the UK. New targets set in law by the government for fine particulate matter are not due to be reached until 2040 and are not ambitious enough to protect health. If we want to protect those whose health is most at risk from the devastating effects of air pollution and ensure another generation of children are not having their future health put at risk, bold action needs to be taken.

**As well as lung conditions, toxic air has been linked to cardiovascular disease, cognitive decline, and poor mental health. Overall, air pollution contributes to up to 43,000 early deaths per year in the UK.**

Polluting vehicles are fuelling toxic air and the climate crisis. Most cars on UK roads still run solely on polluting petrol and diesel, despite the government committing to phase out their sale by 2030. 24 million people across the UK are breathing in toxic air that is damaging their lungs and their ability to breathe. As our February 2023 report *Zoning in on clean air* highlighted, we already have the tools to improve this situation. Clean air zones have proved to be one of the most effective policy measures to deliver rapid and effective improvements to air quality in urban areas. Modelling by the Department for Environment, Food and Rural Affairs suggests that clean air zones are most effective when rolled out as a network in major cities across the UK.<sup>1</sup>

However, concerns have been raised about the financial impact of clean air zones and other emissions reduction measures on the public during a cost of living crisis which makes it increasingly difficult for people, especially those on lower incomes, to switch to cleaner modes of transport. In many cases, current financial incentives aren't enough to help people shift towards cleaner travel, and there are significant barriers to accessing public transport, walking and cycling.

Alongside being the least able to financially afford to change their travel behaviour, those on the lowest incomes often live in the most polluted areas despite contributing the least to air pollution (as many on the lowest incomes don't drive) and are also more likely to suffer from poorer underlying health. This means they often face a triple jeopardy: most exposed to toxic air, most susceptible due to poor underlying health, and less able to change their travel behaviour.

**Those on the lowest incomes often live in the most polluted areas despite contributing the least to air pollution.**

This report will demonstrate that toxic air can be tackled if we use a joined-up, public-health approach, and we have evidenced public support for a new policy, the Cleaner Travel Access Fund, to help people make cleaner transport decisions. However, there is no silver bullet to tackling air pollution. National and local policy makers need to put a holistic mix of policies in place to transition to cleaner air.



**Air pollution can stunt the growth of children's lungs and travel deep into the lungs and brains of unborn babies.**

# Our policy recommendation

1

## Establish a Cleaner Travel Access Fund

A scrappage scheme to be rolled out to areas that implement class D clean air zones, for people on low incomes and people whose mobility is affected by lung and other health conditions to switch their polluting vehicles in exchange for a financial grant. This can be used to buy an active travel option; to fund public transport use; or towards purchasing an electric vehicle.

This policy will be most effective when supported by the following enablers:

2

## Ramp up investment in cycling, walking and wheeling

to make active travel safer to encourage use, easier for people with mobility issues, and more inclusive for people who would like to use active travel.

3

## Ensure local authorities have sufficient funds to improve their public transport offering

and make it more affordable, making the scrappage scheme more attractive to those eligible for the Cleaner Travel Access Fund and increasing the likelihood of use in wider society.

4

## Review the use of incentives to purchase electric vehicles

such as direct measures like help with utilities, and indirect measures like improving the electric vehicle charging network.

As many people on lower incomes cannot afford to drive, these enablers will ensure that those without cars can enjoy more affordable, convenient public transport, and safer, more accessible active travel.

# Our approach

We want the government to set out a programme across England to help those who need it most, the people on the lowest incomes and with lung and other health conditions, to switch their polluting vehicles for cleaner options. Asthma + Lung UK are calling on the government to prioritise strategies which encourage and enable the population to make cleaner transport decisions. We know that clean air zones are one of the most effective ways to reduce air pollution fast. Further to our February 2023 report, *Zoning in on clean air*, we recommend that the programme be rolled out initially through local governments who commit, or who have already committed, to implementing a class D clean air zone\* or similar charging measure to reduce road transport emissions. This approach has several benefits:

- There is extra incentive for local areas to implement clean air zones. Through this programme, local areas will be able to unlock funding from central government for their communities to mitigate the financial impact of these policies on those least financially able to change their travel behaviour.
- Local government and national government are incentivised to work together in their shared interest to protect public health.
- Central government is able to go further in their aims to decarbonise transport, and move faster towards net zero by 2050.
- Local government is able to detoxify public debate around the implementation of clean air zones, which several areas have felt forced to pause or scrap plans towards for various reasons.

\* There are four different classes of charging clean air zones, class A–D. These define the types of vehicles that will be charged within the zone. Class D includes buses, coaches, taxis, private hire vehicles, heavy goods vehicles, vans, minibuses, cars, and the local authority has the option to include motorcycles.



# Who should be eligible for the scrappage scheme, and what's the investment needed?

Asthma + Lung UK is calling for the government to invest a total of £777million to create the Cleaner Travel Access Fund to provide the support needed for the people we have identified need the most help to transition to cleaner modes of transport:

**Live in an area covered by a new or existing clean air zone, and either:**



a. Have a household income of less than £20k a year, or



b. Have a long term health condition that impacts their mobility and hold a Blue Badge

The annual health and social care costs caused by road transport are currently £2.3bn and are expected to rise to £5.3bn by 2035 unless ambitious action is taken.<sup>2,3</sup> A problem of this scale requires political courage to overcome.

Euro emissions standards limits (g/km) for NO<sub>x</sub> for passenger vehicles are part of the EU's air pollution framework, which noted that considerable reductions in NO<sub>x</sub> (which, when it reacts with the environment becomes NO<sub>2</sub> and is then harmful to human health) would be needed to improve air quality, and emission standards would be a determining factor in helping member states comply with air pollution limits.<sup>4</sup> So that the Cleaner Travel Access Fund aligns with class D clean air zones already in place, we propose that the same emissions standards are adopted – cars below these standards would be charged under the clean air zone and so would be eligible to access the scrappage scheme.

**Table on Euro standards (g/km)**

Euro standards	Diesel	Petrol
Euro 3	0.5	0.15
Euro 4	0.25	0.08*
Euro 5	0.18	0.06
Euro 6	0.08*	0.06

## \*Ultra Low Emission Vehicle standards

We believe people should be supported to use the cleanest transport option they can access, but that they should also have agency over their travel decisions. We also know that people with lung conditions and other health problems are some of those worst impacted by air pollution exposure, and for those with mobility problems caused by their condition may still need to use a car. These people need to be supported to access cleaner transport and should be eligible for the Cleaner Travel Access Fund. For people with lung conditions that impact their mobility, reasons for reliance on private vehicles can be due to breathlessness, and other flare ups in their symptoms caused by active travel, or the risk of respiratory infection on public transport.

**We propose that grants of £3,000 be given for people to:**

**Scrap your car for a grant for a bike/e-bike pass**

**Scrap your car for free public transport**

**Scrap your car for money towards purchasing an electric vehicle**

See appendix one for more information on the methodology on costing the policy.

*This report contains policy recommendations for England however we expect that implementation will lead to Barnett Consequentials allowing it to be funded in the three devolved nations as well.*

# Key findings

In 2023, we conducted new research into people's views and barriers to making cleaner transport decisions. We asked the general public what their current travel behaviours were, what was stopping them from using cleaner transport, what support they might need, and what their views and awareness was on air pollution.

## We found:

The public are concerned about air pollution levels in the UK.

69%

are concerned

People want to use cleaner transport, but they say there are no good options for their journeys.

48%

agree

The public would like to see investment in active travel, to make it safer and more accessible.

67%

agree

The public would like to use electric vehicles, but they'd need support to purchase one.

71%

agree

The public want to see more investment in public transport.

85%

agree

**Polluting vehicles are fuelling toxic air and the climate crisis, with most cars still running on polluting petrol and diesel.**



# Millions of people are breathing unsafe levels of toxic air

There is no safe level of air pollution, but tens of millions across the UK are breathing in levels of air pollution that are against the law. This means that the government department responsible for levels of air pollution in England – the Department for Environment, Food and Rural Affairs (DEFRA) – is continually failing to protect public health from its greatest environmental threat.

There are two key pollutants when considering the impact of road transport on health – nitrogen dioxide (NO<sub>2</sub>) and fine particulate matter (PM<sub>2.5</sub>).

**Table 1: What is nitrogen dioxide and fine particulate matter?**

Nitrogen dioxide (NO <sub>2</sub> )	Fine particulate matter (PM <sub>2.5</sub> )
<p><b>What is it?</b> A gas.</p>	<p><b>What is it?</b> Tiny particles.</p>
<p><b>Where does it come from?</b> It is produced by combustion processes, for example in an internal combustion engine (ICE). Around 80% of nitrogen oxide (NO<sub>x</sub>) emissions in areas where the UK is breaching legal levels of NO<sub>2</sub> are due to transport.</p>	<p><b>Where does it come from?</b> A variety of causes – particles from combustion products, engine abrasion, brake pads, tyres. These can comprise of materials including soot, partly burnt petrol and diesel that form carcinogens, heavy metals, silica, and rubber.</p>
<p><b>How bad is it?</b> Exposure to NO<sub>2</sub> can, in the short term, cause inflammation of the airways and increase susceptibility to infection. It can exacerbate the symptoms of those already suffering from lung and heart conditions.</p>	<p><b>How bad is it?</b> PM<sub>2.5</sub> is the air pollutant most harmful to human health. At this size, the particles can be inhaled deep into the lungs and can enter the bloodstream.</p>

The UK has been exceeding legal limits for NO<sub>2</sub> concentrations since 2010, and in 2015 the government was ordered by the supreme court to produce more ambitious plans to tackle illegal levels of NO<sub>2</sub> in the shortest possible time. However, in 2017 and 2018, the high court again declared the government’s plans as insufficient and unlawful. According to data from the Department for Environment, Food and Rural Affairs (DEFRA), 76% of air quality reporting zones in the UK were still in breach of legal limits for NO<sub>2</sub> in 2019.<sup>5</sup> This substantially improved during 2020, when the UK was locked down in the covid-19 pandemic, but even then, five areas (Greater London, West Midlands, Greater Manchester, Bristol and South Wales) were still in breach.<sup>6</sup> 65% of the original 62 local authorities mandated by government to produce clean air plans have now produced or proposed plans in their local area but there is a huge discrepancy between the content, quality and speed with which these plans will clean up the air.

Progress has been slow on tackling NO<sub>2</sub>. According to the National Audit Office, the government’s existing policy measures towards achieving reductions in roadside NO<sub>2</sub> are not sufficient to achieve reductions needed under the 2030 emissions ceilings.<sup>7</sup>

There is a similar story for PM<sub>2.5</sub>. Around a quarter of the England population are breathing in levels of PM<sub>2.5</sub> over guidelines recommended by the World Health Organisation (WHO) back in 2005. When compared to updated WHO guidelines in 2021, this rises to 99% of the population of England. In England, we aren’t breaking the law on this pollutant, but that’s only because the UK’s legal limits for annual concentrations are twice as high as those recommended by the WHO in 2005, and five times higher than those recommended in the 2021 guidelines.<sup>8</sup>

## In early 2023, under the requirements of the Environment Act 2021, the government received overall approval from parliament on targets for PM<sub>2.5</sub> pollution:<sup>9</sup>

- ➔ The annual mean concentration target has been set at ten micrograms per cubic metre (µg/m<sup>3</sup>) by 2040
- ➔ The population exposure reduction target (PERT) set would reduce PM<sub>2.5</sub> levels across England by at least 35% by the end of 2040, when compared to a baseline year set at 2018

Despite thousands of consultation responses and evidence submissions from Asthma + Lung UK and groups including the Healthy Air Coalition and the Royal College of Physicians, these targets fell far short of the targets needed particularly on concentration levels. Achieving an annual mean concentration of 10µg/m<sup>3</sup> by 2040 means that another generation of children will grow up breathing dirty air that harms their lungs and costs lives. The government's approach to cleaning our air has been characterised by delays and lack of ambition. Current UK government policy:

- ➔ Is **disconnected**, hampering a holistic and public health focus.<sup>10,11</sup>
- ➔ Is **delayed**, especially on the implementation of clean air zones.<sup>12</sup>
- ➔ Is **informed by inadequate air quality data**, which currently isn't granular enough to map individual's exposure, and provide adequate advice and reporting for policy development.<sup>13</sup>
- ➔ Lacks **adequate local authority funding and capacity**. Local governments in England have seen a 49% real terms reduction in funding since 2010.<sup>14</sup> While UK government funding is available to local authorities to implement their own locally owned and designed air quality management plans, local authorities themselves point to insufficient funding as the major limiting factor in implementing these plans effectively.<sup>15</sup>

## Toxic air contributes to up to 43,000 early deaths a year in the UK, and some are particularly at risk of harm

Air pollution is bad for everyone and breathing it in throughout our lives is a threat to us all. We all breathe in polluted air, but some groups are significantly more vulnerable to the effects of poor air quality. These include those pregnant, babies, children and older people, and those living with existing lung conditions. Air pollution contributes to up to 43,000 early deaths every year in the UK.<sup>16</sup> There is an ever-growing body of evidence linking air pollution with a wide range of health conditions, including:

- Lung conditions, including lung cancer, asthma and chronic obstructive pulmonary disease
- Many types of cancer
- Developmental problems in children
- Cardiovascular disease
- High blood pressure
- Strokes
- Dementia
- Diabetes
- Poor mental health
- Premature birth and low birth weight

- ➔ For every 10µg/m<sup>3</sup> increase in exposure to PM<sub>2.5</sub>, the risk of dying from all cancers increases by 22%.<sup>17</sup> The more we improve our air quality, **the longer our people live**, and the more healthy years of life they have.<sup>18</sup>

## For people with lung conditions, air pollution impacts their daily quality of life

As well as causing new cases of lung conditions, air pollution can exacerbate the symptoms of people with existing lung conditions. For example, they can experience inflammation of the airways, causing coughing and the terrifying feeling of breathlessness. They could also experience life-threatening flare ups of conditions like asthma and COPD.<sup>19</sup> In the most extreme circumstances, exposure to air pollution can cause death for people with lung conditions, because of the effect on their symptoms.

**“My asthma is more triggered in the morning times rather than the evenings, during rush hour in particular.”**

Asthma + Lung UK focus group participant with a lung condition, 2023

Across the 8,300 people who responded to our 2022 asthma survey, and the 8,232 people who responded to our 2022 COPD survey, 47% and 53% respectively said that air pollution was a trigger for their symptoms. Over 75% of people who responded to the asthma survey said that air pollution has an impact on their health and wellbeing. Overall, we estimate that air pollution triggers or worsens symptoms for 3.4 million people living with asthma and COPD.<sup>20</sup>

In our recent report, *Alerting the Nation*, we surveyed over 1,000 people with a lung condition about their experiences of living in areas with polluted air. For almost 60% of respondents, air pollution makes them feel breathless, 51% said it makes them feel wheezy, and 43% said it makes their symptoms flare up. Most worryingly, 7.8% said that they have been hospitalised due to high air pollution levels. Only 9.7% of respondents said that air pollution does not make their lung condition worse.<sup>21</sup>

Road transport is one of the biggest concerns for people with lung conditions. In the same survey, 82% of respondents were concerned about road traffic and vehicles. To mitigate the effects of air pollution, 70% of respondents avoid travelling during peak times such as rush hour, and a similar percentage avoid main roads in general.

**“If I go somewhere with a lot of cars I feel my asthma, I feel I can’t breathe, versus the countryside. I fully back why it’s important and why things need to change.”**

Asthma + Lung UK focus group participant with a lung condition, 2023

Many people with lung conditions tell us that episodes of high air pollution leave them feeling trapped in their homes, contributing to poor mental health. A 2008–2013 study of the mental health consequences of urban air pollution in South East London found that, as levels of air pollution increased, there was up to a 39% increased chance of mental health disorders.<sup>22</sup> This matches up with our insights, which found that almost a quarter (23.8%) of survey respondents with lung conditions said that air pollution made them feel low and depressed.<sup>23</sup> Substantial morbidity from mental health disorders could be avoided with improved air quality.



**Air pollution leaves people with lung conditions feeling trapped in their homes.**

## Toxic air costs millions to the NHS and social care

The damaging effects of air pollution to our health are costing the NHS and social care service millions every year. In 2017, Public Health England\* estimated the total cost due to PM<sub>2.5</sub> and NO<sub>2</sub> to be £42.88 million based on data where there is robust evidence for an association, and £157 million when diseases that have a less robust evidence base for association are included.<sup>24</sup>

- Recent research has revealed how air pollution exposure causes up to one in ten cases of lung cancer in the UK. Though smoking remains the number one risk factor for lung cancer, there are an estimated 6,000 people who have never smoked who die of lung cancer every year in the UK, some of which may be attributable to air pollution exposure. Scientists studied PM<sub>2.5</sub> particles and hypothesised that the particles could promote the growth of cells carrying cancer-causing mutations elsewhere in the body.<sup>25</sup>
- The Committee on the Medical Effects of Air Pollutants (COMEAP) reviewed in 2022 the findings of more than 70 studies covering possible links between air pollution exposure and dementia, as well as how air pollution might affect the brain. Their review highlighted a strong case for air pollution contributing to increased dementia risk, with PM<sub>2.5</sub> particles entering the brain via the bloodstream a potential direct contributor.<sup>26</sup>
- A French study in 2022 found significantly poorer cognitive performance associated with an increase in exposure to black carbon, NO<sub>2</sub> and PM<sub>2.5</sub>.<sup>27</sup>

Given the growing body of evidence associating air pollution with various conditions this number is likely to rise as research progresses. Public Health England estimate that the health and social care costs of air pollution in England could reach £5.3 billion by 2035 unless considerable action is taken. They also found that a relatively small reduction in the population's exposure to PM<sub>2.5</sub> and NO<sub>2</sub> could lead to a significant reduction in costs.<sup>28</sup>

As of March 2023, it is estimated that the damage costs from road transport emissions for NO<sub>x</sub> and PM<sub>2.5</sub> amounts to £2.3bn.<sup>\*\*29</sup> The actual cost is estimated to be higher as this figure does not include all impact pathways as quantified by Public Health England and as the epidemiological evidence base that links air pollution exposure to health conditions continues to grow.

## Those least responsible for air pollution are often the most exposed

Exposure to environmental hazards is disproportionately experienced by those from lower socioeconomic backgrounds and ethnic minorities.<sup>30</sup> The poorest people in the UK are more likely to live near busy main roads and are therefore exposed to higher levels of roadside air pollution.<sup>31</sup> In 2011, 85% of people living in areas with illegal levels of nitrogen dioxide were also the poorest 20% of the population.<sup>32</sup> 66% of carcinogenic chemicals emitted into the air are released in the 10% most deprived wards.<sup>33</sup> In London, 46% of the most deprived neighbourhoods have NO<sub>2</sub> levels above legal limits, compared with 2% of the least deprived neighbourhoods.<sup>34</sup>

For people from minority ethnic backgrounds, the story is similar. A 2015 study from Imperial College London found that across England, the worst air pollution levels are seen in ethnically diverse neighbourhoods. The most deprived 20% of neighbourhoods had higher air pollution levels than the least deprived neighbourhoods. The lead researcher on the study, Dr Daniela Fecht, said: "the study highlights that inequalities in air pollution exposure are mainly an urban problem, suggesting that measures to reduce environmental air pollution inequality should focus on cutting vehicle emissions in deprived urban neighbourhoods".<sup>35</sup> In 2019 in London, average annual concentrations of NO<sub>2</sub> were on average between 16% and 27% higher in areas where people of ethnic minority background were most likely to live compared to areas where people of white background were most likely to live.<sup>36</sup> Between 31% and 35% of areas with the highest proportion of black and mixed/multiple ethnicities were in areas with higher levels of air pollution, reducing to 15% to 18% for Asian ethnic groups, and just 4% to 5% for white ethnic groups.<sup>37</sup>

This is a huge injustice given there is less car ownership in lower income and ethnic minority groups, so it is often the people who contribute the least to air pollution who are being most burdened by its health impacts.<sup>38</sup> Looking at car ownership by income level, only a third of people in the lowest income group\*\*\* own a car/van compared to over 90% in the highest income group.<sup>39</sup> Between 2015 and 2019, black people in the UK were at least twice more likely to have no access to a car or van, a figure that has remained broadly consistent since 2002.<sup>40</sup> Across ethnic groupings recorded by the National Travel Survey (Asian, black, mixed, white, and other), white people are always most likely to have access to a car.<sup>41,42</sup>

\* Referred to as Public Health England throughout this report but is now the UK Health and Security Agency (UKHSA).

\*\* Analysis based on central damage costs (in £/t) of 8,148 for NO<sub>x</sub> and 74,769 for PM<sub>2.5</sub> and emissions for road transport from the Department for Transport.

\*\*\* The lowest income decile corresponds to an annual income below £13,114



**It is often the people who contribute the least to air pollution who are worst impacted.**

In 2017, the Chief Medical Officer's annual report on the health impacts of pollution described a 'triple jeopardy' for socioeconomically deprived communities and neighbourhoods, showing they faced inequalities deriving from social and behavioural determinants of health, higher exposure to air pollution, and a disproportionately large health effect compared with more socioeconomically advantaged groups.<sup>43</sup>

## **Speeding up the switch to cleaner travel is critical to save more lives from toxic air**

Polluting vehicles are fuelling toxic air and the climate crisis. According to DEFRA, pollutants emitted by transport are the largest threat to clean air.<sup>44</sup> 49.7% of NO<sub>x</sub> pollution and 13% of PM<sub>2.5</sub> comes from road transport. While over the last 20 years exhaust emissions of particulate matter have decreased markedly due to stricter emissions standards, non-exhaust emissions of particulate matter (e.g. brake, tyre and road wear) remain largely unchanged. The impact of electric vehicles on particulate matter will be discussed later in the report, but it must be acknowledged that electric vehicles still produce some brake and tyre wear. Because of this, the government should prioritise policies that reduce the number of cars on the road.

Given the rising cost of living, the challenge to clean up our air has become even more pertinent as those who live on the lowest incomes are now going to find it even harder to switch to cleaner travel. Now more than ever, it's critical for the UK government to set out a national programme to switch to cleaner travel, so that the poorest communities get the support they need to change to cleaner options.



**The damaging effects of air pollution to our health are costing the NHS and social care service millions every year.**



**The government should prioritise policies that reduce the numbers of cars on the road.**

## Current travel behaviour and barriers to cleaner transport decisions

Due to the long term impact of the covid-19 pandemic, it is hard to properly analyse travel behaviours over recent years. For example, most city workers are no longer commuting five days a week, meaning that we cannot look to pre-covid data to model likely future transport patterns. However, comparing the annual number of passenger kilometres travelled in 2019 and 2021 by car, van or taxi, travel via these modes returned in 2021 to 76% of 2019 levels.<sup>45</sup> But, 2021 was still impacted by national lockdowns due to the pandemic. As of 2022, road transport bounced back to 95% of pre-pandemic 2019 levels.<sup>46</sup>

**In 2023, Asthma + Lung UK undertook new research to understand perceptions of cleaner transport, barriers to taking up cleaner options, and the amount of money that would be needed to encourage a switch to cleaner travel options.**

The research showed that more than half of people would like to use cleaner transport options more often than they currently do. Despite this desire, there are several significant barriers that limit people's ability to make cleaner journeys: 48% of people agree that there are no cleaner transport options available to them for the typical journeys they make.\*

**The research showed that more than half of people would like to use cleaner transport options more often than they currently do.**

This section of the report brings together existing data sets and lays out new research findings from Asthma + Lung UK on current travel behaviours and attitudes to cleaner modes of transport. These were defined to research participants as transport options that are lower in carbon emissions and therefore better for the environment, including active travel such as cycling, walking and wheeling, using an e-bike, taking public transport, and driving electric vehicles.

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\* Q7. The term 'cleaner transport' refers to transport options that are lower in carbon emissions and therefore better for the environment. Some examples include driving electric vehicles, engaging in active travel like walking or cycling, using an e-bike and taking public transport. How far do you agree or disagree with each of the following statements about cleaner transport? See appendix 5 for data tables.

## Active travel

Active travel is seen as the cleanest form of transport, and there are several additional benefits: it is good for mental and physical health, and it can be lower cost (although with cycling there can be a significant initial investment).

**“When I was riding a bike, I felt like a new woman. I was up at 6 o’clock in the morning riding around [during the first lockdown]. It does make you feel great, and you know you’re doing your bit for the planet.”**

Asthma + Lung UK focus group participant, 2023

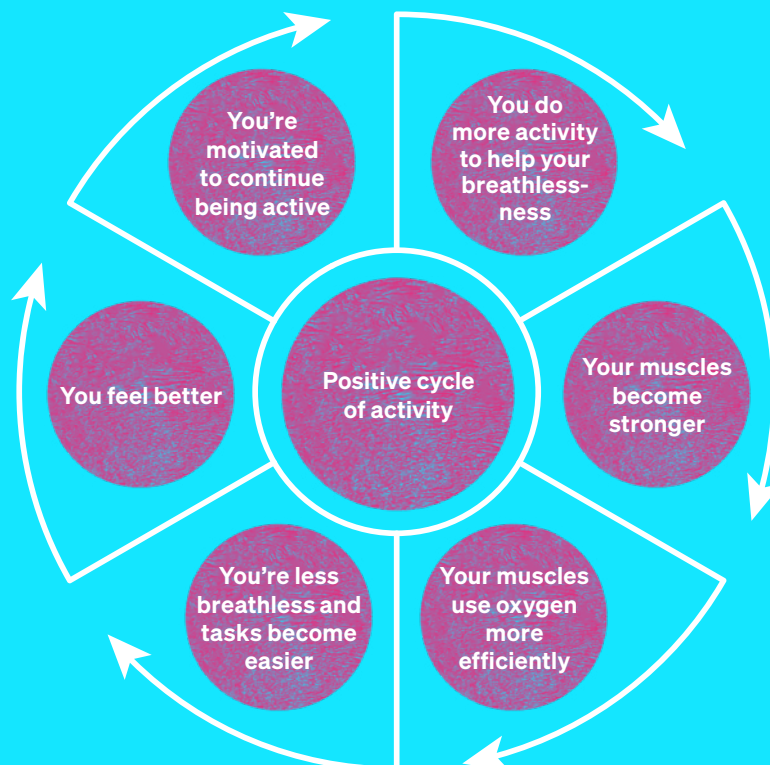
The majority of people in England do not cycle, and while walking is common for short journeys, the rates of walking drop off when journeys are greater than one mile.<sup>47</sup> Most personal trips are within five miles, and the government’s cycling and walking investment strategy considers this an achievable distance for many people to cycle, with many shorter journeys also suitable for walking.<sup>48</sup> This would suggest there is considerable scope to increase the number of people choosing active travel, especially compared across Europe.<sup>49</sup>

Active travel suffers continued underinvestment. In a written statement on 9 March 2023, the Transport Secretary announced that overall active travel funding for the current parliamentary term is being reduced from £3.8 billion to £3 billion. This includes a two thirds cut to promised capital investment in infrastructure for walking, wheeling and cycling, from £308 million to only £100 million for the next two years.<sup>50</sup>

## Active travel isn’t accessible for everyone

Active travel can be great for lung health, and where possible great for people with lung conditions. Physical inactivity is responsible for one in six UK deaths and costs the UK up to £7.4bn annually, including £0.9bn to the NHS alone.<sup>51</sup> Becoming more active makes breathing muscles stronger, and stronger muscles can help people with lung conditions manage their symptoms and improve their condition.

Figure 1: Positive cycle of activity



Source: Asthma + Lung UK

Despite its benefits, active travel is not suitable for everyone in every circumstance. Asthma + Lung UK's 2020 clean air survey (comprised of 2,316 people, of which 75% had a lung condition) and focus group discussions found the following barriers to walking and cycling:

- High levels of air pollution that may trigger their condition when they're out and about
- Lack of infrastructure for walking and cycling, including poor quality pavements and cycle routes
- Lack of programmes to improve access to bikes, such as bike-hire schemes and financial support for the purchase of e-bikes
- Poorly planned connections between modes of transport, e.g. bus stops situated a significant walk away from train stations
- Too much parking on the pavement making it difficult to move around safely

**Our 2023 research reflected these insights:**

- 43% of those with a lung condition agreed overall that they found it physically difficult to use active travel.
- 21% of those with a lung condition strongly agreed that they found active travel physically difficult.
- This compares to only 8% of those without a lung condition.\*

**“I’d like to cycle and walk more but don’t feel able to due to pollution from vehicles and the lack of dedicated and safe infrastructure, e.g. cycle paths and wide footpaths. I therefore, somewhat ironically, use a car instead – adding to the pollution.”**

Asthma + Lung UK focus group participant with a lung condition, 2023

These insights from our survey are reflected in the wider literature. Evidence shows that active travel is not inclusive to all groups. Sustrans, Arup and Living Streets studied 8 groups: women, people from LGBTQIA+ groups, children, older people, people from minority ethnic groups, people from minority religions, disabled people (incl. long-term health conditions) and people living in or at risk of deprivation.<sup>52</sup> The report found that each one of these groups faced different barriers to active travel including safety (esp. for women, people from minority ethnic groups and LGBTQIA+ communities), availability of places to stop and have a break (people with long-term health conditions) and width of pavements.

**The research tested support for several measures to encourage people towards the switch to walking and wheeling and found that:**



\* Q7. The term 'cleaner transport' refers to transport options that are lower in carbon emissions and therefore better for the environment. Some examples include driving electric vehicles, engaging in active travel like walking or cycling, using an e-bike and taking public transport. How far do you agree or disagree with each of the following statements about cleaner transport? I find it physically difficult to use active travel (e.g. walking or cycling). See appendix 5 for data tables.

**“I think we need to learn from places like Amsterdam. If Europe can make it work, I’m sure we can. It’s about the government and local council funding the right things, for example cycle lanes they can also give us tax benefits if we cycle or walk instead of drive.”**

Asthma + Lung UK focus group participant, 2023

According to a poll from YouGov, 36% of people polled during the pandemic agreed they could rethink their travel habits to use their cars and motor vehicles less.<sup>53</sup> The main ways of encouraging people to cycle more were related to safety and infrastructure:



This could suggest how easily people would rethink their travel habits with the right conditions – when there are less cars on the road, the air is cleaner, and the road is safer. We need to see the government prioritise policies that reduce the number of cars on the road.

## **Active travel can’t completely replace other modes of transport**

Though people support incentives to encourage more active travel, when presented with an incentive of £1,000 to replace a petrol/diesel car for a e-bicycle, no participants felt it was an attractive incentive that they would consider. In fact, active travel is not seen as a viable replacement for other forms of travel. This was seen as especially unrealistic for those with lung conditions who experience more significant barriers.

That being said, infrastructure investments in active travel are still needed to encourage a modal shift away from cars, especially on short journeys. The government has set a target for half of all short trips to be walked or cycled by 2023 in England. In 2019, more than 60% of trips between one and two miles were driven. Cycling levels have risen since the pandemic, which Cycling UK say is due to rising fuel prices, but unless cycling infrastructure improves, growth could be undone.<sup>54</sup>

**We need a modal shift  
away from relying on  
cars, towards cleaner  
modes of transport.**



# Public transport

Data on the demographics of public transport use shows that people on lower incomes use bus travel more than any other form of public transport. In our research, 27% of those earning under £20k a year took the bus more than once a week, versus 16% of those earning between £30k–£49.9k, and 19% of those earning more than £50k.\* Our data reflects the national picture: in 2021, people in the lowest real income quartile made 44 local bus trips on average, more than any other income quartile, while those in the highest income quartile made the least bus trips, 16 on average.<sup>55</sup>

## In many places, especially outside of London, the public transport network is inadequate and unreliable

For those living in London, we found positive reflections on the reliability and coverage of public transport. This could be reflected in the fact that London as a region has the highest proportion of households with no cars or vans across the UK, at 42%.<sup>56</sup> However, outside of London, poor networks and low frequency are a barrier for people using more public transport. In January 2023, overall satisfaction with bus services outside of London was 86%, but when it came to punctuality and reliability, satisfaction rate was 74%. Data on satisfaction with reliability is variable throughout the year, showing instability of services – in September 2022 satisfaction hit a low of 66%.<sup>57</sup>

For many, it's hard to see the benefits of public transport use when journeys are often so much longer, and having to take convoluted routes to your destination as opposed to the convenience of car travel is a deterrent for many when considering switching travel behaviour.

**It's hard to see the benefits of public transport when the journeys are often so much longer.**

A lack of public transport infrastructure is often cited as a main cause of regional inequality in the UK. Centre for Cities analysis showed that Britain's largest cities outside of London are trailing behind their European counterparts, and this underperformance costs us many billions of pounds each year in effects on productivity and public health.<sup>58</sup>

Public transport is inadequate and overall use is declining outside of cities. Research from the Campaign for Better Transport looked at public transport provision in 'left behind' neighbourhoods, which they define as having limited access to community assets (i.e. libraries or cultural facilities), low levels of community engagement, and poor connectivity, both digital and physical. They found these areas have poor public transport but are more reliant on it. Compared to other places across England:

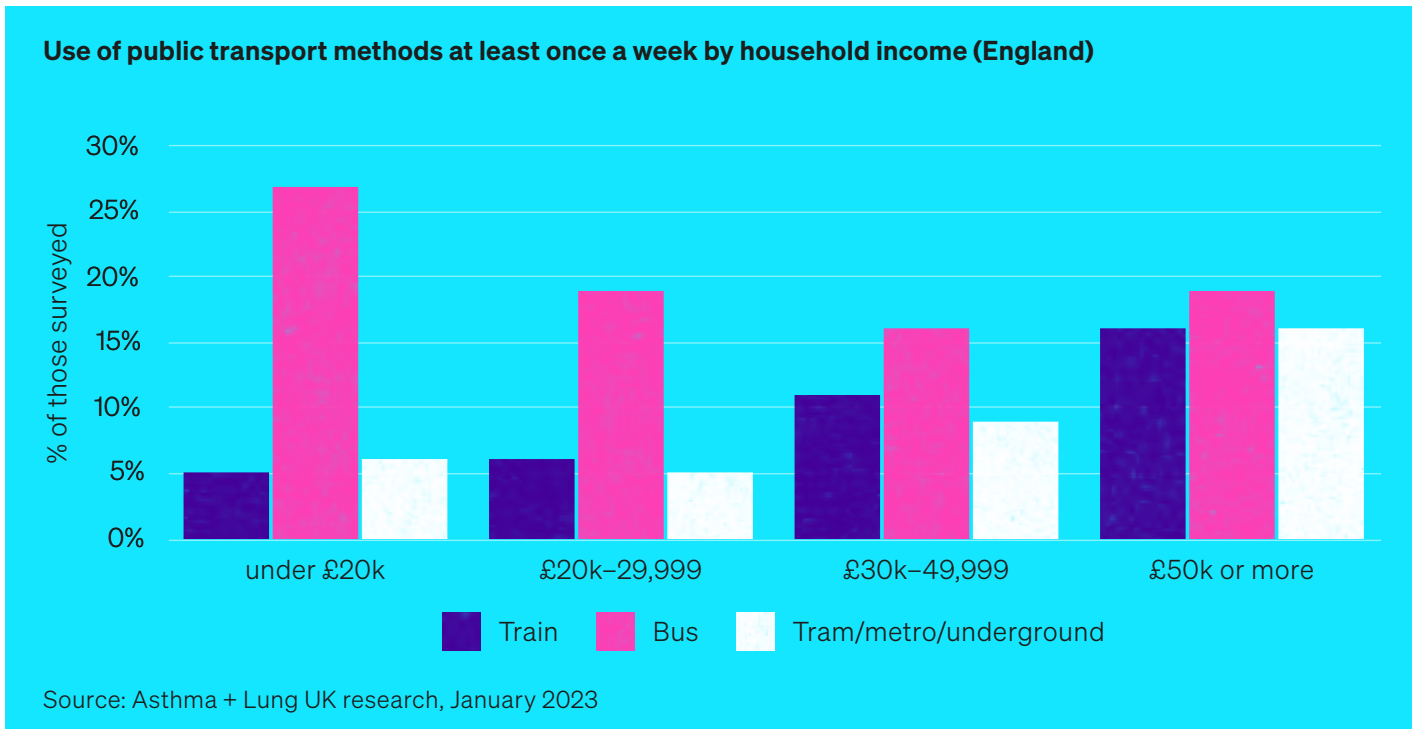


\* Q3. How frequently do you use the following forms of travel? See appendix 5 for data tables.



## Public transport can be expensive, and there's a stark regional variation in cost

Low income households use buses more than any other public transport mode.



Analysis published by the Guardian in 2019 highlighted the price difference between five-mile bus journeys – in London a single bus ticket cost £1.50 (this has since risen to £1.65), whilst a comparable journey in Hampshire cost £5.65.<sup>60</sup> Local bus fares in England increased by 71% between March 2005 and March 2018, according to Department for Transport statistics. In London, prices of single tickets have arguably improved in value – in 2005, a single zone one fare in London was £1, and in 2023 the cost is £1.65 to travel anywhere in London.

**“I can’t afford my own vehicle, so I have to rely on buses to get around. It can be unreliable. For example, on Sunday I was waiting an hour for the bus because the original one didn’t turn up and it was reduced Sunday service so I was waiting around for ages.”**

Asthma + Lung UK focus group participant, 2023

In 2022, the government announced a three month cap of £2 on the cost of a single adult bus fare in response to the rising cost of living and energy crisis. Although the announcement is welcome, it is apparent that it is nowhere near the scale required to deliver behaviour change for cleaner transport. Looking across Europe, the UK’s action to make bus travel more affordable in the current crisis pales in comparison.<sup>61</sup>

- In Germany, a €9 per month transit ticket for all local trains, metros, trams and buses introduced for three months in summer 2022 was taken up by over 52 million people, and the reduction in car use cut carbon dioxide emissions by 1.8 million tonnes. Researchers at the University of Potsdam found that air pollution levels fell by up to 7% in response to the introduction of the low-cost ticket.<sup>62</sup>
- Austria’s new Klimaticket allows unlimited public transport use for the equivalent of €3 a day.<sup>63</sup>
- Giving local authorities enough power and resources to invest in their communities to improve air quality is also key. In Montpellier, the city has been transitioning to a free public transport network for a number of years, and in December 2023 will see the introduction of free unlimited public transport for all residents. The move is described by officials as a ‘necessary one if the fight to clean up our air is to be taken seriously’.<sup>64</sup>

UK public transport infrastructure is far from world-beating. The long term decline in bus services and our unevenly distributed rail network has affected towns significantly, with local authority-subsidised services the most severely impacted by these reductions.<sup>65</sup> In the last ten years, there was a loss of almost 5,000 bus routes, and bus vehicle miles declined by 27%.<sup>66</sup> Though there have been much needed commitments to invest in rail infrastructure in the midlands and the north, however plans for these continually underfunded areas have been curtailed, notably with the reduction of the High Speed Rail 2 (HS2) eastern leg.<sup>67</sup>

A review of train operator performance by the Office of Rail and Road in summer 2022 painted the picture of a growing north-south divide:

- TransPennine Express and Northern both cut more than 15% of their timetable compared to summer 2021
- Avanti (which connects London to large cities in the midlands, north and Scotland), cancelled 12% of services on the day, and more than 60% of running trains failed to arrive on time
- These statistics underplay the actual situation, as trains cancelled prior to the night before are not listed as official cancellations. This means that trains lost to strikes are also not counted as cancelled<sup>69</sup>

In a 2021 survey of attitudes towards local train services, YouGov found that Londoners are the most likely to say their local train services are good (72%, 21 points higher than the general population). Northern areas made up five of the top ten counties where those surveyed said they have actively bad train services.<sup>\*,70</sup>

Our research drew several participants from local authorities in Greater Manchester with dangerous levels of pollution. While services within central areas are more accessible, there are concerns over a lack of transport links between areas, along with speed and frequency of services.

Therefore, given the expense and unreliability, a financial incentive for public transport would not be adequate without investment.

**“I’m not sure the incentive would be enough. My route to work isn’t easy by public transport and at 7am the thought of taking an hour [instead of half an hour] is a difference I’d find it hard to let go, and I have lots of family/friends in different areas, that sometimes the train is too expensive.”**

Asthma + Lung UK focus group participant with a lung condition, 2023

Accessibility and hygiene are also concerns. Those with lung conditions were more likely to raise the cleanliness and hygiene concerns associated with public transport, as well as it lacking accessibility including limited seats and difficulties getting to and from stations.

Within Great Britain, users with a mobility difficulty made around two and a half times fewer trips per year on average by rail compared to those with no mobility difficulty in 2017.<sup>71</sup> Most journeys taken on public transport are commuter journeys (55% of rail journeys in 2017) which can be intimidating for wheelchair users and people who have special requirements on public transport as this means during peak hours public transport will be busier. According to a review of rail services by Williams Rail Review, people with disabilities would like to use rail services more but don’t

\* How good or bad are the train services in your area? Answer – fairly bad/very bad: Cumbria – 25%; Lancashire – 21%; East Riding of Yorkshire – 21%; Lincolnshire – 21%; and West Yorkshire – 21%. From YouGov (2021).

feel confident to do so because of the absence of step-free-access, accessible signage for wayfinding, customer information, facilities (i.e. toilets) and staff training. It is often too difficult to plan journeys ahead, because not all this information is accessible online.<sup>72</sup> Similarly, only half of rural households are within 13 minutes-walk of a bus stop with at least hourly service, compared to 96% of urban households.<sup>73</sup>

**“The environment isn’t very nice, you’re either packed like sardines, or you get home later. When you get to town edges, the services are so much worse.”**


Asthma + Lung UK focus group participant with a lung condition, 2023

**“The priority for me would be making them cleaner and more reliable and accessible. I have a lanyard for hidden disability but not many people know what that is, and it doesn’t guarantee I can sit down. That puts me off because of the effect that can have on me.”**

Asthma + Lung UK focus group participant, 2023

## **Air quality near public transport is often poor**

Bus stops are often placed on busy roads, and so poor air quality can prevent passengers with lung conditions from using these services. This is especially true when frequency of services is low, meaning they will have to wait extended periods near traffic which may trigger asthma or COPD symptoms. Similarly, trains and especially microenvironments like underground services are subject to pollution which can even be higher than busy roads. A 2019 study showed that PM<sub>2.5</sub> levels were four times worse on the London underground than at some street levels.<sup>74</sup> The dangerous levels of pollution in relation to using public transport could put people with lung conditions at higher risk than other groups and can ultimately stop them from using these services and return to private transport instead. It’s important to note that air pollution can be just as bad, if not worse, inside cars as outside them. The levels of air pollution drivers experience while stuck in traffic jams is 140% worse than it is for pedestrians outside.<sup>75</sup> So a prioritisation of policies that reduce overall traffic on the roads is essential to improve air quality for the greatest public health benefit.

A woman with curly hair is looking out of a train window. She is wearing a light-colored jacket over a turtleneck sweater. She is holding a smartphone in her hands. The background is blurred, showing the interior of the train. The entire image has a blue color cast.

**There is a growing north-south divide when it comes to the quality of public transport.**

# Car travel

The vast majority (97%) of the 32.7 million licensed cars in 2020 were still powered by petrol or diesel.<sup>76</sup> In 2022, 645 billion passenger kilometres were travelled, and 88% of these were travelled via cars, vans and taxis.<sup>77</sup> On average, each person made 447 car or van trips in 2021,<sup>78</sup> with each journey on average lasting around 20 minutes, or around 7.5 miles.<sup>79</sup> Comparatively, journeys travelled by bus were an average of 33 minutes and 3.3 miles in London and 39 minutes and 5.7 miles outside of London. Therefore, it's clear that, given the right incentives and investment many of the 88% of passenger kilometres travelled by cars, vans or taxis could be taken by public transport.<sup>80</sup>

**The vast majority (97%) of the 32.7 million licensed cars in 2020 were still powered by petrol or diesel.**

Research undertaken in 2023 by Asthma + Lung UK showed that while those earning a higher than average income (£50k or more) are more likely to own or lease a petrol/diesel vehicle, 55% of those we have defined as earning a low income (£20k or less) own or lease a petrol or diesel vehicle.\* And while those earning between £30k–£49k are the most likely group to use their car three or more times per week, 40% of those earning £20k or less also report using their cars the same amount.\*\* So, despite the government's ambition to decarbonise the transport system, we know that across all income groups certain people will still need to rely on their cars. People on lower incomes will however face higher financial barriers to a transition to a cleaner form of transport. Providing funding for these people to change their travel behaviour will generate a reduction in carbon and air pollution emissions.

## Electric vehicles are too expensive for most people

In December 2021 over a quarter of new cars sold in the UK were battery electric vehicles – the equivalent figure for 2019 was less than 2%.<sup>81</sup> Though the industry is growing, the Society of Motor Manufacturers and Traders (SMMT) found that two thirds of all new electric cars bought in 2021 in the UK were purchased by businesses rather than private buyers. The SMMT has said that consumer acceptance of the technology is still low because of concerns over affordability, charge point availability and infrastructure reliability.<sup>82</sup> Most car owners aspire to own an electric vehicle, they are seen as the future of car travel and more environmentally friendly than petrol/diesel options. There are a number of perceived secondary benefits to owning an electric vehicle, such as being exempt from clean air zone and ultra-low emission zone charges, and often being eligible for free parking.

But the cost of electric vehicles is prohibitive, especially for people on lower incomes. The average cost across the ten best-selling battery electric vehicles is £29,073, which is 30% more expensive than the average sale price for the ten best-selling petrol vehicles which stands at £20,128.<sup>83</sup> The average salary for full time employees in the UK was £38,131 per annum in 2021.<sup>84</sup> There are stark inequalities in the amount of disposable income that people can spend on a new vehicle, and electric vehicles stretch this gap further without the right incentives for those on lower incomes who may need to continue driving for various reasons including their health. In 2018, the lowest 10% decile group by disposable income spent on average five times less on the purchase of vehicles compared with the highest 10% decile group. Across all households, this figure was £1,856.<sup>85</sup> These figures tally with the take-up of electric vehicles looking at wealth – plug-in vehicle ownership is much more common in areas with more disposable income.<sup>86</sup>

The market for electric vehicles is only a small share of the second hand market, another likely barrier for lower income groups to purchase an electric vehicle.<sup>87</sup>

Thinking about their next vehicle purchase, the government's plan to end the sale of new petrol and diesel vehicles by 2030 makes purchasing an electric car more likely for just 13% of those earning less than £20k, compared to 31% of those earning between £30k–£49k, and 41% of those earning over £50k.\*\*\* The cost of living crisis exacerbates the barrier to electric vehicle uptake. With the rapid rise in the price of fuel and household bills, households will have even less disposable income to spend on electric vehicles.

Another barrier to consider is that while the government's phasing out of the sale of new diesel and petrol vehicles by 2030 is a positive step towards decarbonising transport, the prohibitive cost of electric vehicles means that without adequate support and incentives, people on lower incomes will have to turn to second hand internal combustion engines when they need to replace their current cars.

\* Q4. Do you or someone in your household own or lease any of the following vehicles (e.g. a van or car)? See appendix 5 for data tables.

\*\* Q3. How frequently do you use the following forms of travel? See appendix 5 for data tables.

\*\*\* Q5. Thinking about your next car or van purchase or lease, how, if at all, might the government's proposal to end sales of new petrol, diesel and hybrid vehicles by 2035 or earlier influence your decision to buy/lease a battery electric vehicle? See appendix 5 for data tables.

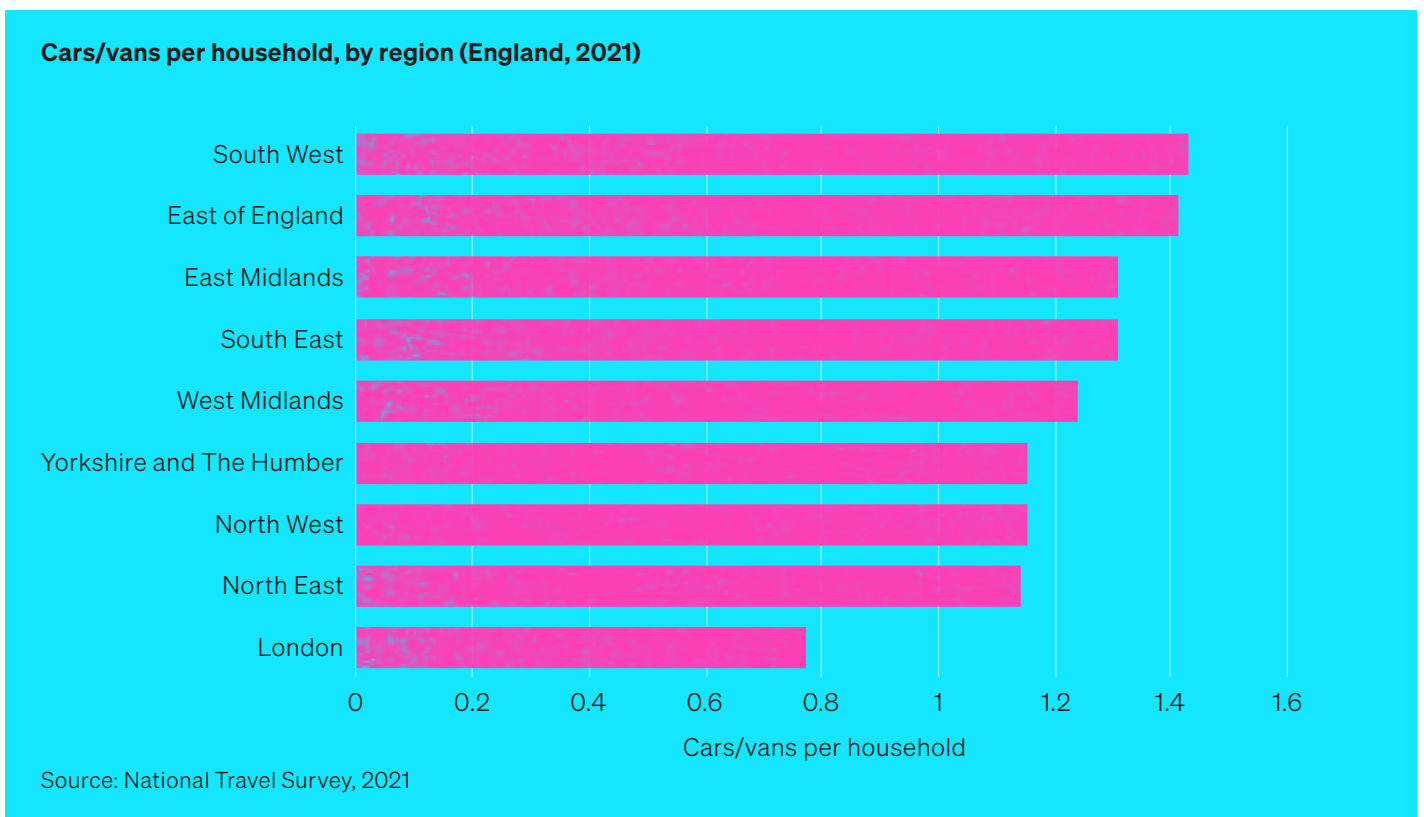
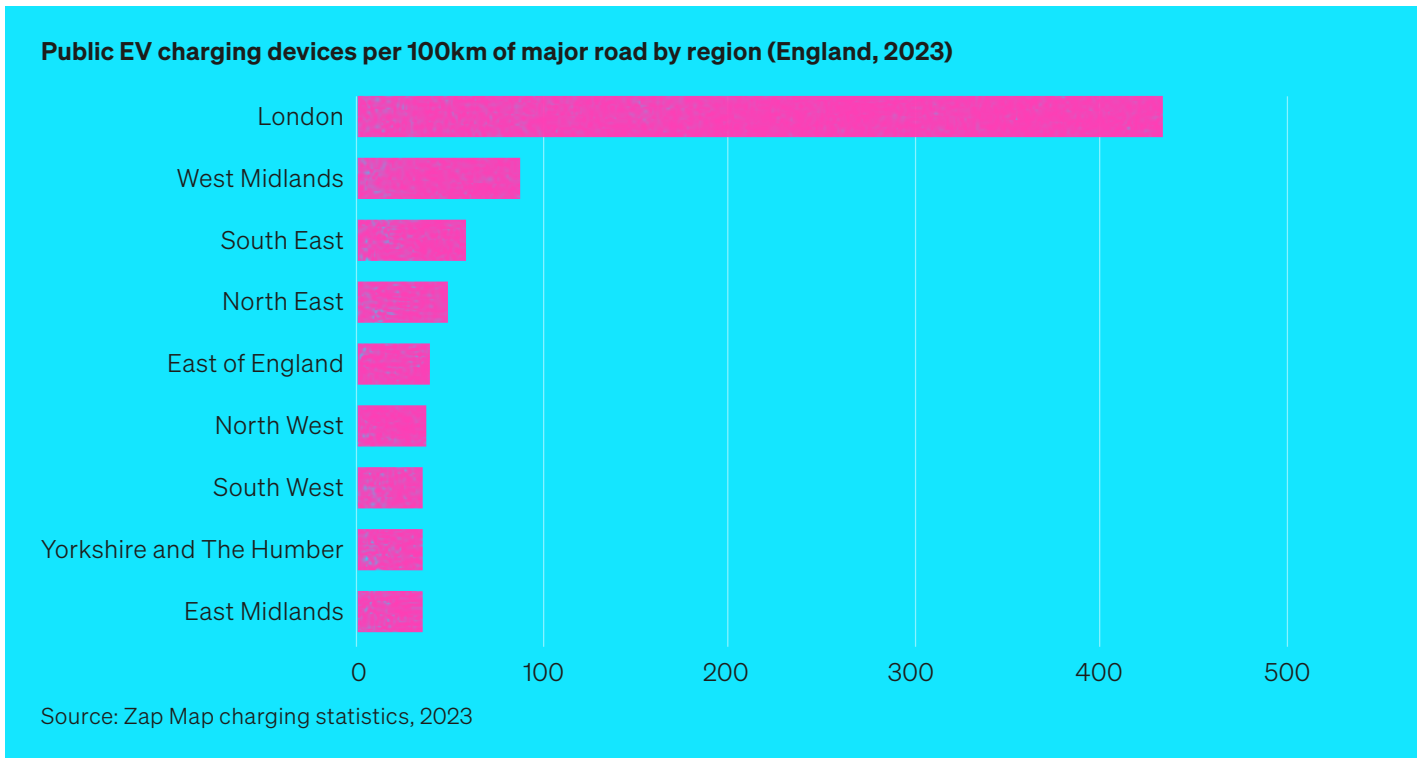
A large parking lot filled with many cars, overlaid with a blue tint and a pink text box.

**Without support to buy electric vehicles, people will turn to second hand polluting vehicles.**

## Electric vehicle charging infrastructure is inadequate

Range anxiety and a view that the current charging infrastructure is insufficient are other causes for concern when considering the purchase of an electric vehicle. Public charge points are needed for two main purposes: to enable long distance journeys and support those without off street parking. By the government's own admission, the current pace of rollout in charge points is too slow to support a zero emission new car fleet by 2035. There is significant variation in the quality and value for money of public charging providers,<sup>88</sup> as well as significant regional inequalities in public charging point availability.

When comparing the levels of car ownership by region with current electric vehicle infrastructure, there is a gulf in availability of public charging points per head in regions outside of London\*.



\* Based on the most up to date data from the Census (2021) and Zap Map (2023)

This contributes to the perception that for people without access to off street parking, an electric vehicle would not fit well with their lifestyle. The perceived difficulty and inconvenience of charging an electric vehicle, for these people, diminish the door the door nature, autonomy and flexibility that people enjoy about driving.<sup>89</sup>

There are of course misconceptions about using an electric vehicle to consider. A Britain Thinks/Department of Transport research piece found that for many, there is confusion about how often electric vehicles need to be charged. 41% of non-electric vehicle drivers believed an electric vehicle needed to be charged every day. These misconceptions contribute towards range anxiety and represent another barrier to overcome.<sup>90</sup>

## **There are concerns about rising energy costs when considering electric vehicles**

While those we surveyed saw an initial financial incentive to help ease the burden of purchasing an electric vehicle as beneficial, there is a need for ongoing financial support to aid with electricity costs, especially in the face of rising cost of living.

**“I think when you purchase the e-car, you should get the charging port included and then some sort of money off your electricity bill.”**

Asthma + Lung UK focus group participant, 2023

The government are taking steps to ease this burden through their electric vehicle infrastructure strategy. The government’s Electric Vehicle Smart Charging Action Plan uses energy use data to deliver benefits for consumers, including allowing motorists to charge electric vehicles when electricity is cheaper or cleaner, allowing consumers to power their homes using electricity stored in their electric vehicle, or even sell it back to the grid for profit. The government predict that high mileage motorists could save up to £1,000 a year, with average motorists saving up to £200.

Through our research concerns were raised about the cost of maintaining electric vehicles, including the cost of replacing batteries. However, studies show that over the lifetime of a car, electric vehicles work out at around £107 cheaper per year than petrol or diesel equivalents. Electric vehicles are also exempt from road tax until 2025. Where costs are higher for electric vehicles is in initial purchase, and in insurance costs, which are on average 25% higher for electric vehicles due to current production costs and complexities involved in the calibration of computers used in these cars.<sup>91</sup>

There are areas where the government could give relief and support for electric vehicle purchases in order to encourage switching, which when tested with our research participants, found a strong level of support (see full results for policy measures in appendix 2).

## **Electric vehicles aren’t a perfect solution**

Electric vehicles improve local air quality and reduce point-of-use emissions; however they are not net-zero when considering the whole life-cycle of a vehicle and its subcomponents. These vehicles still produce some level of PM<sub>2.5</sub> due to brake and tyre wear. Some of these issues can be mitigated with the use of regenerative braking, smoother driving through vehicle autonomy, and the use of new pollution control technologies such as particle capture from brake callipers and low emission tires.<sup>92</sup> However, even a completely zero carbon fleet will provide some particulate matter pollution, both PM<sub>2.5</sub> and PM<sub>10</sub>.<sup>93</sup>

According to the Government’s Air Quality Expert Group, secondary particulate matter (PM) emissions will remain an undesirable consequence of road transport even in 2050 under fully decarbonised scenarios. Pollutants such as PM and ammonia (NH<sub>3</sub>) have more complex emission processes and have less connections to CO<sub>2</sub> reductions and national carbon budgets. A report published by the Royal Society in 2021 highlighted that using hydrogen as a combustion fuel has the potential to increase nitrogen oxides (NO<sub>x</sub>) emissions. Hence the need for more options that don’t just clean up transport fleets, but also remove them from the road completely.<sup>94</sup>



The shift to electric vehicles will require more batteries to be manufactured. This opens up economic opportunities, such as the potential for the UK to develop battery production facilities, but also poses challenges. Batteries for electric vehicles can require rare elements such as lithium and cobalt, which has raised environmental and ethical issues in countries where these elements are mined.<sup>95</sup> Consideration must also be given to the end of life phase of battery electric vehicles, specifically high voltage lithium batteries.<sup>96</sup>

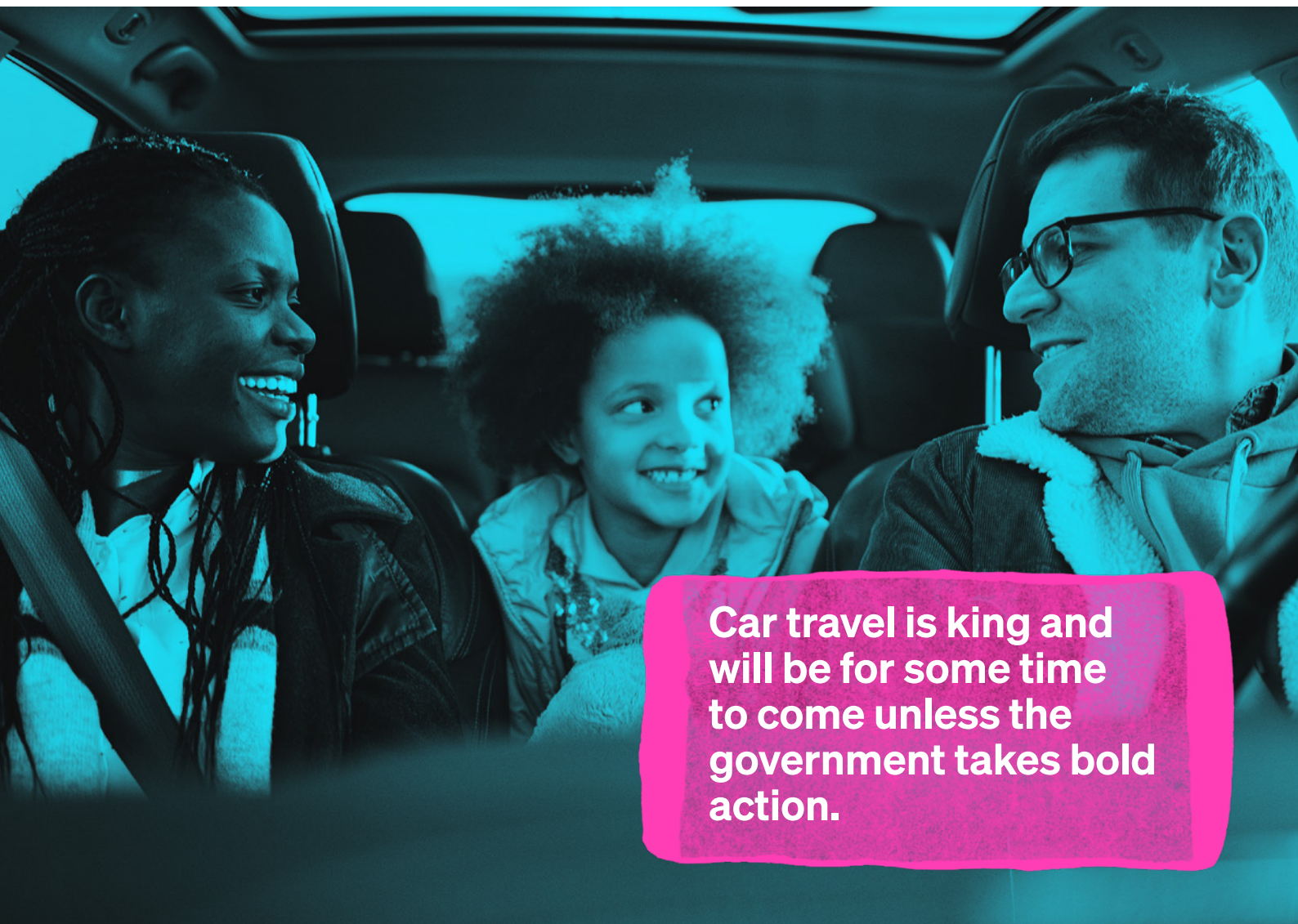
Given all of these considerations, we need to see the government prioritise a reduction of cars on the road.

## **The comfort and flexibility of car travel**

Given the dominant status petrol and diesel car journeys have on transport statistics for the UK, car travel is king and will be for some time to come unless the government takes bold action. The privacy and convenience of private cars are the main drivers of their use, compared with often slower and disjointed journeys by other means of transport. Despite the zeitgeist of debates around climate change and air quality, many consumers consider this an academic debate divorced from their transport decisions.<sup>97</sup>

For some, lingering concerns over covid-19, combined with the perceived uncleanliness of public transport, further encourage the use of private cars.

For people with lung conditions, personal health challenges from symptoms like breathlessness, or the risk of infection from public transport, mean that they are more likely to be reliant on private transport.



**Car travel is king and will be for some time to come unless the government takes bold action.**

# A fair transition to cleaner modes of transport

## Giving people agency and freedom of choice

Our recommendations lay out a policy that gives people the agency to travel in the way most suited to them. The Cleaner Travel Access Fund will allow people to scrap their polluting vehicles for either:

**A grant to purchase methods of active travel, i.e. bikes**

**Mobility credits for public transport use**

**Money towards purchasing an electric vehicle**

We know the landscape of transport use is changing, and this policy will enable and speed up change. The scrappage scheme also needs the following enablers in order to be a success – improved active travel infrastructure, investment in public transport services, and additional help for running electric vehicles.

The next part of the report outlines UK and international learnings as well as modelled benefits of our recommendations.

## What do people expect from the government to overcome these barriers?

The public recognise the need for cleaner transport measures. They say that they are willing to change their own behaviour and reduce private car use if cleaner transport is made more accessible, affordable, and a more attractive proposition. However, our research showed that people thought the government should do more to support people to make the change. Current targets suffer from a credibility gap, with few believing that the government will reach its targets for electric vehicles, nor do they believe that cleaner transport is really a priority.

**“I think they are very ambitious. Don’t seem to be giving big enough incentives for people to convert [to EV’s]. Don’t think their targets are realistic.”**

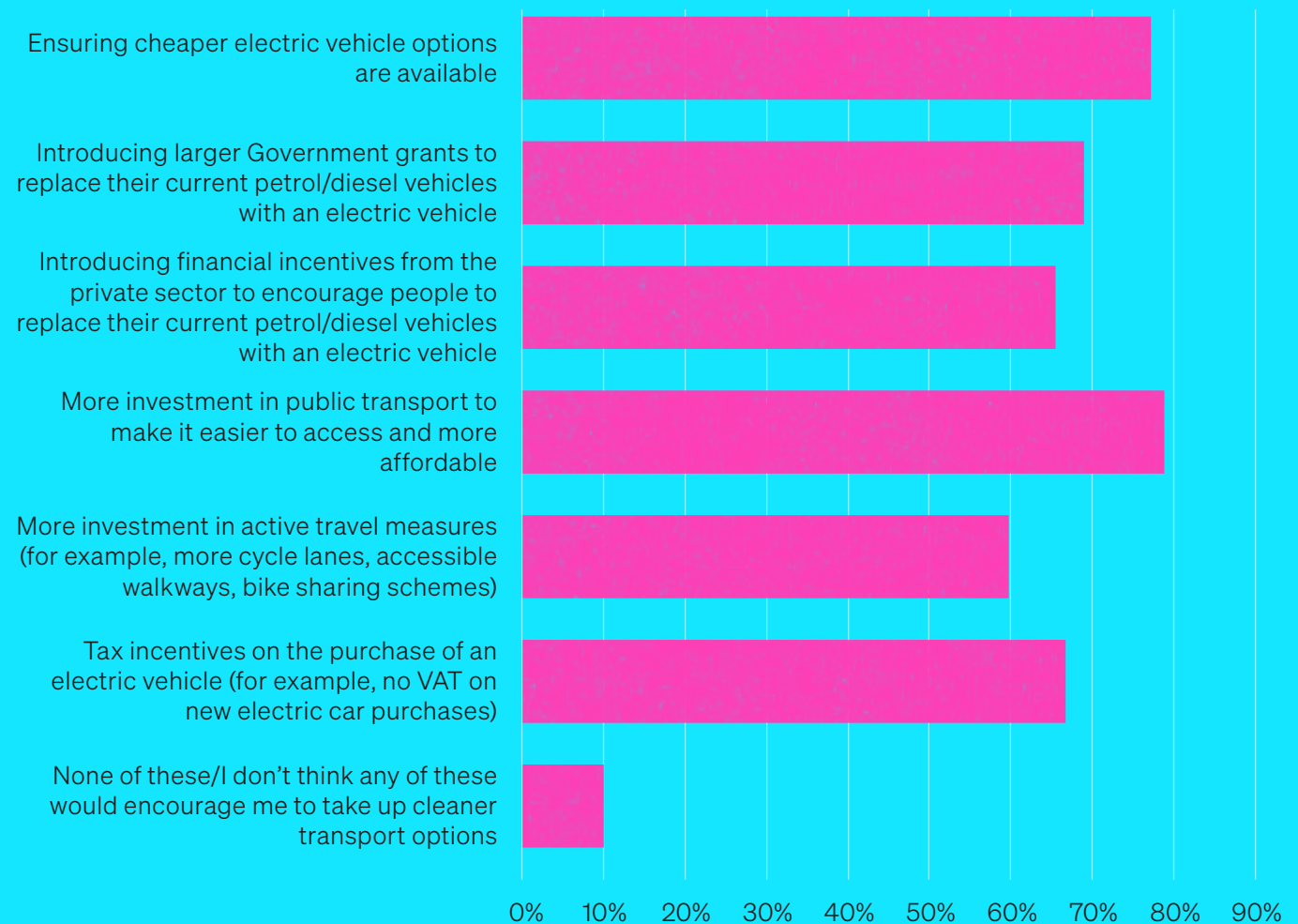
Asthma + Lung UK focus group participant with a lung condition, 2023

There is strong agreement that the government should make cleaner transport options more accessible.

**“I think if they wanted to change it as much as they say they do there would be more going on in terms of incentivising people to get e-cars, to make cleaner choices, use more public transport.”**

Asthma + Lung UK focus group participant, 2023

**Figure 2: Support for policies to encourage cleaner modes of transport (England, 2023)**



Source: Asthma + Lung UK, 2023

% of participants who support introduction of the policy

**Our research shows that the following three policies are needed to encourage those who we propose are targeted by the Cleaner Travel Access Fund to transition to cleaner forms of transport:**

**1**

**More investment in public transport to make it easier and more affordable to access.**

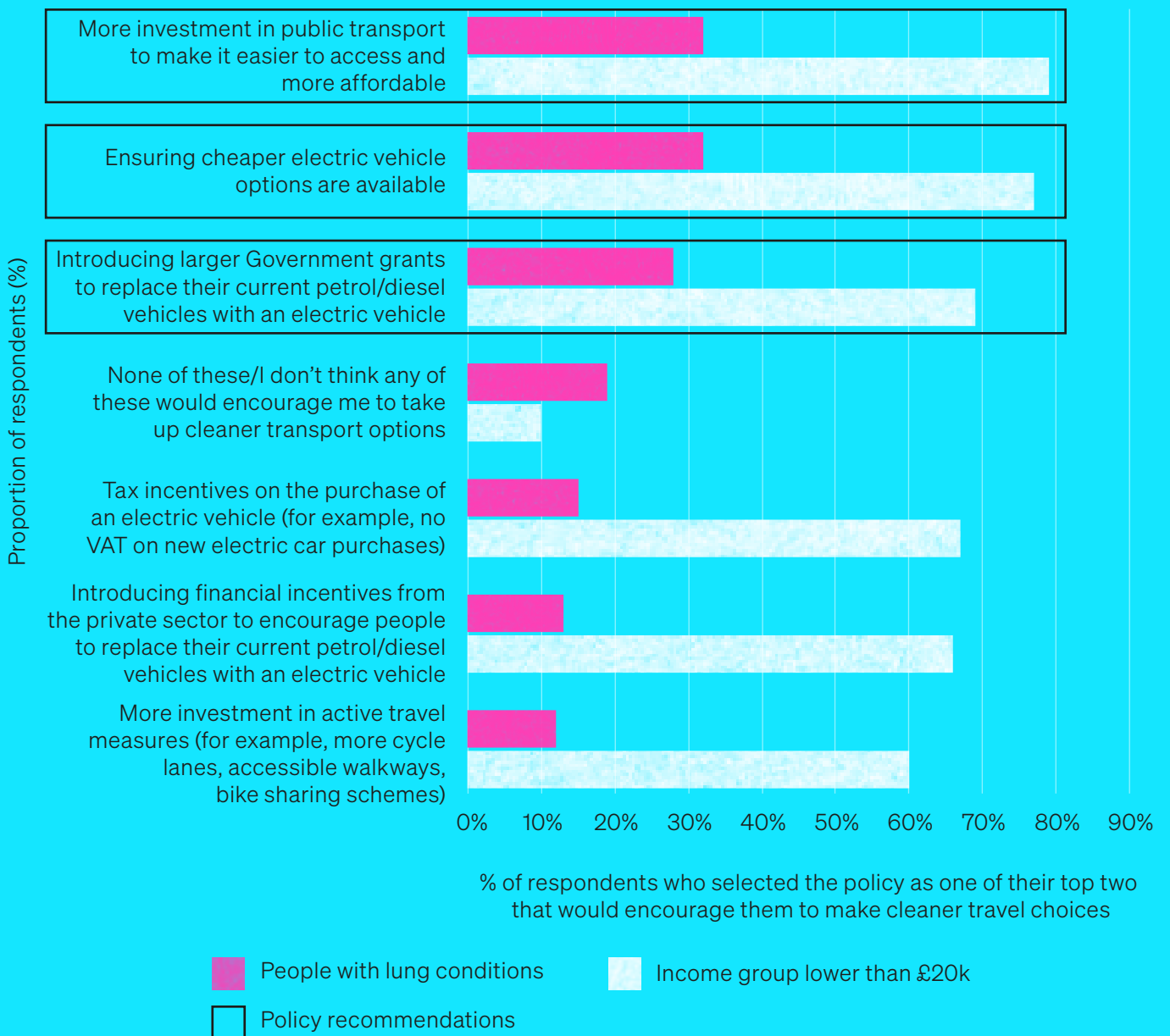
**2**

**Ensuring cheaper electric vehicle options are available.**

**3**

**Introducing larger government grants to replace current petrol/diesel vehicles.**

**Figure 3: Top two policies to encourage cleaner modes of transport for people on low incomes and people with lung disease (England, 2023)**



Source: Asthma + Lung UK, 2023

On making buying or leasing electric cars more one research participant said:

**“Educate people, give statistics and financial help towards. I know the [electric] car is a bigger pay-out out front, but they could help people understand that it’s cheaper in the long run.”**

Asthma + Lung UK focus group participation, 2023

On making active travel easier one research participant said:

**“Using a normal bike would be too much but I’ve never used an e-bike. It scares me a bit because I don’t know how to use an e-bike, so a way to introduce them to people would make it more accessible and easier for me.”**

Asthma + Lung UK focus group participant with a lung condition, 2023

On ensuring public transport options are available and affordable one research participant said:

**“Make them more reliable, cleaner, and more accessible. More reliable is the priority.”**

Asthma + Lung UK focus group participant, 2023

Support for these measures becomes all the more important in the context of air pollution. The public are concerned about the impact of air pollution, with participants (in particular those with lung conditions) reporting feeling the effects in more polluted areas. One research participant said:

**“I suffer COPD, I do take a lot of note around pollution rate, there’s so many companies pumping out pollution. In rush hours, I notice it, I walk along the road with cars, I notice it.”**

Asthma + Lung UK focus group participant with a lung condition, 2023

When made aware of high levels of pollution in their area, the public express concern towards their health and the environment. Some state this will prompt them to pay more attention to air pollution levels, while others are encouraged to increase the amount they use cleaner transport options.

However, there is doubt among the public as to what significant progress can be made to reduce levels of pollution without support from the government and investment in cleaner transport infrastructure.

**“I think we all want to see a better environment but the practicalities come from the infrastructure. The public transport up here is rubbish, the cycle lanes are not supported enough. We all want to see a cleaner Manchester.”**

Asthma + Lung UK focus group participant, 2023

## **A public health focused, holistic approach is most effective and must be prioritised**

In 2019, Public Health England reviewed interventions to improve outdoor air quality and public health. The review aimed to provide local policy makers with a range of available interventions to improve air quality, outlining strategies for design and an evaluation of how effective each measure was in reducing emissions.<sup>98</sup>

They found that combining a number of locally tailored transport related and non-transport related policies resulted in the greatest reduction in emissions from road transport. For example, a clean air zone can be co-implemented with a scrappage scheme to meet compliance, alongside actions to invest in public transport and promote active travel.

The review found that the evidence base for impact on health is strongest when it comes to the promotion of low emissions vehicles such as through scrappage schemes, and the promotion of low emissions zones.

Similarly, DEFRA's plan for tackling nitrogen dioxide identified eight policies aimed at targeting poor air quality in UK cities and reviewed the cost-benefit and health impact.\* They found that clean air zones are most effective in tackling the problem, but that they would also have the most financial impact on the public.<sup>99</sup> By implementing scrappage schemes, additional support to switch to cleaner modes of transport, and investment in cleaner travel infrastructure, alongside clean air zones, we can encourage a fair modal shift that has the best impact on public health.

## **Focussing on preventing air pollution rather than reducing exposure**





Public Health England also recommended that measures aimed at preventing or reducing pollution (emission reduction) be prioritised over those that reduce air pollution once it has occurred (concentration reduction) or rely on avoiding existing pollution (exposure reduction).<sup>100</sup>

## **A targeted scrappage scheme for a move to cleaner transport**

### **Step 1: Establish a Cleaner Travel Access Fund, a scrappage scheme**

for people on low incomes and people whose mobility is affected by lung conditions to switch their polluting vehicles in exchange for a financial grant, which can be used towards purchasing an electric vehicle; to fund public transport use; or to buy a bicycle.

#### **What this should look like**

-  **Targeted towards people on lower incomes and people with long term health conditions that impact their mobility**
-  **Funding from central government for communities that implement a class D clean air zone to help with the financial cost of strong clean air policies**
-  **The scheme should support people to use the cleanest modes of transport that they can access**
-  **Consumer choice should be a key principle, allowing those eligible to access a combination of grants for active travel, public transport, and electric vehicles**

\* See appendix 2 for DEFRA's review of policies targeting poor air quality.



The scheme should be targeted towards those on lower incomes, identified by proof of earnings through either pay slips, a P60 or a tax return if self-employed; and those whose long term health condition impacts their mobility – we have suggested that this group be identified based on blue-badge ownership. We have costed in this report for a grant of £3,000 per household eligible for scrappage – while we outline that our research suggests substantially more is needed for purchase of an electric vehicle, we believe this grant balances efficacy of the policy with a reasonable cost in the current national economic climate. We also believe that a holistic approach is needed, and the policy enablers in steps 2, 3 and 4 should come with the introduction of a scrappage scheme to ensure its success.

Charging clean air zones and low emission zones have a key role in getting the most polluted vehicles off the streets in our towns and cities. In our February 2023 report *Zoning in on clean air*, we showed that clean air zones, which reduce access to the most polluting vehicles through charging or other restrictions, are one of the most effective ways to tackle toxic air as quickly as possible. This is particularly true if they include charging for private vehicles, aka a class D zone.<sup>101</sup> For zones to have the maximum impact, they must be designed well – this means charging as many polluting vehicles as possible and covering a wide geographical area.

However, clean air zones and other charging measures should try not to penalise those most socioeconomically deprived, who may not be able to afford to upgrade their vehicles to achieve compliance or change their travel behaviour. So, local authorities that implement class D clean air zones should unlock funding from the name of policy to support a transition to cleaner modes of transport.

Several scrappage schemes have been established alongside charging measures (see appendix 1: scrappage schemes in England). But these schemes have been patchy in provision, with only 20% of funding going towards private consumers.\*

People should be supported towards the cleanest mode of transport they can access to reduce the overall number of cars on the road and additional investment should be directed towards improving active travel and public transport infrastructure. For those that need to use private vehicles, support should be in place to help people with the cost of running an electric vehicle.



## Case study: learnings from London's Ultra-Low Emission Zone scrappage scheme

The Mayor of London established a £61m scrappage scheme to support Londoners on lower incomes, disabled Londoners, small businesses and charities who would have found it more difficult to adapt to the ULEZ. In a November 2022 review of the scheme, it was found that many of those who used the scrappage scheme reduced their vehicle ownership and changed their travel habits to more sustainable forms of transport:

- A third of scheme participants did not purchase a replacement car or motorcycle
- 22% no longer have access to a vehicle in their household
- Net increases were seen in walking (22%), cycling (5%), bus use (16%), Underground travel (4%) and rail travel (1%)
- There was an overall decrease in recipients' car travel (1%).

Among the recommendations coming out of the review, to build on the successes of the scrappage scheme in future policies, it was noted that there should be increased alternatives to grant payments to maximise mode shift to sustainable forms of transport, including a wide range of third party offers.<sup>102</sup>

\* In total, we estimate funding for scrappage schemes across the six existing and planned clean air zones (Bath, Birmingham, Bradford, Bristol, London, Portsmouth and York) represents £178.3 million. Our estimation is that 80% (£144.3) of this funding is directed at businesses.

In the Environment Act 2021, parliament agreed five environmental principles to guide ministers in the formulation of environmental policies – one of these is the polluter pays principle. This principle requires polluters to bear the financial cost of their actions. This applies to individuals through the introduction of clean air zones, but unethical decisions from private companies with regards to emissions must also be considered. In May 2022, Volkswagen agreed to pay £193m to settle 91,000 individual consumer claims for compensation in England and Wales linked to the dieselpgate emissions scandal – where the company had been found to have installed illegal defeat devices that meant that diesel cars were polluting more on the road than otherwise allowed in laboratory emissions testing. Despite this, many highly polluting vehicles are still on our roads, damaging people’s health. **More action is needed to hold these companies to account, and there should be a role for private companies in providing financial support to access the solutions to the problems they have caused.**

## A whole systems approach to active travel

### Step 2: Ramp up investment in cycling and walking

to make active travel safer and easier for people with mobility issues, and more inclusive for people who would like to use active travel.

#### What this should look like

- ➔ **Inclusive cycling and walking policies to make active travel safer and more accessible to support people with lung conditions to use travel modes that can help their condition improve**
- ➔ **Policies that improve accessibility include: wider pavements, crackdowns on pavement parking, more spaces to stop and rest, dropped kerbs, more frequent road crossings, better connected cycle routes and pathways, more consistent cycle lanes, and affordable access to cycle hire outside of city centres**
- ➔ **Prioritising the overall reduction of cars on the road to maximise public health gain**

Walking, wheeling and cycling have proven benefits for mental and physical wellbeing, decarbonising the transport sector, and helping to reduce social and economic inequity. In a 2019 evidence review of active travel interventions, Sport England found that building and/or improving local routes and networks increased active travel in most cases. When investing in active travel, priority should be given to ‘whole-system’ approaches.<sup>103</sup> This means identifying combinations of interventions that fit locally based on evidence of need and likelihood of impact.

It’s important to consider inclusive approaches to active travel. The Committee on Climate Change noted in their Pathways to Net Zero report that approximately 9% of car miles can be reduced/shifted to active travel by 2035, but decision makers must implement inclusive active travel policies so more people can access these solutions.<sup>104</sup> Research from Sustrans, Arup and Living Streets tested support for several measures to encourage people towards the switch to walking and wheeling and found that:

**80%**

of people favoured better access to places on the street to stop and rest (e.g. benches, trees and shelters)

**72%**

of people wanted more accessibility (e.g. dropped kerbs at crossing points)

**73%**

of people wanted more frequent road crossings

Sustrans identified that in the UK you are less likely to see a woman, disabled person, person over the age of 65, a person from a minority ethnic group, or a person at risk of deprivation, cycling. Safety is a significant barrier, and Sustrans found that the cost of a suitable bike is a barrier for 20% of people from ethnic minority groups (in comparison with 15% from ethnic majorities), and 32% of people from Arabic ethnic groups stated 'cycling is not for people like me'.<sup>105</sup>

Sustrans also found that 55% of people from ethnic minority groups, 38% of people at risk of deprivation, 36% of women, and 31% of disabled people who do not cycle would like to start.<sup>106</sup> Therefore when designing interventions for active travel it's important to consider how to overcome these barriers to create better places to welcome and support everyone to cycle in.

There are other significant co-benefits of an increase in active travel to public health alongside improvements in air quality. Especially in an ageing population where by 2050 one in four people will be over the age of 65, it's important to implement policies now that prevent chronic illness and its impact on the health service.<sup>107</sup> For the one in five people who will have a lung condition in their lifetime, being active has lots of physical benefits, including improving the strength of breathing muscles, heart and circulation. This can help people use oxygen more efficiently, and not get as breathless.

A lot of benefits stand to be derived from active travel, which is why GPs have started to prescribe it in a nationwide trial – working across transport, environment and health co-benefits is a whole systems approach to health improvement.<sup>108</sup> There is also a lot of evidence of the mental health benefits of exercise for people with lung conditions – those who participate in pulmonary rehabilitation, an effective treatment programme involving exercise for people with lung conditions, speak of the independence and happiness that comes with the ability to exercise.<sup>109,\*</sup>

Again, part of the principle of the Cleaner Travel Access Fund should be choice. We know from our insights that active travel cannot fully replace other forms of travel. For those who want to take up more active travel, it is likely they will also need part of the grant to be spent on public transport credits. We suggest that this option is given to people when they decide how they want to spend their grant.

## Mobility credits and improving public transport offering to support those without cars

### Step 3: Ensure local authorities have sufficient funds to improve their public transport offering

and make it more affordable, making the scrappage scheme more attractive to those eligible for the Cleaner Travel Access Fund and increasing use in wider society.

#### What this should look like


**Ensure co-production of plans to improve public transport between national government, local government, and residents, so that:**

- ➔ **Adequate funds are provided to communities to meaningfully improve transport provision, and**
- ➔ **Funding is directed towards the connectivity that people want to use, to make sure action will actually increase use**

\* Taskforce for Lung Health storyteller Ron Flewett said of the ability to exercise with a lung condition: "Before my diagnosis, I enjoyed exercise a lot...I used to train for triathlons; in one session I would do a 25-mile cycle ride, or a two kilometre swim, and/or a run. To suddenly not be able to walk up a flight of stairs is very demoralising. I did stop exercising about 3 years ago mainly due to depression and feeling too fatigued. But I knew I had to start again and that's about the time I started Pulmonary Rehabilitation, which I suppose re-ignited my desire to exercise... It's so important to keep your muscles and your mindset active. When I exercise, I'm happy."

We propose that an element of the Cleaner Travel Access Fund should be a choice to scrap cars in favour of mobility credits. These are 'credits' to use over a set period to spend on public transport options. Not only would consumers be moved away from the most polluting vehicles, but their behaviour would be changed towards shared transport.

In 2017, the British Vehicle Rental and Leasing Association (BVRLA) and Ecuity modelled the impact of a two year scrappage scheme providing mobility credits for 40,000 euro 1-5 diesel cars. Their policy modelled a reduction in NO<sub>x</sub> emissions by 67 tonnes in the first year and 1,272 tonnes over the ten year policy appraisal period. Monetising the NO<sub>x</sub> emission reduction based on the government's damage cost methodology, they modelled health benefits worth £73.5 million (2017 prices). When considering social welfare benefits, the greenhouse gas impact, and the cost of the policy itself, the net present value of the policy was over £170 million.

A woman with glasses and a striped shirt is riding a bicycle. She has a messenger bag on her back and is smiling. The background is a blurred outdoor setting.

**There is also a lot of evidence of the mental health benefits of exercise for people with lung conditions.**



## Case study: Birmingham City Council's scrappage scheme

To support the launch of their clean air zone, Birmingham City Council set up a scheme whereby owners of a non-compliant vehicle that met certain criteria could apply for their vehicle scrappage and travel fund. The total cost of the scheme was £10m, and car owners who earn less than £30k per year and live outside the clean air zone but work at least 18 hours a week inside it are eligible. The scheme allows for a £2,000 grant for the purchase of a new vehicle, or a 'swift' travel card, which has the equivalent of three years free public transport within the West Midlands. The travel card can be shared among family and friends if required, extending the benefits of the scrappage scheme beyond the car owner (which is important to consider given high car passenger travel statistics reported by the Department for Transport).

Birmingham City Councillor Ian Ward said of the travel card: "The swift card represents a golden opportunity for people to make that shift from car to public transport which will help improve our air quality, reduce congestion on our roads and help us to achieve our 2041 target for a net-zero carbon region". Alongside the swift card, Birmingham City Council recognised the need for improvements to public transport to make the policy successful, and so Transport for West Midlands and other transport operators invested in transport throughout the region, with current plans to extend tram services and opening up a rapid bus corridor on the A34 and A45.<sup>112</sup>

Cllr Waseem Zaffar from Birmingham City Council told us: "Introducing the clean air zone was an important legal and moral step for Birmingham but it was absolutely vital that we supported our communities in making the behavioural change required and maintaining their essential day to day activities. The scrappage scheme was an integral element that enabled many to transition onto public transport."

As our February 2023 report *Zoning in on clean air* found, the example of Birmingham shows that with the right design, clean air zones can have an immediate and durable impact on air pollution without penalising local populations:<sup>113</sup>

- In 2022, an interim report from the council found that there was on average a 13% reduction in levels of NO<sub>2</sub> comparing 2019 (pre-covid) to 2021.
- An evaluation by the Joint Air Quality Unit (JAQU) showed that 13% of residents changed their mode of travel.<sup>114</sup>
- Surveys show that a council-initiated communications campaign to explain the aims of the clean air zone successfully shifted public support for the policy from 37% to 45%.<sup>115</sup>

Using concessionary travel data, we can deduce on a wider scale that if people have access to mobility credits/concessions, they will use public transport more. Annual bus statistics from 2022 show that concessionary journeys (elderly, disabled or youth concessions) made up 32.7% of all local bus passenger journeys in England.<sup>116</sup>

In England outside London, total concessionary journeys made up 30.5% of all passenger journeys, while in London this figure rose to 34.7%.<sup>117</sup> As we've outlined in the previous section of this report, the public transport network outside of London is often unreliable and inadequate. A key enabler therefore for incentives to scrap cars in favour of mobility credits for public transport to be attractive to consumers is investment in infrastructure.

Aside from encouraging those eligible for the scrappage scheme to use it, investment in overall public transport infrastructure will have knock on effects outside of those eligible for the Cleaner Travel Access Fund. As many people on lower incomes do not drive, this will ensure that those without cars can enjoy more affordable, convenient public transport. In addition, 62% of those earning above £50k a year said they would like to use cleaner transport options more than they do currently, but 54% said that there were no cleaner transport options for the journeys they make the most, i.e. to work or school.\*

\* Q7. The term 'cleaner transport' refers to transport options that are lower in carbon emissions and therefore better for the environment. Some examples include driving electric vehicles, engaging in active travel like walking or cycling, using an e-bike and taking public transport. How far do you agree or disagree with each of the following statements about cleaner transport? See appendix 5 for data tables.

### People's views on cleaner transport choices (England, 2023)



Source: Asthma + Lung UK, 2023

The government’s recent measure to cap bus fares at £2 in England outside of London has already generated encouraging data – surveys from Transport Focus in January 2023 showed that 73% of bus passengers were satisfied with the value of fares, and 88% of passengers satisfied with their overall journey. Out of the 1,000 people surveyed, 53% said they were aware of the measure, with two thirds of regular bus users aware of it. Seven percent of respondents said they were using the bus more often due to cheaper fares, while 32% said they might use buses more but haven’t yet.<sup>118</sup>

## Scrapping polluting vehicles for electric vehicles, and additional incentives to encourage purchase

### Step 4: Review the use of additional incentives to purchase electric vehicles

such as direct measures like tax benefits and help with utilities, and indirect measures like improving the electric vehicle charging network.

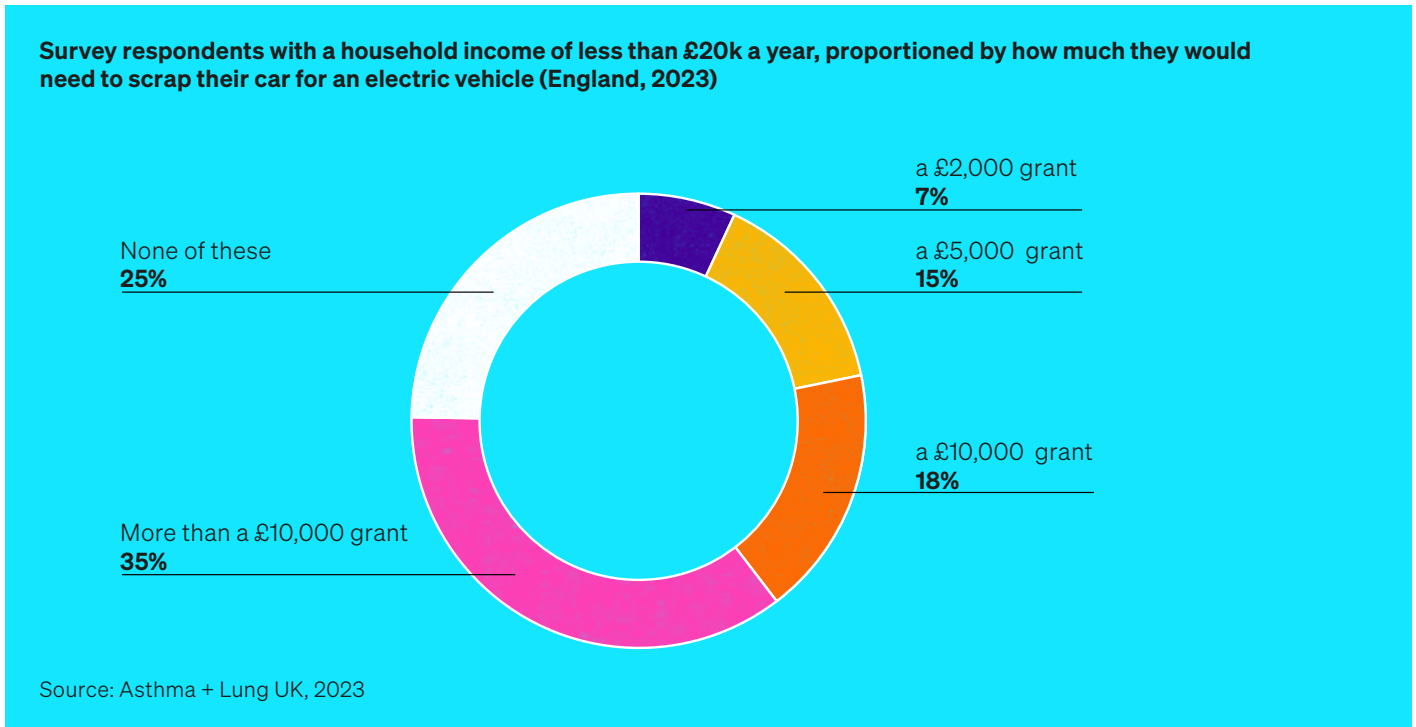
#### What this should look like

- ➔ Continue to invest in electric vehicle charging infrastructure, taking into consideration current regional inequalities per head in charging provision
- ➔ Uphold the polluter pays principle of the Environment Act 2021, encouraging partnership with industry in the scrappage scheme to help people buy electric vehicles and cover the running costs

Public Health England’s evidence review found that scrappage schemes, which are incentive programmes to promote the replacement of old cars with more modern vehicles work well in collaboration with stronger measures like clean air zones.<sup>119</sup>

In order to reach people who need support, scrappage schemes should be targeted. In 2009, the government trialled a £392m non-targeted scheme, providing £2,000 incentives (with £1,000 matched by manufacturers) for people to purchase new vehicles in exchange for cars over ten years old. 392,227 vehicles were scrapped, and the scheme generated an estimated 45% of new car sales in 2009 and a 5.4% reduction in CO<sub>2</sub> emissions.<sup>120,121</sup>

In terms of incentive amounts, for those we surveyed, the majority of low earners stated they would need an incentive of £10k or more in order to consider scrapping their vehicle in order to switch to an electric vehicle.




There are different methods of providing a financial incentive to scrap a car in favour of an electric vehicle. In Norway, the government offers exemption from VAT and road tax for the purchase of an electric vehicle, and they avoid CO<sub>2</sub> and NO<sub>x</sub> charges that are enforced on non-electric cars. Between rebates and tax incentives, electric vehicles can be made cheaper (see figure 4 below. €33k, while cheaper than its internal combustion engine equivalent, is still out of reach for a lot of people, especially those on lower incomes. Similar measures should be carried out by the UK government but on a more accessible starting price).<sup>122</sup>

**Figure 5: Price of VW Golf vs E-Golf in Norway. Source: Norwegian EV Association**

	Volkswagen Golf €	Volkswagen e-golf €
Import price	22,046	33,037
CO <sub>2</sub> tax (113 g/km)	4,348	–
NO <sub>x</sub> tax	206	–
Weight tax	1,715	–
Scrapping fee	249	249
25% VAT	5,512	–
Retail price	34,076 €	33,286 €

**Given the limitations of electric vehicles, both in their emissions and current market cost, we believe the principle of Cleaner Travel Access Fund should be to encourage people to use the cleanest mode of transport they can access.**



**Now more than ever,  
it's critical for the UK  
government to set out  
a national programme  
to switch to cleaner  
travel**



# Conclusion

Air pollution is the biggest environmental threat to human health. Improving air quality fairly, sustainably and quickly requires political courage.

The Cleaner Travel Access Fund will support those who need it most to move to more sustainable travel and support wider policies that are vitally needed to protect public health.

But there's no silver bullet to tackle air pollution, which is why we need to see policies that promote the overall reduction of cars on the road. This means investment for a modal shift to active and shared travel.

**The government must think and act boldly to protect the nation's lungs, reduce dire economic, social and health inequalities, and safeguard our planet.**



# About this report

The research this report is based on was commissioned by Asthma + Lung UK and conducted by Britain Thinks in January 2023. The research consisted of an omnibus survey of 11 questions with a nationally representative weighted sample of 2,000 respondents in England, and three 90 minute online focus groups, with five participants per group. The survey respondents were nationally representative with a boost for respondents with lung related health conditions, so they accounted for 20% of the sample. The focus group participants were drawn from local authorities with illegal levels of air pollution and participants with lung related health conditions self-described as at least moderately impacting their day to day life. All participants were from a lower socio-economic grade (C2DE) and none owned or leased an e-bike or electric vehicle. The survey questions are available in appendix 3, the data tables are available in appendix 4, and the focus group discussion guide is available in appendix 5.

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## The research and this report were funded by Impact on Urban Health:

Impact on Urban Health works to make urban areas healthier places for everyone to live by removing obstacles to good health. Their 'Health effects of air pollution' programme explores how people's health is affected by poor air quality and tests solutions to reduce this harmful impact.

**April 2023**

# Appendix 1 – UK scrappage schemes

City	Overall funding	Eligibility	Offer content
London	£61 million	Low income, disabled Londoners, small businesses and charities	Vans and minibuses: £7,000–£9,500 Heavy vehicles: £15,000 Cars: £2,000 Motorcycles: £1,000
Bath	£9.4 million CAZ funding	Charities, sole traders and small businesses	Taxis and PHVs: up to £4,500 Vans: up to £4,500 HGVs: up to £20,000 Buses and coaches: up to £35,000
Birmingham	£38 million CAZ funding	Earn less than £30k and work 18 hours minimum within the CAZ SMEs for heavy vehicles Taxis and PHVs	Cars: £2,000 mobility credit or towards a replacement vehicle Heavy vehicles: £15,000 Taxis: £5,000 PHVs: £1,000–£2,500
Bradford	£30 million CAZ funding	Licensed taxis, SMEs, charities	Taxis: £3,200–£10,000 Vans and minibuses: £4,500 HGVs: Up to £16,000
Bristol	£42 million CAZ funding	Earn less than £27k and work within the CAZ SMEs operating within the CAZ	Cars: £1,500 grant + £500 interest-free loan Light Goods Vehicles: £4,500 grant + £1,500 interest free loan HGVs and coaches: up to £16,000
Coventry	£1 million from Future Mobility Zone grant	Applicants must live within a select list of Coventry wards (areas of air quality concern)	£3,000 of mobility credits
Portsmouth	£6.6 million CAZ funding	Wheelchair-accessible vehicles Taxis/PHVs Evidence of regular entry into the CAZ for HGVs and buses/coaches	Wheelchair-accessible vehicles: £5,000 Taxis and PHVs: £1,500 HGVs: £16,000 Buses/coaches: £15,000

Source: ULEZ scrappage schemes evaluation report (2022)

# Appendix 2 – 2017 summary of policy options to reduce nitrogen dioxide<sup>123</sup>

Option	NO <sub>2</sub> concentration impact*	Time to impact	Cost (£m)	Health impact (£m)	Public impact (£m)
<b>Clean Air Zones</b>	8.6µg/m <sup>3</sup> in 2020	1–3 yrs	-£600m	£3,600m	-£1,900m
<b>Retrofit</b> Retrofitting of buses, HGVs and black taxis between now and 2020	0.09µg/m <sup>3</sup> in 2019	1–3 yrs	-£170m	£440m	Negligible
<b>Scrappage</b> National scheme promoting a transfer from older conventional cars and vans to electric	0.008µg/m <sup>3</sup> in 2020	1–3 yrs	-£110m	£10m	£70m
<b>Ultra Low Emission support</b> Providing additional support to purchasers of electric vehicles	0.008µg/m <sup>3</sup> in 2017	<1yr	-£290m	£50m	£170m
<b>Speed limits</b> Reduce motorway speed limits to 60mph where there is poor air quality	Up to 2.5µg/m <sup>3</sup> in 2021	>3yrs	-£25m	Up to £1m	Up to -£8m
<b>Government vehicles</b> 30% of all new central government diesel cars are petrol from 2018	0.0005µg/m <sup>3</sup> in 2018	<1yr	-£1.7m	£2m	Negligible
<b>Vehicle labelling</b> AQ emissions information on new car labels	0.004µg/m <sup>3</sup> in 2018	<1yr	Negligible	£18m	Not quantified
<b>Influencing driving style</b> Training and telematics for 100,000 car and van drivers by 2020	0.012µg/m <sup>3</sup> in 2019	1–3 yrs	-£14m	£8.8m	Not quantified

# Appendix 3 – Policy costing methodology

There are an estimated 24 million people across England who live in areas with dangerous levels of pollution, whose local authorities were mandated in 2017 by the government to clean up their air. As of June 2022, only 20% of these local authorities had implemented all the measures that were expected by the government to bring levels of pollution under legal limits.

Number of English Local Authorities exceeding average annual NO <sub>2</sub> limits (>40 µg/m <sup>3</sup> ):	17
Number of English Local Authorities exceeding average annual PM <sub>2.5</sub> limits (>10 µg/m <sup>3</sup> ):	72

We have costed eligibility on income grounds for those with household incomes of less than £20k per year as most in need of financial assistance to make cleaner transport decisions.\* The initial number of people eligible based on income status (<£20,000) and living in areas with high levels of air pollution was 1,885,900. However, as data shows that 50% of those in that income bracket in 2021 owned a car, the remaining eligible population was 942,950.

We also know that people with lung conditions and other health problems are some of those worst impacted by air pollution exposure, and for those with mobility problems caused by their condition, they may still need to use a car. These people need to be supported to access cleaner transport and should be eligible for the Cleaner Travel Access Fund. For people with lung conditions that impact their mobility, reasons for reliance on private vehicles can be due to breathlessness, and other flare ups in their symptoms caused by active travel, or the risk of respiratory infection on public transport.

We propose that eligibility on health grounds therefore be based on receipt of ownership of a blue badge (so that those with mobility issues but are typically passengers in private vehicles are not excluded).\*\*

We estimate that the total number of those eligible on the location, income and health grounds we have outlined is around 1.12 million.

There is no available data on the number of non-compliant cars nationally. Applicants would need to provide their vehicle registration information to determine if they are eligible. We can make an estimation based on data from the National Atmospheric Emissions Inventory for emission standards for diesel and petrol cars that 23% of cars that meet the initial criteria would be eligible.

\* This corresponds to the 30% poorest households as defined by Office for National Statistics income deciles.

\*\* As of March 2021, there were 2.35 million blue badge holders across England. As of January 2023, more than 3.2 million people were claiming Personal Independence Payment. In 2021, 43% of households owned one car, and 97% of cars owned overall were petrol or diesel. Based on this, we can estimate that XXX. However, more robust data collection is needed from the government.

The sums are as follows:

Eligible Groups	Number of people eligible	Cost (£) at £3,000PP without accounting for national average proportion of polluting vehicles	Cost (£) at £3,000PP after applying 23% non-compliance proportion of vehicles
Number people eligible based on income and AP (£20,000 figure)	942,950 (Blue badge holders removed)	£2,828,850,000	£650,635,500
Number people eligible based on Disability and AP	184,258	£552,774,000	£127,138,020
<b>Total cost:</b>	<b>£777,773,520</b>		

Limitations:

- Air pollution data: this is an average across the local authority, so not everyone in these areas will be exposed to high levels of NO<sub>2</sub> or PM<sub>2.5</sub>.
- Blue Badge holder data: data provided by Department for Transport was partial, only providing data on about 50% of local authorities.
- A national average proportion for non-compliant vehicles was applied, so there may be variations in proportions of compliant cars across England. Ultra-Low Emission Vehicle standards were applied in this forecast for diesel and petrol vehicles.

Data sources:

- Local Authority Population sizes: Census 2021
- Air Pollution Data: DEFRA Compliance data 2021
- Gross Disposable Income: ONS
- Car Ownership by Income Quintile: ONS
- National average for emission standards for petrol and diesel cars: National Atmospheric Emissions Inventory.

# Appendix 4 – Survey questions

## Q1. What is your total annual household income from all sources (including benefits) before tax and other deductions?

1. Under £20,000
2. £20,00–£29,999
3. £30,000–£49,999
4. Over £50,000
5. Don't know/prefer not to say

## Q2. Do you have any of the following respiratory conditions?

- Yes – Asthma
- Yes – Chronic Obstructive Pulmonary Disease (COPD)
- Yes – Pulmonary fibrosis
- Yes – Bronchiectasis
- Yes – other lung or breathing condition
- None of the above

## Q3. How frequently do you use the following forms of travel

- 3 or more times a week
- Once or twice a week
- Less than once a week, but more than once or twice a month
- Once or twice a month
- Less than once a month, but more than once or twice a year
- Once or twice a year
- Less than once a year or **never**

Options:

1. Petrol or diesel car
2. Taxi or car share
3. Hybrid car
4. Electric car
5. Motorbike or moped
6. Train
7. Tram, metro or underground
8. Bus
9. Bicycle, e-bicycle or e-scooter
10. Walking

## Q4. Do you or someone in your household own or lease any of the following vehicles (e.g., a van or car)?

- Yes, we own at least one
- Yes, we lease at least one
- No, we do not own or lease this kind of vehicle

Options:

- A petrol/diesel vehicle
- A non-plug-in hybrid vehicle
- A plug-in hybrid vehicle
- A battery electric vehicle

## Q5. Thinking about your next car or van purchase or lease, how, if at all, might the government's proposal to end sales of new petrol, diesel and hybrid vehicles by 2035 or earlier influence your decision?

1. Much more likely
2. More likely
3. No more or less likely
4. Less likely
5. Much less likely
6. Don't know
7. Not applicable

Options:

- Buy/lease petrol or diesel vehicle
- Buy/lease non-plug-in hybrid vehicle
- Buy/lease plug-in hybrid vehicle
- Buy/lease battery electric vehicle

## Q6. You said you or someone in your household owns a petrol/diesel vehicle. There is a suggestion that people could be given an incentive to scrap their current petrol/diesel car and switch to an electric vehicle. Which of the below incentive is the lowest amount that would encourage you to scrap your current car and switch to an electric vehicle.

- A £2,000 incentive
- A £5,000 incentive
- A £10,000 incentive
- An incentive over £10,000
- None of the above

**Q7. The term 'cleaner transport' refers to transport options that are lower in carbon emissions and therefore better for the environment. Some examples include driving electric vehicles, engaging in active travel like walking or cycling, using an e-bike and taking public transport. How far do you agree or disagree with each of the following statements about cleaner transport?**

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Options:

1. I would like to use cleaner transport options more often than I do currently
2. I try to use cleaner transport options where possible
3. There are not cleaner transport options available for the journeys I make the most (e.g. to work or school)
4. I find it physically difficult to use active travel (e.g., walking or cycling)
5. I rely on my vehicle to carry out my daily life, making using cleaner transport options difficult

**Q8. There are lots of different ideas for changes that could be made to encourage people to use cleaner transport options in the UK. How far do you support or oppose each of the following?**

- Strongly support
- Somewhat support
- Neither support nor oppose
- Somewhat oppose
- Strongly oppose

Options:

1. Ensuring cheaper electric vehicle options
2. Introducing larger Government grants to replace their current vehicles
3. Introducing financial incentives from the private sector to encourage people to replace their current vehicle with an electric vehicle
4. More investment in public transport to make it easier to access and more affordable
5. More investment in active travel measures (for example, more cycle lanes, accessible walkways, bike sharing schemes)
6. Tax incentives on the purchase of an electric vehicle (for example, no VAT on new electric car purchases)

**Q9. And which of these changes, if any, do you think would be the most helpful in encouraging you to use cleaner transport options? Please select up to two from the below.**

- Ensuring cheaper electric vehicle options
- Introducing larger Government grants to replace their current vehicles
- Introducing financial incentives from the private sector to encourage people to replace their current vehicle with an electric vehicle
- More investment in public transport to make it easier to access and more affordable
- More investment in active travel measures (for example, more cycle lanes, accessible walkways, bike sharing schemes)
- Tax incentives on the purchase of an electric vehicle (for example, no VAT on new electric car purchases)
- I don't think any of the above changes would encourage me to take up cleaner transport options

**Q10. How far do you agree or disagree with the following statements?**

1. Strongly agree
2. Somewhat agree
3. Neither agree nor disagree
4. Somewhat disagree
5. Strongly disagree

Options:

- The government should be doing more to make buying or leasing electric cars affordable
- The government should be doing more to make active travel (like walking and cycling) easier
- The government should be doing more to ensure public transport options are available and affordable

**Q11. To what extent, if at all, are you concerned about the level of air pollution in...?**

Options:

1. Your local area
2. The UK as a whole

Scale:

- Very concerning
- Fairly concerning
- Not very concerning
- Not at all concerning
- Don't know



# Appendix 5 – Data tables

**Table 1: Respondents by frequency of travel mode**

	Petrol/ diesel car	Taxi or car share	Public transport	Walking/ cycling	Electric/ Hybrid car
At least once a week	72%	7%	40%	95%	11%
At least once a month	9%	14%	48%	20%	6%
At least once a year	5%	41%	100%	16%	12%

**Table 2: Respondents by vehicle ownership**

Type of vehicle	Number of respondents	Percentage
Petrol/diesel	1716	72%
Hybrid/electric	214	9%
None of the above	572	24%
All respondents	2384	

**Table 3: Respondents by likelihood of purchasing different vehicles given the government's proposal to end the sale of new internal combustion engines by 2035**

Type of vehicle	More likely	Less Likely
To buy/lease a petrol or diesel vehicle	19%	22%
To buy/lease a non-plug-in hybrid vehicle	22%	16%
To buy/lease a plug-in hybrid vehicle	23%	15%
To buy/lease a battery electric vehicle	28%	14%

**Table 4: Respondents by levels of financial incentives needed to switch to an electric vehicle**

Financial incentive needed	Percentage of respondents
£2,000	4%
£5,000	25%
£10,000	24%
Over £10,000	31%

**Table 5: Respondents by will to transition to a cleaner form of transport**

Statement about cleaner transport options	Agree	Disagree
I would like to use cleaner transport options more often than I do currently	53%	12%
I try to use cleaner transport options where possible	49%	16%
There are no cleaner transport options available for the journeys I make the most (e.g. to work or school)	48%	24%

**Table 6: Respondents by policy options needed to encourage people to transition to a cleaner form of transport**

Policy options	Support	Oppose
Ensuring cheaper electric vehicle options are available	77%	4%
Introducing larger Government grants to replace their current petrol/diesel vehicles with an electric vehicle	69%	8%
Introducing financial incentives from the private sector to encourage people to replace their current petrol/diesel vehicles with an electric vehicle	66%	7%
More investment in public transport to make it easier to access and more affordable	79%	3%
More investment in active travel measures (for example, more cycle lanes, accessible walkways, bike sharing schemes)	60%	11%
Tax incentives on the purchase of an electric vehicle (for example, no VAT on new electric car purchases)	67%	8%

**Table 7: Respondents by which of the policy solutions above would be the most helpful to encourage people to transition to a cleaner form of transport**

Policy options	Percentage
Ensuring cheaper electric vehicle options are available	32%
Introducing larger Government grants to replace their current petrol/diesel vehicles with an electric vehicle	28%
Introducing financial incentives from the private sector to encourage people to replace their current petrol/diesel vehicles with an electric vehicle	13%
More investment in public transport to make it easier to access and more affordable	32%
More investment in active travel measures (for example, more cycle lanes, accessible walkways, bike sharing schemes)	12%
Tax incentives on the purchase of an electric vehicle (for example, no VAT on new electric car purchases)	15%
I don't think any of the above changes would encourage me to take up cleaner transport options	9%

**Table 8: Respondents by level of agreement with the government's role in transition to cleaner forms of transport**

Level of agreement	Agree	Disagree
The government should be doing more to make buying or leasing electric cars affordable	71%	7%
The government should be doing more to make active travel (like walking and cycling) easier	67%	7%
The government should be doing more to ensure public transport options are available and affordable	85%	2%

**Table 9: Respondents by level of concern for air pollution in their local area and in the UK as a whole**

Level of concern	In local area	In UK as a whole
Very/fairly concerned	1,644	69%
Not at all/Not very concerning	620	26%
Don't know	119	5%
All respondents	2,384	

**Table 10: Concern for air pollution by household income**

Household income band	Very/fairly concerned	Not at all/Not very concerned
Below £20,000	49%	46%
£20,000–£29,999	44%	51%
£30,000–£49,999	47%	48%
£50,000+	48%	49%
All respondents	48%	48%

**Table 11: Concern for air pollution in peoples' local area by lung condition prevalence**

Level of concern	Lung condition	No lung condition
Very/fairly concerned	53%	47%
Not at all/Not very concerned	44%	49%
Don't know	3%	5%

**Table 12: Respondents by household income**

Household income band	Number of respondents	Percentage
Below £20,000	578	24%
£20,000–£29,999	334	14%
£30,000–£49,999	534	22%
£50,000+	778	33%
Prefer not say	160	7%
All respondents	2,384	

**Table 13: Respondents by health condition**

Household income band	Number of respondents	Percentage
Asthma	334	14%
COPD	72	3%
Bronchiectasis	24	1%
Other lung condition	48	2%
No lung condition	1,955	82%
All respondents	2,384	

**Table 14: Respondents by gender**

Sex	Number of respondents	Percentage
Male	1,161	49%
Female	1,216	51%
All respondents	2,384	

**Table 15: Respondents by age**

Age band	Number of respondents	Percentage
18–29	447	19%
30–49	806	34%
50+	1,140	48%
All respondents	2,384	

**Table 16: Respondents by rurality**

Type of rurality	Number of respondents	Percentage
Urban	1,063	45%
Town and Fringe	851	36%
Rural	470	20%
All respondents	2,384	

**Table 17: Respondents by nation**

Nation	Number of respondents	Percentage
England	2,003	84%
Scotland	191	8%
Wales	119	5%
Northern Ireland	72	3%
All respondents	2,384	

# Appendix 6 – Focus group discussion guide

Section and aim	Key questions and probes
<ul style="list-style-type: none"><li>• <b>Introduction</b> (to explain terms of participation and build rapport)</li></ul>	<p data-bbox="450 851 1353 887"><i>Participants to fill in virtual consent forms prior to the group commencing.</i></p> <ul style="list-style-type: none"><li>• My name is [XXX] and I'm a researcher from an independent research agency called Britain Thinks. We conduct research on anything and everything, from what you think about your toothpaste to what you think about the services in your local area. We speak to lots of different of people from across the UK both in person and online.</li></ul> <p data-bbox="450 1111 1485 1173"><b><i>Moderator to introduce any observers as 'colleagues and people I am working with on this project', and the terms of the session:</i></b></p> <ul style="list-style-type: none"><li>• Today we will be exploring people's views on cleaner modes of transport, including what might stop people from using cleaner travel methods.</li><li>• Everything that you say today will remain strictly anonymous in accordance with the Market Research Society code of conduct. This means that everything you say today will be completely confidential and you won't be personally identifiable in our report. The only exception is if you say something that gives me reason to think you or someone else is at risk of harm, in which case we may be legally obliged to pass this information to the relevant authorities.</li><li>• BritainThinks will hold your name and contact information for up to 12 months for quality monitoring purposes only and will not pass on any personal data to any third party.</li><li>• We'll be talking for 90 minutes, finishing up at [TIME]. I have a lot of questions to get through so, in order to finish on time, I may need to interrupt you or move the conversation on. This isn't because I'm not interested in what you have to say but because I want to make sure the session does not over run.</li><li>• Finally, I would like to record the discussion, so we have a note of tonight's session. You have agreed to be video and audio recorded in the consent form you signed before the group, and as a reminder, your participation will be strictly anonymised. With this in mind, if you could make sure you do not have your full name showing on Zoom before I start the recording that would be much appreciated <b><i>[Moderator can change the names of participants if easier]</i></b>. If you have any questions or concerns about this, then please do let me know. <b><i>Moderator to start recording.</i></b></li></ul>

**To start off, I'm going to go round and ask you to introduce yourselves, telling me:**

- Your first name
- Where you live
- Who you live with
- How you spend your time. For example, what you do for work if you are in work at the moment.

*[In the general public group]* We'll be spending time today talking about transport and in particular cleaner transport options. As you would probably expect, A+LUK are particularly concerned with the impact of transport choices on people with lung conditions, so we have asked a couple of people to attend today who have a lung condition. If you do have a lung condition and are happy to talk about how it affects your transport choices during the group, we would encourage you to do so!

*[In the lung conditions group]* We'll be spending time today talking about transport and in particular cleaner transport options. As you would probably expect, A+LUK are particularly concerned with the impact of transport choices on people with lung conditions, so everyone here today has a lung condition. If you are happy to talk about you condition and how it affects your transport choices during the group, we would encourage you to do so!

• **Current transport options and introduction of cleaner transport**

To explore current transport usage among groups and begin to understand opportunities and barriers for different types of transport.

I'd like to spend a little time thinking about how you typically travel day-to-day. We'll be focusing our conversation today on day to day journeys rather than more unusual travel like holidays.

- **In general, what modes of transport do you use?**
  - What, if anything, do you enjoy about travelling with this mode of transport?
  - What, if any, are the downsides to using this mode of transport?
- **What are the biggest challenges you face while travelling?**
- **[FOR THOSE WITH LUNG CONDITIONS]** To what extent is your health/lung condition a challenge when travelling? How does this impact you?
- **Are there any modes of transport you would like to use more often but are not able to?** *Moderator to probe on active travel like walking and using a bike, public transport, car etc.*
  - What is stopping you from using this mode of transport more frequently?

I'd like to now spend a little time discussing something called 'cleaner transport'.

• **To start, when I use the term 'cleaner transport', what does that mean to you?**

For the rest of the discussion, I'd like us to think about cleaner transport as transport options that reduce levels of pollution and will therefore improve air quality levels within the UK. This includes electric vehicles and e-cycles, active travel and public transport.

- **To what extent does this description fit with your original understanding of 'cleaner' transport?**
- **How easy or difficult is it to use cleaner transport options?**
  - What, if anything, makes it difficult to take cleaner transport options?
- **What, if any, advantages are there to using cleaner modes of transport?** *Moderator to listen out for and probe on any mentions by those with lung conditions on impact of cleaner air*
  - To you personally? To your local area? To the country as a whole?

Section and aim	Key questions and probes
	<ul style="list-style-type: none"> <li>• <b>To what extent, if at all, do you feel that the UK requires a move toward cleaner transport? Why?</b> <ul style="list-style-type: none"> <li>– How far do you feel the country is already doing this? Why/why not? Moderator to probe for specific examples</li> </ul> </li> <li>• <b>Whose responsibility is it to ensure people across the UK uses more cleaner transport options?</b> <ul style="list-style-type: none"> <li>– What can you and the people in your community do?</li> <li>– What can the local authority do?</li> <li>– What can the UK government do?</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>Deep-dive on active travel</b></li> </ul> <p>To understand current motivations for using – or not using – active travel, including incentives to encourage greater use</p>	<p>I now want to think about specific types of cleaner transport. We'll be talking about three broad types of cleaner transport in turn, starting with active travel, by this I mean any journeys you make that involve physical exercise, such as walking or cycling.</p> <ul style="list-style-type: none"> <li>• <b>What, if any, benefits do you see to active travel?</b></li> <li>• <b>What, if any, challenges do you face when travelling via active travel?</b> <ul style="list-style-type: none"> <li>– To what extent, if at all, do you see busy roads and air pollution on them as a barrier that prevents you from walking, wheeling or cycling shorter journeys? Why?</li> <li>– [FOR THOSE WITH LUNG CONDITIONS] Are there any additional challenges you face when travelling via active travel as a result of your health/lung condition?</li> </ul> </li> <li>• <b>What, if anything, would you like to see change or improve about active travel?</b> <ul style="list-style-type: none"> <li>– What kinds of support would most improve your ability to travel in this way?</li> <li>– Who should provide this support? E.g. charities, local government, national government?</li> </ul> </li> </ul> <p><b>I would now like to discuss a few different scenarios and conditions which might affect the likelihood that a person switches from car use towards more active travel.</b></p> <p>Scenarios to explore:</p> <ol style="list-style-type: none"> <li>Access to e-bike or a bike sharing scheme near where you live</li> <li>More infrastructure designed to allow for breaks on your route e.g. benches, parklets</li> <li>More accessible pavements e.g. wider pavements, more safe road crossings</li> <li>Greater access to walkways or cycle paths</li> </ol> <ul style="list-style-type: none"> <li>• <b>To what extent, if at all, would any of these have an impact on your likelihood to walk, cycle or wheel more? Why/why not?</b> <ul style="list-style-type: none"> <li>– Which would have the biggest impact? Why?</li> </ul> </li> <li>• <b>Thinking specifically about electric bikes, to what extent, if at all, would a financial incentive encourage you to change your old diesel or petrol car to an e-bike? Why/why not?</b> <ul style="list-style-type: none"> <li>– What, if any, impact would a government grant of £1,000 have on your likelihood to switch?</li> </ul> </li> </ul>

Section and aim	Key questions and probes
<ul style="list-style-type: none"> <li><b>Deep-dive into public transport</b></li> </ul> <p>To understand current motivations for using – or not using – public transport, including incentives to encourage greater use</p>	<p><b>Thank you for all your thoughtful answers so far. I'd like to now focus specifically on public transport, for example, any journeys you make that by bus, train, tram, underground, etc.</b></p> <ul style="list-style-type: none"> <li><b>What, if any, benefits do you see to public transport?</b></li> <li><b>What, if any, challenges do you face when travelling via public transport?</b> <ul style="list-style-type: none"> <li>[FOR THOSE WITH LUNG CONDITIONS] Are there any additional challenges you face when travelling via public transport as a result of your health/lung condition?</li> </ul> </li> <li><b>What, if anything, would you like to see change or improve about public transport?</b> <ul style="list-style-type: none"> <li><b>What kinds of support would most improve your ability to travel? <i>Moderator to probe on: cost, greater frequency of services, greater accessibility, greater area covered by services</i></b></li> <li><b>If these changes were implemented, would this encourage you to stop using your car entirely? Why/why not?</b></li> </ul> </li> </ul> <p>I'd now like to understand how the following scenarios may impact on your likelihood move away from car usage.</p> <ul style="list-style-type: none"> <li><b>If the cost of public transport were to be made more affordable, how likely would it be that you would use your car less/stop using it completely?</b></li> <li><b>To what extent, if at all, would subsidised travel such as mobility credits encourage a you to give up your car? By mobility credits, I mean money off public transport for a set amount of time (typically 1-2 years) in exchange for getting rid of your diesel/petrol car.</b></li> </ul>
<ul style="list-style-type: none"> <li><b>Deep-dive into electric vehicles</b></li> </ul> <p>To understand current motivations for using – or not using – electric vehicles, including incentives to encourage greater use</p>	<p><b>For the next part of our discussion I would like to focus on cars and Electric Vehicles (EV). By Electric vehicles, I mean any vehicle that uses electric motors to drive their wheels, and that is powered partly or fully by rechargeable batteries.</b></p> <ul style="list-style-type: none"> <li><b>In the next ten years, are you planning to buy a car or planning to change your current vehicle?</b> <ul style="list-style-type: none"> <li>Will you be purchasing this vehicle second-hand? <i>Moderator to inquire whether this if petrol, diesel or hybrid</i></li> </ul> </li> <li><b>How likely are you to switch to an all-electric vehicle? Why/why not?</b> <ul style="list-style-type: none"> <li><b>Would you like to own an all-electric vehicle? Why/why not?</b></li> <li>What, if any, concerns do you have with considering a switch to an electric vehicle? Why? <i>Moderator to listen out for any responses related to cost, charging anxiety, lack of infrastructure</i></li> </ul> </li> </ul> <p><b>I'd like to spend a little more time discussing the cost of electric vehicles. The average cost of an electric vehicle is currently £29,000, with some cheaper models priced at £17,000.</b></p> <ul style="list-style-type: none"> <li><b>To what extent is the <u>cost</u> of an electric vehicle a concern? Why?</b> <ul style="list-style-type: none"> <li>How does the cost of an electric vehicle impact your likelihood to purchase an EV?</li> <li>To what extent do other costs associated with an electric vehicle (e.g. charging costs), affect your likelihood to purchase an electric vehicle?</li> <li>At what price point would you consider an electric vehicle to be a viable option for you?</li> </ul> </li> </ul>

Section and aim	Key questions and probes
	<ul style="list-style-type: none"> <li>• <b>To what extent, if at all, would a financial incentive encourage you to change to an electric vehicle? Why/why not?</b> <ul style="list-style-type: none"> <li>– <b>How much of a financial incentive would you need to encourage a change to an electric vehicle?</b> <i>Moderator to allow spontaneous response</i></li> </ul> </li> </ul> <p><b>To what extent, if at all, would you consider changing your old diesel or petrol car to an electric vehicle, if you were offered an incentive of a £2000 grant?</b></p> <ul style="list-style-type: none"> <li>– A £5000 incentive?</li> <li>– A £10000 incentive?</li> <li>– An incentive of over £10,000?</li> </ul> <p><b>As you may or may not be aware, the UK Government has set a target to end the sale of new petrol and diesel vehicles by 2030, and for all new cars and vans to be fully zero emission by 2035. This includes ensuring new cars are either partially or fully electric.</b></p> <ul style="list-style-type: none"> <li>• What do you think about this change? <ul style="list-style-type: none"> <li>– How, if at all, will this impact any of your future car purchases?</li> </ul> </li> <li>• <b>What else would you need to see to encourage/facilitate a change towards an electric vehicle?</b> (e.g. more charging points, faster charging points)</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Recommendations to the government</b></li> </ul> <p>To hear in participants own words, the steps they want the government to take to support cleaner transport decisions</p>	<p><b>We've discussed cleaner transport a lot today and shared with you lots of different actions the government can take to support people to use cleaner transport options. I want us now to reflect on that conversation and for you each to share some advice for the government.</b></p> <ul style="list-style-type: none"> <li>• What one piece of advice would you give the government to better support people to use active travel more frequently?</li> <li>• What one piece of advice would you give the government to better support people to use public transport instead of a car?</li> <li>• What one piece of advice would you give the government to better support people to buy electric cars to replace their petrol/diesel vehicles?</li> </ul> <p><b>And finally in your own words why, if at all, is it important for the government to support people to make cleaner transport decisions?</b></p>
<ul style="list-style-type: none"> <li>• <b>Views on air pollution and thank and close</b></li> </ul>	<p><b>Thank you very much for all your thoughtful responses this evening. For the last few minutes I would like to discuss general attitudes to air pollution and cleaner transport.</b></p> <ol style="list-style-type: none"> <li>a. <b>To what extent, if at all, do you notice air pollution in your local area?</b> <ul style="list-style-type: none"> <li>– Do you feel it has impact on your health? Why/why not?</li> </ul> </li> <li>b. [For public groups only] <b>The reason we are speaking to you today is because you live in an area that is known to have high levels of air pollution. Is this something you were aware of?</b></li> <li>c. How does that make you feel?</li> <li>d. To what extent will knowing this information change the way you travel?</li> <li>e. How likely are you to keep track of pollution levels in your local area? Why/why not?</li> </ol> <p><i>Moderator to thank participants, remind them that their payment will be processed through AYDA and that they may be re-contacted about this project but that there is no obligation to do anything else if they do not wish to.</i></p>



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# Impact on **Urban** **Health**

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Asthma and Lung UK is a charitable company limited by guarantee with company registration number 01863614, with registered charity number 326730 in England and Wales, SC038415 in Scotland, and 1177 in the Isle of Man.



# Putting the brakes on toxic air

Our transport plan for a cleaner, fairer future

Executive summary

April 2023

Impact  
on **Urban  
Health**

The logo for ASTHMA+ LUNG UK features a stylized cross shape composed of four overlapping rectangular blocks. The top block is purple, the bottom block is blue, the left block is green, and the right block is orange. The text "ASTHMA+" is positioned above "LUNG UK" in white, bold, sans-serif font, centered within the intersection of the blocks.

ASTHMA+  
LUNG UK