



# Building Scotland's Low Emission Zones

## British Lung Foundation response

Our vision is for everyone to breathe clean air with healthy lungs. We welcome the opportunity to respond to this consultation.

### **1. Do you support the principle of LEZs to help improve Scottish air quality? Please be as specific as possible in your reasoning.**

We strongly support the introduction of LEZs in Scotland to improve air quality.

Across Scotland's towns and cities, people are breathing in levels of pollution that are illegal and harmful for their health.

This could be increasing their risk of getting lung cancer, cutting people's lives short and making existing lung conditions worse. Latest estimates suggest that the equivalent of over 2,000 lives are cut short each year in Scotland from air pollution. Across the UK it's estimated air pollution equates to an annual cost of £27.5 billion to the Treasury.<sup>i ii</sup>

Air pollution hits hardest people with a lung condition, children and older people. For many of the people we support with chronic obstructive pulmonary disease (COPD) and asthma, air pollution poses a daily risk to their lives - it can worsen their symptoms and in the worst cases force them into hospital. Children's lungs are also very vulnerable as they are still growing - polluted air can stunt the growth of their lungs and increase the likelihood of asthma. For pregnant women breathing in polluted air can stunt the development of their unborn child. Children with smaller lungs are more likely to face health problems later on in their lives.<sup>iii iv</sup>

We support 15 Breathe Easy peer support groups across Scotland. Many patients who attend these groups tell us that pollution restricts their lives and changes what they are able to do with their day. Every month, we receive numerous calls and emails from people who are concerned about air pollution - particularly from parents, schools and patients.

There is substantial evidence to show that a charging LEZ can have a notable positive impact on air quality. The Technical Report published by Defra this year as part of the Draft UK Air Quality Plan for tackling nitrogen dioxide shows that a network of charging LEZs (or CAZs as

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they are referred to by Defra) is the most effective way to deliver legal compliance with air quality targets in the shortest time possible.<sup>v</sup>

The findings in the technical report are supported by successful experiences of implementing CAZs in other cities across the world. A zone introduced in Berlin in 2008 (which included cars) and expanded in 2010 led to PM and NO<sub>2</sub> emissions 50% and 20% lower than the predicted trend.<sup>vi</sup> Even small reductions in vehicle numbers can lead to significant health benefits. The low emission zone which operated in Rome from 2001-2005, achieved a 4% reduction in total number of cars. NO<sub>2</sub> emissions decreased from 22.9 to 17.4 µg/m<sup>3</sup> and PM<sub>10</sub> emissions decreased from 7.8 to 6.2 µg/m<sup>3</sup>. As a result of the policy, 264,522 residents who lived alongside busy roads gained an average 3.4 days of life per person.<sup>vii</sup>

Ineffectively designed CAZs, such as London's existing low emission zone (LEZ), have failed to deliver compliance with legal levels or positively impact on children's health.<sup>viii</sup> London's LEZ only regulated large vehicles such as buses, lorries and light goods vehicles, rather than private cars. Additionally, the emission factors used to model the zone did not factor in real world emissions so were therefore inaccurate.

Although there is no sole universal model,<sup>ix</sup> we believe that LEZs must generally:

- Meet local needs, identifying the biggest local polluters, and discourage their use via financial charges. Private vehicles must form part of a LEZ, due to their contribution to air pollution.
- Support a long-term reduction in private vehicle use, promoting behavioural change for people to switch to public transport and active travel.
- Only include clean, zero emission public transport. Buses used prior to the introduction of LEZs, unless already clean models, should be retrofitted or scrapped.
- Where possible, measure real-world emissions using cameras or sensors. The effectiveness of LEZs will be limited if licence plate and manufacturer emission data is relied upon for monitoring purposes.
- Cover a large enough area to produce measurably lower emissions, and include public service buildings (hospitals, schools, care homes) used by people most vulnerable to air pollution's health effects.
- Be evidence-based, with measurable targets to improve health outcomes.
- Either charge-exempt blue badge holders and people who are exempt from vehicle tax for mobility reasons, or extend the time for these groups to replace their vehicle before charging.

## **2. Do you agree that the primary objective of LEZs should be to support the achievement of Scottish Air Quality Objectives? If not, why not?**

We believe that the primary objective of LEZs should be to improve air quality to protect people's lung health. As such, we want LEZs to not only strive to achieve Scottish Air Quality Objectives but to go beyond them.

The Scottish Government's Cleaner Air For Scotland (CAFS) strategy should be commended for setting recommended objectives for PM<sup>2.5</sup> and PM<sup>10</sup> that are in line with World Health Organisation (WHO) guidelines for these pollutants.<sup>x</sup> However, this is not a legally binding target for Scottish authorities, so there is arguably a lack of incentive to reach it. The EU

legal limits for PM<sup>10</sup> and PM<sup>2.5</sup>, which are legally binding and yet are still being broken across Scotland, are set at a higher level than the WHO “safe” limits. In reality, the WHO state there is no real “safe” level of pollution and that no level of exposure is good for human health.<sup>xi</sup>

This is why LEZs should aim to not only meet but go beyond the Scottish Air Quality Objectives, aiming for WHO guidelines for pollutants, particularly particulate matter.

### **3a. Do you agree with the proposed minimum mandatory Euro emission criteria for Scottish LEZs?**

We think the effectiveness of LEZs in Scotland will be dented if real-world emission monitoring does not happen alongside monitoring of the Euro Standards. As noted on page 21 of this consultation document, there are gaps between the vehicle emissions recorded during controlled laboratory testing and testing undertaken in the “real world” ie. on the road. Independent reports suggest diesel cars produce higher levels of emissions under real-world driving conditions than their own emissions standards suggests - some breaking their own emission standard by a factor of 10.<sup>xii</sup> The effectiveness of LEZs will be limited if licence plate and manufacturer emission data, based on Euro emission criteria, is relied upon for monitoring purposes.

#### **Introduce real-world emissions testing for all vehicles**

As such, we want the Scottish Government to work with pollution and transport experts to develop new real-world emissions testing for all vehicles. Real world testing typically involves driving a vehicle for around 1.5 hours over a test route on public roads and measuring emissions.<sup>xiii</sup> This will provide consumers with accurate pollution information. Once standards have been developed, governments should require:

- Local authorities to assess new and existing bus stock using this test, to ensure compliance.
- New cars to be sold with a compulsory energy certificate similar to that for household products.
- Vehicles to clearly display official stickers/signage indicating the pollution rating of each car.
- Use real world emissions data in modelling air pollution.

### **3b. Do you agree with the proposal to use the NMF modelling in tandem with the NLEF appraisal to identify the vehicle types for inclusion within a LEZ?**

As discussed above in our answer to Q3a, vehicle identification will be limited in its effectiveness if based solely on current Euro emission criteria and not on real-world emissions.

### **4. What are your views on adopting a national road access restriction scheme for LEZs across different classes of vehicles?**

No comment.

**5. What are your views on the proposed LEZ hours of operation, in particular whether local authorities should be able to decide on LEZ hours of operation for their own LEZs?**

Dependent on the outcome of an equality impact assessment, the operating hours for LEZs should be consistent across all local authorities, and ideally operate 24 hours a day, as is the case with the ULEZ in London. A range of different operating times within and across local authorities could very easily lead to confusion, and frustration for drivers, as well as unintentional non-compliance, which could limit the effectiveness of the LEZ in reducing air quality.

**6. What are your views on Automatic Number Plate Recognition enforcement of LEZs?**

See answer to Q3a. We believe that Automatic Number Plate Recognition should be used alongside monitoring real-world emissions through sensors and cameras, and a government-backed programme of real-world emissions testing for vehicles.

**7a. What exemptions should be applied to allow LEZs to operate robustly? Please be as specific as possible in your reasoning.**

We recognise that the most vulnerable communities will benefit the most from improvements in air quality. However there is a risk that LEZs could disproportionately impact those with mobility challenges. We urge Scottish Government to recommend local authorities carry out thorough health impact assessments that assess the impact on people over 65 with long-term health conditions.

**A national, fair and equitable exemption framework**

We need a national exemption policy that ensures people with blue badges and disabled tax class vehicles get a longer time to change their vehicles, or are exempt from charging zones. While the patients we support overwhelmingly support action to clean up our air, we need to make sure they are not penalised financially as a result of their health conditions.

Many people with long-term and advanced respiratory conditions have reduced mobility and are likely to be over 65. Most COPD patients are not diagnosed until they are in their fifties, with the average age of death being 76.<sup>xiv</sup> People with advanced COPD often struggle to walk, rely on an oxygen cylinder to breathe and rely on cars to get to health appointments, to work or to socialise. Patients often tell us it is difficult for them to use public transport, because they're not able to walk long distances, use stairs or access stations. They may not always identify as disabled and are often described as having an "invisible illness." Many of these people are likely to be in receipt of attendance allowance and/or have a blue badge, however we are also aware that many patients we support do not realise they are eligible for these benefits.

There is a risk that LEZs could exacerbate existing health inequalities. People living with disabilities and long-term conditions are more likely to come from a low-income background and have less money to upgrade their vehicle. Around a third of all disabled adults aged 25 to retirement are living in low-income households. This is twice the rate of that for non-disabled adults, as it has been throughout the last decade.<sup>xv</sup>

This is why we need a national exemption policy that ensures people with blue badges and disabled tax class vehicles get a longer time to change their vehicles, or are exempt from charging zones.

### **7b. Should exemptions be consistent across all Scottish local authorities?**

Yes. See answer to Question 7a.

### **8. What are your views on LEZ lead-in times and sunset periods for vehicle types shown in Table 2?**

No comment.

### **9. What are your views about retrofitting technology and an Engine Retrofitting Centre to upgrade commercial vehicles to cleaner engines, in order to meet the minimum mandatory Euro emission criteria for Scottish LEZs?**

No comment.

### **10. How can the Scottish Government best target any funding to support implementation?**

We are aware of the current strain on local authority and national budgets in Scotland. Audit Scotland produced a report in March 2017 on local government finances. The report highlighted the “major challenges” facing local authorities in light of continued reductions in Scottish Government funding, and greater demands on services from an ageing population.<sup>xvi</sup> The report also identified a 7.3% increase in emergency hospital admissions for people age 65 and over.<sup>xvii</sup>

Among adults with pre-existing lung conditions, including chronic obstructive pulmonary disease (COPD) and asthma, exposure to high air pollution has been linked with worsening symptoms and exacerbations.<sup>xviii</sup> Research has shown that air pollution contributes to increased risk of hospital admissions and premature mortality for these patients.<sup>xix</sup>

A report published by the BLF this year found that lung disease costs the UK as a whole £11 billion each year.<sup>xx</sup> In this context, the immediate costs of implementing effective air quality measures should surely be seen as an investment in Scotland’s long-term health and economic prosperity.

## Target the most polluted areas where the most vulnerable people are exposed

Funding should be targeted to towns and cities where pollution levels are the most acute. Areas with high rates of lung disease should also be prioritised, such as Glasgow and the Ayrshire region, where lung disease mortality rates are very high and health outcomes are consistently below average.<sup>xxi</sup> Funding should be allocated to achieve both environmental and health outcomes. It should be allocated across council departments to facilitate cross-departmental working between health, transport and environmental health teams. Evidence shows that the impact of air pollution is felt the most by those whose lungs are already vulnerable - the elderly, children and people with a lung condition. Therefore, funding should be prioritised for schemes that seek to engage and protect vulnerable groups. We think this should include projects that provide data and health information to schools, care homes and hospitals.

## Support improved monitoring and data collection that reflects air quality exposure

Funding and guidance should be provided to local authorities to improve the collection of data on air quality exposure. The majority of current air quality data does not reflect the quality of air that the most vulnerable people are breathing in. For example, a freedom of information request by the BLF to local authorities found that three quarters of Scottish councils do not have air quality monitors outside their local schools. Edinburgh, Falkirk and Rutherglen have all been identified as areas which have illegal and unsafe levels of NO<sub>2</sub>. Over 100,000 children attend secondary and primary schools in these three areas, yet only 3 schools here have pollution monitors outside of them. East Lothian and Glasgow have been identified by the WHO as having unsafe levels of particle pollution PM2.5, yet only one school is being monitored.<sup>xxii</sup>

## 11. What criteria should the Scottish Government use to measure and assess LEZ effectiveness?

We think an improvement in respiratory health should be measured to assess the effectiveness of LEZs, and should also be included in the overall CAFS strategy. For example, outcomes could include a reduction in respiratory emergency admissions to hospital. Scottish Government and local authorities should also look to regularly include people living with lung disease in the assessment to find out how the LEZ has impacted on their health.

Tackling air pollution will help achieve goals across health policy such as improving lung health, increasing physical activity, reducing obesity and addressing health inequalities. Deprived communities are more likely to be exposed to toxic pollution levels, yet have less access to public transport, cycle paths, walking routes and green space.<sup>xxiii</sup> People in the poorest areas of the UK are twice as likely to have COPD and lung cancer compared to people living in the richest areas.<sup>xxiv</sup> Reducing air pollution and promoting active travel will help create greener, safer and healthier communities in Scotland. In order to ensure that health outcomes are achieved, we want to see action that goes beyond including reference to air quality in Joint Health Protection Plans.

## We need a national plan for lung disease to be integrated with the air quality plan

Lung disease is the Scotland's third biggest killer, costing the NHS across the UK £9.9 billion a year and business £1.2 billion through work days lost.<sup>xxv</sup> Despite the millions affected, there is currently no plan in place to evaluate or improve respiratory services. Successive governments have failed to prioritise lung disease and put a robust strategy in place. Any plan to tackle air quality should be fully integrated into the new national plan to tackle lung disease, which the Scottish Government has committed to delivering.

### **12. What information should the Scottish Government provide to vehicle owners before a LEZ is put in place, during a lead-in time and once LEZ enforcement starts?**

We understand the difficulties in trying to appropriately and effectively communicate the impact of air quality on public health, and the complex yet necessary set of policies and actions that will need to be introduced to tackle the problem of air pollution, such as LEZs. This is why we want to see a greater level of support and resource given to SEPA and those in Scottish Government who have been tasked with leading on CAFS communications.

## We need a national public awareness campaign on air pollution

A campaign based on clear, accurate and robust health information will ensure that people know how to protect themselves and support local authorities to take ambitious action on pollution, including the introductions of LEZs.

An awareness campaign will also help dispel myths around pollution exposure and reassure people that they are taking effective steps to protect themselves. For instance, we are often contacted by members of the public and organisations who are keen to use face masks. The majority of face masks do not protect people effectively from pollution, as small particles are still able to get through any gaps. Likewise, many drivers don't realise that they may be exposed to higher amounts of air pollution sat in their own car than outside of it.

Studies have shown that providing the public with clear, concise and meaningful data and information on air pollution significantly helps raise awareness of the problem. However, if this data is not accompanied with clear ways in which people can reduce their exposure people often report feeling "powerless" and unable to protect themselves.<sup>xxvi</sup> Any awareness campaign must be accompanied by clear health advice that facilitates behaviour change. This should be targeted to vulnerable groups.

We note the several commendable one-off communications projects that have taken place since 2015, including those involving children and young people. We also note the work being done on the online Spotfire air quality visualisation tools, which are still in development.<sup>xxvii</sup> However, we feel this has taken a piecemeal approach and has failed to reach the breadth of audience it needs to. We want to see the Scottish Government deliver on its CAFS commitment for a national air quality public awareness campaign, which we argue should be a public health campaign.



The Scottish Government has led some very successful public health campaigns in the past, such as “Detect Cancer Early” and “Take it right outside”, which led to tangible, positive health outcomes across Scotland. Now the government has the opportunity to do the same with air quality, if properly supported. BLF Scotland would be keen to support the Scottish Government in delivering this, as we have done with previous public health campaigns.

### **13. What actions should local or central government consider in tandem with LEZs to address air pollution?**

We believe that a network of LEZs should be complemented by the following, and should be actively pursued by the Scottish Government.

#### **A national public awareness campaign on air pollution**

See answer to Q12.

#### **Introduce real-world emissions testing for all vehicles**

See answer to Q3a and 6.

#### **Improved monitoring and data collection that reflects air quality exposure**

See answer to Q10.

#### **Greater investment in active travel**

The most effective way of reducing air pollution is by getting polluting vehicles off the roads, and encouraging other means of travel. The CAFS Strategy reaffirms the Scottish Government’s commitment to boost cycle use up to 10% of all journeys by 2020, as stated in the Cycling Action Plan for Scotland and the Programme for Government.<sup>xxviii</sup> However, that aim will be undeliverable without a major increase in spending. Transport Scotland published statistics in September 2016 which showed that in 2015, 1.2% of all journeys were cycled, a decrease from 2014 and well below the 2020 ambition of 10%. The figure has remained around 1% since 2003.<sup>xxix</sup> According to Transport Scotland, many of the barriers to cycling are to do with concerns about traffic, safety, and infrastructure. Investment in good quality infrastructure, which provides people with safe and convenient routes to work, can overcome these barriers. This is why BLF Scotland co-signed an open letter in September 2016 to the Cabinet Secretary for Finance and the Constitution asking for an increase in the active travel budget.<sup>xxx</sup>

#### **A targeted diesel scrappage scheme**

Many drivers purchased their diesel cars in good faith. In a 2015 BLF survey of lung patients, 49% of respondents said they bought a diesel car because it was better for the environment and 48% bought it as it was cheaper to run.<sup>xxxi</sup> The government should invest in schemes that help people make cleaner decisions and that send a clear message to drivers on the best vehicles to drive.

We strongly support the introduction of a national targeted diesel scrappage scheme. This scheme should enable people to trade their cars in for a discount on a cleaner vehicle - an



electric or hybrid. Vehicles that are available through this scheme should be drawn up from a prescribed list of real-world emission tested vehicles. This scheme should be targeted at the most polluted urban areas and to low-income communities and people with long-term health conditions.

**14. How can LEZs help to tackle climate change, by reducing CO<sub>2</sub> emissions in tandem with air pollution emissions?**

No comment.

**15. What measures (including LEZs) would make a difference in addressing both road congestion and air pollution emissions at the same time?**

See answer to Q13.

**16. Do you have any other comments that you would like to add on the Scottish Government's proposals for LEZs?**

The proposals for LEZs should be acted on as soon possible. Air pollution is negatively impacting on people's health now - Scottish Government and local authorities need to act as soon possible to start mitigating against the effects of poor quality.

**17. What impacts do you think LEZs may have on particular groups of people, with particular reference to the 'protected characteristics' listed in paragraph 5.2? Please be as specific as possible in your reasoning.**

If implemented correctly, ie. in such a way that air quality improves and appropriate exemptions are included, LEZs could have a positive impact on equality in Scotland.

Air pollution affects everyone's health but particularly affects those with pre-existing health conditions, children (including in the womb), older people and those from lower socio-economic areas (see answer to Q1). Improvements in air quality could have a positive impact on their health.

Where disability relates to mobility problems, we refer to our answer to Q7a.

**18. Do you think the LEZ proposals contained in this consultation are likely to increase or reduce the costs and burdens placed on any sector? Please be as specific as possible in your reasoning.**

No comment.

**19. What impacts do you think LEZs may have on the privacy of individuals? Please be as specific as possible in your reasoning.**

No comment.

**20. Are there any likely impacts the proposals contained in this consultation may have upon the environment? Please be as specific as possible in your reasoning.**

No comment.

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- <sup>v</sup> Defra, DfT (2017) Draft UK Air Quality Plan for tackling nitrogen dioxide: Technical Report
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- <sup>ix</sup> HM Government (2016) Air quality: Government response to the Committee's Fourth Report of Session 2015-2016 p.7
- <sup>x</sup> Scottish Government (2015) Cleaner Air For Scotland: The Road to a Healthier Future, p.37
- <sup>xi</sup> WHO Factsheet, "Ambient (outdoor) air quality and health" (2016)
- <sup>xii</sup> Department for Transport (2016) *Vehicle Emissions Testing Programme: Moving Britain Ahead* p.22
- <sup>xiii</sup> Department for Transport (2016) *Vehicle Emissions Testing Programme: Moving Britain Ahead* p.17
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- <sup>xvii</sup> Ibid. p.24
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- <sup>xix</sup> Halonen et al, Urban air pollution, and asthma and COPD hospital emergency room visits, *Thorax*. 2008 Jul;63(7):635-41. doi: 10.1136/thx.2007.091371. Epub 2008 Feb 11.
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