

Evidence Sources Appendix: Campaign, Campaign Plus and Substantive

This appendix lists all the evidence sources found in response to the Transport Scotland Building Low Emission Zones Consultation. It is important to note that a number of respondents submitted pdf attachments with their responses to the consultation and where quotes were made by any of the sources below that did not provide the full name of a reference or a link, please refer to the Final LEZ Data Spreadsheet and One Drive for quotes of full statements made. Some respondents also quoted references from the Transport Scotland Consultation Paper and these have been included.

Overall, the pattern emerging from the evidence sources is that all the references are from substantive responses due to campaign responses using standard text and no campaign plus respondents citing references. The majority of the references are cited by organisations and most of the references are classified as technical sources.

Question 1

There was a good mixture of both legal and technical sources of evidences for Question 1, with the majority of the references being cited by organisations. Only 5 out of the 35 responses which contained evidence sources were from individuals. As this was the first question of the survey, many of the respondents' answers were more detailed and therefore this may be indicative of the high number of references to this question. References included links to websites and papers, references to legislation, data and statistics, scientific papers and studies, newspaper references and references to government statements.

Question 2

In total, there were 14 responses which contained evidence sources. There was a good mixture of both legal and technical sources of evidences, with the majority of the references being cited by organisations. Only 2 out of the 14 responses which contained evidence sources were from individuals. Overall sources of evidence included links to papers and websites, statistics, media references, legislative references and scientific papers.

Question 3a

Despite Question 3a being a closed question, 7 responses from organisations provided more detailed answers to their response, which contained a mixture of legal and technical references. These references can be found further below and include media and newspaper references, links to websites and scientific papers and legislative references.

Question 3b

Only 7 responses were found which contained sources of evidence in response to Question 3b, with the majority of the sources being technical and 3 out of the 7 responses with references being from individuals. The majority of the sources of evidence were links to studies, reports and data, with 1 response out of 7 referencing a study but not providing a link.

Question 3c

Furthermore, only 5 responses which contained evidence sources were found in response to Question 3c but there was still a good mixture of both legal and technical sources of evidences, with all of the references being cited by organisations. Sources of evidence included references to studies, scientific papers, legal references, references to government data and other research.

Question 4

For this question, only 3 responses which contained sources of evidence were found in response to Question 4 but there was still a mixture of both legal and technical references, with them coming from both an individual and organisations. Sources of evidence included references to studies including links, consultation references and national strategies.

Question 5

Furthermore, as seen further below, there was only one response with a source of evidence in response to Question 5 and this was from an organisation. References were to scientific studies.

Question 6

A total of 4 responses which contained sources of evidence were found in response to Question 6 and of these, all references were technical with the majority being from organisations, with one individual response. Sources of evidence included links to studies and websites and references to data and scientific papers.

Question 7a

6 responses were found which contained evidence sources in response to Question 7a, with the majority being technical data and cited by organisations. 2 out of the 6 responses that contained references were individuals. Sources of evidence included references to studies, scientific papers, legal references and links to websites and reports.

Question 7b

Whilst Question 7b was a closed question, 1 organisation provided a technical reference with a link to an announcement and this can be found further below.

Question 8

3 responses were found which contained sources of evidence in response to Question 8 but there was a combination of responses with 2 responses from individuals and 1 from an organisation with a mixture of legal and technical references. Sources of evidence included references to studies, media references and a reference to a government statement.

Question 9

5 responses were found which contained evidence sources in response to Question 9 and all of the references were found in responses from organisations and were classified as technical. References included those to reports, announcements and links to websites.

Question 10

More evidence sources were found in response to Question 10 (12 responses in total). The majority of the evidence sources were classified as technical and references included links to websites, references to scientific papers and reports, studies and data. The majority were cited by organisations, with only 3 out of 12 cited by individuals.

Question 11

11 responses were found which contained sources of evidence in response to Question 11, with the majority classified as technical and cited by organisations. Only 2 out of the 11 responses which contained evidence sources were from individuals. References included comments on data, references to studies and statistics, links to scientific papers and websites and a comment on a legal case.

Question 12

Furthermore, only a few sources of evidence (from 4 responses) were found in response to Question 12, with all sources being technical and cited by 2 organisations and 2 individuals. Sources of evidence included references to studies and scientific papers, data and media references.

Question 13

A substantial amount of evidence sources were found in response to Question 13, with 18 responses found which contained sources of evidence. The majority of these are cited by organisations, with 1 out of 18 responses being from an individual. There was a good mixture of technical and legal sources of evidence and references included links to papers and websites, references to legislation, data and statistics, scientific papers and references to reports and other legislative information.

Question 14

A total of 17 responses were found which contained evidence sources, and again the majority of these were cited by organisations, with 1 out of 17 being an individual. Again, there was a good mixture of legal and technical sources and references included links to reports, references to scientific papers, polls, a consultation and data references.

Question 15

14 responses were found which contained evidence sources, with 1 out of 14 sources being cited by an individual and the rest by organisations. The majority of the information that was cited was technical, with one legal source of evidence. References included links and references to scientific papers, a reference to a legislative session, statistics and research and reports.

Question 16

In response to Question 16, 8 responses contained sources of evidence with all of these being cited by organisations and all of the references classified as technical. References included statistics, scientific papers and links to them, comments on standards and reports.

Question 17

A total of 12 responses were found in response to Question 17 which contained evidence sources and of these, again all were cited by organisations and were classified as technical. References included reports, scientific papers and citations by organisations.

Question 18

9 responses contained evidence sources and of these, 1 was an individual and the remaining references were by organisations. Again, all of the references were classified as technical and references included scientific papers, links to websites, assessments and reports.

Question 19

Less evidence sources were found in response to Question 19, with only 3 responses found which contained sources of evidence. 2 of these were classified as legal and one was technical and these references were to legislative information, data and a consultation document.

Question 20

In total, 7 sources of evidence were found in response to Question 20, with a mixture of legal and technical references. Only 1 out of the 7 responses was by an individual and references included scientific papers and links, heatmaps, references to government announcements and reports.

List of sources:

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

A total of 35 respondents included sources of evidence in their answer and are listed below:

Respondent type	Source of evidence	Type of evidence
Individual - Substantive	Aberdeen City Council's figures	Technical
Individual - Substantive	https://vizhub.healthdata.org/gbd-compare/ "National Indicator: Public or Active Transport" http://www.gov.scot/About/Performance/scotPerforms/indicator/transport https://www.theengineer.co.uk/hybrid-moves-on-the-buses "The health and socioeconomic impact of traffic related air pollution in Scotland" http://hdl.handle.net/10023/11734_2	Technical
Organisation - Substantive	"Cleaner Air for Scotland: The Road to a Healthier Future" (CAFS)	Legal
Organisation - Substantive	"Cleaner Air for Scotland: The Road to a Healthier Future" (CAFS)	Legal
Organisation - Substantive	Ultra-Low Emission Zone, Report to the Mayor, March 2015, Page 117	Technical
Individual - Substantive	Source: Greener Journeys	Legal
Organisation - Substantive	Department for Transport, Vehicle Licensing Statistics 2016, data taken from table no 0126	Technical
Organisation - Substantive	Cleaner Air for Scotland (CAFS) The Royal College of Physicians research	Legal and technical
Individual -	World Health Organisation study	Technical

Substantive		
Individual - Substantive	https://www.wired.com/2016/03/teslas-electric-cars-might-not-green-think/ https://www.scientificamerican.com/article/electric-cars-are-not-necessarily-clean/	Technical
Organisation-Substantive	Contact Charlie Hewson in our Harrogate Office Charlie.HEWSON@emovis.com 07882701316	Technical
Organisation-Substantive	'Local bus services in Scotland' Consultation Get Glasgow Moving Manifesto	Technical
Organisation-Substantive	Keith Brown, Transport minister Switched on Scotland: A Roadmap to Widespread Adoption of Plug-in Vehicles. Scottish Government September 2013. Link: http://urbanforesight.org/wp-content/uploads/2015/08/Switched-On-Scotland.pdf Traffic Speed in Central Edinburgh is now less than 7mph. During presentation by Tony Kenmuir of Central Taxis at STEP annual conference, 17th November 2017. INRIX 2016 Traffic Congestion Scorecard. Link: http://inrix.com/press-releases/traffic-congestion-cost-uk-motorists-more-than-30-billion-in-2016/ Written submission from SHFCA to the Climate Change and Land Reform Committee Inquiry into air quality in Scotland, August 2017. Link: http://www.parliament.scot/S5_Environment/Inquiries/037_Scottish_Hydrogen_and_Fuel_Cell_Association.pdf	Legal and technical
Organisation-Substantive	See the Greener Journeys report Improving Air Quality in Towns and Cities for a detailed discussion https://greenerjourneys.com/wp-content/uploads/2017/04/Improving-Air-Quality-in-Towns-and-Cities-PROF-DAVID-BEGG-Final.pdf	Technical
Organisation-Substantive	Lothian Environmental Strategy- Bus 2020	Technical
Organisation-Substantive	Defra data	Technical
Organisation-Substantive	CAFS 2015. Cleaner Air for Scotland. The Road to a Healthier Future. Scottish Government 2015. http://www.gov.scot/Resource/0048/00488493.pdf Cellis-Morales et al, 2017. Association between active commuting and incident cardiovascular disease, cancer, and mortality. Cellis-Morales CA, Lyall DM, Welsh P, et al. BMJ 2017; 357:j1456. http://www.bmj.com/content/bmj/357/bmj.j1456.full.pdf COMEAP 2009. Long-Term Exposure to Air Pollution: Effect on Mortality Report. COMEAP 2009. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/304667/COMEAP_long_term_exposure_to_air_pollution.pdf COMEAP 2015. Nitrogen Oxide: health effects of exposure. Statement on the evidence for the effects of nitrogen dioxide on health. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/411756/COMEAP_The_evidence_for_the_effects_of_nitrogen_dioxide.pdf COMEAP 2015. Interim statement on quantifying the association of long-term average concentrations of nitrogen dioxide and mortality.	Legal and technical

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/485373/COMEAP_NO2_Mortality_Interim_Statement.pdf

DEFRA. Developing communication methods for localised air quality and health impact information.

<http://randd.defra.gov.uk/default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18580>

HEDG 2017. Can clean air make you happy? Examining the effect of nitrogen dioxide (NO₂) on life satisfaction. Knight SJ, Howley P. Health Econometrics and Data Group. March 2017.

<https://www.york.ac.uk/media/economics/documents/hedg/workingpapers/1708.pdf>

HEI 2010. Public Health and Air Pollution in Asia (PAPA): coordinated studies of short-term exposure to air pollution and daily mortality in four cities. Boston, Health Effects Institute. 2010.

<https://www.healtheffects.org/publication/public-health-and-air-pollution-asia-papa-coordinated-studies-short-term-exposure-air-0>

HPS 2014. Air Quality (PM_{2.5} particulate pollution) and Mortality in Scotland. A Briefing Paper, Health Protection Scotland, Glasgow, 2014.

<http://www.hps.scot.nhs.uk/resourcedocument.aspx?id=1743>

IOM 2015. Air Quality, Health, Wellbeing and Behaviour. Cowie H, et al. Institute of Occupational Medicine. Report 601-00119. IOM 2015.

<https://www.environment.gov.scot/media/1133/iom-seweb-aq-health-behaviour-review.pdf>

ISM. Influencing Behaviours. Moving Beyond the Individual; A User Guide to the ISM Tool.

<http://www.gov.scot/Resource/0042/00423436.pdf>

Lee et al 2009. Lee D, Ferguson C, Mitchell R. 2009. Air Pollution and health in Scotland: a multi-city study. *Biostatistics*; 10(3): 409-413.

<https://academic.oup.com/biostatistics/article/10/3/409/293291>

NICE 2016. Air Pollution: outdoor air quality and health. NICE 2016.

<https://www.nice.org.uk/guidance/ng70>

RCP 2016. Royal College of Physicians. Every breath we take: the lifelong impact of air pollution. Report of a working party. London: RCP, 2016.

<https://www.rcplondon.ac.uk/file/2912/download?token=rhEZPBDI>

SADQ 2016. Scottish Air Quality Database. Annual Report 2015. Ricardo Energy & Environment. 2016. SEWeb.

<http://www.environment.scotland.gov.uk/air-quality/air-quality-and-health/>

Speigelhalter, 2017. Does air pollution kill 40,000 people each year in the UK?

<https://wintoncentre.maths.cam.ac.uk/news/does-air-pollution-kill-40000-people-each-year-uk>

WHO REVIHAAP 2013. Review of evidence on health aspects of air pollution – REVIHAAP project: technical report. Copenhagen, WHO Regional Office for Europe. 2013.

http://www.euro.who.int/__data/assets/pdf_file/0004/193108/REVIHAAP-Final-technical-report-final-version.pdf?ua=1

Organisation-Substantive	Environmental Act (1995), Ambient Air Quality directive 2008/50/EC, National Transport Strategy	Legal
Organisation-Substantive	<p>https://consult.gov.scot/transport-scotland/building-scotlands-low-emission-zones/</p> <p>The Lancet 'Public health benefits of strategies to reduce greenhouse-gas emissions: urban land transport(2009)</p> <p>https://www.sustrans.org.uk/news/people-cities-want-protected-space-cycling</p> <p>https://www.wwf.org.uk/updates/poll-growing-number-scots-want-stronger-action-climate-change</p> <p>WHO Factsheet, 'Ambient (outdoor) air quality and health' (2016)</p> <p>World Resources Institute, 'Study on International Practices for Low Emission Zone and Congestion Charging,' (2017)</p> <p>https://consult.gov.scot/transport-scotland/building-scotlands-low-emission-zones/user_uploads/low-emission-zones-consultation-2.pdf</p> <p>http://www.spokes.org.uk/wp-content/uploads/2009/03/1708-CEC-EV-FRAMEWORK-spokes-response.pdf</p> <p>http://h2020-flow.eu/news/news-detail/when-roads-are-closed-where-does-the-traffic-go-it-evaporates-say-studies/</p> <p>Royal College of Physicians, 'Every breath we take: the lifelong impact of air pollution' (February 2016)</p> <p>Department for Transport (UK), 'The Value of Cycling' (2016)</p>	Technical
Organisation-Substantive	FBHVC Summary Report	Technical
Organisation-Substantive	<p>i DEFRA (2015) Report: Valuing the impacts of air quality on productivity</p> <p>ii Department for Environment, Food and Rural Affairs (2016) Committed Clean Air Zone Impact Assessment p.12</p> <p>iii Pedersen M et al, (2013) Ambient air pollution and low birthweight: a European cohort study (ESCAPE), The Lancet Respiratory Medicine, Volume 1, No. 9, p695–704 p.695</p> <p>iv Shah PS, Balkhair T (2011). Air pollution and birth outcomes: a systematic review. Environment International, 37(2):498–516.</p> <p>v Defra, DfT (2017) Draft UK Air Quality Plan for tackling nitrogen dioxide: Technical Report</p> <p>vi German Partnership for Sustainable Mobility (2014) Clean Air – Made in Germany, p.26</p> <p>vii Cesaroni G, Boogaard H, Jonkers S, et al, Health benefits of traffic-related air pollution reduction in different socioeconomic groups: the effect of low-emission zoning in Rome Occupational and Environmental Medicine 2012;69:133-139.</p> <p>viii Mudway et al (2015) Effects of Air Pollution and the Introduction of the London Low Emission Zone on the Prevalence of Respiratory and Allergic Symptoms in Schoolchildren in East London: A Sequential Cross-Sectional Study</p> <p>ix HM Government (2016) Air quality: Government response to the Committee's Fourth Report of Session 2015-2016 p.7</p>	Legal and technical
Organisation-Substantive	Joint report with the Royal College of Physicians, Every breath we take: The lifelong impact of air pollution	Technical
Organisation-Substantive	<p>Directive 97/68/EC</p> <p>EU regulation 2016/1628/EC</p>	Legal

Organisation-Substantive	Data from the National Atmospheric Emissions Inventory The London Atmospheric Emissions Inventory Scottish First Minister Nicola Sturgeon NO2 Glasgow City Council's most recent LAQM progress report	Legal and technical
Organisation-Substantive	1 Royal College of Physicians, "Every breath we take: the lifelong impact of air pollution" (February 2016) 2 The First Minister stated in announcing the 2017 Programme for Government: "Our aim is for new petrol and diesel cars and vans to be phased out in Scotland by 2032 - the end of the period covered by our new Climate Change Plan and eight years ahead of the target set by the UK government." 3 Defra, "UK Plan for tackling roadside nitrogen dioxide concentrations Technical Report," July 2017 4 ClientEarth (2) v Defra [2016] EWHC 2740 5 Defra, "UK plan for tackling roadside nitrogen dioxide concentrations: Detailed Plan," July 2017, Figure 3 6 Transport and Travel in Scotland 2016, (26 September 2017) 7 The Guardian Online, "Electric cars are not the answer to air pollution, says top UK adviser" 4 August 2017 8 Transport and Travel in Scotland 2016 (26 September 2017)	Legal and technical
Organisation-Substantive	Karagulian, Federico et al, (2015) Contributions to cities' ambient particulate matter (PM): A systematic review of local source contributions at a global level, Atmospheric Environment, 120 00475-483 Peters A et al (2014) 'Long-term exposure to ambient air pollution and incidence of acute coronary events: perspective cohort study and meta-analysis in 11 European cohorts from the ESCAPE project.' British Medical Journal http://www.bmj.com/content/348/bmj.f7412 http://urbanaccessregulations.eu/low-emission-zones-main/impact-of-lezs	Technical
Organisation-Substantive	DEFRA. Air Quality and Social Deprivation in the UK: an environmental inequalities analysis. Final Report to Department of Environment, Food and Rural Affairs AEAT/ENV/R/2170. 2006. Available at: https://uk-air.defra.gov.uk/assets/documents/reports/cat09/0701110944_AQinequalitiesFNL_AEAT_0506.pdf Living Streets. The pedestrian pound: the business case for better streets and places. 2016. Available at: https://www.livingstreets.org.uk/media/1391/pedestrianpound_fullreport_web.pdf . Raje f, Saffrey A. The value of cycling. London: Department of Transport; 2016. Available at: https://www.gov.uk/government/publications/the-value-of-cycling-rapid-evidence-review-of-the-economic-benefits-of-cycling	Technical
Organisation-Substantive	https://consult.defra.gov.uk/airquality/air-quality-plan-for-tackling-nitrogen-dioxide/supporting_documents/Technical Report Amended 9 May 2017.pdf	Technical
Organisation-Substantive	TfL's 2015 figures	Technical
Organisation-Substantive	The First Minister stated in announcing the 2017 Programme for Government: "Our aim is for new petrol and diesel cars and vans to be phased out in Scotland by 2032 - the end of the period covered by our new Climate Change Plan and eight years ahead of the target set by the UK government."	Legal
Organisation-Substantive	Holman et al (2015)- "Review of the efficacy of low emission zones to improve urban air quality in European cities." Atmospheric Environment 111. 161-169	Technical
Organisation-	https://consult.defra.gov.uk/airquality/air-quality-plan-for-tackling-nitrogen-dioxide/supporting_documents/Technical Report Amended 9 May 2017.pdf	Legal and

Substantive	Building Scotland's Low Emissions Zones – A Consultation, Transport Scotland, 2017 Transport and Travel in Scotland 2016, (26 September 2017)	technical
Organisation-Substantive	See the Greener Journeys report Improving Air Quality in Towns and Cities for a detailed discussion https://greenerjourneys.com/wp-content/uploads/2017/04/Improving-Air-Quality-in-Towns-and-Cities-PROF-DAVID-BEGG-Final.pdf	Technical
Organisation-Substantive	Harrison, R.M., Yin, J., Mark, D., Stedman, J., Appleby, R.S., Booker, J., Moorcroft, S., 2001. Studies of the coarse particle (2.5 -107 mm) component in UK urban atmospheres. Atmospheric Environment 35 (21), 3667 - 3679.	Technical
Organisation-Substantive	STEP Summer seminar: Prof Anable, Barnes and Chadderton STAR Conference: Dr Morton from Leeds University	Technical

Q2-Do you agree that the primary objective of LEZs should be to support the achievement of Scottish Air Quality Objectives? If not, why not?

A total of 14 respondents included sources of evidence in their answer and are listed below:

Respondent type	Source of evidence	Type of evidence
Individual-Substantive	- BBC (2009) "piece on a 20 year old petrol car vs a 2009 diesel car"	Technical
Individual-Substantive	- Subcommittee on Environment & Subcommittee on Energy Hearing – Geoengineering: Innovation, Research and Technology (US Congress)	Technical
Organisation-Substantive	- World Health Organisation - British Cycling	Technical
Organisation-Substantive	- Switched on Scotland: Action Plan for Growth - LowCVP - London Environmental Strategy (2017) (https://www.london.gov.uk/sites/default/files/london_environment_strategy-draft_for_public_consultation.pdf) - Switched on Scotland Phase Two: An Action Plan for Growth (https://www.transport.gov.scot/media/39306/switched-on-scotland-phase-2.p) - Testing of Urban Delivery Commercial Vehicles, Low Carbon Vehicle Partnership (2017) (https://locity.org.uk/wp-content/uploads/2017/01/LowCVP-TfL-2016-Test-Programme-Final-Report.pdf)	Technical
Organisation-Substantive	- Table 13.1a, Scottish Transport Statistics 35 (2016) - Greener Journeys	Technical
Organisation-Substantive	- EU Annual Legal Pollution Limit Values	Legal
Organisation-Substantive	- World Resources Institute, Working Paper, International Practices for Low Emissions Zones and Congestion Charging - World Health Organisation	Technical
Organisation-Substantive	- Clean Air for Scotland (CAFS) - World Health Organisation guidelines	Legal
Organisation-Substantive	- The Aberdeen Project case study	Technical
Organisation-Substantive	- World Health Organisation	Legal and Technical

	Defra, "UK Plan for tackling roadside nitrogen dioxide concentrations Technical Report," July 2017, Figure 2.3 on p 28 Scottish Air Quality Website, "Air Quality Standards and Objectives" WHO Factsheet, "Ambient (outdoor) air quality and health" (2016)	
Organisation-Substantive	- Department for Environment, Food and Rural Affairs and Department for Transport (2017) Clean Air Zone Framework (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/612592/clean-air-zone-framework.pdf)	Legal
Organisation-Substantive	- Karagulian, Federico et al, (2015) Contributions to cities' ambient particulate matter (PM): A systematic review of local source contributions at a global level, <i>Atmospheric Environment</i> , 120 00475-483 - Peters A et al (2014) 'Long-term exposure to ambient air pollution and incidence of acute coronary events: perspective cohort study and meta-analysis in 11 European cohorts from the ESCAPE project.' <i>British Medical Journal</i> http://www.bmj.com/content/348/bmj.f7412 - http://urbanaccessregulations.eu/low-emission-zones-main/impact-of-lezs	Technical
Organisation-Substantive	- Table 13.1a, Scottish Transport Statistics 35, 2016 - Greener Journeys	Technical
Organisation-Substantive	- Clean Air for Scotland (CAFS)	Legal

Q3a- Do you agree with the proposed minimum mandatory Euro emission criteria for Scottish LEZs?

Closed question i.e. Yes/No/Not Answered.

However, of those respondents who included pdf attachments with their answer, a number of evidence sources were mentioned, coming to a total of 7 responses:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	xii Department for Transport (2016) Vehicle Emissions Testing Programme: Moving Britain Ahead p.22 xiii Department for Transport (2016) Vehicle Emissions Testing Programme: Moving Britain Ahead p.17	Technical
Organisation-Substantive	ClientEarth (2) v Defra [2016] EWHC 2740, paragraphs 49 & 50 (emphases added) Transport for London, "Mayor and TfL finalise ULEZ requirements for taxi and minicab trades" (2015) BBC News, "Four major cities move to ban diesel vehicles by 2025" (2 December 2016) C40 Cities Press Release, "Mayors of 12 Pioneering Cities Commit to Create Green and Healthy Streets" (23 October 2017) Climate Action Programme, "Oxford to set up world's first zero emissions zone" (13 October 2017) The Guardian, "Oslo moves to ban cars from city centre within four years" (19 October 2015)	Legal and technical

Organisation-Substantive	https://www.gov.uk/government/publications/low-emission-bus-scheme http://avidtp.com/ http://www.graysonts.com/	Technical
Organisation-Substantive	World Health Organization. WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide. Global update 2005. Summary of risk assessment. WHO: Geneva; 2005. Available at: http://apps.who.int/iris/bitstream/10665/69477/1/WHO_SDE_PHE_OEH_06.02_eng.pdf	Technical
Organisation-Substantive	http://www.lowcvp.org.uk/Hubs/leb/LEBCertificates.htm#ADL www.lowcvp.org.uk/assets/other/LEB%20Certificate%20ADL%20E400H%20PAX%2089.pdf	Technical
Organisation-Substantive	https://consult.defra.gov.uk/airquality/air-quality-plan-for-tackling-nitrogen-dioxide/ https://consult.defra.gov.uk/airquality/air-quality-plan-for-tackling-nitrogen-dioxide/supporting-documents/Technical-Report-Amended-9-May-2017.pdf https://consultations.tfl.gov.uk/environment/air-quality-consultation-phase-2/	Legal and technical
Organisation-Substantive	https://www.theguardian.com/business/2016/apr/21/all-top-selling-cars-break-emissions-limits-in-real-world-tests	Technical

Q3b- 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?

A total of 7 respondents also provided evidence sources in response to Question 3b:

Respondent type	Source of evidence	Type of evidence
Individual-Substantive	http://www.theicct.org/sites/default/files/publications/ICCT_RoadTested_201709.pdf	Technical
Individual-Substantive	http://hdl.handle.net/10023/11734 See Chapter 4 A description of epidemiological studies assessing the impact of traffic-related air pollution on the health of residents in Scottish Air Quality Management Areas - Scottish (Air Quality) Needs Assessment.	Technical
Individual-Substantive	http://www.glpautogas.info/documentos/11GASOLINE%20AND%20LPG%20comparison.pdf	Technical
Organisation-Substantive	http://www.theicct.org/nox-europe-hdv-ldv-comparison-jan2017	Technical
Organisation-Substantive	LEZ feasibility study (Ref 3)	Legal
Organisation-Substantive	https://uk-air.defra.gov.uk/assets/documents/reports/aeqg/ch8.pdf	Technical
Organisation-Substantive	https://consultations.tfl.gov.uk/environment/air-quality-consultation-phase-2/ http://content.tfl.gov.uk/pt-emissions-study.pdf	Technical

Q3c- Should emission sources from construction machinery and/or large or small van refrigerated units be included in the LEZ scope, and if so should their inclusion be immediate or after a period of time?

A total of 5 respondents included evidence sources in response to this answer:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	Aberdeen (2010), Edinburgh (2013) and Glasgow (2010) all conducted feasibility studies	Technical

Organisation-Substantive	Liquid Air on the European Highway 'The economic and environmental impact of zero-emission transport refrigeration' Dearman, 2016. Link: http://dearman.co.uk/wp-content/uploads/2016/05/Liquid-Air-on-the-Euro-Highway-Report-For-Web.pdf BOC Linde FROSTCRUISE® brochure: https://www.boconline.co.uk/internet.lg.lg.gbr/en/images/FROSTCRUISE-brochure410_167707.pdf?v=1.0 BOC Linde Ecolite Zero Emissions Lighting for hire: http://www.tcp.eu.com/products/hire/ecolite-lighting-towers/ecolite-t/	Technical
Organisation-Substantive	regulation EU/2016/1628 The London scheme, issued by the Supplementary Planning Guidance	Legal and technical
Organisation-Substantive	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/593584/E31_-_Air_Quality_v1.5.pdf http://www.nrmm.london/	Legal and technical
Organisation-Substantive	Research from King's College London	Technical

Q4- What are your views on adopting a national road access restriction scheme for LEZs across different classes of vehicles?

For this question, there was only a total of 3 responses which contained evidence sources found:

Respondent type	Source of evidence	Type of evidence
Individual-Substantive	Consultation document page 17: Air quality related Traffic Regulation Conditions (TRCs)	Technical
Organisation-Substantive	The National Transport Strategy Review (NTSR)	Legal
Organisation-Substantive	Scotland's Way Ahead, Low Carbon Infrastructure Task Force, https://scotlandswayahead.org.uk/projects/adaptingcities (accessed November 2017) Congestion Charge Impact Assessment, Transport for London, 2014 https://consultations.tfl.gov.uk/roads/cc-changes-march-2014/user_uploads/cc-impact-assessment.pdf (accessed November 2017)	Technical

Q5- 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?

For this question, there was only 1 response with sources of evidence:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	Peters A et al (2001) 'Increased particulate air pollution and the triggering of myocardial infarction.' Circulation 103:2810-2815 Committee on the Medical Effects of Air Pollutants (2009) 'The mortality effects of long-term exposure to particulate air pollution in the UK. Available at http://webarchive.nationalarchives.gov.uk/20140505105804/http://www.comeap.org.uk/images/stories/Documents/Reports/comeap%20the%20mortality%20effects%20of%20long-term%20exposure%20to%20particulate%20air%20pollution%20in%20the%20uk%202010.pdf	Technical

Q6- What are your views on Automatic Number Plate Recognition enforcement of LEZs? Please be as specific as possible in your reasoning.

There was a total of 4 sources of evidence in response to Question 6:

Respondent type	Source of evidence	Type of evidence
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Individual-Substantive	http://hdl.handle.net/10023/11734 Chapter 7 – A socioeconomic analysis of Low Emission Zones	Technical
Organisation-Substantive	DVLA data for vehicle classification	Technical
Organisation-Substantive	https://tfl.gov.uk/corporate/privacy-and-cookies/road-user-charging	Technical
Organisation-Substantive	Wang et al, 2017	Technical

Q7a- What exemptions should be applied to allow LEZ to operate robustly? Please be as specific as possible in your reasoning.

There were a total of 6 responses with sources of evidence in response to Question 7a:

Respondent type	Source of evidence	Type of evidence
Individual-Substantive	http://hdl.handle.net/10023/11734 Chapter 4 - A description of epidemiological studies assessing the impact of traffic-related air pollution on the health of residents in Scottish Air Quality Management Areas	Technical
Individual-Substantive	DfT data at the end of 2016 Source: Department for Transport, Vehicle Licensing Statistics 2016, data taken from table no 0126.	Technical
Organisation-Substantive	Gardiner et. al (2010) Exploring the care needs of patients with advanced COPD: An overview of the literature, http://www.sciencedirect.com/science/article/pii/S0954611109003059 The Poverty Site (2017) Low income and disability, http://www.poverty.org.uk/40/index.shtml	Technical
Organisation-Substantive	https://tfl.gov.uk/corporate/privacy-and-cookies/road-user-charging	Technical
Organisation-Substantive	Murie, J (2017) Active travel in Glasgow: what we've learned so far. A Glasgow Centre for Population Health (GCPH) report http://www.gcph.co.uk/assets/0000/6007/Active_travel_synthesis_final.pdf , page 38	Technical
Organisation-Substantive	City of Edinburgh Council. Council Commitments 2017 http://www.edinburgh.gov.uk/info/20141/council_commitments	Legal

Q7b- Should exemptions be consistent across all Scottish local authorities?

Question 7b was a closed question with yes/no answers, however there was one source of evidence from a pdf attachment:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	http://www.businessdisabilityforum.org.uk/media-centre/newsletter/members/november-2016/winners-of-2016-disability-smart-a-wards-announced/	Technical

Q8- What are your views on LEZ lead-in times and sunset periods for vehicle types shown in Table 2? Please be as specific as possible in your reasoning.

For Question 8, there was a total of 3 responses with sources of evidence in response to this question:

Respondent type	Source of evidence	Type of evidence
Individual-Substantive	http://www.bbc.co.uk/news/resources/1d-sh/how_toxic_is_your_car_exhaust	Technical
Individual-Substantive	http://www.climatexchange.org.uk/files/2814/9382/5514/The_European_Emission_Standards_of_the_Car_Fleet_Registered_across_Scotlands_Main_Cities_-_Policy_note.pdf	Technical

Substantive		
Organisation-Substantive	The First Minister of Scotland, Nicola Sturgeon The Future of Energy in Scotland (Draft). Scottish Government, January 2017. Link: http://www.gov.scot/Publications/2017/01/3414	Legal

Q9- 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?

In total, there were 5 responses with sources of evidence found in response to this question:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	Announcement by the Transport Minister on 10/10/17	Technical
Organisation-Substantive	Calor commissioned a report by Aether (maps for Edinburgh and Glasgow have been included in this response) The UK National Emissions Inventory	Technical
Organisation-Substantive	2017 DfT report "Emissions Testing of Gas-powered Commercial Vehicles"	Technical
Organisation-Substantive	http://avidtp.com/ http://www.graysonts.com/	Technical
Organisation-Substantive	EIC's 2015 report 'A Clear Choice for the UK: technology options for tackling air pollution'	Technical

Q10- How can the Scottish Government best target any funding to support LEZ implementation?

In response to Question 10, 12 responses with sources of evidence were found for this question:

Respondent type	Source of evidence	Type of evidence
Individual-Substantive	http://www.airqualitynews.com/2015/04/28/air-pollution-costs-uk-economy-54-billion-a-year/	Technical
Individual-Substantive	https://www.theengineer.co.uk/hybrid-moves-on-the-buses/ http://hdl.handle.net/10023/11734 Chapter 7	Technical
Organisation-Substantive	The UK Department for Transport calculations for Clean Air Zones	Technical
Individual-Substantive	World Health Organisation study	Technical
Organisation-Substantive	Research conducted by the RAC Foundation	Technical
Organisation-Substantive	Begg 2017: 18ff and 4f " Improving air quality in towns and cities. http://www.greenerjourneys.com/publication/improving-air-quality-towns-cities/	Technical
Organisation-Substantive	Professor Peter White, University of Westminster 2015 The Impact of Congestion on Bus Passengers, Begg 2016 Professor David Begg analysis of University of Leeds, ITS 2016 Report	Technical
Organisation-Substantive	UK National Institute for Clinical Excellence in its 2017 Review of environmental influences on public health	Technical
Organisation-Substantive	Department for Transport funded project in Birmingham	Technical
Organisation-Substantive	Audit Scotland (2017), Local government in Scotland: Performance and challenges 2017, p.4	Technical

	<p>ibid. p.24</p> <p>Peacock, J. L. et al, Outdoor air pollution and respiratory health in patients with COPD. Thorax, 2011.</p> <p>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.</p> <p>British Lung Foundation (2017) Estimating the economic burden of respiratory illness in the UK</p> <p>British Lung Foundation (2016), The Battle for Breath: the impact of lung disease in the UK, May 2016 – BLF statistics - https://statistics.blf.org.uk/</p> <p>Vidal, J (2016) 'Councils failing to monitor most British schools for dangerous air pollution' Guardian, 6 Oct 2016</p>	
Organisation-Substantive	http://www.edinburgh.gov.uk/downloads/file/4375/2013_further_assessment_report	Legal
Organisation-Substantive	<p>Professor Peter White, University of Westminster 2015</p> <p>The Impact of Congestion on Bus Passengers, Begg 2016</p> <p>Professor David Begg analysis of University of Leeds, ITS 2016 Report</p>	Technical

Q11- What criteria should the Scottish Government use to measure and assess LEZ effectiveness?

11 responses were found which contained sources of evidence in response to Question 11:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	Data on emissions per miles travelled in some format as per the observation by Begg (2017)	Technical
Individual-Substantive	http://hdl.handle.net/10023/11734	Technical
Organisation-Substantive	We measure fuel flow directly from the vehicles in some of our projects and are aware of work at Imperial College converting this and other data to emissions.	Technical
Individual-Substantive	David Begg	Technical
Organisation-Substantive	Begg 2017 " Improving air quality in towns and cities.	Technical
Organisation-Substantive	Current AQMA data and the social and economic measurements used by Aether	Technical
Organisation-Substantive	Begg proposal	Technical
Organisation-Substantive	<p>Public Health England (2016) Working Together to Promote Active Travel: a briefing for local authorities</p> <p>British Lung Foundation (2016), The Battle for Breath: the impact of lung disease in the UK, May 2016</p> <p>https://www.blf.org.uk/what-we-do/our-research/the-battle-for-breath-2016</p> <p>British Lung Foundation (2017) Estimating the economic burden of respiratory illness in the UK</p>	Technical
Organisation-Substantive	Hart JE et al. (2013), Changes in traffic exposure and the risk of incident myocardial infarction and all-cause mortality, Epidemiology 24(5) http://www.ncbi.nlm.nih.gov/pubmed/23877047	Technical
Organisation-Substantive	Chapter 13 of the Transport Statistic Chapter 5 of the annual transport statistics	Technical
Organisation-Substantive	Ezeah et al, 2015	Technical

Organisation-Substantive	Directive and case law including the High Court judgment in R (ClientEarth) No. 2 v Secretary of State for Environment Food and Rural Affairs [2016] EWHC 2740 (Admin)	Legal
Organisation-Substantive	Chapter 13 of Scotland's Transport Statistics	Technical

Q12- 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?

A total of 4 responses were found with evidence sources:

Respondent type	Source of evidence	Type of evidence
Individual-Substantive	http://hdl.handle.net/10023/11734 Chapter 6 - An assessment of policy development and behaviour change	Technical
Individual-Substantive	Data from involvement with a community council	Technical
Organisation-Substantive	Christian Oltra & Roser Sala & Alex Boso & Sergi López Asensio (2017) Public engagement on urban air pollution: an exploratory study of two interventions, Environ Monit Assess (2017) 189:296 Scottish Government (2017) Cleaner Air for Scotland: The Road to a Healthier Future, 2016 Progress Report, p.6-8	Technical
Organisation-Substantive	Defra communications toolkit 2013-2014 Defra, Science and Research Projects, "Developing communication methods for localised air quality and health impact information - AQ1010" Sadiq Khan's twitter feed and press releases page	Technical

Q13- What actions should local or central government consider in tandem with LEZs to address air pollution?

In total, 18 responses contained sources of evidence in response to Question 13:

Respondent type	Source of evidence	Type of evidence
Individual-Substantive	http://hdl.handle.net/10023/11734 Chapter 5 - An investigation of possible strategies to reduce traffic-related air pollution and Chapter 7 – A socioeconomic analysis of Low Emission Zones	Technical
Organisation-Substantive	Clean Air Act 1993	Legal
Organisation-Substantive	CAFS 2020	Legal
Organisation-Substantive	https://policyexchange.org.uk/why-london-needs-a-boiler-scrappage-scheme/ https://energymanagemagazine.co.uk/condensing-boilers-blaze-new-trails-for-low-nox-emissions/ http://www.scottishairquality.co.uk/assets/documents/technical%20guidance/LAQM-PG(S)16-April-16.pdf http://www.scottishairquality.co.uk/laqm/tools https://laqm.defra.gov.uk/action-planning/action-planning.html	Legal and technical

	<p>http://www.scottishairquality.co.uk/laqm/tools</p> <p>http://www.scottishairquality.co.uk/assets/documents/LAQM-TG16-April-16-v1.pdf</p> <p>http://myelectricavenue.info/trial-results</p> <p>Using PVGIS Climate SAF with due South orientation and optimised slope</p> <p>https://www.ofgem.gov.uk/gas/retail-market/monitoring-data-and-statistics/typical-domestic-consumption-values</p>	
Organisation-Substantive	National Transport Strategy	Legal
Organisation-Substantive	<p>Research by KPMG for Greener Journeys ("An Economic Evaluation of Local Bus Infrastructure Schemes, 2015)</p> <p>The University of Leeds' "Buses and the Economy II" of 2014 report</p>	Technical
Organisation-Substantive	Any Journey is Greener by Bus report, Low Carbon Vehicle Partnership, Feb 2017. Link: http://www.greenerjourneys.com/wp-content/uploads/2017/02/LowCVP-Green-Bus-Dec-WEB.pdf	Technical
Organisation-Substantive	https://www.ice.org.uk/news-and-insight/latest-ice-news/air-quality-taskforce-launch-report	Technical
Organisation-Substantive	<p>http://www.glasgowlife.org.uk/events/glasgow-worlds-cup-gymnastics-2011/Documents/Final%20Artwork%20-%20Style%20Map%20A3%20with%20key%20Sept%202012.pdf</p> <p>https://m.trafficscotland.org/Mapping/ViewMap?layerIds=209</p> <p>National statistics data</p>	Technical
Organisation-Substantive	<p>Cycling Action Plan for Scotland (CAPS)</p> <p>Paper prepared for Edinburgh City Council (has also been submitted to Transport Scotland)</p>	Technical
Organisation-Substantive	<p>Scottish Government (2015) Cleaner Air For Scotland: The Road to a Healthier Future, p.46</p> <p>Transport Scotland (2016) Transport and Travel in Scotland 2015</p> <p>http://www.foe-scotland.org.uk/sites/www.foe-scotland.org.uk/files/active%20travel%20investment.pdf</p> <p>British Lung Foundation (2015) Patient survey, 232 respondents – available on request</p>	Technical and Legal
Organisation-Substantive	Clean Growth Strategy	Legal
Organisation-Substantive	<p>Defra, Science and Research Projects, "Developing communication methods for localised air quality and health impact information - AQ1010"</p> <p>Transport Scotland statistics</p> <p>http://hctgroup.org/uploaded/Practical%20bus%20franchising%20-%20the%20Jersey%20model.pdf</p> <p>Transport Scotland, "Transport and Travel in Scotland", Table 26, Reasons why do not travel to work.</p> <p>European Cyclists Federation: "Cycling and Urban Air Quality A study of European Experiences"</p> <p>London Congestion Charge</p> <p>Nottingham City Council</p> <p>Committee on Climate Change, "Reducing emissions in Scotland: 2016 progress report" (Sept 2016)</p> <p>Centre for Public Impact, "London's congestion charge"</p>	Technical

	City Metric, "Why other cities should copy Nottingham's revolutionary parking levy" (Aug 24 2016)	
Organisation-Substantive	Transport Scotland (2016) Travel and Transport in Scotland 2015, page 61 http://www.transport.gov.scot/sites/default/files/documents/rrd_reports/uploaded_reports/j450918/j450918.pdf Designed to Move: Active Cities report - http://e13c7a4144957cea5013-f2f5ab26d5e83af3ea377013dd602911.r77.cf5.rackcdn.com/resources/pdf/en/active-cities-full-report.pdf http://www.startribune.com/cycling-in-minnesota-creates-thousands-of-jobs-and-cuts-health-care-spending-state-report-concludes/417240963/	Technical
Organisation-Substantive	Transport and Travel in Scotland 2016 (26 September 2017) https://www.sustrans.org.uk/blog/tackling-transport-poverty-scotland https://www.sustrans.org.uk/bikelifeedinburgh	Technical
Organisation-Substantive	See Mitigating transport's climate change impact in Scotland: Assessment of policy options, Atkins/University of Aberdeen/Scottish Government Social Research, 2009 http://www.gov.scot/resource/doc/282791/0085548.pdf (accessed November 2017)	Technical
Organisation-Substantive	Walk Cycle Vote campaign Cycling UK's booklet 'Space for Cycling: a guide for decision-makers' Mark Ruskell MSP's recently proposed member's bill to the Scottish Parliament	Legal and technical
Organisation-Substantive	2017 study commissioned by ONS Draft climate change plan 4	Legal and technical

Q14- How can LEZs help to tackle climate change, by reducing CO2 emissions in tandem with air pollution emissions?

A total of 17 responses were found with evidence sources in their answer:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	Estimates from a recent Urban Transport Group, as referenced within the Strathclyde Bus Alliance Report of 25 April 2016 EPUK guidance: Air Quality and Climate Change - Integrating Policy Within Local Authorities	Legal and technical
Individual-Substantive	Paul Hawken's book "Drawdown"	Technical
Organisation-Substantive	Helm report – Cost of Energy Review	Technical
Organisation-Substantive	2017 RAC Report on Motoring	Technical
Organisation-Substantive	LowCVP data	Technical
Organisation-Substantive	Keith Brown, Transport minister RPP3 Climate Plan (Draft), Scottish Government, January 2017. Link: http://www.gov.scot/Publications/2017/01/276	Legal
Organisation-Substantive	"A comprehensive approach for bus systems and CO2 emission reduction" UITP 2011	Technical
Organisation-Substantive	Defra's new consultation (issued post-Budget)	Legal
Organisation-Substantive	A recent GCC meeting with Alexander Dennis	Technical
Organisation-Substantive	Draft London Environment Strategy	Legal
Organisation-Substantive	Committee on Climate Change, "Reducing emissions in Scotland: 2016 progress report" (Sept 2016) Centre for Public Impact, "London's congestion charge" City Metric, "Why other cities should copy Nottingham's revolutionary parking levy" (Aug 24 2016)	Technical

Organisation-Substantive	A survey carried out by BikePlus Scottish Government's Draft Climate Change Plan and Cleaner Air for Scotland Strategy	Legal and technical
Organisation-Substantive	Ian Preston, Joshua Thumim et al. Distribution of carbon emissions in the UK: Implications for domestic energy policy. JRF; 2013 Available at: https://www.irf.org.uk/report/distribution-carbon-emissions-uk-implications-domestic-energy-policy Whyte B, Waugh C. Trends in pedestrian and cyclist road casualties in Scotland. Glasgow: GCPH; 2015. Available at: http://www.gcph.co.uk/publications/572_pedestrian_and_cyclist_casualty_trends_in_scotland .	Technical
Organisation-Substantive	Sustainable Energy Action Plan (SEAP) for Edinburgh The Local Transport Strategy	Technical
Organisation-Substantive	www.carplusbikeplus.org.uk/project_page/electric-bikes-a-summary-of-existing-research	Technical
Organisation-Substantive	P.18-19 EST/Uber Study - http://www.energysavingtrust.org.uk/uberEVtrial YouGov poll commissioned by Uber and conducted from 28 October-1 November 2016.	Technical
Organisation-Substantive	"A comprehensive approach for bus systems and CO2 emission reduction" UITP 2011	Technical

Q15-What measures (including LEZs) would make a difference in addressing both road congestion and air pollution emissions at the same time?

In total, evidence sources were found in 14 responses from Question 15:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	Research forthcoming from Sustrans in December 2017	Technical
Organisation-Substantive	Research by KPMG for Greener Journeys (The Value of the Local Bus Services to the Economy, The Value of Local Bus Services to Society, 2012, 2014 and 2016) The recent (2016) work by Professor David Begg "The Impact of Congestion on Bus Passengers"	Technical
Organisation-Substantive	Walker, J. (2011) and Walker (2018). (references available from mailbox@its-uk.org.uk) (Eddington, 2006). UK Department for Transport in 'Towards a Sustainable Transport System' (DfT, 2007),	Technical
Individual-Substantive	Reports authored by Begg	Technical
Organisation-Substantive	https://www.flickr.com/photos/carltonreid/6440857817	Technical
Individual-Substantive	Ministry of Transport/Department for Transport stats Published DfT stats	Technical
Organisation-Substantive	'The Travelling Citizen: Emergent Discourses of Moral Mobility in a Study of Cycling in London' A 2009 study by Gilles Duranton and Matthew Turner, two Economics researchers	Technical
Organisation-Substantive	City Planner Brent Toderian Youtube Video: "Brent Toderian on sustainable mobility" Transport and Travel in Scotland 2016 (26 September 2017) See, for example, the UK Department of Transport report, "Trunk Roads And The Generation Of Traffic" (1994) T Litman, "Generated Traffic and Induced Travel: Implications for Transport Planning" ITE Journal, Vol. 71, No. 4, Institute of Transportation Engineers (www.ite.org), April 2001, pp. 38-47. J Speck, "Walkable City"	Technical

	Cairns et al. "Disappearing traffic? The story so far" (2002). Municipal Engineer. 151 (1): 13–22.	
Organisation-Substantive	The Scottish Parliament's Rural Economy and Connectivity Committee, following their evidence gathering sessions on the Draft Climate Change Plan	Legal
Organisation-Substantive	Research conducted by Mr Simon Dale, Dr Matthew Frost, Prof. Stephen Ison, Prof. Mohammed Quddusa, and Mr Peter Warren, from the centre for Innovation and Collaborative Construction Engineering at Loughborough University and the highway Metrics Team at Nottingham City Council	Technical
Organisation-Substantive	Transport Scotland. A long-term vision for Active Travel in Scotland 2030. 2014. Available at: https://www.transport.gov.scot/media/33649/long-term-vision-for-active-travel-in-scotland-2030.pdf	Technical
Organisation-Substantive	Mumford's classic 1955 statement "Building more roads to prevent congestion is like a fat man loosening his belt to prevent obesity."	Technical
Organisation-Substantive	http://content.tfl.gov.uk/pt-emissions-study.pdf http://www.tmleuven.be/project/motorcyclesandcommuting/2011092_Motorfietseneindrapport_En_g.pdf	Technical
Organisation-Substantive	Transport and Travel in Scotland 2016, (26 September 2017)	Technical

Q16- Do you have any other comments that you would like to add on the Scottish Government's proposals for LEZs?

Sources of evidence were found in 8 responses:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	Scottish Transport Statistics No. 35 report, 2016 edition	Technical
Organisation-Substantive	World Health Organisation (WHO) guideline value Inhaled Nanoparticles Accumulate at Sites of Vascular Disease. Miller et al, in ACS Nano http://pubs.acs.org/doi/abs/10.1021/acs.nano.6b08551 The Future of Trucks – Implications for Energy and Environment. International Energy Agency, 2017. Link: https://www.iea.org/publications/freepublications/publication/TheFutureofTrucksImplicationsforEnergyandtheEnvironment.pdf The Economic Impact of Hydrogen and Fuel Cells in the UK - A Preliminary Assessment based on Analysis of the Replacement of Refined Transport Fuels and Vehicles, HFC SUPERGEN, March 2017. Link: http://www.h2fcsupergen.com/our-work/whitepapers/	Technical
Organisation-Substantive	See Beria (2016) and Beria et al. (2018).- Example on Milan LEZs	Technical
Organisation-Substantive	The study conducted by the World Resources Institute	Technical
Organisation-Substantive	Department for Transport (2010) Value of Cycling https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/509587/value-of-cycling.pdf , page 14 British Cycling (2014) Benefits of Investing in Cycling https://www.britishcycling.org.uk/zuvvi/media/bc_files/campaigning/BENEFITS_OF_INVESTING_IN_CYCLING_DIGI_FINAL.pdf , page 2 http://www.cyclingscotland.org/wp-content/uploads/2013/08/Architecture-and-Placemaking-2012.pdf	Technical

	Designed to Move: Active Cities report - http://e13c7a4144957cea5013-f2f5ab26d5e83af3ea377013dd602911.r77.cf5.rackcdn.com/resources/pdf/en/active-cities-full-report.pdf	
Organisation-Substantive	Table- Minimum mandatory Euro emission standards for all vehicle types in relation to LEZs (...) Details on the CVRAS can be found in Section 3. *The Vehicle Emission Testing Consultation on Building Scotland's Low Emission Zones Transport Scotland 21 Programme 6 from April 2016	Technical
Organisation-Substantive	World Health Organisation (2016), Ambient air pollution: A global assessment of exposure and burden of disease, available at http://apps.who.int/iris/bitstream/10665/250141/1/9789241511353-eng.pdf	Technical
Organisation-Substantive	http://www.onestreet.org/images/stories/Disappearing_traffic.pdf	Technical

Q17- 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.

A total of 12 responses were found with evidence sources:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	Scottish Transport Statistics No. 35 report, 2016 edition	Technical
Organisation-Substantive	The Scottish Environment Protection Agency	Technical
Organisation-Substantive	Active travel in Glasgow: what we've learned so far. Glasgow Centre for Population Health. Link: http://www.gcph.co.uk/assets/0000/6211/Active_travel_synthesis_WEB.pdf Household car adoption and financial distress in deprived urban communities: A case of forced car ownership? Curl et al, in Transport Policy, 2017. Link: http://eprints.gla.ac.uk/134312/ Improving Air Quality in Towns and Cities: Why buses are an integral part of the solution'. Professor David Begg, April 2017. Link: https://greenerjourneys.com/wp-content/uploads/2017/04/Improving-Air-Quality-in-Towns-and-Cities-PROF-DAVID-BEGG-Final.pdf	Technical
Organisation-Substantive	View held by the World Health Organisation	Technical
Organisation-Substantive	The Royal College of Physicians	Technical
Organisation-Substantive	Pedersen et al, 15 October 2013: Ambient air pollution and low birthweight: a European cohort study (ESCAPE), The Lancet Respiratory Medicine, Volume 1, Issue 9. http://www.thelancet.com/journals/lanres/article/PIIS2213-2600(13)70192-9/abstract Royal College of Physicians, "Every breath we take: the lifelong impact of air pollution" (February 2016)	Technical
Organisation-Substantive	Royal College of Physicians (2016) Every breath we take: the lifelong impact of air pollution. London RCP	Technical
Organisation-Substantive	Royal College of Physicians, "Every breath we take: the lifelong impact of air pollution" (February 2016)	Technical
Organisation-Substantive	https://uk-air.defra.gov.uk/assets/documents/reports/cat09/0701110944_AQinequalitiesFNL_AEAT_0506.pdf	Technical
Organisation-Substantive	https://consult.defra.gov.uk/airquality/air-quality-plan-for-tackling-nitrogen-dioxide/supporting-documents/Technical-Report-Amended-9-May-2017.pdf https://wiki.mag-uk.org/images/7/74/ULEZ_2017_06_21.pdf https://www.researchgate.net/publication/11063015_Hoek_G_Brunekreef_B_Goldbohm_S_Fischer_P_van_den_Brandt_PA_Association_between_mortality	Technical

	<p>and indicators of traffic related air pollution in the Netherlands a cohort study The Lancet 2002 360 1 203</p> <p>https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/485100/PHOF_IA_acc.pdf</p> <p>http://www.telegraph.co.uk/news/earth/environment/11991350/1apped-Where-is-air-pollution-killing-the-most-people.html</p> <p>http://www.niassembly.gov.uk/globalassets/documents/raise/constituencyprofiles/2016/Fermanagh-and-South-Tyrone-Profile-June-2016.pdf</p> <p>https://www.uswitch.com/place-to-live/eilean-siar-western-isles/</p> <p>https://www.google.co.uk/search?q=average+life+expectancy+uk&og=average+life+expectancy+uk&ags=chrome..69i57i0l5.417.5i0i7&sourceid=chrome&ie=UTF8</p>	
Organisation-Substantive	Royal College of Physicians, "Every breath we take: the lifelong impact of air pollution" (February 2016)	Technical
Organisation-Substantive	Evidence from the Glasgow Centre for Population Health http://www.sciencedirect.com/science/article/pii/S0967070X17300100	Technical

Q18- 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.

Evidence sources were found in 9 responses in answer to Question 18:

Respondent type	Source of evidence	Type of evidence
Organisation-Substantive	Glasgow Economic Strategy to 2023	Technical
Individual-Substantive	Findings from the Economic and Business Impact Assessment for the London ULEZ	Technical
Organisation-Substantive	<p>Extrapolated from a Defra assessment that air pollution costs the UK economy as a whole</p> <p>£16bn per year, based on 29,000 UK- wide deaths from air pollution – Defra, 10 May 2013, Impact pathway guidance for valuing changes in air quality. https://www.gov.uk/government/publications/air-quality-impact-pathway-guidance</p> <p>Sustrans, "Physical activity and health - facts and figures"</p> <p>Living Streets, "The pedestrian pound: The business case for better streets and places" (2008)</p>	Technical
Organisation-Substantive	<p>Miller, M, Raftis, JB, Langrish, JP, Mclean, SG, Samutrtai, P, Connell, SP, Wilson, S, Vesey, AT, Fokkens, PHB, Boere, AJF, Krystek, P, Campbell, CJ, Hadoke, PWF, Donaldson, K, Cassee, FR, Newby, DE, Duffin, R & Mills, NL 2017, 'Inhaled Nanoparticles Accumulate at Sites of Vascular Disease' <i>Acs nano</i>. DOI: 10.1021/acsnano.6b08551</p> <p>Brook, RD, Newby, DE & Rajagopalan, S 2017, 'The Global Threat of Outdoor Ambient Air Pollution to Cardiovascular Health: Time for Intervention' <i>JAMA cardiology</i>. DOI: 10.1001/jamacardio.2017.0032</p> <p>Miller, M, McLean, SG, Shaw, CA, Duffin, R, Lawal, AO, Araujo, JA, Hadoke, PWF & Newby, DE 2015, 'Diesel Exhaust Particles Impair Vascular Function and Promote Atherosclerosis Through Generation of Oxidative Stress' <i>Atherosclerosis</i>, vol 241, no. 1, pp. E137-E138.</p>	Technical
Organisation-Substantive	<p>https://www.sustrans.org.uk/news/new-report-economic-advantage-walking-and-cycling and https://www.citylab.com/solutions/2015/03/the-complete-business-case-for-converting-street-parking-into-bike-lanes/387595/</p>	Technical
Organisation-Substantive	Extrapolated from a Defra assessment that air pollution costs the UK economy as a whole £16bn per year, based on 29,000 UK- wide deaths from air pollution – Defra, 10 May	Technical

	2013, Impact pathway guidance for valuing changes in air quality. https://www.gov.uk/government/publications/air-quality-impact-pathway-guidance	
Organisation-Substantive	https://www.sustrans.org.uk/news/new-report-economic-advantage-walking-and-cycling and https://www.citylab.com/solutions/2015/03/the-complete-business-case-for-converting-street-parking-into-bike-lanes/387595/	Technical
Organisation-Substantive	Extrapolated from a Defra assessment that air pollution costs the UK economy as a whole £16bn per year, based on 29,000 UK- wide deaths from air pollution – Defra, 10 May 2013, Impact pathway guidance for valuing changes in air quality. https://www.gov.uk/government/publications/air-quality-impact-pathway-guidance	Technical
Organisation-Substantive	Evidence from the Glasgow Centre for Population Health http://www.sciencedirect.com/science/article/pii/S0967070X17300100	Technical

Q19- What impacts do you think LEZs may have on the privacy of individuals? Please be as specific as possible in your reasoning.

In total, 3 responses were found containing sources of evidence in response to Question 19:

Respondent type	Source of evidence	Organisation
Organisation-Substantive	Data Protection Act	Legal
Organisation-Substantive	Data relating to Emovis' privacy of ANPR and data for tolling and enforcement which can be obtained from them	Technical
Organisation-Substantive	Scottish Government consultation document	Legal

Q20- 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.

In total, 7 responses contained sources of evidence in response to Question 20:

Respondent type	Source of evidence	Organisation
Individual-Substantive	https://www.scientificamerican.com/article/when-used-cars-are-more-ecofriendly/	Technical
Organisation-Substantive	Announcement of the 2017-18 Programme for Government by First Minister Nicola Sturgeon, 5th September 2017. Link: https://firstminister.gov.scot/programme-for-government-2017/ SPICE Briefing on Air Quality in Scotland, May 2016. Link: http://www.parliament.scot/ResearchBriefingsAndFactsheets/S5/SB_16-35_Air_Quality_in_Scotland.pdf Cleaner air for Scotland: The road to a healthier future. Scottish Government, November 2015. Link: http://www.gov.scot/Resource/0048/00488493.pdf Emissions Testing of Gas-Powered Commercial Vehicles, Department for Transport, January 2017. Link: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/581859/emissions-testing-of-gas-powered-commercial-vehicles.pdf The Life Cycle Energy Consumption and Greenhouse Gas Emissions from Lithium-Ion Batteries (A Study with Focus on Current Technology and Batteries for light-duty vehicles) IVL Swedish Environmental Research Institute, May 2017. Link: http://www.ivl.se/download/18.5922281715bdaebede9559/1496046218976/C243+The+life+cycle+energy+consumption+and+CO2+emissions+from+lithium+ion+batteries+.pdf Automated Vehicles: Automatically Low Carbon? Institute for Transport Studies, University of Leeds, June 2016. Link: http://www.its.leeds.ac.uk/about/news/automated-vehicles-automatically-low-carbon/	Legal and technical
Organisation-	Cycling Potential Tool (CPT) and heatmaps	Technical

Substantive		
Organisation-Substantive	<p>https://www.gov.uk/government/publications/low-emission-bus-scheme</p> <p>http://avidtp.com/</p> <p>http://www.graysonts.com/</p>	Technical
Organisation-Substantive	<p>DEFRA. Air Quality and Social Deprivation in the UK: an environmental inequalities analysis. Final Report to Department of Environment, Food and Rural Affairs AEAT/ENV/R/2170. 2006. Available at: https://uk-air.defra.gov.uk/assets/documents/reports/cat09/0701110944_AQinequalitiesFNL_AEAT_0506.pdf</p> <p>Living Streets. The pedestrian pound: the business case for better streets and places. 2016. Available at: https://www.livingstreets.org.uk/media/1391/pedestrianpound_fullreport_web.pdf.</p> <p>Rajef, Saffrey A. The value of cycling. London: Department of Transport; 2016. Available at: https://www.gov.uk/government/publications/the-value-of-cycling-rapid-evidence-review-of-the-economic-benefits-of-cycling</p> <p>World Health Organization. WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide. Global update 2005. Summary of risk assessment. WHO: Geneva; 2005. Available at: http://apps.who.int/iris/bitstream/10665/69477/1/WHO_SDE_PHE_OEH_06.02_eng.pdf</p> <p>Ian Preston, Joshua Thumim et al. Distribution of carbon emissions in the UK: Implications for domestic energy policy. JRF; 2013 Available at: https://www.jrf.org.uk/report/distribution-carbon-emissions-uk-implications-domestic-energy-policy</p> <p>Whyte B, Waugh C. Trends in pedestrian and cyclist road casualties in Scotland. Glasgow: GCPH; 2015. Available at: http://www.gcph.co.uk/publications/572_pedestrian_and_cyclist_casualty_trends_in_scotland.</p> <p>Transport Scotland. A long-term vision for Active Travel in Scotland 2030. 2014. Available at: https://www.transport.gov.scot/media/33649/long-term-vision-for-active-travel-in-scotland-2030.pdf</p>	Technical
Organisation-Substantive	<p>Holman, C., Harrison, R., Querol, X, (2015), Review of the efficacy of low emission zones to improve urban air quality in European cities, Atmospheric Environment, p 161 -169</p> <p>Morfield, P., Groneberg, D., Spallik, M., (2014), Effectiveness of Low Emission Zones: Large Scale Analyses in Environmental NO₂, NO and NO_x Concentrations in 17 German Cities. PLOS</p> <p>Wang, Y., Song, S., Qui, S., Lu, L., Ma, Y., Li, X., Hu, Y., (2017), Study on International Practices for Low Emission Zones and Congestion Charging. World Resources Institute, p 1 - 71</p>	Technical
Organisation-Substantive	<p>Holman, C., Harrison, R., Querol, X, (2015), Review of the efficacy of low emission zones to improve urban air quality in European cities, Atmospheric Environment, p 161 -169</p> <p>Morfield, P., Groneberg, D., Spallik, M., (2014), Effectiveness of Low Emission Zones: Large Scale Analyses in Environmental NO₂, NO and NO_x Concentrations in 17 German Cities. PLOS</p> <p>Wang, Y., Song, S., Qui, S., Lu, L., Ma, Y., Li, X., Hu, Y., (2017), Study on International Practices for Low Emission Zones and Congestion Charging. World Resources Institute, p 1 - 71</p>	Technical