

## **Economic and Tourism Impact Assessment**

### **Non-technical Executive summary**

#### **Key points from the report**

- In the absence of national initiatives, Transport for London identified a Greater London Low Emission Zone as the most effective means to reduce road transport emissions harmful to human health. The monetised value of these health benefits have been estimated at between £130 million and £180 million. TfL recognised that the LEZ proposals would impact on vehicle operators (of HGVs, buses, coaches and potentially also LGVs) and commissioned this study to better understand those impacts.
- This report concludes that the LEZ is likely to result in relatively small increases in average vehicle operating costs, mainly through requiring the fitting and maintenance of abatement equipment, bringing forward the replacement costs for non-compliant vehicles and lowering the recoupment values of second hand vehicles. Measured over a five year period, average vehicle operating costs increase by around 2%, although this varies with vehicle type. The cost increases are lumpy however, given the way in which the scheme would phase in, with costs rising by up to 8% in some years (as a result of one-off costs associated with upgrading non-compliant vehicles), and no additional costs in others. There are cost savings in some years due to increased fuel efficiency and lower overall maintenance costs from operating newer vehicles.
- The cost increases would have a minor direct impact on employment in the transport and logistics sector in London and the UK, and the London tourism sector as vehicle operating costs represent larger proportions of total costs in these sectors. There could also be secondary impacts on other sectors of the economy, through the pass-on of these cost increases in the form of higher prices, leading to reduced demand in the economy as a whole. These secondary impacts are unlikely to be significant.
- There are likely to be some positive employment impacts through increased sales of pollution abatement equipment and fitting services.

- The impact of the proposed core Low Emission Zone option on employment in London is likely to be restricted to certain sectors of the economy. It is estimated that there would be a small impact on full time equivalent (FTE) jobs in the freight transport sector in Greater London. This would be partially off-set by additional jobs created in the retrofit industry (located outside London) and in the fitting, servicing, testing and certification of equipment (in London and the south east).
- The quantification of the employment impacts of the LEZ are “gross” and do not take account of the fact that many job losses in the road transport sector are likely to be temporary as many individuals would be re-employed within the freight sector or elsewhere in the economy. There is highly likely to be some re-allocation of employment within the road transport sector, particularly if demand for freight transport is inelastic with respect to cost as suggested by the transport appraisal literature.
- The LEZ is unlikely to lead to much in the way of substitution effects, in terms of freight customers switching to other (non-road) forms of transportation. There may, however, be some re-distributional impacts, in the sense that those already running compliant vehicles may gain a business advantage over their rivals, so off-setting some of the employment losses. This has been the case with the Gothenburg LEZ.
- The LEZ may have a greater impact on those employed in small business than larger businesses. However, the proportion of people employed by small business is not high in the road transport sector as a whole although it is higher for non-scheduled coach and bus activities, and for operators of light goods vehicles.
- The impacts of the LEZ on employment within the tourism industry are estimated to be modest at less than 100 FTE jobs for the core LEZ option. These figures are based on assumptions around a proportion of coach operators passing on 100% of the increase in their costs onto passengers, and the knock on employment impacts of reduced visitor numbers and tourist spend. However, the LEZ would improve London’s image as a “clean and green” city which would potentially improve its desirability as a tourist destination, potentially counterbalancing reductions in tourist numbers due to cost increases.

### **Background and objectives**

On behalf of the Mayor of London, TfL has consulted the public and stakeholders on draft revisions to the Mayor’s Transport and Air Quality Strategies. The proposed revisions take forward the Mayor’s proposal, made in his 2004 election manifesto, to designate the whole of Greater London a Low Emission Zone (LEZ) subject to consultation.

TfL recognised that the proposed Low Emission Zone would potentially impact on affected vehicle operators by imposing or bringing forward a cost to them to comply with the proposed emission standard. TfL therefore commissioned a report to better understand the potential scale of these impacts, which was prepared by GLA Economics, using the expertise of PWC consultants. The findings of this report will inform TfL's recommendations to the Mayor in response to the consultation and, should the Mayor agree to publish the strategy revisions, the development of a Scheme Order.

The report focuses on the impacts of the proposed LEZ on:

1. Employment in London (and the UK), and
2. Tourism in London

An operator survey, carried out on behalf of TfL in 2005, raised a number of questions around potential employment and tourism impacts arising from operators needing to comply with the LEZ. The study utilises the responses to this survey, as well as research and literature into how the transport and logistics sector generally behaves in relation to an increase in costs. In relation to tourism, two studies were used; one which looked at future hotel demand in London, and a Competition Commission report on the Greater Anglia rail franchise acquisition, which looked at coach transport elasticities.

### **The Proposed London Low Emission Zone**

The proposed London Low Emission Zone is a defined area that certain specified vehicles can drive within only if they meet the LEZ emission standard or pay a substantial charge.

The objectives of the LEZ are twofold. The Mayor of London has a statutory duty to take measures towards the achievement of the national air quality objectives and EU limit values for London. He is also committed to reducing air pollution, and by so doing improve the health and quality of life of people who live, work and visit London.

On current trends London is forecast to fail to meet objectives for two pollutants that in certain quantities are harmful to human health: particulates (PM<sub>10</sub>) and oxides of nitrogen (NO<sub>2</sub>). For particulates there are no safe levels of concentration.

In the absence of national schemes, the proposed LEZ was identified as the most effective means for the Mayor to work towards achieving air quality objectives for London. The anticipated health benefits of the core LEZ are estimated at between £130 million and £180 million, largely through reductions in PM<sub>10</sub>.

The core LEZ proposals are

- For 2008, a standard of Euro III for PM<sub>10</sub> for HGVs, buses and coaches; and
- For 2010, a standard of Euro IV for Particulates for HGVs, buses and coaches. (**Scenario A** as it is referred to in the report)

There is also an additional option or scenario of Euro IV for PM<sub>10</sub> and NO<sub>x</sub> in 2010, providing NO<sub>x</sub> certification capability is available. (**Scenario B**, which is incremental on the Euro III 2008 Particulate standard)

There is also the option of inclusion of Light Goods Vehicles (LGVs) in 2010 with a rolling 10 year age standard (**Scenario D**, which is incremental on the 2008 and 2010 Euro standards for particulates).

Each of these scenarios has different cost implications for operators, and so different implications for potential employment and tourism impacts. The focus of the report is, however, on potential impacts of the core scheme (**Scenario A**).

### **Approach and methodology**

The LEZ has economic impacts on business on the supply side – affecting the costs of vehicle operators and other road transport activities – and the demand side – affecting business purchases and consumers.

The report used compliance cost information and affected vehicle population data provided by TfL to determine the annual cost of compliance per vehicle. From the May 2005 TfL operator survey and the other transport appraisal literature referred to above, two cost elasticities of output (i.e. the responsiveness of output with respect to a change in cost) were derived. These elasticities were used to estimate how the additional costs brought by the LEZ would impact on output and hence employment within the sector and knock-on to other sectors.

The elasticities derived from TfL's May 2005 operator survey are not consistent with those more usually applied in the course of transport appraisal, with some significantly departing from the normal order of elasticities commonly used in appraisal. A key reason for this is that the survey was undertaken when there was not widespread understanding of the LEZ and the associated costs of compliance. The survey was also carried out based on emission standards more stringent than in the current proposed LEZ scheme. As such, use of these elasticities potentially overstates the magnitude of economic impacts arising from the LEZ and should be considered an unlikely "upper bound" or "worst case scenario". For this reason, alternative elasticities have been used which are based on those generally used in the freight transport appraisal literature.

In relation to tourism, two elasticities were developed. One is derived from a study on the demand for tourism facilities in London, and the second is a UK based coach transport elasticity. The TfL operator survey suggested a certain proportion of operators would pass LEZ compliance costs onto passengers. In the absence of any further information, it was assumed the full costs would be passed on. The LEZ impacts on tourism were derived in terms of employment – i.e. reduced visitor numbers and reduced spending power leading to loss of jobs in the sector.

The calculated impacts are gross, and so do not take into account the fact that people losing their jobs in the road transport sector may get jobs elsewhere in the economy, or within the sector itself. Considering net effects is beyond the scope of this work, as it would require in depth knowledge of individual firms and the age of their fleets to assess which firms are better placed than others to be compliant with the LEZ without bearing the additional costs. Nonetheless, a small number of interviews with HGV, LGV and coach operators were carried out which focused on understanding operator behaviour, particularly in terms of passing on any cost increases to customers.

The calculated impact also does not take into account the potential positive employment impact of additional demand in the manufacture, fitting, and maintenance of abatement equipment. However, the report does refer to information Transport for London has gathered from the abatement industry about potential employment growth in relation to the LEZ.

### **Projected impacts on employment**

The report summarises the increase in operating costs that would result from the core LEZ scheme from 2008 to 2016<sup>1</sup> and assesses their significance in relation to total costs. The LEZ costs are considered over five years, potentially representing the typical business planning period for most operators, not least because vehicles are typically depreciated over five years, although this varies with vehicle type. An average cost increase of around 2% is observed, which also varies by vehicle type. These costs are lumpy, given the way in which the scheme would phase in, with costs rising by up to 8% in some years (as a result of one-off costs associated with upgrading non-compliant vehicles), and not changing, or decreasing, in others.

It should be noted that only aggregate employment impacts have been estimated for the period concerned; that is; the same employment changes would not arise on a year-on-year basis. Net efficiency gains are also projected to arise in some years, and these in turn could give rise to positive employment effects. The LEZ introduction could also lead to some secondary (i.e. indirect or knock-on) impacts on employment, but these are not expected to be significant (about an additional 500 jobs over the life of the scheme using the TfL “upper bound” estimates).

<sup>1</sup> Financial Year 2015/2016

In summary, the direct employment impacts of the LEZ are expected to be relatively minor and likely to be restricted to certain sectors. Based on the assumptions regarding the operation of the scheme, the cost to operators of compliance and elasticities from the freight transport literature, the direct impact of the LEZ on employment in Greater London in the road transport sector is estimated to be around 160 full time equivalent (FTE) jobs, representing around 0.2% of FTE jobs in road transport activities in London, and around 930 FTE jobs, or around 0.1%, for the rest of the UK in that sector.

Using the interim elasticities from the Operator survey, the direct impacts of the scheme on employment in the road transport sector is around 1300 FTE jobs in Greater London (1.4% of FTE jobs in road transport activities) and 7,500 FTE jobs in the rest of the UK (1.2% of FTE jobs in the sector). As described above, this is an unlikely “upper bound” estimate which will be refined with further work.

The inclusion of LGVs and NO<sub>x</sub> would increase the projected employment impacts. Based on elasticities from the freight transport literature, the inclusion of diesel-engined LGVs in the proposed LEZ scheme from 2010 is likely to increase the impact in employment terms to around 0.2% of FTE jobs in the road transport sector in the UK. The effect on employment in Greater London is more significant due to a relatively larger affected LGV population in Greater London, which increases the impact to around 0.4% of FTE jobs in the sector. Increasing the emission standard to include NO<sub>x</sub> from 2010 is also likely to increase the impact on employment to some 0.2% in the rest of the UK, and 0.3% in London.

Transport for London has had discussions with the retrofit industry and the Vehicle and Operator Services Agency (VOSA) on the impact of the LEZ on employment in the manufacturing, fitting and inspection of particulate abatement equipment to meet the increased demand anticipated from the LEZ. A range of 195 to 270 jobs could be expected to be created, off-setting some of the employment impacts, as would the potential net efficiency gains, referred to above.

Also, as noted above, the report cannot quantify potential redistributive impacts of the LEZ. However, experience from the Gothenburg Low Emission Zone suggests that some firms operating cleaner vehicles would gain a competitive advantage, and would be expected to absorb some of the potential employment losses contributed to by the costs of complying with the LEZ.

### **Projected impacts on tourism**

A further implication of the LEZ is the potential impact on tourism and tourist expenditure arising from potentially increased coach fares. The TfL operator survey did not contain sufficient information to calculate the extent of cost pass-through by coach operators to passengers, and therefore a very cautious approach to calculating visitor expenditure impacts was used (i.e. it

was assumed that all costs were passed through). Reductions in tourist spend are translated into employment impacts in terms of person years of employment and FTE jobs lost.

In summary, visitor expenditure impacts from the LEZ are likely to be low, being less than 100 FTEs. This is a very small impact in the context of the entire tourism spend in London of £12.9 billion<sup>2</sup>. Moreover, the LEZ may actually improve the image of London as a green and clean city, so encouraging tourism, potentially linking in with a “Green” London 2012 Olympic and Paralympic Games.

<sup>2</sup> Source: UK Tourism Survey (ONS), International Passenger Survey (ONS) and GB Day Visits Survey (The Countryside Agency)