

Silvertown Tunnel submission from MAG

This version: 2017 04 05

This summarises the Motorcycle Action Group's position regarding four areas of consideration arising from the meeting between The Applicant and MAG on Monday, 3rd April, 2017 at TfL offices in Southwark.

Background

Following extensive debate at the various consultation sessions, the Motorcycle Action Group (MAG) has continued to request an exemption from user charging for Powered Two Wheelers (PTWs) at the proposed Silvertown Tunnel crossing. We make our request on the basis that these charges are counterproductive in terms of the stated objectives of the scheme. Indeed, they would contradict a widely established precedent, which has been arrived at on sound rational and empirical grounds across the UK.

Following the March 28th 2017 open hearings in Greenwich, MAG and The Applicant agreed to meet to consider the arguments for and against charging Powered Two Wheelers (PTWs). TfL offered a number of responses to the points which have been made by MAG on behalf of riders at the consultation sessions. We are grateful for the time they took to prepare these and the amicable fashion in which our discussions were conducted.

This further submission responds to the five areas raised by TfL at our meeting and seeks to explain MAG's position on each. For brevity we cite - and do not repeat - points previously made in our written submissions, unless they are absolutely necessary to provide the context for our case against user charging for motorcyclists.

It should be noted that we have had considerably less than three days to prepare these comments and we apologise if some of the technical points are only briefly referenced. We have ALL the workings behind our arguments on file and would be happy to provide our research on every single point made in this submission.

The five areas we cover are:

- 1 *TfL's arguments regarding powered two wheelers and congestion.*
- 2 *TfL's arguments regarding powered two wheelers and road damage.*
- 3 *TfL's arguments regarding powered two wheelers and accident costs.*
- 4 *TfL's arguments regarding powered two wheelers and social context.*
- 5 *TfL's arguments regarding powered two wheelers and emissions.*

We address each of these in turn. MAG thanks the Panel for your patience in regard to the length of this submission. For motorcyclists in London the threat of user charging is immensely concerning because it goes against every established precedent which has been set in the city since motorcycling began. All the arguments, which have been effectively put and accepted in all other locations

from the Severn Bridge to the Dartford Crossing, including in London itself, appear to have been disregarded by The Applicant. MAG is merely attempting to make the case for consistency based on logic and empirical observation, all of which, we believe, underlines the case for an exemption from the user charge for motorcycles and scooters.

1 Tfl's arguments regarding Powered Two Wheelers and congestion.

MAG and other highly relevant bodies recognise - and have explained why - motorcycles have a key role as part of solutions to congestion problems. Evidence from around the world consistently proves modal shift towards motorbikes and away from cars reduces traffic jams and related problems of an environmental, social and economic nature. We have cited evidence from Leuven (1), Vietnam (2) and also Tfl's own research findings (3).

To be specific, recommendations that Tfl should do more to recognise and optimise the role of PTWs in an essential mix of solutions to congestion problems were made by: The Mayor's Roads Task Force (The Vision and Direction for London's Streets and Roads, July 2013) and by The London Assembly's Transport Committee (Easy Rider Report, March 2016). We can supply copies of these documents on request.

In the meeting between MAG and Tfl on Monday 3rd, three days before the deadline for submissions, Tfl explained that they had based their assumptions about the value of any contribution that PTWs could make to solving congestion problems on estimated values taken from a Transport Research Laboratory study that was published in 2012, and entitled 'Client Project Report CPR1813: The Estimation of Saturation flows at traffic lights in London, and the impact of cyclists on saturation flows.' MAG received a paper copy of this report and is happy to provide it on request.

In the report it is claimed that if a car has a 'Passenger Car Unit' (PCU) factor of 1.0, then a motorcycle should have a PCU of 0.55. This means that a motorcycle's impact in terms of traffic flows in a saturation environment is being valued at just over a half that of a car.

MAG raises three issues about this assessment, both of which are technically detailed but very significant:

Firstly, for some reason, which is not explained in the report, Tfl has chosen the PCU value for a motorcycle as 0.55. However, the two estimates Tfl provides in making this value are 0.4 (RR67 estimate) and 0.53 (MVA 2009 estimate). Why would Tfl create a value which exceeds the highest of the two estimates it is theoretically based upon? MAG suggests this is an arbitrary judgement and that there is no apparent justification for this value whatever. MAG also suggests that the two values on which it is based are fairly arbitrary in themselves, with assumptions which can legitimately be challenged.

It is beyond the capacity of MAG's research resources to provide a definitive re-evaluation of all these research papers at this time, given that we have had approximately 58 hours in total since being provided with these documents. We judge that it will be useful to conduct a comprehensive analysis of these documents as soon as practicable due to their overall implications regarding the validity of TfL's assumptions on which they have based their current proposals for the treatment of motorcycles using the tunnel.

Secondly, however, for the purposes of this specific consultation, that may not be necessary as the estimated values being relied on by TfL seem to have little if any relevance anyway. This is because the report provided to MAG was focussed primarily on traffic flows *in a very specific situation*: to quote page 4 of the report: 'Saturation flow is defined as the discharge rate from a signal controlled stop line during the 'effective green period.' In other words, the report is looking at traffic activity at traffic lights. MAG suggests that, unless The Applicant is intending to introduce a series of traffic lights in the tunnel, this research is NOT relevant to the effect on traffic flows in the proposed crossing. MAG has repeatedly cited evidence to show that in an environment where traffic is flowing, motorcycles add no pressure on congestion, due to the capability of these machines to 'filter' through the traffic. This is a firmly established fact and TfL has, to date, offered no evidence to challenge this. MAG also presented evidence of in-field research where the actual effect of motorcycles was measured. This was not dependent on a traffic modelling formula, but observed traffic behaviour. In all cases, including TfL's research, motorcycles were shown to be congestion reducing devices, with clear evidence that modal shift from car to motorbike would reduce traffic congestion.

Thirdly, as has been made clear by MAG and others, unless lane widths are deliberately reduced to make the action of 'filtering' impossible, motorcycles can and will filter through traffic, adding nothing to the congestion. Evidence suggests that even where lane widths are purposefully reduced, this results in a more dangerous filtering environment rather than the abandonment of this perfectly legal practice. The debate about lane widths exceeds the scope of the current consultation. However, as long as the applicant intends to furnish the tunnel with typical lane widths which facilitate filtering – which is evidently conducive to filtering and thus reduced congestion – then there is no dispute between TfL and MAG regarding the advantages of motorcycling above cars in a congested environment.

Even using the questionable PCU value ascribed to motorcycles, it is obvious that a vehicle with a value of 0.55 is preferable to a vehicle with a value of 1.0. As such, using TfL's own figures as presented to us at the meeting, we find a clear and unambiguous confirmation that modal shift from car to motorcycle or scooter is attractive in terms of the stated congestion targets of the scheme. Charging motorcycles is therefore utterly counter to the goals of the tunnel project – as set out by The Applicant. To stress again, this conclusion is based on the very data which TfL has provided, and since MAG disputes this data, even on this 'worst case scenario' there is still incontrovertible evidence to show that by any reasonable analysis it is wrong to apply a user charge to motorcycles.

It is again worth noting that an electric car, which must necessarily be valued at a PCU of 1.0, is exempt from user charging. Thus we see that the PCU value of any particular vehicle is clearly not a controlling reason to impose a user charge. For TfL to charge motorcycles on the basis of its own ascribed PCU value for powered two wheelers and not to charge electric cars would be blatantly discriminatory and out of keeping with any measure of consistency.

In MAG's meeting with TfL, the interesting question of the impact of a possible modal shift from motorcycles and scooters to public transport was considered. This is an interesting question with social implications and other knock-on effects in terms of the increased loading which 180,000-300,000 riders would have on the existing public transport system. Limiting ourselves in this section only to the effect upon congestion of a shift from powered to wheelers to buses, trains and the underground network, MAG can share its conclusions about this intriguing question:

- 1 A shift from motorcycles to the underground or buses and the rail network would theoretically reduce road traffic. However it would increase congestion on public transport services that are often overloaded already, and we need to recognise this is not a theoretical negative to those already enduring a saturated tube environment. Also, for the reasons already stated, it has not been proved that such a shift would reduce congestion in the Silvertown Tunnel flow of traffic. However, there would necessarily be some knock-on effect regarding additional dependence on surface transport given that it is not the case that everyone who used to ride to and from work could magically arrive at their destination by tube and foot alone. The modelling of these consequences is complex and as far as MAG is aware, no such studies have been done in regard to actual road journeys conducted by the London motorcycling community. In fact, despite repeated recommendations that TfL should properly investigate the potential benefits of modal shift from cars or vans to PTWs, TfL has consistently refused to do so. The problem for TfL here is that they ascribe a PCU value of 2.10 to buses so, depending on the actual interrelation between the need for extra buses to accommodate the extra public transport population, there is clearly a shift from a low PCU vehicle to a higher one. In reality, nobody can say for sure how significant this effect is, but it is risky to make policy on the basis of guesswork.
- 2 A shift from motorcycles to buses would increase congestion because more buses would be required unless ALL the shift could be accommodated within the existing and planned bus routes and service frequencies. For this to be the case would require a tremendous leap of faith, given the saturated nature of many bus services in the locality of the proposed tunnel and beyond. Note that in this section we are not addressing emissions or social consequences of such a shift and we return to this later.
- 3 It is inconceivable that all riders who shift away from powered two wheelers will shift towards public transport. If there is a reduced

financial incentive to ride to work, some will resort to a car. While this is again difficult to model, there has to be a non-zero shift from (using TfL's own proposed values) low PCU vehicles to higher PCU vehicles and that is counter to the aims of the scheme.

- 4 If riders are to be persuaded to shift from two wheels (TfL PCU value of 0.55) to tubes, buses and trains through a user charge, why is this same rationale not being applied to congestion causing electric cars (PCU=1)? This underlines the inconsistency in the policy of charging powered two wheelers in the context of the congestion argument.

Further corroborating evidence supporting our claims is to be found in newspapers an example of which is in the Telegraph which has no particular vested interest in supporting the same arguments MAG is making (4), and also from Northampton Council which is proactively promoting motorcycles as a congestion solution (5).

MAG's conclusion for this section: using TfL's own figures, it is inconsistent to charge motorcycles on the basis of the congestion argument because other vehicles which create far more congestion are exempt and, whatever the interrelation in a shift from bikes to public transport, the same arguments in 'PCU' terms are virtually twice as compelling for electric vehicles. Thus, if electric vehicles are to be exempt, together with other congestion causing vehicles, then motorcycles must clearly be exempt from the user charge as well.

References:

- 1 <http://www.tmleuven.com/project/motorcyclesandcommuting/home.htm>
- 2 <http://www.codatu.org/wp-content/uploads/Should-motorcycle-be-blamed-for-traffic-congestion-in-vietnamese-cities-Hien-NGUYEN-Franck-MONTGOMERY-Paul-TIMMS.pdf>
- 3 <http://content.tfl.gov.uk/pt-emissions-study.pdf>
- 4 <http://www.telegraph.co.uk/cars/features/two-wheels-good-everyone-else-road/>
- 5 <http://www.roadsafetygb.org.uk/news/5128.html>

2 TfL's arguments regarding powered two wheelers and road damage.

In the meeting with MAG, TfL presented documentation from Ricardo- AEA's document entitled 'Update of the handbook on external costs of transport.' (1). TfL cited page 72, which lists suggested unit values for infrastructure costs related to different forms of road transport. The figure cited for a motorcycle is 0.3 eurocents per vehicle kilometre (ect/vkm), compared to 0.9 for a passenger car and 2.9 for an HGV of 3.5-12 tonnes. TfL claimed this illustrates that

motorcycles are responsible for road damage and that this is a justification for charging them for using the Silvertown Tunnel.

MAG has done its best to analyse the data in the very limited time available. We approached the source material for much of the claims – work led by Heike Link in Germany. We also explored the detailed methodology which leads to the 0.3 ect/vkm value.

We identified a number of considerations which compromise TfL's claim.

Firstly, it transpires that the variable infrastructure costs as determined in Germany as NOT a measure of road damage alone. To quote page 70 of the report supplied by TfL themselves:

'Variable costs include certain elements of the capital costs and running costs reported in the road accounts, namely (definitions from BFS (2011)):

- *Routine maintenance and large repair measures (part of capital costs): periodically recurring, comprehensive measures to ensure the original and the required road conditions, including in particular major repairs and activities to improve the carrying capacity of the road, to repair the drainage lines, and to strengthen the engineering structures.*

- *Operational maintenance (part of running costs): includes measures to ensure the continuous operability of the road, such as cleaning, inspection, surface treatment, winter maintenance, lighting and minor repairs to maintain the functionality.'*

It also highlights the fact that there is considerable variation in how the variable cost figures are determined by different researchers. To quote the study again (page 70):

'The UNITE case studies apply a standardised procedure to obtain infrastructure cost estimates for 17 EU countries. However, in most cases no necessary distinction could be made between cost components. Therefore, the unit values presented in the IMPACT D2 are largely based on the average cost figures for Germany stemming from Prograns/IWW (2007)... In the absence of better information, the case of Germany could be used as an average representation of the European network composition and geography. However, this is a very crude assumption, and country-specific data must be preferred if available.'

Thus there is a huge caveat to using these figures as authoritative - and transferrable to other countries. One is obvious, the other not so obvious. The obvious point is that costs NOT related in any way to road damage are included in the overall calculation. While very heavy vehicles – or more specifically vehicles with a high axle loading – will have in their variable costs a very high proportion related to road damage, the lighter the vehicle, the less significant this element turns out to be. It is therefore perfectly legitimate to suggest that an HGV's main cost is its road damage component, while for a motorcycle it is

‘operational maintenance’ such as ‘measures to ensure the continuous operability of the road, such as cleaning, inspection, surface treatment, winter maintenance, lighting and minor repairs to maintain the functionality.’ This in no way supports The Applicant’s suggestion that powered two wheelers cause significant – or even any measureable – road damage. It simply means that as road users the motorcyclists are being apportioned a certain amount of the operational costs of having a road scheme. If this is to be used a basis for charging riders for using the tunnel, it is necessarily the case that all road users must also be charged for exactly the same reason – including electric cars and all other vehicles currently exempt from the charge. To charge riders because they need clean and well-lit roads is entirely discriminatory and fails any basic test of fairness. It is also not easy to understand why The Applicant would single out riders on this basis, while leaving other vehicles uncharged. MAG suggests that The Applicant may not have considered the question of road damage holistically – nor studied the evidence presented to MAG in the detail which MAG has devoted to both the materials presented to us and the background research behind those materials. By contrast, we have conducted as rigorous an analysis as time has permitted. We believe our conclusion on this matter is utterly robust.

Secondly, the less obvious but equally significant element here relates to the caution contained in the document which cites that ‘country-specific data must be preferred if available.’ If the calculation were entirely based on road damage, since the laws of physics do not change from one country to another the relative cost per km would be relatively easy to calculate according to a general formula. However the fact that other considerations related to infrastructure and road maintenance in part unrelated to repair work is involved is the reason why these general formulas cannot be created. Thus again we see that The Applicant appears to have misinterpreted the implications of the data. This isn’t about road damage. It’s about all the variable costs of a road system, where, notionally, some perceived cost of the overall operation of the roads is being attributed to bikes and for that matter other vehicles, including electric cars, taxis and buses.

Thirdly, repeated evidence confirmed that road damage increases exponentially with axle weight. Precisely, and to quote the information provided by The Applicant: ‘the degree to which an increase in weight leads to higher damage follows a power law.’ This is frequently cited, as in an American report which effectively outlines the issue (2). As such, an electric car which weighs, say, seven times more than a motorcycle will cause exponentially more damage to the road. As such it cannot be the case that, in terms of road damage, an average motorcycle generates one third of the damage of an average car. To quote from a typical source on the matter (2):

*‘Heavy trucks obviously cause more road damage than cars, but how much more? According to a GAO study, [Excessive Truck Weight: An Expensive Burden We Can No Longer Afford](#), road damage from **one 18-wheeler is equivalent to 9600 cars**(p.23 of study, p.36 of PDF).*

The study assumed a fully loaded tractor-trailer at 80,000 pounds, and a typical passenger car at 4,000 pounds. That's 20 times difference in weight, but the wear and tear caused by the truck is exponentially greater.

Food for thought: a bicycle and rider at 200 pounds is the same 20 times less heavy than a 4000 pound passenger car. Similarly, the wear and tear caused by that bike and rider would be exponentially less than a passenger car's.'

Note that The Applicant has never cited road damage in relation to the exempt vehicles, and as such for consistency it seems preposterous to cite this factor as a reason to charge motorcycles while not charging other exempt vehicles. Without any plausible explanation for the differential treatment of light motorcycles versus much heavier vehicles, it seems unreasonable to use this argument selectively, especially given the flawed interpretation of the data The Applicant has made in coming to this conclusion.

It's worth noting that frequently motorcycles are not even included in research measuring road damage. For example, in 'Measuring the marginal cost of road use An international survey' by Nils Bruzelius (3) on page 25 motorcycles are absent from the chart altogether. To the best of MAG's knowledge, The Applicant is the only body in British transport history to suggest a road user charge for motorcycles on the basis of road wear and tear.

MAG's conclusion for this section: The Applicant's evidence of road damage by PTWs is in fact a notional calculation of variable infrastructure costs, and NOT of road damage, which is only one component in the overall calculation. Furthermore, other vehicles which demonstrably create far more road damage – according to The Applicant's own evidence – are exempt. Thus the road damage argument cannot reasonably be applied to motorcycles as a justification to apply a user charge.

References:

1

<http://ec.europa.eu/transport/sites/transport/files/themes/sustainable/studies/doc/2014-handbook-external-costs-transport.pdf>

2) <http://www.vabike.org/vehicle-weight-and-road-damage/>

& <http://archive.gao.gov/f0302/109884.pdf>

3) <http://www.diva-portal.org/smash/get/diva2:673969/FULLTEXT01.pdf>

3 TfL's arguments regarding powered two wheelers and accidents.

In the data provided in the meeting with TfL, they seemed to be implying that because PTWs are involved in collisions with pedestrians riders should be charged. However the applicant has made no assessment of the causal factors related to accidents. Most appear not to be caused by a powered two-wheeler. Why has The Applicant not taken the same broad-brush approach towards cars, buses and coaches? Let us look at the information provided.

In the discussion, it seemed that The Applicant has unilaterally decided to charge PTWs as a result of accident statistics, but not other modes of transport. This is a remarkable departure from the aims of the scheme, and there appears to be no precedent for this in any of the written documentation supplied by The Applicant in the years since the commencement of the proposal.

There are also anomalies in the claims made regarding the frequency of the incidents involving PTWs. For example, the measure of PTW presence on the roads is misleading. A 30 mile commute by a PTW is categorised as the same value as a bicycle of $\frac{1}{4}$ of a mile. The most meaningful assessment is a mixture of trips and mileage. TfL have acknowledged this in The Roads Taskforce Document. We can supply this on request. When this is taken into account the percentage impact of PTWs in the accident scenario immediately halves, as the percentage of PTW presence on the roads doubles to 2%.

Also, the data provided by TfL to MAG states that 3,366 casualty related accidents involved a car and 597 involved a motorcycle. We have had too little time to fully assess this data set, but the concern here is immediately obvious. The Applicant wishes to use user charging to reduce the proportion of motorcycle related casualties involving pedestrians, even though using their figures over six times more people are casualties as a result of car collisions. We question why The Applicant seeks to use user charging to reduce collisions for the small proportion of PTW related casualties when a far greater reduction would be achieved by dis-incentivising car use. The toll can only be seen in this context as an attempt to deter motorcyclists from riding in London, as any other interpretation of the motivation to charge in this context doesn't make sense.

MAG therefore suggests that this is a clear example that The Applicant regards the user charge as an effective means of deterring PTW use in London – otherwise they would not have presented us with this linkage between motorcycle charging and pedestrian casualties. MAG suggests to the Panel that this is a wholly inappropriate policy position, as it overtly discriminates against riders, and explicitly acknowledges the deterrent effect the proposed charges will have uniquely in relation to motorcyclists. This confirms a key part of MAG's argument in opposition to the user charge for motorcycles.

If this interpretation is incorrect, MAG asks, when it comes to car drivers, why has The Applicant not stated that the user charge is being charged as a deterrent to reduce car usage in order to reduce the far higher number of pedestrian casualties related to car impacts with pedestrians? MAG suggests that this is a clear example of discrimination and indicates that the user charge for

motorcyclists is being proposed in part for reasons which have nothing to do with the officially stated intentions of the user charging scheme.

MAG's conclusion for this section: The use of accident statistics as a reason to charge riders and not other vehicles which in London are involved in far more injury accidents indicates an unambiguous intent by The Applicant to use the instrument of road charging to deter riders from entering the city. This is a wholly inappropriate reason for charging. It is overtly discriminatory against the riding community and has no place in supporting the stated aims of the tunnel. It also confirms that The Applicant explicitly accepts that the user charge would be an active deterrent to motorcycle use – a core element in MAG's case against the charge. There is no other plausible way to interpret the intention in this respect of The Applicant's claims.

4 Tfl's arguments regarding powered two wheelers and social context.

The Applicant has presented MAG with evidence to suggest that motorcyclists are not particularly representative of lower socio-economic bands in London. They suggested that the proportion of bike users is roughly constant, or even slightly favouring the higher income earners.

MAG has never argued that wealthy people don't ride bikes. To suggest that the least wealthy are the primary motorcycle owners in the country is to miss the point which MAG has made. Specifically, our argument is two-fold.

Firstly, we argue that many people choose PTWs for their business activity for reasons of economy. This is borne out by The Applicant's data which is taken from the London travel Demand Survey (1). The data suggests that over 75% of motorcycle trips are for work-based, shopping or personal business reasons. Leisure represents around one sixth of trips. As such, riders are in the great majority making business-based journeys. MAG argues that this is specifically because of the attractiveness of PTWs as a quick and cheap mode of transport in the city, especially given the heavy congestion which makes travel in other ways more expensive in time (as well as money).

MAG argues that a significant proportion of those trips are carried out by less wealthy individuals, for whom the advantages of economy are highly significant. Taking data from those who have sought insurance through a relationship between MAG and a major insurer, Bikesure, the insurance data indicates that 74% of those taking out insurance in the scheme are aged 16-35 and of those, 41% are 16-25. It is accepted that, on the whole, these younger groupings are the least wealthy, indicating there is a skew towards lower earning riders. Regarding the type of motorcycles they ride, 28% have insured machines of up to 125cc, which is usually an indication of use of the vehicles for commuting purposes. Even those who ride larger machines (and only one third ride bikes of above 750cc) will save considerably on car costs.

MAG suggests that the economic advantages of PTWs are significant to these groups. The Applicant clearly agrees, as they have told us that one reason for

introducing the charge on riders is because of the accident rates relating to riders and pedestrians. This necessarily means they expect the user charge to act as a deterrent to riding – for there can be no other interpretation of the meaning of the association with accident rates and riding. Since MAG and TfL appear to agree that the charges are significant enough to deter riders, it follows, albeit circumstantially, that riders are very cost conscious and that therefore the charges affect them more than they will affect other categories of users. Even a 50% discount for those who can prove their relatively low incomes will mean a roughly 170% increase in the average commuting cost for a typical 125cc rider on an average length journey. This seems to MAG, in principle, unfair, as it amounts to a regressive tax on those seeking to minimise their commuting costs. We covered these figures in detail in an earlier submission, and again are happy to provide more detailed workings if required.

As previously stated, the other social cost has become even more clear as a result of the meeting between MAG and TfL. As we have learned, The Applicant intends to use the user charge on motorcycles to deter usage, meaning that, as MAG suggested, riders will be coerced into finding alternative ways of travelling. No method of public transport is cheaper than the great majority of motorcycle journeys over the same distance in time or money. Thus, the coercive attempt at modal shift away from riding exposes former riders to much more expensive and longer journeys. Some of these journeys will become extremely cumbersome – with more than one leg to the journey and much longer journey times. Since The Applicant has not made a persuasive case for the deterrence of riding in the first place, this forced modal shift serves no useful purpose either to the riding community or to the transport environment as a whole.

MAG's conclusion for this section: while the social cross-section of riders is relevant, the key factor is the recognition by The Applicant of the deterrent effect of the charges – which amounts to a form of financial coercion to dis-incentivise riding. This perceived disincentive effect has not been cited explicitly or implicitly by The Applicant in terms of any other road user category. This means that The Applicant's rationale indicates that they agree with MAG's assertion that the user charge has a far more significant impact on riders than on any other road users facing the charge. This underlines a point made by MAG throughout the consultation: the user-charge affects the riding community disproportionately, and since The Applicant is attempting to use these charges to discourage riding, user charging for PTWs is counter to any stated goal of the scheme, and constitutes the knowing use of charges to inhibit one important mode of transport in the city. MAG suggests this is both discriminatory and incoherent given the benefits of PTWs in terms of The Applicant's own objectives. MAG suggests that an exemption for PTWs is the appropriate resolution.

(1) <http://content.tfl.gov.uk/london-travel-demand-survey.pdf>

5 ***TfL's arguments regarding powered two wheelers and emissions.***

The Applicant has cited emissions control as an objective in the proposed scheme. In the meeting held between MAG and TfL it was accepted by both parties that there are 'non-zero' emissions from PTWs.

However, regarding the key concern of The Applicant, namely NOx emissions, it was not suggested by The Applicant at any time in our dialogue that PTWs are a significant contributor to these emissions. Given that there will be no further opportunity to debate these issues directly with The Applicant prior to the closure of submissions, MAG accepts in good faith that TfL is not concerned about the NOx contribution by PTWs. We also note that the Applicant has at no point sought to address the effect of electric vehicles on congestion, which in turn generates NOx through the secondary effect of non-electric cars which are caught in congestion to which electric cars directly contribute and to which motorcycles do not.

Secondly, PTWs produce so little pollution they are usually not even included in the headings of tables assessing the relative contribution of different vehicles.
(1)

Thirdly, The Applicant has stated if electric cars rise to a larger proportion of traffic at some point they will be charged too, which will doubtless deter people from adopting the technology. However, TfL must also say the same thing about bikers. If in some alternative reality the roads become flooded with bikes, then reconsider charging, except that pollution would come down massively and there would be no congestion.

Turning to the details of the specific emissions and in order to cover all bases, as the Panel will recall, MAG contended that PTWs generate perhaps 1/3000th of NOx emissions in London. We will now explain the mathematics of this assessment.

The Greater London Authority's (GLA) figures state that 21% of NOx in central London comes from London buses and coaches, compared to 8% diesel cars. Petrol cars generate 3% of NOx in Central London, and even across greater London 7%. The Applicant claims that 1% of traffic in Central London is PTWs. MAG asserts that it is at least twice that. So, in the spirit of fairness, let's use the higher figure of 2%. Even in this case, and assuming motorcycle emissions for comparable cubic capacity are also comparable with other engines, this means that with an average cubic capacity which is one sixth of a typical motor vehicle, which MAG suggests is a reasonable estimate, the NOx emissions are 0.01% of the total contribution. Allowing for an error of 300% MAG therefore asserts that PTWs cannot be contributing more than 1/3,000th of emissions from traffic. It is worth noting that MAG had to extrapolate these figures because the assumed contribution from PTWs is so low that a separate heading for motorcycle NOx emissions was not even included in the tabulation of the data we have been using
(2). We therefore assumed that PTW emissions were included somehow in the 'Petrol car' category – a precedent set in the data relating to usage information as outlined in the London travel Demand Survey.

MAG's claims about the relative insignificance of PTWs in terms of emissions are confirmed in another report. According to Cleanair.London: 'across Greater London, cars contribute the highest proportion of road transport emissions 35% whilst heavy goods vehicles are significant 30% and buses 21% (and just under 30% in 2015). Within central London buses become the most significant source of NOx emissions at around 40% in 2008 growing to just below 50% in 2015. Cars contribute around 20% as do HGVs and taxis and LGVs each contribute about 10% of emissions of NOx. Gas use from workplaces is more significant in central London, contributing around 30% in 2008.' We are happy to provide the source for this quotation on request. There is no suggestion that PTWs make any significant contribution at all to NOx in Central London. In the meeting with TfL, there was no evidence offered to refute this assessment.

There are other emissions that are occasionally mentioned. PM10 (meaning Particulate Matter with a diameter of 10 microns) is an example of a particulate that is said to cause harm to health. However, 35% of PM10 emissions come from tyre and brake wear. Since an electric vehicle has brakes and tyres, it is reasonable to assert that, on account of its mass, six times more kinetic energy needs to be dealt with by the brakes and tyres of an electric car than by a PTW (and in the case of an average small 125cc vehicle the differential is nearer to 9 times more – even including the rider). Even if there is a degree of 'energy conservation' between the power storage and the kinetic energy, there is no doubt that an electric car generates more PMs than a motorcycle. It would be useful for The Applicant to clarify if these PM emissions are no longer a concern for them. Alternatively, if they continue to be a concern, the onus is on The Applicant to explain why it is consistent to use PTW emissions as a reason to impose a user charge on the lightest polluting vehicles on the road in terms of PMs, and not to charge electric vehicles. This is an inconsistency that has never been addressed by The Applicant.

Our argument is summed up in a Telegraph article confirming the view held by MAG that motorcycle commuting is good for the entire commuting population (3). It is worth noting that six out of 10 cars feature single occupancy and if these were to all convert to PTWs, there would be a considerable reduction in emissions (and congestion). (4) Though this scenario is unlikely to occur, logically there should be an incentive, not a barrier, for such a modal shift for the many reasons already highlighted – of which emissions reduction is the relevant one in this section of our submission.

Also, TfL itself stated this in the original document relating to charging (5):

5.9 In setting the charging regime for Blackwall and Silvertown Tunnels, TfL has given consideration to prices on the Highway's Agency's Dartford Crossing and also to the level of revenue needed to cover the cost of the scheme. Charges at Dartford Crossing, expected to come into effect in November 2014, are set out in the table below.

Remarkable, The Applicant then appears to have ignored the charging regime as it relates to Powered Two Wheelers which are exempt from user charging. They have never explained the reasoning behind why they have disregarded an example which they themselves provided.

MAG's conclusion for this section: MAG has observed that exempt vehicles which make direct and indirect contributions to emissions are exempt, while a modal shift towards motorcycles would actually reduce emissions. Also, PTW NOx emissions are miniscule in London and, since The Applicant has already stated they would consider introducing a user charge for electric vehicles if volumes grew considerably, the same condition would legitimately apply to motorcycles. However, in the absence of such growth there is no consistency in charging motorcycles now and not charging electric cars. Both reduce direct emissions of NOx and CO2 at the point of operation, but only one is treated as doing so. MAG suggests it is consistent to treat motorcycles in the same way and exempt these machines from the user charge.

(1) <http://www.ippr.org/files/publications/pdf/lethal-and-illegal-solving-londons-air-pollution-crisis-Nov2016.pdf?noredirect=1>

(2) <http://www.ippr.org/files/publications/pdf/lethal-and-illegal-solving-londons-air-pollution-crisis-Nov2016.pdf?noredirect=1>

(3) <http://www.telegraph.co.uk/motoring/motorbikes/9272532/Why-commuting-by-motorcycle-is-good-for-everyone.html>

(4) <http://content.tfl.gov.uk/technical-note-14-who-travels-by-car-in-london.pdf>

(5) <http://content.tfl.gov.uk/st-draft-outline-strategy-for-user-charging-v2.pdf>

Overall conclusion

MAG recognises that this is an extensive and detailed response to the discussions held with The Applicant at our meeting on Monday, 3rd April at the TfL offices in Southwark. We again thank the Panel for your patience in this matter. Given the potentially catastrophic consequences to the economics of motorcycling if this user charging regime is introduced, we have no alternative than to make the strongest case we can to highlight why the proposed charges for PTWs are discriminatory, unfair and coercive, as indicated by the stated intentions of The Applicant themselves – for instance, in regard to accident rates and apparently seeking to deter riding in the city as a result, despite a far higher casualty rate being caused by other vehicles which apparently are not being treated in this punitive manner.

We sincerely hope we have made our case in a measured, credible and ultimately persuasive manner, such that it is clear user charging for motorcycles and scooters is not an appropriate element in the Silvertown Tunnel proposal. We propose that the only equitable and consistent arrangement is an exemption for Powered Two Wheelers, in keeping with the arrangements throughout the rest of London.

Lembit Öpik

Director of Communications & Public Affairs
Motorcycle Action Group (MAG)