Lorry Road User Charging:
A Review of the UK Government's Proposals.

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## ACKNOWLEDGEMENT

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1. Scope of the Lorry Road User Charge

According to the Chancellor’s 2002 Budget statement, the Lorry Road User Charge (LRUC) had a modest and worthy aim: to ‘ensure that lorry operators from overseas pay their fair share towards the cost of using UK roads’. Foreign-registered hauliers would have to pay around 15p for every kilometre travelled in the UK, assuming they bought their fuel outside the country, as most currently do. This would raise an extra £139 million annually for the UK Exchequer (Figure 1). The system of lorry charging which the government is planning to introduce in 2008 would probably cost several times this amount to operate. If the creation of a ‘level playing field’ for British and foreign hauliers is the main justification for the LRUC, we are taking a sledgehammer to crack a nut.

This is because the new system of road user charging is not only being applied to foreign hauliers. All 430,000 lorries registered in the UK with gross weights of over 3.5 tonnes will be subject to exactly the same charges. No extra revenue will be raised from them, however – at least ‘at the start’. Unlike in other EU countries that have either introduced or are planning to introduce road tolls, ‘off-setting tax cuts’ will ensure that ‘the UK haulage industry does not pay any more as a result of the new charge’. To achieve this, a huge rebate system will have to be established to return an equivalent amount of fuel duty to hauliers, probably in the region of £3 billion worth (Figure 1).

<table>
<thead>
<tr>
<th>Current taxes on UK lorries:</th>
<th>UK charge - VED = £3,040 million</th>
</tr>
</thead>
<tbody>
<tr>
<td>VED = £280 million</td>
<td>Fuel tax rebate = £3,040</td>
</tr>
<tr>
<td>Fuel tax = £3,040 million</td>
<td></td>
</tr>
<tr>
<td>Total = £3,320 million</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1: Estimated Revenue Flows from the Lorry Road User Charge**

Elaborate and costly as this rebate system will be, it will present nothing like the technical and organisational challenges of the proposed system of vehicle tracking and toll collection. This will involve the integration of a range of telematics and communication technologies including satellite tracking, cellular telephony, microwave systems and digital tachographs. Registers of vehicles, operators and authorised fitters of tolling equipment will have to be compiled and maintained. Separate revenue streams will have to be created for the inward flow of toll income and return flow of fuel rebates. Different systems of tolling are to be developed for frequent and occasional users. Underpinning the operation will be an elaborate enforcement network for detecting and penalising non-compliance. Figure 2 outlines the main elements in the LRUC system. The two government ministers responsible for the LRUC declared in 2002 that, ‘we have decided to make the charge simple at first to ensure that it can be successfully implemented as soon as possible’. Even at the outset, however, the proposed system will be highly complex.
To put the complexity of this British system into context, it is worth comparing it with the German Maut system, which, according to the German Logistics Trade Association, has 'proved one of the biggest industrial / political flops since the war.' In Germany, only vehicles with a gross weight of 12 tonnes or more travelling on autobahns are to be tolled and the level of toll will be fixed. In the UK, all vehicles over 3.5 tonnes are to be charged for their use of all roads at a rate that is likely to be varied by road type and time of day. Figure 2 shows the extent to which widening the scope of road user charging to all roads and all lorries over 3.5 tonnes, expands its coverage.

Figure 2: LRUC Coverage with Different Road Network and Vehicle Weight Thresholds

It is estimated that it will cost around 24% of annual revenue to operate the German Maut system. As it is not yet known how much it will cost to operate the LRUC, a figure of 20% will be used as a rough guide. As the proposed British system is much more complex than its
German counterpart, this may prove to be a conservative estimate. It would represent an annual operating expense of around £600 million to which would have to be added the cost of administering the fuel rebate scheme. It was widely expected that with the introduction of LRUC, vehicle excise duty (VED) would be abolished, but recent reports suggest that it will be retained. In the absence of any offsetting administrative cost savings, the annual bill could well be £700m or more – five times as much as the extra revenue from foreign hauliers. Table 1 presents the results of a sensitivity analysis showing the effect of varying the costs of operating the road charging and fuel rebate systems on the total cost of the scheme and the average toll per km. Internalising this total cost within the LRUC scheme would add a further 3p per km or more to the charge. Alternatively, if the Chancellor is true to his word and does not increase the total tax burden on the UK haulage industry, the Treasury would have to incur this cost.

<table>
<thead>
<tr>
<th>% of revenue</th>
<th>Annual Operating Cost of Road User Charging Scheme</th>
<th>Annual cost of fuel rebate scheme</th>
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<tbody>
<tr>
<td></td>
<td>£50m</td>
<td>£75m</td>
</tr>
<tr>
<td>10%</td>
<td>£380 (1.6p)</td>
<td>£405 (1.8p)</td>
</tr>
<tr>
<td>15%</td>
<td>£550 (2.4p)</td>
<td>£575 (2.5p)</td>
</tr>
<tr>
<td>20%</td>
<td>£680 (2.9p)</td>
<td>£705 (3.1p)</td>
</tr>
<tr>
<td>25%</td>
<td>£850 (3.7p)</td>
<td>£881 (3.8p)</td>
</tr>
</tbody>
</table>

Table 1: Estimates of the Total Cost of Operating the LRUC Scheme (£ million). (average toll per km required to recover the total cost in parenthesis)

The key component in the new charging regime will be the ‘on-board unit’ (OBU) to be installed in all lorries travelling more than 12,000 kms on UK roads each year. This will determine the truck’s location using a global positioning system (GPS), match that location against a built-in digital map of the UK road network (to determine the class of road) and communicate with a control centre, relaying information about the distance travelled and toll to be charged. One of the ironies of the current proposal is that the majority of the foreign trucks entering the UK travel less than 12,000 kms annually on UK roads. 59% make fewer than 12 trips to the UK per annum (Figure 3) and the average trip length for foreign vehicles within the UK is 644 km – hence total distance travelled is only around 7700 km. These vehicles will be covered by a separate ‘occasional user scheme’ which will require them to hire a ‘low-use OBU’. This will be quite different from the standard one and use a micro-wave system to communicate with road-side beacons located at ‘strategic locations’ across the UK road network. So the main LRUC system will not even apply to the majority of foreign vehicles entering the UK.

Figure 3: Frequency with which Foreign-Registered Trucks Enter the UK

Some people see this separate arrangement for foreign vehicles as an interim measure until EU countries agree on a standard ‘black box’ that will permit inter-operability between all the
national road tolling systems introduced across Europe. This seems a distant prospect, however, if experience of the new digital tachograph is any guide. Discussions on the EU specification for this tachograph have been underway for over a decade and still not reached a satisfactory conclusion.

2. Beyond Distance-based Taxation

The huge cost, effort and political risk associated with the LRUC scheme simply cannot be justified by the desire to establish tax parity between British and foreign hauliers. The system will have much greater functionality built in at the outset than will be needed to achieve this goal. It is also much more than would be required to introduce 'distance-based' taxation. Environmental groups have been campaigning for many years for distance-based taxation of trucks, which would correlate more closely with the environmental costs they impose and give hauliers greater incentive to fill their vehicles. Much of their criticism was directed at VED which is a fixed annual tax and takes no account of the distance that vehicles travel. In recent years, however, the level of VED has been sharply reduced, greatly increasing the proportion of lorry tax revenue raised by fuel duties – which are essentially distance-based and more closely related to vehicle emissions, particularly CO₂. For the average 38 tonne (4x2 axle) articulated lorry, for example, fuel tax now accounts for 93% of total annual taxes as opposed to 83% in 1998. The case for a separate system of distance-based taxation has therefore weakened. If one were still required, however, much simpler means exist for charging hauliers per lorry-km. It should, for example, be possible to devise a reasonably fool-proof system based on tachograph readings.

What is being planned, however, goes well beyond distance-based taxation. The scale of the investment in LRUC will only be warranted if the government plans to exploit its flexibility by varying the level of charge by road type, time of day and, ultimately, geographical location. Theoretically, this would enable the government to achieve the economist’s ideal of varying taxes in line with marginal social costs. In the transport arena, these costs fall mainly into two categories, environmental and congestion costs.

3. Recovering Environmental Costs

Environmental costs can be divided into two categories: those associated with CO₂ emissions, which have a global impact, and other externalities whose effect is felt locally. There are three ways in which the LRUC might be able to reduce these two sets of environmental cost?

1. **Cutting the overall level of lorry traffic:**
   As tax neutrality has been promised, the introduction of the new charge should not increase total road haulage costs. The government will not therefore be using this new price mechanism (at least initially) to dampen total demand for road freight transport nor to promote a transfer of freight to less environmentally-damaging modes. The move to a more explicit form of distance-based taxation may, nevertheless, give operators a stronger incentive to raise vehicle load factors and reduce empty running. The British road haulage industry has already managed to cut the proportion of vehicle-kms run empty from 34% to 26.5% over the past thirty years (Figure 4). Further reductions are possible, but there is always going to remain a large element of 'structural' empty running. As companies are already under strong commercial pressure to maximise backloading, partly as a consequence of high fuel taxes, any additional impetus from the LRUC is likely to be small.
2. **Promoting the use of cleaner vehicles:**
It is proposed that low-emission vehicles will be granted a discounted user charge to reinforce the ‘greening’ of the nation’s truck fleet. The current system of fuel duties already rewards more fuel-efficient vehicles, while vehicles with ‘reduced pollution certificates’ (RPCs) get a £500 discount on their VED. Now that VED levels are relatively low, the scope for discriminating in favour of cleaner vehicles is limited. The LRUC will permit greater discrimination, though this is likely to accelerate only marginally a trend that is already well underway. As a result mainly of tightening Euro emission standards for new vehicles and increased retrofitting of exhaust traps (CRTs), atmospheric and noise emissions per lorry-km are in steep decline.

3. **Reducing the impact of road freight movement on sensitive environments:**
This will require the LRUC to vary by road link or geographical area and is seen as a ‘second generation’ development of the system. The GPS satellite tracking capability will be used in the first generation system merely to differentiate motorways from other classes of road (as a lower charge will be imposed on the former), but even this is seen as representing ‘a considerable technical challenge’ 10. Introducing a geographically-differentiated charge will not only be fraught with ‘technical’ difficulty, it will also require a detailed evaluation of the environmental costs of lorry traffic at the local level. By the time this ‘second generation’ system is available, the nation’s lorry fleet will be substantially cleaner and quieter, reducing the need for such a complex environmental charging mechanism.

In summary, while the LRUC will permit a closer matching of taxes with environmental costs, the improvement on the present system will be limited and certainly not large enough to justify the associated expense and upheaval.

4. **Congestion Pricing of Freight Movement**

The ability to vary charges by road type, time of day and location is only worth having if you plan to use the LRUC for congestion pricing. How effective a tool is it likely to be in easing the problem of traffic congestion on Britain’s road network? The answer would seem to be a fairly ineffective one, for several reasons:
1. Lorry traffic represents only 6% all road traffic, 14% if, like highway engineers, you give a lorry a passenger car unit (PCU) rating of 2.5 (Figure 5). According to government traffic forecasts, even at the 2.5 PCU weighting, lorries will only account for 4% of the growth of traffic on Britain’s roads between 2000 and 2010 (Figure 6). Seen in this light, freight traffic appears more a victim of traffic congestion than its cause. The main cause of traffic congestion is undeniably the car, which represents 71% of all road traffic and will be responsible for 70% of its predicted growth during this decade (in terms of PCUs). As Professor Phil Goodwin has pointed out, if the LRUC manages to reduce lorry traffic the relatively small amounts of road space likely to be released will be quickly filled by the growth of car traffic, with little, if any, improvement in traffic conditions. The resulting shift in the balance of road space from lorries to cars is also unlikely to be in the best interests of the economy.

![Figure 5: Composition of Traffic on UK Roads Expressed in Passenger Car Units (PCUs)](image1)

![Figure 6: Contribution of Different Vehicle Types to Traffic Growth 2000-2010](image2)

2. For the foreseeable future, the LRUC will not reflect the wide variations in congestion levels that exist across the road network even at peak times. In the first generation system, the only distinction will be between motorways and non-motorways. No
allowance will be made for the fact that even during the morning peak, much of the road network is uncongested.

3. Opportunities for rescheduling freight journeys may prove more limited than expected. There has already been a two-and-a-half-fold increase over the past twenty years in the proportion of lorry-kms run between 8pm and 6am (Figure 7). A substantial differential in the LRUC rates for lorries between day-time and night-time operation could certainly help to reinforce this trend. The imposition of higher tolls during the morning and afternoon peaks, say for periods of 2-3 hours, would be much more contentious.

![Figure 7: Proportion of Lorry-kms Run on UK Roads between 8pm and 6am.](image)

Derek Beevor of Road-tech has shown how difficult it would be for hauliers to reschedule their operations to avoid these higher tolls within the complex regulatory frameworks governing drivers’ hours and working time. Most small hauliers would lack the analytical tools needed to determine the best routing and scheduling options on a day-to-day basis. It has been suggested that, in the case of longer hauls, vehicles could be parked during premium-toll, peak periods. Given the high cost of operating heavy goods vehicles (e.g. around £32 per hour for a 44 tonne artic) and the new constraints soon to be imposed on drivers’ working-time, peak-time tolls would have to be set at punitive rates to make this worthwhile. It is also questionable if there would be enough off-road space to accommodate all the parked vehicles. Shorter trips could be rescheduled to avoid peak periods. As almost 70% of road freight tonnage travels less than 100 kms, the vast majority of trips are relatively short (Figure 8). Altering their departure times, however, would often entail the rescheduling of industrial and distribution activity at either end of the trip. It is debatable to what extent the transport tail would be able to wag the industrial dog, given the classic trade-offs between transport and other logistical costs. A more likely scenario is one in which hauliers are instructed to meet the existing schedules and absorb the higher tolls within their already slim margins.

Overall, behavioural responses to variations in the level of the LRUC during the day are difficult to predict. Even if they did induce significant rescheduling of freight deliveries though, the net effect on congestion levels on most roads would be very marginal.
5. Promoting the Diffusion of Telematics

The government is keen to use LRUC to encourage wider adoption of telematics across the haulage industry. The ministers responsible for the LRUC have claimed that ‘it will help to bring the latest technology into the cabs of the UK’s lorries where it can be a valuable aid for the haulage industry, offering fleet management and navigation services’ \(^{17}\). There is no denying that the application of telematics to road haulage can be very beneficial \(^{18}\). A European survey undertaken in 2002 found that around 84% of hauliers using telematics had managed to improve reliability, 78% enhanced customer service and 60% cut transport costs \(^{19}\). Accelerating the uptake of telematics could be a valuable spin-off benefit from LRUC, but it, nevertheless, raises several issues.

For example, many thousands of lorries are now equipped with telematics, using a variety of systems. Will the OBU be compatible with all this existing kit? There is also evidence that there has been some over-selling of telematics systems in recent years to hauliers that were given little guidance on how to get the most out of their investment. Full exploitation of this technology usually requires fundamental changes to business practices and processes. Many operators appear to be making only superficial use of it, however, and are, accordingly, getting sceptical about its true worth. Forcing telematics onto tens of thousands of other haulage companies as part of the LRUC programme will only compound this problem, unless serious efforts are made to help them integrate this new technology into their operations. There is also a danger that if, like the German tolling system, the LRUC scheme proves to be a fiasco, it may actually deter wider adoption of telematics.

When asked who will bear the high costs of operating the LRUC, government officials have hinted that the haulage industry might be expected to meet these costs out of the savings it will make from the application of LRUC-related telematics. It is not known how much financial benefit would accrue to the haulage industry from this telematics application and how it would be distributed by size and type of operator. Capturing some of the benefit of telematics in higher toll levels, however, is hardly likely to encourage the uptake of this technology.

6. Comparison with other European Countries

In examining the experience of road tolling elsewhere in Europe, it is important to distinguish the tolling of individual stretches of road to recover the capital cost of construction, as is common in France, Spain and Italy, from the imposition of charges across road networks to cover road maintenance, environmental and / or congestion-related costs. The LRUC falls...
into the second category. To date, only Switzerland and Austria have implemented distance-based charging schemes of this type. The German Maut system should have been in operation since August 2003, but is now unlikely to be introduced before the end of 2004.

There are important differences between the LRUC plans for the UK and the lorry tolling schemes that exist in Switzerland and Austria and being developed for Germany:

1. **Foreign vehicles account for a very much larger proportion of lorry traffic in these countries than in the UK.** The vast majority of foreign vehicles transit these countries on international journeys. Transit traffic, for example, accounts for around three-quarters of road tonne-kms in Switzerland, up from a quarter in 1981. The proportion of transit traffic on UK roads (moving to and from the Irish Republic) is trivial by comparison. The amount of cabotage undertaken by foreign-registered vehicles in the UK is also very small in both absolute and relative terms. In 2003, it accounted for only 0.4% of road tonne-kms in the UK. According to EU statistics, in 2001 the level of ‘cabotage penetration’ in the domestic haulage market was 2.7 times higher in Austria than in the UK. The taxation of foreign hauliers therefore provides a much stronger justification for road user charging in these other countries and represents a much larger source of toll revenue.

2. **Lorry road user charging in Switzerland, Austria and Germany is generating a large amount of additional revenue for investment in transport infrastructure.** In all three countries, a large proportion of the toll revenue is being used for infrastructural improvement, mainly for trans-Alpine rail tunnels in Switzerland and predominantly for road investment in Austria and Germany. Given the UK government’s assurances about tax neutrality, there will be no net increase in revenue to fund transport improvements. On the contrary, the cost of setting up and operating the LRUC may divert resources that could otherwise be used to upgrade the transport system.

3. **Diesel fuel duties are much higher in the UK.** They are, respectively, 45% and 161% higher than in Germany and Austria. It is because British hauliers are already much more heavily taxed than their counterparts in these countries, that an elaborate fuel duty rebate system will have to be established to offset the new road user charges. This rebate system will be unique to the UK.

4. **The proposed UK system is the most complex.** Table 2 compares the four systems in terms of their coverage of vehicle classes and road types. The Swiss and Austrian systems are comparable to the proposed LRUC in tolling all trucks with gross weights in excess of 3.5 tonnes, but are much simpler. The Austrian system uses microwave Dedicated Short Range Communication (DSRC) between 400 road-side beacons and ‘Go-boxes’ on the vehicles to record entry to and exit from the autobahn network. Although the Swiss charge lorries for travelling on all roads, they do not vary the toll by road type. They too use a DSRC system to activate (or de-activate) an ‘on-board unit’ (OBU) when the vehicle enters (or leaves) the country. The key element in the Swiss system, however, is the linkage of the OBU to the vehicle tachograph. The tachograph measures the distance travelled and transfers this information onto a ‘chipcard’ inserted into the OBU. This chipcard can either be sent to the toll collection agency or the information relayed through the internet on a monthly basis. Operators are invoiced retrospectively for the distance travelled on Swiss roads. The OBUs have a GPS capability, though this is used solely to provide an independent check on total distance travelled to deter operators from tampering with the tachograph or failing to switch on the OBU. In the UK, GPS will play a much more fundamental role in differentiating road types as well as monitoring distance travelled. There will also be a supplementary DSRC system for occasional users of the UK road network, including the majority of foreign-registered vehicles.
Gross Vehicle Weight

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Over 12 tonnes</th>
<th>Over 3.5 tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorways / Autobahns</td>
<td>Germany</td>
<td>Austria</td>
</tr>
<tr>
<td>All Roads Standard km charge for all roads</td>
<td></td>
<td>Switzerland</td>
</tr>
<tr>
<td>All Roads Variable km charge by road type (initially motorways / other roads)</td>
<td></td>
<td>UK</td>
</tr>
</tbody>
</table>

Table 2: Differences in the Extent of Lorry Road User Charging Schemes

The Swiss system, which has been operating since January 2001, is generally considered to have been a success. The technology has functioned well, hauliers find it easy to use, operating costs are relatively low (at around 6% of revenue) and the effects on the Swiss freight transport system have been broadly in line with forecasts. It is worth noting, however, that the introduction of this tolling scheme was accompanied by an increase in the maximum weight of trucks from 28 to 34 tonnes. Many hauliers have been able to recover the toll payments from the savings they achieved from load consolidation.

7. Alternative Ways of Meeting the Objectives of the LRUC

The road user schemes in Switzerland, Austria and Germany have clearly stated objectives. The same cannot be said of the LRUC. The original objective of taxing foreign hauliers for their use of UK roads clearly cannot justify, on its own, the tolling and fuel rebate schemes which are now being proposed. In this section, we will examine some of the likely objectives of the LRUC scheme and consider how they could be achieved with less cost, risk and disruption:

Distance-based charging of foreign-registered hauliers for their use of the UK road network. The system currently operated by the Swiss government for foreign vehicles without OBUs could satisfy this requirement. On the first entry of a foreign vehicle into the country, its details are logged and an identification card issued. Then, and on future visits, the driver uses a self-service machine to enter the vehicle identification number, kilometre reading and trailer status, and to specify the payment method. He receives a receipt with a declaration to be signed. On leaving the country, the driver provides a signed declaration of the new kilometre reading and pays the accumulated charge for the total distance travelled. Random checks are made on kilometre readings and delivery paperwork to ensure that the declarations are accurate.

The relatively small numbers of foreign vehicles entering the UK combined with the country’s island status would make this system much easier to operate here than in Switzerland. Approximately 12,000 trucks a day enter Switzerland through 100 border stations equipped with tolling equipment. Only 5000-6000 trucks enter the UK daily, with over 95% of them arriving through only seven points (Channel Tunnel and six major ro-ro ports).
Relate the tax paid by HGVs to their environmental costs.
As most of these costs are closely correlated with fuel consumption, fuel taxes recover most of these environmental costs. At the present level of fuel duty, almost all environmental and track costs are covered across the lorry fleet as a whole. The heavier categories of articulated vehicle, however, are currently under-charged relative to their marginal social costs while the smaller rigids are over-charged. Some redistribution of the tax burden across the vehicle fleet is, therefore, required. Also, within each vehicle class lorries meeting higher Euro-emission standards cause less pollution per litre of fuel consumed. It would be much easier and cheaper to correct the tax imbalance between artics and rigids and to accelerate the uptake of cleaner vehicle technology by using the existing system of vehicle excise duty, particularly as this is being retained anyway. Widening VED differentials would have the disadvantage of reducing the sensitivity of the total tax burden to distance travelled for the more polluting vehicles. With the steady tightening of Euro-emission standards and decline in the level of emissions per vehicle-km, this is likely to be a minor issue within the next 5-10 years.

Discourage lorries from using congested roads at peak periods
As explained earlier, little will be gained by penalising only one category of vehicle for using the road network at busy times, particularly as this category accounts for less than a sixth of total traffic. Effective congestion pricing will require the integration of LRUC into a general road user charging scheme at some future date, as yet unspecified. If all vehicles were subject to the same tolling system, fuel duties could be reduced or eliminated and there would no longer be a need for a fuel duty rebate system for lorries. Until then, the adverse effects of congestion on operational efficiency and service quality will continue to induce changes in the way that companies manage their logistics. In recent years, many companies have been rescheduling and rerouting of deliveries to reduce the impact of congestion on their operations 29 (Figure 9). The relaxation of night delivery curfews and restrictions on night-time working would also help to maintain the long term trend towards of out-of-hours distribution.

![Figure 9: % of Companies Taking Various Actions in Response to Traffic Congestion](image)

Trial road user charging with one category of vehicles.
Lorry operators are partly seen as ‘guinea pigs’ for the introduction of road user charging in the UK. It has been suggested that LRUC will test the tolling technology and user response and, if successful, lead ultimately to a full roll-out to all categories of vehicle. It has also been argued that once trucks are subject to LRUC, industry will campaign for its extension to all vehicles creating a more favourable political climate for the tolling of cars. It has to be asked, however, to what extent we will be able to extrapolate from the experience of road freight operators in both technological and behavioural terms? While similar types of GPS-technology may be employed, the behavioural responses of commercial businesses and private motorists are likely to be quite different. Establishing a comprehensive road charging
scheme for 26 million cars will also be an order of magnitude more challenging than implementing the LRUC scheme despite all its inherent complexity. As the Secretary of State for Transport has stated, 'There is a world of difference between 460,000 lorries and 26 million cars, but that technology could be available to us in the next 20 years or so.' That would suggest a gap of around 16 years 'or so' between the introduction of LRUC and the extension of road user charges to cars – an exceptionally long time between a trial and a full implementation, spanning four Parliaments and no doubt several revisions to transport policy.

8. Other Concerns

Critics of the LRUC have drawn attention to other potential problems:

Reliability of the technology: during the piloting phase of the German Maut a substantial proportion of the OBUs were found to be defective.

Security of the GPS system: it has been argued that drivers will be able to tamper with the OBU antenna, interrupting or distorting the GPS signal. This could be difficult to prevent.

Removal of fuel efficiency incentives: at present hauliers achieving higher fuel efficiency are rewarded by consuming less fuel and thus paying less fuel duty. If, in offsetting road user charges, the government refunded all the fuel duty a company paid, the tax incentive to operate more fuel efficiently would be removed. This would undermine the strenuous efforts being made within the government’s TransportEnergy programme to raise the fuel efficiency of road haulage operations. It would also curtail the use of fuel duty differentials to incentivise the switch to cleaner, alternative fuels.

Risk of fraud in the fuel rebate system: the return of £2-3 billion of road toll revenue each year in fuel duty rebates to tens of thousands of operators will create a major new opportunity for criminal activity.

Adverse effect on vehicle routing: if tolls on motorways and other roads are significantly different, total lorry-kms may increase as operators route their vehicles more circuitously to take advantage of the lower charges per km on motorways.

Regional variations in average toll levels per km: hauliers operating in parts of the country with a relatively low density of motorways would, on average, pay a higher level of toll per km. For example, only 29% of lorry-kms in Scotland are run on motorways, whereas across the UK as a whole the comparable figure is 41%.

9. Attitudes of Industry to the LRUC

The government often claims that it has the support of the road haulage industry for the LRUC. It certainly has top-level endorsement from the Freight Transport Association (FTA) and Road Haulage Association (RHA), but it is not clear that it commands the full support of the wider membership of these organisations.

The overall level of awareness of the proposed scheme seems low. The government’s own survey of hauliers in the summer of 2003 found that only 54% of lorries were operated by organisations ‘aware’ of the LRUC. Many of those that are aware of it have probably been lulled into a false sense of security by the Chancellor’s assurance of tax neutrality. This commitment, however, relates to the industry as a whole; at a company level there will be winners and losers – and it will only apply ‘at the start’.
The industry’s two main trade bodies have justified their support for the LRUC on several grounds, including:

*Ensuring that foreign hauliers are taxed on a similar basis to UK operators:* This is a very desirable goal, but, as discussed earlier, the annual cost of operating the proposed LRUC system will probably be several times higher than the additional revenue raised from foreign hauliers.

*Breaking the fuel tax ‘logjam’:* Intense lobbying by the trade associations has singularly failed to get the UK government to reduce the heavy fuel tax burden on hauliers. The RHA, for example, has campaigned vigorously for an ‘essential user rebate’ on fuel for road hauliers, but without success. The trade bodies hope that they may win concessions as part of a fundamental reform of lorry taxation. The chief executive of the FTA, for example, has stated that the LRUC is ‘the transport industry’s best chance of achieving closer harmonisation of fuel duty taxation with the rest of Europe’. The LRUC is also seen as offering a means of ‘decoupling’ the taxation of trucks and cars. This may prove wishful thinking, however. After all, the fuel rebate system that the government is planning to introduce could on its own be used to give freight operators preferential tax treatment, without creating the huge, complex and costly tolling network. The RHA has also proposed cheaper and simpler methods of rebating some of the fuel tax that hauliers pay through, for example, the use of the VAT system. The real issue is whether the government believes there is a case for cutting taxes on hauliers and has shown any intention of doing so. There is little evidence of this. On the contrary, there is probably satisfaction in government circles that, uniquely in Europe, current taxation of lorries in the UK almost fully internalises their environmental and track costs. It is possible that with the taxation of trucks and cars decoupled, the government could raise fuel taxes on cars without penalising the haulage industry. If the resulting increase in the cost of motoring restrained the growth of car traffic, hauliers might indirectly benefit from roads becoming congested at a slower rate. This is highly speculative, however, and unlikely to appease the LRUC’s critics within the haulage industry.

*LRUC is the ‘only show in town’:* This too hardly inspires confidence in the scheme. It is too bad if it is the wrong show.

There appears to be a paradox at the heart of the trade associations’ support for the LRUC. They have emphasised that this support is conditional on the charges not being varied by time of day (RHA position) or not until all road vehicles are covered by variable charging (FTA position). As explained earlier, however, the functionality being built into the system from the start can only be justified if the LRUC is to be used for congestion pricing. The RHA is also insistent that British hauliers should not have to bear the high costs of setting up and operating the LRUC scheme. Presumably, if these costs are imposed on the haulage industry, breaching the assurances about revenue neutrality, the organisation may withdraw its support.

10. Conclusion

There is a growing view among British road hauliers that, under the pretext of taxing foreign trucks, the government is about to saddle them with a complex tolling system that will be expensive to implement and create a major new revenue stream for the Exchequer. A comparison of the tax income from foreign vehicles with the likely costs of operating the LRUC confirms that the scheme cannot be justified solely as a means of levelling the playing field with foreign operators. Hauliers are naturally suspicious because the government has not clearly explained what other objectives it is hoping to achieve with the LRUC. The three progress reports on the LRUC merely contain vague references to LRUC ensuring that ‘all
lorries using UK roads contribute on a fair and equal basis towards the costs they impose...irrespective of their nationality’ 39. It is not clear if this includes congestion costs as well as environmental and track maintenance costs. Nor is any indication given of the extent to which these costs will be disaggregated and recovered by road type, geographical area, class of vehicle and time of day.

The case for introducing road user charging for trucks is much less pressing in the UK than in Central European states like Switzerland, Austria and Germany whose road networks carry much larger proportions of foreign traffic and are about to experience a surge in transit traffic as a result of EU Enlargement. For example, it is forecast that 35% of the toll revenue generated by the German Maut will come from foreign vehicles 40; in the UK less than 5% of toll income is likely to be raised from foreign operators. Other countries are also planning to channel much of the toll revenue from trucks into infrastructural investment to help to accommodate the growth in traffic volumes. As the cost of setting up and operating the LRUC will far exceed the additional revenue from foreign hauliers, it will reduce rather than increase the resources available for transport improvement.

If LRUC is to be adopted in the UK, it would be advisable to delay its introduction until:

- road user charging is applied to all categories of road traffic, permitting the substitution of tolls for fuel duty, as suggested by the Commission for Integrated Transport 41, and removing the need for a separate fuel rebate system for lorries
- common standards of electronic road tolling have been established across the EU
- the reliability of GPS-based tolling equipment has improved
- more experience has been gained from the application of tolling technology in other countries, particularly Germany whose system most closely resembles that proposed for the UK.

This would entail a much longer delay than the two-year postponement, from 2006 to 2008, announced in the third LRUC Progress Report. The current timetable for putting out to tender the design, implementation and management of LRUC is much too tight and risks locking the government into a system that has not been adequately researched or debated.

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