

# Toll Collect

Germany's road pricing system for road freight

## 1. INTRODUCTION

Road pricing is necessary if the road transport sector is ever to become sustainable: it is largely because road users do not pay for their external impacts (environmental, social & economic) that we see an overuse of our roads.

Critics of road pricing argue that such schemes don't work, but the London congestion charge has proven this to be false. This briefing describes the progress made in Germany in delivering a nationwide road pricing system for road freight.

Whilst in Germany in July 2006, David Spaven, then Chair of TRANSform Scotland, was a guest of *Toll Collect*, the company operating Germany's lorry tolling system, for a two-day briefing and study tour in Berlin. The successful implementation of the road charging system and the lessons learned have vital implications for the UK, and the potential application to car traffic.

## 2. BACKGROUND

The German lorry tolling system came into operation in January 2005, covering 12,000 kilometres of *Autobahnen*. 1.5 million HGVs annually are liable for the toll payment – 35% of them foreign vehicles.

The system is based on a combination of mobile communications technology (GSM) and the satellite-based global positioning system (GPS).

The success, and relatively quick introduction, of the German system are understood to have been crucial to a recent change of attitude by the UK Department for Transport towards the introduction of national road charging in the UK.

## 3. HISTORY

In February 2000 the Paellmann Commission recommended the introduction of a distance-based lorry toll in Germany to achieve the following aims:

- To equitably share the costs of maintaining and expanding transport routes
- To guarantee German and foreign transport companies equal competitive conditions
- To offer rail and inland shipping opportunities to shift freight away from road haulage
- To generate additional income for maintaining and expanding transport infrastructure.

In September 2000 the German Transport Ministry announced the introduction of the distance-based lorry toll. Toll Collect (a private company, 45% owned by Deutsche Telekom) was appointed to run the system for 12 years.

In its first year of operation, 23 billion lorry



Image courtesy of Toll Collect.

kilometres were charged, raising far more than any other road charging system in the world. The toll – which applies to all vehicles over 12 tonnes weight – raises almost €3 billion annually.

#### 4. HOW IT WORKS

What is claimed to be the world's most advanced road pricing system operates without toll booths, extra lanes, speed restrictions or complex structures along toll roads. GPS and GSM link to On Board Units (OBUs) which automatically calculate the charge.

The OBU is free, but the operator has to pay for installation costs. Installation takes several hours at present, but future generations of OBU should take less than 20 minutes to install. In any case, OBUs are increasingly being fitted to new trucks during factory assembly.

Since foreign hauliers cannot be forced to install OBUs there is also a manual system with toll station terminals – but this generates only 14% of the toll income, and is declining.

Charging is based on (i) distance, (ii) engine class, and (iii) number of axles. The system also has the capability to factor in additional charging classes such as the time and place of journey.

The average toll rate was originally €0.15 per kilometre, but was reduced to €0.124 "to reduce the burden on the haulage industry". An average charge would therefore be €50.00 for a 400km journey. The German Ministry for Transport has claimed there was a 7% shift from road to rail freight during the first year of operation. Additionally, empty running by HGVs has declined by 15% after introduction of the tolls, suggesting that charges may have encouraged transport companies to operate more efficiently, with associated environmental benefits.

#### 5. POTENTIAL APPLICATION TO CAR TRAFFIC

Application of the system to cars will be possible with the next generation of OBUs, but is

currently regarded as a non-starter politically in Germany.

However, the 18-month German experience is said to have created a "paradigm shift" within the UK Government, and there has been extensive discussion between Toll Collect, its sister company Satellic (which markets the system worldwide), the DfT and Transport for London. The Scottish Executive has also been contacted, as separate legislation would be required north of the border.

*Satellic estimate that it would take just two years from a positive policy decision to implementation of a system on the ground. Difficulties in introducing such a system for road traffic in the UK are seen as being almost entirely political and motivational, rather than technical.*

Potentially, a satellite based tolling system has much to offer the UK – with relief of congestion and economic benefits being key drivers for the Government. However, the potential environmental benefits are also high, including the 'holy grail' - the internalisation of the external costs of road transport.

Following the disappointment of the Edinburgh congestion charging referendum, the German experience provides both the mechanism and the motivation for the implementation of a national road user charging scheme in the UK.

#### 6. CONCLUSION

The UK government continually states that a UK-wide road pricing scheme will not be practicable for 10-15 years because the necessary technology is not available.

However, the experience of the Toll Collect scheme is that such technology *is* available, and *could be* implemented in the UK.

The question remains as to whether our political class has the political will to implement such a scheme.

#### 7. REFERENCES & FURTHER INFORMATION

All references are from info supplied face-to face during the two-day study visit to Berlin last summer with Satellic and Toll Collect, which also included a session with the German Transport Ministry.

For further information see:

- <[www.satellic.com](http://www.satellic.com)>
- <[www.t-systems.co.uk](http://www.t-systems.co.uk)>

#### **Toll Collect briefing - version 1.0**

Published by TRANSform Scotland, March 2007

Lamb's House, Burgess Street, Leith, Edinburgh, EH6 6RD, Scotland  
Tel: +44 (0)131 467 7714; Fax: +44 (0)131 554 8656  
[info@transformscotland.org.uk](mailto:info@transformscotland.org.uk); [www.transformscotland.org.uk](http://www.transformscotland.org.uk)