

# Innovation in Road Transport

## Opportunities for Improving Efficiency

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## **ROAD PRICING: THE CASE OF THE NETHERLANDS**

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## Road pricing: the case of the Netherlands

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### Introduction

The plans for introducing road pricing in the Netherlands have a long history. The first schemes were already being considered in the 1980s. In the 1990s, various forms of a price per km charge were considered and elaborated upon. However, eventually all of these schemes were cancelled because of a lack of political support for such a scheme.

Currently, charges for infrastructure use in the Netherlands are limited to:

- Tolls in several tunnels (Dordtse Kil, Weterscheldetunnel) as a means of financing the construction and maintenance of these tunnels
- Shadow tolling (Wijkertunnel) also as a means of financing, but paid by the state instead of the users of the tunnel

### *Anders Betalen voor Mobiliteit* (Platform 'Alternative Charging Regimes for Mobility')

In 2004, the then Minister of Transport created a platform (ABvM) chaired by the late Mr. Paul Nouwen, to investigate the level of support for various charging schemes among public and private organisations. The organisations consulted include regional and local government authorities, car sales representatives, automobile associations, and environmental lobby groups. The aim of this platform was to consider charging schemes that could be an alternative to the current system of taxes on vehicle purchase and fuels and recommend an alternative for which there was wide support..

The ABvM platform commissioned a lot of research to investigate the desirability of various alternative charging schemes; desirability being defined to include all sorts of social, economic and environmental impacts. In doing this research, the ABvM platform defined 10 alternatives ranging from a toll program, fuel levies, and a variant of national road charging for freight transport.

The recommendation made by this ABvM platform was to have a system based on a per kilometre charge for kilometres driven by cars, combined with a congestion surcharge levied along congested section of the road network. This was considered 'fair': the road user pays relative to his/her use of the roads, and more if s/he contributes to congestion. One of the considerations for further research was to define the environmental criteria of the flat km price

Another important aspect of this system is that it is intended to be budget neutral, that is the revenues collected from this charging scheme should be offset by a reduction in the taxes paid by vehicle owners on the purchase of their vehicles and as road taxes.

Finally, the revenues collected from this system are to be earmarked for investments in road infrastructure. Concurrently, the Platform recommended that the system of road management is to be changed in ways that directly links revenues from road pricing to road management bodies.

Despite the elaborate attempts to forge consensus and arrive at a charging scheme that is palatable to most stakeholders, the resulting consensus among the sixteen members of the ABvM Platform is still fragile at best. The differing perspectives among the stakeholders are evident at times from the vague language in the agreement that leaves much wiggle room!

## Government policy on congestion

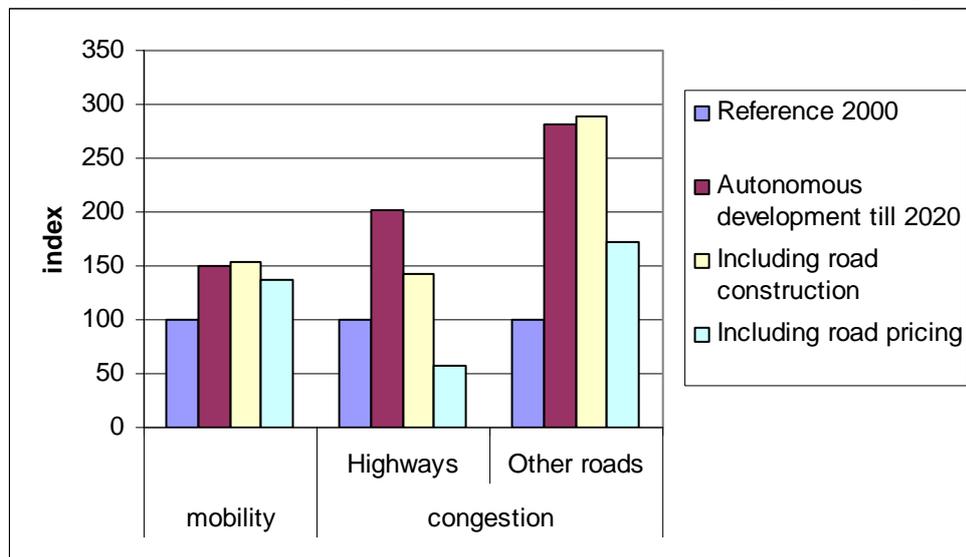
The Netherlands Minister of Transport has accepted the recommendation of the ABvM Platform. This was considered to be a major step forward. Till this happened, a large number of organisations had publicly expressed their opposition to a road pricing system. Thus, despite the fragile consensus in the ABvM platform, the fact that this recommendation has been accepted marks a major step forward.

The Netherlands Ministry of Transport's policy on mobility is based on the so-called 'three B's': *Bouwen, Benutten, Beprijzen* (Construction, Optimising usage, Pricing). This means that:

- New roads are built where they are needed and it is feasible to do so
- Existing road capacity is used more efficiently by implementing various measures such as traffic management, route advisory systems, traffic monitoring, etc.
- Pricing is used to reduce congestion. This also contributes to improving road safety and reducing environmental problems. It should contain both a price per km for all kilometres driven and a congestion surcharge.

The order in which these measures are implemented is important to the Netherlands Ministry of Transport: the goal of reducing congestion in 2020 back to the level of congestion in 1992 (which means a major reduction) is to be realised by firsts building new roads, insofar that the budget permits this, then by measures to optimise road use, and only then can congestion charging be considered. The risk of reversing this order is that congestion charging is used to reach the policy goals by increasing the number of places in which the scheme operates and the tariffs are increased, without any road capacity being added. While this may be attractive from the Treasury's point of view, it is a commonly held perception that this would detract from the acceptability of the scheme among the Platform members, as well as the wider public.

Figure 1 Indicative impact of policy measures Construction and Road pricing on road congestion



Source: AVV, March 2005 (data variant 5 of Platform: flat fee + congestion charge)

### Not a toll but variable pricing

It is worth noting that the proposed Dutch system is quite different from existing toll systems. Most toll systems aim at financing the costs of a road (DBFM, DBOM, etc.). By contrast, the Dutch road pricing scheme is not linked to individual roads, it covers the entire network and it is focused on the behaviour of the road user. The charging scheme aims to stimulate road users to make a considered choice to travel or not travel, and to select their time and route of travel. Charges, if they are properly calibrated, can be used to influence the choice behaviour of road users. Based on the charge, it may be more attractive to travel via certain routes, at certain times of day, in certain types of cars. In the long-run, such a charge may even influence choices people make about their place of residence and work. Charges do not have a direct link with road construction or maintenance costs in the way they do in other countries. Rather the overall amount paid by all users is used as an input for infrastructure financing.

### Expected impacts

The impacts of road pricing depend on how the charging scheme is designed. The primary factors to consider in design such a scheme are the height and differentiation of the charge itself, the location, time and level of the congestion surcharge. The level of the first component, the kilometre price is paid for all kilometres, relates to the current taxes that have to be reduced to meet the budget neutrality requirement.<sup>1</sup> Budget neutrality requires that the higher the kilometre charge, the greater the reduction in the existing car taxes should be. In the studies conducted on behalf of the Platform one alternative was to transfer all of the Vehicle operating taxes and a quarter of the purchase tax. At the then available data this would result in a price of 3.4 eurocents per km. Alternatively if the entire purchase

<sup>1</sup> Congestion charge is also included in this budget neutrality

tax was converted, a rate of around 5.7 eurocents per km would result, of course depending on the year of calculation, tax income of that year and the volume of vehicle kilometres.<sup>2</sup>

The research done on the impacts of such a charge indicates that, in the variants investigated by the Platform (variants 1A, 1B, 5)

Volume of road traffic will decline by some 10-15%<sup>3</sup>

Congestion will decline, depending on the design of the charging scheme, by 40-60%<sup>4</sup>,

Road safety will improve (order of 10-12% related to traffic volume reduction)<sup>5</sup> and

Emissions will decline by around 13%, which also relates to traffic volume.<sup>6</sup>

The cost benefit analysis results for the preferred option of the Platform (a combination of a flat rate and a congestion charge) show a substantially positive outcome.

**Table 1: CBA results for Platform preferred alternative**

CBA component	bn EUR
System costs	-0,73
Net revenues	0,00
Net tax returns	0,00
Change in travel cost contributions	0,00
Total financial	-0,73
Travel time savings	2,52
Mobility change	-0,91
Total welfare	0,88

Source, CPB, 2005

An analysis was also carried out to assess the budget implications for a few different cases. This analysis showed that while for many road users the reduction in fixed car taxes will be more than what they will pay in variable road pricing – an average user will have this balanced if he drives some 15.000 km per year – those groups who drive many more kms on the roads – businessmen, commuters – will also benefit due to the reduction in road congestion. In fact, analysis shows that business travel will increase due to the introduction of road pricing, because time benefits greatly outweigh increased costs. Please note that the income effects of the introduction of road pricing greatly depends on the final fine-tuning of the tariff scheme.

## The current car tax system – the first threshold towards implementation

Current car taxes are based on:

- Purchase tax, to be paid at the time of purchase of a new passenger car. This was about 45% of the net catalogue price of a car in 2007, with some fixed amounts to be added or deducted depending on the fuel type. For an average car this sum can be €6.000-8.000, but for luxury cars it can be a multiple of this.
- Vehicle operating tax: this is an annual amount to be paid for using the passenger car. The level depends on the weight of the car (the higher the more) and the fuel used (diesel cars pay higher

<sup>2</sup> The rate of 3.4 cts/km was based on transferring the vehicle operating tax (MRB) and 25% of the purchase tax (BPM), while the rate of 5.7 cts/km was based on fully transferring both taxes into a price per km. Data were based on 2003 tax and mobility data.

<sup>3</sup> AVV, 2005

<sup>4</sup> AVV, 2005

<sup>5</sup> Ministry of VROM, 2005

<sup>6</sup> Ministry of VROM, 2005

- taxes than gasoline cars). For an average petrol passenger car the user pays some €200-300 per year. For a light goods vehicle the charge is around €300 per year and for trucks around €600<sup>7</sup>
- Passenger cars are also charged a local vehicle operating tax. For an average passenger car this charge ranges from €150 to €250.<sup>8</sup>
  - Eurovignet for trucks, which is based on the European Commission's Eurovignet Directive.

In addition, users also pay fuel duty when fuelling their cars (about 84 cents a litre for petrol cars)<sup>9</sup>. This is not taken into account in the road pricing scheme and will remain in place even after the road charging scheme is introduced.

The first step to introduce road pricing has already been taken; i.e. shifting taxes from the purchase taxes (a one time only tax paid at the start of the lifetime of a car) to the vehicle operating tax (paid annually). This step is needed to reduce potential shocks on the car market, as buyers may postpone their purchase if they know that purchase tax is going to be removed in a near future year. This 'shock' is reduced by gradually shifting parts of the purchase tax towards the vehicle operating tax. In 2008, the first 5% was transferred and in 2009 this was repeated. This means that by 2012 already 25% of the purchase tax is transferred in annual payments.

## Conclusions

From a research perspective it is concluded that:

- Road pricing has significant impacts on the volume of road traffic and especially on congestion levels. The exact impacts depend on the way the scheme is designed: where and when a congestion charge is levied. The flat fee itself also helps to reduce congestion.
- It contributes to increased welfare: society as a whole benefits from a scheme as proposed in the Netherlands. The level depends on the design of the scheme. Also the impacts for specific groups within society depend on the set-up of the scheme and the relation to changes in fixed taxation.
- Environment benefits from a road pricing scheme through a reduction of the overall volume of traffic. Also traffic safety is improved.

## The road ahead

While the Platform Advice recommended 2011 as the target year for implementation of the new charging scheme, it also suggesting the adoption of phased approach for implementing the system. Today, the time line has been revised, which relates to the decision making process and legal steps that need to be taken. A start will be made in 2012, for trucks.<sup>10</sup> Also in this year the implementation of on board equipment in passenger cars will start. Due to the large number of vehicles – some 8 mln is forecasted – and the limited installation capacity, this is expected to take several years. The Ministry envisages that in 2017 all road users will pay per km.<sup>11</sup>

<sup>7</sup> Assumed: petrol car of 1100 kg, LGV of 1500 kg and a truck of 40 GVW. Charges in 2007. Wet Motorrijtuigenbelasting.

<sup>8</sup> Levels of 2007.

<sup>9</sup> Including VAT on petrol charge. Dutch Ministry of Finance, Factsheet belastingen 2009.

<sup>10</sup> [http://www.verkeerenwaterstaat.nl/onderwerpen/mobiliteit\\_en\\_bereikbaarheid/kilometerprijs/wat\\_gebeurt\\_wanneer/](http://www.verkeerenwaterstaat.nl/onderwerpen/mobiliteit_en_bereikbaarheid/kilometerprijs/wat_gebeurt_wanneer/)

<sup>11</sup> [http://www.verkeerenwaterstaat.nl/onderwerpen/mobiliteit\\_en\\_bereikbaarheid/kilometerprijs/wat\\_gebeurt\\_wanneer/](http://www.verkeerenwaterstaat.nl/onderwerpen/mobiliteit_en_bereikbaarheid/kilometerprijs/wat_gebeurt_wanneer/)

In the period prior to 2012, large pilot testing is done in the Netherlands.<sup>12</sup> Already today smaller scaled pilots are conducted to test equipment as well as behavioural aspects of pricing systems.

## Literature

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More literature can be found on the website of the Ministry of Transport, [www.verkeerenwaterstaat.nl](http://www.verkeerenwaterstaat.nl)

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<sup>12</sup> [http://www.verkeerenwaterstaat.nl/onderwerpen/mobiliteit\\_en\\_bereikbaarheid/kilometerprijs/wat\\_gebeurt\\_wanneer/030\\_wat\\_doen\\_we\\_al/](http://www.verkeerenwaterstaat.nl/onderwerpen/mobiliteit_en_bereikbaarheid/kilometerprijs/wat_gebeurt_wanneer/030_wat_doen_we_al/)