



**CiViTAS**  
Cleaner and better transport in cities

**MIMOSA**

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## Measure Evaluation Results

### UTR 1.2 Stimulating the use of clean vehicles by innovative parking policy

Patricia Stumpel-Vos (City of Utrecht)  
Leonard van den Houten (City of Utrecht)  
Patrick van Egmond (DTV Consultants)

Date February 2013



THE CIVITAS INITIATIVE  
IS CO-FINANCED BY THE  
EUROPEAN UNION

## ***Executive Summary***

The city of Utrecht aims to improve the air quality within the city and to achieve a modal shift towards cleaner vehicles. In order to achieve these objectives the city implements many measures. One of the many possible ways to improve the air quality is to increase the use of clean cars. This MIMOSA measure 'Stimulating the use of clean vehicles by innovative parking policy' was an example of this type of measure. Within this measure the city of Utrecht had the intention to differentiate the parking tariffs for cars according to their environmental characteristics : the fuel type. The idea was that the city could decrease the use of 'dirty' cars by charging 'dirty cars' (cars with high emissions) a higher parking tariff than clean cars.

To be able to differentiate the parking tariffs in this way, new national and municipal legislation was needed. Utrecht was one of the partners in a national pilot regarding this tariff differentiation but the former deputy mayor for Traffic and Transport had doubts concerning the effectiveness of the measure. Therefore Utrecht decided to leave the pilot. After the local elections in spring 2010, the new Deputy Mayor of Utrecht decided to pursue this measure. The national Ministry agreed and granted Utrecht permission to again join the pilot.

However, the pilot still awaited formal approval by the (new) national government and senate. October 2010 saw a change in national government and in the political "colour" of the responsible Minister. Because of this, it became highly unlikely that the proposed national law that was required to start the pilot would be accepted. The Minister doubted that the law would have significant effect on air quality in cities and was very hesitant with regard to the privacy issues related to enforcement of the law. On the 18<sup>th</sup> of November 2011 the national government decided not to go ahead with the experimental legislation. Due to this decision the pilot was no longer possible and the measure was stopped.

Despite the withdrawal of the measure, a process evaluation was conducted and enabled the identification of the barriers and drivers encountered. The **main barrier was political** based on an assumed lack of technical efficiency as well as assumed social undesirable consequence resulting in a legislative barrier, which eventually resulted in the abandonment of the experimental law. On the other hand, politics were also a driver for this measure. After an initial abandonment at local level, following the municipal elections that took place in March 2010, the new deputy mayor (also responsible for mobility and transport) declared himself to be in favour of the measure (political **driver**). The city again requested permission from the ministry of environment (who coordinated the pilot for various Dutch cities with air quality problems) to join the envisaged pilot project on tariff differentiation based on environmental characteristics. The former environmental Minister agreed by then that Utrecht could rejoin. The following general elections, resulting in a change of national government, meant that the pilot awaited formal approval by the new national government and senate.

Differentiated parking tariffs based on environmental performance is clearly a politically sensitive measure. If a city decides to implement such a measure, it needs a strong, consistent political and legislative framework.

Despite its apparent failure, the measure was important because it kept this vital subject on the political and societal agenda. Those in favour of this measure hope that it will have an opportunity again in the future.

## A Introduction

### A1 Objectives

The measure objectives are:

(A) High level / longer term:

- To improve the air quality

(B) Strategic level:

- To achieve a modal shift towards cleaner vehicles in the city centre

(C) Measure level:

- To stimulate the purchase and/or use of environmental friendlier vehicles in order to increase the number of environmental friendlier vehicles in the city
- To decrease the emissions of private vehicles in Utrecht in order to improve the air quality

### A2 Description

The city of Utrecht aims to improve the air quality within the city and to achieve a modal shift towards cleaner vehicles. In order to reach these objectives the city implements many measures. Examples of these measures are some of the MIMOSA measures that have the objective to *decrease the usage of private cars*, like P+R facilities, car sharing and increasing the number of parking places for bicycles. Another way to improve the air quality is to *increase the usage of clean cars* - this MIMOSA measure 'Stimulating the use of clean vehicles by innovative parking policy' is an example of this type of measure.

Within this measure the city of Utrecht had the intention to differentiate the parking tariffs for cars according to the environmental characteristics of the cars: the fuel type. In the inner city and the surrounding areas people have to pay to park their cars. The idea was that the city could decrease the usage of 'dirty' cars by changing the parking tariffs: 'dirty cars' (cars with high emissions) would be charged a higher parking tariff than clean cars. A national study shows that an increase of parking tariffs by 10% results in a decrease of car usage of about 3% (Goudappel Coffeng (1996). *Kwantitatieve effecten van parkeerbeleid*. In samenwerking met MuConsult.). By this, the objective was to improve the air quality in the city of Utrecht.

To be able to differentiate the parking tariffs in this way, a new national and municipal legislation was needed. Part of this measure was to execute changed municipal parking taxation legislation. Utrecht was one of the partners in a national pilot - with the other three largest Dutch cities and a few other cities with major air quality problems - regarding this tariff differentiation.

Questions to be addressed were how to differentiate the parking tariffs and how to distinguish the cars physically, based on their environmental characteristics. First of all a classification of cars based on the environmental characteristics/fuel type was needed.

Implementing this new classification was also part of this measure. Based on this new classification a new permit tariff scheme and short-stay parking tariffs were intended to be set up with lower tariffs for cleaner vehicles.

This envisaged change asked for new parking ticket vending machines that are able to differentiate between tariffs, based on the environmental characteristics of the cars. These ticket machines have been implemented (see measure UTR 3.1 Innovation of the system of parking permits and rates).

Due to a change in the national government in October 2010 and in the political "colour" of the responsible Minister, decision making on the required new national law to be able to start the pilot was postponed numerous times. It was unlikely that it will be accepted within MIMOSA lifetime. For this reason a pilot was no longer possible and the measure has been stopped in 2011.

In November 2011 the national government decided to not make it possible to start the pilot. In their opinion differentiating parking tariffs, would affect exactly those people who have no possibility to buy a cleaner car. The national government has another measure to stimulate people to buy clean cars namely by fiscal adjustments. In that way, people who buy a car can chose at that moment to buy a clear one, and receive tax concession. By differentiating the parking tariffs, people do not have that choice, because mainly the people that has lower financial capacity drive in older – and often more dirty – cars. These people would have to pay more for parking their car, but they do not have a realistic alternative.

## **B Measure implementation**

### **B1 Innovative aspects**

The innovative aspects of the measure were:

- the introduction of a **new conceptual approach** which **targets specific user groups**, as to say owners of clean vehicles who are rewarded with a lower parking tariff;
- **a new national legislation** that should allow a differentiation between the environmental characteristics of cars – and therefore to being able to ‘reward’ cleaner cars. The national as well as the municipal legislation had to be amended to make this possible.

### **B2 Research and Technology Development**

The G4 (cooperation of the four largest cities in the Netherlands: Amsterdam, Rotterdam, The Hague and Utrecht) initially intended to set up a joint tariff differentiation pilot. To be able to implement the pilot, the Dutch government needed to adopt the experimental law which would allow these four largest cities – and a few other cities - to experiment with tariff differentiation.

The Dutch Vehicle Registration Authority (RDW) made a proposal how to classify cars based on environmental characteristics (fuel type) through access to their vehicle database.

The national Ministry for Transport conducted research to develop the necessary municipal legal amendment on the permit tariff scheme and on the short-stay parking tariffs. Once this amendment would have been accepted by the city government, further research on the consequences and the best way to execute the new permit tariff scheme and short-stay parking tariffs was intended to be carried out.

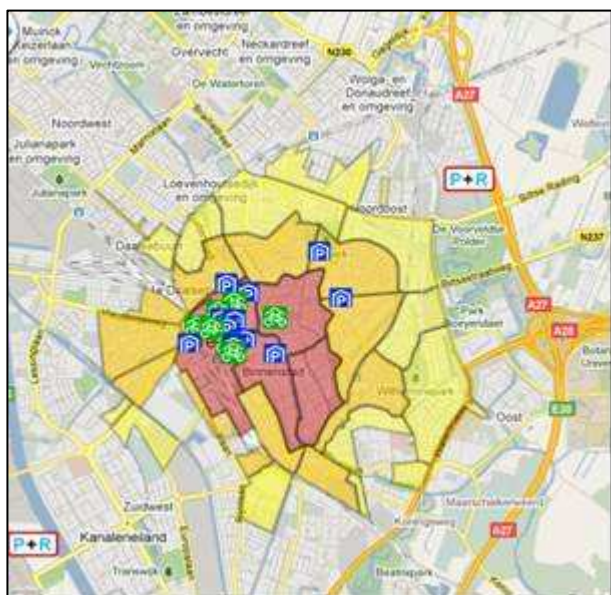
Furthermore a feasibility study into the possibilities of tariff differentiation in parking ticket vending machines had to be carried out. Utrecht intended to do this in cooperation with the producer of these machines.

Another feasibility study had to be done to study the operational consequences of the implementation of tariff differentiation based on environmental characteristics, such as: permit issuing, enforcement, automation and how to be able to distinguish between cars based on their environmental characteristics.

These studies have not been carried out because the legislation was not changed.

### **B3 Situation before CIVITAS**

Before the implementation of this measure (and still today) the level of tariffs for parking cars on the street in Utrecht was (and still is) based on parking duration, parking period, occupied "footprint", and parking space location, with no distinction between environmental characteristics of vehicles. In 2011 the city was divided in different parking tariff areas:






 area 1 (city centre)	€ 4,18 per hour (Monday–Saturday 7:00-1:00 and on Sundays when the shops are open 12:00-18:00)
 area 2	€ 2,55 per hour (Monday – Saturday from 9:00 until 23:00)
 area 3	€ 2,29 per hour (Monday – Saturday from 9:00 until 21:00)

Figure B3-1: Map of the paid parking areas.

To park a car in a parking garage in 2011 the costs were € 1,50 - € 3,20 for each hour, depending on the (location of) the parking garage.

### B4 Actual implementation of the measure

This measure was cancelled due to no approval of the required new experimental law by the national government and senate. This approval was necessary to have a legal frame for implementing this measure.

Until the cancellation the measure implementation was prepared through the following stages:

**Stage 1: Negative local decision on a national pilot (period until March 2010)** - The national government intended to adopt an experimental law, which allowed the four largest cities in the Netherlands<sup>1</sup> and a few other cities with serious air quality problems to participate in a pilot project regarding tariff differentiation according to environmental characteristics of vehicles. Although Utrecht first decided to participate in this pilot the former deputy mayor for Traffic and Transport De Bondt of the conservative-liberal political party

<sup>1</sup> Amsterdam, Rotterdam, Den Haag (The Hague) and Utrecht

had doubts concerning the effectiveness of the measure. Therefore Utrecht did not join the pilot and was looking for other ways.

**Stage 2: Positive decision about pilot (September 2010)** – After the local elections in spring 2010, in which the green party "GroenLinks" became the biggest party and provided the Deputy Mayor for Traffic and Transport, the new Deputy Mayor of Utrecht decided to pursue this measure after all, despite earlier cancellation of his predecessor. The Deputy Mayor requested permission from the Ministry of Environment (who coordinated the pilot) to join the pilot. The national Ministry agreed and granted Utrecht permission to again join the pilot project regarding tariff differentiation according to environmental characteristics of vehicles.

However, the complete pilot still awaited formal approval by the (new) national government and senate. A decision was first expected in May 2011, but was postponed again, causing further delays. Utrecht considers it likely that the decision will be negative.

**Stage 3: Local implementation plan (starting end of 2010)** – By the end of 2010 the first steps towards an implementation plan were taken. Questions to be addressed were amongst others how to differentiate the parking tariffs and how to distinguish between various groups of parkers (short term versus residential parking). The parking vending machines had been renewed for about 60%, which technically allowed applying differentiated tariffs when buying a ticket by obligating car parkers to enter the license plate of the car they park - the license plates of all the Dutch vehicles are stored in a national database of the Dutch Vehicle Registration Authority (RDW), including fuel type and weight and the parking machines were able to contact this database - so no technical barrier was expected.

**Stage 4: Decision that the parking ticket machines may not be used for differentiating tariffs (September 2011)** - The local government decided that it was not allowed to use the parking ticket machines for tariff differentiation by obliging parkers to enter the license plate. The local government decided that, out of privacy reasons, people cannot be obliged to give their license plates: it must be possible to buy a parking ticket anonymously. Which way the differentiation will take place, should be determined in the implementation plan, which still was not finished.

**Stage 5: Change in national government leads to cancelation of the measure (November 2011)** - October 2010 saw a change in national government and in the political "colour" of the responsible Minister. Because of this, it became highly unlikely that the proposed national law that was required to start the pilot would be accepted. This is notwithstanding the priority this measure has in the municipal policy plans and the efforts undertaken together with the Association of Netherlands Municipalities (VNG) to positively influence the decision making process. The Minister doubted that the law would have significant effect on air quality in cities and was very hesitant with regard to the privacy issues related to enforcement of the law. On the 18<sup>th</sup> of November 2011 the national government decided to not go ahead with the experimental legislation.



## **B5 Inter-relationships with other measures**

The measure is related to other measures as follows:

- **UTR 3.1 Innovative Parking Permits** – Both this measure and UTR 3.1 (Innovation of the system of parking permits and rates) were aiming at parking in the city of Utrecht. Whereas measure UTR 3.1 aims mainly at the “technical” hardware of the parking infrastructure, measure UTR 1.2 aimed at specific “software” part of the parking policy as to say tariff discrimination based on the environmental performance of the parked vehicles.

## **C Impact Evaluation Findings**

Impact evaluation is not applicable because the measure was stopped.

### **C1 Measurement methodology**

Not applicable.

### **C2 Measure results**

Not applicable.

### **C3 Achievement of quantifiable targets and objectives**

Not applicable.

### **C4 Up-scaling of results**

Not applicable.

### **C5 Appraisal of evaluation approach**

Not applicable.

### **C6 Summary of evaluation results**

Not applicable.

### **C7 Future activities relating to the measure**

Whether the city of Utrecht wants to continue this measure with differentiation of parking tariffs in the future is hard to tell. First a positive decision on national level is needed. In the mean time Utrecht introduced Mobile Parking, a system where the car parker needs to enter his/her license plate. This would make it possible to differentiate the tariffs in future.

## D Process Evaluation Findings

### D.1 Deviations from the original plan

The deviations from the original plan comprised:

- **The measure was stopped in 2011** – Due to the postponed required new national law to be able to start the pilot it was no longer possible to implement a pilot and the measure has been stopped in 2011. In November 2011 the national government decided to not make it possible to differentiate the parking tariffs according to the environmental characteristics of the car.

### D.2 Barriers and drivers

#### D.2.1 Barriers

A number of barriers have been registered that finally resulted in the abandon of the measure and intention to implement a tariff differentiation based on environmental characteristics.

#### Preparation phase

- From the beginning of this measure, it was clear that the implementation was dependent of national decisions. This was a risk. After an initial decision to implement the measure, the Utrecht city council postponed early within the CIVITAS project its participation to a pilot project regarding tariff differentiation according to environmental characteristics of vehicles and in a second step even withdrew its intention to participate to the measure. The previous deputy mayor for Traffic and Transport De Bondt of the conservative-liberal political party had serious doubts about the effectiveness of the measure and considered it as a symbolic measure<sup>2</sup>. More efficient in her opinion was to differentiate the general tax for authorization to drive with the vehicle (i.e. motorized vehicle tax/ moterrijtuigenbelasting) (**political barrier based on an assumed lack of technical efficiency**).
- The city of The Hague (another envisaged test site) argued that this envisaged measure came on top of a large number (8 to 9) of other measures to promote cleaner cars, and thinks therewith that it made tariff differentiation less efficient. The city of Rotterdam (another envisaged test site) indicated that they thought that it should be part of a larger package of measures that foster the use of cleaner cars. An exception is made in Rotterdam for the electric car. The owner of such a vehicle can get a free parking license, and discount in a number of parking garage. The city of Amsterdam was still in favour of differentiating parking tariffs.

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<sup>2</sup> Algemeen Dagblad, "Duur parkeren vieze auto's valt slecht", 12 October 2009.

- On the 18<sup>th</sup> of November 2011 the national government decided not to go ahead with the experimental legislation. They indicated that in their point of view tariff differentiation on the basis of environmental vehicle characteristics would especially disfavour that part of the population that does not have the financial means to procure the more expensive environmental-friendlier vehicles. It would for them be more difficult to make use of the possibility to pay a lower parking fee, or even being completely exempted from paying. **(Political barrier based on an assumed social undesirable consequence resulting in a legislative barrier, abandon of the experimental law)**<sup>3</sup>.
- The city of Amsterdam in the meanwhile also favoured the reservation of parking place for clean (electric) vehicles. Differentiating parking tariffs on the basis of environmental characteristics is generally considered as a complicated and expensive solution **(technical and financial barriers)**<sup>4</sup>.

## D.2.2 Drivers

A number of drivers can be determined that helped to progress with the measure.

### Preparation phase

- In London and Stockholm differentiated tariffs for parking based on the environmental characteristics exist already **(driver: existing preceding experiments)**. Also in the Netherlands the Ministry of Environment wanted to experiment this tariff differentiation **(political driver)**. The arrival on the market of digital parking machines made such a differentiation possible **(driver; technical availability of hardware)**. The Ministry responsible for environment ordered 2 studies<sup>5</sup> (initial + update) that had to determine the potential environmental effects of such tariffs differentiations. The studies concluded on the basis of modelling that the emission reductions are small, yet that this could help at certain locations with severe air quality problems to stay within the European air quality norms **(driver: availability of some scientifically researched potential effects)**. Among other on the basis of these reports the Ministry started to prepare an experimental law, which should allow the four largest cities in the Netherlands (Amsterdam, Rotterdam, The Hague, and Utrecht) and a few other cities with serious air quality problems to participate in a pilot project on tariff differentiation based on environmental characteristics of the vehicles **(driver: preparation of an experimental law)**.
- After an initial abandon at local level, following the municipal elections that took place in March 2010, the new deputy mayor, also responsible for mobility and transport declared to be in favour of the measure **(political driver)**. The city requested again permission from the ministry of environment (who coordinated the pilot for various Dutch cities with air quality problems) to join again the envisaged pilot project on tariff differentiation

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<sup>3</sup> National Government, press communication, "Parkeertarieven voor elke auto gelijk", 18 November 2011, The Hague.

<sup>4</sup> E.g. for example argued in "Geen voordeelparkeren zuinige auto" p-plus.nl, 19 November 2011.

<sup>5</sup> A. (Arno) Schroten M.J. (Martijn) Blom, "Update milieueffecten gedifferentieerde parkeertarieven Rapport Delft", March 2011 and M.J. (Martijn) Blom, A. (Arno) Schroten, H.P. (Huib) van Essen "Milieueffecten van differentiëren van parkeertarieven", Delft, August 2006.

based on environmental characteristics. The former environmental Minister agreed by then that the city of Utrecht could join again. The following general elections, resulting in a change of national government, made that the readily pilot awaited formal approval by the new national government and senate.

- Locally the city of Utrecht installed over the last year a large number of digital parking machines. The last batch of around 80 new parking machines has been installed in Utrecht in 2011. This brings the total of digital parking equipment up to 530 operational machines. These new machines have many new technological options and can offer various (digital) products, including providing the technical hardware that allows differentiated tariffs based on environmental characteristics (**technical driver**)

## D.2.3 Activities

### Preparation phase

- The Ministry of Transport tried to get and keep this measure on the agenda of the Minister. They asked several times whether the involved municipalities were still interested in participation. Utrecht always answered positively.
- The Parking Department explained the consequences of not obliging the car parkers to enter their license plate in the parking machines, but the alderman thought that the privacy aspect was more important.
- The Parking Department (responsible for this measure) started an alternative measure, called Mobile phone parking. In this way people who park their car give their permission voluntarily for registration of their license plate and possibly other information that is subject to privacy legislation. This Mobile Parking is successful, it started on the first of March 2012, and after three months already 20% of the short parking payments were done by Mobile Parking.

## D.3 Participation

### D.3.1. Measure Partners

- **City of Utrecht, Department of Parking** - This Department is responsible for the parking within its city boundaries.

### D.3.2 Stakeholders

In this measure the following main stakeholders were involved:

- The **national legislator and politicians** - in the Netherlands the legal frame of differentiated parking tariffs on the basis of environmental characteristics was lacking, this obliged the involvement of these;
- **RDW (state registration agency of all Dutch licensed vehicles)** – in the chosen technical/procedural solution in the parking ticket machines the driver had to identify the vehicle with its license plate number. On basis of the data in the database of the national

RDW it would have been possible to determine the environmental characteristics of the vehicle and by this to differentiate the parking tariffs according to the environmental characteristics of the car.

## **D.4 Recommendations**

### **D.4.1 Recommendations: measure replication**

- Differentiated parking tariffs based on environmental performance is clearly a political sensitive measure. In case a city decides to implement such a measure, it needs a strong political and legislative frame.
- Two modelling studies concluded that the direct effects are small, yet could be part of the solution at certain points where air quality is low;
- Present available technique (digital parking machines), and recognition of environmental characteristics (based on vehicle model identified by the driver when parking, or by linking to central national database through license plate identification) seem to be still too complicated and expensive in comparison to achieved results. Onboard identification technology (only now slowly being implemented) might ease the procedure;
- There is an issue of social fairness, whereas the less social economic favoured citizens are more penalized by differentiated parking tariffs. This links to the political sensibility and needs a careful thinking (likewise is this an issue with the London congestion charging);
- The efficiency of the attitude change envisaged, might also be obtained by just reserving parking places for clean cars. In case of differentiated parking tariffs each traveller parking is individually confronted (when paying) to the difference in environmental performance of its vehicle, whereas the visual availability of free parking place targets every person passing by/ searching for a parking place, unless you place clear parking signs when you are in a differentiated parking tariff zone.

### **D.4.2 Recommendations: process (related to barrier-, driver- and action fields)**

- Make sure that the measure is feasible before starting. In the Netherlands, people have talked and thought about this measure for years, while at the same time it was not sure whether the needed legislation would be adopted. Before the start there has to be a certain level of certainty about the political feasibility of the needed legislation.