

## 8<sup>th</sup> BESTUFS II Workshop

13<sup>th</sup> – 14<sup>th</sup> March 2008

### **"Environmental Zones in European Cities: impacts and opportunities for urban freight"**

EMT-Empresa Municipal de Transportes de Madrid  
c/ Cerro De La Plata  
428007 Madrid  
Spain

## **Minutes of Meeting**

### **Day 1**

#### **1 Opening by Pedro Ayuso and Dieter Wild**

The final BESTUFS workshop was opened by Pedro Ayuso. He welcomed the participants and congratulated the organisers of the event. Mr Ayuso introduced the city of Madrid as an open city with no barriers and tolls. There is nothing that prevents the mobility of travellers. It is not in the nature of Madrid to impose barriers. A number of measures have been taken in the past to keep this possible, such as a parking scheme, a residential priority programme and access controls. It is good to reduce transit: the average speed in the city has increased and traffic intensity levels have decreased. The challenges for the city are now low emission areas and the possibilities to reduce freight transport. The three relevant authorities are all participating on this. The participants were welcomed at this event, as the city is very interested to hear about and learn from the lessons learnt and mistakes in other countries. Special thanks were expressed to EMT, which is an example of a municipal transport company that uses bio-fuel vehicles and electric buses. In some areas a new vehicle type is used which is smaller and cleaner than traditional buses. EMT can be seen as a pioneering company, especially when one looks at the project with hydrogen.

Dieter Wild recalled a visit to the city 15 years ago when the roads in Madrid were very congested. In the mean time, many changes have taken place: there are fewer vehicles to be seen and more regulations are in place. Mr Wild also introduced the project BESTUFS and emphasized the fact that the project relies heavily on local support. He also presented the BESTUFS Good Practice Handbook that was published in many local languages and the final conference that will take place in June in Athens where the participants will look into the future of cities. Finally he recalled a presentation on one of the first environmental zones in Sweden that was presented at a workshop in September 2000. The first experiments showed a reduction in

emissions, but it was expected that low emission zones would not be needed anymore in the future because of the expected improvements in vehicle technology. Astonishingly, the vehicles have become much cleaner, but still more and more environmental zones are appearing.

**2. Mrs. Soledad Perlado** – Consejera Técnica. General Directorate of Air Quality and Risk Prevention Ministry of Environment, Spain

*Presentation: "Environmental Zones in Spanish cities"*

Soledad Perlado presented the efforts of the Ministry of Environment to develop an institutional umbrella for urban development. When looking at an image of the development of people on the earth, it is clear that nowadays the city is the main model, or eco-scheme for human life. It is expected that in the 21<sup>st</sup> Century more than 50% of the world population will live in cities. This leads to an ecological footprint and sustainability issues, which will become a win-or-loose battle. By 2015, 80% of the European citizens will live in cities, which induces an increased need for mobility and public space. Regarding the situation in Spain, 85% of freight transport takes place by road. With increasing emissions, there is a necessity to reduce road transport to prevent congested roads and accidents. We cannot wait until factory supply chains are completely blocked. Therefore, the Ministry has developed a strategy on the urban environment, which is aligned with EU policies. The objective is to have compact and efficient cities, which lead to social cohesion, an important value in Spain for centuries. Development lines are plans for sustainable logistics, the construction of logistical platforms, fuel taxes on emissions and better quality fuels. There is also a knowledge platform: [www.ecourbano.es](http://www.ecourbano.es). Specifically to reduce pollution, a catalogue of pollutants has been developed by Transyt, a group of universities and a label will be promoted for vehicle emissions. Also events like the European week of mobility and the City without car initiative are supported.

*Discussion*

Dieter Wild asked how urban freight is treated in city networks and the mobility observatory and whether there is expertise in small cities on the topic. It was answered that the intention is there, but that it has to be stimulated further.

Enrique Garcia asked whether other emissions than CO<sub>2</sub> are considered in the plans because these emissions are not important on the local level, whereas other emissions have far more serious impacts. This comment was accepted: the focus is now on CO<sub>2</sub>, because there has to be some priority.

**3. Dr. Manuel Tuero**, General Director of Environmental Evaluation, Quality and Control. City Council of Madrid

*Presentation "Low Emission Zone as established in 2006-2010 Madrid Local Air Quality Strategy"*

Mr Tuero presented the environmental zone in Madrid. At first an air quality analysis has been carried out and a strategy has been developed. Based on this strategy several measures have been identified, one of them being the environmental zone.

When Madrid considers actions, interaction with higher levels is needed because support is essential. The focus of the environmental zone is on three types of particles. The levels are below the levels stipulated by the EU. One has to consider however that Madrid is under the influence of the Sahara, which has an impact on the PM10 levels in the city. Nevertheless, in the last years the limits were exceeded several days. The problem concerns especially the air quality peaks (nitro-oxide). Several measures have been considered. For instance, a ring road is needed and an environmental zone to prevent problems. An important issue is freedom of travelling. The city has mobile police officers who are responsible for mobility matters. In 2008, access will be restricted to vehicles that comply at least with EURO2 levels. From 2010 EURO3 will be the limit. The impact on taxis is expected to be low. A system will be needed to control this administrative intervention. A device comparable to the one used in Germany is considered. It is important that the city does not want to bother the citizens. Furthermore, a tool to control atmospheric warnings is considered.

#### *Discussion*

Fuensanta Martínez Sans asked whether the city council has whether the economic impact of the environmental zone has been studied in a cost-benefit analysis'. To the first question, it was answered that it is important to attack the actual sources of the pollution and not just to introduce a payment scheme. It is proved that the inhabitants pay the taxes, not the companies. Regarding the second question, one has to consider that the city is a system where urban mobility has an impact. The council has to be very cautious and therefore there are discussions with other authorities, but there is also the matter of the protection of human health.

**Pedro Calvo Poch**, Delegado de Seguridad y Movilidad del Ayuntamiento de Madrid

#### *Presentation "Urban challenges for Freight distribution in urban Mobility"*

Pedro Calvo Poch thanked everybody who was involved in the organisation of the workshop, also on behalf of the Major of Madrid. He presented the battlefield of sustainability which has risen because of the high concentration of people. Sustainability has now been recognized by international organisations. The challenge for Madrid is to optimise the quality of life. We want to receive products and citizens generate mobility, but people don't want to get trapped in congestion. There are costs of time, stress and health involved. We cannot have an attitude of resignation, we need to make an effort – we cannot keep living with an imbalance between transport and the environment. There are discussions with operators to create a common responsibility. The opportunity to share best practices with BESTUFS is welcomed and the City of Madrid will take actions to support measures to protect the environment.

**Martin Salet**, Commission Urban Distribution, The Netherlands

#### *Presentation "Environmental Zone, don't do it alone!"*

Martin Salet presented the approach on environmental zones in the Netherlands. The National Mobility Plan includes an obligation to cooperate for all stakeholders, including cities and provinces, and the possibility to intervene if necessary. The Ministry is assisted by the Commission Urban Distribution, which exists of a number of members from different backgrounds. It is not just the environmental issues, but also legal issues that are important (building projects have been stopped because of exceeded

environmental limits). There are fears for different solutions in different cities. An important issue on the situation in the Netherlands is that there are almost no malls outside the city centres due to the current legislation. A problem in transport policy is the fact that passenger transport gets more attention than goods transport (goods do not vote). In any case, there is now a stakeholder agreement on environmental zones. In seven cities the environmental zones are already in force. It was very interesting to see that environmental issues have put urban freight distribution on the political agenda. Cities and companies now work together on customised solutions. We have seen examples of more efficient distribution, such as night-time deliveries. There are now strict regulations, which make shops responsible for compliance and cities for enforcement. The national government has subsidised the development of silent equipment that can have very positive effects, as a pilot at supermarkets has showed recently. The future will show that the delivery zones will also apply to vans, we will see transport growth and a slow transition towards cleaner trucks.

#### *Discussion*

Dieter Wild asked whether noise levels are measured in absolute terms or relative to background noise, because it is known that for instance in Spanish cities this can be very high in some streets. It was answered that peak levels are measured. Dieter Wild commented that the example in Barcelona has shown that the question is whether residents complain about the noise. If not, the night would be a good time for delivery. The example in the Netherlands has indeed shown that there were hardly any complaints.

It was asked whether the Amsterdam Cargo Tram project is successful. It was answered that the plans are not fixed yet, but it is a private company that operates without financial help from the city. The project might be able to take up part of the transport volume which goes to retailers and department stores, which accounts for 70% of the total transport volume. It is important to look at all opportunities however. There are also plans to use the canals for instance.

It was asked what kind of noise controls take place. It was answered that there are limited possibilities to do so, although there were examples of trips to supermarkets. These have shown however that a crucial aspect is to have a silent driver.

**Dr. Ludwig Arentz**, Department of Environment and Consumer Protection, Cologne City, Germany

#### *Presentation "Low Emission Zone Cologne – A way to tolerate dense transport in urban cities"*

Mr Ludwig Arentz presented the Low Emission Zone in the City of Cologne which limits access to passenger vehicles and freight vehicles. The "green label" is given to Euro 4 vehicles, which represents 80% of the fleet. The problems the city experiences today are mainly PM10 and NO2 related, and to a limited level also to NO. The big problem concerns the daily maximum limits. Especially NO2 proves difficult to combat. In the past no traffic related environmental data was available, but now an Air Quality Measurement approach has been set up using different measurement systems, both passive and active. An additional problem in Cologne is posed by the emissions from ships.

A series of tables were presented that show potential reductions in emissions. The system used for the Low Emission Zone includes a sticker that is placed on the windscreen of the vehicle that states the emission class. The system also applies to foreigners, but there are special offers with public parking outside the Zone. Now the city is trying to include environmental data in the traffic light management. Nowadays it has become known that the smaller the emission particles, the more problems it causes to human health, which is problematic because traffic produces a lot of smaller particles.

#### *Discussion*

Dieter Wild commented that it is difficult to determine the borders of a Low Emission Zone. He asked whether the objective of the scheme is to enable a free traffic flow, or to protect the inhabitants' health. It was answered that the objective is to save people, but one has to realise that there is a commercial centre.

It was asked whether the city uses alternative fuels, such as hydrogen or CNG. It was answered that bio-fuels are the next step and hydrogen is seen as a solution for the more distant future. Hydrogen buses are still too expensive, both in price and maintenance. This is not yet seen as a durable solution. Samantha Kennedy commented that a trial is running in London now, but it is heavily subsidised. Fuensanta Martinez Sans commented that the production of hydrogen is not so clean and therefore it is not considered sustainable.

Martin Salet asked whether the same sticker is used in all cities with an environmental zone. It was answered that the stickers are the same, but the rules differ in the different cities. The number plate number is mentioned on the sticker.

Dieter Wild raised a question about enforcement by camera. It was answered that the court ruled out this option in Germany.

**Mrs Samantha Kennedy**, Strategy Manager Low Emission Zone, Transport for London, UK

#### *Presentation "The Low Emission Zone in London"*

Samantha Kennedy presented the Low Emission Zone in London, which is an Air Quality Scheme and focuses on health concerns related to PM and NO<sub>x</sub>, and not on CO<sub>2</sub>. There is a focus on poor people in society and hot spots caused by heavy vehicles. The aim is to discourage the most polluting vehicles from entering the city. By 2008 the limit is set at Euro 3 and at Euro 4 by 2012. The city takes a holistic view: if you can comply, you have to do so. This also applies to the public fleet. By 2010 the scheme will apply to vans and minibuses as well. There needs to be a certification of the vehicle as being compliant, although certain exemptions are possible. Foreign operators are required to register as well. It is a 365d/24h paying scheme enforced by cameras. There is a daily charge and high penalties for non-compliance. To prevent problems, a High Impact Public Information Campaign took place and an online Compliance Checker is available.

### *Discussion*

Laetitia Dablanc asked whether there is no fear that the more polluting vehicles will be used in other cities, which means the problem is just diverted to other areas. It was answered that the city is so large, that it is assumed that the majority of the fleet has to come to London at some point in its lifespan, but other cities have to look at the issue as well.

Magnus Jäderberg asked how the system is controlled and whether the police is involved. It was answered that VOSA is not part of the police. Infringements are criminal offence. A comparison with other countries shows that in Germany the police and parking control officers have to enforce the scheme.

Jason Trenchfield asked whether a cost impact analysis of the scheme has been carried out and how it affects the smaller companies. It was answered that smaller companies are not unnecessarily burdened because there is no age restriction – retrofitting is accepted.

**Technical visit – Mr Carlo Rubio-** Department Traffic Technologies, Mobility, Spain to the Centre of Emission Control and Centre of Mobility Management

A technical visit took place to the Centre of Emission Control and the Centre of Mobility Management. At the emission control centre it was shown how emissions are monitored in the city. At the mobility management centre it was shown how the roads and traffic are monitored and how incidents are handled.

## **Day 2**

### **Introduction by Dieter Wild**

Dieter Wild expressed his thanks to IVECO for financially supporting the common dinner. Furthermore, he summarized the presentations of the first day.

Soledad Perlado mentioned that several administrations are involved and that they want to have alternative fuel buses in the cities. This is especially important since in the future the vast majority of people will live in cities and emissions are increasing, although attention is also paid to accidents and space use.

A participant commented that it is important to have a focus on particles, but also to take into account the particles that fly in from the Sahara. For nitro-oxide different measures are necessary. The objective is to have a good database. The plan is to limit access based on Euro norms. At the moment the levels are not set very high. In the future there will probably be camera detection.

Martin Salet indicated that in the Netherlands there are problems in 20 cities; people even went to court to fight for their right to live within a sufficiently clean environment. The Commission Urban Distribution has a role as arbiter. The environmental zones are based on Euro norms. A best practice example is the night time delivery pilot.

**Mr Fabio Cartolano**, City of Bologna, Italy

*Presentation* "The freight distribution plan and the access to the Environmental zone in the city of Bologna, Italy"

Fabio Cartolano started his presentation with an introduction on the city of Bologna, which is the 2<sup>nd</sup> most important logistical centre in Italy. It has a Low Traffic Zone, which represents a centre with small streets and 50,000 inhabitants. The freight movements are characterised by a share of 48% of internal movements. An ITS system with enforcement cameras comparable to the one used in London is in place. It is used since 2003 to control the use of bus lanes, but also to reduce to number of unauthorised cars on dedicated lanes. A number of goals and specific actions are included in the presentation. A survey among freight operators showed that there are many own account transport operations that are carried out rather inefficiently compared to the more effective third party operations with high load factors. There are freight reserved parking slots, although regulations and usage have to be improved. The freight distribution plan is specified in a number of goals and actions: (1) access rules depending on the pollution category (with a future action to extend this to the entire LTZ), (2) pricing policies with either a yearly permit or pay-to-access ticket and (3) the van sharing project. This last plan includes a virtual transit point, a system with reserved parking slots. There is a dilemma though: EU regulations prevent funding private companies, but without it, the scheme cannot exist.

*Discussion*

Martin Salet asked whether it is planned to phase out low Euro category vehicles. It was answered that the scheme allows forcing out lower categories in the future, but at the moment they can still get access if they pay the fee.

**Mr Dan Dura**, City of Suceava, Romania

*Presentation* "Low Emission Zone – An East European city point of view"

Dan Dura presented the Low Emission Zone in the City of Suceava in Romania. Suceava is a medium-sized city and participated in CIVITAS, the AlterCo project in 2001 and the Catch project in 2004. Few investments have been made in the past 20 years and the city is facing many traffic problems nowadays. The Low Emission Zone represents the pedestrian area, but there are plans to expand the zone. In the last years lots of investments have been done in the transport infrastructure, many taxis run on alternative fuels, people are encouraged to use public transport (and resist the tempting of the car as status symbol). Several soft-measures have been implemented in the MIDAS project. The city has VMS on eco-routes.

*Discussion*

Dieter Wild asked how freight distribution is carried out in the area. It was answered that part of the street is closed, but there are alternative access ways.

Ludwig Arentz commented that the share of alternative fuel buses is high. It was answered that LPG is the only alternative at the moment, but that biogas will be a solution for the future, especially after re-installment of the waste water plant.

**Mr Vincent Meyer**, City of Montpellier, Transport Authority, France

*Presentation "Environmental Zone in the City of Montpellier, France"*

Vincent Meyer presented the environmental zone in Montpellier. This city has a young and a growing population with a large service industry (public medical services) and a lot of tourism. There is also a pedestrian area. The urban freight consists of 26,000 loading operations per week, carried out for 55% by small vehicles and 60% by own account transport operators. The city centre is very complex and it is difficult to combine economic development with the traffic. The environmental zone is inspired by other cities like Barcelona. The main actions were the extension in 2004 of the pedestrian area and the totally different regime in 2006, which is admittedly difficult compared to other cities. Between certain hours only electric vehicles are admitted. The zone was developed by an ad-hoc working group with a strong consultation process, especially with transport operators that wanted to change to electric vehicles. The ambition was modest: change a part of the fleet to electric vehicles. The scheme is in force since 2006 and at the moment three companies have turned to electric. It is a slow process. The main obstacles involve the fact that there is only one brand of electric vehicles that can be used, the high cost despite subsidies and the other well-known problems. The volumes are today only marginal. For the future impact studies and a more ambitious strategy regarding freight deliveries are expected. The city wants to be more efficient and prevent one specific risk: to have too many electric vehicles. The city wants to be a facilitator, but with an active role. When a shop is sold to a new owner, they are informed about the electric vehicle distribution option.

*Discussion*

Dieter Wild commented that a similar scheme called ISOLDE existed in Nurnberg, but it is not in operation anymore.

**Mr Magnus Jäderberg**, City of Göteborg, Traffic & Public Transport Authority, Sweden

*Presentation "News from the START Project"*

Magnus Jäderberg presented the environmental zone in Göteborg, which is connected to the START project. The city has a large port and is an important logistical hub. The city experienced congestion problems and in 1996 introduced the environmental zone as part of the TELLUS project. The scheme applies to buses and heavy trucks over 3.5t that run on diesel engines and covers 15km<sup>2</sup>. An expansion of 10km<sup>2</sup> was planned for 2007. The legal framework is a local regulation that is only controlled by the police. The fines for infringements are not very high, but violators have to be towed out of the zone; they are not allowed to use their own engine in the zone. The statistics show reductions in emissions. Several other conclusions are included in the presentation.

*Discussion*

Robert Motshagen asked why the costs for expansion for the zone were lower than expected, as presented. It was answered that they thought public transport would become more expensive. There had been a limited assessment at the time, though.

Ludwig Arentz asked how the city deals with foreign trucks. It was answered that it is assumed that it is usually the same drivers that drive these routes. They will recognize the signs soon.

**Mrs. Fatma Sahin**, EuroCommerce

*Presentation* "The importance of the commerce sector in city centres"

Fatma Sahin presented the organisation EuroCommerce and their Logistics Working Group. They commented on the fact that urban freight transport receives insufficient attention in the EC's Green Paper on Urban Mobility. They notice that an efficient and sustainable transport system is needed for greener towns and cities. Members of EuroCommerce already use hybrid vehicles voluntarily. The impacts of environmental zones on commerce are feared. These fears relate to traffic restrictions, administrative burdens and financial burdens. Restrictions are not the answer; more discussion and tailor-made solutions are necessary. On the other hand the rail sector should also be more flexible.

*Discussion*

Dieter Wild raised the question whether harmonisation of the rules on environmental zones are needed. Do they cause problems?

Fabio Cartolano commented that there is a conflict between public administrations and commerce. The question is how to solve the dilemma. On the other hand sometimes it just takes time. In Bologna there were fears about closing streets for traffic which are now considered as the most attractive commercial streets in the city.

Fuensanta Martinez Sans remarked that local municipalities should provide sustainable solutions by keeping the three pillars economy, society and environment in balance.

Dieter Wild commented that public transport is subsidised, but consolidation of freight transport is not. One has to look at efficiency.

**Mr Pablo Cebrian**, IVECO

*Presentation* "Which solutions are available from the car manufacturers' side?"

Pablo Cebrian presented solutions for today's problems that are actually already available. He also presented the wider perspective of energy security (the "end of cheap oil") and climate change. When looking the local problems, we are talking about air quality. It is generally accepted that transport accounts for 50% of NOx and PM10 in cities. He discussed the available alternative transport technologies: (1) electric, which is a stable niche, but hindered by high cost, safety issues and the weight and product lifetime, (2) hybrid, (3) bio-fuels and (4) hydrogen, of which two types of solutions exist. With regard to hydrogen, one has to consider that this will be a solution around 2050.

For the shorter time frame, natural gas and biogas might be a solution. He also presented the "fuel road map" that for the shorter time the stoichiometric mixture would be a solution.

The CNG engine is very good compared to Euro 5 engines, regarding emissions and noise levels. There are already several examples, such as the Daily CNG vehicle used by DHL, the Eurocargo, Stralis and Irisbus.

#### *Discussion*

Dieter Wild commented that especially the fuel supply is a problem. It is difficult to favour one fuel type. For instance in Sweden, every fuel station was required to offer one alternative fuel. They decided on ethanol, which led to problems to the development of CNG usage. Basically, there was market distortion.

#### **Mr Guillermo Montero, PROINCA, Spain**

##### *Presentation "Environmental Scoreboard for transport operators in Spain"*

Guillermo Montero presented the work carried out by PRIONCA in the south of Spain and on the EU project LINK. He mentioned that goods transport is sort of the "ugly duckling" and gets little support from the politicians and the sector. Nevertheless, Environmental Scoreboards for Transport Operators of urban freight, a strategic map and objectives and indicators have been identified and developed. It really seems that transport companies are reluctant to change.

#### **Discussion and conclusions**

By Dieter Wild, PTV AG, Germany and Ana Botella, Councillor of Environment for the City Council of Madrid, Spain.

Dieter Wild commented that it was good to compare the approaches of the different cities and to see their differences. The question is whether all cities will have environmental zones in the future. The development started in cities where the pressure was the most urgent, but it is to be questioned whether it should be transformed into general measures.

Ana Botella, Councillor of Environment and also Vice Major of Madrid, presented plans on the transport and the environment in the city of Madrid. She commented on the benefits to have a space to discuss best practices. It is clear that the environment has become more important and we are in a fight against climate change. Especially since in the near future most people will live in big cities, strict criteria for sustainable development are necessary. Innovative developments have to be fostered, but we have to be more respectful to the environment. Already important achievements have been made, as some pollution levels are today lower than 10 years ago, despite a growth of the fleet of 30%. We still have to consider that traffic is the most important emitter of gases and particles. More action needs to be taken for Air Quality. Regarding the environmental zone, we have been able to compare different models. Now the city of Madrid is studying implementation issues. So far, the city is looking at a model close to the German example and further away from the London example. A new regulatory framework will be required for regulating and controlling the zone. We will discuss with the actors in the process. Finally she stressed that Madrid will continue to help organise events.