

MINUTES 4th BESTUFS II Workshop
Urban Waste Logistics
9th – 10th March 2006

ERZ Entsorgung und Recycling Zürich - ara glatt

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Day 1 – 9th of March 2006

Welcome and Introduction

Mr. Ruesch from RAPP Trans opened the workshop taking place in the seminar centre of ERZ. Mr. Neuhold explained the origin of the seminar centre, which is an old wastewater plant in the Zurich outback. It was converted into a seminar centre because a new high capacity plant was built, which created redundancy. Mr. Ruesch introduced BESTUFS to the participants and the new working fields, such as waste logistics in particular. Several trends, developments and challenges in these fields will be discussed at the workshop. The introduction was finalised by an introduction round.

(All presentations of this workshop are available on the BESTUFS website: <http://www.bestufs.net/workshops>.)

1. Freight transport strategy City of Zurich, by Mr. Willy Dietrich, City of Zurich (CH), Department of Civil Engineering

In the presentation a reference to the IDIOMA project was made demonstrating city boxes in the Zurich area. A question was raised as to what happened to it after the pilot project. After the pilot project, it wasn't used anymore: it worked from an operational point of view, but the volumes were too low for an economically viable operation. It was asked if the activities on particulate filters were part of a bigger plan, or if it was a one-off initiative. It was a national measure taken up by the city, but it does not apply to lorries. On construction sites, sometimes measures are taken, however. Regarding the 18 sub-policies presented, no more specific measures on waste are identified: overall coordination is the goal. There is an energy plan and a pollutants plan.

2. Waste disposal and logistics strategy for the City of Zurich, by Mr. Neuhold, Director ERZ (CH)

Zurich has developed an underground disposal system (which was also demonstrated in the technical visit later that day). Numerous questions were asked. Zurich used to have waste containers in the distant past, but they were abandoned at some point. Now there is renewed interest in containers, instead of having waste bags in the street. There is no fear of a terrorist attack. A special type was developed because of very specific requirements of the large group of representatives involved in the decision making process, although a similar system already exists.

Zurich collects large waste goods (furniture, etc.) with the Cargo Tram. It does not interfere with the operation of other tram services as there are sufficient tracks available where the tram can stop.

The main problem with waste in the city is the failure of the people to understand it is their own waste, which has to be transported. The people will have to accept that this task has to be carried out. ERZ has tried to convince schools to pick up the subject, but they were reluctant to do so.

There has been a strategy for reducing waste by reusing packaging material. This happened together with a restructuring of the packaging industry.

There was a discussion about the amount of control over the industrial and communal waste, especially the logistics part. As ERZ has about 30% of the market share, it has limited influence on the logistics. It is also not competitive compared to private waste collection companies who drive faster, put less people on each vehicle and have cheaper vehicles.

3. *Environment-friendly waste technology: the PUZER Xmit system, by Mr. Kari Kallioniemi, PUZER (FI)*

A range of applications of pressure controlled pipe systems for waste disposal has been presented. It was made clear that standardisation of technologies cannot be expected as every solution is tailor made. The pipe diameter has been set at 350mm to be able to transport waste bags, which supermarkets sell. Special bags are used for bio waste in Finland. The customers of the system are developers of housing/building projects, sometimes in cooperation with cities. For instance, a small city in Finland requires that all waste in future development areas will be fitted with pipe waste systems. Integral cost comparisons were not presented, as this has to be negotiated with different waste collectors. The owner of the property decides.

4. *Optimisation of waste logistics in the City of Graz: Results from the CityPorts pilot Graz, by Mr. Gerfried Cebrat, FGM AMOR (AT)*

The results of two CITYPORTS subjects were presented: a dynamic rerouting system for urban waste logistics using on-board devices and a strategic routing system. One of the demonstration projects showed that the larger three-axle vehicle was more efficient, caused less damage and less pollution. This was contrary to the city's arguments on the visual aspects of waste collection (the city preferred a smaller two-axle vehicle). There were some concerns about the costs and payback period of trip planning systems for urban waste logistics.

In the old situation, however, a lot of paperwork had to be done on commercial waste (invoices). This is carried out electronically with the route planning system, which saves time. The payback period of this system is about two years (except for the applications in municipal waste, as there are no invoices). A further issue that needs to be addressed is the contribution of waste collection processing to urban congestion. As there are no particular surveys available it is conceived that freight and waste are only a small proportion of the traffic and transport. BESTUFS will address this issue by collecting data on the impact of urban freight transport, this is presently under procession and the first results will shortly be presented during a particular workshop. Finally, a comment was made on how traffic information generated from urban transport vehicles can be used to improve the data basis for urban traffic management. However, it is considered as counterproductive to use information from transport processes for traffic management as waste collection vehicles stop a lot, break speed limits and take shorter routes through living areas (that the other road users might not yet be aware of).

5. *Intermodal waste transport in Holland, by Mr. Martin Quispel, NEA (NL)*

The presentation has shown that transport of waste by inland shipping can be economically viable even at short distances (25km). The transshipment container used in this case already has a compactor on the chassis. Cost calculations have shown that savings of up to 20% can be achieved compared to the traditional waste transport system. The influence of traffic conditions and possible changes in trip lengths are not completely clear as companies are already trying to avoid congestion. A comparable project was mentioned about waste transport on the London canal which proved that inland barges can be very cost effective compared to road at a distance of 10-12km. In this respect, it is important to consider the current collection process, for instance the number of persons per vehicle.

Technical visit

The technical visit consisted of three site visits:

- Demonstration of the Zurich under floor waste container system
- Zurich waste combustion plant
- Cargo Tram in operation

Day 2 – 10th of March 2006

Opening

Mr. Wild opened the second day and gave a summary of the proceedings of the first day. There had been a broad introduction on waste logistics in general, waste management in Zurich and how waste collection is organised. There have been presentations on an underground disposal system, the Cargo Tram in Zurich and a presentation about an innovative waste collection system using a pipe system that collects and separates waste from several houses. This might be a good solution to be considered in the planning of new large housing and building projects. The last presentation showed that intermodal waste transport can be efficient even at short distances. Maybe this can be copied to railway transport.

***6. Waste logistics activities and initiatives in London, by Paul Dumble, Stephen Steele
Transport for London (UK)***

Waste collection in London is currently mainly organised locally by the boroughs. This causes on one side a lot of competition on the other side there are uncoordinated actions. The Mayor's Office is currently looking into strategic options regarding waste collection. There is however virtually no knowledge about commercial streams available. It was asked if building a central plant for London was considered. This could be a possible consideration. The overall purpose is to develop something more efficient than the current set up, including the involvement of other transport modes. In the short term, however, this can hardly be realised, as for example the long-term contracts agreed that the vehicles limit the possibilities. For the moment, setting up a single waste authority would be a good first step. It was asked whether there are restrictions on moving the waste plants. There are many challenges however, such as the 10 to 15 years necessary for the application planning. It would encourage a more logistical approach. There is indeed a need for partnership and cooperation.

***7. Waste logistics in Sweden and a good example of hybrid waste collection vehicles in
Gothenburg, by Mrs Maria Lindholm, Transek (SE), Dr. Stig Franzén, CIT, (SE), Mr.
Carl Jensen, Renova AB, (SE)***

A project with hybrid waste collection vehicles was presented. The drivers liked the vehicles very much. One reason was the increased safety because of the larger windows. The vehicles have capacities between 18 and 26 tons and have two persons on them. The vehicle shuts down the main engine when the waste bins are collected. Starting up the engine, however, causes a high level of emissions. It is the question whether the stops are long enough to justify shutting down the engine. The project has not found options to lower the noise caused by filling the vehicle (emptying the bins). The acceptability of cost increases of these kinds of vehicles are subject to the political situation.

8. *Optimisation of waste logistics: the case of Madrid, by Mr. Dario Salvati, Iveco's Product General Manager (I)*

IVECO offers its clients “transport solutions” by offering a wide range of specialised vehicles, regarding dimensions and alternative fuels (such as CNG and biodiesel). It was asked why the Scandinavian market is not covered as well as the Southern European market on CNG vehicles. This is caused by the strong competition of the regional brands. A number of questions were asked about the specialised vehicles. The extra small vehicles have a maximum payload of 7 to 8 tons. The guarantee on the diesel vehicles running on bio diesel is guaranteed with a mix above 5% (30% is practice), but more oil is needed. (In general bio diesel propelled vehicles have a higher average fuel consumption and have shorter maintenance intervals. These extra costs have to be offset either by the funding or by price incentives of the manufacturers). The maintenance interval is crucial. A suggestion to use old cooking oil as fuel was welcomed and an offer was made to carry out in-house tests on this product.

9. *Short Statement on the VERDI Project, by Dr. Laetitia Dablanc, LVMT ENPC Cite Descartes (FR)*

An EcoRail project on the use of rail for short distance waste transport was shortly presented. The transport distance was a few dozen kms, but required huge investments, especially for the transshipment. There is a large need for public funding that highly depends on the communities if they want this.

Roundtable discussion

After the presentations, a roundtable discussion took place. The following items were raised:

- It would be interesting to have more quantitative information about waste logistics, especially on recycling, sorting out of goods (fractions) and fuel savings. The OPTRANS project provides an overview of a region in Germany.
- It seems the EU Directive on recycling is almost sending out the wrong message. They should not just focus on recycling, which causes a lot of transport, but also on reprocessing. One should look at the options to make biogas from paper for instance. This could lead to less transport.
- It seems waste logistics show tailored, specific applications and there is a strong involvement of inhabitants. There are particular solutions for the same problems. The question is how you share best practices: there are differences in housing and waste logistics is not just cost driven. It is a complicated agenda.
- In London, it was concluded that the lack of data/numbers is just a small part of the story. The political influence especially on waste logistics is huge and it is one of the hardest sectors to achieve changes.

- There is a question on the responsibility and control of industrial and municipal waste collection by private companies. It seems no control is possible, since the sector has been deregulated.
- Waste collection has peaks in activity. It seems a quite traditional sector and there are few options to shift to other modes. However, waste is not a very urgent commodity. The waste collection companies already avoid congestion.
- In Paris, waste collection tours take place during peak hours, however, the people working for these companies seem very tolerant and patient. There seems to be a better attitude towards them than to other deliveries.
- The reason for not carrying out the waste collection earlier during the day is the fact that this might disturb residents while sleeping. In Madrid, waste collection takes place during the night, but here the general noise level is relatively high.
- Efficiency improvements were suggested when intelligent bins that know how full they are would be used. Collection trips would be planned based on this information. A similar system is already used in some bottle collectors.

Final statements

Mr. Wild expressed his thanks to Mr. Abel for organising the workshop, to Mr. Neuhold for providing the venue and to Mr. Quispel and Mr. Schoemaker for the workshop support.

The next BESTUFS conference will be on 18-19 May 2006 in Malta.

The next BESTUFS workshop will be on 21-22 September 2006 in Vienna.

Annex 1: Participants list

	Last name	First name	Company Name
Mr.	Abel	Heiko	RAPP-Trans
Mr.	Brooker	Ian	Peter Brett Associates
Mr.	Michael	Browne	University of Westminster
Mr.	Cebrot	Gerfried	FGM Amor
Dr.	Dablanc	Laetitia	LVMT ENPC Cite Descartes
Mrs.	Debauche	Wanda	Belgian Road Research Centre
Mr.	Dewan	Islam	University of Newcastle
Mr.	Dietrich	Willy	TBA ZH
Mrs.	Douvin	Laurence	Conseil de Paris CES France Impacts
Mr.	Dumble	Paul	Transport for London
Mrs.	Forkert	Silke	PTV Planung Transport Verkehr AG
Dr.	Franzen	Stig	Chalmers Industriteknik-CIT
Mr.	Horvatth	Balazs	TRANSMAN Ltd.
Mr.	Huschebeck	Marcel	PTV Planung Transport Verkehr AG
Mr.	Jekel	Detlev	SPPC Partners
Mr.	Jensen	Carl	RENOVA
Mr.	Johnson	Simon	ARUP
Mr.	Kallioniemi	Kari	PUZER
Mr.	Karrer	Raphael	RAPP-Trans
Mr.	Kuhn	Elmar	AWEL
Mrs.	Lindholm	Maria	TRANSEK
Prof.	Martin	Alfredo	IVECO
Mrs.	Martinez Sans	Fuensanta	IVECO
Mr.	McLeod	Fraser	University of Southampton
Mr.	Neuhold	Gottfried	ERZ
Mr.	Palmer	Andrew	Cranfield University
Mr.	Quispel	Martin	NEA Transport Research and Training
Mrs.	Raffaillac	Julie	Steer Davies Gleave
Mr.	Ruberti	Giovanni	CSST
Mr.	Ruesch	Martin	RAPP-Trans
Mr.	Salvati	Dario	IVECO
Mr.	Schoemaker	Jarl	NEA Transport Research and Training
Mr.	Schrampf	Jurgen	ECONSULT Betriebsberatungs.ges.m.b.h
Mr.	Spörri	Peter	AFV/ZH
Mr.	Steele	Stephen	Transport for London
Ms.	Van Isacker	Nathalie	STRATEC
Ms.	Vranova	Jana	CDV
Mr.	Wichser	Jost	ETH Zürich, IVT
Mr.	Wild	Dieter	PTV Planung Transport Verkehr AG
Mr.	Zitnansky	Peter	VUD a.s.
Mr.	Zunder	Thomas	University of Newcastle

Annex 2: Agenda

Thursday March 09th, 2006

- 9:30 10:00 **Registration and coffee**
- 10:00 10:30 **Welcome and introduction**
Mr. Martin Ruesch Rapp Trans/
Mr. Gottfried Neuhold, Director ERZ, Zurich Disposal and Recycling
- 10:30 11:00 **Freight transport strategy City of Zurich**
Mr. Dr. Willy Dietrich, City of Zurich (CH), Department of Civil Engineering
- 11:00 11:30 **Waste disposal and logistics strategy for the City of Zurich**
Mr. Neuhold, Director ERZ (CH)
- 11:30 12:00 **Environment-friendly waste technology: the PUZER Xmit system**
Mr. Kari Kallioniemi, PUZER (FI)
- 12:00 13:15 **Lunch break**
- 13:15 13:45 **Optimisation of waste logistics in the City of Graz: Results from the CityPorts pilot Graz**
Mr. Gerfried Cebrat, FGM AMOR (AT)
- 13:45 14:15 **Intermodal waste transport in Holland**
Mr. Martin Quispel, NEA (NL)
- 14:15 14:45 **Coffee break**
- 14:45 18:00 **Technical Visit**
- The Zurich under floor waste container system
 - The Zurich waste combustion plant
 - The Cargo Tram in operation
- 19:30 **Common Dinner**

Friday March 10th, 2006

- 9:00 9:10 **Welcome & Introduction**
Mr. Dr. Dieter Wild, PTV AG
- 9:10 9:40 **Waste logistics activities and initiatives in London**
Paul Dumble, Stephen Steele Transport for London (UK)
- 9:40 10:10 **Waste logistics in Sweden and the good example of hybrid waste collection vehicles in Gothenburg**
Mrs Maria Lindholm, Transek (SE), Dr. Stig Franzén, CIT, (SE), Mr. Carl Jensen, Renova AB, (SE)
- 10:10 10:30 **Coffee break**
- 10:30 11:00 **Optimisation of waste logistics: the case of Madrid**
Mr. Dario Salvati, Iveco's Product General Manager (I)
- 11:00 11:15 **Short Statement on the VERDI Project**
Dr. Laetitia Dablanç, LVMT ENPC Cite Descartes (FR)
- 11:15 12:30 **Conclusions and discussion**

End of the Workshop