THE est! BEST PRACTICE COMPETITION

The EST project has been an international conceptual exercise in imagining a future for Environmentally Sustainable Transport and mapping policy pathways towards that future. As the project has developed, it has become increasingly clear that innovative and practical solutions that go beyond "business-as-usual" must be sought and implemented. Indeed, many such solutions are key elements of the EST project case studies.

Fortunately, EST is not science fiction, but a feasible and promising alternative. Indeed, throughout the EST project, it has become clear that many of the programmes, technologies and changes in transport behaviour necessary for EST exist in one form or another – today. The most complete of these seek to bridge the gap between technology and behaviour, between individual mobility and public transport and between the need for access to people, places, goods and services and the provision of adapted mobility products.

In order to provide a practical illustration of the different facets of EST, the Austrian Federal Ministry for Agriculture, Forestry, Environment and Water Management, along with the OECD Environment Directorate, issued a call for *est! best practice* examples to be presented at the Conference on "Environmentally Sustainable Transport: Futures, Strategies and Best Practice" in Vienna.

Forty-three candidates responded to the call to provide examples of EST in the following categories:

- Communication and Awareness-Raising
- Mobility Management for Passenger and Freight Transport
- Technology and Infrastructure
- Youth and Education
- Culture and the Arts

The jury faced the difficult task of selecting eighteen projects among the many excellent entries. Those projects selected for the exhibition were felt by the jury to rank highest according to the following criteria: contribution to sustainability; impacts on transport, environment and health; innovation and promising strategy; creativity and new concept; ease of implementation and practical results; and potential for trend-setting and awareness raising.

Furthermore, all of the selected projects had to be either in practice or funded. Finally, as a general rule and where appropriate, preference was given to projects that demonstrated an integrated approach to developing strategies for EST.

The projects are acknowledged as best practises and good practises for EST. The projects presented on the following pages illustrate a broad range of practices and promising initiatives that show creativity, innovation and commitment for moving towards environmentally sustainable transport.

Promotion for Sustainable Mobility Public Transport and Car-Sharing, Bremen

Car-Sharing has a crucial role to play in supplementing cycling, public transport and other environmentally friendly modes. Accordingly, Bremen has introduced a joint ticket for Public Transport and Car-Sharing – the 'Bremer Karte plus AutoCard'. When purchasing this card, card-holders are in essence purchasing their mobility across a number of modes (car, tram, bus, etc...) and are no longer constrained to one mode only.

A central element in the combined mobility package's successful image is targeted information and communication efforts that emphasise the Bremer Karte's services and flexibility. Promotion campaigns using posters at bus and tram-stops, advertisement on the body of trams and inside all public transport vehicles have accompanied the project from the outset and are still ongoing

In order to raise awareness, even the local football team has been used. The well-known manager of the football club Werder Bremen, Willi Lemke, supports Car-Sharing and is portrayed as a satisfied 'Bremer Karte plus AutoCard' user on advertisement posters.

As urban dwellers are among our key target groups, we have developed a commercial for inner city cinemas. The story of the short film concentrates in a relaxed and funny way on the various aspects of the Car-Sharing system (as an addition to Public Transport).

The cinema commercial has been produced by 'Bock Film' (Bremen) in co-operation with the agency 'Vierplus' (Bremen), which has been responsible for the promotion campaign. The initiative for the commercial came from the Municipality of Bremen, Department for Environment and Building (Senator für Bau und Umwelt der Freien Hansestadt Bremen).The mobility service 'Bremer Karte plus AutoCard' is a joint product of the public transport company Bremer Straßenbahn AG (BSAG), the Car-Sharing operator Cambio / StadtAuto Bremen GmbH and Opel-Beckmann. The 'Cinemaxx', Bremen and the 'Cinema', Bremen are sponsoring the project by free projection in their cinemas in Bremen.

With more than 2200 Car-Sharers in Bremen and 630 combined season-tickets (Bremen has a very high share of biking...) we see a reduction of about 2.000 tons of

CO_2 annually. About 500–700 private cars have been replaced – which is an important step in solving an enormous (and usually underestimated) problem: the competition for public space in urban areas.

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Közlekedéstudományi Intézet Rt.
Alapítva 1938

Introduction of compressed natural Gas fuelled City Buses in Hungarian Public Transport

The use of compressed natural gas (CNG) as an environmentally "clean" alternative fuel for city buses has a significant potential for emissions reduction of regulated (CO, HC, NO_x, PM) and non regulated (benzene, aldehyds, PHM) pollutants, and thus for air quality improvement in urban areas. This is especially true in Central and Eastern Europe where older vehicle fleets are now being upgraded. In addition, the use of natural gas provides a good opportunity to conserve oil products and to diversify energy sources. Beside these advantages, public transport companies can expect to reap cost savings as natural gas is, and will be for some time, a less expensive fuel than oil-based fuels. These concerns provide the background for a project to develop and test a CNG-fuelled engine for Hungarian city buses.

In the first phase of the project (1996–1997), an environmentally friendly CNG-fuelled, lean-burn, turbocharged, intercooled engine equipped with oxidation catalyst was developed. This development was made in the framework of a co-operation programme between Hungarian and Dutch institutes and companies.

Typically, Hungarian buses operate on 6-cylinder, heavy duty, serial production Hungarian diesel engines which comply with Euro-2 emissions limits. The new jointly-developed engine fulfills the Euro-4 emission limits (forecasted for the year 2005) and is manufactured by the Hungarian RÁBA-factory. This new engine was used to power Hungarian made IKARUS city-buses. These engines are equipped with a CNG-fuel-system manufactured by the Dutch DELTEC-Woodward Fuel-System Company. The project was supported and supervised by the Dutch and Hungarian Ministries of Environment and Transport and by the Dutch Agency Senter.

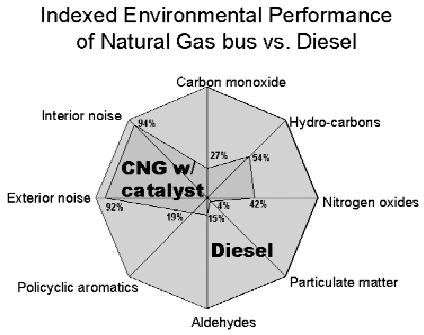
A one-year field test formed the second phase of this project and its main objectives were to evaluate the reliability, life time expectations and the environmental as well as the economical performance of the operation of CNG-fuelled city buses. These field tests were made at two Hungarian bus companies between September 1998 and October 1999.

IKARUS 280 type CNG-fuelled articulated city-bus manufactured by IKARUS bus

Based on the main results of the project the following conclusions can be drawn:

- Using CNG buses to replace older diesel models can be an economically effective way to reduce air pollution and decrease noise from public transport buses.
- It is technically realisable, economically profitable and can improve the living environment in cities although it calls for a high initial investment.
- The necessary assistance of the state is justified through a significant decrease in external costs.

As a result of these trials the involved bus companies are in the process of purchasing another 35 CNG buses.



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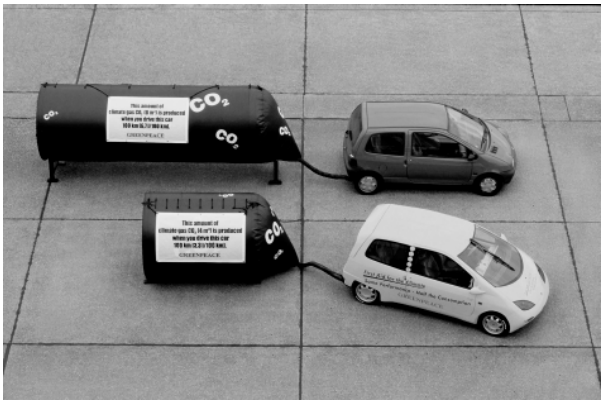
GREENPEACE

SmILE Fuel Efficiency Technology

Underpinning Greenpeace's SmILE project is the conviction that the mainstay of sustainability is the continuous substitution of products with goods and services using increasingly fewer resources and the best available technology. The Greenpeace SmILE-Project proves that the fuel consumption of automobiles – and CO_2-emissions – can be cut in half with little impact on performance. SmILE's technology is applicable to all mass-produced cars powered by gasoline engines. The project demonstrates that it is possible to dramatically improve fuel consumption with significantly fewer resources and a minimum of change to the existing infrastructure and production facilities. It is a least resource use project. However, SmILE also acknowledges that change is often a series of successive approximations and so it is a first step, or bridge, in guaranteeing sustainable transport for generations to come.

The project's technical features are a significantly improved gasoline engine, weight reduction, improved aerodynamics and reduced rolling resistance. The internal combustion engine virtually eliminates "throttle losses" by Downsizing and SuperCharging (DSC). This improvement translates into a 35% reduction in fuel. The three other components reduce consumption by an additional 15 percent. Thus, fuel consumption is cut in half. This fact has led to the statement in the public campaign saying that "Half is feasible now".

The other aspect of the SmILE-Project has been the public campaign. The goal has been to empower the body politic and create public awareness of the technical possibilities for sustainable transport. Since the project's unveiling in 1996, some of the car's features have made their way into mass-produced commercial vehicles. When, in 1996, people said a 3-litre car could not be commercially produced and sold, SmILE proved the contrary. And by 1999, large auto-makers began to offer 3-litre vehicles for sale. From its initial conception through all the stages of engineering and realization, the project has been successful because many dedicated men and women have given their time, knowledge and commitment in the idea that we can build a better tomorrow. For Greenpeace it is also a genuine effort to bridge the gap between itself and the economic-industrial sector of our society.



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KulturBahnhof

The Renaissance of Kassel's Central Station

Due to restructuring measures of the Deutsche Bahn AG, the Central Station of Kassel has lost its main function as long-distance station. The free space, not needed any longer for train traffic, is now being used for multifunctional activities with an emphasis on new media, culture (cinemas, galleries, exhibitions, conference and congress rooms) and education.

In many stations throughout Germany a lot of free space will be available for new activities in future. The project shows clearly how to use this space and it also demonstrates how cultural projects which are affected by financial strains placed on local authorities can be newly "organised". This project has made the city centre and the surroundings of the station more attractive.

The conversion of the Central Station into a station with a mainly cultural character has been recognized by the EXPO 2000 as being a leading example for conversion measures and is therefore being regarded as a special project. The association "KulturBahnhof e. V.", a grouping of cultural institutions, is in charge of the EXPO project.

In 1997 the premises of the KulturBahnhof were used for the World Exhibition of Art "documenta X" which takes place every five years

A mixture of daily train station, cultural meeting point, innovative surrounding and conference location offers a wide range of variety for events. Different kinds of facilities are available at the KulturBahnhof for conferences, exhibitions, seminars and evening events.

The development of the project KulturBahnhof is by far not finished. Soon the film production company of the Oscar Award Winner Thomas Stellmach will be moving into the facilities of the station. The initiators of the KulturBahnhof hope that the new Board of the German Railway will maintain the interest in the Europe-wide model project KulturBahnhof. The present business policy of the German Railway leaves no space for projects which, at first glance, make no profit. The KulturBahnhof of Kassel contributes to a better image of the Deutsche Bahn and the region of Kassel.

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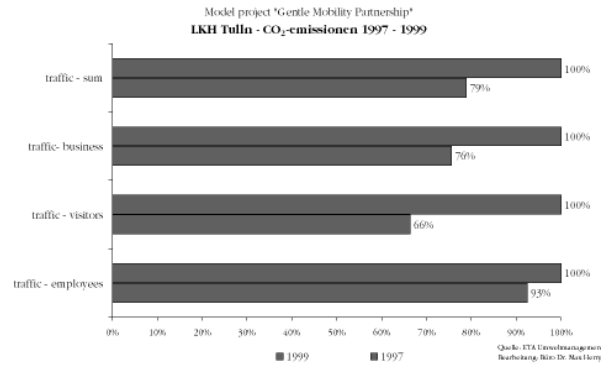
Company Mobility Management in the Hospital of Tulln

After an initial environmental impact assessment carried out for the Tulln city hospital, it became clear that transport activity generated by the hospital was responsible for the bulk of the hospital's CO_2 emissions. In order to reduce these emissions, the hospital initiated a mobility management project under the auspices of the Austrian "Soft Mobility Partnership" programme.

A more challenging test-site could not have been found as the Tulln district has one of the lowest population densities and highest car ownership rates of all of Austria. Furthermore, the hospital drains its staff from 80 neighbouring communities in addition to Tulln and operates 24 hours a day and on week-ends posing a significant challenge for increasing public transport usage. Because of this rather difficult situation, the project promoters decided to first focus on those trips for which practical and environmentally-friendly alternatives existed — the project's initial focus was therefore on increasing the share of pedestrian and bicycle trips by staff living in Tulln.

The result of this first phase was promising — the share of staff using non-motorised means increased from 50% to 69% while at the same time the share of staff using cars has been reduced from 60% to 57%. The programme met with even greater success in a subsequent phase that sought to reduce the use of cars for shopping trips and running errands (-23%) and the use of light goods vehicles for goods delivery to the hospital (-60%). Despite these successes, the programme has had some difficulty in raising the share of public transport trips due to the conditions outlined above.



One of the key features of the programme has been its voluntary approach to reducing motorised traffic. The programme has avoided the use of restrictive measures such as parking prohibitions and parking space management choosing, instead, to focus on positive motivation and awareness-building. The success of the programme has served to validate this approach and has turned the hospital into a showcase for company-wide mobility management strategies.

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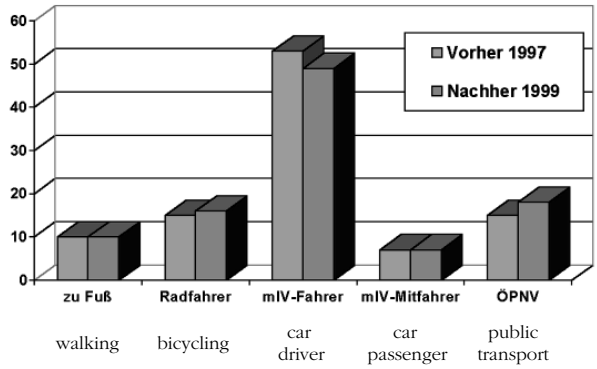
VORARLBERGER MEDIENHAUS

Company Mobility Management in the Vorarlberg Media Office Building

Under the auspices of a two-year model project initiated by the Federal Ministry for Agriculture, Forestry, Environment and Water Management together with the Chamber of Commerce, the Vorarlberg Media Office was one of the first companies to put a "workplace mobility management" into practice. The Federal Ministry provided technical and financial support, and the Institute for Transport Planning and Traffic Engineering, TU-Vienna, acted as external consultant.

Environmentally friendly mobility is a subject, which has long been of interest in the Vorarlberg Media Office. However, when the office moved from Bregenz to Schwarzach in 1996, the local situation was quite different. The new office building was out in the greenfields slightly off the beaten track. This was not the most convenient of locations from a traffic planning point of view. Furthermore, the move from Bregenz to Schwarzach meant that now only 7% of the staff lived locally. Indeed, this amongst a host of other considerations – not the least of which was the ready availability of adequate parking space – was enough to convince most of the office staff that the best way to come to work was by car.

A group of five environmental enthusiasts and representatives management initiated a campaign to optimise the mobility of habits of all members of staff. These efforts culminated in the company's participation in the government-sponsored model project *"[environmentally] Gentle Mobility Partnership"*. The initial reaction to this model project – which was launched in 1997 – was one of almost complete disinterest. Sheer persistence on the part of the campaigners overcame this general apathy



and ushered in a gratifying trend. The percentage of employees who drove to work each day dropped from 73% down to 60%. Within the space of two years, the CO_2 emissions attributable to travel to and from work were reduced by as much as 17% thanks to the various measures implemented. At the end of the project no fewer than 76% of the office employees were of the opinion that the project had heightened awareness of the need for more environmentally sound forms of mobility Meanwhile, opinion leaders at the Vorarlberg Media office consider it highly worthwhile and desirable that other companies should follow this example.

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Langenlois: The Traffic Saving Community

Within the framework of the Lower Austrian State Traffic Concept, the concept of a "traffic reduction community" was developed in order to counter the increase in motorized individual traffic (MIV). Thanks to a convincing traffic concept, Langenlois was chosen to demonstrate how this measure could be implemented in Lower Austrian communities with a population of less than 7000 (about 95% of all communities in the state).

The four-year model project "Langenlois Traffic Reduction Community" aims at the voluntary reduction of car rides that can easily be replaced by more environment-friendly means of transportation. Various well-coordinated measures provide information on alternative forms of transportation and demonstrate their advantages for the individual as well as the community (mottos: *"It is fun to reduce traffic"* and *"It is an advantage to be a traffic reduction community"*).

According to the spirit of the Lower Austrian State Traffic Concept, the "traffic reduction community" is deliberately designed as a long-term project that will gradually but lastingly shape the life of the community. The Traffic Reduction Manual provides a careful and lucid documentation of the entire project. In it, all of the measures are laid out in such a way that they can easily be reproduced by other communities. The effects of the project are analysed in detail through polls and traffic counts (scientific evaluation). Already after one year, 27% of the inhabitants affirmed that since the start of the project, they had begun to use environment-friendly means of transportation, including walking, instead of the car.

Features of the project:

- The promotion of the local economy is an equally important goal. Attractive shopping and leisure possibilities, and as many local places of work as possible, are prerequisite for reducing traffic.
- The will to reduce traffic is central *("Traffic reduction begins in the head")*. In the framewok of a first evaluation (Fall-Winter 1999), 34% of the inhabitants (44% of the drivers) agreed with the statement that it is possible to motivate people to choose environment-friendly means of transportation without "compulsion" (i. e. without the introduction of new laws).

- The organization of the project as well as the strategies of motivation are designed to have a lasting effect.
- No restrictions will be put on driving.
- The individual measures must be inexpensive, so that they may easily be reproduced by all communitites. Motto: *"Good ideas instead of high costs."*

For more information:
http://members.aon.at/mip/verkehrsparen.htm

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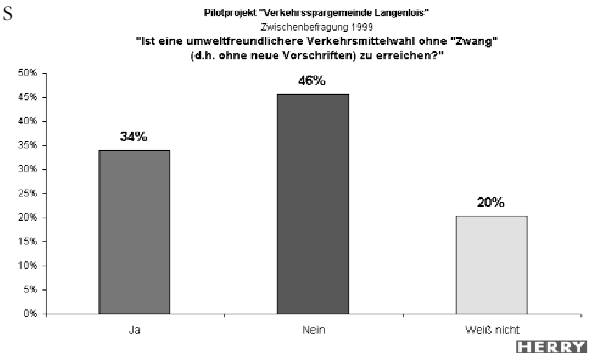

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Integrated Mobility Services: Mobility CarSharing Switzerland

Mobility CarSharing is based on a simple yet powerful premise: people don't necessarily need to own a car, they need the mobility that cars provide. Based on this idea, Mobility CarSharing has become the world leader in providing integrated mobility services to its customers throughout Switzerland. Based around a core package of services that allows customers to quickly, easily and flexibly hire cars on a short-, medium- or long-term basis, Mobility CarSharing has sought to offer a wide choice of mobility options to its customers through new partnerships with public transport and rail operators.

Examples of Mobility CarSharing services include:

- Combined transit – carsharing passes (collaboration with the national railway SBB – CFF, regional products such as züri mobil in the Greater Zurich Area)
- Collaboration with CarRental schemes (Hertz and Eurocar) for supplementary offers at holiday peaks)
- Collaboration with nation-wide retailers (Migros) with offers for businesses and van rentals in shopping centres.
- Collaboration with Migros to acquire the most ecological production vehicle on the market 75 VW Lupos 3 TDL

Mobility CarSharing allows clients to reduce the environmental impact of their travel patterns. After becoming users of Mobility CarSharing's services, customers display the following characteristics:

- Short trips (less than 5 km) are rationalised and other environmentally sound mobility means are taken (by foot, bike or moped).
- Vehicle occupancy is higher (Mobility occupancy = 2,1 persons; average Swiss occupancy = 1,3 persons).
- A drastic shift in the modal split of the users is seen (average Swiss share for public transport: 20% and 80% for car; while 75% of Mobility CarSharing members use public transport and 25% use the car resulting in a decrease of transport energy consumption of 57%)

A detailed life cycle assessment (LCA) of Mobility CarSharing services has recorded an overall reduction in environmental impacts of 20% despite an only 3% drop in distances travelled. The assessment methodology is being further developed to include noise pollution, fine particulate matter and social impacts (accidents) beyond the current focus on air emissions, energy use and major soil and water pollutants. This assessment will be used in-house as a strategic tool to document our emissions on an annual basis.

Mobility CarSharing Switzerland is a co-operative society, registered in Zurich with headquarters in Lucerne and offices in Geneva and Zurich. It operates within Switzerland and provides over 1,400 vehicles of 14 different categories and types at approximately 800 locations (250 at train stations) to its over 36,000 customers.

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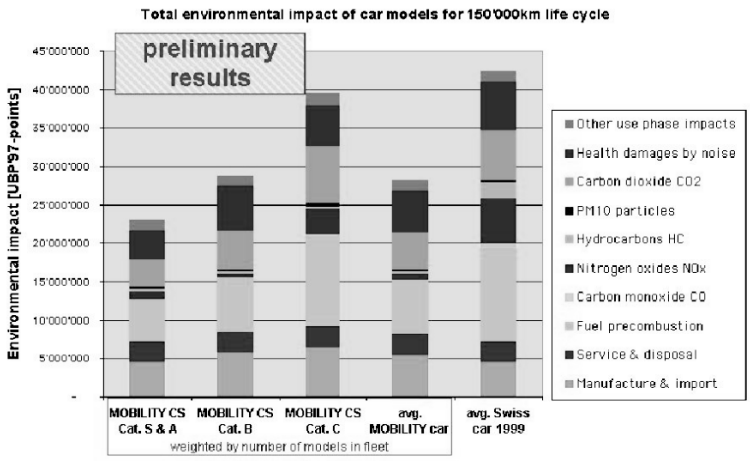

AS Oslo Sporveier

Publicity and information campaign for Public Transport for Oslo Sporveier

Background

These commercials have been running since 1987, and have been an important part of the publicity and information work for AS Oslo Sporveier. A new commercial has been produced about once every second year. The commercials have been shown in cinemas in Oslo.

The purpose

AS Oslo Sporveier (Sporveien) use these kind of commercials in order to reach two important goals:

- Gain sympathy from the inhabitants of the city of Oslo and build an emotional relationship that goes beyond the rational product that Sporveien can offer. A relationship built on intangible values, not the directly product oriented ones. Succeeding in doing this, Sporveien will not be so vulnerable when practical problems occur, such as delays, raising prices, reducing frequency etc.
- Build loyalty and increase usage.

Target Groups

The younger part of the population is the main target group. We are aiming at them when they reach the age where they get their driving license. As long as they can't drive they are the heavy users of public transport, and it is important to keep them as loyal customers.

Creative strategy

The commercials tell small everyday stories that are closely attached to public transport. Some of them promote a special product, others focuses on the concept that it is the smart ones that use public transport.

But most important; the stories are told in a charming and humorous way that makes people laugh. Not a sign of boring, public information, only good storytelling that makes the people like Sporveien and public transport even a little bit more!

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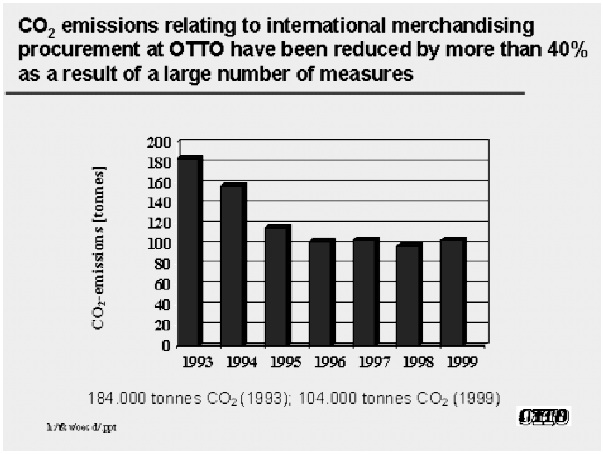
Company-wide CO_2 reductions through Green Supply Chain Management

In 1993, the international procurement of goods and materials for the German mail-order retailer Otto's product lines caused more than 184,000 tons of CO_2 emissions. To lower these CO_2 emissions, Otto developed a four-pronged strategy. Beside testing and using alternative fuels to establish low or zero emission systems, the main aim has been to optimize transportation technically and logistically and to shift consignments to other means of transport. From 1993 to 1999, annual CO_2 emissions were reduced by some 40% thanks to a large number of measures. By 1999, CO_2 emissions from the international transportation of incoming goods had thus been reduced to 104,000 tonnes per year. At the same time, the eco-efficiency factor for incoming goods transport was raised from 0.45 tonnes of merchandise per tonne of CO_2 emissions to 0.78.

One central element of the Green Supply Chain Management project involves shifting consignments from high-emission means of transport such as planes and trucks to lower-emission means of transport such as sea-going ships. This means that new logistics chains have to be established.

For the Turkish market, some 5% of consignments were transferred from truck to ship. This led to a saving of 0.16 tonnes of CO_2 and DM 300.00 per tonne of merchandise. At the same time, handling was greatly simplified. In 2000 the share of sea going ship transportation should be increased to 20%. For the Hong Kong market a total of 8% of pure air consignments were shifted to a combined sea-air transportation. As a result, CO_2 emissions were cut by 2.8 tonnes and costs by DM 1,800.00 per tonne of merchandise. In 2000 the share of sea-air transportation should be increased to 12%.

The measures clearly show that, even in times of "just in time" and "quick response", a reduction in emissions, handling effort and transport costs can be achieved by the establishment of new logistics chains and the use of low-energy and low-emission means of transport such as sea-going ships.



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SCHENKER AG

SCHENKER
Stinnes Logistics

Emission Calculation – Transport Chain Emission Profiling for Clients

Demands to reduce the negative environmental impact of the transport sector are being more and more strongly voiced by customers and the public sector. At the same time, transport is increasing as a result of more intensive and rapid goods flows. Reducing the environmental impact of transport presupposes access to good monitoring systems. To satisfy this need, Schenker-BTL has developed an emission calculation tool to help determine the total environmental load caused by transport and logistics systems in its European land transport network. This is the most advanced and comprehensive tool currently available on the market.

The application consists of three parts - Emission On-Line, Emission Report and Emission Analysis – each designed to meet specific aims and satisfy different target groups.

Common to all three parts are the following:

- The application is linked to an internal database that continuously provides real-time information about transports in Schenker's European network.
- They are characterized by a high level of accuracy, where individual consignment data constitute the lowest common denominator.
- They allow emission calculations of complete transport chains even though a number of different transport modes are involved.

The calculation provides information about transport-related emissions expressed as kilos of carbon dioxide (CO_2), nitric oxides (NO_x), hydrocarbons (HC), sulphur dioxide (SO_2) and particulate matter (PM); information is also included about the total energy consumption in kWh, and a socio-economic evaluation of the harmful effects on society is provided in monetary terms.

While early in its deployment, the tool has already proved itself to be of considerable value to a number of joint customer projects in Sweden, Norway and Denmark. It has also been positively recognised by other external parties and is recommended for use by the financial market and business sector in Sweden, for example, in collecting green key figures for companies quoted on the stock exchange.

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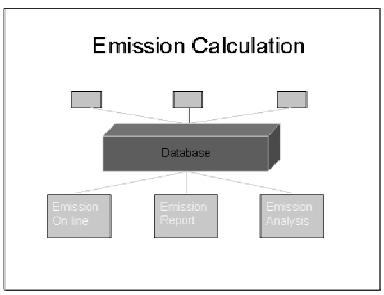
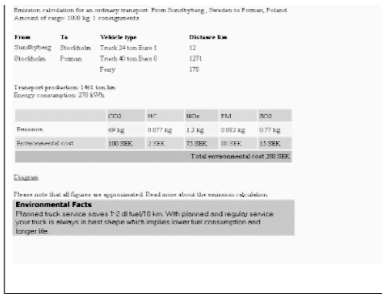
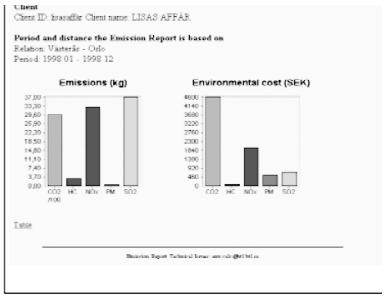






Socialdata

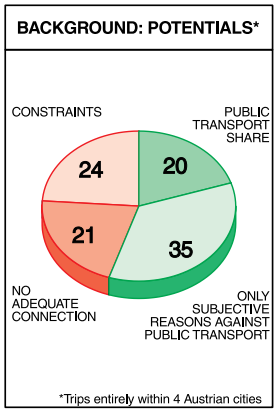
Individualised Marketing in Public Transport: An innovative Approach to Reduce Motorised Private Transport

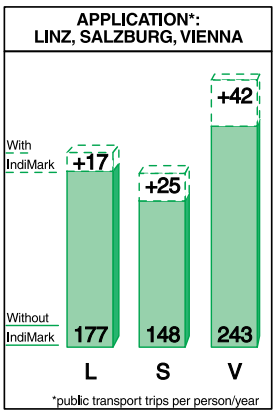
Results of a successful demonstration project in three Austrian cities

Can mobility behaviour be changed voluntarily and if so, how? This question was the background for a project initiated by the Austrian Ministry of Transport. Its aim was to analyse possibilities and limits for reducing motorised private transport via soft policies (motivation, information, communication), to develop an adapted marketing strategy, to apply it in demonstration projects (e. g. for increasing public transport patronage) and to evaluate its effects (before/after study of mobility behaviour; cost /benefit analysis).

This project, started in 1997 and finished in 1999, brought about very encouraging results:

- The analysis revealed that there are considerable potentials for reducing motorised private transport by soft policies: For about one-third of all trips undertaken with (private) cars in Austrian cities an adequate alternative in public transport exists, but is not used only for subjective reasons (lack of information, wrong perceptions of cost, travel time etc.)
- An effective concept to mobilise those potentials – Individualised Marketing (IndiMark) – was developed. This innovative strategy uses direct contacts, individualised motivation and tailor-made information to foster the use of public transport. It targets individuals who have alternatives to car use available to them and seeks to provide them with very concrete and detailed information about the full range of their travel options.





- The effectiveness and pertinence of this approach has been proven in three case studies (Linz, Salzburg, Vienna). These case studies have involved tens of thousands of people and a wide range of public transport products. In each case, the results of the evaluation revealed significant increases in public transport patronage accompanied by a decrease in the use of motorised private transport. A cost/benefit analysis furthermore showed that IndiMark increases revenues for public transport operators due to its long lasting effects. IndiMark is an innovative, cost-effective, lasting and successful instrument to help cities move towards more environmentally sustainable transport.

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SPOLETO CAR-FREE

CITTÀ DI SPOLETO

SSIT SPOLETO

Alternative mobility for Spoleto, a town open to humans

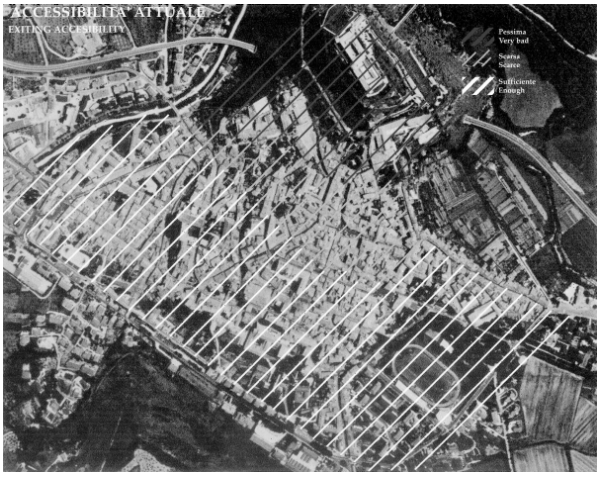
Spoleto is an ancient town in central Italy, which was already splendid in Roman times and during the Lungobard period.

Like all Italian and European historic centers, to improve access, Spoleto has modified its urban structure to adapt it to modern transport requirements; a significant example lies in the construcion of the "National Internal Transit" road which, in the second half of the eighteenth century, revolutionized the urban transit system in the town and its' economy. Largely due to this development, it's historic center, which grew up around man and animal traction, is today at the mercy of cars and buses. Vehicles and humans past through its' medieval alleys together, and in this uneven contest, the latter come off worse.

In order to return the city to a more human scale, the municipality has initiated a project which will seek to create an urban mobility system free of motor vehicles and buses. This system is centred on the construction of two vehicle parks close to the historic centre of Spoleto and of mechanised systems consisting of moving walkways, lifts and escalators. The system transforms a hill town into a "flat" city with easy access and fully "walkable urban spaces"; it restores life to public spaces, such as roads and squares today invaded by parked vehicles.

It will reduce atmospheric and noise pollution; it will provide additional economic value to the historic centre. It is also applicable to other historic centres of greater dimensions than Spoleto too.

The cost for the whole project is 80 billion £; the start of the works for the first operating step is planned within october 2000, with an expense of 53 billion £.



Spoleto: existing non-motorised accessibility

Spoleto: non-motorised accessibility of the new infrastructure development

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AZIENDA TORINESE MOBILITA' S.p.A.

Hydrogen Bus—Zero Emissions and Targets for Public Transport

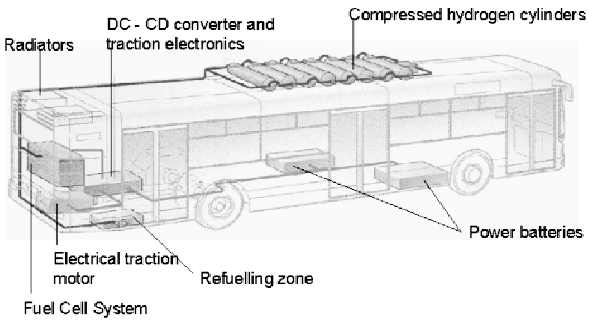
Azienda Torinese Mobilità (ATM) is a joint stock company controlled by the City of Turin. It provides numerous mobility services in the field of public transport. Among these is a joint project with the City of Turin to develop a hydrogen-fuelled bus. This project represents the culmination of a long history of seeking to improve air quality and reduce atmospheric emission to below the limits defined by Italian legislation and European standards.

Through its development plan for 1998–2010, ATM has defined a number of specific environmental targets, such as a 50% reduction of noise levels both inside and outside ATM-operated vehicles, and a 10% reduction in fuel consumption, with a concomitant decrease in pollutant emissions. These goals are to be achieved from a progressive shift to EURO 3 engines, the purchase of CNG buses and finally through the use of fuel cells and in-house production of hydrogen.

Furthermore, in connection with the process that led to the ISO 9001 certification, the company implemented environmental management improvements specified by standards ISO 14001. Moreover, ATM defined 11 top priority indicators whose evolution makes it possible to assess the success of its environmental policies.

The basic focus of the hydrogen bus zero emissions project is to realistically assess the costs of both fuel cell busses and associated ground systems while keeping in mind the specific safety needs associated with their movement in the urban environment. The final cost-benefit evaluations and pollutants/noise emission levels are formulated as a function of the requirements of the transport companies and of the public authorities that have commissioned the project.

The project will be implemented by a joint venture established to this aim by: ATM S. p. A., IRISBUS Italia S. p. A., SAPIO PRODUZIONE IDROGENO E OSSIGENO S. r. l., ENEA – the Italian National Board for Energy, Environment and New Technologies –, CVA – Valle d'Aosta Water Ltd., ANSALDO RICERCHE S. r. l., with the participation of IFC – International Fuel Cells Corporation. The leadership of this joint venture has been entrusted to ATM, in recognition of the role played by the company in promoting the project and in view of



the importance given to the management of the vehicles and the system as a whole. The project costs are shared between the public investors (Ministry of Environment, ATM, CVA, ENEA) providing 3.2 million Euro and the private part (IRISBUS, SAPIO, Ansaldo Ricerche) contributing 3.3 million Euro.

The final goal of this project will be the feasibility of a clean use of energy for the transport system, by proving that it is possible to start out with water, produce hydrogen by means of electrical energy which in its turn is obtained from water, and release water into the atmosphere as the sole output of the cycle.

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off ramp: School Car Trip Reduction Programme

The percentage of students driven to school in the Greater Vancouver Regional District has increased by 53% in the past ten years – almost half of the region's children get to school by car. Children learn at an early age to see their mobility principally in terms of car travel – more often than not as a passenger dependent on their parents' availability.

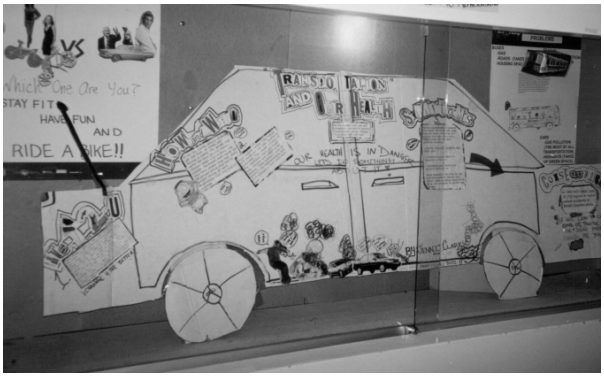
Additionally, there is a lack of education targeted to youth counteracting popular media messages around car-use. There is a real need for more youth education regarding the impacts of the automobile on air quality, health, environment, land use, stress and quality of life.

In order to address these concerns, the Canadian NGO Better Environmentally Sound Transportation (B. E. S. T.) developed the off ramp secondary school trip-reduction programme. Off ramp has a long-term focus of developing strategies to get students walking, cycling and taking public transport more often. It focuses on empowering students to better analyse transportation issues, to hold school events that offer opportunity and incentives to try alternatives to the car, and to dismantle barriers to sustainable transportation in school communities. Students carry out detailed surveys for student trips to and from school and then seek to increase the number of non-car trips. The overall goal of the programme is to reduce car trips to the participating schools by 20%.

At each of nine pilot schools in Vancouver and Victoria, teams of students serve as principal contacts and team leaders. Together with a contact teacher in each school,

off ramp co-ordinators provide training, incentives and a workbook outlining the steps to implementing a car trip reduction programme. Programme activities range from education about public transport options, providing secure bicycle storage on school grounds, advice on safe routes to school, providing comparative information on the costs of car versus non-car transport options, etc… Additional support is provided through event planning, resources and frequent site visits. Although the programme has been developed by B. E. S. T. it is the students themselves who play a key role in adapting strategies for their school community.

Furthermore, an effort is made to integrate the off ramp programme into the regular school curriculum in response to a demand for comprehensive environmental activities that can be implemented within school communities.



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sanfte mobilität
Modellvorhaben Autofreier Tourismus

Model Project "Sustainable Mobility – Car-Free Tourism"

The project is a future-oriented common project for environment, tourism and mobility run by the Austrian Ministry for Agriculture, Forestry, Environment and Water Management, the Ministry for Innovation, Transport and Technology, the Ministry for Economy and Work, the Province of Salzburg and the two model communities Bad Hofgastein and Werfenweng. The project is also supported by the European Union.

The objectives of the project are to create a high-quality "car-free tourism" product, to implement innovative traffic concepts for travelling to the model communities, to keep vehicles with internal combustion engines out of the city centres, to give impulse for the use of innovative transport technologies and to improve environmental quality.

Measures undertaken by the procect in Bad Hofgastein und Werfenweng

- extension of walking and cycling paths
- extension or establishment of pedestrian zones
- traffic calming, attractive street designing and organisation of parking
- replacing vehicles with internal combustion engines by electric vehicles for special purposes (car rental, car sharing, hotels, delivery): more than 30 e-scooters, 10 e-bikes and 3 e-cars are already in use in the two model communities
- bicycle and electric car sharing
- Austria's first solar loading station for electric vehicles
- pilot project in luggage logistics for visitors travelling by train (door-to-door service)

- new offers in regional and local public transport: Werfenweng Shuttle from Bischofshofen to Werfenweng, optimized Citybus with zero emission or hybrid vehicle in Bad Hofgastein
- mobility management centre Pongau based on the regional municipalities in co-operation with Postbus and Austrian Railways will optimise public transport and co-ordinate with tourism
- creation of a special interest group and attractive "all-inclusive-packages" for "Holidays from the Car", benefits for car-free tourists
- co-operation with international transport and tour operaturs (TUI, Dutch Railways – "Alpenexpress") for attractive tourist train travelling
- new design of communication and marketing, newsletters and media co-operations, visualisation in the community, car-free events
- international partnerships with e.g. Bavaria, Lombardy, Trentino, South Tyrol, Veneto and Friuli-Gulia-Veneto in the international Alpsmobility project and co-operation with NETS, the Network European Tourism for Sustainable Mobility

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WALLONIA

RAVeL: Dedicated Soft Mobility Network in Wallonia, Belgium

RAVeL is an uninterrupted soft mobility network of 2.5000 km that will cover all of Wallonia from north to south and east to west. It is built essentially on converted abandoned railroad corridors and canal towpaths. RAVeL will be also interconnected with similar structures in neighbouring regions, countries and at the entire EU level via the network of greenways in Europe

The idea of a network is therefore an essential criterion in the conception of RAVeL: indeed, the possibility of adding new sections to the network is one guiding criteria when considering the decommissioning of railroad tracks. Because it relies essentially on these abandoned railway lines and canal towpaths along navigable or formerly navigable waterways, the network is characterised by its physical autonomy from the usual road network. The RAVeL corridors are public thoroughfares intended exclusively for certain types of users and "soft" traffic modes: pedestrians, cyclists, persons with reduced mobility, as well as equestrians – conditions permitting.

Watercourse and railway lines are important elements of our landscape, having in part fashioned them. The RAVeL lines contribute to establishing a green network that promotes ecological exchanges that favour the biological diversity of our landscapes.

This project is also aimed to rehabilitate a large quantity of un- or dis-used communication infrastructure in order to create a new travelling network. In so doing, the project preserves an important part of our cultural heritage.

The network meets new mobility and economic needs while improving the overall quality of life. In urban areas, it emerges as a credible alternative to car-based road network. The RAVeL must be seen not only as a project for slow travel for leisure purposes, but also as a means for improving the overall mobility of the population for trips to work, public services and shops. This is the reason why it became, through a Ministerial Decree, the third highway network in Wallonia after the RGG (motorised expressway) and the RESI. (motorised intercity network). The Traffic Laws were also modified in 1998 in order to include this new way of travelling.

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A New Marketing Approach for Changing Customer Awareness towards Public Transport

In the past decades Wiener Linien operated on a protected monopoly market for public transport. Due to the developement within the European Union this economic circumstances change dramatically. For the first time in history the company faces the challenge of real competition from within and outside the country.

In spite of these conditions the pressure for success from the owner—the City of Vienna—to raise market shares is still high. The official plan of traffic projects an increase from 29 to 35% in 2010. In 2000 the rate was 33%. Wiener Linien started with proffessional marketing as soon as 1992, although stable conditions were thought long lasting.

Due to results from market research in 1998 customers saw Wiener Linien as innovative and reliable, technically highly equipped and efficient. On the other hand users had less emotional links, less brand-feeling towards the company. Our services were a matter of course and self evident. Summarised the Wiener Linien felt a lack of emotion in the relationship customer-company.

Objectives of the Awareness Campaign

Beside the technical fields the Wiener Linien can win the competition against private transport and other service providers only if attitudes, brand relations and images change. Therefore it's the aim of the awareness campaign to create a strong brand

- with emotional bonding
- which demonstrates personal caring and willingness to real services
- which communicates sympathy and "warmth"
- shows life quality and the role of Wiener Linien to improve everyones personal life
- which manifests that the needs of the clients are taken seriously

Human touch and benefit-communication replaces technical demonstrations in the advertising work. Emotional images are shown to the clients who can feel and see them every day and relate to them.

"Even three minutes can be an eternity"

The new brand campaign startet in spring 1999 with the new slogan "The City Belongs to You" and the first stories Kiss", "Asking girl", "Asking boy" and "Relaxing business man". In 2000 we continued with sujets "Waiting boy with flowers", "Theatre", "Shopping lady", "Break at Würstelstand", "School boy", "Disco", "Cinema" and "Kindergarden". All brochures got an adequate new layout. Radiospots tell correspondent nice stories happening in busses, trams and metro lines of Wiener Linien.

Results and Reactions

The goals of the campaign were fully reached. Ratings concerning awareness and sympathy in 2000 showed an increase from 48 to 62% until 1998. The positive answers to the question "Is it important for Vienna" raised from 65 to 71%.

The campaign was nominated at the "New York Festival for Advertisement" and was rated 3rd worldwide among 13.000 nominees in the category "Low Budget".

Several 1st ratings at jury based contests in Austrias second largest newspaper "Kurier"

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Good Practices

Mobility Management, Passenger Transport

Encouragement of Bio-diesel at Grazer Verkehrsbetriebe, *Grazer Stadtwerke A.G*

Company Mobility Management in Tulln Hospital, *Landeskrankenhaus Tulln*

Car-Pooling as an Efficient Mobility Management Tool, *P. S. A. Peugeot CIT*

Zillergrund (Park & Ride and Shuttle for Car-free Tourism), *Ruhegebiet Zillertaler Hauptkamm*

Barrier-Free Urban Planning, *Stadt Salzburg*

From the Bottom to the Top – The Eisenstadt Example, *T. U. Wien*

Company Mobility Management in the Vorarlberg Media Office, *T. U. Wien, Herry Consulting*

Sustainable Mobility: Car-Free Tourism, *Trafico*

Integrated Mobility Services in Switzerland, *Mobility Carsharing Switzerland*

Liechtenstein Takt, *VCL Verkehrsclub Liechtenstein*

LIBE (Real-time Information Provision to Users of Public Transport), *Linzer Elektrizitätswerke*

Innovative Supply Chain using Inland Navigation, *Via Donau*

Ruck-zuck mit dem Zug (Going and back by train to trade fairs), *Messe Wieselburg*

Mobility Central for Tourism, *Mobilitatszentrale Pongau*

Car Sharing for Companies, *Wuppertal Institut*

Quality Alliance Eco-Drive/Fuel Efficient driving, *Ecoprocess*

Mobility Management, Freight Transport

Rail/Road Tank Container Concept, *BP Austria, A. G.*

Logistics and CO_2 Reductions for Freight Transport, *Otto Versand*

GPS based Logistics System in a Truck Fleet, *Schenker A. G.*

Transport Chain Emission Profiling for Clients, *Schenker A. G.*

Communication and Awareness Raising

Publicity and Information Campaign for Public Transport, *AS Oslo Sporveier*

BP Driver Training, *BP Austria*

Image Development and Promotion for Sustainable Mobility: Bremer Card, *Freie Hansestadt Bremen, Der Senator für Bau und Unwelt*

Verkehrsspargemeinde Langenlois—the Traffic Reduction in the Community, *Gemeinde Langenlois*

Public Transport Customer Workshops, *Mobil 21 + P. O. P.*

Mobil-Zentral: Non-motorised Transport Gateway, *Mobil Zentral*

Individualised Marketing in Public Transport, *Socialdata*

Branding: A New Marketing Approach for Changing Customer Awareness Towards Public Transport, *Wiener Linien*

World Transport Policy & Practice Journal, *WTPP Journal*

Technology & Infrastructure

Hydrogen Bus: Zero Emissions and Targets for Public Transport, *Azienda Torinese Mobilità*

Spoleto: Carless City—The Alternative Project for Mobility in Spoleto, *Comune di Spoleto*

SSIT Società Spoletina di Imprese Transporti S. p.A

EST in the Czech Republic: Analysis of Emission Production from Transport, *Czech Ministry of Transport & Communication*

Introduction of Compressed Natural Gas Fuelled City Buses in Hungarian Public Transport, *Institute for Transport Sciences*

Emission Free Travel with the Electric Car, *Knifeshop*

Merseytravel – Electric Buses, *Merseytravel*

Zinc-Air Electric Vehicles for the City of Milano, *Zincar SL*

CO_2 Powered – Cooling Units, *Schenker A. G.*

MA48 Truck Simulator Teaches Economic Driving to Save Fuel, *SimuTech, Gesellschaft für Fahrsimulation, MAN Nutzfahrzeuge*

RAVeL: Autonomous Network of Slow Tracks – Rails to Trails for Sustainable Mobility, *Ministère de la Région Wallonne*

An Airport Adapted to the Environment, *Oslo Airport*

SmILE Fuel Efficiency Technology, *Greenpeace*

Culture and the arts

Kulturbahnhof Kassel, *KulturBahnhof*

Education and Youth

Off ramp – School car trip reduction programme, *Better Environmentally Sound Transportation B.E.S.T.*

OECD Working Group on Transport and the Environment

Background

In 1994, the OECD Working Group on Transport and the Environment was created by the OECD Pollution Prevention and Control Group to serve as a co-ordination mechanism bringing together delegates from environment, transport and other ministries of the OECD member countries and the European Commission, and to carry out activities in the area of transport and environment. The Working Group co-ordinates transport-related work of the Environment Directorate with other parts of the OECD and other international organisations, in particular the IEA, ECMT, the EU, UNECE, UNEP, WHO, and NGOs that address transport and environment issues.

Objectives

1. Guide and carry out OECD's Working Party on Pollution Prevention and Control (WPPPC) projects on transport and environment, in particular on:

- determining the gaps, at international level, in data and information which would allow the full examination of environmental and socio-economic impacts of the transport sector and alternatives to current transportation systems;
- evaluating options and developing policy guidelines for an environmentally sustainable transport (EST) strategy including all modes. Attention should be paid to the means of addressing growth through better demand-side management policies (in particular, for freight transport and leisure traffic), a shift towards more environmentally sound and energy efficient transport and communication modes; and to enhance access to other people, goods and services while reducing the need for physical movements (e. g. through telecommunication, integrated transport and land use planning, changing production and consumption patterns);
- defining concrete environmental criteria and procedural recommendations that countries may use to set specific environmental targets for sustainable transport under their particular conditions. The Working Group will recognise the need for reconciling environmental objectives and measures with other policy goals, in order to further reduce health and environmental impacts from the transport sector at local, regional and global level;
- analysing policies to reduce greenhouse gas emissions from the transport sector, and developing comprehensive transport and climate change mitigation options and recommendations for domestic policies in support of meeting global commitments such as the Kyoto targets;
- examining possibilities for reducing unsustainable growth and global impacts from high growth sectors such as aviation, road freight transport, and leisure travel/tourism using an EST approach, incorporating them into comprehensive policies to prevent climate change as well as local pollution and other impacts, and stimulate accordingly actions in other competent bodies;
- extending the scope of the EST approach to non-Member countries, in particular to Central and Eastern European countries and the NIS, by supporting outreach activities, and co-operation with other international organisations such as the European Commission, UNECE, UNEP, WHO, CEI, the World Bank, EBRD, EIB;
- analysing and documenting appropriate policies and promising combinations of regulatory, economic, informative and educational instruments with a view to: (i) internalising environmental costs of transport; (ii) stimulating market conditions and technological progress for cleaner and more fuel-efficient motor vehicles and other transport modes (e. g. public and combined transport by road, rail and waterways); and (iii) overcoming the obstacles to the effective implementation of preventive policies for environmentally sustainable transport.

Photo: Philippe Crist, OECD, 7 July 2000

2. Be responsible for co-ordination and integration, and enhance appropriate co-operation of WPPPC's environmentally sustainable transport work with: i) other environment activities, in particular the work on climate and energy/environment (i.e. on GHG and energy efficiency aspects of transport); ii) with other OECD programmes, i.e. Urban Affairs (Territorial Development Service) and Road Transport Research (Directorate of Science, Technology and Industry); and iii) with other organisations such as the European Conference of Ministers of Transport, the International Energy Agency, the European Commission, the UN Economic Commission for Europe and the World Health Organization. Particular attention will be given to the implementation of the recommendations of the Vienna Declaration on Transport and Environment.

3. Provide a forum for information exchange on emerging issues, trends and challenges in the transport sector (including aviation), and for review of transport/environment action plans.

Organisation

The Working Group has a renewable two-year mandate and is composed of delegates from Environment and Transport Ministries of OECD Member countries. The group is led by a bureau comprised of elected delegates and is headed by two elected co-chairs. The group's substantive work is carried out by staff in the OECD secretariat as well as by Member country administrations in support of the OECD projects. The Working Group meets twice a year.

Activities and events

- "Towards Clean Transport: Fuel Efficient and Clean Motor Vehicles", OECD Conference, Mexico City, 1994.
- "Towards Sustainable Transportation", OECD Conference, Vancouver, 1996.
- OECD Project on Environmentally Sustainable Transport (EST), starting 1996, including regular workshops and expert meetings within the context of
  - — Phase 1: Definition and quantification of environmental criteria for sustainable transport.
  - — Phase 2: Development of business-as-usual trend and three EST scenarios (technology, mobility management and combined scenario); assessment of economic and social implications of scenarios.
  - — Phase 3: Backcasting development of policy instruments and strategies
  - — Phase 4: Refinement of criteria and development of guidelines for moving towards EST
- Project on Sustainable Consumption and Individual Travel Behaviour, 1996–1997:
- Workshop on "Eco-Efficiency in the Transport Sector", Berlin, 1997
- Joint ECMT/OECD Project on Sustainable Urban Travel, 1998–2001.
  - — Workshop on "Land Use for Sustainable Urban Travel: Implementing Change", Linz, 1998
- Workshop on "Social and Economic Implications of Environmentally Sustainable Transport", Ottawa, 1998.
- Workshop on "Innovation for Environmentally Sustainable Transport", Berlin, 1999.
- "Environmentally Sustainable Trans-Alpine Transport for the 21st Century – Challenges, Perspectives and Strategies", Alpine Regional Colloquium, Chambéry, 2000.
- "Environmentally Sustainable Transport: Futures, Strategies and Best Practice", OECD Conference, Vienna, 2000.

Outreach activities to non-member countries

- Joint Austrian/UNEP/OECD Study on Environmentally Sustainable Transport in Central European Initiative (CEI) countries, 1997–1998.
  - — Workshop on "Implementing EST in the CEI – Pilot Projects in Slovenia", Ljubljana, 1999.
  - — Workshop on "Implementing EST in the CEI – Pilot Projects in Slovakia", Bratislava, 2000.
- Follow-up to the UNECE Regional Conference on Transport and Environment, Vienna, 1997, and the Programme of Joint Action
- Support for the WHO Ministerial Conference on Environment and Health, London, 1999, and contribution to the follow-up of the WHO Charter on Transport, Health and the Environment.

Planned activities

- Follow-up to the Vienna Conference with the EST guidelines and their implications for the OECD and Member countries, in particular the development and implementation of regional EST strategies and EST pilot actions.
- Project on environmental problems and life-cycle impacts (pollution, CO_2, material use) of high growth sectors, such as aviation, leisure traffic and freight (road, maritime), and the identification of policy options, notably measures of transport demand management, modal shifts and efficiency improvements with particular emphasis on implications from the increasing use of Intermodal Transport and logistics for the movement of freight.
- Alternative transport scenarios and their role in decoupling economic growth from transport demand, notably the relationship between transport infrastructure investments and economic growth using the findings from the economic assessment of the BAU and EST scenarios in the EST project. A subproject may look at sophisticated vehicle tax models to curb demand for passenger and freight transport.