
ASSESS

Assessment of the contribution of the TEN and other transport policy measures to the mid-term implementation of the White Paper on the European Transport Policy for 2010

FINAL REPORT

ANNEX XVI DEVELOPMENTS IN URBAN TRANSPORT SINCE THE 2001 WHITE PAPER

European Commission

DG TREN

DM 28

1043 Brussels

Belgium

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 **TRANSPORT & MOBILITY
LEUVEN**

TRANSPORT & MOBILITY LEUVEN
VITAL DECOSTERSTRAAT 67A BUS 0001
3000 LEUVEN
BELGIË
+32 (16) 31.77.30
<http://www.tMLEuven.be>

and:

TNO, Netherlands
WSP, UK
TRT, Italy
DLR, Germany
University of Gdansk, Poland
ITS Leeds, UK
SWOV, Netherlands
CAU Kiel, Germany
Istanbul Technical University, Turkey

Preface

This is ANNEX XVI of the final report for *'Assessment of the contribution of the TEN and other transport policy measures to the mid-term implementation of the White Paper on the European Transport Policy for 2010'*.

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Authors:

Kristof Carlier, TML, Belgium

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Scope

Scope of the ASSESS study

The ASSESS study is about the ***“Assessment of the contribution of the TEN and other transport policy measures to the mid-term implementation of the White Paper on the European Transport Policy for 2010”***.

The European Commission’s White Paper of 12.9.2001 “European transport policy for 2010: time to decide” aims to promote a sustainable transport policy. The White Paper proposes to achieve sustainability by gradually breaking the link between transport growth and economic growth, principally in three ways: changing the modal split in the long term, clearing infrastructure bottlenecks and placing safety and quality at the heart of the transport policy.

As foreseen, the White Paper on Transport undergoes in 2005 an overall ***assessment concerning the implementation of the measures it advocates and to check whether its targets*** - for example, on modal split or road safety - ***and objectives are being attained or whether adjustments are needed***.

ASSESS provides technical support to the Commission services for the above mid-term assessment of the White Paper.

The analysis accounts for the economic, social and environmental consequences of the proposed measures and their contribution to sustainable development objectives. It provides also a detailed analysis of those effects of enlargement likely to affect the structure and performance of the EU transport system.

The study takes a three pillar approach based on the use of analysis, indicators and models. National transport policies are reviewed for compatibility and coherence with the White Paper objectives. The models used allow a detailed analysis of the freight market, the passenger market and their infrastructure networks under a number of scenarios.

Scope of this Annex

The White Paper highlights three main measures related to urban transport:

- Support for pioneering towns and cities
- Promotion of use of clean vehicles
- Promotion of good urban practices

This annex will assess European policy since 2001 with regards to the three main measures listed above, after which some recommendations are formulated.

Index

PREFACE	3
SCOPE.....	5
INDEX	7
TABLES.....	7
ANNEX XVI DEVELOPMENTS IN URBAN TRANSPORT SINCE THE 2001 WHITE PAPER	9
XVI.1. INTRODUCTION.....	9
XVI.2. SUPPORT FOR PIONEERING TOWNS AND CITIES	10
XVI.2.1. CIVITAS and CIVITAS II.....	10
XVI.2.2. Urban goods transport: IDIOMA and CITY FREIGHT.....	12
XVI.2.3. PROPOLIS	13
XVI.3. PROMOTION OF USE OF CLEAN VEHICLES.....	15
XVI.3.1. On the promotion of the use of biofuels or other renewable fuels for transport (2003/30/EC).....	15
XVI.3.2. Restructuring the Community framework for the taxation of energy products and electricity (2003/96/EC).....	17
XVI.3.3. European vehicle standards.....	18
XVI.3.4. CIVITAS	18
XVI.3.5. CUTE.....	18
XVI.3.6. ECTOS.....	18
XVI.3.7. CLEANRCAB	19
XVI.4. PROMOTION OF GOOD URBAN PRACTICES	19
XVI.5. RECOMMENDATIONS.....	20
REFERENCES.....	23

Tables

Table 1: Share of biofuel in the total fuel consumption for transport by the end of 2005

17

ANNEX XVI *Developments in urban transport since the 2001 White Paper*

Authors: Kristof Carlier, TML (Belgium)

XVI.1. Introduction

With regards to urban transport, the 2001 White Paper on transport policy states the following: *“The expanding urban fabric, lifestyle changes and the flexibility of the private car, often combined with inadequate public transport provisions have caused a huge upsurge in traffic in towns over the last 40 years. Though decentralization of activities or housing may occasionally have been flanked by the development of appropriate public transport infrastructure or services, the lack of an integrated policy approach to town planning and transport is allowing the private car an almost monopoly. Omnipresent and a burden though it may be in the town centres, it is above all in the peripheral areas of towns and cities that traffic growth has been fastest. In these areas, where transport needs are harder to determine and satisfy, public transport is not proving flexible enough in its present form. And to make matters worse a feeling of insecurity puts people off using public transport in certain areas and at certain times of day.*

Increased traffic and urban congestion go hand in hand with more air and noise pollution and accidents. Frequent short journeys made with the engine cold increase fuel consumption exponentially, and emissions may be three or four times higher while traffic speed is three or four times slower. Urban transport on its own accounts for 40% of carbon dioxide emission from road vehicles. Carbon dioxide is the main greenhouse gas causing climate change. In addition, there are the other pollutants which have a disturbing effect on the health of town and city dwellers, in particular nitrogen oxides, which cause peaks in ozone levels, and unregulated small particles. The most vulnerable sections of the population, such as children, the elderly and the ill (with respiratory, cardiovascular or other diseases), are the chief victims and some studies have put the cost to the community at 1.7 % of GDP (1). In terms of safety, one fatal accident in two takes place in urban surroundings, and the highest casualties are among pedestrians, cyclists and motorcyclists.”

Due to the subsidiarity principle, the role of the European Commission is limited to supporting local authorities by funding innovative urban transport measures and by organizing the dissemination of knowledge on good practices regarding urban transport. When appropriate, the Commission can decide to set up European regulations which affect (the impact of) urban transport (e.g. on emissions for public and private transport vehicles).

Although the national and local authorities are the key players in urban transport policy, the European Commission can and should assist the national and local authorities. The White Paper highlights three main measures related to urban transport:

- Support for pioneering towns and cities
- Promotion of use of clean vehicles
- Promotion of good urban practices

The following chapters will assess European policy with regards to the three main measures listed above, after which some recommendations are formulated.

¹ World Health Organisation. Health costs due to road traffic related air pollution. An impact assessment project for Austria, France and Switzerland. June 1999.

XVI.2. Support for pioneering towns and cities

The support for pioneering towns and cities has been realised by several European projects, of which CIVITAS and CIVITAS II are the most relevant in this context. Other European projects supporting pioneering urban areas are IDIOMA, CITY FREIGHT, and PROPOLIS. These projects are discussed below.

XVI.2.1. CIVITAS and CIVITAS II

Within CIVITAS I (2002-2006) 19 cities and within CIVITAS II (2005-2009) 17 cities take part. These 36 cities all across Europe will be funded by the EU with 100 Mio € and the overall budget of the Initiative will be more than 300 Mio €. The main objectives of CIVITAS are:

- to promote and implement sustainable, clean and (energy) efficient urban transport measures
- to implement integrated packages of technology and policy measures in the field of energy and transport in 8 categories of measures
- to build up critical mass and markets for innovation

The sections below discuss some of the measures supported by CIVITAS and CIVITAS II, grouped by theme. Some selected projects are briefly mentioned for each theme. Finally the evaluation of the CIVITAS projects is presented. Note that some measures can be categorised under more than one theme.

XVI.2.1.1. Clean fuels and vehicles

This theme encompasses energy-efficient, cost-effective and clean public and/or private vehicle fleets for passenger or freight transport (minimum Euro-IV standard) using alternative fuels and the necessary energy infrastructure. Typical projects are the conversion of vehicle fleets (taxis, buses, inner-city freight lorries) to bio-diesel, CNG, LPG or electricity and the installation of the necessary energy infrastructure. The implementation of most measures is on schedule. The number of vehicles included in each project varies from 5-10% of a city council's fleet (about 250 vehicles in total) to the entire public transport bus fleet and taxi fleet (in Graz).

XVI.2.1.2. Integrated pricing strategies

The 'integrated pricing strategies' theme groups all measures related to demand management and revenue raising strategies. The measures are based upon integrated pricing strategies by means of introducing full scale area-wide or city-wide pricing schemes, possibly in combination with innovative use of pricing of parking and of public transport.

The city of Rotterdam is very active when it comes to pricing strategies. They have organised a workshop on kilometre pricing and have introduced several parking experiments (demand dependant parking tariffs, integrated P&R fares). Other measures include the use of mobile phones to pay parking fares, differentiations in parking fares according to the vehicle's level of pollution and a truck parking management project.

XVI.2.1.3. Less car intensive lifestyle

This theme covers all the measures that aim to reduce the use of the private car or to raise awareness about alternatives. Examples of these measures are the promotion of car-pooling, car-sharing or other

measures to increase the car-occupancy, mobility management and the promotion and facilitation of cycling.

One of the car-pooling experiments has a potential user group of 100,000 citizens. It is expected that the vehicle occupancy for home-to-work trips will increase by 20% in some selected destinations. The car-sharing project in Genova expects 2000 users by the end of the project. In Bristol, a Cycle Resource Centre (CRC) is established in a neighbourhood with substantial office developments. The CRC provides cyclists with a secure bicycle parking, lockers, showers, repair facilities etc.

XVI.2.1.4. Soft measures

‘Soft measures’ include innovative measures for managing mobility demand by means of introducing new approaches to integrated planning: promoting green transport plans, walking and cycling, mobility marketing and awareness. Particular attention is paid to road safety aspects. This theme realised projects on traffic training for children, the promotion and facilitation of (safe) bicycle use, integrated mobility policy and mobility management (both for companies and authorities) and travel information.

Venice introduces low impact (environmental) waterbuses, which are accessible for disabled people. Bristol organises an individualized travel marketing campaign: more than 1000 households are visited; information, gifts and incentives are distributed. Several companies’ or organisations’ mobility plans are also grouped in this theme.

XVI.2.1.5. Access restrictions

Demand management strategies based upon access restrictions to the inner city areas and other sensitive zones by means of introducing access control permitting access only to clean and energy efficient vehicles (including collective transport vehicles), and to cycling and walking.

The most striking example is the restricted traffic zone in Rome (the “Zone a Traffico Limitato” or ZTL). In the central area of the city (the historical centre), political administration and public services are the main industries, which include activities related to transport and tourism. On weekdays between 6:30 and 18:00 and on Saturdays between 14:00 and 18:00, only vehicles with permission are allowed in the zone. The 150.000 permissions are granted mostly to disabled people (35%), vehicles of public services (20%) and residents (20%). The ZTL is the largest Access Restriction area in Europe after London, supported by the Automatic Control System (ACS).

XVI.2.1.6. Collective passenger transport

This theme stimulates collective passenger transport and its quality of service by means of introducing clean and energy-efficient vehicle fleets, non-conventional public transport systems, innovative organisational, financing and management schemes, improved security and safety, integration with walking, cycling and other modes. Particular attention is paid to accessibility for people with reduced mobility.

XVI.2.1.7. Urban goods transport

The theme is described as: ‘New concepts for the distribution of goods by means of introducing innovative freight logistics services using clean and energy efficient vehicle fleets, dedicated infrastructure and information services.’ Most cities, active in this theme, introduce new distribution schemes.

Since summer 2002, units for customers (forwarders) are consolidated every day in the Freight Village (GVZ) Bremen and transported to target areas (i.e. Shopping Centre, central warehouse). A truck mileage reduction of about 9,000 kilometres monthly is achieved by City Logistics. This correlates to 70 day-tours of trucks of the size range 7.5 t. All in all about 1,100 litres of diesel fuel are saved every month by the groupage-actions.

XVI.2.1.8. Transport management

Transport management systems and traveller services (including systems and services based upon satellite applications/GALILEO), such as those for intermodal travel information, transport pricing and payment, road conditions, vehicle location and guidance and traffic management.

XVI.2.1.9. Evaluation of the CIVITAS projects

One can conclude that CIVITAS and CIVITAS II have enabled the selected European cities to set up innovative transport projects. A large number of cities is involved in the CIVITAS projects, and a wide range of new concepts and technologies – from facilitating cycling over parking management and clean vehicles to inner-city freight distribution – has been field-tested.

The scale of the individual projects is often too small to have a significant impact on the overall urban transport of the cities. The major achievement of the projects is that the experiments have proven the applicability of the new technologies. As such, an important barrier for the large scale introduction of the new transport concepts and technologies, in all urban areas across Europe, has been taken. The realisation of the innovations will convince other authorities and organisations of their applicability. Also the costs and investment risks of future realisations has decreased by the realisation of the pilot projects in CIVITAS and CIVITAS II.

The importance of the dissemination of the experiences of the individual projects can not be underestimated. The experiences gathered should be accessible to all European cities, not only to the cities participating in the CIVITAS projects. The involved private companies (e.g. car manufacturers) will do some of the dissemination in their own marketing campaigns; it is important that the Commission focuses on supporting the dissemination of the experiences of the local authorities.

XVI.2.2. Urban goods transport: IDIOMA and CITY FREIGHT

Efficient freight transport is an important factor of competitiveness of urban areas and to sustain wealth generation. However, freight traffic also imposes significant costs in terms of congestion and environmental pollution, which, in turn, affect significantly the quality of life in the cities.

There have been two European projects on freight transport in urban areas: IDIOMA (Innovative Distribution with Intermodal freight Operation in Metropolitan Areas) and CITY FREIGHT. Both projects have supported innovative projects regarding freight transport in a selection of cities or urban areas.

XVI.2.2.1. IDIOMA

IDIOMA (1998-2001) experimented in Nürnberg, Öresund, Stockholm, Malmö, Paris, the Randstad (Amsterdam, The Hague, Rotterdam, and Utrecht) and Zürich. During the project different concepts, aimed to improve the distribution of goods within urban areas and between intermodal terminals/freight centres and urban areas, were demonstrated. Specific objectives of the project were to implement and as-

sess innovative solutions in the following areas: regional or local bundling of urban freight transport, using common carriers or co-operative distribution concepts, new loading units in urban intermodal transport, new ICT applications for information exchange in intermodal transport, including optimisation of distribution networks and multi-operator tracking and tracing systems, new transshipment systems, combined passenger and freight transport concepts, and use of alternative fuels and energy sources in urban freight vehicles.

All IDIOMA innovations showed, generally, a reduction of emission levels but the economic performance was unsatisfactory. Regional or local bundling projects, which included testing of a multi-temperature vehicle for composite distribution of goods, were only partially successful and were found difficult to implement in the current transport business environment. While in some cases computer-based network optimisation helped achieve environmental benefits, savings of distribution costs could not be proved. City/small container concepts showed technical problems which in principle can be solved, while the commercial perspective is more uncertain with high transshipment costs being the main barrier.

Integrated transport of passenger and freight has the advantage of fast access to city centres but showed limitations in the feasible sizes of the cargoes as well as organisational difficulties for their transshipments. Demonstrations of use of alternative fuels made apparent as main barrier to large scale introduction the competition with other fuels having massive supply infrastructure.

The problems shown in the commercial performance of the IDIOMA concepts call for support to development of freight transport structures in urban areas and to training and education of transport operators. The introduction of heavy-vehicle fees might increase the need to improve concepts in particular on the pre- and end-leg of intermodal transport.

Standardisation efforts and further demonstration projects were recommended for small containers which will more likely play only a marginal role in city distribution without large investments in infrastructure and equipment. An overall approach should be developed for the handling and carrying of intermodal equipment as well as the processes and the facilities in freight centres. Further research was recommended on the share and usage of information along the transport chain as well as the entire supply chain and on transshipment systems to make small-volume terminals more profitable.

XVI.2.2.2. CITY FREIGHT

The other European research project, CITY FREIGHT, studied inter- and intra-urban freight distribution networks. CITY FREIGHT supported projects in one city or region in each participating country (Belgium, UK, The Netherlands, Italy, Spain, Finland and France). It analysed selected freight transport systems already functioning in Europe and evaluates their socio-economic and environmental impacts in an urban context, with a common assessment methodology. The project focused on innovative and promising logistic schemes.

The objective was to provide guidance to interested stakeholders (government, regional or local authorities, network operators, shippers and consignees) on the advantages and drawbacks of some recent innovations in the field of inter- and intra-urban freight distribution systems.

XVI.2.3. PROPOLIS

PROPOLIS (Planning and Research for Land Use and Transport for Increasing Urban Sustainability) is an FP5-project (2001-2003). The objective of PROPOLIS was to research, develop and test integrated

land use and transport policies, tools and comprehensive assessment methodologies in order to define sustainable long-term urban strategies and to demonstrate their effects in European cities.

The results show that, with growing traffic, the environmental sustainability deteriorates in all case cities compared with the current situation if no actions are taken. The trend is unlikely to change even if city specific reference scenarios, including local investment programmes, are adopted. Also, the social sustainability tends to deteriorate. The aim of PROPOLIS was to find policies that could simultaneously improve all three dimensions of sustainability compared with the reference solution and, if possible, even improve the current level of sustainability. This goal was reached in most of the case cities using the same type of package approach combining pricing, investment and land use policies. This indicates that the approach could be transferable and similar strategies could work also in other European cities.

The local investment plans, normally consisting of an investment programme for both public transport and road investments, performed in the right direction but could not maintain the current level of sustainability. The various elements of the programmes were often found to encourage development towards opposing goals. Investment programmes should be designed to be consistent with the general goals set for the transport-land use system.

The results of increasing the cost of operating the private car are uniform for all the cases. The environmental, social and economic indices improved simultaneously. Cordon pricing policies do not perform as well environmentally and socially although the overall effect is mainly positive or neutral. Economically, however, they were found to be more efficient than the general car pricing policies in some cases. Parking policies are environmentally, socially and economically neutral or, in some cases positive. Speed regulation policies have diverse effects in the case studies.

From the environmental and social point of view, increasing the speed of public transport is generally neutral. Economically this policy is at least slightly positive in all cities although a high investment is required in order to achieve the speed /service increase. Reducing the fares for public transport has environmentally and economically positive results. The results very much depend on the level of reduction. The overall effect of land use policies was found to be small in most cities although there were considerable changes in the values of some individual indicators, for example quality and fragmentation of open space. Economically the results were neutral or positive.

Best results were achieved by using policy combinations, i.e. push and pull measures consisting of car pricing policies and simultaneous improvements of public transport through reduced fares and better speed and service. The combination produced cumulative positive results and the negative land use effects of the individual policies could be avoided.

Adopting the above policy packages lead to a 15-20% reduction in CO₂ emissions, an 8-17% reduction in traffic accidents and often to at least small reductions in exposure to noise and pollutants and in the total time spent in traffic. In addition, the accessibility to the city centre and services was improved. The socio-economic benefits varied but were typically 1000 – 3000 euro/inhabitant for the assessment period. Searching and defining more optimal local levels for the actions could further improve the results, as demonstrated in some case cities.

XVI.3. Promotion of use of clean vehicles

The Commission has put forward two directives regarding biofuels in 2001. The directive 2003/30/EC (8 May 2003) deals with the promotion of biofuels and other renewable fuels for transport. The 2003/96/EC directive (27 October 2003) restructures the Community framework for the taxation of energy products and electricity, allowing member states to reduce tax on biofuels. Both directives are discussed below in XVI.3.1 and XVI.3.2.

The Commission determines emission standards (EURO-norms), to which new vehicles must comply. These standards are discussed in XVI.3.3. Additionally, the European Commission supports – or has supported – following projects that deal with clean(er) fuels and vehicles in urban transport: CIVITAS, CUTE, ECTOS and CLEANRCAB. The contribution of these projects to the use of clean vehicles is discussed in XVI.3.4 and beyond.

Note that much of the research on clean vehicles is carried out by private companies, the most important of which are Daimler Chrysler (spent 5.6 billion euro in 2003 in RTD), Volkswagen (4.1 billion), BMW (2.6 billion) and Peugeot (2.1 billion) in the European Union; worldwide Ford (5.9 billion) and Toyota (4.9 billion) are the most important. By reference, the leading R&D-investors in other sectors worldwide are Pfizer (Pharma and biotech; 5.7 billion), Siemens (Electronics; 5.6 billion) and Nokia (IT hardware; 4.0 billion).

Some of the research in the automobile sector goes to having lighter weight cars with better ignition systems, a higher energy efficiency, reduced friction of tyres and shapes, better injection systems. All these kinds of research reduce negative environmental impacts.

XVI.3.1. On the promotion of the use of biofuels or other renewable fuels for transport (2003/30/EC)

The Commission White Paper 'European transport policy for 2010: time to decide' expects CO₂ emissions from transport to rise by 50% between 1990 and 2010, to around 1,113 million tonnes, the main responsibility resting with road transport, which accounts for 84% of transport-related CO₂ emissions. From an ecological point of view, the White Paper therefore calls for dependence on oil (currently 98%) in the transport sector to be reduced by using alternative fuels such as biofuels and hydrogen. Greater use of biofuels for transport forms a part of the package of measures needed to comply with the Kyoto Protocol. The objective of the Commission is to substitute 2% (calculated on the basis of energy content) of conventional fuels (petrol and diesel) by biofuels by the end of 2005, to substitute 5.75% by the end of 2010² and to substitute 20% of conventional fuels by alternative fuels (including biofuels) by the year 2020³.

The natural resources required for conventional fuels (crude oil, gas and coal), are limited and will become scarce in the mid-term future. Even now, Europe is heavily dependant on energy sources from abroad: Europe holds less than 5% of the world's natural resources in crude oil, gas and coal while consuming about 18% of the worldwide oil production⁴. Therefore it is of strategic importance to reduce Europe's dependency on natural resources. As transport is an important consumer of oil...

² From Directive 2003/30/EC of 8 May 2003

³ From the Commission Green Paper 'Towards a European Strategy for the security of energy supply'

⁴ Statistical review 2005 of BP

There is a large variety in biofuels, some of which are suited to substitute petrol, others to substitute diesel. Some biofuel varieties are already commercially available, while the technique for producing other varieties is still being developed. The currently available biodiesel FAME (a trans-esterification of crops or vegetable oil) has an overall CO₂ emission of about 50% of conventional diesel. The carbon efficiency of the future biofuels will be better (less than 10% of the CO₂ emissions of conventional fuels). The use of biodiesel in a conventional diesel engine results in substantial reduction of unburned hydrocarbons, carbon monoxide and particulate matter and a slight increase of NOX. The exhaust emissions of sulphur oxides and sulphates (major components of acid rain) from biodiesel are essentially smaller compared to petrodiesel.

Meeting the 2% transport biofuel target is not likely to cause significant distortions to the agricultural production patterns in the EU; however, meeting the 5.75% transport biofuel target most probably will require significant changes in the agricultural production patterns in the EU. Considering a larger framework of techno-economic concerns and agriculture policy objectives, implementing such changes might be quite challenging in practice.

On equal terms, the production of bioethanol requires less land than that of biodiesel, due to a larger biofuel yield per hectare from the crops-potential feedstock for bioethanol. Consequently, producing all biofuel as bioethanol would lead to a significant reduction in the land area, needed to meet the transport biofuel targets. Nevertheless, other technoeconomic and policy-related drawbacks, associated with crop cultivation specifics and agricultural regulations, are likely to appear in this case. Blending bioethanol with fossil diesel appears as a promising tool to reduce the land area requirements, in view of meeting the transport biofuel targets. A number of technical drawbacks, related to fuel qualities and engine performance, should however be solved before this fuel option becomes feasible in practice. A potential further enlargement of EU-25 (EU-15 plus 10 new acceding countries) with 2 candidate countries – Bulgaria and Romania, would reduce the relative land area requirements to meet the transport biofuel targets. This would be due to the larger relative biofuel crop potential of the 2 candidate countries, compared to EU-15 and the new acceding countries.

As a result of technological advances, most vehicles currently in circulation in the European Union are capable of using a low biofuel blend without any problem. The most recent technological developments make it possible to use higher percentages of biofuel in the blend. Some countries are already using biofuel blends of 10 % and higher.

The cost of biodiesel is about 0.50-0.60 €/litre, which is higher than the cost of conventional fossil diesel (about 0.40-0.45 €/litre in 2005). In order for biodiesel to become financially attractive, the Member States are allowed to make tax exemptions (see XVI.3.2).

The progress of the introduction of biofuel of most member states is described below. This progress report is based mainly on the '1st reports pursuant to Directive 2003/30/EC' by the Member States. Belgium, Italy, Luxemburg and Slovenia have not yet delivered such a report.

With less than 6 months to go until the deadline of the 2% transport biofuel objective, only 7 Member states are expected to meet this target and biodiesel for transport is not available at all in 4 member states. The progress of Luxemburg and Slovenia is unknown. An overview of the expected biofuel share by the end of 2005 for each Member State is presented in Table 1.

Table 1: Share of biofuel in the total fuel consumption for transport by the end of 2005

Member State	Biofuel Share	Member State	Biofuel Share
Austria	2.50%	Latvia	2.00%
Belgium	0.00%	Lithuania	2.00%
Cyprus	1.00%	Luxemburg	
Czech Rep	2.00%	Malta	less than 2%
Denmark	0.00%	Poland	0.50%
Estonia	0.00%	Portugal	1.00%
Finland	0.10%	Slovakia	2.00%
France	0.80%	Slovenia	
Germany	2.00%	Spain	1.00%
Greece	1.50%	Sweden	3.00%
Hungary	0.50%	The Netherlands	0.00%
Ireland	0.06%	United Kingdom	0.30%
Italy			

Some Member States that will not meet the 2% objective have explicitly chosen to do so. They argue that their domestic biomass resources or production facilities are insufficient (i.e. Cyprus, Malta), that the technical readiness of their vehicles for the use of biofuels is rated doubtful (i.e. Estonia), that the loss of tax revenue, due to the tax exemption of biofuel, is considerable (i.e. Denmark) or that the gain (in casu the reduced CO₂ emissions) is out of proportion to the costs and that it is more efficient to reduce CO₂ emissions in other ways (i.e. Denmark). Although some of these states indicate that their opinion with regards to biofuels might change in the near future, it is not probable that they will meet the 5.75% target by 2010 as they have not even started the preparations for introducing biofuel.

Other Member States (i.e. Belgium, The Netherlands) are willing to promote the use of biofuels, but are behind on schedule. These states have started the preparation of the introduction of biofuels and it may be assumed that they have every chance to meet the 5.75% target by 2010.

XVI.3.2. Restructuring the Community framework for the taxation of energy products and electricity (2003/96/EC)

The scope of this directive is to harmonise the structures of excise duties on mineral oils among the European Member States. Paragraph (26) of the directive allows Member States “to exempt or reduce excise duties so as to promote biofuels, thereby contributing to the better functioning of the internal market and affording Member States and economic operators a sufficient degree of legal certainty. Distortions of competition should be limited and the incentive of a reduction in the basic costs for producers and distributors of biofuels should be maintained through, inter alia, the adjustments by Member States taking into account changes in raw material prices.”

France and Italy are to give up their existing tax redemptions on biofuels in the near future and replace it by the new tax redemption according to this Directive.

Since the resource cost of biodiesel (0.50-0.60 €/litre) is higher than the resource cost of fossil diesel (0.40-0.45 €/litre), a tax redemption on biodiesel is required to make it a competitive alternative for diesel from fossil resources. The gap in resource cost has considerably diminished since 2003 due to increasing oil prices. If oil prices continue to increase, the motivation for the tax redemption for biofuels might become obsolete.

As for today, some Member States are reluctant to promote biofuel because of the considerable loss of tax incomes.

XVI.3.3. European vehicle standards

Car manufacturers have to meet technical requirements (EURO-norms) before vehicles are allowed on the market. These standards, specified by the European Commission, limit the maximum emission exhausts in predefined test cycles. As these standards become more severe and the penetration of cleaner vehicles in the total vehicle stock increases, air pollution from transport diminishes. This effect is partially compensated by the continuous growth of vehicle-kilometres.

XVI.3.4. CIVITAS

The CIVITAS projects have supported cities across Europe in using clean fuels and clean vehicles in their city centres (see chapter XVI.2). Among others, CIVITAS supported the use of clean stagecoaches in Winchester (EURO III or higher), the use of biodiesel and biogas and hybrid or E-vehicles. The construction of the required refuelling infrastructure was supported as well.

XVI.3.5. CUTE

The emission of pollutants and noise is one of the most important side-effects of transport in urban areas. The European Commission has awarded 18.5 million euro to nine European cities⁵ for the introduction of hydrogen and fuel cell buses, part of the CUTE project (2001-2006), funded by the 5th Framework programme's energy, environment and sustainable development programme. The participating cities demonstrate that hydrogen is an efficient and environmentally friendly power source for the future. Twenty-seven fuel-cell powered buses, running on locally produced and refilled hydrogen, prove that zero-emission public transport is possible.

This hydrogen/fuel cell bus project is the first project world-wide which addresses at the same time the production of hydrogen, the hydrogen refilling in city centres and the operational use in commercial public transport systems. These buses operate like conventional buses.

At the end of May 2005, 33 fuel cell buses operating as part of a global trial of new technology passed the milestone of 760,000 kilometres – equivalent to travelling the distance from the earth to the moon and back again. More than 3 million passengers have enjoyed a ride on the vehicles that run within the CUTE, ECTOS and STEP⁶ projects.

XVI.3.6. ECTOS

ECTOS (FP5, 2001-2005) is a consortium of leading European corporations within the area of hydrogen production and fuel distribution, vehicle manufacturing join forces to perform a real scale comparative assessment of the effect of changing the transport energy base from fossil fuel to regenerative produced hydrogen. The ECTOS-project involves research, demonstration and evaluation of hydrogen infrastructure and fuel cell buses. The research focuses on the socio-economic implications of transforming from one fuel to another, transport model research, life-cycle analysis, environmental monitoring and cost-benefit analysis. Iceland has been chosen for the project as it is possible to run a hydrogen project in a CO₂ free manner. Results and experience are channelled into other similar European projects through various dissemination activities.

⁵ Amsterdam (Netherlands), Barcelona (Spain), Hamburg (Germany), London (United Kingdom), Luxembourg, Madrid (Spain), Porto (Portugal), Stockholm (Sweden) and Stuttgart (Germany)

⁶ STEP is taking place under the auspices of the Government of Western Australia.

XVI.3.7. CLEANRCAB

Cleaning air from particulate and gaseous impurities is becoming more and more important especially in urban environments. People travelling in vehicles (buses, taxis, cars, trains, etc.) are exposed to high impurity concentrations that are often higher than under outdoor conditions, as has been shown by different studies.

Traffic, atmospheric conditions, lifestyle and anthropogenic activities debase in-vehicle air quality and may affect driver lucidity and passenger comfort and health. Poor air quality leads to fatigue, eye problems and even respiratory disorders particularly for asthmatic or ageing people. Several surveys have shown that reaction capacities of car drivers can be diminished by as much as 18% because of poor air quality and accident risks increase. The CLEANRCAB project (FP5; 2002-2005) investigates how the air quality inside vehicle cabins can be improved to increase the driver's comfort, health and performance.

XVI.4. Promotion of good urban practices

Dissemination of results is an important objective of every European project. As such, all the projects discussed before contribute to the promotion of good urban practices. There are however no initiatives whose only goal is the promotion of good urban practices, without researching, developing or experimenting new techniques, strategies or policies. As some researchers focus on the actual research, they pay less attention to the dissemination of their findings. The increased use of internet has improved the availability and quality of dissemination of Framework Research Projects over the years.

As an example, the dissemination activities of the CIVITAS projects are illustrated below, after which the upcoming 'Thematic Strategy on the Urban Environment' is discussed.

Despite the fact that only a limited number of cities get funded as demonstration cities within the CIVITAS Initiative, CIVITAS wants to remain open for other ambitious cities to participate in the CIVITAS Forum. With the beginning of CIVITAS II, more than 80 cities that are committed to clean urban transport have signed the CIVITAS Declaration.

Active participation in the CIVITAS Forum requires that a representative of the city attends CIVITAS Forum meetings and the city has a constructive and proactive approach to the distribution of information about the CIVITAS Initiative, at local and national levels. As such, dissemination at various levels is stimulated. CIVITAS also encompasses an extensive website and an electronic newsletter, both freely accessible.

The upcoming 'Thematic Strategy on the Urban Environment' is one of the key actions outlined in the Sixth Community Environment Action Programme. The Thematic Strategy is a new way of developing environmental policy for complex priority problems that require a broad approach. The Strategy will consider the environmental problems of urban areas, set objectives building on existing policies dealing with these problems and identify the proposals necessary to reach these objectives.

Four priority themes have been identified for the Thematic Strategy on the Urban Environment. They have been selected as they have a significant effect on the environment in urban areas. They are sustainable urban transport, sustainable urban management, sustainable construction and sustainable urban design.

Overall, the Thematic Strategy seeks to contribute to the improvement of the environmental efficiency of urban areas and to secure a healthy living environment for urban citizens.

The Strategy will build on existing work. There are many examples of good practice and innovative demonstration projects in each of the 4 priority themes that contribute to a better urban environment. However, whilst these islands of excellence exist, the routine, day to day practice often falls far short of these standards. One of the principle challenges then is to achieve a widespread adoption of these best practices since that will achieve a significant improvement in the quality of the urban environment. The Thematic Strategy should facilitate the change from talking about best practice to delivering it across the European Union – a change from “Local Agenda 21” to “Local Action 21”.

XVI.5. Recommendations

The European Commission does not control urban transport issues directly (due to the subsidiarity principle) therefore results of their initiatives regarding urban transport also rely on the efforts of the contributing partners (e.g. local authorities, public transport companies...). The authorities and organisations cooperating in prestigious, innovative European projects are keen to turn the projects into a success. Care should be taken when the successful measures of these projects are applied all across Europe. Some cities or urban areas might be less motivated to implement the suggested measures, decreasing the changes on a successful deployment. This can be demonstrated with the 2003/30/EC Directive on the promotion of biofuels. Some Member States are enthusiast about introducing biofuel for transport and are even ahead of the Commission’s directive. Other Member States have second opinions about promoting biofuels and are much more reluctant to meet the Directive. In order to get commitment from the local authorities, it is important for the Commission to involve them in the decision process regarding urban transport issues.

The most effective measures to reduce traffic volumes in urban areas are charging (e.g. the London Congestion Charging), access restrictions (e.g. the “Zone a Traffico Limitato” in Rome) and parking management (e.g. Winchester, Rotterdam). Although there is no technologic challenge in introducing these measures, the political challenge is considerable. The introduction of these measures can, on the short term, upset groups of citizens if their travel times (or costs) increase, or if they risk losing customers.

When introducing these measures, it is important to guarantee a good accessibility of the affected areas by public transport and slow modes. Special attention should be paid to residents and people with a reduced mobility, e.g. by granting them entry permissions or parking facilities at reduced fares.

The role of the Commission in introducing these effective measures is limited. The Commission can promote the measures and organise the platform to share knowledge and experiences on e.g. the technical implementation of the measures or on the organisation of public participation in the decision process.

Charging, access restrictions and parking management may be the most effective individual measures to reduce traffic volumes in urban areas, it is good practice to apply a coherent set of a variety of measures. These measures can include the promotion and improvement of public transport, the promotion of slow modes and improvement of their facilities or the integration of land use and transport planning.

Another way to reduce the impact of transport on urban life is the promotion of clean fuels and vehicles. This Commission has responsibility on this policy issue. Although clean fuels and vehicles are not limited to urban areas, the urban environment is where pollution from transport has its greatest impact.

Technological improvements allow fuel-efficient cars, which exhaust fewer pollutants. The European Commission determines the standards to which new cars must comply before they are allowed on the market (by means of the EURO-norms).

The emission of sulphur, hydrocarbons, CO, PM and PAH can be significantly reduced by using biofuels, which can be introduced with no or small adaptations to vehicles and the refuelling infrastructure. To reduce the emissions even more, electricity, hydrogen or fuel cells can be used as energy source for transportation, but these technologies are not ready for large scale deployment yet. The Commission plays an active role in promoting the use of biofuels by means of the EC/2003/30 and EC/2003/96 directives and supports also other alternative fuels by experiments in CIVITAS.

Much of the research on cleaner vehicles is carried out by private companies (car manufacturers) in response to emission regulations and to the consumers' wish to drive fuel-efficient (and thus cost-efficient) vehicles.

Emission-predictions (from the 'base case, partial implementation' scenario; TREMOVE) for European capitals show that there will be only small changes in CO₂ emissions from 2000 to 2010 (+1%), but significant reductions in the exhaust of PM (-19%), NO_x (-37%) and VOC (-50%). These reductions are caused mainly due to the penetration of modern vehicles (more vehicles that are conform to higher EURO-norms) in the vehicle stock.

The White Paper is surprisingly brief on cycling. Cycling generates zero-emissions and is beneficial for human health. For short distance in the urban area, cycling can be a valid alternative for the private car. The modal share of cycling trips varies among European countries from 1% to 27%. In some cities in The Netherlands, as much as 50% of the city trips are cycling. The main barriers for cycling are vulnerability in accidents, bicycle theft, increasing travel distances due to urban sprawl, perceived low status, weather and topology. To increase the share of cycling, it is important to provide high quality cycle facilities: safe, direct, coherent and comfortable. The Commission can play an active role in putting cycling on the agenda of transport policy discussions and provide support in the coordination of the many actors involved in policy planning regarding cycling issues.

Dissemination of results is an important objective of every European project. As such, all projects financed under the 5th and 6th research framework programmes are expected to disseminate their results. For example, the CIVITAS initiative is open for all ambitious cities to participate in the CIVITAS Forum. With the beginning of CIVITAS II, more than 80 cities that are committed to clean urban transport have signed the CIVITAS Declaration. Active participation is expected from the forum members to stimulate dissemination at various levels. CIVITAS also encompasses an extensive website and an electronic newsletter, both freely accessible.

The upcoming 'Thematic Strategy on the Urban Environment' will also play an important role in the dissemination of knowledge on urban transport. The Strategy will consider the environmental problems of urban areas, set objectives building on existing policies dealing with these problems and identify the proposals necessary to reach these objectives. The Strategy will build on existing work. There are many examples of good practice and innovative demonstration projects that contribute to a better urban environment. However, whilst these islands of excellence exist, the routine, day to day practice often falls far short of these standards. One of the principle challenges then is to achieve a widespread adoption of these best practices

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