EUROPEAN URBAN MOBILITY AND AIR QUALITY STUDY TOUR

17 - 27 JANUARY 2015

Report Study Tour

EU Project Promotion of Sustainable Urban Mobility in Third Countries

Commissioned by: European Commission, Directorate-General for Mobility and Transport (DG MOVE)

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1. **INTRODUCTION**

The European Commission has an on-going relationship with China inter alia on sustainable urban mobility as part of the high level EU/China Urbanisation Partnership.

Sustainable urban transport development and the improvement of urban air quality are widely acknowledged as key global challenges of the 21st century, particularly in developing countries. The Commission is actively working to improve citizens' quality of life and strengthen the economy by promoting sustainable urban mobility and the increased use of clean and energy efficient vehicles. Europe has unique and widely respected experience on sustainable urban mobility planning. The Commission wishes to share the European Union’s experience on urban mobility with stakeholders across the world. Accordingly the Directorate General for Mobility and Transport (DG MOVE) of the European Commission has contracted consultants to organise a study tour for Chinese experts under the project “Technical Support of Sustainable Urban Mobility in Third Countries (=EU partner countries)” in order to provide technical assistance to the Commission’s efforts to support sustainable mobility in China.

The study tour took place from the 18th till the 27th of January 2015. The study tour was attended by Chinese experts from the private sector, local and regional governments and universities. In total 18 delegates from 8 Chinese cities (Dandong, Guangzhou, Hangzhou, Nanjing, Nanning, Shenzhen, Tianjin, Yichang) joined the study tour to Europe.

The group consisted of **government officials** (5) in charge of or related to urban transport administration or urban construction, representatives of large **government owned companies** in design, engineering or planning (8), **private organisation or NGOs** (4) and the World Bank Tianjin city procurement company (1). The list of participants is given in appendix 1.

**Programme**

During the tour the Chinese participants received information on a broad range of topics related to sustainable urban mobility planning, through presentations and site visits. Topics covered during the study visit were:

- Urban transport planning policy and air quality
- Walking and cycling
- Collective passenger transport
- Car and bike sharing
- Integration of transport modes / Intermodality
- Mobility management
- Clean and energy-efficient vehicles
- Urban freight/city logistics
- Traffic and demand management
- Access regulation

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Six European cities were visited where the participants were welcomed by a range of public and private organisations that organised presentations and site visits demonstrating EU experience in planning for sustainable urban mobility. Experts from the European Commission, local and regional public authorities, (public) transport companies, NGOs and academics\(^2\) gave 26 presentations in total on sustainable urban mobility, focussing on:

- Success stories and best practice examples
- Presentation of main achievements and key contributing factors
- Opportunities for China – EU cooperation on Urban Mobility

The presentations are available as pdf-files and can be provided on request. All presentations were provided to the participants who used these for reporting and dissemination activities within their own organisations and among other stakeholders in China.

**The participants**

The delegates were very positive about the trip (organisation, logistics and meetings) and that the trip has provided them with significant amount of useful new insights and information. The participants had many discussions during and after the tour and promote what they have learned from this experience to more people in China, including the decision makers.

In the following chapters more detailed information is provided on the study tour program (Chapter 2) and the feedback from the participants (lessons learned and experiences from the study tour) in Chapter 3. The fourth chapter contains short summaries of the presentations and site visits.

## 2. The Study Tour Programme

The participants arrived in Europe from China on Monday 18\(^{th}\) January and left on Wednesday evening 27\(^{th}\) of January.

**Monday 18-1-2016, Amsterdam**
1. Welcome at Amsterdam Schiphol Airport (Rob Jeuring, Ecorys)
2. Introduction to the EU structure and the study tour program (Rob Jeuring, Ecorys)

**Tuesday 19-1-2016, Amsterdam**
3. Zero emission City Logistics, on site (Peter Tjalma, Bert Roozendaal, Cargohopper Amsterdam)
4. Amsterdam Transport Policy and Air Quality, Climate and Economy (Harry van Bergen, City of Amsterdam)
5. Amsterdam cycling policy: an integrated approach (Ria Hilhorst, City of Amsterdam)
6. Amsterdam Electric, on site (Carla van der Linden, City of Amsterdam)
7. Inner City Walk: Amsterdam sustainable urban transport practices (Rob Jeuring, Ecorys)

**Wednesday 20-1-2016, Amsterdam / Rotterdam**
8. AMS Institute / SmartCities (Tom Kuipers, AMS-Institute)
9. Greenwheels (Alicia Hobbel, Greenwheels)
10. Parking Company Rotterdam (Karel de Boer, city of Rotterdam)

**Thursday 21-1-2016, Rotterdam**
11. Verkeersonderneming Rotterdam (Aernout van der Bent, CEO Verkeersonderneming Rotterdam)
12. Transport and mobility policy, Rotterdam (Marten Guit, City of Rotterdam)
13. Low emission zone, Rotterdam (Frank Akkermans, City of Rotterdam)
14. H2 project, Rotterdam (Hans van Vliet, Waterstofplatform Rotterdam)

\(^2\) The list of speakers can be found in annex 2.
Friday 22-1-2016, Brussels
15. Official Welcome by DG MOVE (Magda Kopczunska, Director for Innovative and Sustainable Mobility, EU DG MOVE)
16. Introduction to Sustainable Urban Mobility Planning in Europe (Mans Lindberg, EU DG MOVE)
17. Improvement of air quality through Sustainable Urban Transport measures in Europe (Andre Zuber, EU DG Environment)
18. Roadmaps 2030 (Guy Hitchcock, Roadmaps 2030 / Ricardo)
19. Outstanding solutions for innovative and green urban mobility (Dr. Yanying Li, Ertico ITS Europe)
20. Polis, European network of cities and regions cooperating for innovative transport solutions (Karen Vancluysen, Gabriela Barrera Polis, Deputy Director)

Sunday 24-1-2016, Ghent
21. Ghent sustainable urban mobility inner city walk (Rob Jeuring, Ecorys; presentation and information provided by Wim Schuddinck & Tony Martens, City of Ghent)

Monday 25-1-2016, Lille
22. Les Transports en Commun de l’agglomération Lilloise (Cedric Bartoli, Métropole Européenne Lille)
23. Le Plan de Déplacements Urbains Lille 2010->2020, (Karine Szymanski-Pannetier, Métropole Européenne Lille)
24. Site visit Eurallille including stations Lille Europe and Lille Flandres (Métropole Européenne Lille)

Tuesday 26-1-2016, Paris
25. STIF: the organising authority for transport and mobility in Paris and Ile-de-France (Cyril Aillaud, STIF, Syndicat des transports d’Île-de-France)
26. The sustainable urban mobility plan in the Ile-de-France region (Laurence Debrincat, STIF, Syndicat des transports d’Île-de-France)

Transfers during the tour were made by coach. In total there were 26 presentations and site visits. All the power-point presentations received were sent to the participants within a few days after they had returned home, so they could directly share the information within their own organisations, prepare reports etc.

3. FEEDBACK FROM THE CHINESE PARTICIPANTS

After their return to China the participants were requested to submit feedback on the study tour. The feedback summarised by ITDP is presented in this chapter. The individual comments are listed in appendix 3.

General

The January 2015 study tour took into account the feedback provided by participants in the Sustainable Urban Mobility study tour organised by the consultants in 2014. During the second trip there was more time for the delegates to visit the sites and experience the best practices. In this way the participants got more impressions of the pedestrian zones, low emission zones, parking management, good facilities for non-motorized transport, bus rapid transit systems etc.

In China, the government realises the importance of sustainable development, and there is a focus on green and sustainable development of cities together with rural development. Restriction on car use, giving priority to buses, public transport, bicycles, and walking are national policies. Air quality control and environmental protection are key tasks at all government levels. Therefore the timing of this study tour is very good and gives the opportunity to learn from the best practices of Europe.

The delegates expressed that they were very positive about the trip (organisation, logistics and meetings) and that they had learned a great deal. The participants had many discussions during and after the tour and are now promoting the experience to more people in China, including the decision makers. Overall the participants were very positive about the trip.
Some of the ideas and conclusions learnt from the EU study tour

The topics addressed during this study trip cover many of the hot topics in China, such as electric cars, parking management, low emission zones, non-motorized transport planning, shared streets, mobility plans, and the improvement of air quality through Sustainable Urban Transport measures in Europe. All of the PP slides and thoughts were shared through Wechat, QQ and emails.

What was done upon return to China

- After returning to China, some of the delegates joined high level meetings with provincial leaders.
- Three proposals were submitted by Mrs. Shen Ying (Chief Engineer, Guangzhou Transportation Commission) to the Guandong Political Consultation meeting at the end of January 2016. The topics of the three proposals are: 1. Set up a low emission zone in Guangzhou, 2. Encourage and provide better facilities for cycling in Guangzhou, 3. Parking management and reform of the on street parking institution.
- Mr. Yang Tao (Chairman, Nanjing city Traffic Planning and Design Institute Co. Ltd., Nanjing) wrote a meeting memo everyday for the participants, which was subsequently published in a booklet. He met the Jiangsu provincial leaders after he went back to report on what he had learnt in Europe. The Jiangsu provincial leaders asked him to give a presentation about this study tour and to give a lecture in the province in order to share the information with more people.

He has just published a booklet called ‘Visit to Europe Random Notes’, which records the whole European trip experience and academic achievements of this study tour. This booklet has been dispersed to several key persons from different governments, institutes, organisations, and consultants, so the impact has reached many cities like Guangzhou, Shenzhen, Tianjin, Nanjing, Nanning, Yichang, Dandong, etc.

- The delegates from Tianjin will integrate the knowledge gained from the visit into the NMT improvement project in Tianjin this year; this project is financed by the World Bank.
- The delegates from Nanning will integrate the knowledge acquired into the BRT-project, aiming at a multi-mode integration, which will be under construction this year.
- Xiaomei Duan and the staff from ITDP-China and GMEDRI (Guangzhou Municipal Engineering Design & Research Institute) had discussions and presentations on what was learnt and what can be done in a number of cities. ITDP will promote the concept of ‘shared-streets’ and NMT improvement, together with parking management in the cities where they have BRT projects.
- The Wechat group of the study tour participants is still active in exchanging information and discussions on sustainable urban mobility.
- In the week of 26th September 2016, the Institute for Transportation and Development Policy (ITDP) will host a big Transport Summit in Yichang, China. Yichang city, as a good demonstration of a city for BRT, NMT and multimode integration and green development, just won the 2016 Sustainable Transport Award in the transportation research board meeting in Washington D.C. this January. ITDP intends to invite some of the key partners from Europe to join this summit as a direct result of the contact from this study tour.
This chapter provides an overview of the presentations given and site visits conducted during the study tour.

Monday 18-1-2016, Amsterdam
The delegation arrived and was welcomed at Schiphol airport. In the hotel Rob Jeuring gave an introduction to the European Union and Commission and the study tour program.

Tuesday 19-1-2016, Amsterdam

1. Zero Emission City Logistics, Cargohopper Amsterdam
This day started at the premises of Cargohopper, a provider of zero emission city logistic services, based just outside the low emission zone border of Amsterdam. Cargohopper is fully operational, showing that 100% Zero-emission Inner City Distribution can be a reality.

Mr. Peter Tjalma showed the Cargohopper in action in the morning when the (electric) trucks were loaded and leaving for the delivery of goods in the city. The concept of this logistics center on the edge of the inner cities was explained further as well there being a detailed presentation on the key characteristics and success factors: location (limited range of vehicles), volume (parcels and pallets), vehicles, high level IT with low level detail, sponsor, project champion, perseverance, marketing).

2. Amsterdam Transport Policy and Air Quality, Climate and Economy
Mr. Harry van Bergen (City of Amsterdam) presented the city of Amsterdam’s policy on Transport and Air Quality, Climate and Economy. The main reasons Amsterdam is putting so much effort into improving the air in the city are: health (1) and to prevent that the construction of new building projects may be delayed or even cancelled (2). The local hotspots, determined by calculation as well as well as through measurement, are all located near busy roads. The air quality in Amsterdam is improving, but EU-standards have been tightened: it is a challenge to meet the new standards for nitrogen dioxide (NO2) in 2015. The Amsterdam Air quality is surveyed yearly. Mr. van Bergen then explained the main types of measures in the action plan: (1) Local measures to tackle the local hotspots, like clean coaches on the Prins Hendrikkade (near Central Station) and a green wave (progressive signal system) on the main roads; and (2) general measures to improve the air quality throughout Amsterdam by having an Environmental Zone (LEZ) for heavy duty vehicles and for light duty vehicles and electric mobility. The city of Amsterdam intends to improve the air quality further to levels lower than the official limits. The
aim is zero emission by 2025. Measures taken by the city of Amsterdam in this respect are subsidies for high mileage corporate vehicles, privileges for clean vehicles (parking and priority for clean cabs), close cooperation with branch organisations, realisation of a public charging network of 4.000 charging points in 2018.

3. Amsterdam Cycling Policy: an integrated approach
Mrs. Ria Hilhorst (City of Amsterdam) presented the integrated and successful Amsterdam cycling policy. She explained how Amsterdam became a cycling capital: the bicycle in Amsterdam is a daily means of transport for work, school, shopping and leisure. The majority of cyclists is 18-55 years old, well-educated and belong to the higher income group. The number of bicycles is almost equal to the number of inhabitants (800,000 bicycles). In 1989 about 39% of the trips in the city were made by bike, which increased to 53% in 2012 (650,000 trips a day). Then she described the four pillars of the integrated Amsterdam’s cycling policy:

Traffic safety
- Bicycle lanes separated from other traffic
- Bridge for pedestrians and cyclists
- Designated areas for cyclists at traffic lights
- Blind spot mirror for trucks
- Countdown application on traffic lights
- Well marked and safe traffic diversions for cyclists at roadworks

Bicycle infrastructure
- 90% of the roads/streets in Amsterdam are ‘bicycle-friendly’ routes (30 km/hr)
- The city now has 600 km of bicycle lanes, protected from other traffic.
- Clearly marked routes for cyclists
- Cyclists free of charge on the ferry and in the metro

Bicycle parking
- Extension of parking capacity
- More intensive use of existing parking capacity by shortening the period of parking
- Guarded bicycle parks

Education:
- Bicycle lessons and exams for children

4. Amsterdam Electric, on site
Amsterdam now has the highest density of charging stations for electric vehicles in the world. Mrs. Carla van der Linden (policy officer for the city of Amsterdam) presented ‘Amsterdam Electric’ on site at Amsterdam Central Station.

One of the measures to stimulate the use of electric cars is to give priority to electric taxis at the main taxi stand at Amsterdam Central Station. When entering the stand, electric taxis are immediately given a position at the top of the waiting list. Therefore their waiting time before they can start their next ride is clearly limited. There is an electric charger at the taxi stand.

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5. **Amsterdam City Walk**

During a walk through the inner city, guided by Mr. Rob Jeuring (Ecorys), several relevant Amsterdam urban transport system features were shown in real life, such as a new bicycle-pedestrian tunnel under Central Station (a major and safe cycling link), a multi-level bicycle parking in front of the (Amsterdam Central station), a redesigned city entrance street with priority for walking, cycling and public transport (Roodeloper), on street parking (Rokin), electric charging point (Jodenbreestraat), and an inner city cycling/pedestrian street (Zeedijk).

**Wednesday 20-1-2016, Amsterdam / Rotterdam**

6. **AMS Institute / SmartCities**

In this institute, science, education, government, business partners and social organizations work closely together to create solutions for the complex challenges a metropolitan region like Amsterdam faces. Now and in the future. The presentation by Mr. Tom Kuipers focussed on urban mobility, including aspects of urban mobility in ‘Amsterdam Smart City’.

7. **Greenwheels**

Mrs. Alicia Hobbel (Location Manager Greenwheels) presented Greenwheels, the market leader in car sharing in the Netherlands. The fleet consists of 1648 cars in the Netherlands and 233 cars in Germany. Greenwheels is partner of the NS (Dutch railways) and is therefore also available at most railway stations. Registered users can easily search for and book a car on-line by smartphone or PC on the Greenwheels website. The car can be opened with the Greenwheels or Smartphone app and the car can be driven after the pincode has been entered.

Greenwheels cars are parked in reserved parking places, so on return there is never the problem of finding an empty parking place. Since Dutch cities have different regulations regarding parking permits this creates an extra administrative challenge.

According to a study among car sharers by the Netherlands Environmental Assessment Agency there is a 30% reduction of car ownership, 18% reduction of kilometres, 5% to 20% more use of public transport and a reduction of 230 to 320 kg CO2 per person per year.

8. **Parking Company Rotterdam**

Kees Jonkergauw (Policy Officer, City of Rotterdam) represents the organisation of on street parking regulation in Rotterdam. The presentation started with an introduction to Rotterdam and the main features of its traffic and parking policy aimed at improving accessibility and liveability (City Lounge Vision). The Rotterdam parking system consists of Park and Ride sites at the edge of the city well connected to the city centre by public transport, public and residential parking garages (off street) as well as regulated and optimal distribution of on-street parking capacity (Rotterdam has 250,000 parking places, of which 82,000 are paid parking places).

As part of the City Lounge Vision Rotterdam will remove another 1,800 on-street parking spaces in the next three years in the inner city (2,000 spaces of these 10,800 spaces have already been removed) thereby stimulating off-street parking (garages). The removed parking places can then be used for bicycle parking places, terraces, or temporary events.

The Rotterdam parking philosophy for on-street parking is: “An optimum distribution of limited public parking capacity across the various groups of users (local residents, companies and visitors)”

The main characteristics of the on-street parking system in Rotterdam are:

- Permit holders and short-stay visitors use the same on-street parking locations
- No maximum parking time (tariff dictates!)
- Demand-driven parking charges
Off-street parking in municipal garages cheaper than on-street parking
- Payment by (mobile) phone everywhere, credit card at machines at main tourist locations. Cash payment is possible in all parking garages.
- License plate parking (no tickets, only the license plate has to be registered).
- Enforcement by Scancars with licence plate recognition cameras.

Thursday 21-1-2016, Rotterdam

9. Verkeersonderneming Rotterdam
Mr. Aernout van der Bend (CEO Traffic Company) introduced the Traffic Company and its activities. The Traffic Company is a cooperative organisation between the municipality of Rotterdam, the Rotterdam City region, the Port of Rotterdam Authority, the Ministry of Infrastructure and Environment and Rijkswaterstaat (the national road authority). The Rotterdam region is one of the most congested in The Netherlands, which is why the time has come to find innovative measures. The traffic organisation works to improve the accessibility of the Rotterdam region focussing mainly on measures that promote more efficient use of the existing infrastructure (mobility management, driving behaviour, optimising logistics and infrastructure). It received the Eurocities Award 2014 for cooperation. (https://www.youtube.com/watch?v=Hx4ofw6iVTU). The targets of the Verkeersonderneming are: reliability in the logistics planning, creating more development for ITS – services, better accessibility of the region of Rotterdam, strengthening the competitive position on logistics. The main conclusion of his presentation was: cooperation is essential, it needs trust and courage.

10. Transport and Mobility Policy Rotterdam (Marten Guit, City of Rotterdam)
Martin Guit (City of Rotterdam) first presented the mobility trends in Rotterdam. Rotterdam is the second largest city in the Netherlands and one of the largest ports in the world. The municipality is home to over 600,000 Rotterdam residents with over 170 different nationalities. The larger urban zone numbers about 1,400,000 inhabitants. Rotterdam has a long tradition when it comes to sustainable urban mobility planning and the establishment of air quality policies. Over the last few years there has not been any further growth in car use. At the same time there was a growth in bicycle use and metro use. After that he focussed on the new Rotterdam Urban Mobility policy and its main objectives: ‘Rotterdam - Healthier and more Accessible’, Rotterdam city centre as a city lounge: reduced car mobility, Rotterdam as a cycling city, Rotterdam as the marketplace for mobility, innovation & collaboration, Rotterdam: Accessibility – The Driving Force Behind Spatial and Economic Development.

11. Low Emission Zone Rotterdam (Frank Akkermans, City of Rotterdam)
Mr. Frank Akkermans gives presented the Low Emission Zone (LEZ), which had recently been extended.

Since the 1<sup>st</sup> January the following cars are no longer allowed to enter the LEZ:
- Diesel trucks Euro-1, 2 and 3.
- Diesel vans and passenger cars made before 2011.
- Petrol and IPG vans and passenger car made before 1992.

The LEZ contributes to the improvement of the air quality. 50% of PM emission is caused by inner city traffic. Within the city there are several streets where the air quality norms are exceeded. Rotterdam has set a target to decrease the PM concentration caused by traffic (on average 0,75 µg/m³) by 40% by 2018 compared to 2014 and to green their own car fleet (in 2018, 25% less emission).

The clean air measures of the city of Rotterdam to achieve this goal are:
- Expansion of the environmental zone valid for passenger cars, vans and trucks
- Continuation of the subsidy and demolition scheme
- Green Deal Zero Emission 010 city logistics
More charging points for E-logistics  
Greening of the municipal fleet (trucks, buses and ships)  
The Rotterdam mobility agenda (see point 10)  
Stimulating innovation and behavioural change

12. H2 project Rotterdam (Hans van Vliet, Waterstofplatform Rotterdam)
Mr. Hans van Vliet presents the H2 platform. The City of Rotterdam is an ideal starting location for the H2 platform: it has a substantial production of H2, knowledge and experience (industry, education research); there is a need (air quality, sustainability) and many potential applications (buses, garbage trucks etc.). After the presentation Mr. Jaap Oldenziel (Air Liquide) showed and explained the first hydrogen refuelling station on site.

Friday 22-1-2016, Brussels

13. Official Welcome by DG MOVE
Mrs. Magda Kopczynska (Director for Innovative and Sustainable Mobility, DG MOVE) officially welcomed the delegation on behalf of the Commission. She emphasised the good co-operation on urban mobility so far and in particular the EU/China Urbanisation Partnership. She reminded everyone that the “Horizon 2020” program creates possibilities for cooperation also for Chinese partners. The importance of managing urban mobility in order to deliver economically and environmentally sustainable cities, especially in a rapidly urbanising country like China, was also underlined, before going on to wish the delegation a fruitful continuation to the study tour.

14. Introduction to Sustainable Urban Mobility Planning in Europe
Mr. Mans Lindberg (Policy Officer Urban Mobility, DG MOVE) presented the European Sustainable Urban Mobility Planning policies and its background: Transport and mobility are vital functions for European cities - enabling economic growth, access to jobs and competitiveness. At the same time many urban areas suffer from severe congestion as well as issues related to, climate change, air quality, noise and traffic safety. He focussed on the EU transport challenges, the EU policy goals and actions on urban mobility: knowledge and best practice exchange (Eltis), research and demonstration projects (Civilas), awareness raising (Mobility Week, EU award schemes) and stressed the opportunities for cooperation between Chinese and European organisations within EU funded programmes like Horizon 2020.

15. Improvement of Air Quality through Sustainable Urban Transport Measures in Europe (Andre Zuber, EU DG Environment)
Mr. Andre Zuber (Policy Officer, DG Environment) gave a presentation on the improvement of air quality in cities through the reduction of transport emissions. Air quality and emissions are subject to international and national observation and action. At the EU level AQ and global emissions are regulated by: treaty, strategies, legislation and guidance / Emission caps: National Emission Ceilings Directive (DIR

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2001/81/EC) / Local air quality limits: Air Quality Directive (DIR 2008/50/EC) and source legislation (EURO standards). Major global emission reductions were achieved from 1990 onwards. Yet major non compliance still exists: in many European cities there is still a violation of WHO air quality standards which causes serious health risks. An important measure will be the implementation of rules for road vehicle Real World Emissions from 2017.

The main conclusions are:
- Urban air quality depends on several sources inside and outside the cities;
- Air emissions have declined significantly in the EU, but urban air quality improvements are not significant so far;
- Most large cities still have problems with achieving the current EU standards;
- All source categories would have to reduce emissions to meet EU standards and long term health objectives;
- Transport/mobility measures and effective EURO standards are key to achieving clean urban air quality, particularly in hotspots;
- Management and technical solutions exist to reach sustainable transport solutions and clean air:
  - promoting clean urban public transport, including cycling,
  - clean vehicles, and associated infrastructure,
  - environmental zoning, e.g. restriction of older vehicles.

16. **Roadmaps 2030 (Guy Hitchcock, Roadmaps 2030 / Ricardo EE)**

Mr Guy Hitchcock (Ricardo EE) presented the European supported project Roadmaps 2030. This project, launched by DG Move, aims to:
- Catalyse action on developing sustainable urban mobility across Europe
- Ensure that the urban transport objectives as stated in the 2011 Transport White Paper can be realised
- Facilitate practical action through the development and dissemination of a robust, easy-to-use policy support tool

The objectives of the online tool are to:
- Support small and medium sized cities which have fewer resources for modelling
- Be simple and easy to use with limited data input and with no need for significant transport modelling experience
- Provide quantified outputs for a range of transport, environmental and economic impacts
- Provide a web-based, easily accessible tool
- Help a range of city policy makers to explore and scope initial policy packages (roadmaps) to meet sustainability objectives
- Facilitate discussion and engagement between key city departments with a common tool

He then explained the 6 steps needed to go from policy measures to roadmaps: analyse the current situation (1), establish the vision (objectives) (2), identify policy measures (3), group policy measures in consistent strategies (4), specify the pathway and timelines to proceed towards scenario goals (5), assess the outcomes (6).

17. **Outstanding solutions for innovative and green urban mobility**

Mrs. Yanying Li (Ertico ITS Europe) gave a presentation on intelligent transport solutions (ITS), the ERTICO-ITS Europe partnership and the cooperation with China. She showed several innovative IT solutions from the Viajeo PLUS project Top10 Urban Mobility Solutions, Beijing e-tricycle for last-mile delivery of goods, electric and hybrid buses in Hamburg to flexible cycling facilities in Sao Paulo.

She then presented the main lines of the way forward: Autonomous Driving (a new type of public transport also addressing the challenges of an aging society); big data and sharing economy, electric vehicles and Mobility As a Service (MaaS) i.e. the digital era of transport.
18. **Polis**

Mrs. Karen Vancluysen and Mrs. Gabriela Barrera (Polis) presented Polis, their core activities and projects. Polis is a European network of cities and regions cooperating on innovative transport solutions. Currently Polis has around 65 member cities and regions. The core activities are:

- Networking: exchange between members, dialogue with other actors, workshops/seminars/conferences, thematic workgroups (Mobility and Traffic Efficiency, Safety and Security, Environment and Health, Social and Economic aspects)
- Policy: the voice of cities and regions in European transport policy, position papers and policy, documents, representation of cities in international fora
- Research and innovation projects: research projects with demonstration component, pilot projects, exchange of experience and good practice, campaigns and awareness raising, cooperation with other cities and regions.

The Polis Global Platform aims to foster cooperation between European cities and their counterparts all over the world. Associate membership is now open to local and regional authorities beyond Europe. Polis is involved in the EU supported Solutions project, aimed at the deployment and transfer of innovative sustainable urban transport solutions. The speakers then presented the current priorities of Polis and related projects / activities regarding air quality, procurement/implementation, innovative solutions, planning & incentives, electro mobility focus, and input to relevant EC policies.

**Sunday 24-1-2016, Ghent**

19. **Ghent sustainable urban mobility inner city walk**

Sunday saw a visit to the City of Ghent. Ghent is Belgium’s third largest city with about 247,000 inhabitants in an area of 156.18 km². Over the past couple of years, Ghent has become much more attractive after the city made considerable efforts to curb the use of private cars, calm traffic in the city centre and improve bicycle mobility. Wim Schuddinck and Tony Martens from the City of Ghent could not join this Sunday visit, but provided information about the Ghent mobility plan and a related proposal for a city walk beforehand at forehand. Rob Jeuring (Ecorys) presented the main aspects of the Ghent mobility plan and guided the tour. The main objective of the plan is (1) to achieve a reduction in car traffic, (2) create more space for cyclists and pedestrians, (3) create free lanes for public transport and (4) build a pleasant city to live in, work and visit. The main measures in the mobility plan are: no through-traffic in the city centre (a), parking exemptions for inhabitants, deliveries, professional reasons (b), parking in underground car parks (c) a parking-route around the centre (d), a dynamic traffic and parking guidance system, and (e) an integrated bicycle policy.

During the city walk the main elements of the presentation were shown in life.

Mr. Cedric Bartoli gave a presentation on the transport and mobility background of the Lille agglomeration. The agglomeration has about 1 million inhabitants 40% of which live in the 4 main villages, namely Lille, Roubaix, Tourcoing, Villeneuve d’Ascq. MEL is the authority responsible for all modes of urban transport, urban logistics, urban roads, public transport and local planning (urban planning, housing, travel). First he gave an overview of urban and transport development in the last 150 years. Then he presented two large realised projects la Val (a driverless metro system, made up of 2 lines that serve 60 stations), La billetique (integrated ticketing system) and Le V’lille (bike sharing system). The presentation ended with a discussion on some of the big decisions to be made on transport supply, public procurement, transport infrastructure and the PDU (Sustainable Urban Mobility Plan), which will define the main principles of organization for the transport of passengers and goods, traffic and parking, and mobility management, as well as the interaction between planning and travel over the next 10 years.

21. Le Plan de Déplacements Urbains Lille 2010->2020, (Karine Szymanski-Pannetier, Métropole Européenne Lille):

Mrs. Karine Szymanski-Pannetier gave a presentation on the PDU (comparable with a SUMP) of Lille, adopted in 2011. In France it is mandatory to have a PDU i.e. a framework document in the format required by law for cities over 100,000 inhabitants. It has a long-term vision and an operational horizon of 10 years. It must handle mandatory topics like the reduction in car traffic, development of sustainable transport, marketing etc. An environmental impact assessment, as well as stakeholder consultation, are part of PDU preparation. The main objectives of the Lille PDU are to:

- ensure accessibility for all
- improve health and safety conditions
- reduce car ownership
- implement a coherent parking policy
- develop good quality alternative transport options
- improve accessibility to the Lille Metropole

These general objectives are translated into quantified targets that by 2020 there will be a reduction in the emission of pollutants and greenhouse gases, a change of modal split towards more walking (31%->35%), cycling (2%-10%), public transport use (10%->20%) and less car use (56%->35%). Then she presented the integrated PDU package of directions/measures adopted to reach these targets on parking, cycling, logistics, communication and marketing etc.

22. Site visit Euralille

Mr. Cedric Bartoli then guided the participants after lunch through Euralille, including the stations Lille Europe and Lille Flandres. Euralille is an impressive and very good example of successful integrated land use and public transport node development.
23. STIF (Syndicat des transports d’Île-de-France).
The last day the group was hosted by STIF, the transport and mobility authority in Paris and Ile-de-France.

Mr. Jean-Christophe Monnet welcomed the delegation, introduced STIF and presented the main characteristics of the region (11.9 million inhabitants, almost 20% of the French population, 6 million jobs, the world’s most visited tourist destination, 47 million foreign tourists p.a. and more than 41 million trips everyday, of which > 20% are by public transport).
The Île de France region has several administrative layers (1 Regional Council, 7 ‘Départements’ (counties), 83 inter-municipalities, 1,280 municipalities).

Mr. Cyril Aillaud then gave a presentation on the STIF organisation. The main missions of STIF are:

- definition and organisation of public transport services (road, light rail, heavy rail), fare policy, service levels for each network and service quality objectives
- contractual relations with network operators and control of their activity
- mobility planning
- and STIF can play a role
  - in car sharing, bike sharing, carpooling,…
  - studies and monitoring of the investments to upgrade and extend the network
  - recommendations on intermodality issues
  - ensuring a sustainable financial balance

Mr. Cyril Aillaud also elaborated on the public transport network (rail, bus and metro, all with a steady increase in the number of passengers in previous years), the governance of STIF, the Île de France public financing structure, STIF expenses and revenues.

24. The sustainable urban mobility plan in the Île-de-France region

Mrs. Laurence Debrincat (STIF, Syndicat des transports d’Île-de-France) described the PDU (SUMP) that covers the whole Île de France region. The main objective of the PDU is to ensure a sustainable balance between individual mobility needs of the population and goods and the preservation of the environment, health and quality of life. It focusses on reducing motorized traffic, developing public transport, cycling and walking, organizing parking provision and organising freight transport and goods delivery in order to reduce the impact on road traffic and the environment. In the PDU for Île the France ambitious mobility shift targets have been calculated in order to achieve a decrease in greenhouse gas emissions by all modes of transport by 20% before 2020. This is a very ambitious target given the context of an expected increase in mobility of + 7% due to the urban development of the region. The mobility shift targets for 2010-2020 are public transport (+20%), walking/cycling (+10%), cars (-2%).

To achieve these targets 9 challenges and 34 measures have been defined. The 9 challenges are:

1. Enabling cities to promote walking, cycling and public transport
2. Making public transport more appealing
3. Developing walking in the mobility chain
4. Developing cycling as a mode of transport
5. Acting on the conditions of use of individual motorized modes
6. Achieving accessibility for all in the whole mobility chain
7. Working towards a better organization of freight
8. Creating a governance system able to ensure implementation
9. Making inhabitants responsible for their trip decisions

Detailed content for each measure was described. Responsibility for the different areas for action were identified and some explanation was provided on cost estimations and the time schedule for implementation. It was explained how the responsibility for the implementation (public transport excluded) is shared by many actors. The regional council is not responsible for the implementation, but it is a key stakeholder regarding financing especially for public transport, cycling, road safety, and the delivery of goods.
APPENDICES

1. Chinese participants
2. European experts / presenters
3. Feedback from the Chinese participants
## APPENDIX 1. CHINESE PARTICIPANTS

<table>
<thead>
<tr>
<th>No</th>
<th>Given Name</th>
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<th>Position (EN)</th>
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<tr>
<td>1</td>
<td>YONGQIAO</td>
<td>SUI</td>
<td>Vice Director</td>
<td>Dandong Transportation Bureau</td>
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<td>Government</td>
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<td>2</td>
<td>YANG</td>
<td>LI</td>
<td>Planner</td>
<td>Guangzhou Municipal Engineering Design &amp; Research Institute</td>
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<td>3</td>
<td>WEI</td>
<td>DAI</td>
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<td>YING</td>
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<td>5</td>
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<td>6</td>
<td>WENXUAN</td>
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<td>9</td>
<td>TAO</td>
<td>YANG</td>
<td>President</td>
<td>Nanjing Institute of City &amp; Transport Planning Co., ltd.</td>
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<td>10</td>
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<td>13</td>
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<td>16</td>
<td>XIAOMEI</td>
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<td>17</td>
<td>JINGLU</td>
<td>ZHU</td>
<td>Urban Development Planner</td>
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<tr>
<td>18</td>
<td>SHUANGJIAN</td>
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<td>NMT Engineer</td>
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<td>Private sector</td>
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</table>
### APPENDIX 2. EXPERT PRESENTERS AND STUDY TOUR ORGANISATION

#### Expert Presenters

<table>
<thead>
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#### Study Tour Organisation

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APPENDIX 3. INDIVIDUAL FEEDBACK FROM PARTICIPANTS

Sui Yongqiao: Vice Director, Transport Department, Dandong
He was very impressed by the successful cycling policies in Amsterdam. All countries and cities concentrate on improving the air quality, making the transportation more accessible, healthy and sustainable.

There are three main points:

1. Encourage cycling,
2. Control and reduce the use of private vehicles,
3. Develop public transportation.
Both methods and measures applied in these cities or countries have a positive effect on Chinese city design, planning and policy making.

Yang Tao: Chairman, Nanjing City Traffic Planning and the Design Institute Co. Ltd., Nanjing

Mr. Yang wrote the meeting memo everyday for the delegation. He will publish this. He iwa extremely impressed by the low emission zones in Amsterdam, Rotterdam and other cities visited. The detailed timeline and clear policies make it possible for low emission zones to be achieved. Through government, organization and authorities’ efforts, many ideas, new techniques and pilot projects are put forward and subsequently put into use.

In addition, parking policies are another useful and important part of city design and planning. In Rotterdam, car sharing was introduced by Greenwheels and the detailed policies were presented as well. Reducing the on street parking, using "P+R" parking, and encouraging public transportation are some of the major ways of dealing with the parking problem. Similarly, charging different fees and serious monitoring help to solve the parking problem as well.

A mobility plan was mentioned in many cities during this program. Prof. Yang gave his own ideas on this and his ideas are listed below:

1. The target of planning should focus on improving air quality, making cities more accessible, liveable and healthy
2. The establishing of a bicycle city, thereby making a no emission city
3. Transportation sharing mode
4. Zero emission freight transportation
5. Clean energy and electric vehicles
6. Traffic management and control based on low or no emission zones.
7. Parking management and road space, with revised priority
One other city which really impressed Prof. Yang was Lille. The updating of Lille is fantastic and amazing. The new rail station and its integration with the transportation system is excellent and many other cities and countries could learn from it. In addition, the way that public space is designed in Lille is yet another great example that can be shown to other regions all over the world.

All in all, new ideas, new technology and new measures learnt in Europe could be a useful example for city designers and government officers in China. Prof. Yang believes that we could do a lot more during the process of city planning in China in the future.

Shen Ying: Chief Engineer, Guangzhou Transportation Commission, Guangzhou

Shen Ying wrote three proposals for Guangdong Provincial Political Consultation Commission meeting, which was held at the end of January 2016.

(1): Low emission zone/Zero emission zone in Guangzhou

The air quality problem now is quite an important issue as it affects people’s health and it is becoming even worse. What’s more, traffic pollution contributes significantly to this problem, especially NO2 and PM2.5 in China.
Because of this major issue, experience gained in European countries could be a good example to solve the air quality problem. Among all these measures, creating a low/zero emission zone is a good way. In Berlin, Rotterdam and Amsterdam, low emission zones are scoped so that the historical or inner civic centre’s may be well protected.

In Guangzhou, similar measures could be used as there are some similar historical streets and zones in the old inner city. Using clean energy, electric vehicles, public transportation and a cargo distribution centre are some of the promising ways to achieve such a low emission zone.

(2): Parking management

In the 21st century, car parking is becoming more and more of a social problem. Many cities all over the world regard parking as one of their most challenging problems. More and more private vehicles go into the city, however, there are not enough spaces provided. On street parking used to be a measure to solve this problem. However, fewer public spaces cause other issues. In this way parking management should be addressed instead of only providing more parking lots or garages, especially in cities in China.

In Shen’s opinion, there are two ways to improve parking management:

1. To reform the current meter management mode, to achieve unified management
2. Periodic assessment and appropriate measures to reduce the number of roads and parking spaces in the central area, restoring bike paths.
3. Increase the input in science and technology, and price regulation

(3): A Complete Cycle Lane Network in Guangzhou

Cycling used to be a very common way to get around in the 1980s in Guangzhou. However, in the last twenty years, more and more vehicles have entered the city. The number of bicycles decreased significantly. At the same time, many urban problems including traffic jams, air quality and noise pollution grew. Improving the bicycle system and optimizing the city structure, to prevent and alleviate congestion, reduce air pollution and energy consumption is an important way to improve the urban living environment, promote sustainable development; completion of the cycle lane network to develop the bike system is an important prerequisite.

In order to encourage people to use bicycles, a green, low-carbon and environmentally friendly way of getting about, it is necessary to speed up the completion of the cycle lane network in Guangzhou. This will provide continuous, convenient, comfortable and safe cycling environment.

In addition, as a result of the successful experience in Amsterdam, Rotterdam and Paris, Ms. Shen has three of her own ideas to improve Guangzhou’s cycle lane network:

1. Proposal and clear NMT road right distribution.
2. A step by step plan
3. Detailed planning for the implementation

Zhu Jinglu: Urban Development Planner, ITDP-China, Guangzhou

1. ITDP has been working on NMT projects as part of the urban transport and planning improvement. The “transit-mall” is one of the preferred methods in some cases. During the walking tour, especially in Amsterdam and Gent, many streets designed as semi-transit-mall were seen; these could be implemented easily in some of the more complicated situations in China.
2. The city/town centres in Amsterdam, Rotterdam, Brussels, Lille, for example, are well designed with pedestrian zones. These help to create a better environment for pedestrians, stores, and NMT users. This multi-win idea can be used in some current crowded commercial areas.
3. The TVM system in Paris is well constructed and managed, but the access connecting Choisy le roi bus station and the train station lacks clear information guidance and a good structure, like a covered walkway, which makes the transfer between different forms of transportation difficult.
4. As regards urban design, making space is frequently used in many hubs on different levels, like Rotterdam Central Station, Ghent Market Hall, etc., all of which help to create more iconic areas. Detailed landscaping design and structure setting can be used as a reference in some plazas or small park designs.
Li Yunbo: Engineer, Guangzhou Municipal Engineering Design and Research Institute, Guangzhou

Cities in Europe have very good experience and examples that can be applied by Chinese cities during the process of city transportation development, transportation planning and management as well as the consideration of and research on air quality.

Actually, after the industrial revolution and the enjoyment of the convenience of the car, European cities also face a series of problems such as worsening traffic congestion and air quality. In recent years, governments from the European Union, have begun to focus on sustainable transport and the solution to environmental problems, and have subsequently achieved certain results. Problems also began to appear in our country’s cities, such as worsening traffic jams and air quality, but research has mostly focused on car and how to ease traffic congestion.

It is possible to learn from European urban development and improve the construction of a people-oriented city, from pedestrians’ right of way, bicycles, bus space, reducing the dependence on oil from the energy mix, and making the city more liveable and vibrant.

Li Yang: Urban Planner, Guangzhou Urban Planning Institute, Guangzhou

Amsterdam has redesigned many of the streets to slow down the traffic and make way for pedestrians and cyclists. Besides this, it has implemented differentiated charging in parking zones and bollards to keep the vehicles out of the high activity centers. This is beneficial in encouraging non-motorised transport development and cutting down on car traffic in the city center. The implementation of LEZ has also helped to keep high emission vehicles out of the city and reduce traffic congestion and air pollution. I am very impressed with Amsterdam’s change from a car-occupied city to a bike friendly city since the 1970s, which was the result of the transformation of the mindset, policies, standards, street and public space designs and master plans. As China is facing serious problems with traffic congestion and air pollution, the experience of Amsterdam in promoting non-motorised transport is essential for Chinese cities to learn from.

The second most inspiring city during this trip was Lille. The idea of building a new international high-speed railway station at the edge of the historic city center so as to trigger urban regeneration was very visionary. The master plan that integrated the old (Flanders) and new (Europe) railway station and local public transport network (metro, tram and bus) with mixed-use developments of retail, business, residential, entertainment and green space so as to make the urban regeneration happen was also very extraordinary. The project has created many new homes, job opportunities and activities. Now the metropolis of Lille has not only become the largest city region in France, but also acts as the crossroads of west Europe. In 2011, Lille adopted a new SUMP for 2020. The SUMP aims to make Lille a more sustainable city by increasing the mode share of walking, cycling and public transport and decreasing the mode share of cars.

All in all, this study tour in Europe has been very fruitful. The experience of these cities can be examples to lead the shift in urban development in China. To promote these best practices, we should start by changing the mindset of the policy makers at both national and local levels, and choose the potential cities to implement the changes. The implementation can start at city level, including master planning and relevant policies.

Yang Shuangjian: Planner, ITDP-China, Guangzhou

We started our trip in Amsterdam to study the city’s policy on electric mobility, Low Emission Zone (LEZ), cycling, parking and as a smart city. Then we went to Rotterdam to learn the city’s parking, urban planning and LEZ policies, mobility as a service programme, and the application of electric car-sharing and H2 refuelling. The third city that we went to was Brussels, where we had a meeting with Directorate-General for Mobility and Transport (DG Move) and Directorate-General for Environment of the European Commission (EC) on Sustainable Urban Mobility Planning (SUMP) and how to improve air quality through sustainable urban transport measures in the EU. We also had meetings with the consultants and associations on sustainable mobility and intelligent transport systems. The fourth city that we went to was Ghent, where we had a site visit to see how it restricts vehicle use in the historic centre. The next day, we had a lecture in Lille to learn about urban development, transport and the SUMP (or PDU in French) of the city, and then took a site visit to the Euralille area to see the integration of transit and land development, and how this could act as a catalyst for urban regeneration in Lille. Our final stop was Paris. We attended the lecture by STIF to learn how urban transport and mobility is organized and developed in a megacity region like Paris and Ile-de-France.
Of all the cities we visited, I was most impressed by Amsterdam. The city is known as the capital of cycling and is one of the most sustainable cities in the world. In Amsterdam, almost everyone has a bike and 90% of its streets are “bike-friendly” (car speed < 30km/h). The integrated design and easy connection of different modes of transport at the Amsterdam central railway station is also very inspiring. The signs for transfer are very clear even for the travellers and the walking distance for transfer is short. What makes it very different from most of the traffic hubs in the world is the huge bike parking flat adjacent to the station, so people can park their bikes and transfer to the trains very easily. The metro system is also bike-friendly in that people are allowed to take their bikes on board. The design of the station entrance is also bike oriented – with a step free escalator, people are more likely to use the “bike+ride” mode of travelling.