

# TeMA

Journal of  
Land Use, Mobility and Environment

There are a number of different future-city visions being developed around the world at the moment: one of them is Smart Cities: ICT and big data availability may contribute to better understand and plan the city, improving efficiency, equity and quality of life. But these visions of utopia need an urgent reality check: this is one of the future challenges that Smart Cities have to face.

Tema is the Journal of Land use, Mobility and Environment and offers papers with a unified approach to planning and mobility. TeMA Journal has also received the Sparc Europe Seal of Open Access Journals released by Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Directory of Open Access Journals (DOAJ).



CITIES, ENERGY AND MOBILITY

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Journal of  
Land Use, Mobility and Environment

## CITIES, ENERGY AND MOBILITY

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TeMA. Journal of Land Use, Mobility and Environment offers researches, applications and contributions with a unified approach to planning and mobility and publishes original inter-disciplinary papers on the interaction of transport, land use and environment. Domains include: engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science and complex systems.

The Italian *National Agency for the Evaluation of Universities and Research Institutes* (ANVUR) classified TeMA as scientific journal in the Area 08. TeMA has also received the *Sparc Europe Seal for Open Access Journals* released by *Scholarly Publishing and Academic Resources Coalition* (SPARC Europe) and the *Directory of Open Access Journals* (DOAJ). TeMA is published under a Creative Commons Attribution 3.0 License and is blind peer reviewed at least by two referees selected among high-profile scientists. TeMA has been published since 2007 and is indexed in the main bibliographical databases and it is present in the catalogues of hundreds of academic and research libraries worldwide.

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# TeMA

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## REVIEW PAGES

### CITIES, ENERGY AND MOBILITY

Starting from the relationship between urban planning and mobility management, TeMA has gradually expanded the view of the covered topics, always remaining in the groove of rigorous scientific in-depth analysis. During the last two years a particular attention has been paid on the Smart Cities theme and on the different meanings that come with it. The last section of the journal is formed by the Review Pages. They have different aims: to inform on the problems, trends and evolutionary processes; to investigate on the paths by highlighting the advanced relationships among apparently distant disciplinary fields; to explore the interaction's areas, experiences and potential applications; to underline interactions, disciplinary developments but also, if present, defeats and setbacks. Inside the journal the Review Pages have the task of stimulating as much as possible the circulation of ideas and the discovery of new points of view. For this reason the section is founded on a series of basic's references, required for the identification of new and more advanced interactions. These references are the research, the planning acts, the actions and the applications, analysed and investigated both for their ability to give a systematic response to questions concerning the urban and territorial planning, and for their attention to aspects such as the environmental sustainability and the innovation in the practices. For this purpose the Review Pages are formed by five sections (Web Resources; Books; Laws; Urban Practices; News and Events), each of which examines a specific aspect of the broader information storage of interest for TeMA.

#### 01\_WEB RESOURCES

The web report offers the readers web pages which are directly connected with the issue theme.

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#### 02\_BOOKS

The books review suggests brand new publications related with the theme of the journal number.

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#### 03\_LAWS

The law section proposes a critical synthesis of the normative aspect of the issue theme.

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#### 04\_URBAN PRACTICES

Urban practices describes the most innovative application in practice of the journal theme.

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#### 05\_NEWS & EVENTS

News and events section keeps the readers up-to-date on congresses, events and exhibition related to the journal theme.

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有关土地使用、交通和环境的杂志

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## 评述页

### 城市、能源与移动性

TeMA从城市规划和流动性管理之间的关系入手，将涉及的论题逐步展开，并始终保持科学严谨的态度进行深入分析。在过去两年中，智能城市课题和随之而来的不同含义一直受到特别关注。学报的最后部分是评述页 这些评述页具有不同的目的：表明问题、趋势和演进过程；通过突出貌似不相关的学科领域之间的深度关系对途径进行调查；探索交互作用的领域、经验和潜在应用；强调交互作用、学科发展、同时还包括失败和挫折（如果存在的话）。评述页在学报中的任务是，尽可能地促进观点的不断传播并激发新视角。因此，该部分主要是一些基本参考文献，这些是鉴别新的和更加深入的交互作用所必需的。这些参考文献包括研究、规划法规、行动和应用，它们均已经过分析和探讨，能够对与城市和国土规划有关的问题作出有系统的响应，同时还对诸如环境可持续性和在实践中创新等方面有所注重。因此，评述页由五个部分组成（网络资源、书籍、法律、城市实务、新闻和事件），每个部分负责核查TeMA所关心的海量信息存储的一个具体方面。

#### 01\_WEB RESOURCES

The web report offers the readers web pages which are directly connected with the issue theme.

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## REVIEW PAGES: WEB RESOURCES

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In this number

SUSTAINABLE MOBILITY POLICIES IN EUROPE AND ITALY:  
REVIEW, RESOURCES AND TOOLS

In the last decades, sustainable mobility policies at urban scale have gradually seen an increasing interest by the European Commission as they represent some of the key strategies for 'sustainable cities' (Colucci, 2012). The first policy proposals, the "Citizens' Network", date back to 1995 and 1998. They resulted in the launch of a series of initiatives based upon a "best practice" approach. In 2001 Transport White Paper "European transport policy for 2010: time to decide" suggested 60 specific measures to be taken at EU level in the transport sector. In 2005, in order to reduce the energetic and environmental impact of transport, the European Commission adopted the Green Paper "Towards a new culture for urban mobility" whose key issues are: free-flowing and greener towns and cities, smarter mobility and urban transport which is accessible, safe and secure for all European citizens. In 2009, the European Commission adopted the Action Plan on urban mobility. In 2011, Transport White Paper "Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system", had a vision for the future of European transport until 2050. It recommended profound changes in the strategic planning and proposed a series of objectives and concrete measures that focused on transport integration. Moreover, a European Commission study on mobility plans, which were implemented in Europe, places Italy among the countries with a well-established transport planning with its regulatory support and availability of guidelines (Orchi, Valentini 2014). In Italy the Law 340/2000 (art. 22) introduced the PUM (Plan for Urban Mobility) as a long term (10 years), systemic and integrated planning instrument for managing mobility in urban areas. This law did not become immediately operational for lack of both necessary funds and the inadequate definition of the approval procedures for plans. This law and the national guidelines, issued in 2005, promote sustainable approaches aimed at reducing levels of congestion, pollutant and noise emissions and energy consumption. In addition, they promote other more general issues like safety, accessibility and the use of sustainable modes of transport, focusing on land use-transport integration. Such scientific and regulatory efforts in the field of urban mobility appear to assume an increasing emphasis. They underline the need to limit the environmental impacts of transport systems and to encourage sustainable mobility policies.

In this number we present three important web resources: the first one, the Transport Research and Innovation Portal, gives an overview of research activities at European and national level; the second one, Bump mobility, provides city planners, environmental and technical officers in local authorities, with the knowledge and skills to plan and manage sustainable mobility; the last one, Eltis portal, facilitates the exchange of information, knowledge and experiences in the field of sustainable urban mobility in Europe.



TRIP | Transport Research and Innovation Portal  
<http://www.transport-research.info/>

The main objectives that lie at the basis of the development of the Transport Research and Innovation Portal (TRIP) are twofold. The first objective is to improve access to knowledge in the European Research Area and beyond through the appropriate dissemination and promotion of the transport research results. The second objective is to reinforce the link between transport research and transport policy through the provision of accurate, timely and complete information on key deliverables of transport research projects.

Once in the homepage, users can choose to give an overview to research activities at European and national level by clicking on the left navbar. *Country profiles* provide a summary on the organization of transport research in the European Research Area countries: 28 Member States of the European Union and Iceland, Norway and Switzerland. This section includes also overviews for some additional countries like USA, Brazil, etc. At European level, the most important research programme is the Seventh Framework Programme (FP7) which is a multidisciplinary programme devoted to responding to the challenges of making transport more sustainable over the seven-year period (2007–2013). FP7 will be followed by Horizon 2020 which is to run from 2014 to 2020. It is part of the drive to create new growth and jobs in Europe and it has three key objectives: excellent science, competitive industries and better society. Within the institutional framework of transport research, users can find some quick links to founding sources and support initiatives. By clicking one of the countries listed in Country profiles section, you can get information about the related government strategy for research and innovation in the field of transports and about the organizations responsible for the institutional framework and funding. The *Programme* and *Project* sections contain detailed information on national, European and international programmes and projects respectively. TRIP database for projects and programmes can be accessed by selecting the transport theme, the funding origin or the partner. Project information is provided on three levels: *Short profile* includes information on origin and funding of the project, thematic transport themes and available contact point; *Profile* in addition to the above includes background, objectives and methodology; *Results* provide information on key project outputs and final reports that can also be downloaded. In the *Publications* section the series of Policy Brochures and Thematic Research Summaries provide a broader overview of the research conducted at European level and its input into the policy-making process. *Compendium* presents an overview of transport research and funding organizations in the European Research Area. It is available in a digital mapping environment in which relevant organizations involved in transport research and funding are presented on the map of Europe. The *Research Summaries* are focused on transport themes, like “Climate policy and energy efficiency”, “Multimodal transport”, “Environmental impacts”, etc. The *Policy brochures* contained in this section focus on the sustainability of the European transport system and can be downloaded. The themes are smart and competitive railway system, smart and sustainable logistics, employment in transport sector, etc. For each Policy Brochure some videos are regularly released by TRIP. The videos highlight the key elements of the related publication. The *Events* section encloses calendar of high-level international transport conferences whilst the *Newsroom* section contains news of the latest in transport research, policies and innovation, including monthly e-Newsletters. Totally, TRIP showcases over 7300 projects and their associated documents and more than 300 national, European and international transport research programmes. Research and business communities can identify research needs and business solutions; source ideas and partners for new transport research and demonstration projects; use the website to spread knowledge about your own project results. Public service providers can implement innovative solutions and share and find out about good practices in Europe. Investors and technology brokers can source investment opportunities.



## BOOSTING URBAN MOBILITY PLANS <http://www.bump-mobility.eu/>

BUMP provides city planners, environmental and technical officers in local authorities, with the knowledge and skills to plan and manage sustainable mobility in urban and peri-urban areas. Moreover, BUMP supports the most committed towns and cities to produce their own Sustainable Urban Mobility Plans.

In BUMP homepage banner, users can rapidly access to the four steps to make urban mobility more sustainable: learn, share, develop and raise. In *Learn* section, users can find a common training programme that can be delivered through six modules on the SUMP process. By clicking on the links provided it is possible to download the 'Integrated support package for the production of Sustainable Urban Mobility Plans (SUMPs)' leading the reader through the training program and providing details on individual issues and a full set of training materials. All training services were provided free of charge to the local authorities selected as beneficiaries through a public call. Local authorities then appointed their representatives as participants in project activities among their planners, environmental and technical officers.

*Share* section introduces the second step, which consists in the mutual learning stage. In this stage, participants can share expertise and viewpoints on mobility planning and management issues through a series of interactive activities (world-café and role-play sessions) aimed at fostering exchanges among participants coming from different countries. From this section, reader can also download the "Report on mutual learning activities".

In *Develop* section, readers can get information about the development stage of the SUMP. This stage includes professional help and advice from a team of experts appointed to meet the authorities' specific needs and requirements. *Raise* section inform about the opportunity to visit the best-performing towns and cities (the 'BUMP Pioneers') where the BUMP approach has been fully implemented and put into practice, leading to remarkable results in terms of sustainable urban mobility plans and realizations. In this section, people who is interested in can insert their contact to keep themselves updated.

In addition, BUMP home page contains a clear and effective summary that lists the reasons why to adopt a Sustainable Urban Mobility Plan. Another way to navigate the BUMP website is to select one of the sections listed in the upper web bar. *About BUMP* section includes short information about objectives, methodology and partners. In *Resources* section users will find all the useful documents being produced during the project. They will also find the best selection of relevant external links that can help them go deeper in detail on freshly updated contents related to urban mobility and available on the net. They are Eltis portal, SUMP Portal, CIVITAS, CH4ALLENGE, ETC. This section is constantly enriched and updated. In the end, *News* section contains the latest news about the project.

BUMP website represents an important reference to support local authorities in the development of Sustainable Urban Mobility Plans for cities with a population ranging from 40.000 to 350.000 inhabitants. The project targets senior officers and directors within local authorities, allowing them to acquire the necessary skills to develop their SUMPs. The results of the project show that 36 new SUMPs have been produced during the project's lifetime (and another 60 by 2020); 180 directors/high-ranking officers and technicians from 90 cities in the 40-350.000 inhabitants range have been trained during the project' s lifetime (and another 200 trained by 2020); 50 new cities have joint the CIVITAS Forum Network during the project's lifetime; 2.000 municipalities in the 40-350.000 inhabitants range have been informed about project activities during the project's lifetime.



ELTIS - THE URBAN MOBILITY OBSERVATORY  
<http://www.eltis.org/>

Eltis facilitates the exchange of information, knowledge and experiences in the field of sustainable urban mobility in Europe. It is aimed at individuals working in transport as well as in related disciplines, including urban and regional development, health, energy and environmental sciences. Created more than 10 years ago, Eltis is now Europe's main observatory on urban mobility. It is financed by the European Union under the Intelligent Energy - Europe (IEE) programme. Eltis homepage lets readers choose among key themes: *DISCOVER*, *RESOURCES* and *PARTICIPATE*. Through them Eltis provides the information, good practices, tools and communication channels needed to help you turn your cities into models of sustainable urban mobility. The dedicated *MOBILITY PLANS* section offers a hub of information on how to develop and implement Sustainable Urban Mobility Plans (SUMPs) as the need for more sustainable and integrated planning processes in Europe grows. Within *DISCOVER* section: *News* offers a regular round-up of local, regional and European news related to sustainable urban mobility; *Case studies* presents and analyses successful local examples of sustainable urban mobility initiatives and strategies; *Facts & figures* provides a range of statistical data on sustainable urban mobility topics; *Topics* outlines the key sustainable urban mobility related subjects covered on Eltis; *EU legislation & policies* contains important legislation and policy developments on sustainable urban mobility. The section *RESOURCES* supports users to act and promote sustainable forms of mobility in their region or city. It consists of six subsections: *Tools* contains guides, handbooks and reports to support and inform urban mobility professionals in their work; *Photos* hosts a gallery of images you can use to promote urban mobility; *Videos* features outstanding examples of sustainable urban mobility approaches; *Training materials* presents training and educational materials produced in the sustainable urban mobility fields; *EU funding* brings together the current EU funding streams and programmes that are accessible for local governments; *Press & promo* contains Eltis and Mobility Plans platform promotional materials (such as logos, templates) as well as materials from events and seminars. Moreover, Eltis website, in *PARTICIPATE* section, allows readers to share examples of best practice and discuss new and innovative ideas on sustainable urban mobility. As a registered *Friend of Eltis* you can submit content and comment on your colleagues' ideas and initiatives and read more about the benefits of becoming a member; *Events* presents a calendar of important conferences, meetings, workshops and networking sessions; *Job* offers is a noticeboard of current sustainable urban mobility related employment opportunities; on the *Forum*, users can discuss all matters related to sustainable urban mobility.

Eltis website is very engaging and informative.

## REFERENCES

- Colucci, A. (2012). Towards resilient cities. Comparing approaches/strategies. *Tema. Journal Of Land Use, Mobility And Environment*, 5(2), 101-116. doi:<http://dx.doi.org/10.6092/1970-9870/921>
- Orchi, S., & Valentini, M. P. (2014). Il ruolo strategico dei Piani Urbani della Mobilità Sostenibile in Europa e in Italia. *Energia, Ambiente e Innovazione*, 2-3/2014. doi: 10.12910/EAI2014-60.

## IMAGE SOURCES

The images are from: <http://www.greenstart.it/>; <http://www.transport-research.info/>; <http://www.bump-mobility.eu/>; <http://www.eltis.org/>

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CITIES, ENERGY AND MOBILITY  
REVIEW PAGES: BOOKS

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In this number  
FROM SMART CITY  
TO SMART MOBILITY

Urbanization is accelerating at pace, placing new, intense pressures on city resources and infrastructure. Urban Mobility will be one of the toughest challenges for cities around the globe. In many cities, existing mobility systems are already inadequate, yet urbanization and increasing populations will increase demand still further. Cities have traditionally sought to solve such challenges by adding new capacity to match demand. However, a capacity-building approach alone is neither efficient nor sustainable.

Mobility underpins everything we do as individuals, as communities, as regional, national and international economies. People need to move around to secure basic human needs, but mobility is also a luxury, contributing to quality of life by enabling exploration, leisure and recreation. In the city, high quality mobility is a necessity for the success of other urban sectors and the creation of jobs, and plays a key role in cultivating an attractive environment for residents and business. The demand for mobility is growing around the world. People expect safer, easier, healthier and more pleasant solutions. These demands are especially strong in cities, where demographic pressure is causing the main economic, social and environmental challenges of the future to converge.

In a rapidly changing world, mobility is key to sustainable development. Increasing economic, ecological and social aspirations of citizens worldwide, changing consumption and production patterns, and limited natural resources are driving innovation in the transport sector. Transport services and infrastructure are no longer seen as simple means of moving people and goods, but mobility and logistics are increasingly perceived as key agents of change.

Technology has been fundamental to transport throughout human history, but recent rapid advances in information technology promise to transform transport management in ways that would have been inconceivable until recently. Just as information and communication technologies are crucial for sustainable development, so can their use accelerate the “greening” of transportation.

According to these short considerations, this section proposes three documents that help to better understand the issue of this number: The policy brochure Smart and Sustainable Logistics for a Competitive Europe; Urban Mobility in the Smart City Age; 50 BIG IDEAS - Shaping the Future of Electric Mobility.



**Title: Smart and Sustainable Logistics for a Competitive Europe**

Author/editor: European Commission

Publisher: European Union

Download: <http://www.transport-research.info>

Publication year: 2015

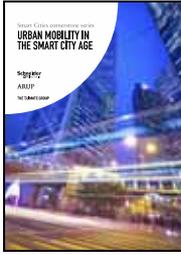
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This policy brochure presents an overview of current and future policy on smart and sustainable logistics and EU-funded research to support development and implementation of this policy. Additional information on transport research programmes and related projects is available on the transport research and innovation portal website at <http://www.transport-research.info>.

Logistics is central to the EU economy, contributing to economic growth and playing a key role in international competitiveness. With the predicted growth in freight transport, the challenge is to raise the efficiency and competitiveness of the logistics sector and to reduce the sector's environmental impacts. Europe is currently a leader in logistics, with six EU Member States in the global top 10 in logistics performance in 2014 (World Bank, 2014). With the steady growth in freight volumes throughout Europe, the long-term forecast is 80% growth in freight transport by 2050.

In the last two decades, transport-related greenhouse gas emissions have increased substantially, one third of these emissions is attributed to freight transport. With increasing growth in freight transport, EU policy is to improve freight logistics while simultaneously minimising the negative impacts of this growth. The policy focus is to reduce the heavy dependence on fossil fuels (EC, 2011). Constant high levels of CO<sub>2</sub> emissions threaten the EU target of 60% reduction in greenhouse gas emissions in the transport sector by 2050 with respect to the 1990 level (EC, 2012). Currently, 74% of Europe's population lives in urban areas, and the percentage is expected to increase (UN World Urbanization Prospects, 2011). As a result, high density urban areas are increasingly confronted with the impacts of freight logistics in the form of congestion, noise hindrance and air pollution. The urban environment also presents a special challenge for logistics companies. The last mile of the logistic chain, which accounts for a large proportion of shipment costs and complexity of operations, is often the most inefficient. Thus, distribution and logistics from production sites to distribution warehouses and to customers in urban areas need to be improved. Logistics in urban areas can be improved by implementing new organisational concepts in combination with innovative vehicles. For example, electric vehicles that are particularly quiet are highly suitable for night deliveries to reduce road congestion during rush hours. A priority goal in EU transport policy is to improve the efficiency and to reduce the environmental impact of freight logistics. In support of this policy, research priorities include development and launch of smart logistics concepts especially in urban areas, using advanced information and communication technologies, and promoting eco-innovation in freight transport. Goods delivery accounts for a significant proportion of traffic in urban areas and contributes disproportionately to congestion, air pollution, and carbon emissions. EU policy and research are dedicated to developing efficient freight delivery concepts to reduce congestion and to lower emissions. Research focuses on the introduction of clean freight vehicles and innovative logistics concepts for urban areas.

EU-funded research has developed new approaches to urban freight logistics that contribute to strategies to safeguard the 'liveability' of cities. These approaches include improving vehicle load capacity, raising the efficiency of transshipment operations, and integrating delivery operations in city traffic management. These solutions have been validated in business cases and pilot studies with stakeholders including large and small companies, city authorities and transport authorities. The EU is providing implementation support through research projects and the CIVITAS initiative, which tests and evaluates measures to stimulate efficiency in urban transport logistics.



**Title: Urban Mobility in the Smart City Age**

Author/editor: Arup, The Climate Group and Schneider Electric

Publisher: CHENGDU 2014 GLOBAL SUMMIT

Download: <http://digital.arup.com/wp-content/uploads/2014/06/Urban-Mobility.pdf>

Publication year: 2014

ISBN code: n.d.

This publication explores how we will move from a reactive approach to mobility services, to a proactive model that anticipates future change and takes advantage of new opportunities. The aim is to provide city and mobility decision-makers with reflections and guidance on developing and adopting sustainable strategies that meet current and evolving challenges.

This publication is articulate in six different chapters: The challenge of Urban Mobility; The promise of Smart Mobility; The structure of Smart Mobility; Smart Mobility and the Role of Data; Bringing the value chain to Life; Mobility: A corner stone of the Smart, Sustainable City.

This chapter establishes the challenge of urban mobility in today's cities. It sets out why mobility is such an important element of the urban sphere, and identifies the drivers which define the need for a new approach to mobility.

The first chapter explores the potential for smart mobility to meet the actual challenges. It explains how smart mobility can lead to more efficient use of transport infrastructure, and alter the way people use transport services by offering them with more and better information.

The second chapter describes some of the services that arise from a smart mobility system, and the advantages that these products can create for travelers, transport operators, urban planners and city governments. Also, this chapter considers the toolkit for building a smart mobility system, which enables the creation of smart services.

The third chapter describes the technology foundations of smart mobility solutions, and introduced the concept of data as the raw material for new mobility services. This chapter describes how smart mobility services are made, focusing on the role of data and how data is used and services are created through an information value chain that brings together stakeholders from across different sectors and verticals. This will help city government, transport operators and industry understand how they need to start thinking about data and operational technologies when commissioning new services—either infrastructure like control centers, or transport modes such as new bus contracts to allow additional economic and social value to be created.

The fourth chapter defines how the new mobility services, building on operational technology and data, are starting to address problems related to peak hour travel demand, while also offering the potential to make cities more livable and successful. Delivering the benefits of these services to a wide range of actors requires multiple data streams from multiple data sources and technologies. This requires an ecosystem approach, in which commercial, organizational, social and technical components are aligned.

This paper shows the potential benefits for the mobility sector. But cities are made up of a complex web of overlapping systems, of which Mobility is just one. Energy, Water, Public Services, Buildings & Homes, and Information and Communication Technologies to name but a few are all part of the essential fabric of cities.

This report has considered the opportunities available for cities to improve the operational efficiency and traveller experience of their mobility systems, while generating new economic value. Smart technologies offer incredible potential for sustainable mobility. However, the key messages of this report can also be applied to the other urban sectors.



Title: *50 BIG IDEAS - Shaping the Future of Electric Mobility*

Author/editor: Urban Foresight

Publisher: Urban Foresight

Download: [http://www.cleanenergyministerial.org/Portals/2/pdfs/EVI\\_2014\\_EV-City-Casebook.pdf](http://www.cleanenergyministerial.org/Portals/2/pdfs/EVI_2014_EV-City-Casebook.pdf)

Publication year: 2014

ISSN code: n.d.

Cities, businesses, and governments around the world have recognized electric vehicles as an essential part of a smarter and more sustainable future. The multiple environmental, economic, and energy system benefits offered by electric vehicles and hybrid have shaped a broad consensus on why this transformation is essential. The goal of this casebook is twofold to demonstrate the significance of what has been achieved to date and to show how innovative solutions can create new opportunities for electric mobility in the future. Experience suggests that it is unlikely that a single breakthrough or policy intervention will bring about this transformation, but rather a combination of different measures.

This is the second edition of the electric vehicle city casebook explores these future-facing questions. It proles 50 examples of transformative policies, projects, technologies, and business models that have been implemented in 23 countries across six continents. The 50 Big Ideas presented in this casebook are by no means an exhaustive list of factors that will contribute to this change. However, they do highlight areas of considerable promise for the future of electric mobility.

The impact of each of the Big Ideas has been evaluated against six dimensions to explain its expected contribution to advancing Electric Vehicle adoption and realizing the associated benefits that this will bring:

- RELATIVE ADVANTAGE - Does it give electric vehicle's a distinct advantage over internal combustion engine (ICE) vehicles?
- EASE OF USE - Does it make electric vehicle's more convenient and enjoyable to use?
- VEHICLE PERFORMANCE - Does it enhance the design, construction, and performance of electric vehicles?
- AWARENESS - Does it help people to better understand electric vehicle's?
- ENVIRONMENTAL - Does it provide direct environmental benefits?
- ENERGY SYSTEM - Does it enhance the management and operation of energy systems?

For each Big idea is indicated the degree to which will has a direct impact on each of the six dimensions.

## REFERENCES

European Commission (2011): White Paper, Roadmap to a Single European Transport Area, Towards a competitive and resource efficient transport system, COM(2011) 144 final, Brussels.

European Commission (2012): SPEECH/12/230 27/03/2012, Siim Kallas – Using freight to help European transport move to a sustainable future, [http://europa.eu/rapid/press-release\\_SPEECH-12-230\\_en.htm](http://europa.eu/rapid/press-release_SPEECH-12-230_en.htm), Brussels.

Las Casas, G., Lombardo, S., Murgante, B., Pontrandolfi, P., & Scorza, F. (2014). Open Data for Territorial Specialization Assessment Territorial Specialization in Attracting Local Development Funds: an Assessment. Procedure Based on Open Data and Open Tools. *Tema. Journal Of Land Use, Mobility And Environment*. doi:<http://dx.doi.org/10.6092/1970-9870/2557>

World Bank (2014): Logistics Performance Index: Connecting to Compete 2014, [http://lpi.worldbank.org/sites/default/les/LPI\\_Report\\_2014.pdf](http://lpi.worldbank.org/sites/default/les/LPI_Report_2014.pdf).

United Nations (2011): World Urbanization Prospects: the 2011 Revision, New York.



In this issue

## REGULATORY FRAMEWORK TOWARDS A MORE SUSTAINABLE URBAN MOBILITY

Urban areas face today the challenge of developing more sustainable transport systems in order to support both their economic competitiveness and environmental health. Indeed, the shift towards a more ecological mobility may considerably reduce greenhouse gas emissions as well as pollution and congestion, having positive consequences to address the issues related to climate change.

By sustainable mobility we mean the mobility model that enables movement with minimal environmental impact while at the same time addressing social interests, in other words, a model whose means of transport consume the least energy and produce less pollution as well as respond to health problems, foster social cohesion and consider a priority the needs of *wick people* (Tiboni, Rossetti, 2012).

In the last decade a great number of measures have been promoted all over the world to improve the sustainability of mobility systems and, in particular, the European Union has played a significant role at international level coming up with various initiatives to make urban transport throughout Europe more efficient and effective. Specifically, this issue analyzes:

- the European Action Plan on Urban Mobility, adopted by the European Commission in 2009;
- the 2010/40/EU Directive on the framework for the development of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport, adopted by the European Commission in 2010.

The Action Plan proposes several actions to help local, regional and national authorities in addressing specific issues related to urban mobility in a coordinated way; it promotes the exchange of best practices amongst the member states and provides funding in order to support the implementations of innovative policies.

On the other hand, the 2010/40/EU Directive aims at accelerating the coordinated deployment and use of Intelligent Transport Systems in road transport across Europe, identifying four priority areas in which work should be further pursued and six priority actions to be promoted.

In order to have a wider framework of the commitments towards the development of a more sustainable mobility system at international level, the last document described in this issue is the new Mexico City's Mobility Law, adopted in 2014 with the goal of promoting public transport, cycling and walking in one of the largest cities in the world. The three documents provide a diverse perspective of the various measures developed to catalyze sustainable transport worldwide.



## COM (2009) 490: EUROPEAN ACTION PLAN ON URBAN MOBILITY

The growth of cities and the irreversible consequences of climate change make it necessary to ensure an efficient transport network among European cities as well as within urban areas, where most transport starts and ends. Improvement in transport systems may indeed lead to a significant reduction in congestion, which means less greenhouse gas emissions, pollution and noise and, at the same time, may foster territorial competitiveness ensuring higher level of economic development.

In this framework, and based on the consultations following the presentation of the Green Paper in 2008, one year later the European Parliament drawn the Action Plan of urban mobility up. This Plan “sets out a coherent framework for EU initiatives in the area of urban mobility while respecting the principle of subsidiarity”. The aim of the document is give support to policy makers and local administrators both financially and operatively, by providing funding and examples of short and medium term practical actions to be activated within the different geographic contexts.

The plan proposes twenty actions structured in the following six themes:

- *promoting integrated policies* – integrated planning affords insights into the interconnections between the various transport, environmental, urban and industrial sectors, ensuring a wider approach which is more suitable for the complexity of the urban space;
- *focusing on citizens* – the efficiency and attractiveness of urban transport system depend on its reliability, accessibility and safety and for this reason UE wants to improve travel information, accessibility for passengers with reduce mobility and support the spread of a new ecological culture for urban mobility, through different communication tools such as awareness-raising campaign;
- *greening urban transport* – the promotion of environmentally friendly strategies focused on the diffusion of lower and zero emission vehicles represents a key factor for the success of the Action Plan, which confirms the EU financial support for research and demonstration projects related to “green” technologies, vehicles and infrastructures;
- *strengthening funding* – the Commission is aware of the grower need for investments in order to improve urban mobility and for this reason it strengthens EU existing funding sources like the Structural and Cohesion Funds, the sub-program STEER and the CIVITAS initiative;
- *sharing experience and knowledge* – exchange of information is fundamental for achieving the ambitious goals of sustainable urban mobility strategies, so the UE encourages the national and international share of best practices and projects developed by virtuous cities. Moreover, the Commission is committed to improving data collection in order to address the lack of statistics about transport and mobility;
- *optimizing urban mobility* – the optimization of urban mobility involves various aspects, for example improving modal shift towards more sustainable modes of transport, facilitating urban freight transport, or encouraging the application of Intelligent Transport Systems (ITS) within the European context.

Each theme represents a specific line of strategy the UE wants to develop for the promotion of a more environmental friendly urban mobility throughout the Continent and up to now several initiatives have been implemented to achieve the previously mentioned goal. The contribution of the UE is of particular importance because authorities and policy makers need support, both economically and operationally, for the development of efficient and innovative solutions.



## DIRECTIVE 2010/40/EU ON THE FRAMEWORK FOR THE DEPLOYMENT OF INTELLIGENT TRANSPORT SYSTEMS IN THE FIELD OF ROAD TRANSPORT AND FOR INTERFACES WITH OTHER MODES OF TRANSPORT

In 2008 the European Commission adopted the Action Plan for the Deployment of Intelligent Transport Systems (ITS) in Europe in order to accelerate the implementation of ITS in road transport. In presenting the ITS Action Plan, the Commission also proposed a Directive, which has been formally adopted in 2010.

The 2010/40 EU Directive establishes a framework for the promotion of the coordinated and coherent deployment and use of Intelligent Transport Systems within the European Union.

Specifically, “Intelligent Support Systems means systems in which information and communication technologies are applied in the field of road transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport (art. 4). The application of these innovative technologies to the road transport sector represents a crucial step towards energy saving, better environmental performance and the reduction of congestion of road infrastructure.

The main goal of this Directive is to ensure a coordinated implementation of these tools within Europe as a whole, giving priority to the following four main areas of ITS deployment (art. 2):

- optimal use of road, traffic and travel data;
- continuity of traffic and freight management ITS services;
- ITS road safety and security applications;
- linking the vehicle with the transport infrastructure.

For each priority areas, the Directive identifies a number of priority actions (art. 3):

- the provision of EU-wide multimodal travel information services;
- the provision of EU-wide real-time traffic information services;
- data and procedures for the provision, where possible, of road safety related minimum universal traffic information free of charge to users;
- the harmonized provision for an interoperable EU-wide eCall;
- the provision of information services for safe and secure parking places for trucks and commercial vehicles;
- the provision of reservation services for safe and secure parking places for trucks and commercial vehicles.

Since the adoption of the ITS Action Plan first and of the 2010/40 Directive later, most member states show active engagement at some level, as described in the Report on the implementation of Directive 2010/40/EU released by the European Commission in 2014, which offers an overview of the twenty-seven national reports provided by the member states in 2011, as requested by art. 17(1) of Directive 2010/40.

The report highlights that numerous initiatives have been developed by the member states in order to promote the application of ITS, responding both to end users' needs as well as operator tasks. Most member states have focused their investments into the first priority area of ITS deployment – the optimal use of road, traffic and travel data – while very little attention has been devoted to the fourth priority areas by now. However, overall, European states are demonstrating a strong interest to promote ITS application throughout Europe.



## MEXICO CITY'S MOBILITY LAW – LEY DE MOVILIDAD

Mexico City, with an estimated population of nine millions in 2014, is part of the most populous metropolitan area in the Western Hemisphere, with over twenty million people. When we think of virtuous examples of sustainable transport in cities, we immediately think of European cities such as Amsterdam and Copenhagen, or highly dense realities such as Singapore or Hong Kong. Nevertheless, this list should also include the capital of Mexico, which has made significant efforts in improving the sustainability of its mobility in the last decade by developing new metro lines and limiting the use of private vehicles. Various measures have been implemented to shift focus towards citizens instead of cars: the Metrobus rapid transit system (BRT) has been created, together with the ECOBICI public bike-sharing system and several downtown areas have been pedestrianized. In addition to these considerable strides, the new Mobility Law has made greater improvement in promoting walking, bicycling and public transport with the ambitious goal of turning Mexico City into an example of sustainable mobility.

Among the most important innovations introduced by the new Mobility Law are (OECD, 2015):

- the introduction of mobility as a right – “Mobility is the right of each individual and of society to move freely and access goods through the different modes recognized in this law”;
- the prioritization of road space and financial resources according to a new user hierarchy, which places pedestrians at the top, followed by cyclists;
- the enactment of explicit sustainability principles to guide policy.

Furthermore, the new Mobility Law aims at the creation of a “regulatory body” for transportation operators, so to eliminate the existent fragmentation of the system; this new body would also be responsible for the promotion of a more efficient, safer and inclusive public transport service.

Resilience represents an additional aspect considered by the Mobility Law that, indeed, emphasizes the importance for the city's mobility system to be able to quickly adapt to extreme weather events that are becoming more and more widespread.

Mexico City's commitment for the development of a more sustainable mobility system proves that also enormous urban conurbations can reduce their contribution to climate change and become positive examples of sustainability.

### REFERENCES

OECD (2015). *OECD Territorial Reviews: Valle de México, Mexico*. OECD Publishing, Paris. Doi:<http://dx.doi.org/10.1787/9789264245174-en>.

Tiboni, M., & Rossetti, S. (2012). L'utente debole quale misura dell'attrattività urbana. *Tema. Journal Of Land Use, Mobility And Environment*, 5(3), 91-102. doi:<http://dx.doi.org/10.6092/1970-9870/1200>

### IMAGE SOURCES

Fig. 1: <https://eu-smartcities.eu>

Fig. 2: [https://en.wikipedia.org/wiki/Environmental\\_impact\\_of\\_transport](https://en.wikipedia.org/wiki/Environmental_impact_of_transport)

Fig. 3: [https://en.wikipedia.org/wiki/Intelligent\\_transportation\\_system](https://en.wikipedia.org/wiki/Intelligent_transportation_system)

Fig. 4: [https://en.wikipedia.org/wiki/Trolleybuses\\_in\\_Mexico\\_City](https://en.wikipedia.org/wiki/Trolleybuses_in_Mexico_City)

## REVIEW PAGES: URBAN PRACTICES

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In this number  
**SUSTAINABLE CITY LOGISTICS:  
 TWO CASE-STUDIES**

According to the United Nations Population Fund, in 2009 the proportion of the global population living in urban settings exceeded 50% for the first time in history, with an estimated 3.4 billion people living in urban areas, more than the entire global population in 1960. This trend is expected to continue, with urban areas absorbing all of the expected population growth over the next four decades (UNFPA, 2014).

Due to their large populations and extensive commercial and industrial establishments, urban areas required large amounts of goods and service for commercial and domestic use. The growing importance of urban freight transport is related to increase in urban population and continued economic growth in urban areas. This results in increasing level of demand for freight transport services. Urban freight transport and logistics covers all activities involved in the transport of goods in a city. It involves the delivery and collection of goods and provision of services in town and cities. It also includes activities such as good storages and inventory management, waste handling, office and households removals and home delivery services (Nuzzolo et al., 2013).

Freight transport constitutes a major enabling factor for most economic and social activities taking place in urban areas. In particular, an efficient freight transport system plays a significant role in the competitiveness of an urban areas and represents an important element for the local economy regarding the employment and income that it generates (Russo & Comi, 2010). However, it is a major contributor to environmental impacts, particular to local air pollution, congestion and noise and, as a result, it has an important impact on public health and quality of life. Indeed, as confirmed by several empirical studies, urban freight vehicles account for 6–18% of total urban travel (Figliozzi, 2010), for 19% of energy use and 21% of CO<sub>2</sub> emissions (Schoemaker et al., 2006). As a result, environmental sustainability has become a critical issue in the context of urban freight in the last two decades and many cities around the world have implemented measures to mitigate the negative effects of freight transportation.

In the next sections, two relevant case studies of sustainable city logistic solutions are illustrated:

- The Cityporto of Padova (Italy);
- The Elcidis Urban Consolidation Center of La Rochelle (France);

The analysis presented in the next sections illustrate how an integrated approach to urban logistics can help solve complicated and difficult problems and pave the way to a more sustainable urban freight transport by combining modern technology factors within conventional urban planning tools.



## PADOVA

Padova is an Italian medium city (about 250,000 inhabitants) that has a historical city centre recently classified as Human Patrimony by the UNESCO. The main urban transport problems in Padova are traffic congestion and noise, low air quality and large commercial road traffic into the city centre. Like other medium Italian cities, the municipality has defined a restricted access zone (ZTL) to deal with this congestion. For most freight transport vehicles, the access hours to the ZTL are from 10:00 to 12:00 only in working days. Out of these periods, only the residents and authorised categories of vehicles are allowed to enter. An electronic tag identification system has been adopted to increase the access control at the gates of the zone.

In 2004, Cityporto, an innovative city logistics system, was established in Padova's periphery. The Cityporto, proposed by Interporto di Padova S.p.A., the real state and management company related to the intermodal platform, aims to enhance the delivery flows of goods as well as to improve the quality of the city life (Gonzalez-Feliu & Morana, 2010). The project is the result of more than 18 months of an experience that involved the Municipality of Padova, the Interporto di Padova S.P.A., the Province, the local Chamber of Commerce and the transport operators.

The model, laying on the basis of an urban consolidation centre, is extremely simple: logistics operators, above all carriers, deliver their goods to the logistics platform where eco-friendly low impact methane and electric vehicles are loaded. Then these vehicles distribute the goods to the city centre, the so-called "last mile" in the transport chain. The low impact vehicles used to distribute the goods to the city centre have free access to the restricted traffic zone, preferential lanes and are able to park inside the limited traffic zones at any time of the day. The service is dedicated to the subcontracted and direct goods hauliers who work in the city, and will be extended shortly to perishable goods delivery. The tariffs of the service are contracted with each customer, in base of the quantity of freight to be delivered.

A key element of this project is the use of ITC. Indeed, as a support to tactical and operational planning, a strong information system has been developed. The system allows to track in real time the vehicle fleet position, using automatic vehicle location (AVL) web-based tracking system. This allows management to meet customer needs more efficiently. Vehicle location information can also be used to verify that legal requirements are being met.

The logistic platform aims to reduce the negative effects of goods distributions by improving the efficiency of the supply chain. A study of the CLAS Group for the Italian Ministry of Environment pointed out a reduction of the length of the delivery trips and of the total amount of kilometres covered by freight vehicles and related emission. In particular, over a 24 months period, the study has pointed out a reduction of 561,400 km (1,216 km/day on average), a reduction of 58,200 litres of gas consumption (due to less freight transport vehicles circulating) and a reduction of pollutants (51.4 Kg of PM10). Furthermore, in the period 2003 - 2009 (i.e. before and after the opening of the Cityporto) there was a reduction of approximately 67 % of greenhouse gas emissions.

Cityporto of Padova is one of the few experiences of this kind successfully operating in Italy. The model has been taken as an example by many other Italian towns (e.g. Modena, Albano Terme and Como), and every year it is studied by numerous foreign delegations. The Cityporto plan provides a robust economic argument for timely and preventative measures for energy and CO2 emission saving in urban good distribution.



## LA ROCHELLE

La Rochelle is a medium city (about 80,014 inhabitants) and one of the most important French seaport. It has been the first European city which organized an electric car-sharing system in the city centre and the first French city which organized a public bike rental system. Despite a strong political support for an environmentally approach to transport planning, the city has experienced an increase in traffic congestion and noise over the last twenty years (SUGAR, 2011).

In 2001, the Communauté d'Agglomération de La Rochelle initiated an urban consolidation centre (UCC) in La Rochelle. The objective of the project was to optimise goods distribution in the city's historical centre with an environmentally friendly approach. In particular, the project aims to improve economic and environmental performance of the goods distribution by reducing the number of trips and by maximizing the loading rates of vehicles and the usage of low-pollution urban freight transportation vehicles.

As for the case of the Cityporto, the project lays on the basis of a simple scheme: the transport operators or the self-transporting stakeholders deliver their goods to the urban consolidation centre, located by the train station and next to the historic centre, where they are temporary stored. From this site, low-emission vehicles depart for the distribution of goods in the city centre. In particular, deliveries from the urban consolidation centre are made using nine electric vehicles of which two are equipped with dedicated temperature control for the delivery of perishables. Beside this service, the UCC also offers other auxiliary services with electric vehicles. The manager, Transports Genty, is a private company founded by a competitive tender.

The project is the result of a long process of participation that involved important stakeholders in the process at a very early stage. The success of the La Rochelle UCC is in the first place due to the shared sense of urgency of all stakeholders involved in the process. The good participation is presumably also due to the funds provided by the municipality. Indeed, subsidies are provided by the local government for the infrastructure and a fixed amount per package.

The platform was designed not only to promote delivery using electric vehicles, but also to relieve traffic congestion in the centre by reorganising deliveries. To that end, a new traffic regulation was passed. According to this regulation, heavy freight-delivery vehicles (i.e. GVW exceeding 3,5t) are allowed to deliver within the perimeter only between 6:00 and 7:30 a.m. The time-window management of the municipality encourages transport companies to drop of their goods at the urban consolidation centre.

Today the UCC of La Rochelle serves 1300 businesses and around 30% of the deliveries to the city centre are handled by the urban consolidation centre. This is approximately 450 parcels/day and between 5 and 10 pallets per day. Delivery from the urban consolidation centre to the inner city costs 3.75 euro/parcel. According to a report from the SUGAR project (SUGAR, 2011) the Elcidis Urban Consolidation Centre has brought significant environmental benefits. In particular, the use of electric vehicles has brought a huge benefits regarding exhaust gas emissions, noise emissions and CO<sub>2</sub> emissions (61% saving). The UCC is successful according to most stakeholders and there are 61% less vehicle kilometres with conventional trucks in the city centre (Patier, 2006). Carriers can avoid wasting time in delivering in the city centre and retailers and residents appreciate better traffic and parking conditions and noticed the general improvement of their local environment (SUGAR, 2011).

## REFERENCES

- Figliozi, M. A. (2010). The impacts of congestion on commercial vehicle tour characteristics and costs. *Transportation research part E: logistics and transportation review*, 46(4), 496-506. doi:10.1016/j.tre.2009.04.005.
- Gonzalez-Feliu, J., & Morana, J. (2010). Are city logistics solutions sustainable? The Cityporto case. *TeMA. Journal of Land Use Mobility and Environment*, 3(2), 55-64. doi:http://dx.doi.org/10.6092/1970-9870/167.
- Nuzzolo, A., Coppola, P., & Comi, A. (2013). Freight transport modeling: review and future challenges. *International Journal of Transport Economics*, 40(2), 151-181.
- Patier, D. (2006). New concept and organization for the last mile: The French experiments and their results. In E. Taniguchi, and R. G. Thompson (Eds.), *Recent advances in city logistics, proceedings of the 4th international conference on city logistics* (pp. 361-374). Amsterdam: Elsevier.
- Russo, F., & Comi, A. (2010). A classification of city logistics measures and connected impacts. *Procedia-Social and Behavioral Sciences*, 2(3), 6355-6365. doi:10.1016/j.sbspro.2010.04.044.
- Schoemaker, J., Allen, J., Huschebek, M., & Monigl, J. (2006). *Quantification Of Urban Freight Transport Effects*. Available at: [www.bestufs.ne](http://www.bestufs.ne). Last accessed October, 2015.
- SUGAR - Sustainable Urban Goods Logistics Achieved by Regional and Local Policies (2011). *City Logistics Best Practices. A Handbook for Authorities*. Available at: <http://www.sugarlogistics.eu/pliki/handbook.pdf>
- UNFPA United Nations Population Fund (2014). *State of World Population 2014*. Available at: <http://www.unfpa.org/swop>. Last accessed: October, 2015.

## IMAGE SOURCES

The image shown in the first page is from <http://logiseconomy.tistory.com>; the images shown in the second page is from <http://wikipedia.org>; the image in the third page is from <http://www.linternaute.com>.

## REVIEW PAGES: NEWS AND EVENTS

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In this number

TRANSPORT ENERGY CONSUMPTION:  
A DISCUSSION FOR A WIDER MOBILITY VISION

Nowadays energy consumption is one of the main themes of transport policy. A number of strategies have been designed over the last decades in order to reduce current energy consumption trends in the transport sector. They include fuel taxes, more efficient technologies and changing travel behavior through demand regulation. Indeed, technology progress alone is not able to improve effectively the energy efficiency of the transport system (Lopez et al., 2012); this is mainly due to the structure of the current mobility system, designed for the use of private transport; it is confirmed by the analysis conducted by the European Commission on energy consumption in 2010 in the old continent, according to which the majority (82 %) of the energy is consumed by road transport, and about 2/3 of the total consumption are due to passengers transport. This approach is no longer sustainable: In a simulation made with the *business as usual* method the dependence on oil is expected to remain slightly below 90% and CO<sub>2</sub> emissions remain higher than a third compared to their 1990 level. Next to these numerical data on environmental cost the research finds other interesting data: the cost of congestion would increase by 50%, the gap in accessibility between central and peripheral areas would increase, and the social costs of accidents and noise would continue to grow. Therefore, the challenge is to decouple the transport system from oil dependence without sacrificing its efficiency; it calls into question the whole system and the classical view of efficiency of movements linked exclusively to a non-integrated management of road infrastructure, seeking alternative approaches to optimize the use of all modes of transport and to organize a better complementarity (co-modality) of different transport modes both public and private. Rules that help the transport mode that needs less energy should be implemented. Several studies consider as central point of the question the analysis of the interaction of urban pattern characteristics – such as population density, settlement size, distance from urban centers and transport networks, jobs and housing balance, local neighborhood design, public transport accessibility – and socio-economic characteristics – such as income and car ownership, house tenure and attitude to travel – in relation to the impact on energy consumption of the transport system. In a nutshell it is essential to address the issue of sustainable mobility considering the transport system inextricably linked to all the other main elements of the wider urban system (Gargiulo et al, 2012).

For this reason, in the international conferences selected, the issue of mobility is the core point for the development of broader strategies for sustainable and energy efficient development on a urban and regional scale.



## 6<sup>TH</sup> EUROPEAN TRANSPORT RESEARCH CONFERENCE. MOVING FORWARD INNOVATIVE SOLUTIONS FOR TOMORROW'S MOBILITY

Where: Warsaw, Poland

When: 18-21 April 2016

The TRA conference represent one of the most important transport research event in Europe, gathering every 2 years the main stakeholders among the researchers, experts, and policy-makers. Its scope covers all modes of surface transport: road, rail and waterborne, as well as co-modality, in urban, inter-urban and long-distance settings. One of the main assumption of the conference is that the transport represent an important factor for the global competitiveness of Europe. For that reason the organizing committee will give priority to researches and implementation challenges that take into account the following goals:

- The development of common schemes and standards for the interoperability of European transport systems;
- The development of cooperation and competitiveness mechanisms between transport systems in Europe and in the world, to address the evolving needs in the education system to better tackle future industrial and societal needs;
- Ensuring, through a wider vision of transport system, the mobility of people and goods, and thus freedom in the political and economic sense;
- Enabling a better spatial planning so that transport systems provide mobility for people and goods at the highest level of energy efficiency, reliability, and safety.



## 21<sup>ST</sup> INTERNATIONAL TRANSPORT AND AIR POLLUTION CONFERENCE (TAP 2016)

Where: Lyon, France

When: 24-26 May 2016

Reduction of fossil energy and the increasing demand for mobility are the central topics of this conference born with the aim of bringing together public authorities and state or local government agencies with jurisdiction over transport or air quality, community groups, operators, commercial carriers, nonprofit and other business entities to share their contributions on the current scientific knowledge of air pollution due to emissions from transport system. The conference goal address the main challenges in transport with respect to energy, environment and economy issues and aims to explore the most advanced research works and innovations, the latest technological and industrial developments and implementations, and innovative policies, in Europe and worldwide, with an emphasis on the following topics:

- Exhaust and non-exhaust emissions from transport modes: measurements and modeling;
- Emission control and Technologies;
- Transport, energy consumption and greenhouse gas emissions;
- Urban and suburban air quality;
- Transport policies and mobility challenges towards cleaner cities.



## 22<sup>ND</sup> INTERNATIONAL CONFERENCE ON URBAN TRANSPORT AND THE ENVIRONMENT

Where: Crete, Greece

When: 21-23 June 2016

The complex interactions between urban transport and the environment is the starting point of the conference which aims to provide opportunities for establishing practical action strategies for resolving urban transportation problems.

Clearly the issue of providing effective and efficient transport systems in the urban settings remains an acute challenge with financial, political and environmental constraints limiting the ability of transport system planners and operators to deliver the high quality outcomes expected by the public. Therefore the interaction between academic and practical perspectives is emphasized: theories and ideas are debated and their practical applications rigorously tested. The range of subjects proposed in this conference is really wide covering classical topics of the mobility world as transport security and efficiency as well as more actual one connected with the most pressing challenge of the modern society as climate change, land use reduction and energy efficiency.



## INTERNATIONAL CONFERENCE ON TRANSPORTATION & DEVELOPMENT 2016

Where: Houston, Texas, USA

When: 26-29 June 2016

The conference will focus on projects and best practices around the topic of smart transportation that contribute to the development of innovative tools for competitiveness and prosperity. Presentations and panel are called to illustrate how the researches are improving performance to meet the critical mobility and development challenges of a changing operational and competitive environment. It will cover transportation and development planning, financing, functional design, construction, operation, and management.



## 2016 ACT INTERNATIONAL CONFERENCE

Where: Portland, USA

When: 31 July-3 August 2016

The conference theme is “Mobilizing our Communities”; The ACT International Conference aims to be a collaborative learning community composed by practitioners, government officials, students, researchers, and educators called to develop the next generation of transportation demand and mobility management leadership, technologies, analytics and strategies. The main topics of the conference are:

- Mitigating congestion;
- Enhancing mobility;
- Economic benefits of TDM;
- Energy conservation;
- The future of transportation funding sources;
- Commuter and employee safety.

## REFERENCES

Gargiulo, C., Pinto, V., & Zucaro, F. (2012). City and mobility: towards an integrated approach to resolve energy problems. *Tema. Journal Of Land Use, Mobility And Environment*, 5 (2), 23-54. doi: <http://dx.doi.org/10.6092/1970-9870/920>

López, E., Monzón, A., & Pfaffenbichler, P. C. (2012). Assessment of energy efficiency and sustainability scenarios in the transport system. *European Transport Research Review*, 4(1), 47-56.