



factsheet

Bike Sharing and Public Bicycle System



**Wuppertal
Institut**

UN HABITAT
FOR A BETTER URBAN FUTURE



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Urban Electric Mobility Initiative (UEMI) was initiated by UN-Habitat and the SOLUTIONS project and launched at the UN Climate Summit in September 2014 in New York.

UEMI aims to help phasing out conventionally fueled vehicles and increase the share of electric vehicles (2-,3- and 4-wheelers) in the total volume of individual motorized transport in cities to at least 30% by 2030. The UEMI is an active partnership that aims to track international action in the area of electric mobility and initiates local actions. The UEMI delivers tools and guidelines, generates synergies between e-mobility programmes and supports local implementation actions in Africa, Asia, Europe and Latin America.

SOLUTIONS aims to support the exchange on innovative and green urban mobility solutions between cities from Europe, Africa, Asia and Latin America. The network builds on the SOLUTIONS project and brings together a wealth of experience and technical knowledge from international organisations, consultants, cities, and experts involved in transport issues and solutions.

The overall objective is to make a substantial contribution to the uptake of innovative and green urban mobility solutions across the world by facilitating dialogue and exchange, promoting successful policy, providing guidance and tailored advice to city officials, fostering future cooperation on research, development and innovation.

SOLUTIONS_UEMI supports urban mobility implementation actions that contribute to the Paris Agreement and the New Urban Agenda.

Sustainable energy and mobility can make positive contributions to a number of policy objectives, nationally and locally. In particular in cities there is a great potential to create synergies between for example safety, air quality, productivity, access and climate change mitigation. A UEMI resource centre will provide opportunities for direct collaboration on projects focusing on sustainable urban mobility and the role e-mobility can play in it. The UEMI will pool expertise, facilitate exchange and initiate implementation oriented actions.

UN-Habitat, the Wuppertal Institute & Climate Action Implementation Facility jointly host the resource centre for the Urban Electric Mobility Initiative, aiming to bridge the gap between urban energy and transport and boosting sustainable transport and urban e-mobility.

UEMI

Solutions

Aims

In brief

A public bicycle system is a relatively new transport concept enabling people to make short trips and/or connect to public transport. The system is based on point-to-point trips, where users can pick up a bicycle at any self-serve bicycle-station and return it to any other station within a limited period (around 30-45 minutes).

Bicycle-sharing systems have two key advantages for local governments when compared to other transport projects: costs are relatively low and the timeline of planning and implementation is short (i.e., 2 to 4 years).

Examples

Amsterdam (Netherlands) introduced the first bicycle-sharing system in 1965, but the city quickly shut it down due to theft and vandalism. By the mid-90s, other cities tried to introduce public bicycle programs, but it wasn't until 2010 when the concept experienced a major boom around the world. Today, more than 600 cities have bicycle-sharing systems, with the largest in Hangzhou and Shanghai (China), Paris (France), London (UK) and Washington D.C. (U.S). Each city has planned and designed the system to make it its own, taking into account the different and unique characteristics of their urban context.

The main features of a bicycle sharing system are usually:

- A network of stations with an average distance of 300 metres between them;
- Bicycles with adjustable parts and gears to two different types of users;
- Stations with an automated locking system for easily checking bicycles in and out;
- A tracking system that locates the bicycles and identifies the users;
- Real-time monitoring of station occupancy;
- An easy and accessible paying method.

Results

Bicycle-sharing systems fill in the gap between public transport and destination points, and satisfy citizens' demand for short trips, reducing the time of commutes. In general, bicycle-sharing systems increase the choices of and accessibility to attractions by giving locals a wider range of destinations beyond their walking range at a low cost. By providing an alternative to the use of private vehicles, this transport mode also helps improve air quality and reduce transport congestion and noise. In addition, cycling brings both

In brief

Examples

Results

physical and mental benefits for its users, and can help improve the urban image of a city and its culture.

Technical and financial considerations

Estimating the costs of a bicycle-sharing system depends on a number of factors, such as the size of the system (number of stations and bicycles) and the type of stations and bicycles (infrastructure and technology). Operating costs include maintenance, distribution, staff, insurance, office space, storage facilities, website hosting and maintenance, and electricity (if necessary).

There are several financing options for launching a bicycle-sharing system, such as government funds, federal and state grants, private donations, corporate sponsorship, street advertising contracts and users' revenues.

The systems usually perform well at farebox recovery (i.e. the percentage of operating cost recovered by user revenues). In the U.S., they showed recoveries from 36% up to 97%, a very high percentage in comparison to the average farebox recovery of the U.S. metro transit systems, which is 35%.

A key factor to take into account for the operational and economic success of the system is redistribution, which consists in rebalancing the bicycles that are near capacity to stations that are empty. This represents a great operational challenge, accounting for up to 30% of the operating costs in the case of European systems.

Policy/legislation

A city or municipality wanting to launch a bicycle-sharing system should have an effective public transport system to promote connectivity and intermodality through physical and operational integration.

Regulations and infrastructure that prioritise cyclists and their safety, such as enforcing the use of helmets and constructing bicycle paths in key roads, should accompany the implementation of a bicycle-sharing

Technical and financial considerations

Policy/Legislation

Case Study: Mexico city's Bicycle-sharing system (Mexico)

Context

Mexico City is one of the most congested and polluted cities in the world. For several years, the city has made a great effort to improve public transport and reduce car trips and travel times. The government knows that this benefits inhabitants' health and reduces the strain on government health programs, traffic control, and the city's carbon footprint. Such initiatives include the introduction of a BRT system in 2005, a new metro line (making it a network of 12 lines), the "No Driving Day" initiative and, most recently, the introduction of the Ecobici bicycle-sharing system.

In action

The Ministry of Environment launched the Ecobici bicycle system in Mexico City in February 2010. The city installed 85 stations in a central neighbourhood with offices, housing and several restaurants and cafes. Citizens rapidly adopted the system, finding that it satisfied their needs for short trips and convenient connections.

In the 6 years since Ecobici began, it has grown considerably. The city recently registered 35 million trips, during which users travelled 54 million kilometres. There are now 452 stations located through 42 neighbourhoods, an area of 32 square kilometres. Over 220,000 people use the system of 6,000 bicycles. The network connects to 35 metro stations and 54 BRT stations. Ecobici is now the largest bicycle-sharing system in Latin America.

The Ministry of Environment also launched other policies to support the use of bicycles in Mexico City. These include the Urban Cyclist Manual, and the Sunday Promenade, Move by Bike, which consists of closing roads on Sundays for cars, making them exclusive for cyclists (or other kinds of recreational uses, such as roller skating and running) and the Cycling School, which provides free cycling classes for people all ages.

Results

Thanks to Ecobici, Mexico City reduced CO₂ by 2,400 tonnes. To mitigate that amount of greenhouse gas emissions would require the planting of around 7,000 trees. The success is mainly due to citizens' shift in transport choices. In a 2014 survey, 16% of Ecobici users said they stopped using their cars and instead hopped on a bicycle; two years earlier the figure was

Case Study: Mexico city's bicycle-sharing system

5%. Some 60% said that before using the system, they never considered the bicycle as a feasible transport mode. Now they do.

Users also said that riding a bicycle has a positive effect on their mental health by avoiding the stressful environment of crowded public transport or traffic. Several women also have found Ecobicycle an escape from sexual harassment, which is a common issue in Mexico City's public transport systems.

Sources

Sarah Goodyear. "The Bike-Share Boom," City Makers: Connections (September 2016)

Institute for Transportation & Development Policy. The Bike-share Planning Guide (July 2014)

Peter Midgley. Bicycle-sharing Schemes: Enhancing Sustainable Mobility in Urban Areas (May 2011)

Peter Midgley. The Role of Smart Bike-sharing Systems in Urban Mobility (May 2009)



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