

# CiViTAS

Dyn@mic cities active for sustainable mobility



THE CIVITAS INITIATIVE  
IS CO-FINANCED BY THE  
EUROPEAN UNION

# CIVITAS DYN@MO in a nutshell

CIVITAS DYN@MO is an ambitious project bringing together four European cities that have agreed on a mission to strengthen sustainable mobility. DYN@MO is short for the project motto **DYN**amic citizens **@ctive** for sustainable **MO**bility.

The participating cities are **Aachen** (DE), **Gdynia** (PL), **Palma de Mallorca** (ES) and **Koprivnica** (HR).

The cities will promote non-polluting lifestyles, collaborate with citizens with new, web-based tools, and implement integrated, innovative transport services for active citizens of all ages.

The project consortium consists of 28 partners in the participating cities, supported by the Union of the Baltic Cities, Rupprecht Consult and Lund University.

DYN@MO is part of the CIVITAS Initiative, supporting cities to introduce ambitious transport measures and policies towards sustainable urban mobility. The project runs until November 2016.



# CIVITAS DYN@MO objectives

The strategic aims of DYN@MO are threefold. The project will:

- ▶ Develop “Mobility 2.0” systems and services by applying new web-based technologies;
- ▶ Implement innovative electric mobility solutions, using new electric and hybrid vehicles and
- ▶ Engage in a dynamic citizen dialogue for mobility planning and service improvement.

At the strategic level, DYN@MO cities will create a culture for interactive mobility planning in which citizens and other stakeholders can actively participate in planning through dynamic processes.

At the technical level, DYN@MO cities will use clean, energy-efficient vehicles, especially electric vehicles, and advanced ICT and ITS Systems as the basis of innovative transport services.

At the service level, citizens and travellers in the DYN@MO cities will experience innovation hotspots with exciting new mobility services.



Photo: City of Aachen



Photo: City of Koprivnica

## CIVITAS DYN@MO in action: Implementing sustainable mobility

The four DYN@MO cities will implement altogether 30 innovative measures within three working areas:

### Engaging in a dynamic citizen dialogue

#### ► Sustainable Urban Mobility Plans (SUMP)

Sustainable Urban Mobility Plans are at the core of the project and give a sound basis for mobility planning. The two leading cities, Aachen and Gdynia, will advance their planning culture and existing SUMPs while Koprivnica and Palma develop ambitious SUMPs – all including extensive citizen and stakeholder involvement via traditional means and web-based applications.

### Implementing city and citizen-friendly electric mobility solutions

#### ► Clean and energy efficient vehicles

The DYN@MO cities are strongly committed to make their public transport cleaner and to enhance the environmental performance and energy efficiency of their fleets. Besides acquiring new, more environmentally friendly vehicles for public transport and the municipal fleet, the cities will test and promote other electric vehicles and modes of sustainable transport with pilot projects.

### Developing “Mobility 2.0” systems and services

#### ► Use of Information and Communication Technology (ICT) and Intelligent Transport Systems (ITS)

Throughout the project, “Mobility 2.0” systems and services will be developed by applying web-based technologies. The new systems and services will improve the service quality of public transport as well as the communication and maintenance of transport systems. New services will also support the preparations for developing or updating SUMPs and provide new ways of involving citizens and stakeholders in the SUMP process.

The project also works at the European level. All 30 measures implemented in the four DYN@MO cities will have a high degree of transferability across Europe. The decision makers and technical experts from DYN@MO cities will actively contribute to European exchange through annual summer universities, trainings and by establishing competence centres for Sustainable Urban Mobility Planning (SUMP) and electromobility.



Photo: Peter Rotheudt

## AACHEN

Aachen (around 240 000 inhabitants) is a historic city where 32 emperors have been crowned between 936 and 1531 A.D. It is the westernmost city in Germany, located in North Rhine-Westphalia, close to the borders to Belgium and the Netherlands. The city has four universities and is thus a young, dynamic and highly educated city. Aachen has a long tradition in sustainable urban mobility planning and has been appointed as a German model region in both mobility management and electromobility.

### Transport situation in Aachen

It is the incredible amount of 1.4 billion of kilometres that the roads in Aachen are used by cars and trucks annually. 100 million litres of petrol are consumed. At first glance, the public transport network seems unlikely to play a dominant role: only 15 million kilometers per year the roads in Aachen are used by buses. However, with an average value of 21 people sitting in one vehicle, a distance of 320 million passenger kilometers is covered. Bus transport contributes to 10% of nitrogen oxide emissions, which is comparatively low if we consider the number of people being transported.

Due to the unfavorable topographical situation of Aachen, the limits for particulate matters (PM10) and nitrogen dioxide (NO<sub>2</sub>) have been exceeded several times during the past years. However, unlike many other cities in Germany, the setting up of an

environmental zone could be avoided by a large number of activities contributing to an improved air quality: e.g. the introduction of a special offer of reduced tickets for the local public transport service (JobTicket) for the employees of the city administration and the Technical University (RWTH).

### Planning for sustainable urban mobility

Aachen has been involved in sustainable urban mobility planning for decades. The city was one of the first in Germany to develop a "Verkehrsentwicklungsplan" in 1995.

The city develops a Sustainable Urban Mobility Plan in which citizens and other stakeholders can actively participate. Following on from this, the citizens of

Aachen will have several times the opportunity to contribute to the future development of transport paper, and to discuss the current state of mobility with experts in the field.

After a recent referendum put a stop to the planned project of reintroducing a light railway system connecting the newly developed campus area with the city centre of Aachen, alternative ways to solve the transportation problem are being sought. The aim is to find another solution – a solution the citizens want, which will be less expensive and have positive effects on the environment.

## CIVITAS DYN@MO objectives and measures in Aachen

The core of DYN@MO activities is to develop a dynamic regional SUMP, and a process similar to the development of an SUMP will take place in the surrounding cities in the District of Aachen (“StädteRegion”) as well.

To analyse a potential reduction of the environmental impacts of bus transportation, two hybrid buses will be tested according to a defined test programme and methodologies. One of these buses will be converted into a fully electric vehicle during the project. The other bus will be a Euro VI hybrid bus with highly innovative aspects. Based on successful results, four hybrid buses will be procured for day-to-day operations.

A sustainable mobility plan will be implemented for the newly developed campus areas of the Technical University of Aachen. The measure aims at reducing motorised trips and restricting parking and will result in a comprehensive mobility plan for the new campus, a pedelec rental system and a business trip and internal logistics management system.

As cooperation between the city and the public housing company, Electromobile living will offer new mobility options to residents based on electric vehicles. Three of the six possible “mobility locations” will be realised, to find out which ones the residents will be surveyed.

With the establishment of the Mobility Alliance Aachen, all local mobility providers will cooperate to develop a cross-border information platform for all actors of the regional mobility market to offer multiple

mobility options for customers, built on interactive Mobility 2.0 applications. In addition, a travel assistant based on real-time information will be developed to suggest alternative transport modes and schedules. According to preliminary profiling, customers will receive individualised travel information. The travel assistant will also allow user-generated information such as incident notifications.



Photo: City of Aachen/Andreas Schmitter



Photo: City of Aachen/Jens Stachowitz



Photo: City of Aachen/Jens Stachowitz



Photo: Maciej Bejrn

## GDYNIA

Gdynia is a port city with 250,000 inhabitants, in the Tri-City Metropolitan Area (in total more than 1.2 million inhabitants). It is a centre of maritime economy, international trade, science and academic education, culture and tourism. As one of the most rapidly developing and dynamic Polish cities, Gdynia is often mentioned as a city of success dwelled by initiative and active people.

The city is continually making high efforts to reduce motor traffic demand in the area and has an SUMP since 2008. Gdynia has been involved in the CIVITAS network since 2002 and has participated in the CIVITAS TELLUS project.

### Transport situation in Gdynia

#### Road network

Gdynia has a well developed road system - 400 km of roads important for local, national and international transport. The bicycle path network in the city is expanding and new routes are being built for inhabitants and tourists.

#### Public transport

Gdynia is one of the Polish and European forerunners in greening and modernising the public transport. The public transport system is based on three main sub-systems: buses, trolleybuses and suburban light rail. The system can be described as efficient and accessible - 77% of the citizens live within a five-minute

walking distance to a bus stop. Bus and trolleybus fleets are low-floor.

#### Sustainability problems

The modal split in Gdynia is as follows: public transport 50%, cars 49%, cycling 0.4% and other 0.6%.



Photo: City of Gdynia

Unfortunately, the motorisation rate is high. This results in rush hour congestions in the main streets of the city. Gdynia pursues a policy of reducing traffic and encourages people to the use alternative means of transport.

## Planning for sustainable urban mobility

### Long-term transport policy in Gdynia

Gdynia has four legal documents related to transport planning. They are mainly focused on solving the most relevant transport problems of the city in a truly sustainable way. This means building the cycling network and creating a cycling culture, increasing multimodality and improving the quality of public transport services.

### Sustainable Urban Mobility Planning in Gdynia

As a result of the European project BUSTRIP, Gdynia developed a Sustainable Urban Transport Plan (SUTP) for the period of 2008-2015. Although the plan was not formally adopted by the City Council, it serves as an important working document. It addresses the activities and measures necessary to establish a sustainable urban transport system in Gdynia as part of the Tri-City (with Gdansk and Sopot). Currently, the plan is being supplemented, extended, updated and adjusted to current requirements within the DYN@MO project, and finally formally adopted.

## CIVITAS DYN@MO objectives and measures in Gdynia

In DYN@MO, Gdynia will work to extend activities in sustainable urban transport and focus on three themes: Sustainable urban mobility planning, clean and energy efficient vehicles, Information and Communication Technology (ICT) and Intelligent Transport Systems (ITS).

The core of the DYN@MO activities in Gdynia will be to further develop the Sustainable Urban Transport Plan (SUTP) from 2008 into a Sustainable Urban Mobility Plan (SUMP), with strong involvement of Gdynia's inhabitants and stakeholders. Gdynia wants to become a model case for Sustainable Urban Mobility Planning in Poland.

To support the process, a varied community project studies will be conducted. One of the main pilot

projects in Gdynia is closing one of the main streets in the city centre and turning it into a pedestrian area.

In addition, a Baltic Sea Region SUMP Competence Centre will be set up in cooperation with University of Gdansk, Union of the Baltic Cities and Lund University.

To increase the attractiveness of the beloved trolley-buses in Gdynia, trolleybus lines will be extended into areas without wired infrastructure. Battery hybrid trolleybuses will be converted and tested in a residential area without public transport service. Furthermore, the energy efficiency of the system will be increased with innovative supercapacitor technology.

A Mobility 2.0 internet platform will be set up to conduct consultations with the local community and stakeholders. In addition, ITS and ICT will be deployed in Gdynia in many ways. To feed in to the SUMP process, Gdynia will elaborate the first three-level transport model for both individual and public transport. Furthermore, a weigh-in-motion system will be set up to identify overweight trucks and help lessen the considerable burden on the environment and roads. An automatic traffic incident detection system will be introduced to improve road safety. Gdynia will also test a dedicated bus and a high occupancy vehicle (HOV) lane with automatic detection devices.



Photo: City of Gdynia



Photo: City of Koprivnica

## KOPRIVNICA

Koprivnica is a city of 33,700 inhabitants in north-west Croatia. Internationally recognized for food processing and pharmaceutical industry as well as Croatian naïve art movement, it is also the educational, cultural and sports centre of regional importance. It is currently developing a concept of regional university for 5,000 students. Active sustainable mobility policies of the city have resulted in the high percentage of cyclists and pedestrians in the city centre. The biggest challenge for the city in making the local transport more sustainable is the lack of public transport.

### Transport situation in Koprivnica

The favourable geographical position of the city at the crossroads of two major European transport corridors has granted Koprivnica its fast development in the past. However, the current shape of repair of both national road infrastructure and railway system is unsatisfactory. This has resulted in the sharp decline of the use of public transport based on buses and trains and consequently the quality of their service.

In contrast, the city has improved the infrastructure in the city centre and systematically promoted cycling and walking. An extensive network of pedestrian footpaths and cycling tracks, together with energy-efficient public lighting has contributed to the attractiveness of sustainable modes of travel. It resulted in

the modal split of almost 40% of trips made on foot or by bicycle.

Sustainability of freight transport remains an issue while the development of public transport inside



Photo: City of Koprivnica



the city and in its surroundings is the aim of the DYN@MO project. Further major improvement involves the reconstruction of the national railway system along the Pan-European transport corridor Vb, allowing for the improvement of regional and local railway infrastructure.

## Planning for sustainable urban mobility

The city has developed two mobility programmes called “Town on the Move” and “Streets for People”, implemented between 2002 and 2009. These programmes improved mobility infrastructure and promoted sustainable means, resulting in the high percentage of almost 40% of cyclists and pedestrians in the city centre. Incoming and outgoing traffic is much less sustainable due to the lack of public transport and the overall popularity of cars for daily transport.

Sustainable mobility has also been a part of the Local Agenda 21 (LA21), adopted in 2008. Public participation in the planning process of development of the LA21 has improved public awareness of sustainable mobility. The development of the LA21 has been an important step in the development of planning skills and raising the capacities of the city administration.

Sustainable Energy Action Plan, adopted by city council in 2011 in the scope of Covenant of Mayors, includes further measures aimed at the reduction of greenhouse gas emissions.

## CIVITAS DYN@MO objectives and measures in Koprivnica

The development of Sustainable Urban Mobility Plan and sustainable public transport are the main objectives of the DYN@MO activities in Koprivnica. Based on its previous experience, the city perceives the SUMP process as an important learning experience to achieving new urban planning expertise and creating an SUMP competence centre for the wider region. It will also serve as an example for smaller cities Europe-wide, facing similar mobility challenges.

DYN@MO will place a strong focus on the future university students' mobility needs as the new university campus is planned to become a model area

of sustainable mobility solutions and a zero emission zone. A wide range of attractive sustainable mobility options will be offered and tested in this model area, in order to reach optimal solutions.

The progress of measure implementation and acceptance of new solutions will be actively promoted via Mobility 2.0 platform, developed by university students themselves. The first users will record their experience and motivate the lively interaction with potential target groups.

An innovation corridor will be established within the project, including the local railway line connecting the northern and southern city boundaries as well as the industrial zone and the future university campus. In the middle of this line, the integrated public transport terminal is located serving also as the starting point for electric buses to be used for public transport. The initial public transport scheme will connect the city with its catchment area and reduce the use of cars for daily commuting. Electromobility will also be promoted through a car-sharing scheme for the local administration and municipal companies based on electric vehicles.





Photo: City of Palma

## PALMA

Palma (421.000 inhabitants) is the capital and main port of the Balearics. Palma is the cultural, educational, administrative and commercial centre of Mallorca. The city was established 123 BC by the Romans and since has seen many conquerors and cultures, which is reflected in the extensive historic city centre. Since the 1950s tourism has increased constantly, making Mallorca one of the major holiday destinations of Europe. The main tourist related installations are the large marina, the beach resort areas and the international airport.

### Transport situation in Palma

The historic centre and its medieval cathedral form the heart of the city. Car traffic is restricted in most of the historic centre. From here a radial road network stretches out towards the 19th and 20th century city quarters and surrounding villages. A motorway ring road completes the road infrastructure. Because of its central role on the island, Palma attracts commuters and visitors. The share of motorized transport is 50 % (2009). The high amount of private cars causes congestion on the ring road and the main corridors towards the city centre.

The main means of public transport in Palma is the urban bus network, which is complemented by a metro line towards a mayor industrial area and the University Campus.

Seasonality influences the mobility of Palma in different ways. Impacts include increased congestion on the highway ring road and main corridors to centrally located underground parkings. On rainy days, many tourists staying at the beach resorts decide to take the public bus to the city, leading to high demand peaks in local public transport.

### Planning for sustainable urban mobility

In recent years, several improvements to increase the use of public transport have already been made, including intermodality measures to connect public transport to cycling and car trips. Most of the non-motorised trips in Palma are made on foot. The city has created pedestrian areas on routes towards

the historic city centre and within the historic centre itself. Before DYN@MO, the cycling lane network was expanded to a total length of 43.5 km. In 2011, a new public bicycle system called BiciPalma was launched.

The core of the DYN@MO activities in Palma is the development of a Sustainable Urban Mobility Plan (SUMP). In relation to the revision of the General Urban Master Plan, Palma plans to develop an SUMP, which integrates existing policies and strategies for sustainable mobility and involves the local stakeholders. To support this aim, a new Mobility 2.0 platform is established to provide citizens with one integrated entry point for mobility information.

## CIVITAS DYN@MO objectives in Palma

Within the DYN@MO project, the city of Palma targets residents and visitors and aims to:

- ▶ Increase the attractiveness and user-friendliness of urban transport services.
- ▶ Increase the use of public transport, walking and cycling.
- ▶ Encourage a more rational use of motorized vehicles, including the introduction of clean propulsion technologies and fuels.
- ▶ Reduce traffic related emissions.

## CIVITAS DYN@MO measures in Palma

The Mobility 2.0 platform will increase the user friendliness by combining information on public transport, public bicycles, congestion and availability of underground parking spaces. A new parking guidance system will lead to a more efficient use of existing parking spaces and reduce the queues of rental cars in the summer season. To increase the modal share of walking and cycling and further enhance the attractiveness of public space, healthy walking routes and new cycling lanes are planned and realized. In addition, the city will expand the public bike system with new stands and bicycles.

Palma also plans to introduce clean vehicles on a large scale. The public transport company and city departments will procure clean buses and electric cars and scooters. The promotion actions of the project, new local regulations and the installation of public charging points will contribute to a wider uptake of electric vehicles among companies and citizens.

## Local co-operation on SUMP

Within the process of the Sustainable Urban Mobility Plan, the city will co-operate closely with local stakeholders and inhabitants to increase the quality and effectiveness of the DYN@MO measures and other future measures for more sustainable urban mobility.





# Contacts

## Website:

[www.civitas.eu](http://www.civitas.eu)

## Contacts for the CIVITAS DYN@MO project

### Coordination

Georg Werdermann, Project Coordinator

City of Aachen

[georg.werdermann@mail.aachen.de](mailto:georg.werdermann@mail.aachen.de)

### Management

Bernd Decker, Project Manager

Rupprecht Consult

[b.decker@rupprecht-consult.eu](mailto:b.decker@rupprecht-consult.eu)

### Communication and dissemination

Kirsi-Marja Lonkila, Project Dissemination Manager

Union of the Baltic Cities

[kirsi-marja.lonkila@ubc.net](mailto:kirsi-marja.lonkila@ubc.net)

### Evaluation

Tom Rye, Project Evaluation Manager

Lund University

[tom.rye@tft.lth.se](mailto:tom.rye@tft.lth.se)



#### Acknowledgement

This publication is produced under the auspices of CIVITAS WIKI (Advancing Sustainable Urban Transport in an Enlarged Europe through CIVITAS), a support action for coordination and dissemination funded through the EC's Seventh Framework Programme for Research and Technological Development.

#### Legal Notice

The views expressed in this publication are the sole responsibility of CIVITAS DYN@MO and do not necessarily reflect the views of the European Commission.



THE CIVITAS INITIATIVE  
IS CO-FINANCED BY THE  
EUROPEAN UNION