

e-SMART TRAINING MATERIAL

**Increasing the proportion of electric vehicles –
the CEMOBIL project**

The e-SMART project

While electrification of private transportation has continued to expand constantly, ambitions should move forward towards electric vehicles solutions in Last-Mile-Logistics (LML) and the Local Public Transport (LPT), with electricity generated from renewable energy sources.

The decarbonisation of the transport sector and particularly the mass deployment of electric vehicles need truly interoperable roll-outs of electric vehicle charging infrastructures powered by renewable energy as well as an intelligent charging management to prevent peak loads. This is especially important in the Alpine Space, where mobility and transport have always played a significant role.

The e-SMART project addresses this challenge: Bringing developments in e-mobility in LML and LPT together and improving the electric vehicle ecosystem building up on the concept of smart-territorial relationships.

Find out more about the e-SMART project:
www.alpine-space.eu/projects/e-smart



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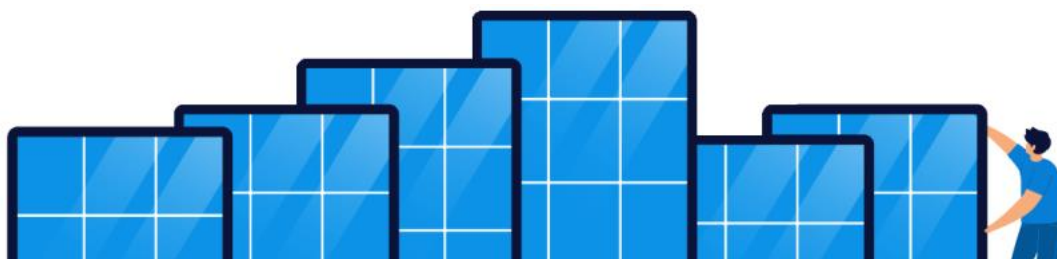
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Objective

This training material aims to achieve a significant reduction in air pollutant and CO₂ emissions in Cities by increasing the proportion of electric vehicles.

Within the LIFE+ EU-Project CEMOBIL (CO₂-neutral E-mobility in European Cities to Reduce Air Pollutants (PM₁₀, PM_{2.5}, NO₂) and Noise Demonstrated in Klagenfurt, Austria) the City of Klagenfurt together with partners from the mobility, energy and public sector demonstrated that e-mobility in Klagenfurt on Lake Wörthersee works and thereby an effective and sustainable improvement of the environmental quality, especially in the case of air pollutants, but also in the case of noise, is possible.

A total of 69 e-vehicles were purchased and tested, and the necessary infrastructure was set up using 50 e-charging stations. The electricity required for the electric vehicles were provided by renewable energy sources. Special business models are intended to promote the private acquisition of e-vehicles. In order to stimulate the market for electric vehicles and commit people and companies to use e-vehicles instead of cars with internal combustion engine, a set of different awareness raising actions were planned.



1. Introduction

In spite of absence of large industrial emitters, the ambient air situation is a critical one in Klagenfurt on Lake Wörthersee due to the city's topographical location in a basin and the resulting unfavourable meteorological conditions (strong inversion and low wind speed). As in most European cities and towns, local road traffic and transport are the chief causes for air quality problems.

On average 59% of the inhabitants of cities of the size of Klagenfurt on Lake Wörthersee (appr. 105 000 inhabitants) suffer from noise. Road traffic noise emitted by passenger cars, lorries and motorcycles accounts all in all for 71% of noise nuisance to which residents are exposed.

In the context of the project CEMOBIL (CO₂-neutral E-mobility in European Cities to Reduce Air Pollutants (PM₁₀, PM_{2.5}, NO₂) and Noise Demonstrated in Klagenfurt, Austria) , e-mobility was brought to series maturity in a city for the very first to counteract the double health burden of dust and noise, thus significantly enhancing the quality of life of all city dwellers. The challenge consisting in providing evidence that e-mobility is indeed able to effectively improve the quality of the environment in urban areas at low cost and without seriously restricting individual mobility. Another key target was to prove the efficiency of electric vehicles in thereby to increase the demand for electric cars in Klagenfurt on Lake Wörthersee in the long run, thus making it a model region for Europe. The project goal was to reduce the environmental pollution in the city centre by 10 % (reference year 2010) and to comply with the NO₂ limit of 40 µg/m³.

To sustainably establish and encourage e-mobility in Klagenfurt on Lake Wörthersee, 69 electric vehicles were purchased under the project for testing. By providing these vehicles and by setting up 50 e-charging stations in the greater Klagenfurt area, the population had the possibility of gaining hand-on experience of e-mobility and of integrating it seamlessly into their everyday transport needs. Another 50 e-charging stations were set up through private initiative (e.g. property developers, shopping centres, etc.). The electricity required to power the e-vehicles were obtained entirely from renewable sources of energy and electro-mobility was integrated permanently into urban transport planning. Awareness-raising measures with the active participation of the citizens and comprehensive accompanying research and evaluation were additional key elements of the project.

Project lifetime: 2010 - 2016

2. Infrastructural and organisational

a) Acquisition and use of e-vehicles and charging stations

CEMOBIL extended the mobility services offered in Klagenfurt on Lake Wörthersee by new options, both for the individual and public transport. This was facilitated by purchasing 69 electric vehicles: 35 passenger cars, 10 micro-cars, two utility vehicles, 10 e-bikes, 10 e-scooters, one e-bus and one e-boat satisfied a broad spectrum of potential demands for e-vehicles.

Simultaneously with the progression of the project, the complete infrastructure comprising 50 public e-charging stations and another 50 privately initiated ones as well as service and repair facilities were provided and ensured smooth operation in and around Klagenfurt on Lake Wörthersee. The e-charging stations have been set up at prominent locations in public space and they run on 10% green electricity. Charging is possible up to 22kW at these charging spots and in addition 2 quick charging stations are also available. Installation of the charging stations (and expansion of the electricity grid necessary to fulfil the charging power requirements) was done in collaboration with Stadtwerke Klagenfurt AG (STW), the City's municipal utilities.

b) Public Transport

A prototype e-bus designed by the Polish company Solaris serving a line between the city centre of Klagenfurt and the University of Applied Sciences. The distance covered per round trip was 7,2 km, which adds up to 110 km daily. The conventionally operated replacement bus, which is mandatory under the work rules, runs at midday while the e-bus is being recharged.



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The e-boat “ES Maria Wörth”, which has a capacity of 60 persons, a prototype, has been navigating the Lend Canal, providing a direct waterway con-

nection between the centre of Klagenfurt and Lake Wörthersee. The boat may also be chartered for weddings and other festivities.

3. Measures to promote e-mobility

a) Test e-vehicles and rental

Test **e-vehicles** were offered for one week for private persons, companies and public institutions to gain hands-on experience in using e-mobility. Test drivers could register by phone or by e-Mail. A rental contract for the text ride had to be signed where laid down a deposit of about € 200,00 and the obligations in the event of damage (deductible between € 450,00 and € 1.000,00). All e-vehicles were covered by comprehensive insurance. The administrative fee charged for one test week was € 60,00.



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Further promotional measures:

- **E-Bikes and e-Scooters** were handed over to 18 test families for testing and sharing their experience via Facebook.
- Five Nissan Leafs were operated as **e-Taxis** (testing period 4 – 12 weeks with an amount of € 300 excl. VAT)
- **Driving schools** had the possibility to rent e-cars for a period of 3 month for the perfection training. Thus learning drivers were able to familiarise themselves with the handling and driving feeling.

b) Training measures

An adequate training is vital for a comprehensive electro mobility offensive.

Trainings for professional groups who have to handle electric vehicles in emergencies, such as fire fighters, paramedics and garages. In cooperation with an Austrian Automobile Club a training course was organised.

Also **info mobility days** were held, where up to 30 e-vehicles were available for free-of-charge testing.

c) Legal framework

The Region of Carinthia established the legal conditions which allow the City of Klagenfurt to specify the number and the equipment of the **necessary e-charging stations for new building projects** as a mandatory requirement. This measure is very important to promote e-mobility into (residential) building projects.

Furthermore e-vehicles park in the **short-term parking zone** in Klagenfurt and two other Carinthian Cities free-of charge for 3 hours. A parking disc had to be displayed.



d) Support for the purchase of e-vehicles

Within the CEMOBIL project the Region of Carinthia has developed a Public-Private-Partnership model. Up to € 7.000,00 were granted for the acquisition of an e-car, for individuals and companies.



e) Integration of stakeholders and opinion leaders

The awareness and the effect of the project was be raised significantly by integrating stakeholders and opinion leaders at regional and national political levels as well as at EU level.

During the entire project life numerous activities were undertaken, such as a study trip to Oslo, the participation in the New Mobility Congress in Leipzig and at GETEC in Freiburg and 5 stakeholder workshops. The project activities were also presented to experts at the European Conference on Mobility Management (ECOMM) and at the CIVITAS Forum Conference.

Under the LIFE+ programme a platform meeting on “Alternative Mobility of the Future” was organised providing the opportunity of exchanging experiences among LIFE+ projects. Via the Zero Emission Platform (ZEP), interested parties can exchange information material, experiences and documentations after having signed a Memorandum.

Link: <http://zero-platform.cemobil.at/login.phtml>

4. PR activities and marketing

Media and PR campaigns with folders, posters, publications in print media, newsletters, press conferences, testimonials, a project video, events, presence at exhibitions and fairs were targeted to increase information and awareness among the population.

- Environmental label – free parking in the short-term parking zones for 3 hours
- 2 e-kart races - adults, adolescents and children could familiarise themselves with e-mobility
- Information event where attractive prizes could win, such as free test rides with an e-car

- Final congress of the CEMOBIL project which had been co-funded under the LIFE+/klimaaktiv programmes with site visit, broad range of topics and further numerous additional activities



5. References & Further Readings

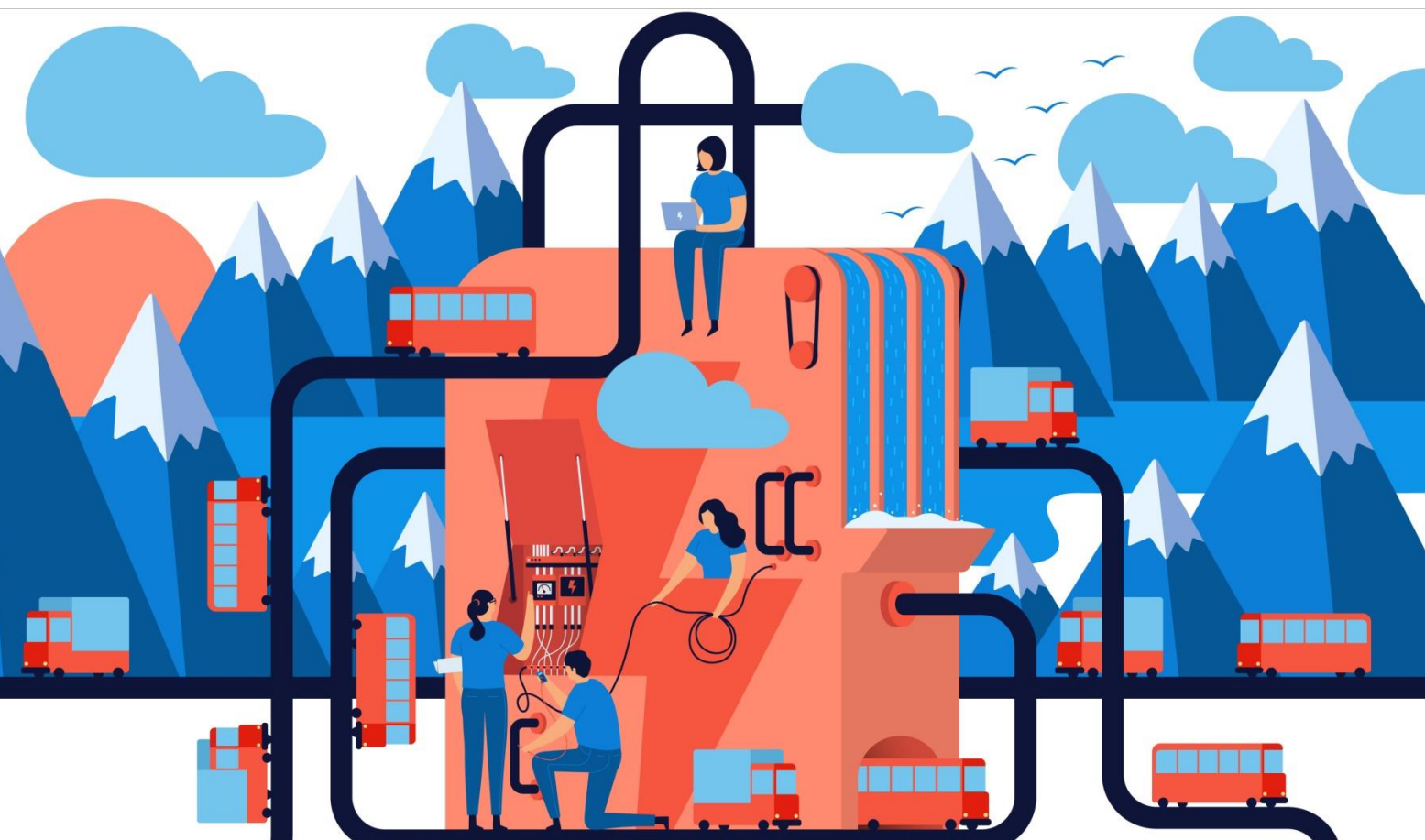
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