Photo: City of Lörrach

Lörrach banks on electric mobility

Local public transport, e-car sharing, municipal fleet

Increasing traffic volumes represent a great challenge for the town of Lörrach. Situated in the immediate vicinity of Basel, Lörrach is subject to commuter and shopping traffic. It is thus essential to find new concepts and break new ground in terms of sustainable mobility. This is why, in early 2013, the town developed a mobility master plan setting targets and proposing measures concerning traffic policy. Taking some of the car traffic load off the town by promoting non-motorized traffic and local public transport is the top priority. As for the promotion of environment-friendly alternatives, the enhancement of electric mobility is an important part of the master plan.

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Situated in the far southwest of Germany in the Wiese valley in the foothills of the southern Black Forest and close to the Swiss land border, Lörrach is a pulsating hub between Basel, the Alsace, the Vosges and the Black Forest. Amid this unique landscape, some 49,000 inhabitants as well as visitors of the "capital" of the Markgräflerland region find a diverse, open culture and savoir-vivre characterized by a tri-national atmosphere.

The town consistently pursues a sustainable energy policy: In 2002, Lörrach was the first German town to be awarded the Swiss Energiestadt label; in 2007, it was the first town in Baden-Württemberg to be given the European Energy Award (eea), and in 2010, Lörrach took a leap to achieving the European Energy Award Gold, which it was able to renew in 2013.

Electric vehicles in local public transport

Within a model test carried out by the State of Baden-Württemberg, an electrically driven bus was operated on an inner-city line as early as 2005 (*figure 1*). This bus had been borrowed from Genoa and featured an inductive battery charging system of the Conductix-Wampfler company in Weil am Rhein. Charging coils were installed at two stops for contact-free recharging of the bus batteries within a few minutes, thus allowing for a smaller vehicle battery. The bus was in operation for about eight months and proved that the technology is suitable in general. For instance, it was able to keep up with the normal flow of traffic. However, a larger passenger capacity would have been desirable.

Lörrach opts for e-car sharing

CO_2 emissions of e-vehicles are very low when using green electricity. In addition, electric vehicles drive extremely quietly, thus contributing significantly to the reduction of traffic noise. The use of electric cars in car sharing is ideal. It enables many citi-

zens to use this environment-friendly transport alternative without having to put up with any of the deficiencies that it still has to cope with, such as the short range. Car sharers can access conventional cars if necessary and opt for an e-car when driving short distances. Lörrach supports urban electric mobility in its "Lörrach mobilises electricity" project in cooperation with the innovation fund for climate and water protection of the regional utility, Badenova. Its partner, Stadtmobil Südbaden, procured three electric car sharing vehicles for Lörrach in 2014. They may be found at the new bicycle parking hall, among other places (*figure 2*). Charging is realized by ultra-quick charging systems developed especially for this project. They are currently throttled to 22 kW. Once the necessary tests have been completed, however, the batteries can be charged completely within 30 minutes. The vehicle will thus be available for the next user within virtually no time at all. As the town is itself a customer of Stadtmobil, these electric vehicles are also used for official trips.

"my-e-car" supplements the existing car sharing offer

Stadtmobil Südbaden and the regional utility, EnergieDienst, have kicked off yet another project.

The my-e-car GmbH joint venture has been operating a fleet of more than 30 electric car-sharing vehicles in southern Baden since December 2014. The vehicles are parked at quick-charging stations with two charging slots (*figure 3*). So, apart from my-e-cars, other (private) owners of e-vehicles can use the charging stations, paying with their credit cards. The electric power comes from the nearby run-of-river power station of Wyhlen and is therefore 100 % green electricity. The current my-e-car offer comprises four locations, with two further ones to be added in the coming months.

The headquarters of my-e-car GmbH is in Lörrach, which further enhances Lörrach's pioneering role in the field of electric mobility. The total number of charging facilities in Lörrach amounts to 11 charging stations. For a town of this size, this is a remarkable number. Lörrach thus ranks at the top in national comparison.

Electric vehicles in the municipal fleet

The town of Lörrach is also active on its own behalf. Three pedelec bikes are available for town staff to use on official trips. Moreover, Lörrach is involved in the badenova project "Practical test of e-mobility to examine the use of electrically driven vehicles in the municipal fleet". In an initial step, ten municipal vehicles, e.g. flatbed trucks, transporters and passenger cars, were equipped with data loggers for three weeks in order to record the daily distances driven. It turned out that all but one vehicle could be battery-powered, as they do not have to cover long distances. In a further step, an e-Smart was leased. It is used for official trips.

In March 2015, the town administration purchased another electric vehicle. An electrically driven flatbed truck travels the town center streets for the public cleansing service. The town administration plans to purchase further electric vehicles: Courier vehicles, for instance, and the service vehicles of the municipal executive service are particularly suitable for electric drive technology due to frequent stop-and-go traffic.

Conclusion

It is understood: The electric car is not going to solve all the problems that result from automotive traffic, especially not the huge space requirements for streets and parking lots. This is why the promotion of bicycle traffic, walking and the use of local public transport will continue. Yet, it makes sense, for reasons of climate protection, to replace automobiles using combustion engines with electric vehicles

Bicycle parking hall with e-mobility offers

The new bicycle parking hall, situated centrally at the main station, allows commuters to combine local public transport, e-car sharing and trips by bicycle in an ideal manner. The building, which was inaugurated early in 2014, provides space for more than 100 bicycles on more than 200 square meters, including ten separate stalls as well as lockers for bicycle helmets and other luggage. The solar system on the roof of this hall partly provides the facility with its own electricity. The parking hall is designed as a monitored bicycle parking lot and can be accessed via an electronic system. There are publicly accessible charging slots for e-bikes

Figure 1: Contact-free recharging e-bus.
All photos: City of Lörrach

Figure 2: The Stadtmobil e-car sharing vehicles may be found at the new bicycle parking hall.

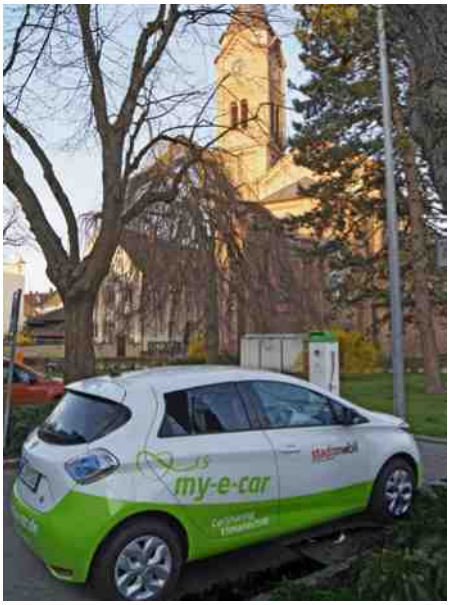

Figure 3: The "my-e-car" joint venture supplements the existing carsharing offer

Figure 4: E-mobility day 2013 in Lörrach

in the entrance area. Apart from charging stations for the shared e-vehicles, two charging slots for private e-cars are located at the adjacent parking lot.

Bicycle parking facilities have also been installed in the town center. They are equipped with bicycle holders as well as lockers and charging slots for e-bikes. The objective is to create an attractive offer for citizens to ride their bikes into town and do their shopping.

Information offerings on the topic of e-mobility

Lörrach wants to inform the citizens regularly and comprehensively about any measures taken in the field of electric mobility. Therefore, an information platform about this future-oriented topic will be included on the town's website. Apart from an overview of public charging stations, the e-car sharing offer will be explained on this web page and information will be provided about the use of electric busses and e-vehicles in the municipal fleet.

In addition, the town also organizes public events relating to the topic of electric mobility. In the scope of the "100 years of train operation at the Wiesentalbahn" anniversary, there was an e-mobility day on September 13, 2013. Interested visitors had the opportunity to look at numerous electrically driven vehicles in the town center (*figure 4*). The models ranged from current ones through to historic vehicles. A special one was the "eforce One" electric lorry of the Swiss Feldschlösschen brewery, of which only two exist so far. Visitors were also allowed to test e-cars and e-bikes. The highlight of the day was a parade of all sorts of e-vehicles – from e-cars, e-bikes and Segways through to electric wheelchairs – through the town center of Lörrach. Watched by numerous spectators on the side of the street, the parade of 73 vehicles moved through the street silently.

This year, Lörrach will be a stage of WAVE. WAVE is the world's largest electric vehicle rally. For this event, more than 80 e-vehicle users are expected to come to Lörrach and present their vehicles for several hours. Simultaneously, the "Mobility Day" will take place in the town center. Apart from private enterprises, such as bicycle and car dealers, transport companies, car sharing providers and other parties will be represented with information booths. The town of Lörrach will provide information about its endeavors in the field of electric mobility.

Outlook

Extension of e-vehicle infrastructure

The number of charging stations will be increased continuously over the next few years. The future locations will be determined according to such criteria as accessibility and grid stability. These charging stations are to give an incentive to the citizens and visitors of Lörrach to buy and use electric vehicles. Moreover, we are investigating whether free parking spaces exclusively for e-cars can be made available near the town center and whether charging stations can be created in existing customer parking areas in cooperation with the retailers of Lörrach. Customers would really benefit from this while shopping, since they would be able to recharge their vehicles for free during this time.

Use of local public transport

The use of e-vehicles is also possible in local public transport. The town is investigating the possibilities of installing a solar shuttle bus line between the swimming pool, the town center and the Swiss border in Riehen. This would provide visitors coming from Basel with an attractive connection to our local public transport, linking it to the Basel tram network. The installation of park-and-ride spaces at the swimming pool would create a comfortable alternative for commuters and shoppers coming from the Wiese valley to driving their own cars into town. In addition to this solar shuttle bus line, the general use of electrically driven town busses is being examined. ■

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