PRESS RELEASE

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Bidirectional charging: V2X Suisse project clears first key hurdle

The Mobility Cooperative is working with several partners to test the potential of electric cars as energy storage devices, to see how they might contribute to grid stability. The pilot project is set to run until spring 2024, and has already proved that the technology works – but there's still a lot of work to be done in Switzerland before it can be used on a widespread basis.

In future, electric cars could be used to balance out fluctuations in the grid by feeding power back into the network when they aren't being driven. This is certainly possible from a technological standpoint, as Switzerland's own "V2X Suisse" pilot project, which is being led by Mobility, recently demonstrated. Launched in 2022, the project has been able to show in tests that it meets the technical requirements set by Swissgrid, the operator of the country's national grid . Specifically, this means that the system platform is able to respond to a signal to begin compensating for fluctuations in the grid within two seconds. With the increasing risk of power shortages and energy bottlenecks, this is a major achievement that underlines the potential that this technology has to offer.

The idea behind bidirectional charging is simple: stationary vehicles are used as mobile power banks that can be linked together to form energy storage units and smooth out power peaks. Mobility's current fleet of 3'000 vehicles alone could, in theory, theoretically supply 60 megawatts – more than the Peccia pumped-storage power plant in Ticino, for example.

Making the most of valuable insights during the winter months

The V2X Suisse project is exploring various regulatory and technical issues surrounding the use of vehicles for bidirectional charging. It is the largest test of its kind to be carried out in Switzerland to date – involving 50 of Mobility's "Honde e" vehicles that are available for regular car sharing at 40 stations across Switzerland. Customers have already covered more than 400'000 kilometres in these vehicles, with many more to come. This summer, it was decided to extend the project by six months until the end of March 2024. The reason for this that developing the platform was a complex process, and building the V2X infrastructure took longer than expected. Now that the full project set-up is available, the aim is to make the most of the valuable insights to be gained from the winter months. The project's final report will then be published in summer 2024.

Framework conditions have to be improved

"Generally speaking, there are still significant challenges in terms of setting up a charging infrastructure in Switzerland," says project manager Marco Piffaretti. But car sharing companies in particular are dependent on uniform solutions when it comes to developing and operating this type of infrastructure. "It's vital to guarantee non-discriminatory access for reading and writing data. This is the only way to make the most of the potential of electromobility to benefit the grid."

The focus is now on economic efficiency
The technical feasibility of the system has now been proved. According to Piffaretti, the main task now is to look into the economic viability of the technology involved. “At the end of the day, energy sharing has to be straightforward and economical.” There are still some hurdles to overcome before that is the case, however. In the initial phase, the project has already shown that a lot of distribution grid operators are not really prepared for feeding power back into the grid from dual-use batteries. Among other things, solutions are needed to establish the proof of origin of the electricity that is fed back into the grid.

However, it does look as if the Swiss parliament will soon abolish double grid fees, and this will lay the foundations for economically sensible implementation. In the words of Mobility CEO Roland Lötscher: “It bodes well that politicians have listened to us and understood what we’ve been saying. There’s a lot of enthusiasm for the V2X project. People are seeing the opportunity to make smarter use of the existing energy infrastructure – among our community and station partners, and also the industry associations. If we all do our homework together now, I firmly believe that in a few years’ time, we’ll be sharing energy and mobility.”

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ABOUT V2X
Seven companies are involved V2X Suisse, with Mobility as the project lead. They are: automotive manufacturer (Honda), software developer (sun2wheel), charging station developer (EVTEC), aggregator manufacturers (tiko), and scientific support providers (novatlantis, in collaboration with ETH). The project is supported by the pilot and demonstration programme run by the Swiss Federal Office of Energy (SFOE).
For details, see: www.mobility.ch/en/v2x

ABOUT MOBILITY
Mobility is the car sharing market leader in Switzerland. The cooperative offers its 261’000 customers 2’960 vehicles across a range of categories at 1’570 stations. Using state-of-the-art technology, the system offers simple, inexpensive and fully automated car sharing with a strong, sustainable foundation. Car sharing as part of a combined mobility approach saves space and reduces traffic and environmental impact: each Mobility car replaces 11 privately owned vehicles.