



# Tartu: Reusing old EV Batteries

## Overview

The objective of this activity is to use EV batteries in a sustainable way by giving them a second life. Reusing old batteries will considerably benefit the environment as less resources will be used to produce new batteries and energy storages and at the same time, renewable solar energy will be used to charge the EVs. As such, the EV taxis of the private company OU Takso will be partially recharged based on renewable energy that is produced on-site with PV panels and stored in used EV batteries. OU Takso will install a recharging point (for reusing the EV batteries) and PV panels to generate solar energy).

The system will thus consist of old EV batteries, PV panels, EV chargers and battery charging equipment. The latter is the most important part of the system as this equipment is currently not available on the market and was separately developed during the SEC project. The system allows to fully charge in a sustainable way around 30 EVs each day, depending on the location of the system. Also, depending on the climate conditions, surplus electricity produced by the PV panels can be used for other on-site purposes (e.g. lighting) or sold to the grid.



## Business Modell

The development of the EV battery reuse system is funded by H2020 (70%) and the SME itself (30%).

## Benefits

- Decarbonizing the electricity supply
- Increase of grid stability
- New business opportunities
- Increased resource efficiency
- Independence in energy supply
- Extending the lifetime of EV batteries
- Reducing the environmental impact of manufacturing/recycling batteries
- The system is able to work in an off-grid mode (autonomy)

## Citizen Engagement

For this solution, citizen engagement will mainly take the form of awareness-raising. The system will be introduced to the citizens and stakeholders at information events in order to raise their awareness of sustainable mobility solutions in general and battery re-use in specific.



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## Stakeholders

<b>Owner(s)</b>	OU Takso
<b>Service/Technology Provider</b>	Nissan, OU Takso
<b>Users</b>	OU Takso
<b>Investors</b>	H2020, OU Takso

## Investment/Finance

Ca. 170,000 Euro

## Replication Potential

As the EV market continues to grow and manufacturers are announcing more and more models that are affordable to the end users, the market for second-use EV batteries can be expected to increase remarkably as well. Besides offering a solid business opportunity as replaced batteries are expensive to discard and recycle while still having most of their capacity, reusing batteries reduces waste and adds another 5-10 years of effective lifetime. Several automakers are already experimenting with alternative uses for these second-life batteries in stationary energy storage, so the solution that will be developed and piloted in Tartu could considerably contribute to these efforts. The solution can be easily replicated. The crucial part of the solution is the equipment that enables to manage (charge) the battery blocks. Until now, no commercial solutions have been available for doing this. In cooperation with Tallinn University of Technology, the Estonian University of Life Sciences, the necessary equipment was developed. The system was launched in June of 2019 and after setup and correction in the system, the solution can be commercialized and produced on a large scale.

## Contact

<p>Ermo Kontson OU Takso <a href="mailto:ermo@elektritakso.ee">ermo@elektritakso.ee</a></p>	
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## More Details:

<https://smartencity.eu/about/solutions/reusing-old-ev-batteries-tartu/>



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