

# Development of an integrated e-bike sharing scheme

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- Public electric-trike sharing scheme supporting citizens with reduced mobility
- Sustainable mobility options for all
- Affordable and barrier-free bike sharing

*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.*

**Location:**

Munich, Germany

**Organisations involved:**

[City of Munich](#)

[Stadtwerke München](#)

[Public Transport Munich](#)

[\(MVG - Münchner](#)

[Verkehrsgesellschaft\)](#)

## What is the solution?

Cities are struggling with increasing pollution due to traffic emissions. Munich, in particular, faces huge problems with air pollution. Part of a sustainable solution is the promotion and implementation of electric mobility solutions, as this can reduce local emissions. In Munich, the MVG's (Munich's public transport provider) current bike-sharing system is not well-suited for senior citizens (60+) or physically impaired people, because these groups often prefer electric bicycles or tricycles (or trikes). The current bicycles on offer also do not allow users to transport heavy loads. The chosen alternative in these cases often tends to be the private car. Within this measure, a carrier e-trike for mobility-impaired people and a concept for the integration of an e-trike in MVG Rad-bike-sharing system will be developed. This will not only diversify what is on offer in terms of public mobility services, but it will also enable access to often expensive vehicles, like electric bicycles and tricycles, such as e-bikes and e-trikes, thereby providing an affordable and sustainable alternative.

## How does it work?

A newly developed e-trike, which is easy to cycle, thanks to a low and deep-seated tricycle-frame is being integrated into the existing shared bicycle fleet of Munich's public transport provider (MVG). The e-trike is very user-friendly and offers high stability. It runs at a speed of up to 25 km/h and has enough storage space capacity for several large shopping bags. The e-trike can be located and booked by the MVG eTrike App.

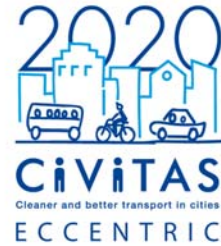
The measure is being implemented in collaboration with the user groups targeted. Interviews with senior citizens provided the baseline technical requirements. The MVG was also able to build on its experience with non-electric bike-sharing schemes and applied this to the e-trike sharing scheme.

Users are given the opportunity to provide feedback on their user experience, which will allow the bike sharing provider to improve their services and further adapt it to the needs of all users. The experience with this system will be used as a basis for creating a replicable and (up)scalable concept of an e-mobility solution for all (public e-trike-sharing). It strategically strengthens the role of public transport companies, as the backbone of sustainable urban mobility, and fosters e-mobility and public multimodal transport systems.



## Expected results

By providing access to otherwise expensive e-trikes, this measure makes public mobility offers more inclusive. Therefore, the measure is expected to increase citizens' willingness to change their travel behaviour from car to bike. The measure is also expected to generally increase the knowledge of public e-bike sharing schemes and the number of users. Based on this measure, public e-trike sharing schemes will be able to be developed on a larger scale, leading to reduced emissions, improved mobility and greater health benefits for the general population, including vulnerable groups.



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## Business model

A detailed business model has yet to be established. The measure is funded, up to 70%, by the CIVITAS ECCENTRIC project, and 30% from the City of Munich's Utility Company (Stadtwerke München, in German). The e-trike will form part of the overall bike sharing system MVG Rad. The planned budget to implement the solution is about 390,000 euro.

### Partners involved:

- Public Transport Munich (MVG)
- Draisin GmbH – Trike manufacturer
- E. Ziegler Metallbearbeitung AG – Charging station manufacturer
- Pironex GmbH – Sharing technology provider
- Heinzmann GmbH & Co. KG – Engine and battery technology

### Timeframe:

- Research & Development: Eight months
- Procurement & Implementation: 12 months
- Demonstration & Monitoring: 10 months
- Conclusions & Recommendations: 18 months

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