



# GAMES

## Grid Aware Mobility and Energy Sharing

“ Combining Vehicle-to-Grid and car sharing could foster synergies supporting the decarbonisation of the energy and mobility sectors

The electrification of mobility could potentially reduce fossil fuel consumption in the transport sector, along with the related nocive emissions and associated health hazards. Concurrent with the increasing number of Electric Vehicle (EV) models available on the market and with governmental incentives to electrify transport (as a means to decarbonize this sector), many vehicle fleet owners are contemplating on how to shift partially or entirely to EVs. However, this transition poses a challenge for fleet owners, especially as the required charging infrastructure can be expensive and complex to position when considering electric grid and parking space restrictions. Additionally, in order to truly reduce their environmental footprint by using renewable energy supply sources to recharge the EVs, the vehicle fleet owners need to coordinate the charging events with electricity suppliers and distributors. Thus, the electrification of shared vehicle fleets heavily depends on cross-sector coordination and collaboration which can be made possible through digitalisation.

GAMES will focus on how digitalisation can enable electric shared vehicle fleets to answer mobility needs while creating new revenue streams by providing services to electrical grid operators and energy communities. GAMES will verify if such cross-sector exchanges can increase the efficiency of both the shared mobility and energy sectors and reduce their environmental footprint.

### Project Duration

01.04.2022 - 30.09.2024

### Project Budget

Total Budget: € 1,022,110.-  
Funding: € 811,263.-

### Project Coordinator

University of Applied Sciences and Arts of Southern Switzerland (Switzerland)

### Project Partners

- e7 energy innovation & engineering (Austria)
- Salzburg Research Forschungsgesellschaft mbH (Austria)
- Reichman University (Israel)
- Hive Power Sagl (Switzerland)
- Azienda Elettrica di Massagno SA (Switzerland)
- Sun2wheel AG (Switzerland)

### Project Website

games-innovation.net

### Contact

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ERA-Net Smart Energy Systems



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**ERA-Net  
Smart Energy Systems  
Joint Call 2020  
(MICall20)**

This project has been awarded funding within the ERA-Net SES Joint Call 2020 for transnational research, development and demonstration projects. 22 Mio EUR of funding have been granted to 21 projects active in 17 regions and countries.

## Main Objectives

The principles that lay the ground for the GAMES project objectives are that:


- the development and implementation of innovative and sustainable business models involving asset sharing mechanisms help minimize customer risk, provide a wider and fair access to sustainable energy technologies, and can offer economically valuable cross-sector services.
- cross-sector coupling can improve the efficiency and resilience of energy systems at various geographical scales, and these rely partially on partnerships established via digital monitoring and analysis, and a comprehensive mapping of collateral benefits.
- understanding users, their mobility needs and behaviour, their motives and engagement patterns with the service and its providers should be at the centre of any mobility planning.
- shared vehicle fleets have the critical mass required to offer reliable grid services, reduce parking space by reducing private vehicle holdings, can partially complement public transport.

On the basis of these principles, the objectives are:

- amplify electric and shared mobility appeal to a wider and more diverse public.
- quantify the economic value of the flexibility provided by EV fleets.
- proof of concept of cross-sector platform interoperability.
- enhance efficiency, sustainability, stability and security of distribution networks.

## Expected Main Results

- developed forecasting algorithm that predicts the availability of electric shared fleet vehicles for generating revenues from grid services
- identified economic, technical, environmental, and social motivators for user mobility mode choice
- quantified synergies of EV fleets with fluctuating renewable energies
- integrated digital shared vehicle fleet data in a grid analytics platform



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