E4-share

Due to growing awareness and concerns regarding pollution, sustainability and life quality, cities are confronted with severe challenges and a need for transformation processes that both reduce pollution and energy consumption and increase the quality of public space. These challenges can be met by flexible car-sharing systems based on electric cars that also allow users to efficiently switch between transport modes. In e4-share, we lay the foundations for efficient and economically viable electric car-sharing systems by studying and solving the optimization problems arising in their design and operation. We develop methods for finding apt solutions to the optimization problems arising at the various planning levels, as well as innovative approaches considering them simultaneously.

**Aim/objective**

- Lay foundations for efficient and economically viable e-car sharing
- Understand customer and operator needs
- Develop generally applicable methods for optimized planning and operation
- Identify opportunities for urban decision makers

**Approaches/methods**

- Extensive examination and mathematical formalization of the arising (optimization) problems
- Active stakeholder dialogue
- Development of novel numerical methods for planning and operating e-car sharing systems

**Expected results and impacts**

- Algorithms for efficient planning and operating of e-car sharing systems
- Reduce the ecological footprint and enhance climate neutrality
- Take advantage of technological solutions and realize efficient and sustainable urban systems and networks

**Involved cities/project examples**

- Bologna
- Brussels
- Vienna
- Comparison of cities in NYC, Vienna and Singapore

**Associated carsharing companies**

- TPER (Bologna)
- DB Rent GmbH (Berlin)
- Car2go (Italy)
- EQ_sharing (Milan)
- Bee (Naples)
- AMAT (Palermo)

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**About JPI Urban Europe**

JPI Urban Europe is a transnational research and innovation programme on urban transition. With the ambition to develop and validate new solutions for sustainable and liveable cities, a cooperation platform and programme is provided to connect urban stakeholders, researchers, cities, business and society.