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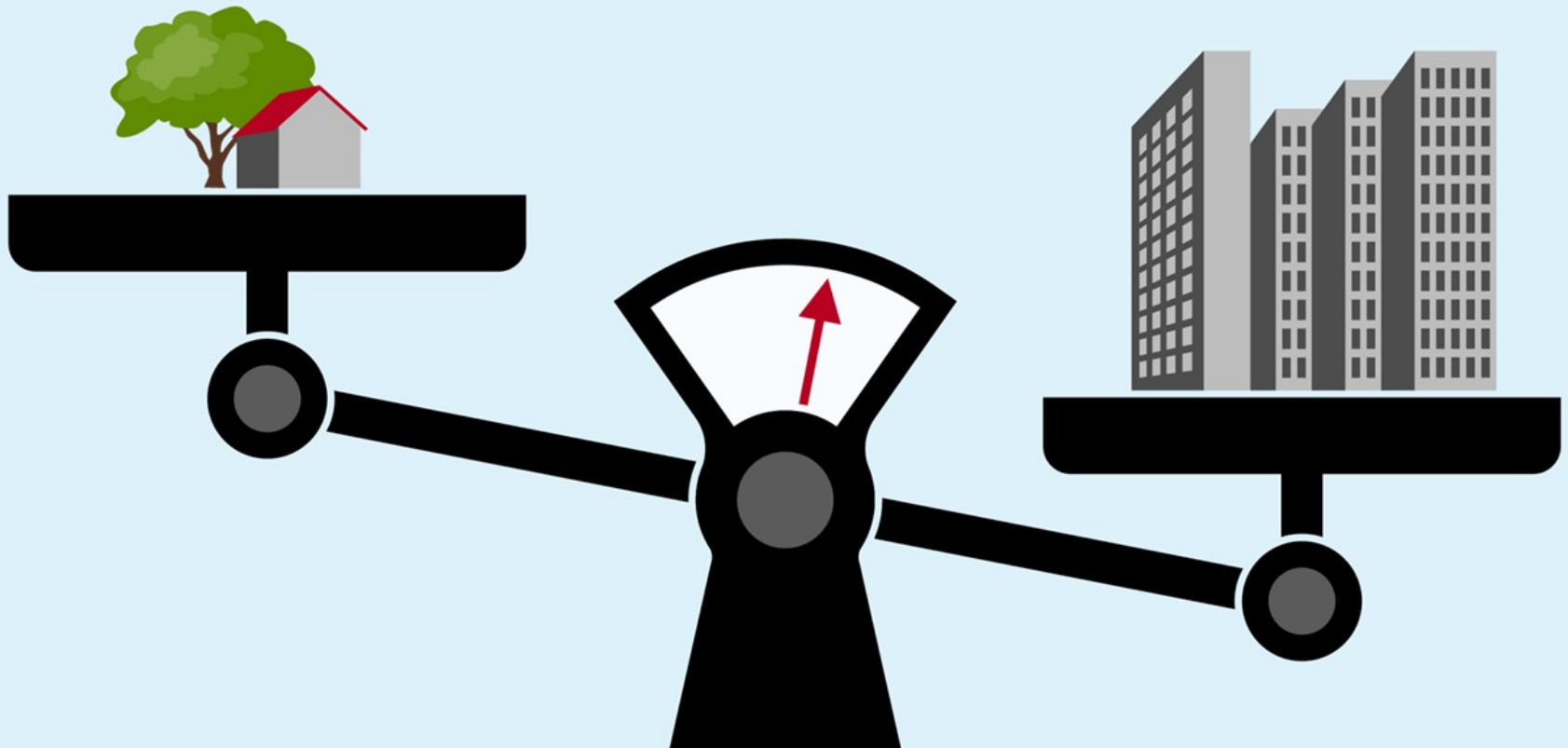
aufgrund eines Beschlusses
des Deutschen Bundestages

Smart2Charge: Smart grid enabled BEV charging infrastructure for rural areas

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(Stuttgart, Germany)
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The challenge of rural exodus

The goal is to achieve similar living conditions
in rural and urban areas...



... but rural areas face major challenges

- a large proportion of jobs are in the cities and urban areas
→ requirements for reliable and sustainable mobility
- new approaches must be found



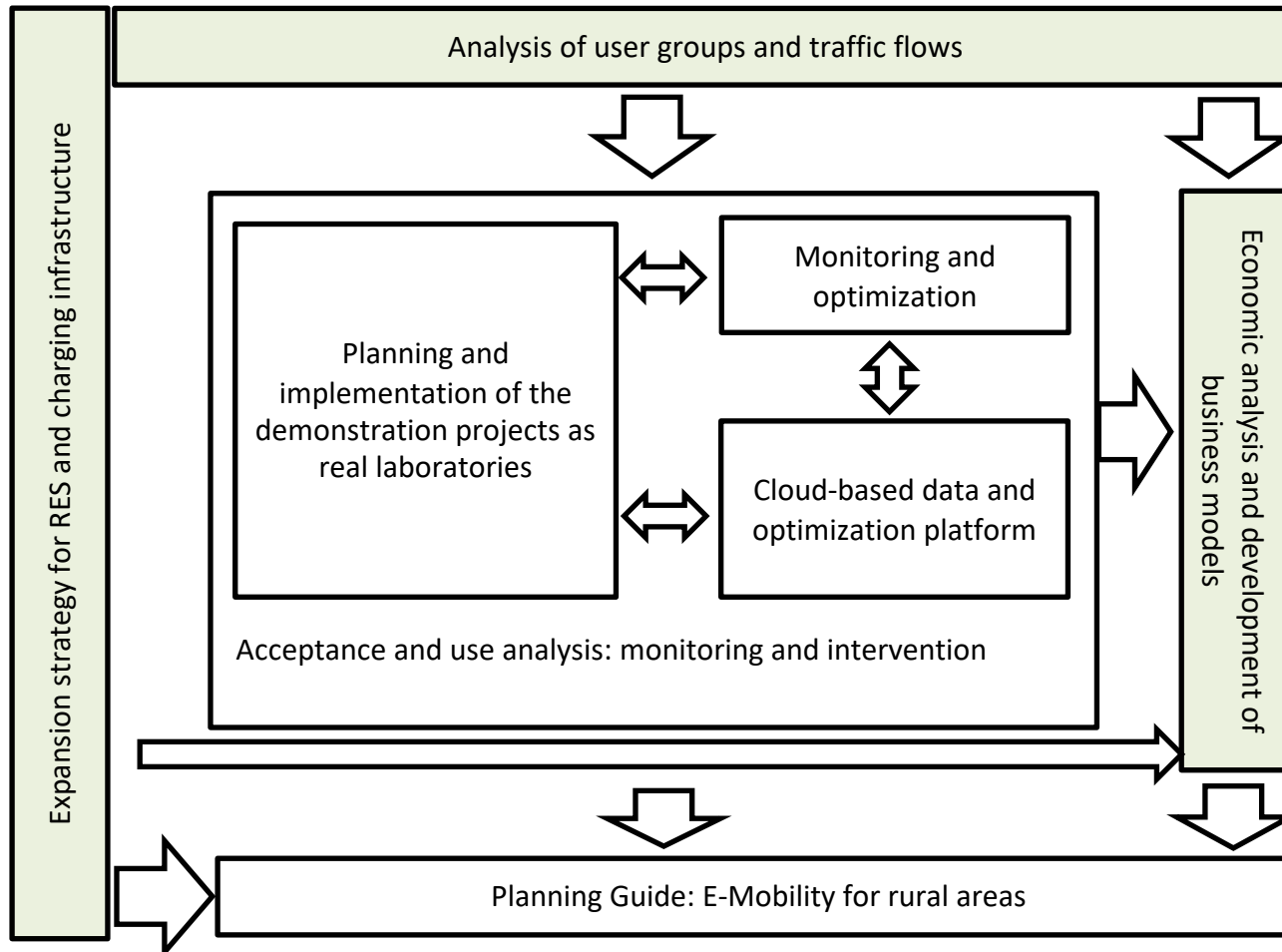
What must be done to maintain rural areas as attractive places to live?

The community of Wüstenrot

- about 6.700 residents
- divided into 5 sublocations
- in the catchment area of Heilbronn and nearby the region Stuttgart
- rural area, which must face up to the problem raised: most people work in other cities because there are not so many jobs in Wüstenrot



Smart2Charge: Project Goals



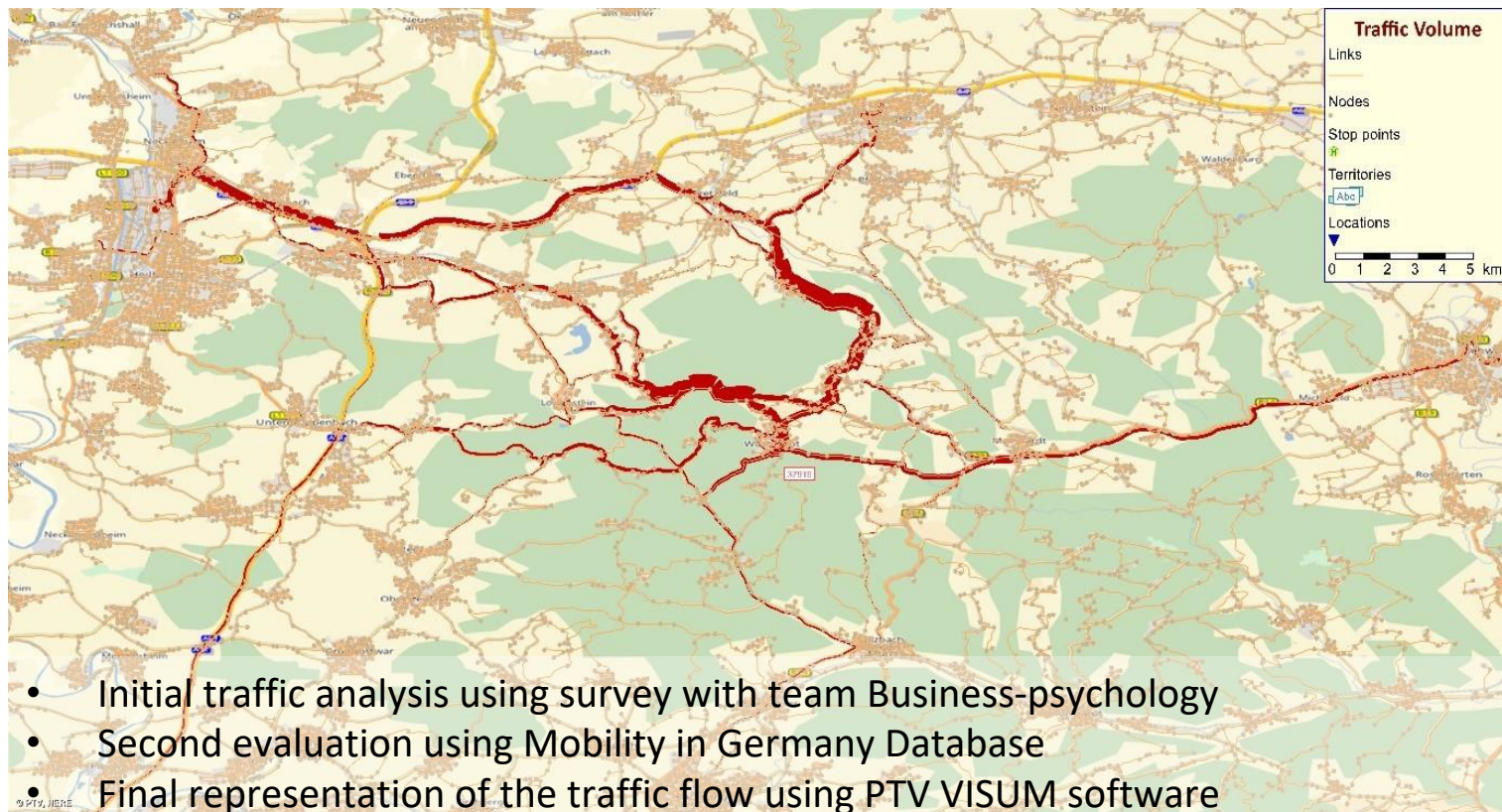
Project Consortium



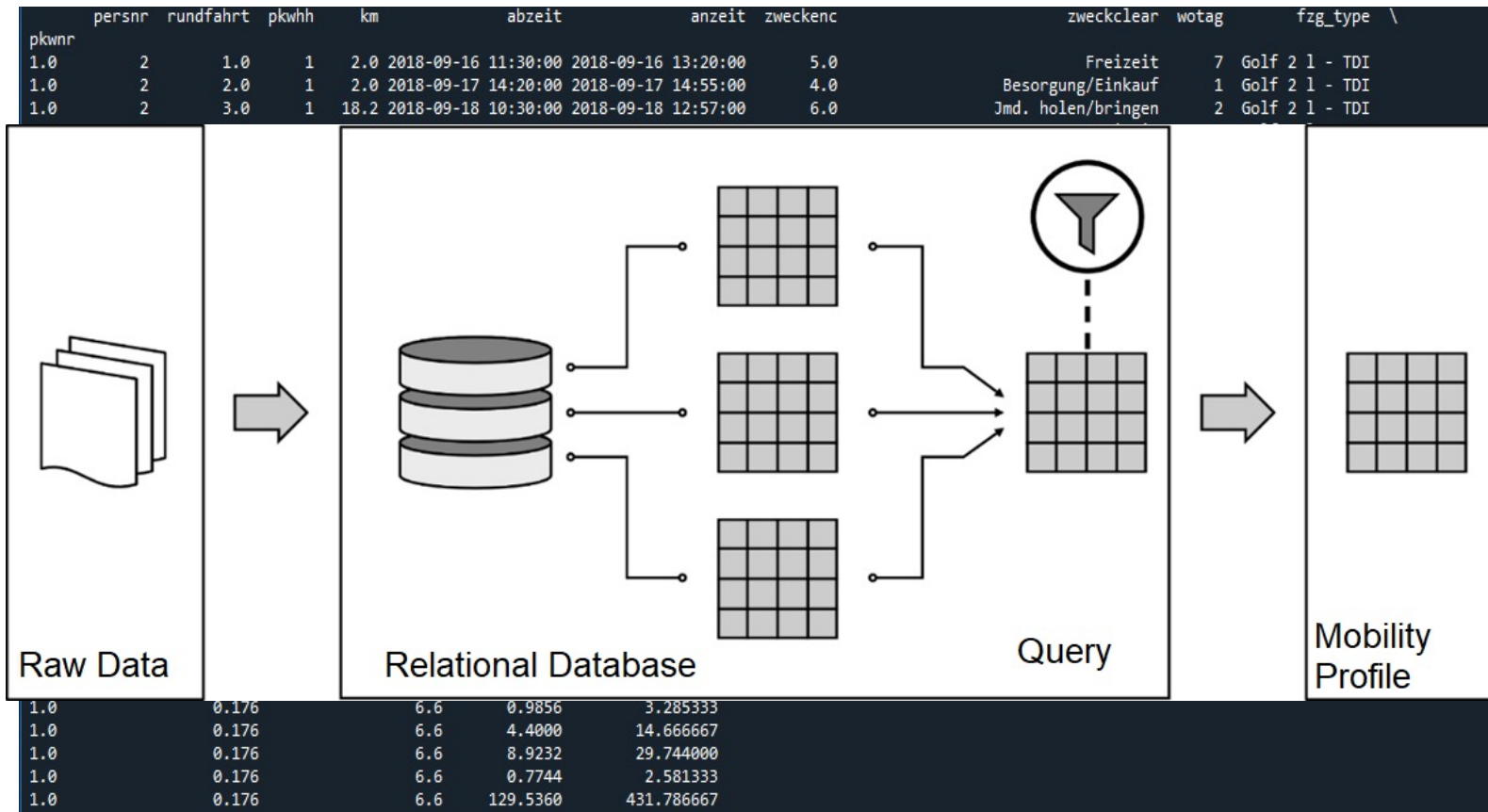
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Evaluation of mobility parameters and traffic flows for Wüstenrot

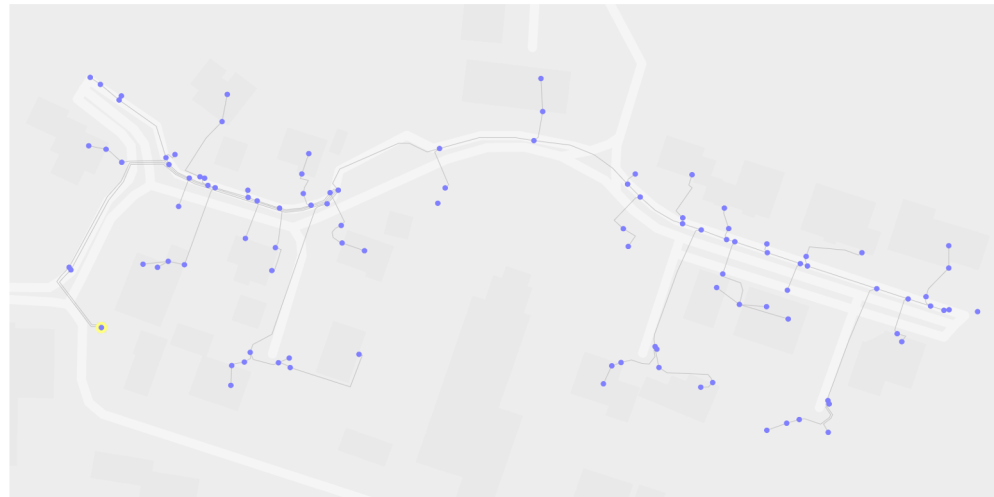


Mobility profile generator



Grid Modelling and Implementation of Flexibility Options

- Detailed LV grid model of the plus energy settlement Vordere Viehweide, Wüstenrot
- Modelling tools: Python + pandapower
- GIS based data for the exact location of busbars, lines and knots



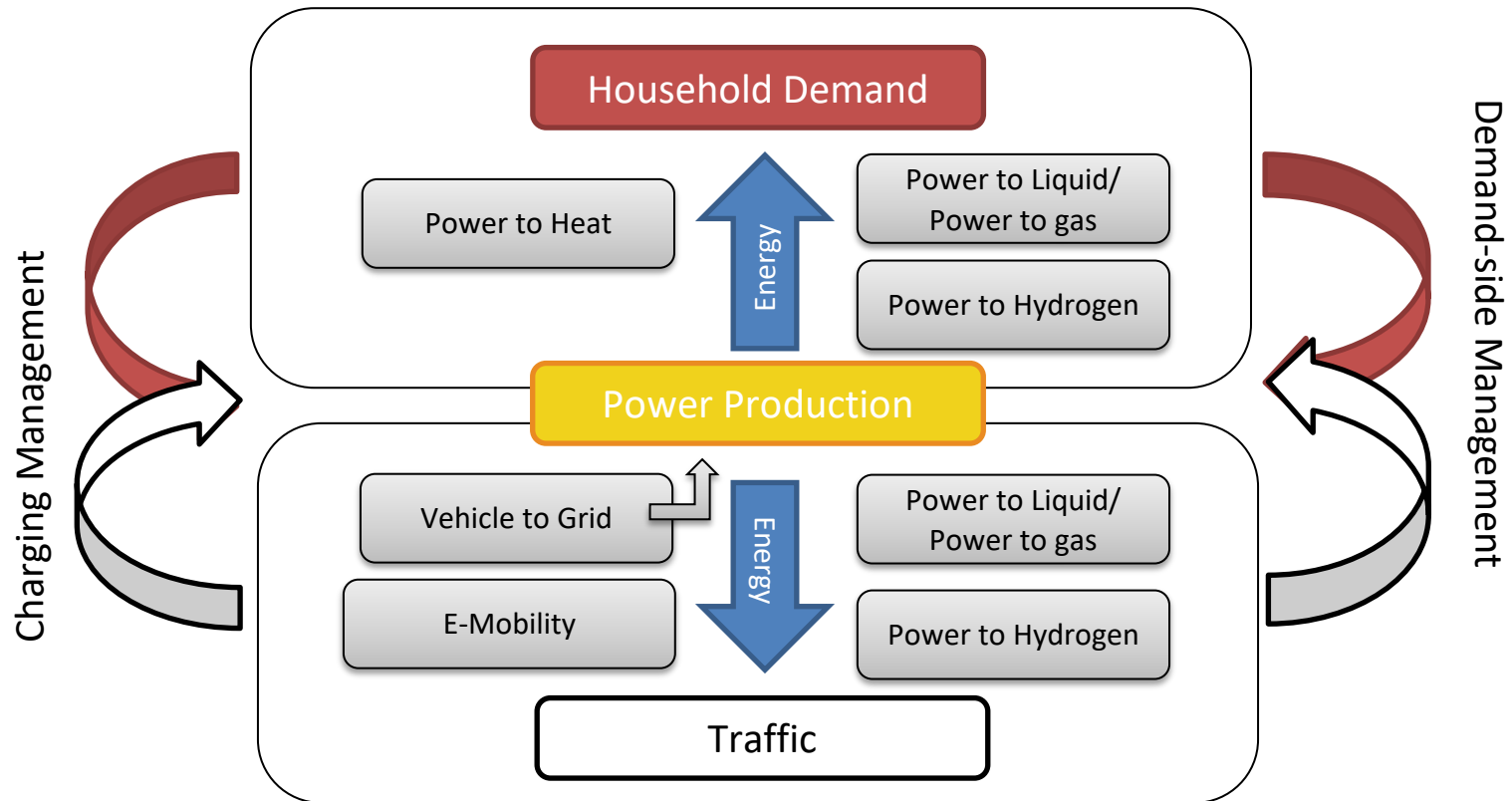
Grid Modelling and Implementation of Flexibility Options

- Evaluation of overloads with power flow calculations
- Example for the simultaneous power demand of 3x32A for each building in the area:



- Next Steps: implementation of charging stations and evaluation of flexibility measures, such as V2G

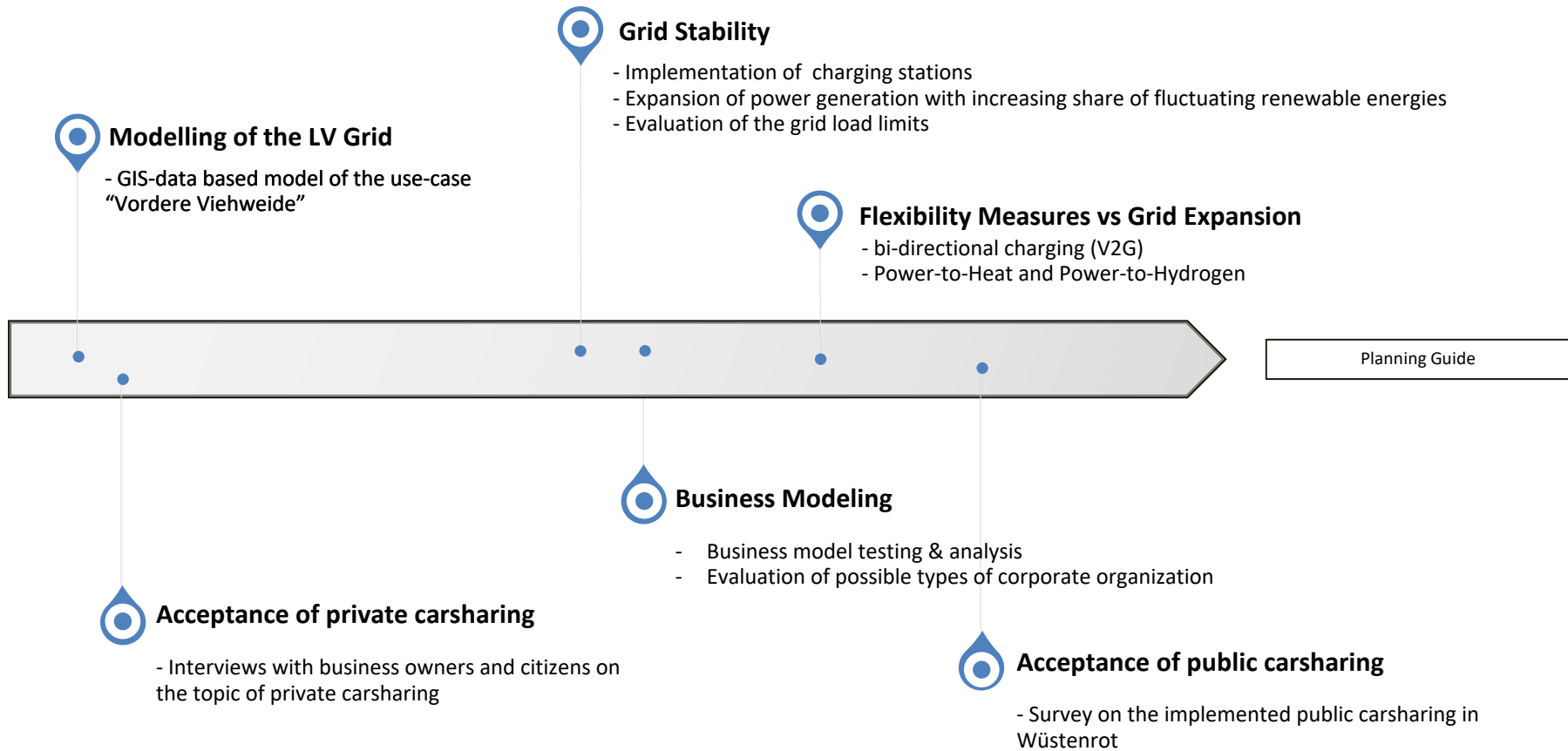
Flexibility Options



Impact of the project for the community of Wüstenrot

- Strengthening mobility in rural areas
- Increasing attractiveness as a place of residence for commuters
- Bidirectional charging as an opportunity to contribute to sustainable mobility

Roadmap





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Thank you for your attention!

[Smart2Charge](https://www.smart2charge.com) | [HFT Stuttgart \(hft-stuttgart.com\)](https://www.hft-stuttgart.com)



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