0044 - EVALUATING THE POTENTIAL OF FUTURE E-MOBILITY USE CASES FOR PROVIDING GRID ANCILLARY SERVICES

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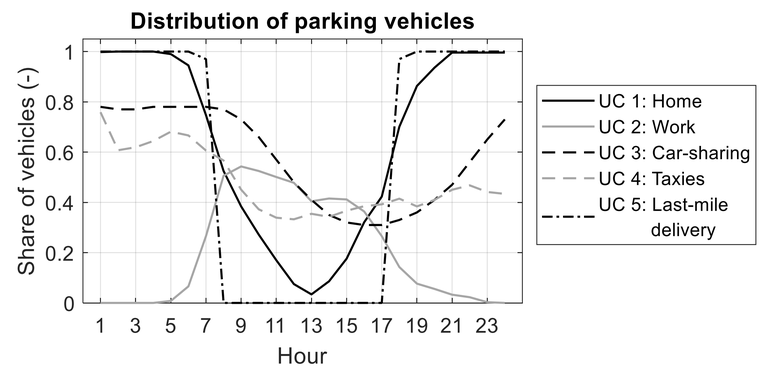
Introduction:

Forced generation of RES will increase the future demand of:

- Redispatch measures
- Secondary control reserve (SCR)
- Tertiary control reserve (TCR)

Future electric vehicles may provide the required flexibility for the power system!

Service	2019	Trend 2030
Redispatch	1 859 GWh (228 days)	+ 18.8 %
SCR	310 GWh (365 days)	+ 23.0 %
TCR	19 GWh (176 days)	+ 52.0 %



Methodology:

1. Deriving the future Austrian demand of grid ancillary services
2. Modelling realistic mobility patterns of EVs based on traffic analyses
3. Identifying EVs' potential considering one MV grid
4. Analysis of grid restrictions based on long-term grid simulation

Conclusions:

- EVs parked at home (UC 1) provide the most potential
- SCR and redispatch allow higher potential
- EVs' provision of grid ancillary services strongly depend on local grid restrictions