Sharing Mobile Storage for Demand Charge Reduction

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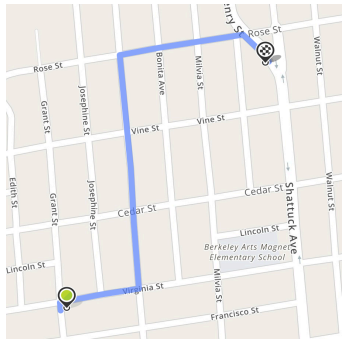
Business case: Demand charge reduction

Supply Side | Matching Platform | Demand Side



Supply side
- Increasing EV adoption
- 95% of time parked

CPS platform manages
- Matching
- Flow of information
- Flow of money

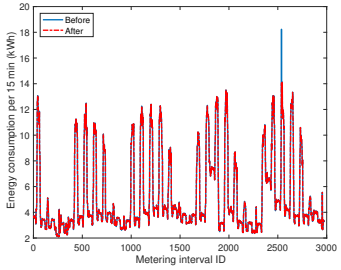
Demand side
- Eager to reduce demand charge
- Installed bi-directional charger

Piggyback on electrified TNCs

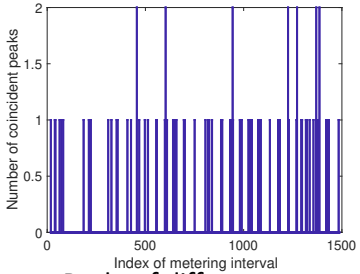
UBER + lyft + = ???

- TNCs are electrifying their fleets
- CA SB 1014: Clean Miles Standard & Incentives Program
- Demand charge requests and ride sharing requests are complementary spatially and temporally

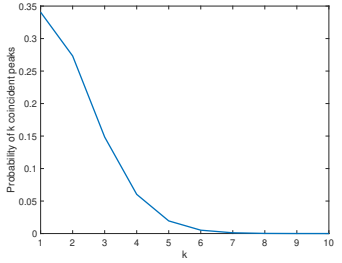
Temporal statistics of peaks



- Shaving peaks reduces demand charge

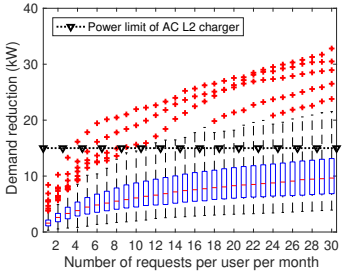


- Peaks of different users are temporally dispersed

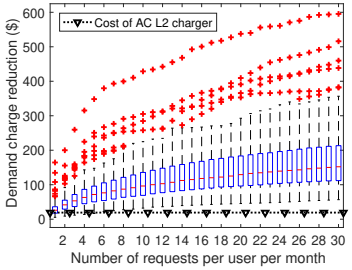


- Theory: probability of *k* coincident peaks

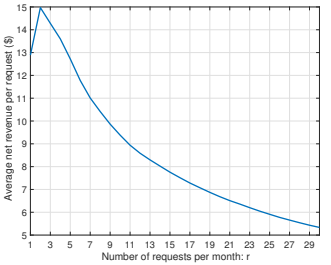
Hardware cost and driver compensation



- AC L2 bidirectional charger is sufficient



- Demand charge reduction covers L2 charger costs



- Driver compensation comparable with Uber

Joint service provision in electrified TNCs

- Developed model and computational tools to optimize joint service provision for electrified TNCs
- Identified conditions under which providing electricity service creates synergistic value for existing transportation services

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