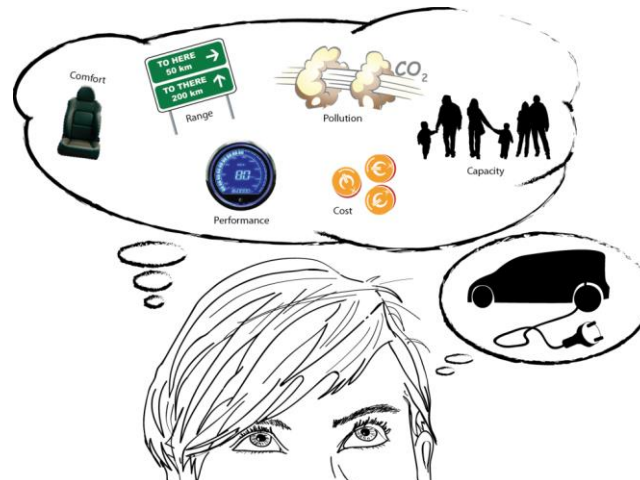


Electromobility Modelling

by

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Green eMotion project (GeM)

Big European Project monitoring cars in 2011-2013 in Ireland, Denmark, Sweden, Spain.

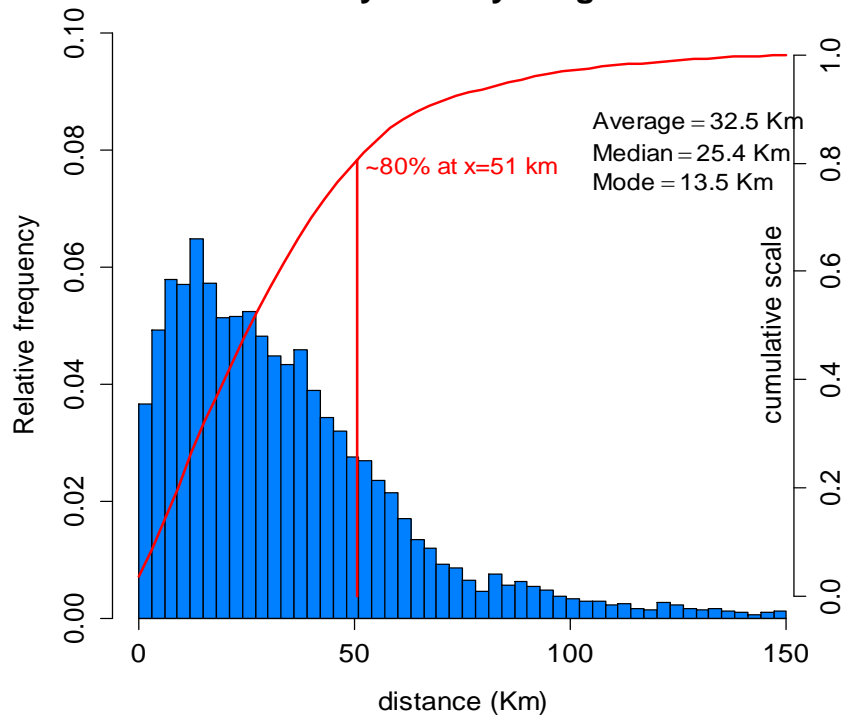
A total of 457 vehicles were monitored on 65800 trips

Vehicle Make-Model	Number of trips with non-zero Length	Number of trips with non-zero Length and Energy Consumption
no make-no model	533	305
Citroen-Zero	141	137
Mitsubishi- i-MiEV	31,428	19,594
Peugeot-iOn	25,453	24,080
THINK-City	8,244	7,911

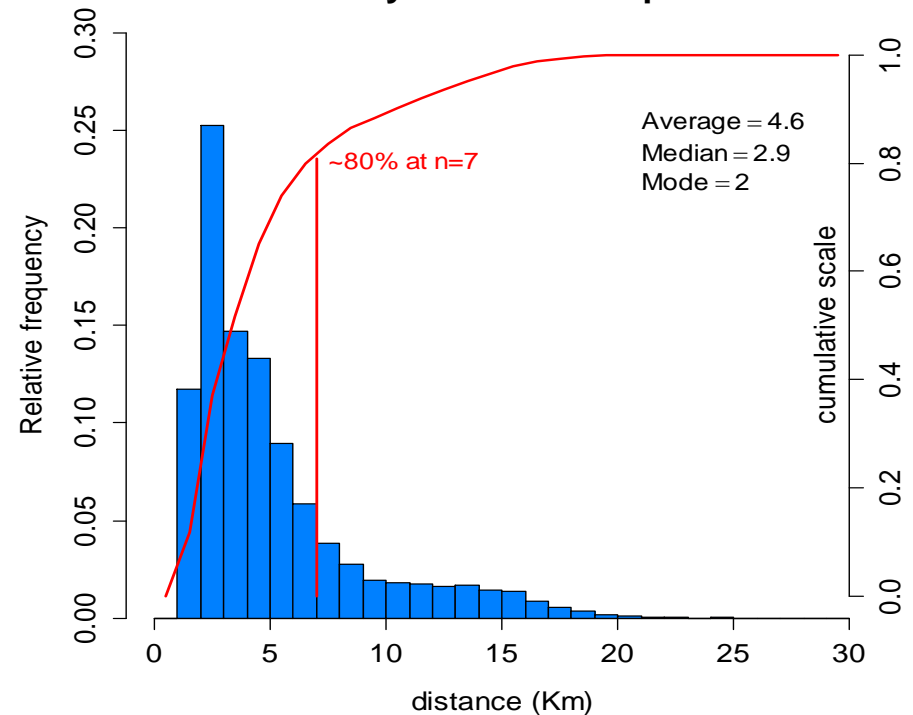
Is autonomy an issue? (GeM data)

1. 80% trips < 50 km/day
2. trips/day ~ 5 (80% of all trips)

Daily Mobility Length



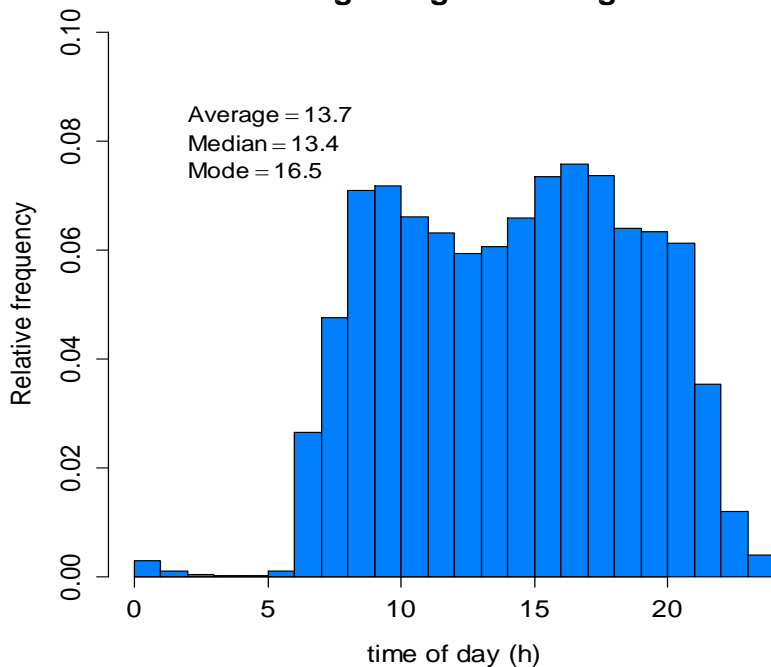
Daily Number of Trips



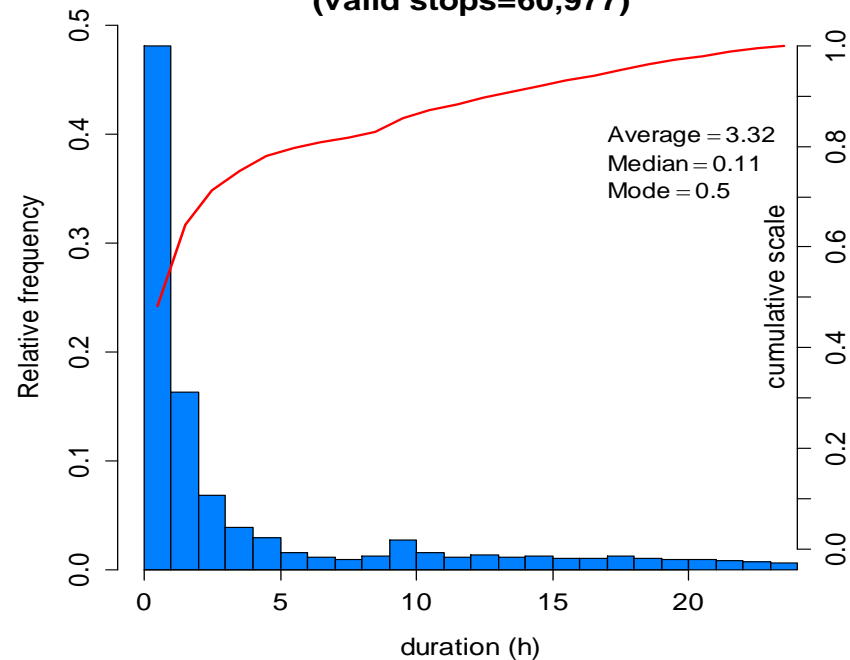
Is parking important (GeM data)?

1. Frequent short stops -> fast charging?
2. No particular preference for time of parking (during the day). Duration?

Beginning of Parking

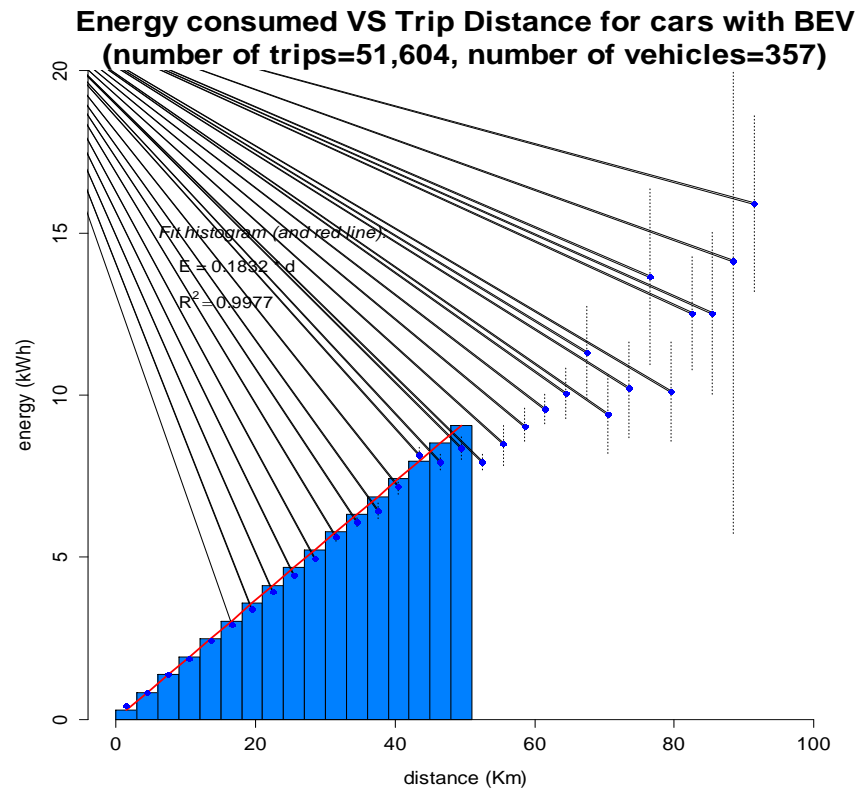


**Parking Time Duration
(valid stops=60,977)**



Energy consumption (GeV data)

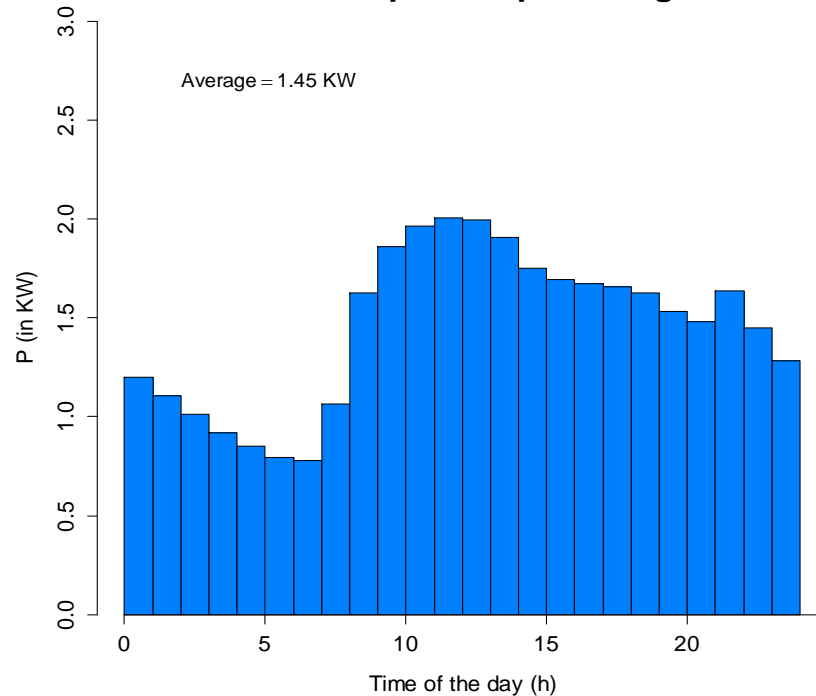
EC \sim 18.32 kWh/100 Km (based on experimental data)  Used in DIONE



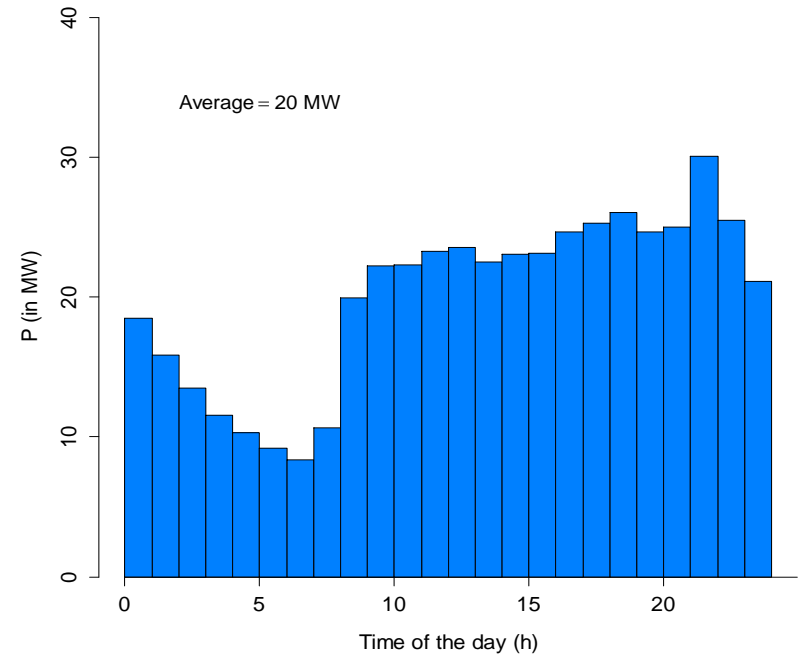
Power requested from the Grid per time of the day (GeM data)

Combination of slow and fast chargers, most car not privately owned.

Power requested per charge

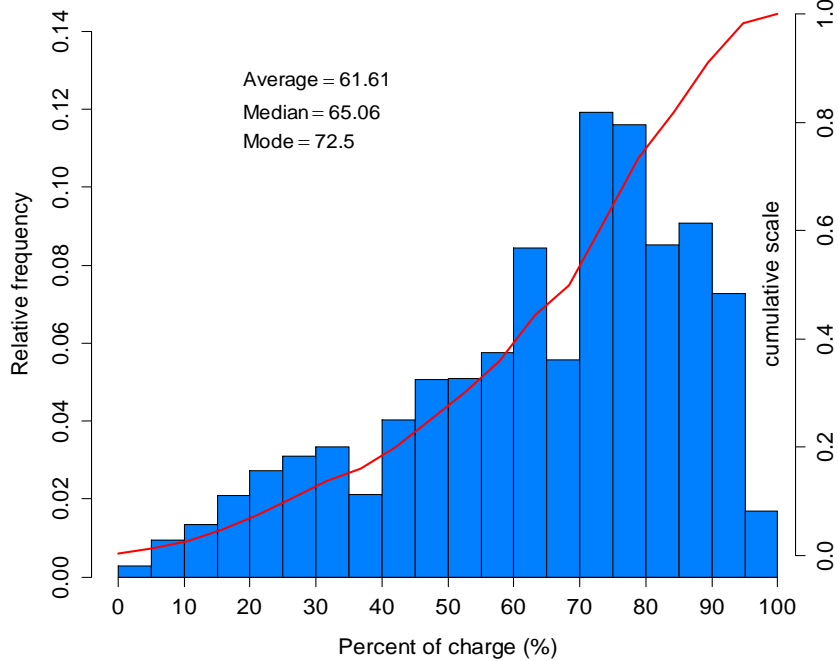


Total power requested

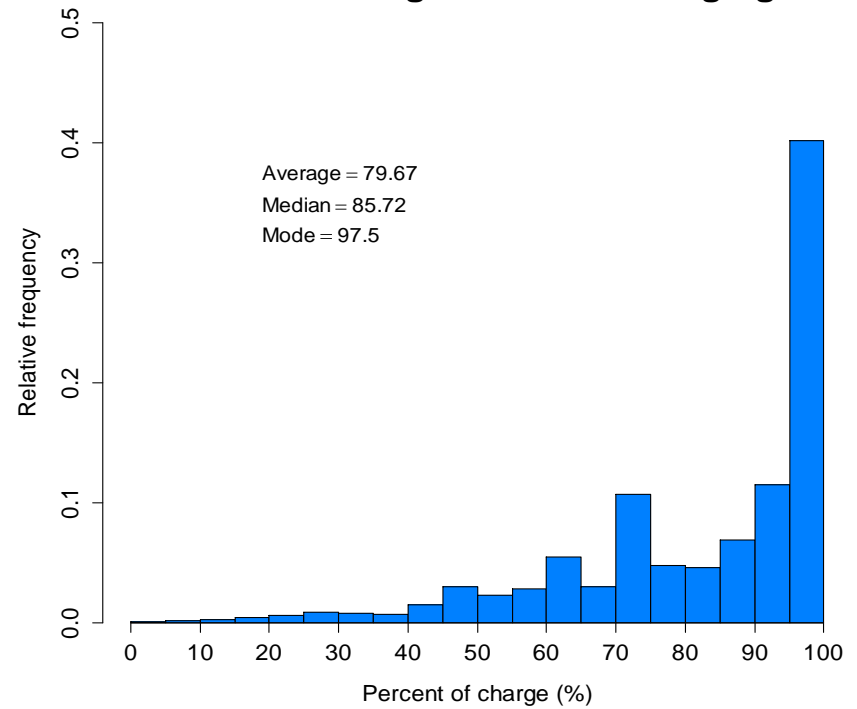


State of charge at beginning and end of charge (GeM data)

**State of Charge at Start of Charging
(recs: 25607)**



State of Charge at End of Charging

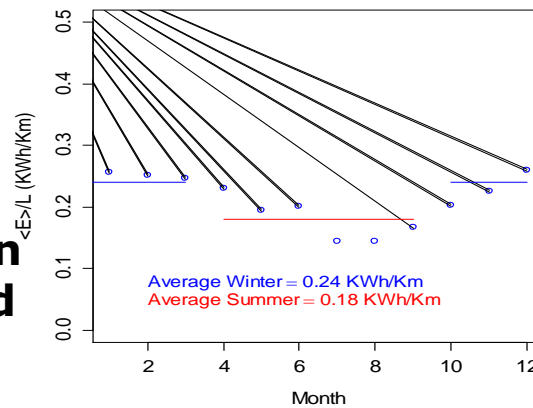


Analysis of consumption per country

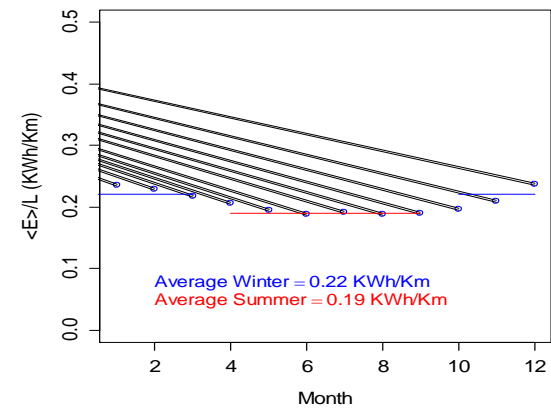
Patterns of consumption linked with weather and use of A/C

DK: North
 ES: South
 IE: better correlated to ES?
 SE: North

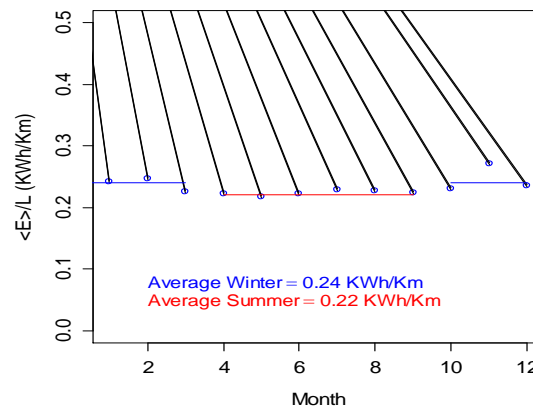
Country: DK (valid trips=21,665)



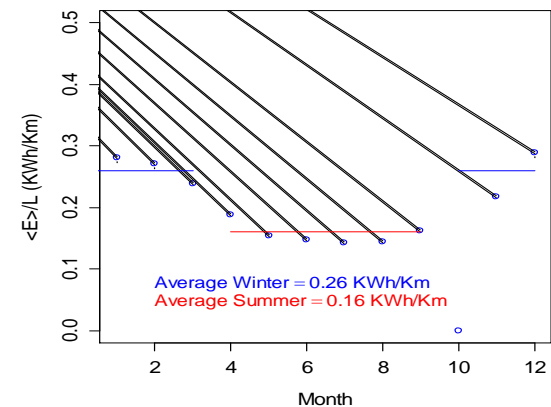
Country: IE (valid trips=12,828)



Country: ES (valid trips=8,237)



Country: SW (valid trips=4,745)



Next steps

- GeM data are a source of data for European Electric Vehicle Mobility
- Define what is needed from EVE in order to define typical ageing patterns
- Agree with JRC if they can do further analysis according to EVE specs

THANK YOU FOR YOUR ATTENTION.