3rd E-MOBILITY STAKEHOLDER FORUM

User requirements for urban electric mobility

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FRevue

Green eMotion

ZeEUS
Zero Emission Urban Bus System

European Commission

Why don't people buy EVs today?

January 2015: 30,000 registered electric vehicles in Germany

- Only a small selection of car models at high purchase costs
  - ⇨ Limited buyership

- Limited (electric) range
  - ⇨ Restricting personal mobility

- Charging facility necessary at home/company
  - ⇨ Limited user group

- EVs require trip planning and periodic re-charging
  - ⇨ Loss of simplicity

Getting a picture on electric mobility in Germany

Survey among owners of BEVs and PHEVs in 2014

- 3,100 participants from a total 9,000 invited E-Vehicle owners in Germany (private and commercial)
- Comprehensive information about:
  - properties of the electric vehicle
  - motives for purchasing an electric vehicle
  - daily usage
  - characteristics of household / company
  - charging practices and preferences

User profiles

Private Users (63%)

91% male,
ø age 51 years

2- and 4-person-households

51% University degree, high income

53% households live in detached house

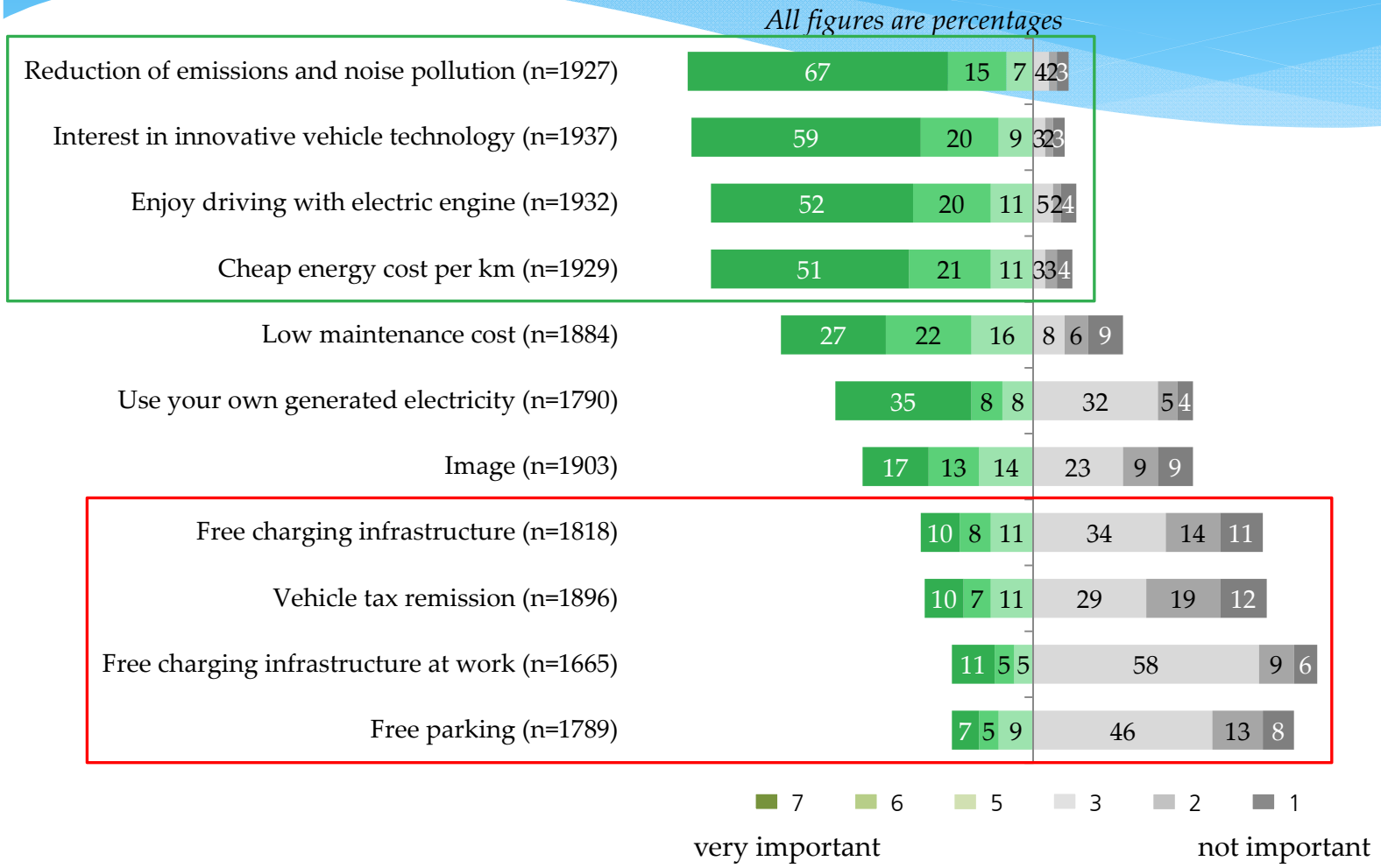
Commercial Users (37%)

67% SME < 40 employees, one location, less than 9 vehicles

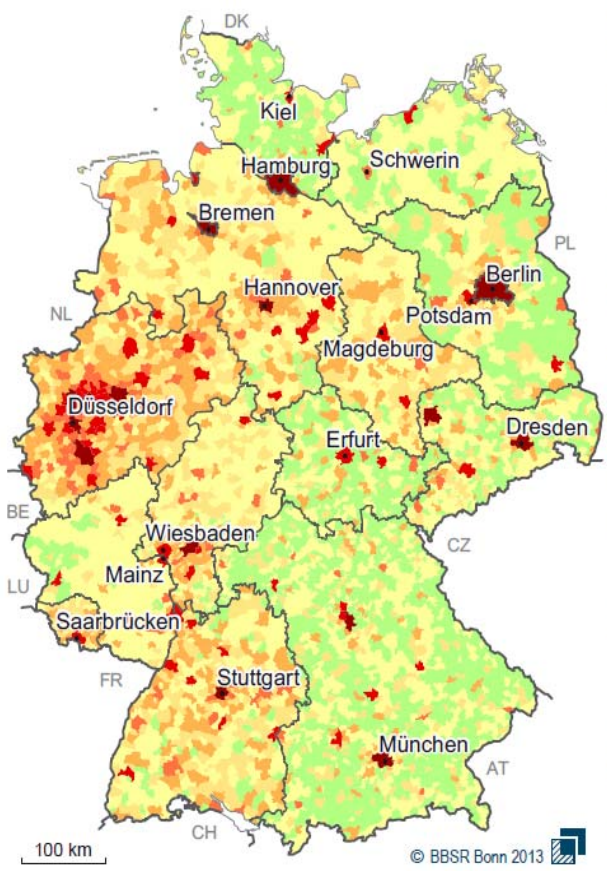
5% >1200 employees, up to 5 electric vehicles

Service companies, public institutions, construction companies, energy supply companies

Mix of motives for purchasing EVs



Large share of EVs in small cities



Stadt- und Gemeindetyp

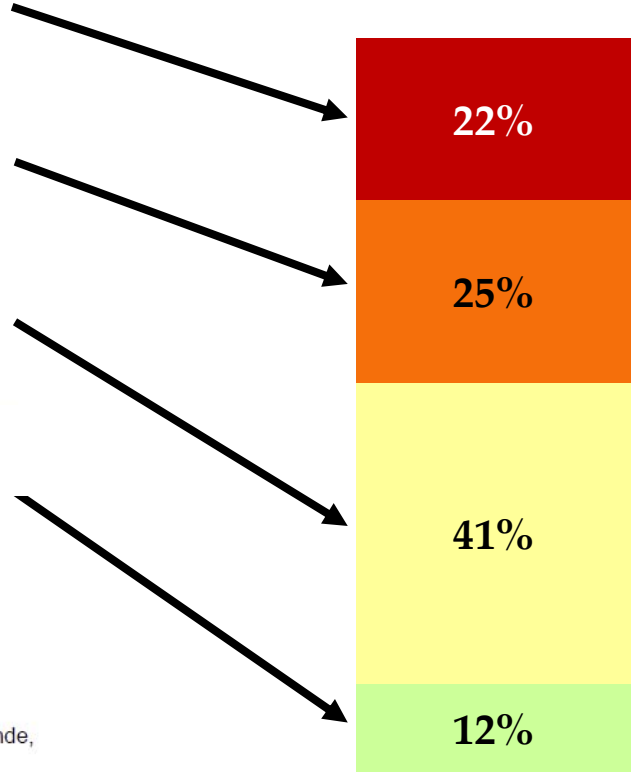
Large Cities
- große Großstädte um 500.000 Einwohner und mehr
- kleinere Großstädte unter 500.000 Einwohner

Medium Cities
- größere Mittelstädte mit Zentrum 50.000 Einwohner und mehr
- kleinere Mittelstädte mit Zentrum 20.000 bis 50.000 Einwohnern

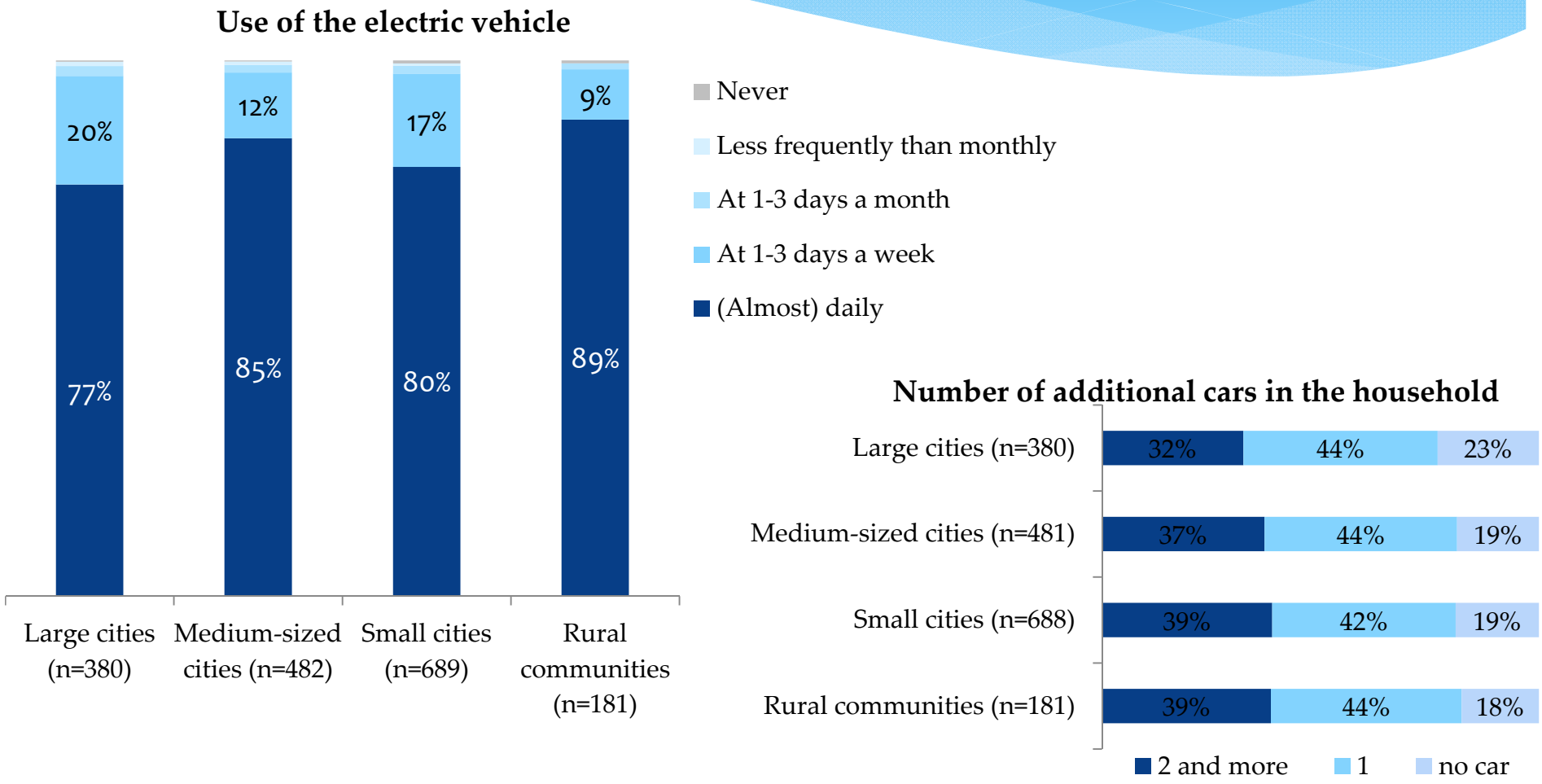
Small Cities
- größere Kleinstädte mit Zentrum 10.000 Einwohner und mehr

Rural Communities
- Landgemeinden

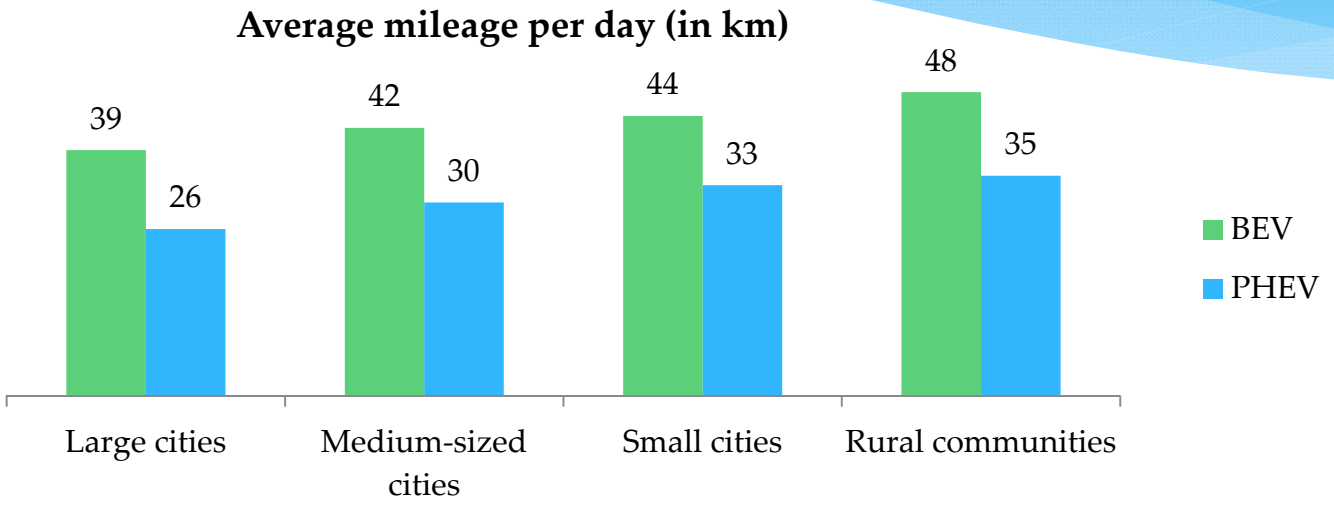
Datenbasis:
Laufende Raumbeobachtung des BBSR
Geometrische Grundlage:
BKG, Gemeinden und Gemeindeverbände, 31.12.2011



High proportion of households with more than one car



Strong demand for higher electric range

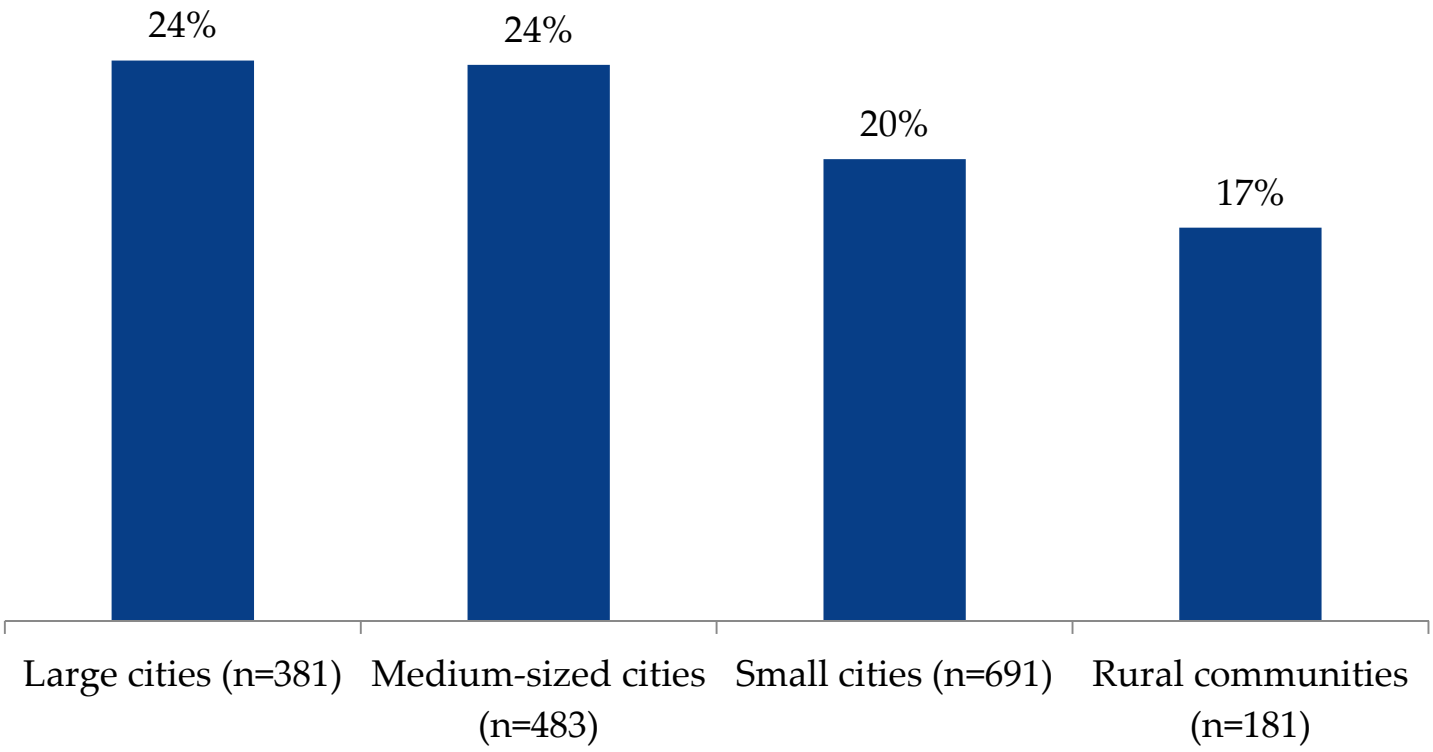


Desired electric range

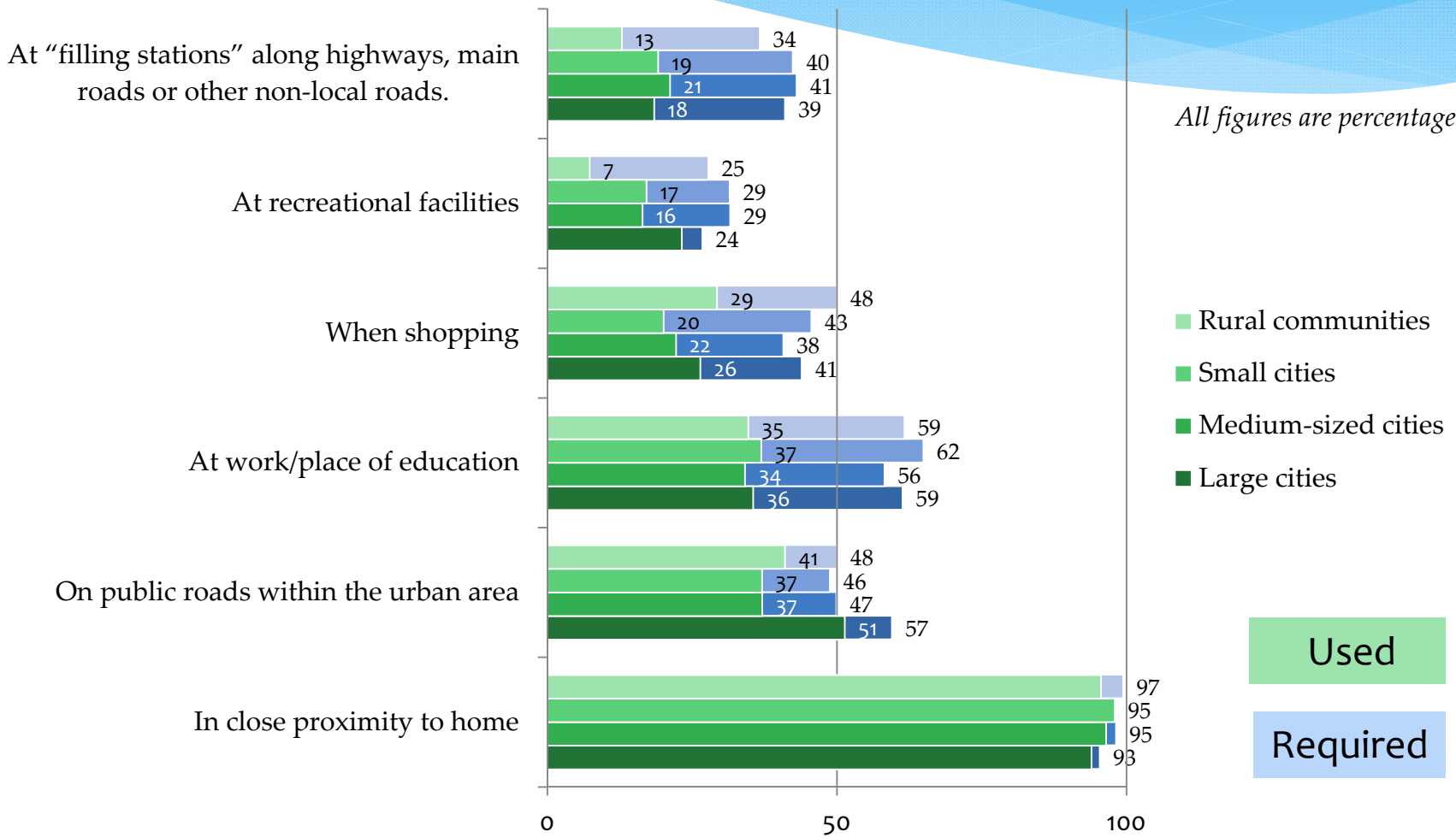
	Large cities (n=358)	Medium-sized cities (n=456)	Small cities (n=643)	Rural communities (n=168)
More electric range with extra cost	71%	69%	68%	75%
The electric range as it currently stands	28%	31%	31%	24%
Less electric range for a lower price	1%	0%	0%	1%

Urban users report higher flexibility in terms of usage

I can use the electric vehicle for any trip purpose.



Mismatch of used and desired charging facilities



Best practice: Electric carsharing as enabler

- Sharing-concept: for every purpose the right electric vehicle!
- Minimizing access barriers (membership and distances to vehicles)
- Access to fast PT through P&R for suburban dwellers in large cooperatively organized housing
- Reduction of car ownership in the midterm – especially the 2nd and 3rd car of household

Carsharing is already today more economical compared to car ownership with an annual mileage of up to 10,000 kilometers.

What is needed to make electric vehicles a success story in Urban areas?

- The **price of the vehicle** has to come down – current EVs contain a lot of extra equipment increasing the price
- Expansion and promotion and **Park & Ride facilities** including charging infrastructure
- **Workplace charging** – for urban users (esp. PHEVs) possibly the main charging location!
- **Smaller, cheaper EVs** for commuting – suitable for all-weather conditions
- **Public accessible charging infrastructure** for car sharing vehicles and as a "backup" for private users
- **Fast charging** on motorways to overcome longer distances and in cities for power user groups such as taxis and courier services

Thank you

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User profiles of electric vehicles

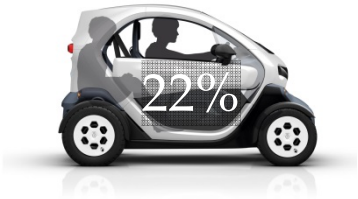
Battery electric vehicles (BEV)

11,500 km — 15,000 km

48 km — Weekdays — 39 km

Plug-in hybrid electric vehicles (PHEV)

Leichtfahrzeuge (z.B. Renault Twizy)



7,500 km

38 km — Weekdays