

POLIS

CITIES AND REGIONS FOR TRANSPORT INNOVATION

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The transition to electric vehicles in Belgium: Why are private customers not buying it yet?

POLIS annual conference, 29 November 2023

Dr Evi Dons

Why this study?



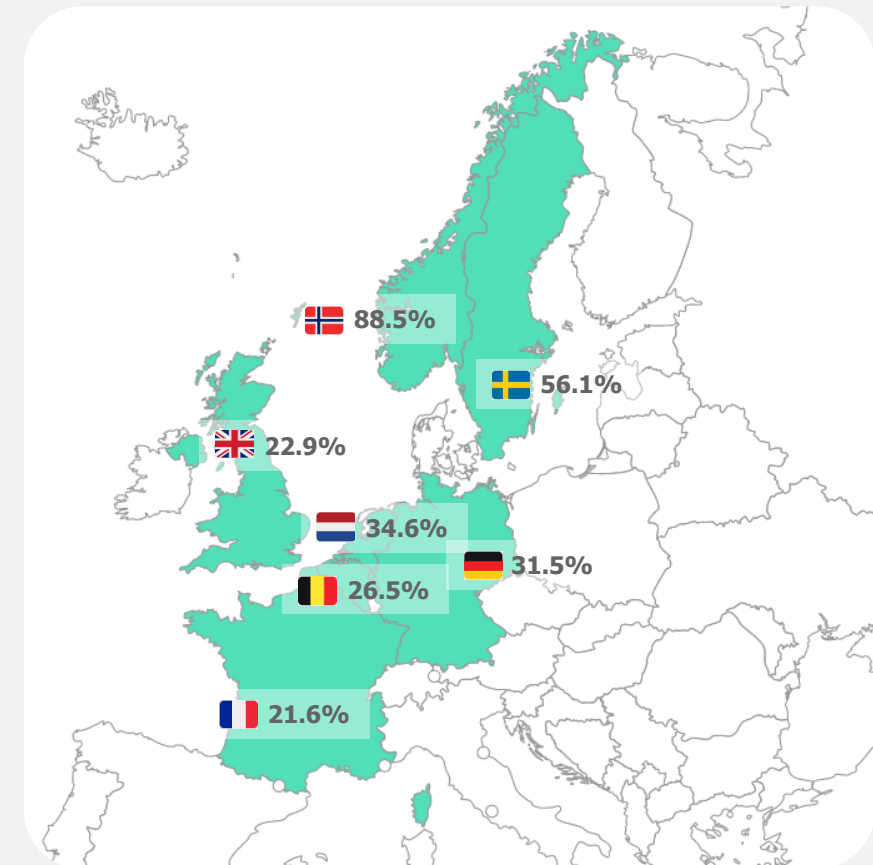
State of the art in Belgium & benchmark

▶ EV share in total sales in 2022

- ▶ Battery electric (BEV) and plug-in hybrid (PHEV) combined

▶ Incentives

							
Subsidy / bonus to purchase new vehicle		x	x		x	x	x
Subsidy / bonus to purchase second-hand vehicle		x				x	x
Subsidy for charging infrastructure	x		x	x	x	x	x
Scrapping program for old vehicles						x & x	
Reduction from road tolls, parking and other charges		x	x	x	x	x	x
Exemption from VAT on purchase				x			
Exemption from annual road tax	x	x	x				x
Reduction of annual road tax	x			x	x		x
Exemption from registration tax	x	x	x	x		x	
Reduction of registration tax	x					x	
Personal income tax reduction	x						
Access to extra-infrastructure		x		x			



x = national measure, x = local measure

State of the art in Belgium & benchmark

► New registrations 2023: increase in EVs

Engine type	2023 (9 months)	2022	Evolution 2023 vs 2022
Petrol	43.7%	48.9%	-5.2%
Diesel	9.3%	16.4%	-7.1%
PHEV	20.4%	16.2%	+4.2%
HEV	7.4%	7.5%	-0.1%
BEV	18.3%	10.3%	+8%
LPG	0.7%	0.7%	=
CNG	0%	0.1%	-0.1%

92.2% company-owned

91.5% company-owned



The top five BEVs sold in Belgium in 2023 are
Tesla Model Y, Volkswagen ID.4, Audi Q4, Volkswagen ID.3, Volvo XC40

Results

Total Cost of Ownership - TCO



Total Cost of Ownership

► Development of a *Total Cost of Ownership* TCO-tool * The New Drive

► TCO =

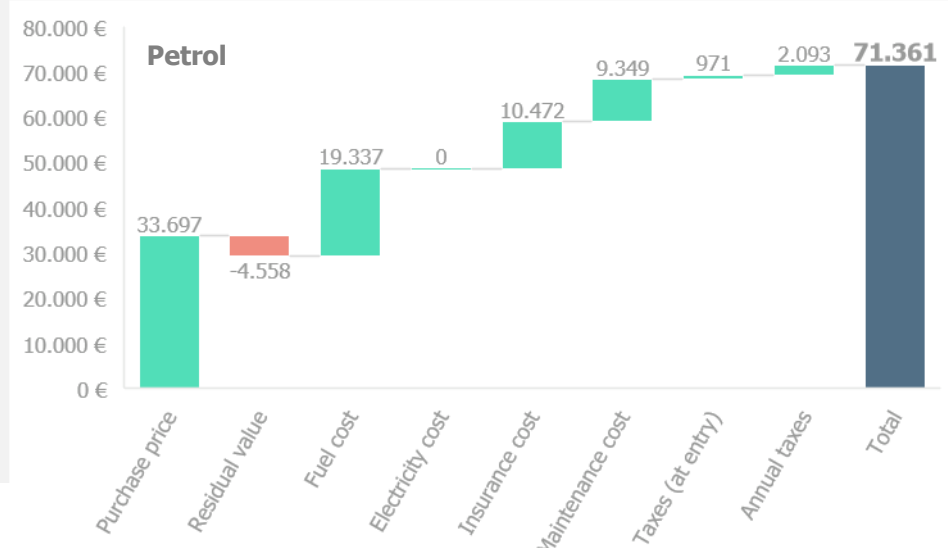
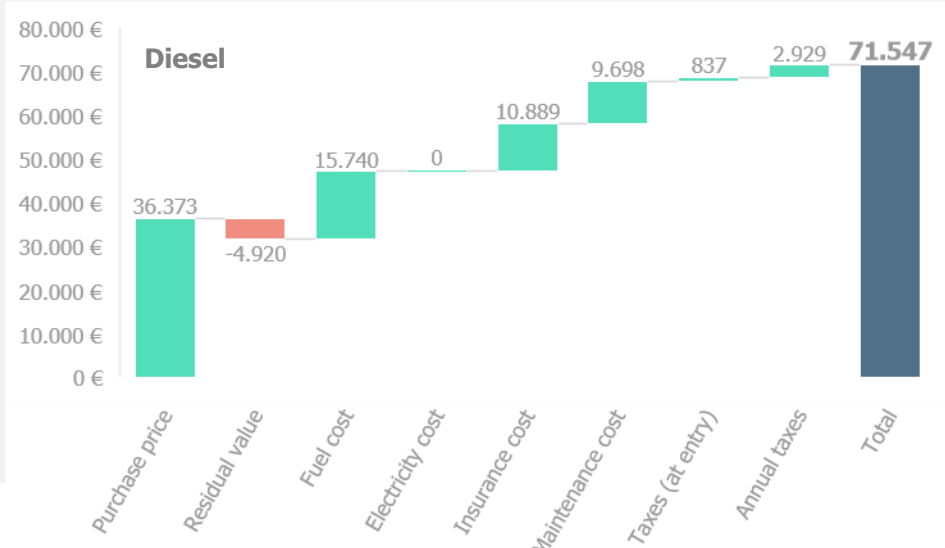
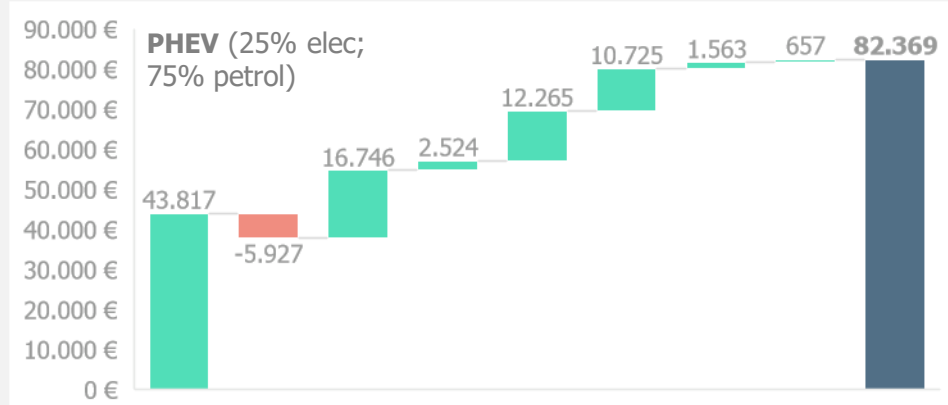
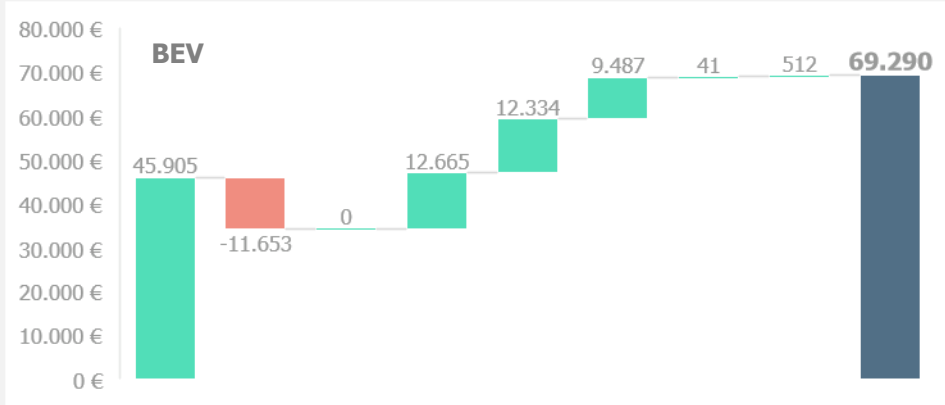
- + Purchase price
- Residual value
- + Fuel cost
- + Electricity cost
- + Insurance cost
- + Maintenance cost
- + Taxes (at entry)
- + Annual taxes

- Total price of different car models is presented by car segment, fuel (petrol, diesel, PHEV, BEV), region
- Considering current taxes, fuel prices, average insurance costs, etc.
- 135000 km over 9 years

TCO componenten									
Aankoopprijs	Restwaarde	Brandstof	Electriciteit	Verzekeringen	Reparatie onderh. banden	Belasting op inverkeerstellin	Jaarlijkse verkeersbelastin	TCO	
incl. btw (€)	Restwaarde (€)	incl. btw (€)	incl. btw (€)	incl. btw (€)	incl. btw (€)	g (€)	g (€)		
13.020,00	805,35	11.126,70	0,00	7.164,63	6.538,59	61,50	767,43	39.484,20	
13.020,00	805,35	11.126,70	0,00	7.164,63	6.538,59	283,16	435,96	39.374,39	
13.020,00	805,35	11.126,70	0,00	7.164,63	6.538,59	61,50	767,43	39.484,20	
13.490,00	1.918,52	0,00	7.227,27	5.028,03	7.110,33	0,00	0,00	34.774,15	
13.490,00	1.918,52	0,00	7.227,27	5.028,03	7.110,33	61,50	767,43	35.603,08	
13.490,00	1.918,52	0,00	7.227,27	5.028,03	7.110,33	61,50	767,43	35.603,08	
13.780,00	852,36	13.196,79	0,00	7.269,21	6.638,27	61,50	767,43	42.565,55	
13.780,00	852,36	13.196,79	0,00	7.269,21	6.638,27	376,33	435,96	42.548,91	
13.780,00	852,36	13.196,79	0,00	7.269,21	6.638,27	61,50	767,43	42.565,55	
13.990,00	472,29	0,00	7.227,27	5.028,03	6.631,34	0,00	0,00	33.348,93	
13.990,00	472,29	0,00	7.227,27	5.028,03	6.631,34	61,50	767,43	34.177,86	
13.990,00	472,29	0,00	7.227,27	5.028,03	6.631,34	61,50	767,43	34.177,86	
13.995,00	1.335,27	0,00	5.872,14	5.028,03	6.925,88	0,00	0,00	33.156,32	
13.995,00	1.335,27	0,00	5.872,14	5.028,03	6.925,88	61,50	767,43	33.985,25	

Figure: Excerpt of the TCO-tool (Source: The New Drive, for Vias institute)

Total Cost of Ownership



Total Cost of Ownership



- ▶ Higher segment: BEV cheaper
- ▶ Smaller cars: ICEV cheaper (but small difference!)

- ▶ Higher mileage per year: BEV (lower recurrent costs compared to ICEVs)
- ▶ Lower mileage per year: ICEV

- ▶ Purchase price of BEVs expected to go down in the coming years + new purchase subsidy in Flanders for cars <€40,000 from 2024

Results

Opinions from Belgian drivers



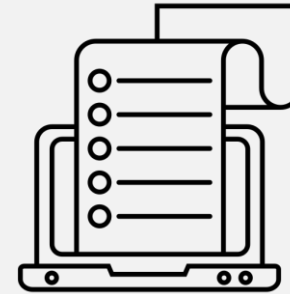
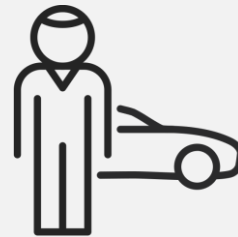
Electrification of the fleet: Consumer profiles

Aim

Electrification determinants, barriers & facilitators of EV private car fleet in Belgium

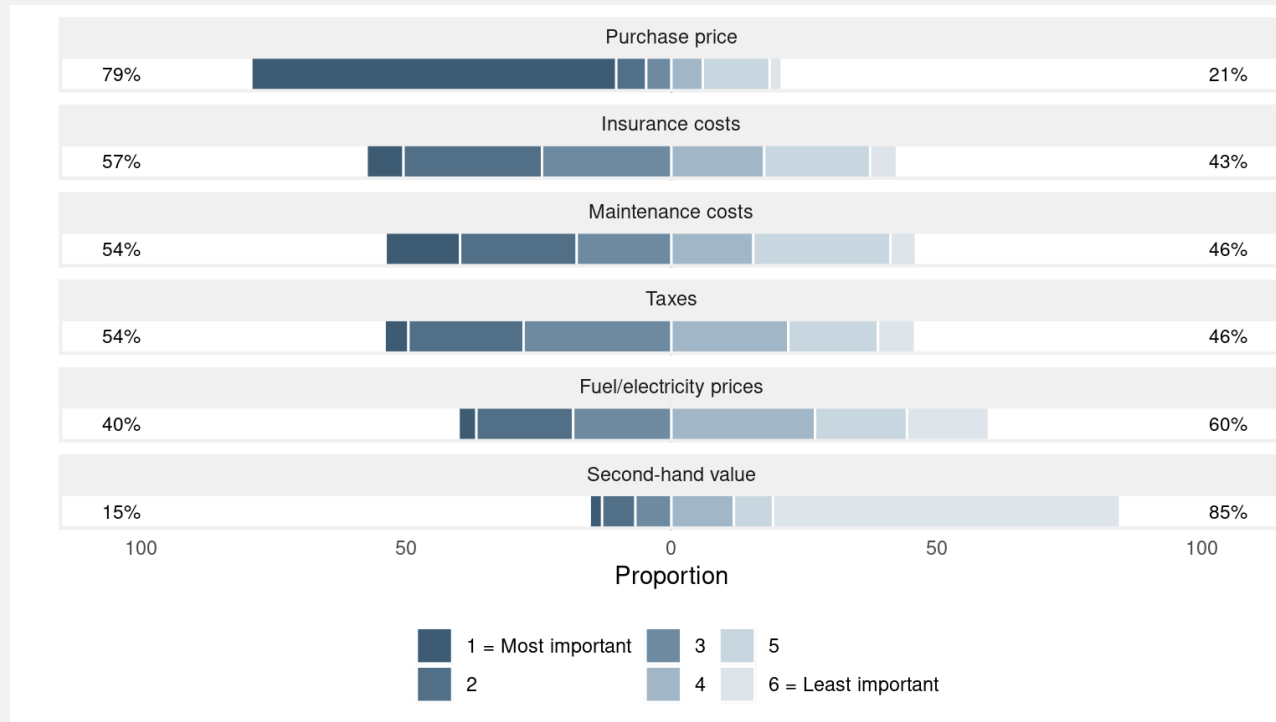
► Method

- Online survey in >2000 Belgian drivers with a vehicle in their household
- Representative sample
- May 2022



Electrification of the fleet: Consumer profiles

▶ Total Cost of Ownership: which elements are important for private consumers?



- ▶ Purchase price is by far the most important cost factor for consumers
- ▶ Second-hand value is the least important
- ▶ Conclusion: switch to EV is difficult because of the high purchase price

Electrification of the fleet: Consumer profiles

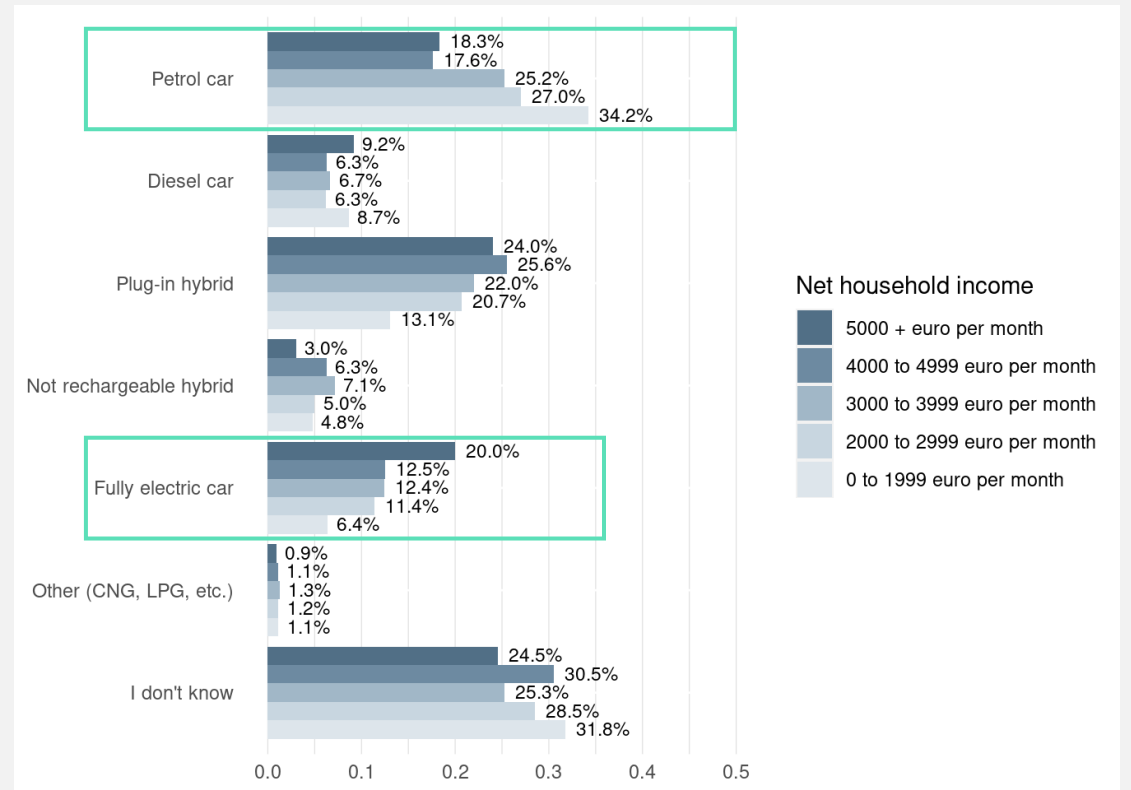
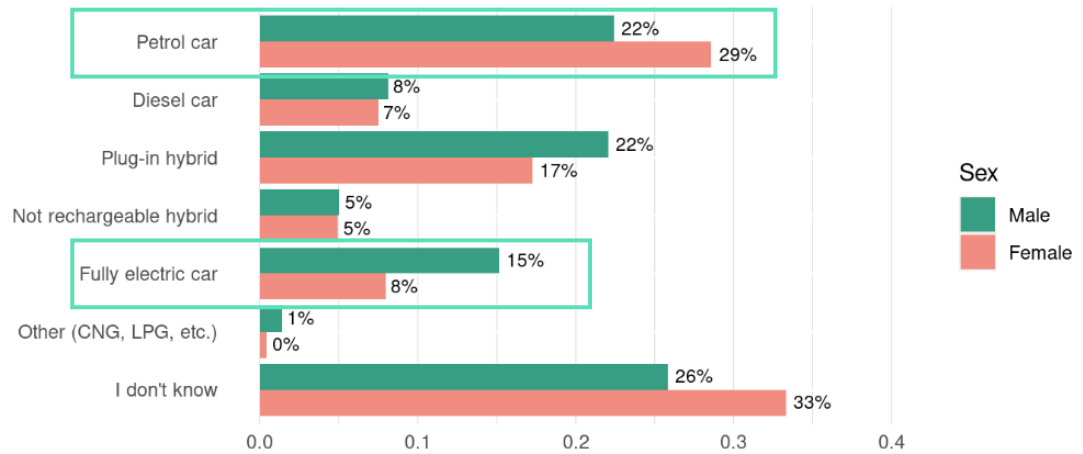
► Intention for next car purchase

High TCO?!

Type of car	Total [%]
Petrol car	26%
Diesel car	8%
PHEV	20%
Not rechargeable hybrid	5%
BEV	12%
Other (CNG, LPG, etc.)	1%
I don't know	30%

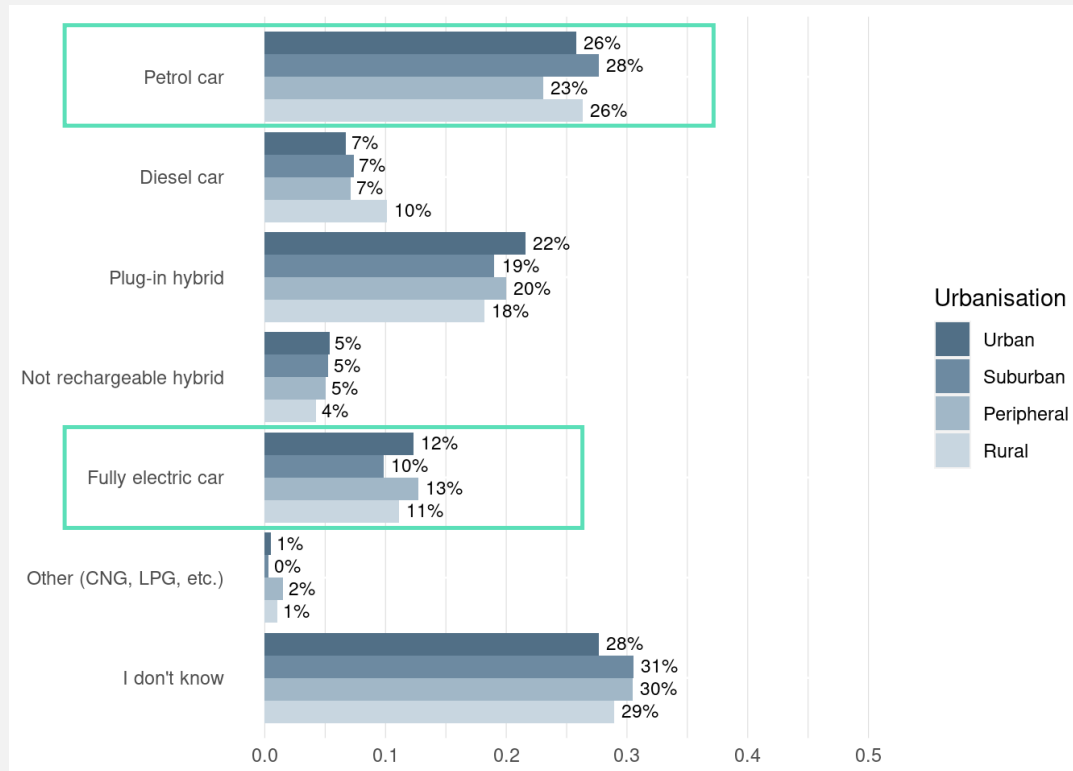
Electrification of the fleet: Consumer profiles

► Intention for next car purchase



Electrification of the fleet: Consumer profiles

► Intention for next car purchase

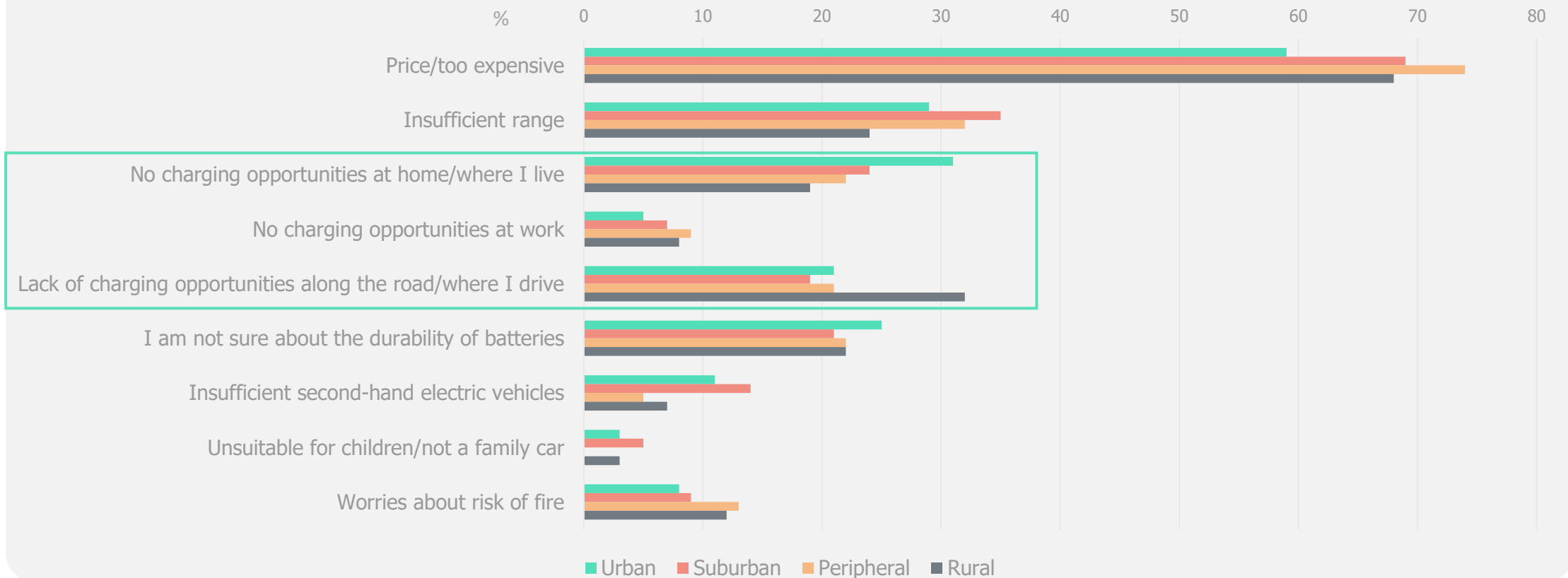


... but access to a charging station is important!

... and if no access, a PHEV is preferred over a BEV.

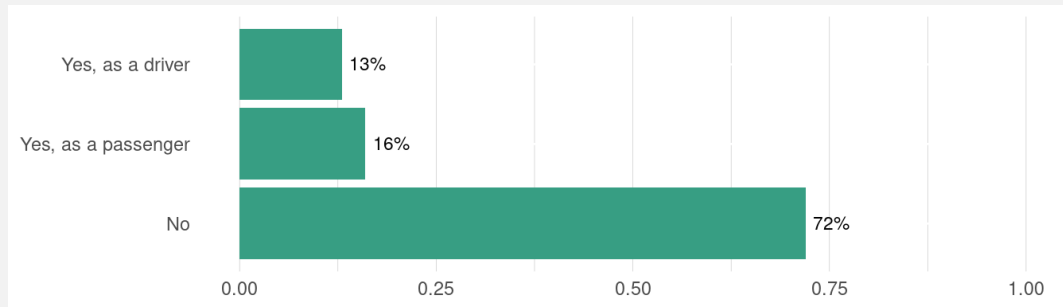
Electrification of the fleet: Consumer profiles

► Reasons not to buy an EV

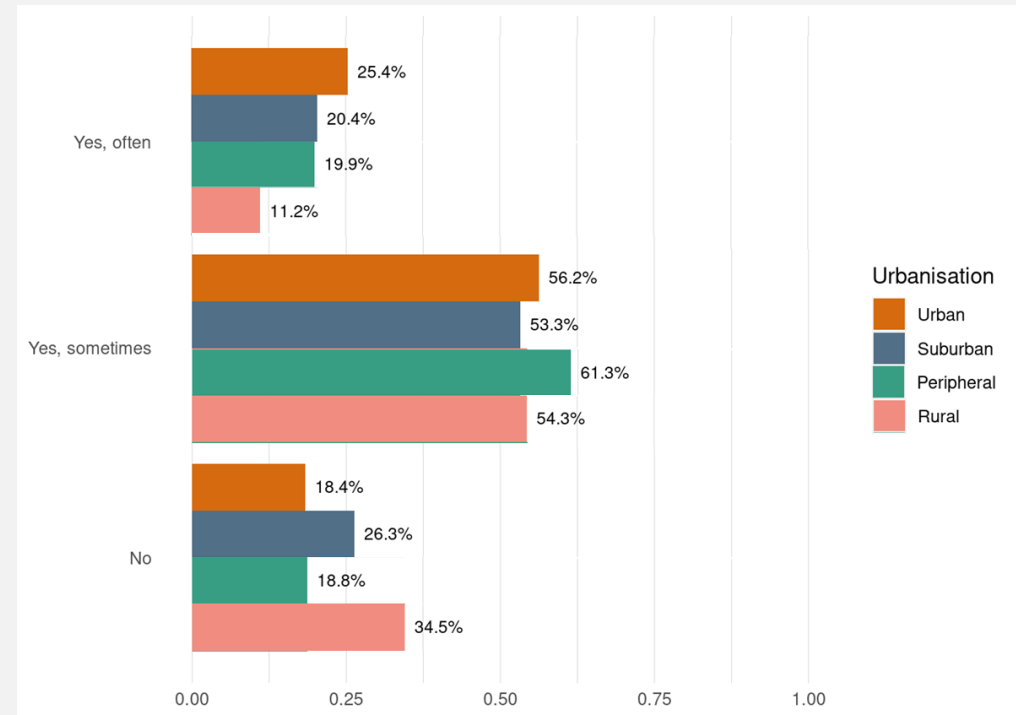
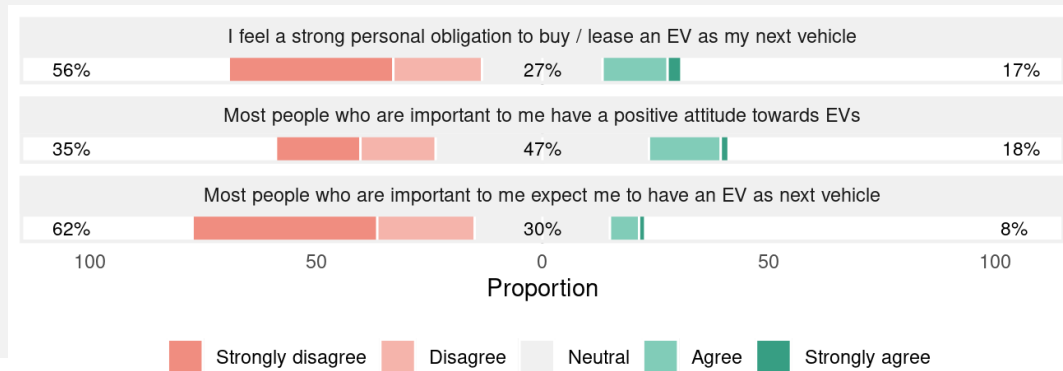


Electrification of the fleet: Consumer profiles

► Have you ever tried an EV?



► EV as next car?



Conclusions



Knowledge gap!

- ▶ **Company cars -> private fleet**
 - ▶ TCO -> purchase price matters for private drivers
 - ▶ ↔ Buying a PHEV
- ▶ **EVs are for high income households & middle-aged men**
- ▶ **72% has never tried an EV**
- ▶ **35% never see EVs in their rural neighbourhood**
- ▶ **Provide plenty of charging infrastructure**
 - ▶ in urban and rural areas

“Individuals see the EV as a solution to a non existing problem”

from Renta, 2023, survey in Belgian drivers

More information?

- ▶ Go to vias.be
 - ▶ Publications
 - ▶ Scroll or search for GREENPARK

▶ Questions?

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The transition to electric vehicles in the private fleet (GREENPARK)

Download publication

Identification of the technical, societal and taxation framework for an efficient transition to greener fleets

Themes: Mobility, Policy & regulation

Authors: Evi Dons, Dagmara Wrzesinska, Younes Ben Messaoud, Annelies Develtere, John-John Deleuze

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