strategy&
Part of the PwC network

eReadiness 2021

Survey Report

Market perspectives, customer needs and recommended actions for OEMs

July 2021

This study provides updated perspectives on the short-term development of the e-mobility business in 6 European markets

About the Study

Context

- Over the last few years, OEMs have made significant investments for the electrification of vehicles, which are not yet fully converted into relevant revenue streams despite the significant growth registered in the last months
- OEMs have continued their investment in e-mobility throughout COVID-19 outbreak and have to adopt a tailored market approach to maximize the return on investment during the upcoming EV uptake phase

Survey Goals

- PwC Strategy& has launched the **2nd edition of the eReadiness** pan-European study to capture market perspectives from different angles to help OEMs identify the best viable options to ensure short-term commercial effectiveness
- The study focuses on Battery Electric (BEV) and Plug-in Hybrid Vehicles (PHEV) hereinafter jointly referred as EV
- The study focuses on **6 European markets**: France, Germany, Italy, Norway, Spain and Switzerland

Sample

- **4,000+ consumers surveyed** with a balanced sample among the 6 markets in scope with the study
- **103 mid-large sized corporations** with a vehicle fleet of 100+ units
- **30 dealerships** with an annual turnover of at least 10 M€, **representing 29 brands** in total

Methodology

- **B2C Clients**: online surveys with a representative sample of the driving population of each market in scope
- **B2B Clients**: phone interviews and online surveys with fleet & mobility managers
- **Dealerships**: face-to-face / virtual interviews with Dealership owners/ principals based on a structured questionnaire

Source: Strategy&

Agenda

Executive summary

EV Market

- The EV market (BEV + PHEV) is expected to reach 23% of total new car sales by 2024 in the EU 6 markets (France, Germany, Italy, Norway, Spain and Switzerland), mainly fueled by BEV
- The fleet (B2B) segment will remain the most attractive ones, with a projected share of approximately 55% of the total EV market in 2024

Demand

- Overall EV interest is high, with 55% of surveyed consumers and 100% of fleet managers declaring an intention to buy an EV in the next 2 years
- Among consumers, EV Owners (4% of the panel) are high-income, middle-aged males living in city centers
- EV prospects (64% of the panel) have ~40% lower income than EV Owners. Among them, *Dreamers*, *Luxurious* and *Tech Enthusiasts* are the 3 personas (out of the 6 identified) with the highest intention to buy and represent 50% of the demand in the next 2 years
- Within the fleet segment, large companies declare the highest EV penetration while mid-sized ones register the highest EV growth rate
- Online sales represent 9% of EV sales, yet 59% of consumers would buy their next vehicle online driven by convenience and price transparency
- 60% of consumers and 70% of fleet customers bought EV and charging solutions in a bundle, with up to 30% purchasing additional EV-related services/ products in the same period (e.g. energy contracts, energy management solutions)

Supply

- B2B is perceived as the most attractive market, both for size and growth by dealers, with a focus on large corporates vs. SMEs
- Dealers envisage a c. 20% EV share in the next 2 years mainly driven by the urban population with a decreasing interest from rural areas
- Dealerships have a partial understanding of consumers' key driving factors, with driving experience and incentives being overrated
- Dealership is the main B2C channel, although 65% of them would require more training support from OEMs
- Similar to last year's results, dealerships question the impact of EVs impact on their margins, in particular for the aftersales business
- Used EV market is still nascent, but it represents a key attention area for OEMs with regard to value proposition, stock rotation and financial impact

Source: Strategy&

Our view on the way forward

Way forward

- To keep up with the e-mobility race, OEMs need to define tailored selling propositions that can be articulated in **5 key improvement actions** to tap the full potential of the EV market demand in the short run

Extended value proposition – Define an extended offering to address the increasing demand of EV-related products and service, which are currently not part of the OEM and dealership portfolio (e.g. energy contracts, charging solutions, smart-home solutions, …)

Omnichannel journey – Define a customer journey that complements traditional brick-and-mortar sales with a seamless on-line customer experience, by combining the best of both worlds to target digital native prospects and ensure resilience in case of health emergencies

Customer experience – Design and deploy EV-specific sales process to make the customer experience more compelling, and to ensure regular monitoring of customer feedback and identification of key pain points throughout the EV journey

Customer support – Enhance customer support during the post-purchase phase, by focusing on the installation of private charging solutions as well as the public charging point usage

Pre-Owned EV business – Enhance used EV business proposition with dedicated CPO and upskilling programs to help dealerships manage the EV 2nd hand trade in a more effective and profitable way

Source: Strategy&

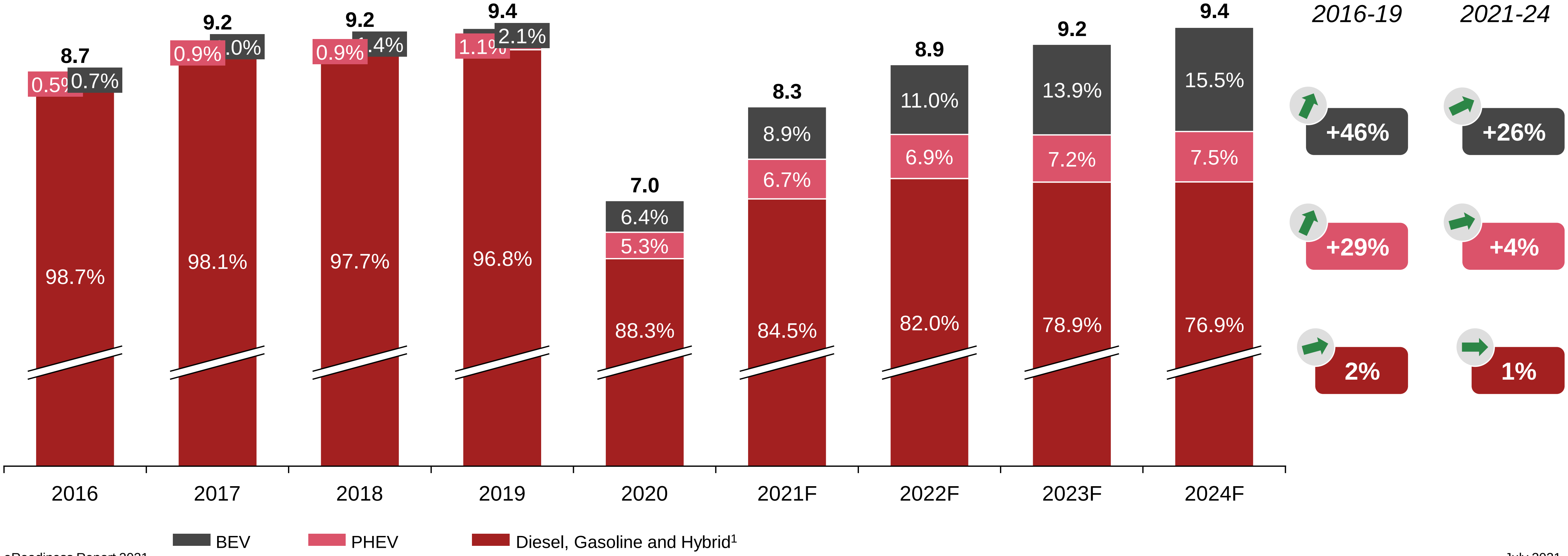
Agenda

Market recovery from Covid-19 crisis in 2020 is expected to be driven by an increasing adoption of EVs

EU market – New car registrations outlook

New car registrations (m units, %, France, Germany, Italy, Norway, Spain and Switzerland)

CAGR

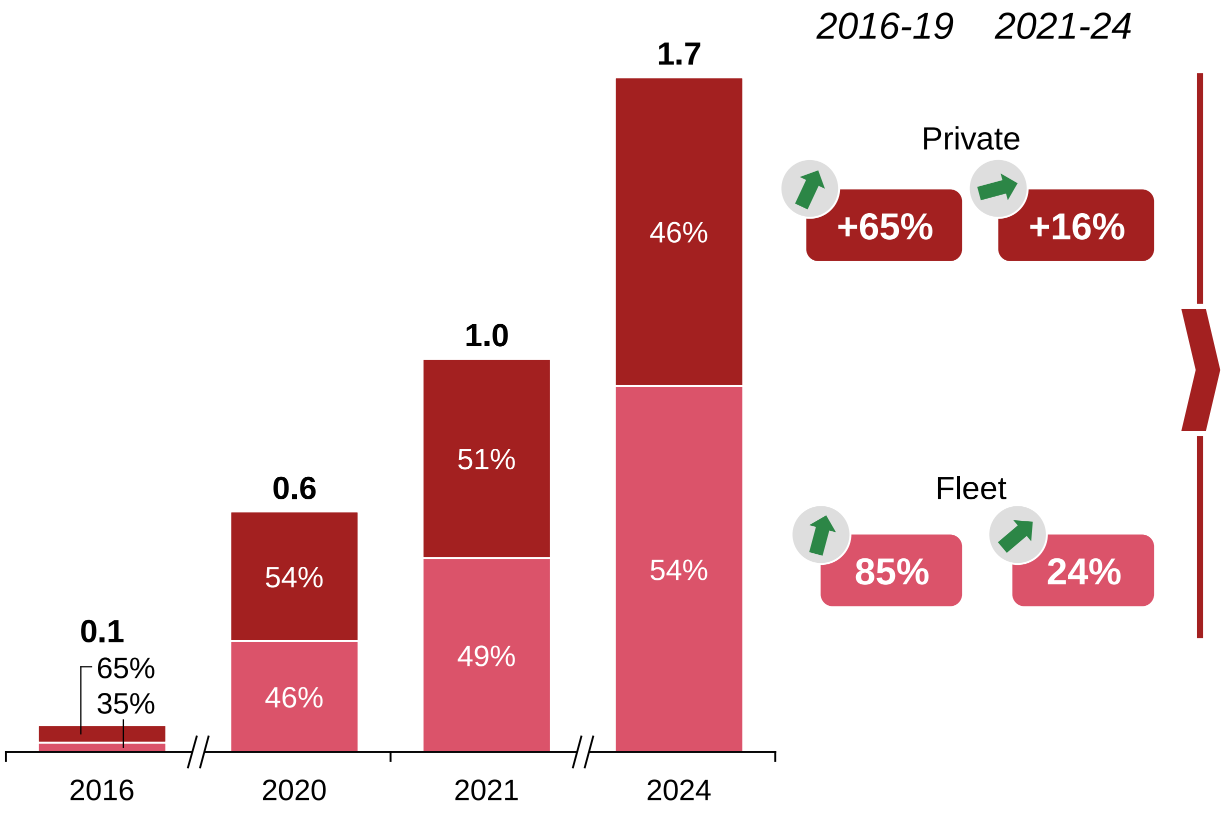


Note: 1) Hybrid includes all Non-plug-in hybrid (e.g. MHEV, HEV)
Source: Fitch Connect, Strategy& analysis

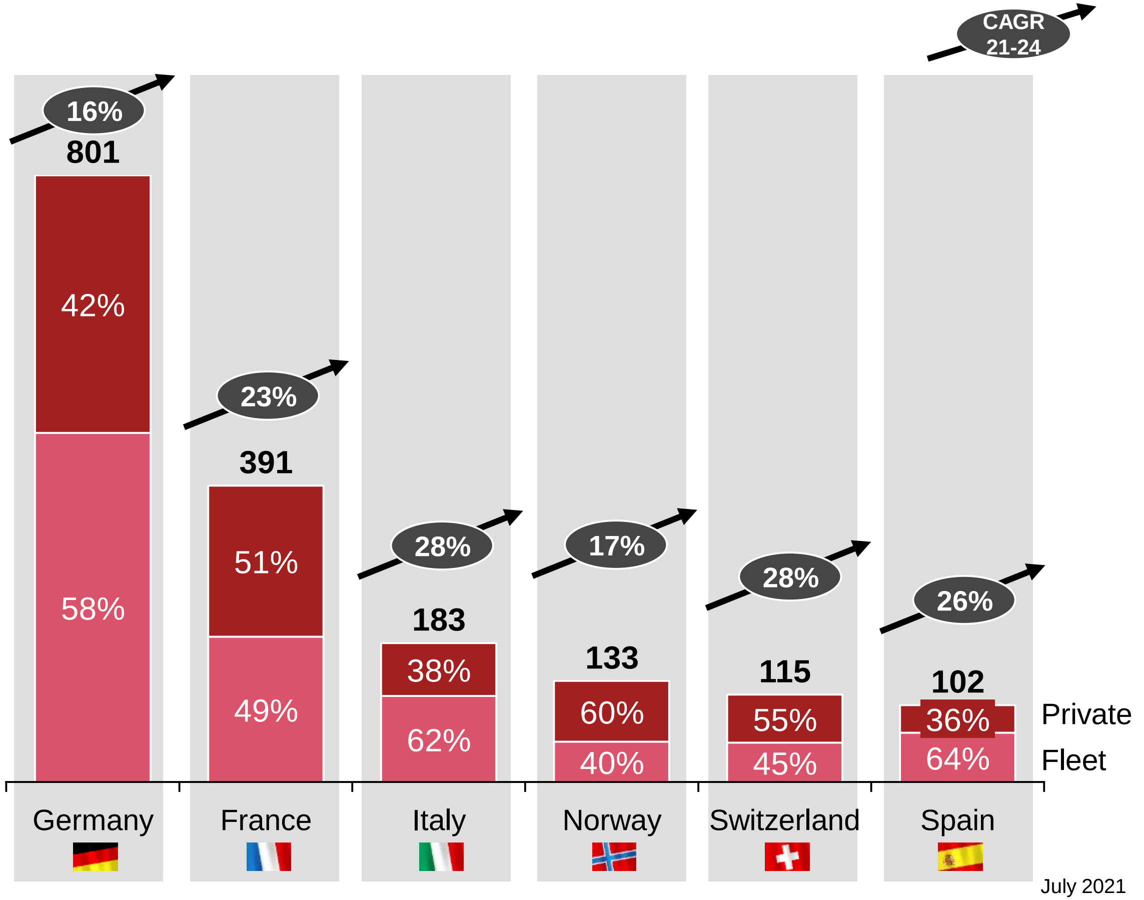
Fleet (B2B) segment is growing faster than the private (B2C) one, with Germany and France representing the most sizable markets

EV sales split by customer segment and market

EV sales by customer segment
(%, .000 units, France, Germany, Italy, Norway, Spain and Switzerland)



EV sales by country (%, .000 units in 2024)



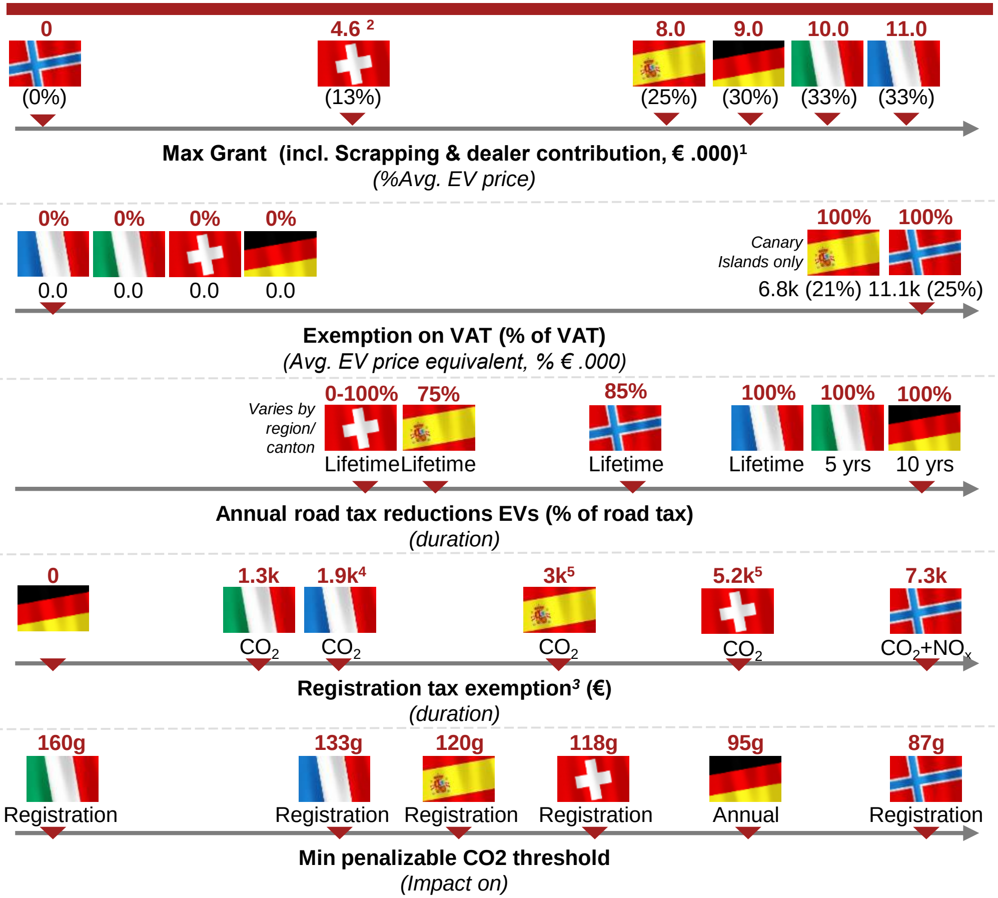
Note: Volumes exclude Demo car and RAC
Source: Fitch Connect; Strategy& analysis

EV market growth is fueled by dedicated state incentives, accounting for up to 33% of the retail sales price in some markets

Benchmark of EV incentives and ICE disincentives

Incentive categories	*Application per country*					
1 Grants *Purchase subsidies, national and local grants, scrapping bonus, infrastructure incentives*	✗	✓	✓	✓	✓	✓
2 VAT exemption *Exemption or reduction on VAT, purchase or import taxes*	✓	✗	✗	✗	✓	✗
3 Tax exemptions *Company tax benefits, annual ownership tax reductions*	✓	✓	✓	✓	✓	✓
4 Registration tax *Exemption or reduction on one-off registration taxes or CO_2/NO_x taxes disincentivizing ICEs*	✓	✓	✗	✓	✓	✓
5 Penalties for ICE *Penalties or disincentives for usage of emission-cars above a certain CO_2 threshold*	✓	✓	✓	✓	✓	✓

EV incentives



1) Figures vary depending on household/individual. Does not incl. local grants. Max grant yields retail prices: <€45k FR & SP, <€40k GE, <€50k IT; 2) Varies per canton; 3) Incl. only emission-related one-off taxes (e.g., weight tax is excl.) for cars >160gCO2/km; 4) 85kW HP vehicle from Britany, incl. a lower tax according to horsepower; 5) €30k net value vehicle; Source: ACEA, EZV, EAFO, IEA, PwC Global Automotive Tax Guide, Eurostat, local authorities, Strategy& Analysis

Agenda

1. Executive Summary
2. EV Market Overview
3. **Demand Side**
   - **Consumers**
   - Fleet
4. Supply Side - Dealerships
5. Recommendations on the way forward
6. Contacts

Consumers have been grouped into 3 main clusters: EV owners, EV prospects and EV skeptics

Consumer survey – Clusters and investigation areas

% ***B2C Customers Sample***: *#3,571 respondents*

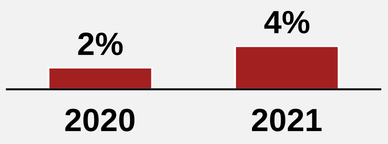
Description / Size

Focus area

Outcome

1 EV owners

- People who currently own an EV

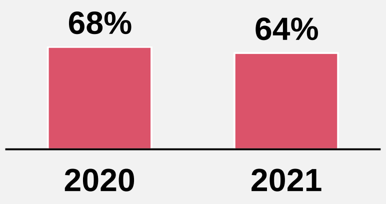


- Who are EV owners
- What has been their customer journey
- What are their usage habits

Best practices and lessons learnt to be leveraged to define EV specific customer journey

2 EV prospects

- People who have declared their intention to buy an EV in the next 5 years

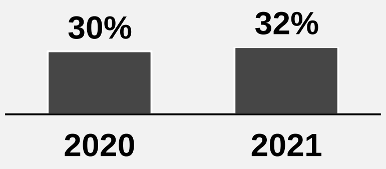


- Who are the key personas and their distinctive traits
- What is their intention to buy an EV
- What are key reasons to buy

Key customer profiles, with associated demographics and needs, to support targeting actions of OEMs

3 EV skeptics

- People who have declared their intention not to buy an EV in the next 5 years



- Who are EV skeptics and what are their distinctive traits
- Why they are skeptics and which are the main rejection reasons about EV

Concerns and purchasing barriers to be addressed by OEMs communication to stimulate intention to buy

Source: Strategy& analysis on feedback from B2C survey

EV owners, EV prospects and EV skeptics display some specific traits with regard to income, mobility needs and demographics

Consumer survey – Cluster profiles

	1 EV owners	2 EV prospects	3 EV skeptics
What is your annual income?	€ 77k	€ 48k	€ 38k
How many km do you commute daily?	29 km	24 km	19 km
Do you have a private parking spot at home?	92% yes	81% yes	76% yes
What is your gender?	57% male	52% male	43% male
What is your age?	46 years	46 years	53 years
What is your family size?	3.0 people	2.9 people	2.4 people
Where do you live?	82% in urban areas	78% in urban areas	64% in urban areas

Source: Strategy& analysis on feedback from B2C survey

EV owner's profile is in line with 2020 - high-income, middle-aged person, living in urban areas with a private parking spot

Profiling – EV owners vs ICE owners

% ***B2C Customers Sample**: #146 respondents* ***Vs. 2020***

***How many km do you commute daily?* 29 km ↓ -6Km**

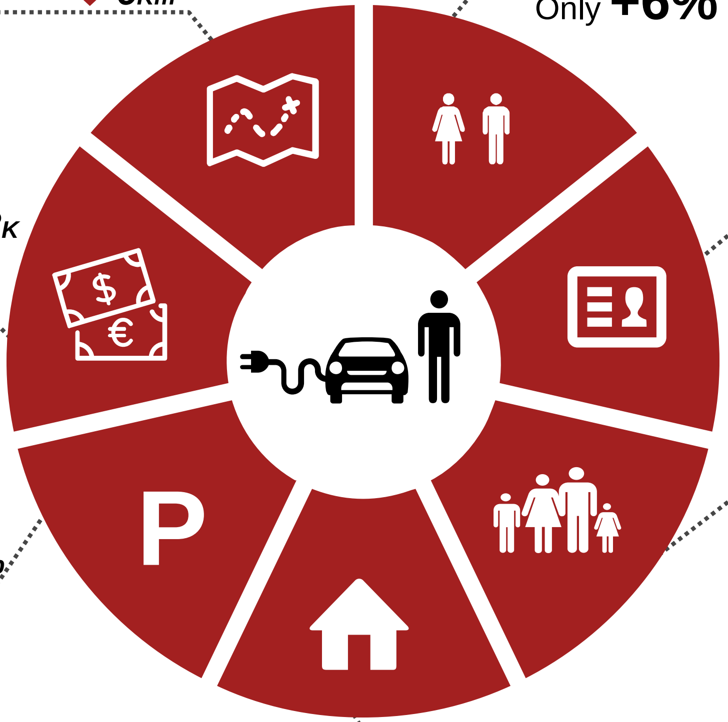
EV owners commute on average **+7 km** than ICE owners

***What is your annual income?* € 77k ↓ -13K**

The average annual income of EV owners is **1.8x** the average income of ICE owners

***Do you have a private parking spot at home?* 92% yes ↑ +9p.p**

+13% of EV owners have a **private garage** compared to ICE owners



***What is your gender?* 57% male ↑ +1p.p**

Only **+6% of male** EV owners vs ICE

***What is your age?* 46 years ↑ +1year**

The average age of EV owners is **+10 years** compared to ICE owners

***What is your family size?* 3.0 people ↓ -0.5**

The EV owner's household is on average **0.3 people larger** than that of ICE owners

***Where do you live?* 82% in urban areas**

+9% of EV owners live **in urban areas** compared to ICE owners

Source: Strategy& analysis on feedback from B2C survey

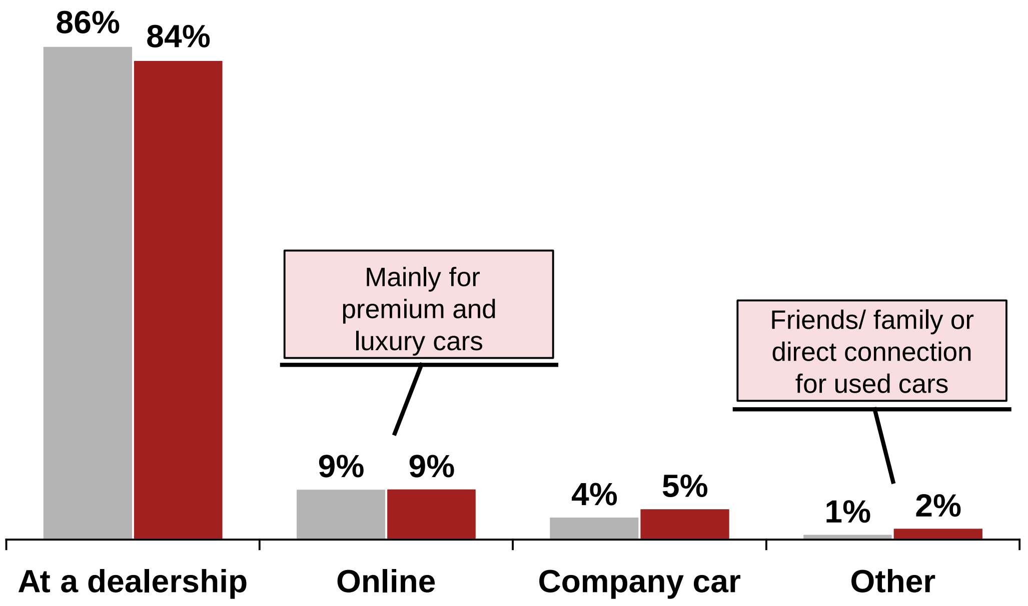
The main purchase channel for EVs is via dealers, although 59% of respondents would consider buying online

EV car type and purchase method

Where did you buy it?

% ***B2C Customers Sample**: #146 respondents*

2020 2021



Would you buy your next car online?

% ***B2C Customers Sample**: #146 respondents*

Yes

59%

Drivers

1. **Convenience**
   (Opening time/ days, dealership distance, etc.)
2. **Price advantage**
   (Higher discounts, promotions)
3. **Product availability**
   (Stock availability with specific accessories)

No

41%

Barriers

1. **Need to experience the car**
   (Touch & feel, size, etc.)
2. **Preference for face-to-face interaction with salesman**
3. **Limited trust in performing large transactions online**

Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

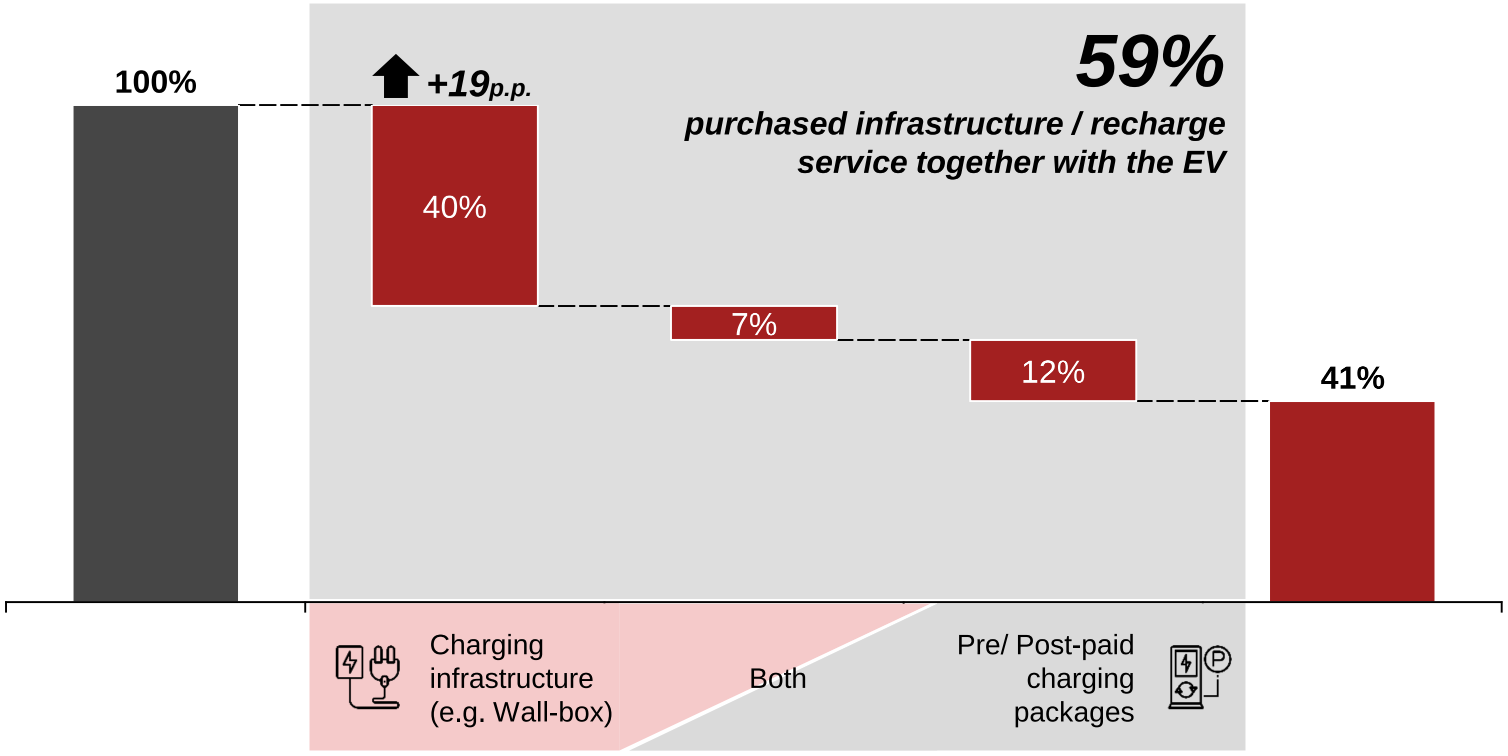
59% of EV owners purchased re-charging solutions with their EV - Managed installation grants higher customer satisfaction

Additional products and services

What additional recharging infrastructure / services did you buy together with your EV?

% **B2C Customers Sample**: *#146 respondents*

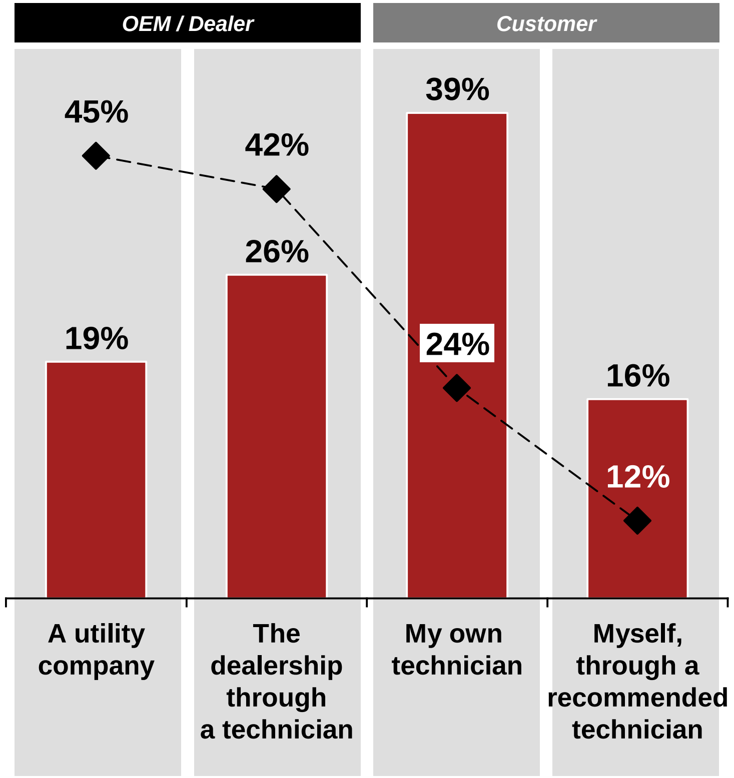
Vs. 2020



Who was in charge of installing the charging infrastructure?

% **B2C Customers Sample**: *#69 respondents*

% **NPS Score**



Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

87% of surveyed EV owners primarily charge their EV at home/ office

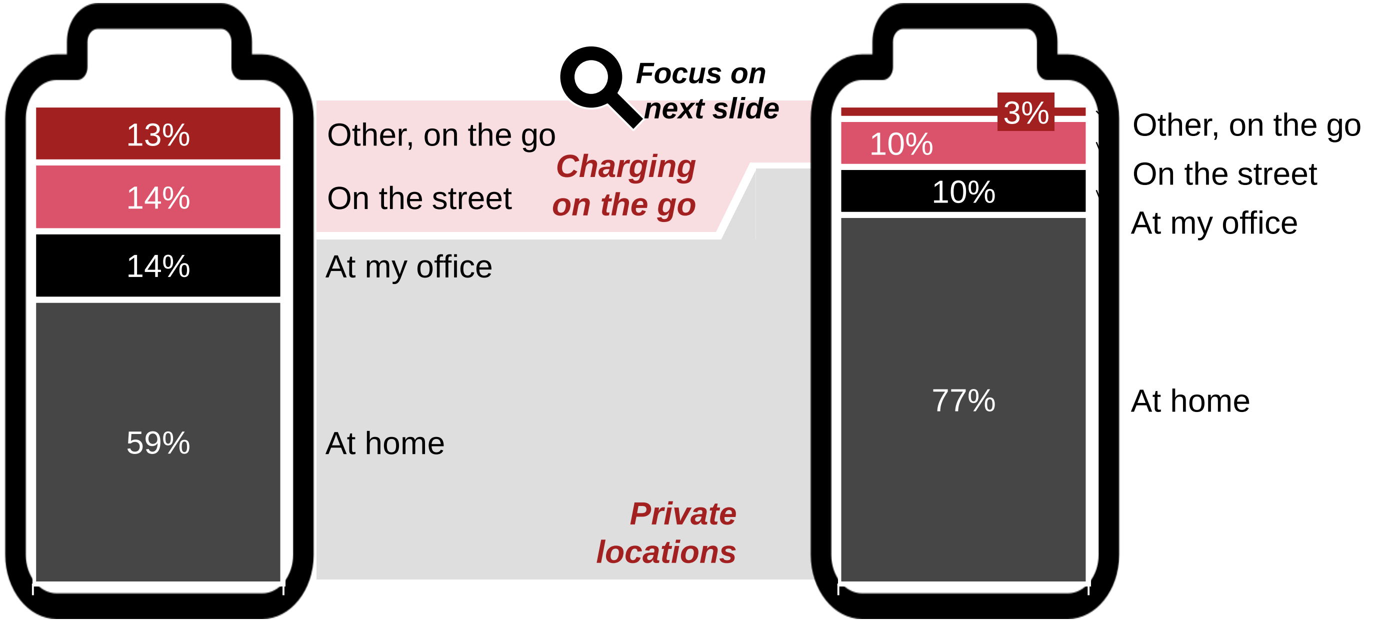
Charging habits

Where do you typically charge your EV?

% ***B2C Customers Sample**: #146 respondents*

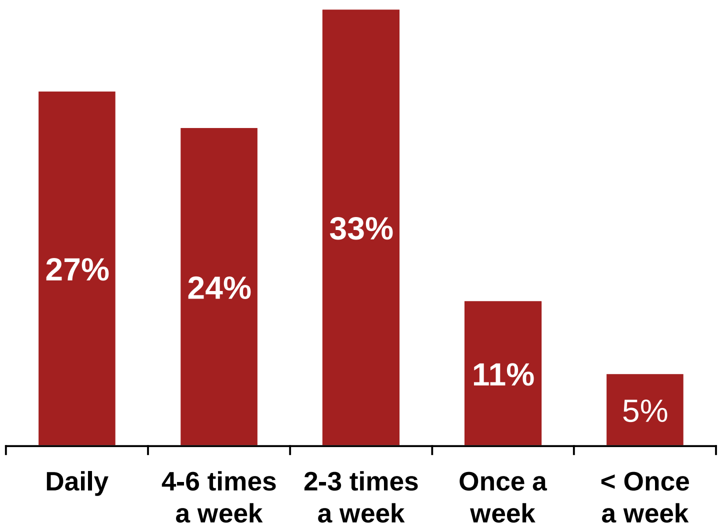
Which is the primary location where you charge your car?

% ***B2C Customers Sample**: #146 respondents*



How often do you charge your car?

% ***B2C Customers Sample**: #146 respondents*



Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

Used EV penetration is still limited (15% of EV owners) mostly driven by younger customers with a lower income

Used EV Deep-Dive

Used EV Sample

15% ***of EV Owners bought a Used Car***

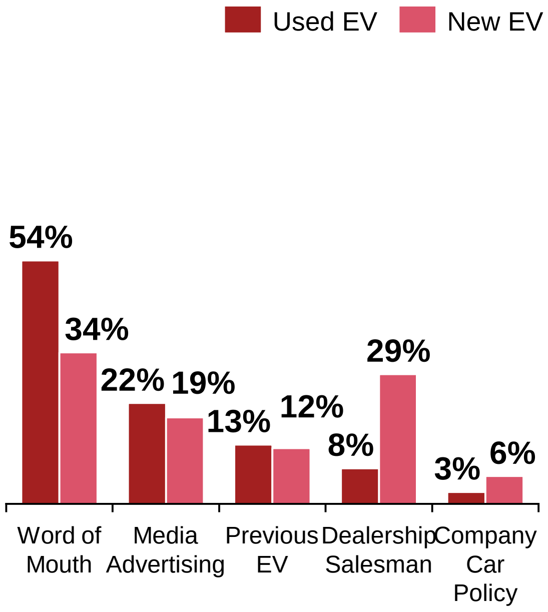
Daily Commuting distance
18 Km **-11** *km* *than New EVs Owners*

Age
38 Yrs **-6** *yrs* *than New EVs Owners*

Income
€71k **-€ 5***k* *than New EVs Owners*

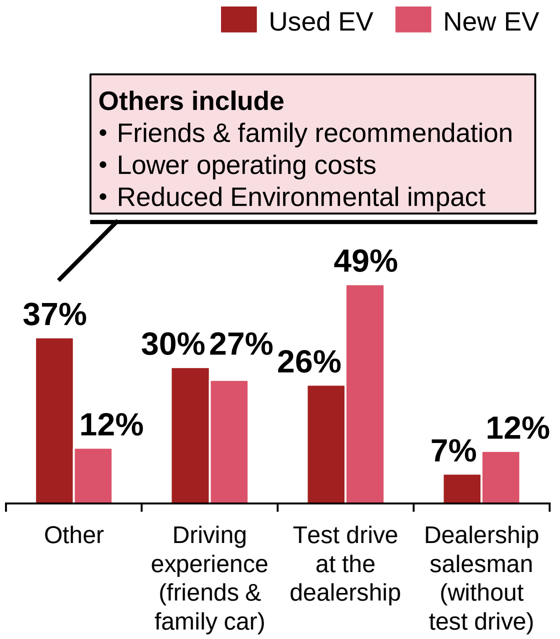
What led you to consider buying an EV?

% ***B2C Customers Sample****: #146 resp.*



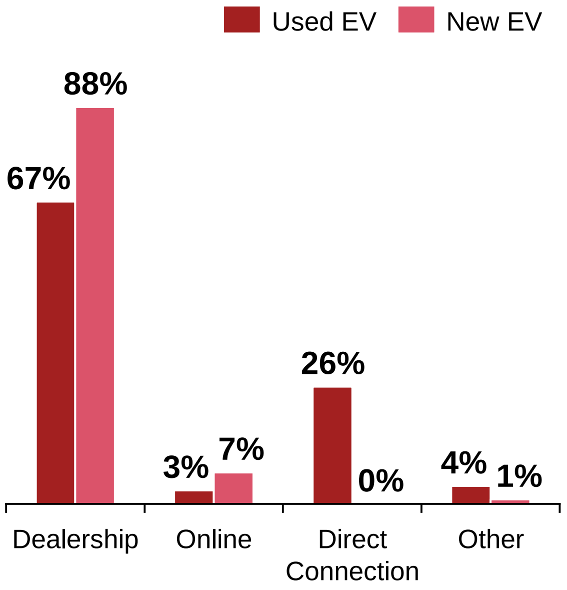
What was the convincing element?

% ***B2C Customers Sample****: #146 resp.*



Where did you buy the car?

% ***B2C Customers Sample****: #146 resp.*



- **67% of EV Prospects may consider buying a Used EV car in the next 36 months**

Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

EV prospects are similar age of EV owners, but have of a ~40% lower income

Profiling – EV prospects vs EV owners

% ***B2C Customers Sample**: #2,244 respondents* *Vs. 2020*

***How many km do you commute daily?* 24 km** -2Km

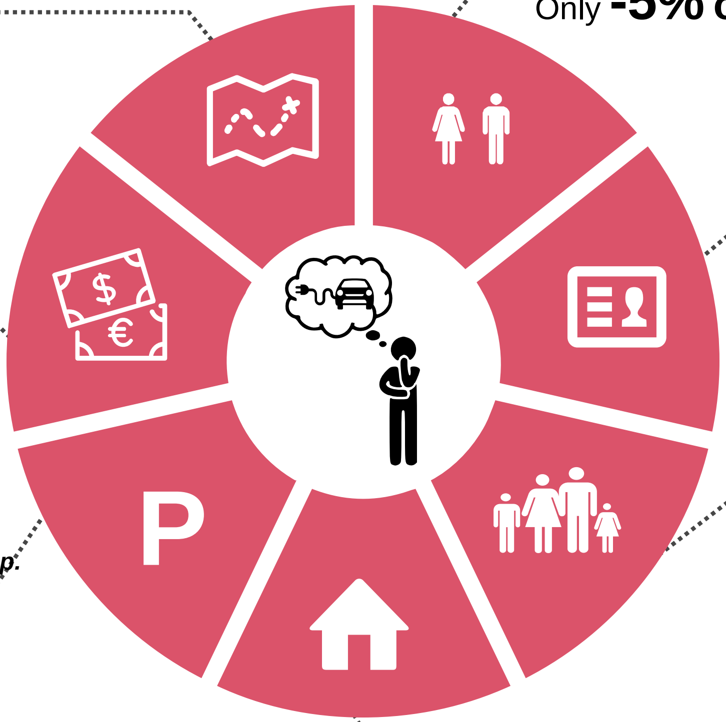
EV prospects commute on average **-4 km** than EV owners

***What is your annual income?* € 48k**

The average annual income of EV prospects is about **-40%** of EV owners' income

***Do you have a private parking spot at home?* 81% yes** +11p.p.

-11% of EV prospects have a **private garage** compared to EV owners



***What is your gender?* 52% male** -6p.p.

Only **-5% of male** EV prospects vs EV owners

***What is your age?* 46 years** +6y

The EV prospects are on average **same age** as EV owners

***What is your family size?* 2.9 people**

The household size of EV prospects is roughly **in line** with that of EV owners

***Where do you live?* 78% in city areas**

-4% of EV prospects live **in city areas** compared to EV owners

Source: Strategy& analysis on feedback from B2C survey

We have identified six personas amongst future EV customers based on four behavioral dimensions

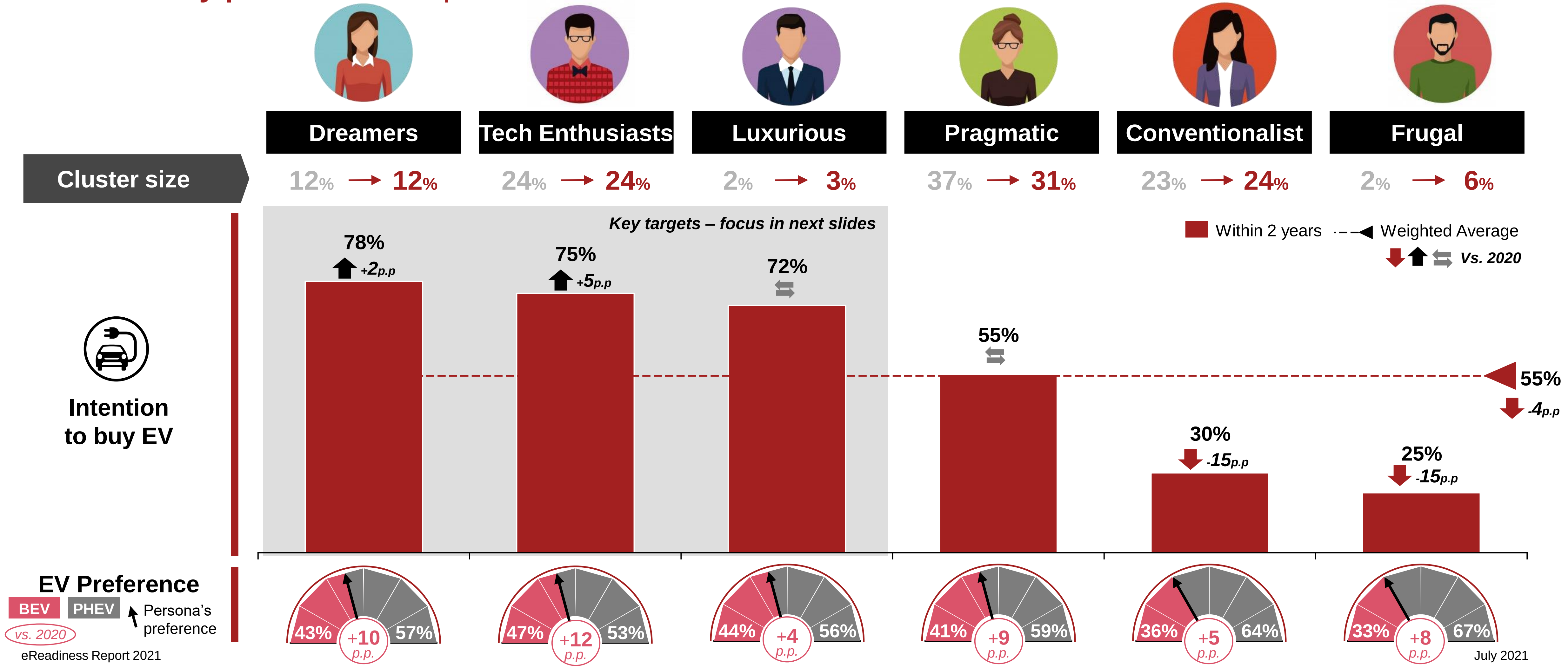
Key personas

	Dreamers	Tech Enthusiast	Luxurious	Pragmatic	Conventionalist	Frugal
Environmental Conscience	Environment and climate change are top priorities	Concerned about the environment, but not the first priority	Environment is among the lowest priorities	Environment is crucial but not worth the extra mile	Not particularly concerned about the environment	Concerned about the environment but it is not the first priority
Technology Confidence	Digital native, feels comfortable with technology	Early adopter, has high confidence with technology	Buys mainstream technology, but uses basic functionalities	Digital native, feels comfortable with technology	Uses basic technology once It becomes popular	Not technology addicted, uses it to find opportunities
Price Sensitivity	Is willing to pay higher price for a good cause	Willing to pay extra to gain early access to technologies	Price is not a concern	Important but not a priority, seeks good price/quality ratio	Saving is important, but "you get what you pay for"	Price conscious, always looking for bargains
Car Usage	Doesn't use car whenever possible	Combines the car with other means of transport	Uses car as primary transportation	Combines the car with other means of transport	Uses car as primary transportation	Minimize car usage preferring cheaper alternatives

Source: Strategy& analysis

Dreamer, Luxurious and Tech Enthusiasts consistently show the highest intention to buy in the near future

Focus on key personas – EV purchase intention

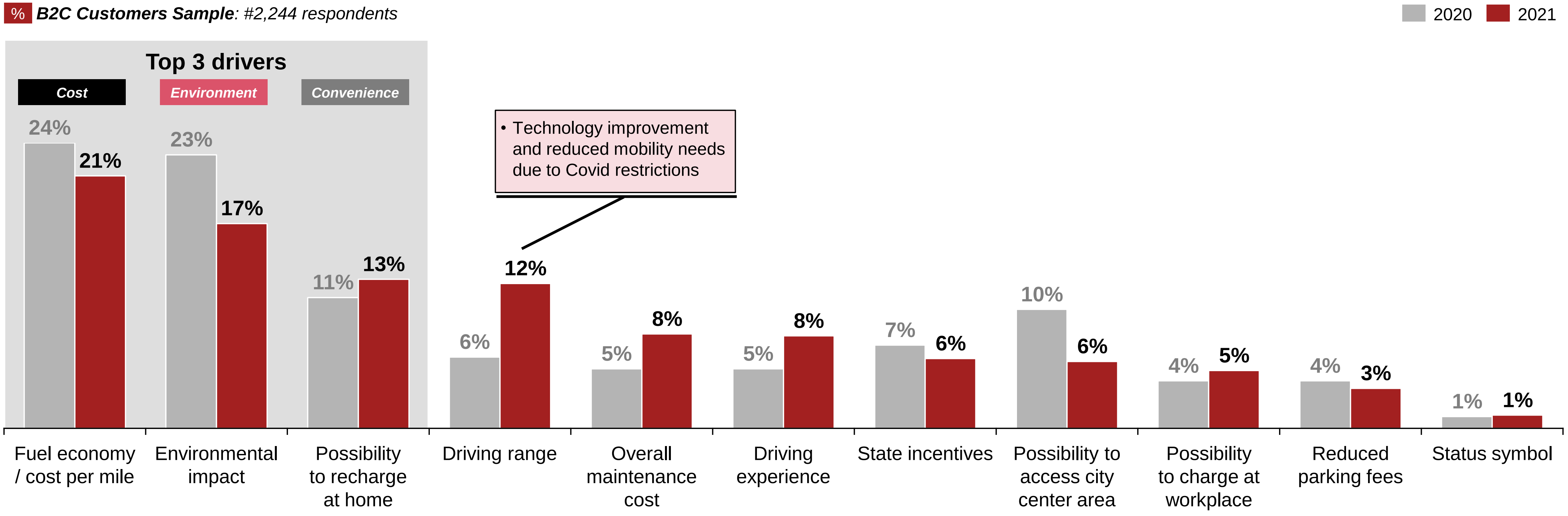


Source: Strategy& analysis on feedback from B2C survey

Key purchasing drivers are in line with last year: fuel economy, environmental impact and possibility to charge at home

Purchasing drivers

What are main reasons that drive you to buy an EV?



Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

EV skeptics are older than EV prospects and with a ~25% lower annual income

Profiling – EV skeptics vs EV prospects

% ***B2C Customers Sample**: #1,881 respondents*   ***Vs. 2020***

How many km do you commute daily? ***19 km*** ***-6Km***

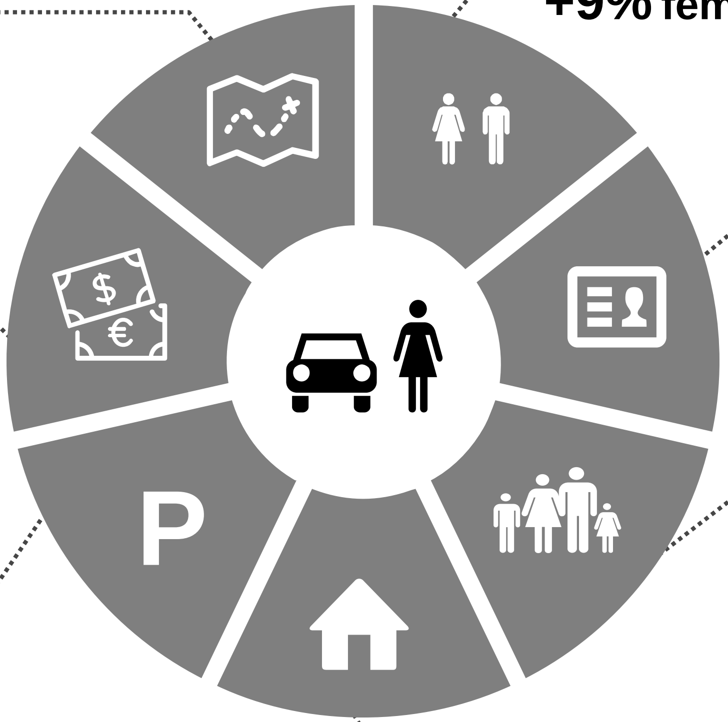
EV skeptics commute on average **-5 km** than EV prospects

What is your annual income? ***€ 38k*** ***-2K***

The average annual income of EV prospects is about **€ 10K lower** than that of EV owners

Do you have a parking spot? ***76% yes*** ***+9p.p***

-5% of EV skeptics have a **parking space** compared to EV prospects



What is your gender? ***43% male***

+9% female EV skeptics vs EV prospects

What is your age? ***53 years*** ***+9years***

The EV skeptics average age is **+7 years** than EV prospects

What is your family size? ***2.4 people***

The household of EV skeptics is **-0.5 people** smaller than EV prospects' families

Where do you live? ***64% in city areas***

-14% of EV skeptics live **in city centers** compared to EV prospects

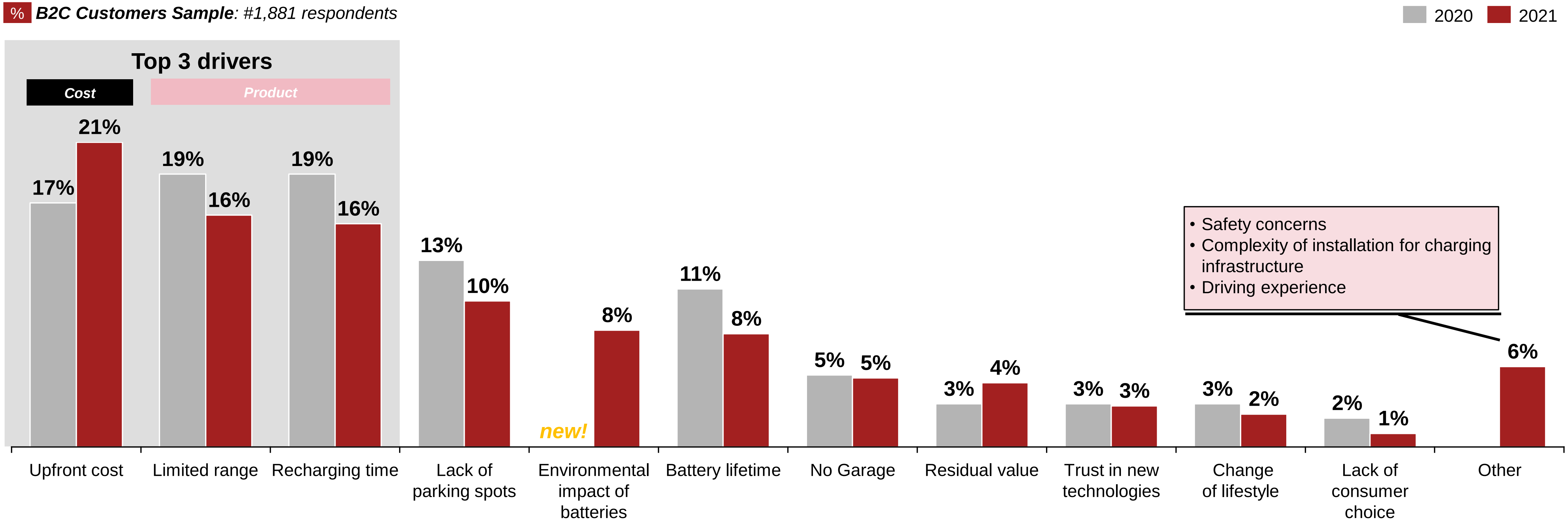
Source: Strategy& analysis on feedback from B2C survey

Key inhibitors to buy an EV are upfront cost, limited range and charging time

Main reasons for rejection

What are main reasons that discourage you from buying an EV?

% ***B2C Customers Sample**: #1,881 respondents*



Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2C survey

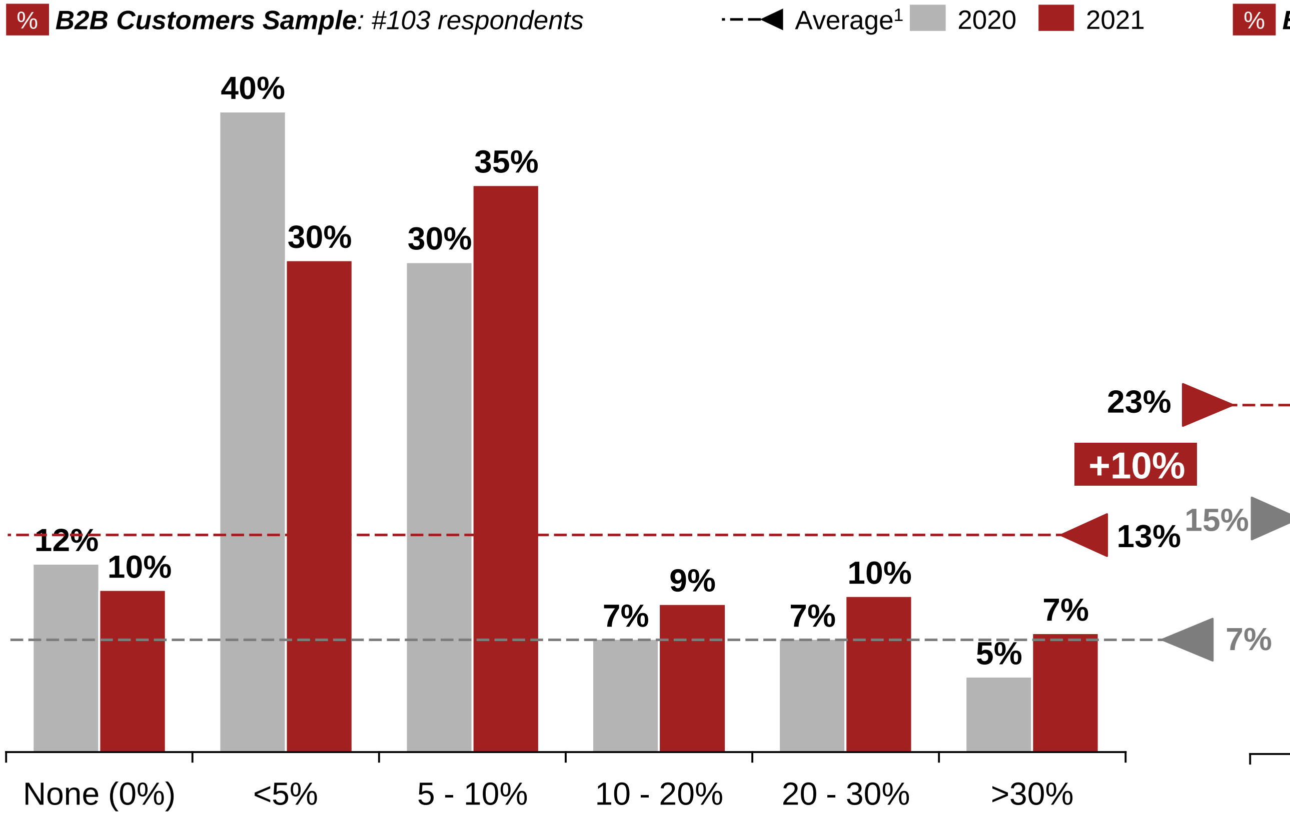
Agenda

Increasing EV penetration in surveyed companies' fleets vs. 2020, with 10% additional growth expected in the next 2 years

Share of EV in companies' fleet

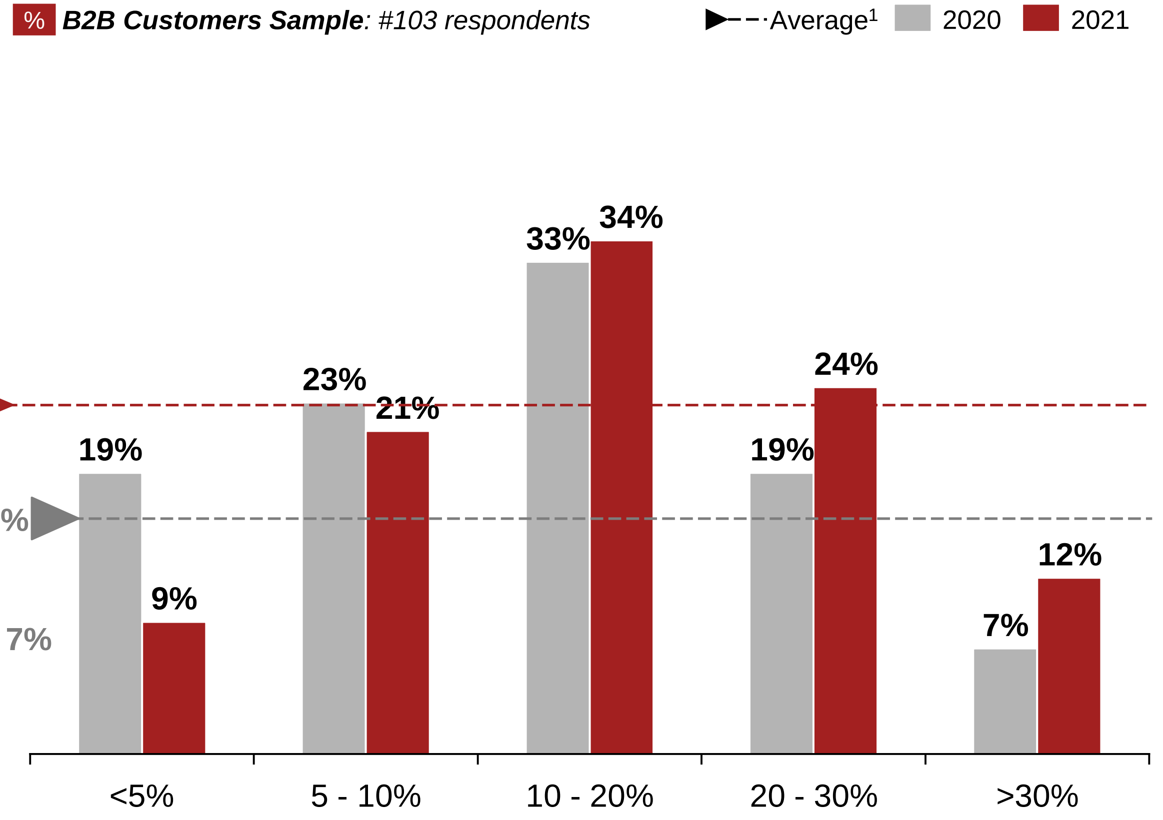
What is the EV share in your current company's feet?

% ***B2B Customers Sample**: #103 respondents*



Which EV share do you expect to reach in the next 2 years?

% ***B2B Customers Sample**: #103 respondents*

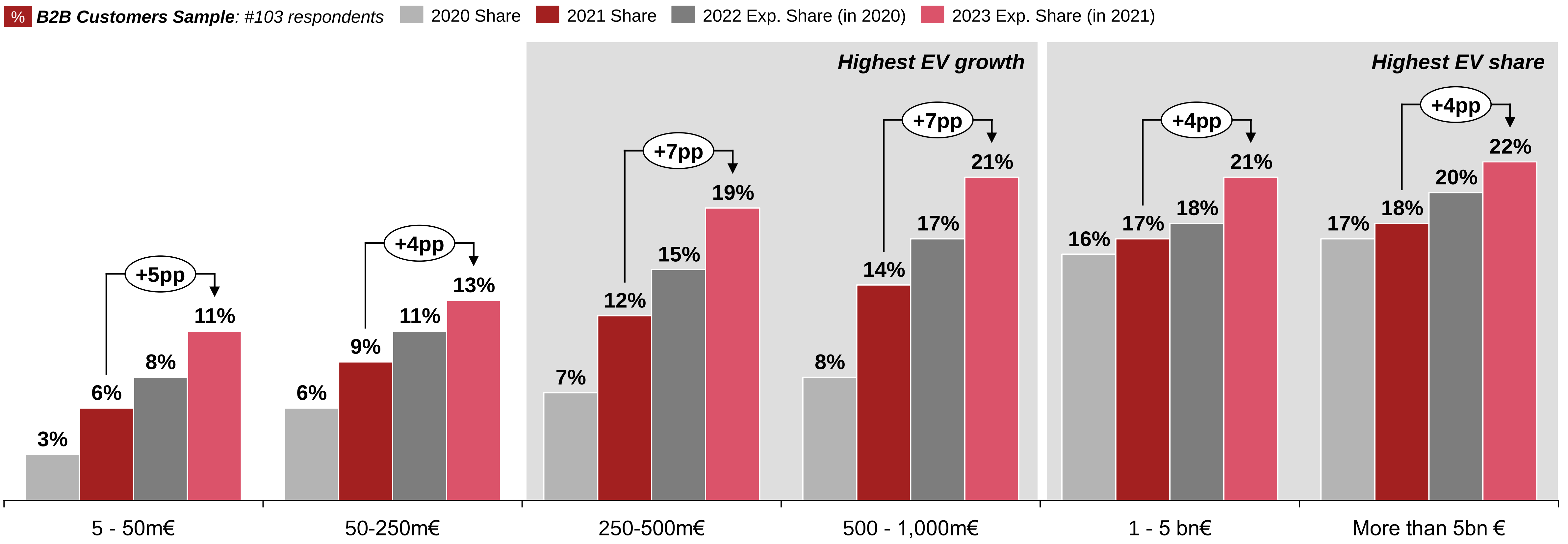


Note: percentages may not total 100% due to rounding; 1)Weighted average of current and expected EV fleet penetration
Source: Strategy& analysis on feedback from B2B survey

Large companies show the highest EV penetration, whilst mid-sized ones will register the highest growth in the next 2 years

EV penetration increase by company size *(annual turnover)*

How much do you expect to increase the EV share of your company's fleet in the next 2 years?



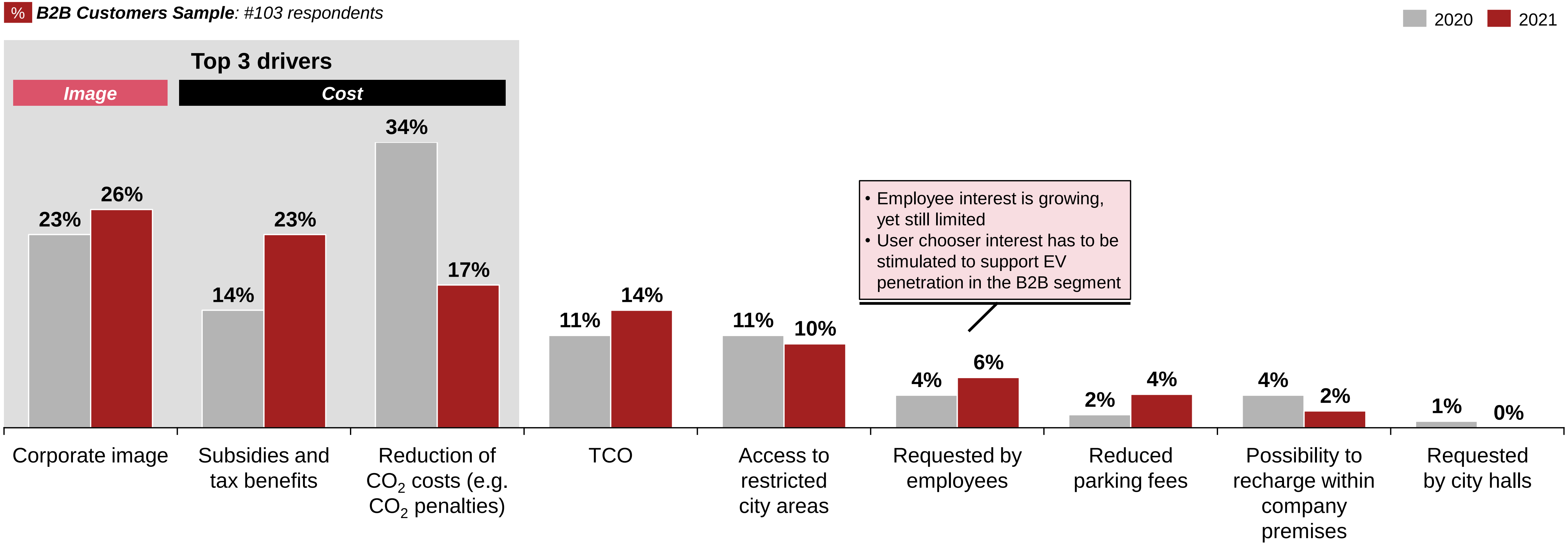
Source: Strategy& analysis on feedback from B2B survey

Key purchasing drivers are related to corporate image and EV cost – employees' request is growing but still limited

Buying drivers

What are main reasons that drive you to select EV in the company fleet?

% ***B2B Customers Sample**: #103 respondents*



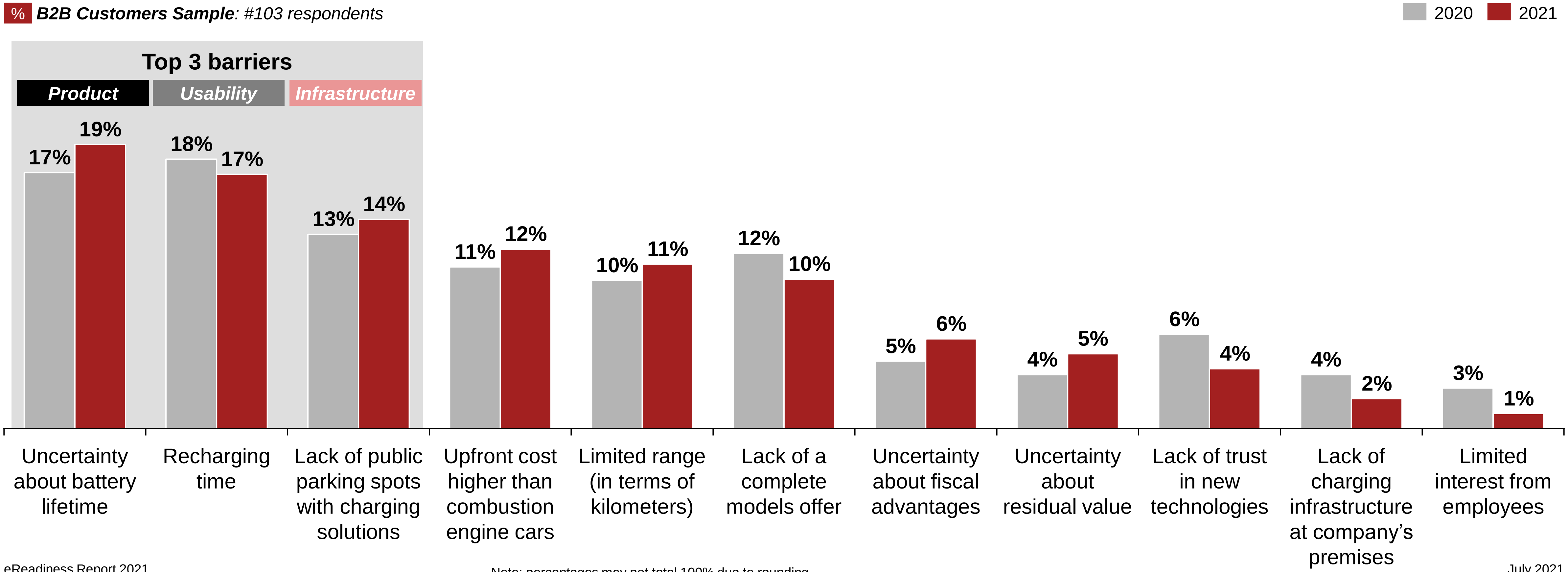
Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2B survey

Main purchasing concerns are EV batteries, charging time and lack of public charging infrastructure

Reasons for rejection

What are the main factors that <u>discourage</u> you from selecting EV in the company fleet?

% ***B2B Customers Sample**: #103 respondents*



Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from B2B survey

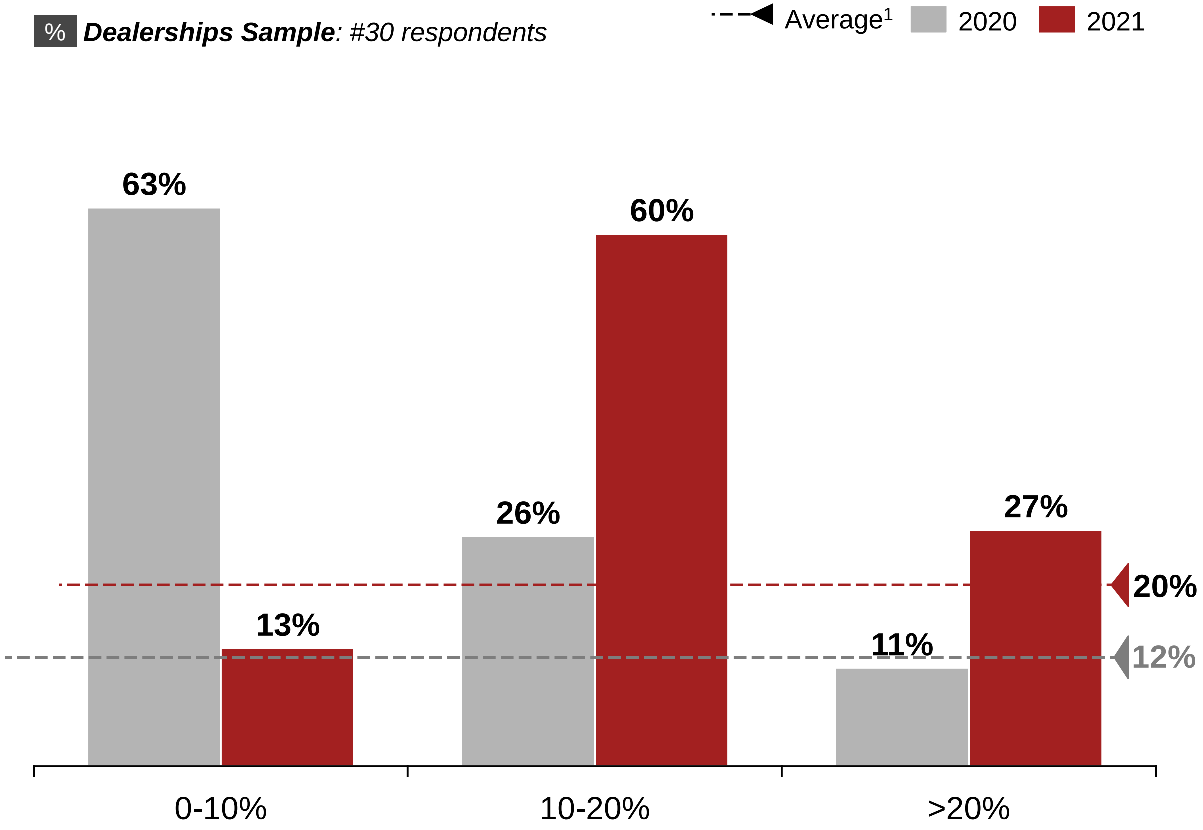
Agenda

Majority of dealers envisage a 10-20% share of EVs in 2 years, considering the B2B segment to be the most attractive

Market view – EV sales forecasts

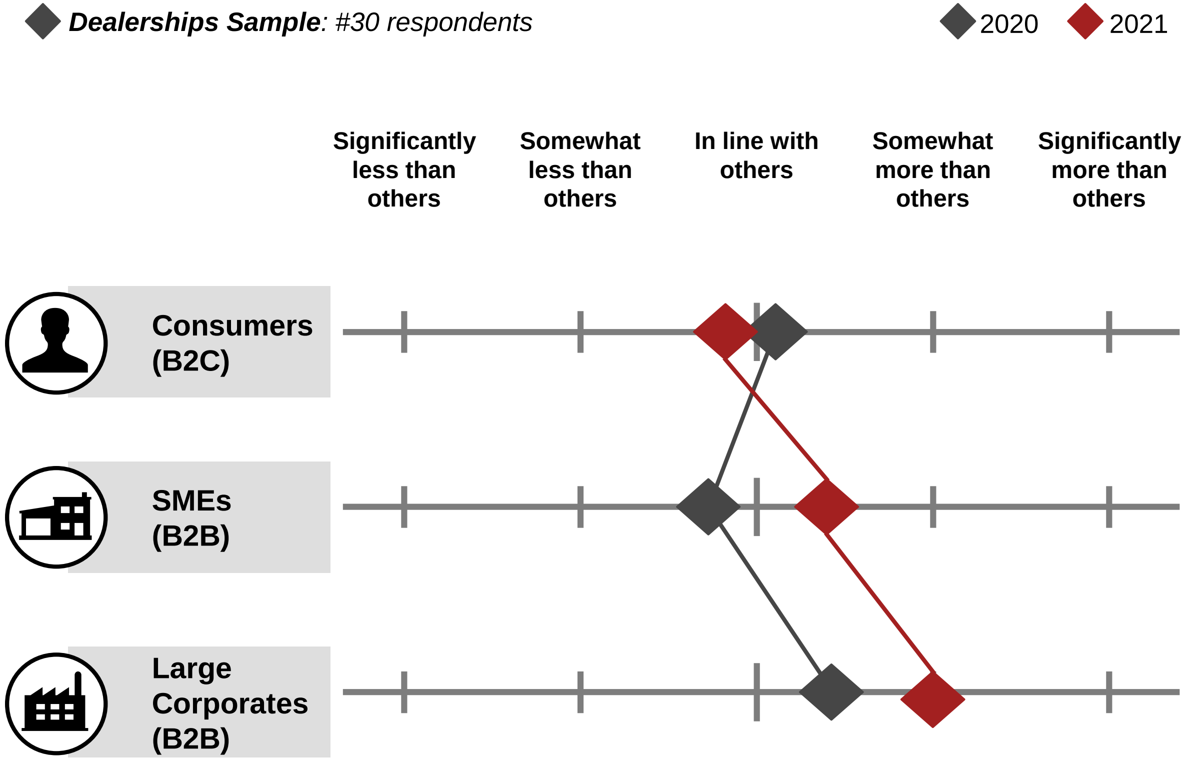
What EV volume share do you expect to achieve within 2 years as % of total sales?

% ***Dealerships Sample**: #30 respondents*



What EV volume share do you expect to achieve within 2 years as % of total sales?

***Dealerships Sample**: #30 respondents*

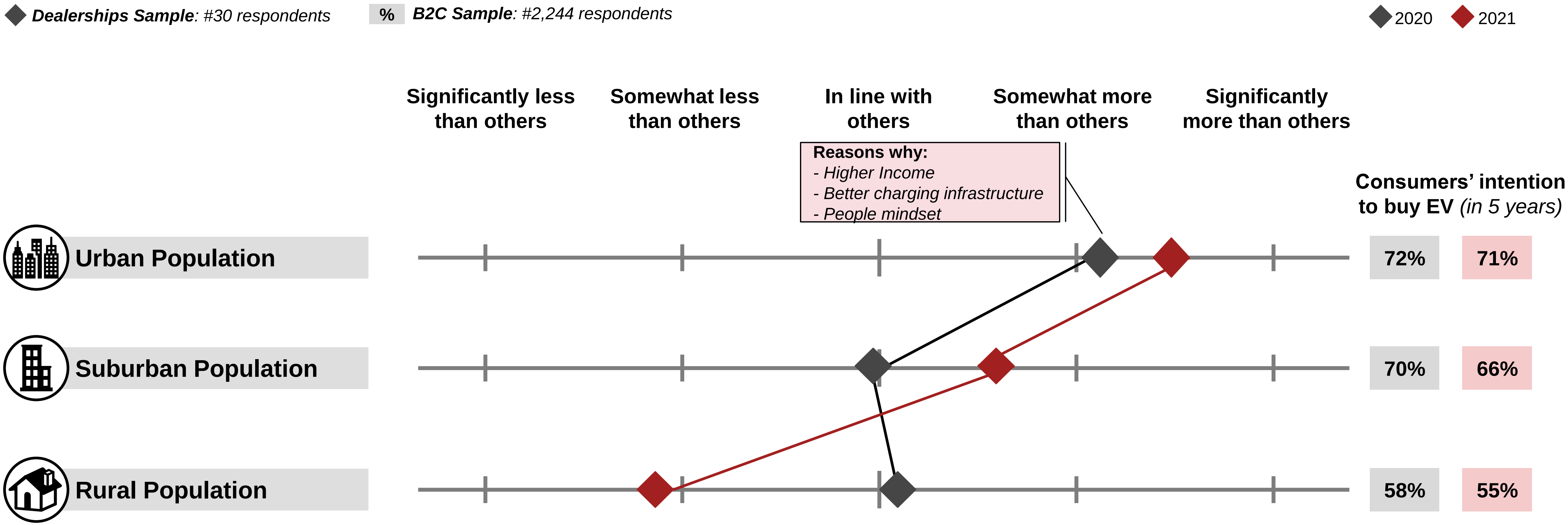


Note: percentages may not total 100% due to rounding; 1) Weighted average of expected EV market penetration in 2022
Source: Strategy& analysis on feedback from Dealerships interviews

Urban population is considered as high-potential market; rural areas are seen less attractive compared to last year

Market view – Segmentation & Targeting

Do you expect any difference in the EV take up rate across urban, suburban and rural population?

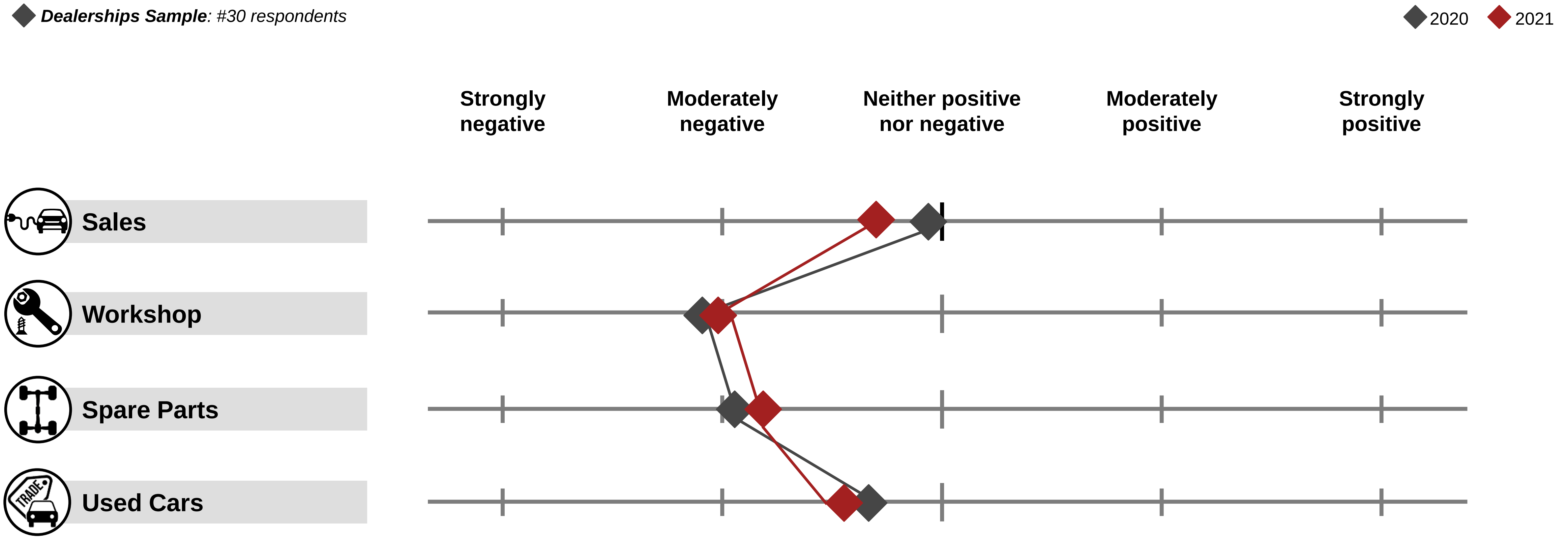


Source: Strategy& analysis on feedback from Dealerships interviews and B2C interviews

EV business is still expected to impact the profitability of dealerships, in particular with regard to workshop and spare parts

Sales channel – Dealership business impact

What is the expected EV sales impact on Dealerships' margins for each line of business?



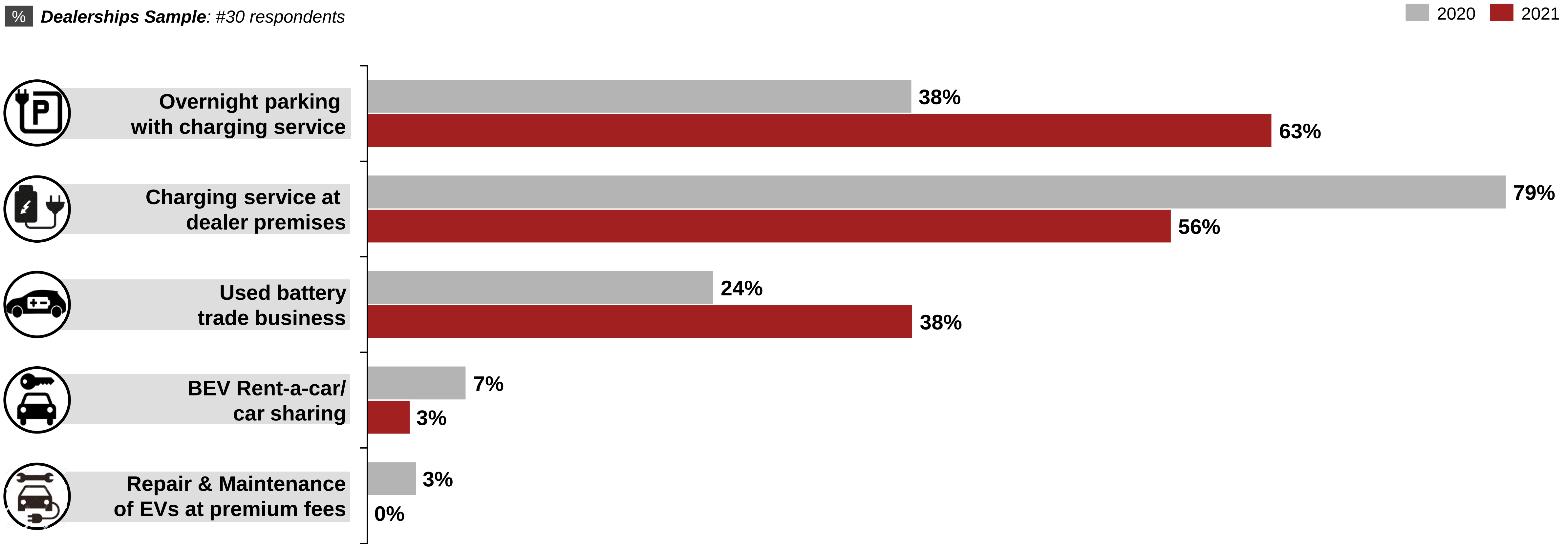
Source: Strategy& analysis on feedback from Dealerships interviews

Charging services and used battery trade are seen by dealerships as alternative revenues streams connected to the EV business

Sales channel – Dealership alternative revenues pools

Which new revenue streams linked to EV business will Dealerships be able to exploit?

% ***Dealerships Sample**: #30 respondents*



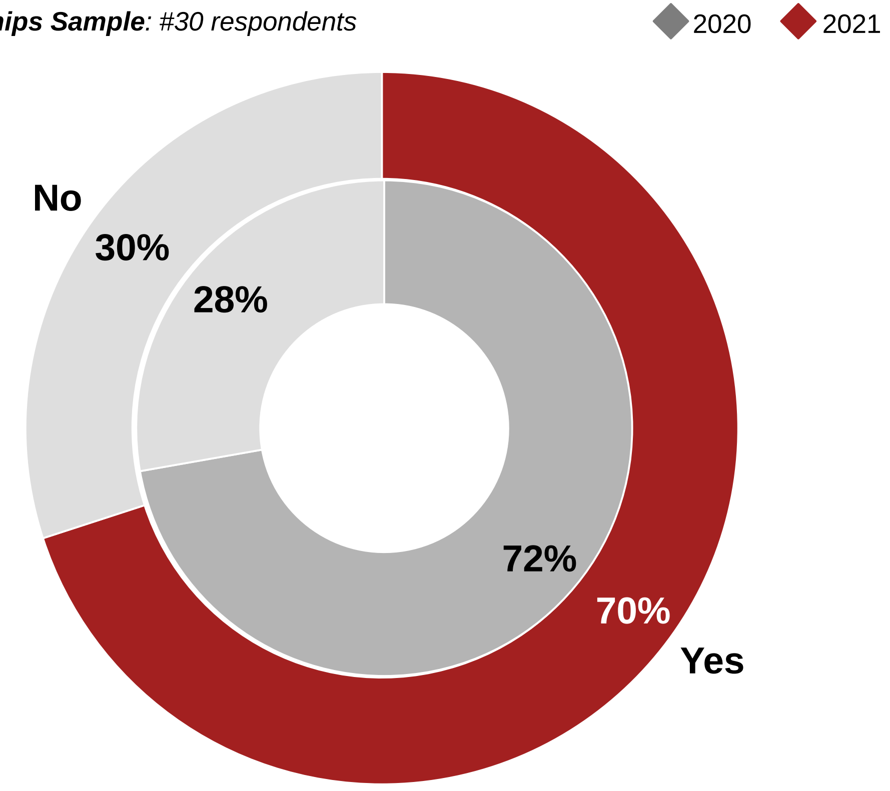
Note: percentages may not total 100% due to rounding
Source: Strategy& analysis on feedback from Dealerships interviews

Dealerships feel their salesforce still needs support on EV-specific topics through training/ coaching activities

Sales channel – Sales skills & Capabilities (1/2)

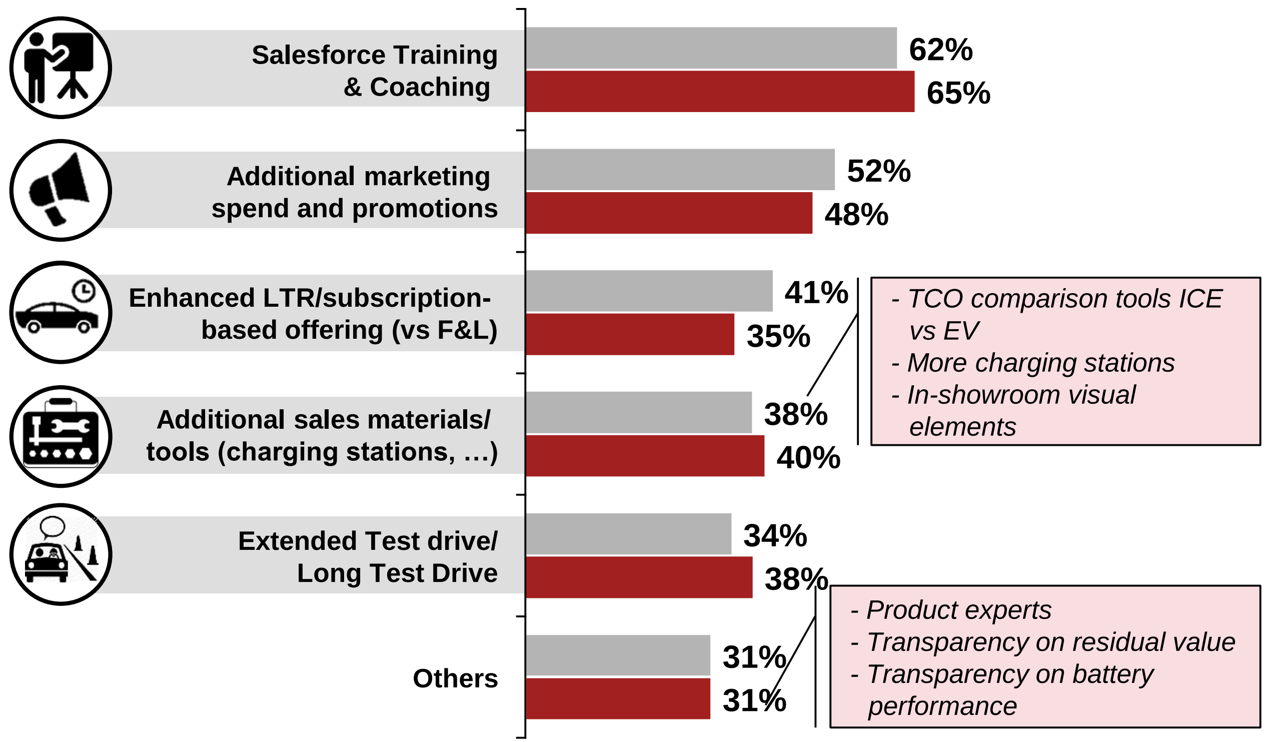
Do you (as a dealership) think your salesforce has the right skills and capabilities to sell EVs?

% ***Dealerships Sample**: #30 respondents*



What support from the OEM would be needed to better drive EV sales?

% ***Dealerships Sample**: #30 respondents*



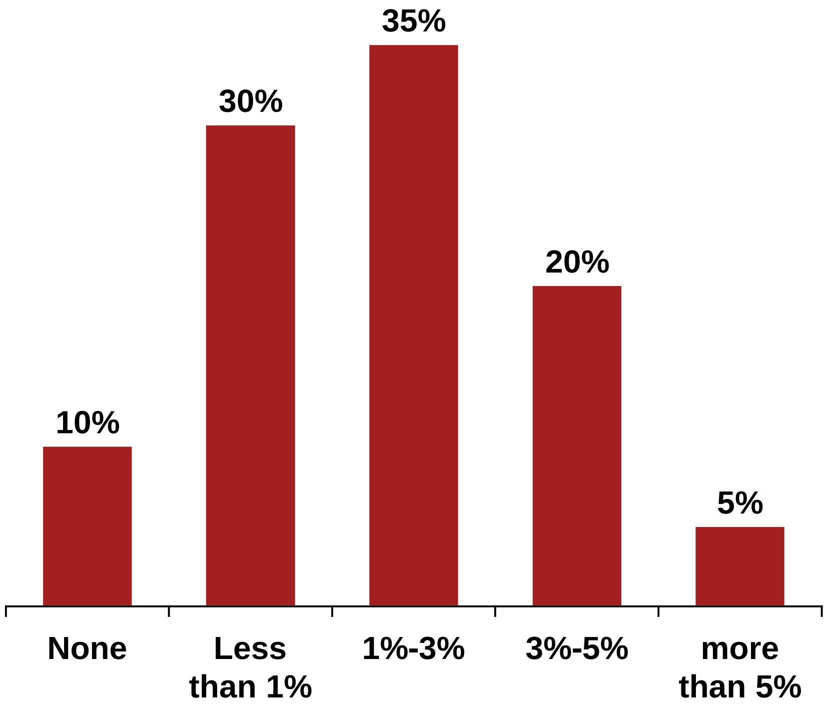
Source: Strategy& analysis on feedback from Dealerships interviews

Used EV sales are negligible, yet stock rotation is lower than ICE vehicles and represents a primary concern

Used EV Deep-Dive *new!*

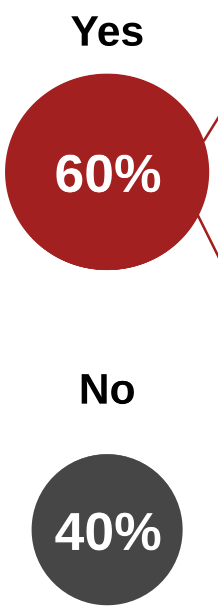
What percentage of EV sales is related to Used Cars?

% ***Dealerships Sample**: #30 respondents*



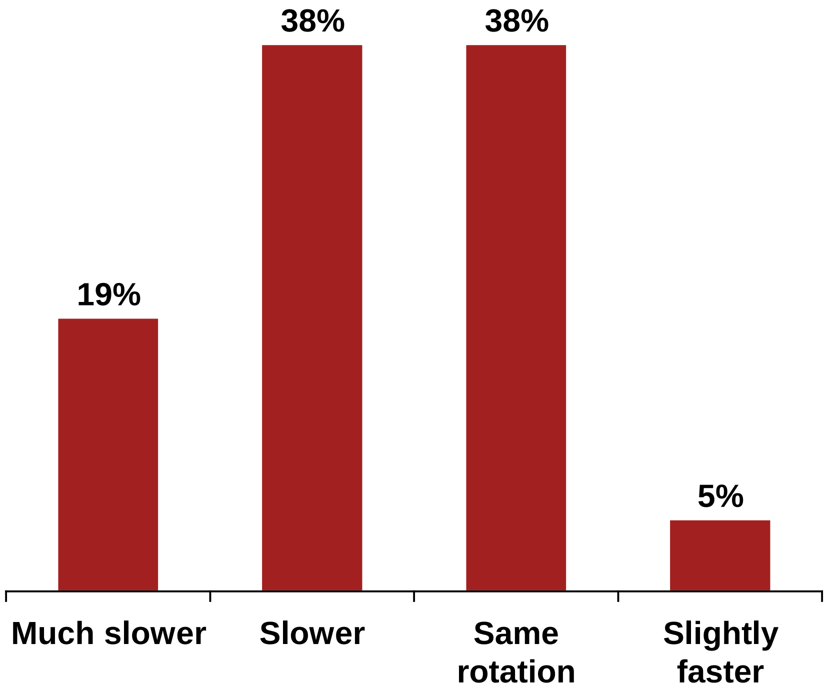
Do you monitor stock rotation for Used EVs?

% ***Dealerships Sample**: #30 respondents*



How do you perceive stock rotation of Used EVs compared to ICE?

% ***Dealerships Sample**: #18 respondents*



Source: Strategy& analysis on feedback from Dealerships interviews

Agenda

We have shortlisted 5 improvement actions to help OEMs tap the full potential of the EV market demand in the short-run

Recommendations for OEMs

	Proposed actions	*Reasons why*
Extended value proposition	Define an extended offering to address the increasing demand of EV-related products and services that are currently not part of the OEM & dealership portfolio (e.g. energy contracts, smart-home solutions, …)	• 10-30% consumers purchased additional EV-related products and services within a short time frame after purchasing their EV • Few OEMs have already defined an extended value proposition including energy bundles, home solutions and additional services
Omnichannel journey	Define a customer journey that complements traditional brick-and-mortar sales with a seamless on-line customer experience to target digital native prospects and ensure resilience in case of health emergences	• ~10% of customers already bought their EV online, with ~60% willing to buy their next car remotely, mainly driven by convenience and cost advantage drivers • 50% of the demand in the next two years is made up of digital natives living a relevant share of their life online
Customer experience	Design and deploy EV-specific sales process to make EV customer experience more compelling and to ensure constant monitoring of customer feedback to identify key pain points throughout the EV journey	• Word of mouth was the main consideration factor for EV owners, with returning customers beginning to represent a sizeable share (12%) • EV owners' satisfaction declined 8% in the last year, with few OEMs having defined EV-specific sales process guidelines focusing on the entire journey
Customer Support	Enhance customer support during the post-purchase phase, by focusing on the installation of private charging solutions as well as public charging point usage	• ~60% of B2C and 70% of B2B customers procured EV charging solutions • OEMs/ Dealerships managing the installation of charging infrastructure achieve higher NPS, improving brand advocacy and word of mouth which represent the main consideration factor for new EV purchase
Pre-Owned EV business	Enhance used EV business proposition with dedicated CPO and upskilling programs to help dealerships manage the EV 2nd hand trade in a more effective and profitable way	• 40% of dealers do not / have a limited experience in used EV sales • Used stock rotation is slower than traditional ICE vehicles, putting additional pressure on the profitability of dealerships and working capital requirements

Source: Strategy&

Agenda

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