

User preferences for charging locations and charging schemes – a survey in eight EU countries

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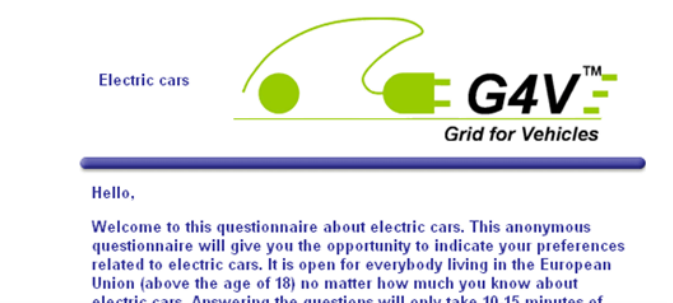
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- Web-based, small-scale survey
 - G4V looks into grid-impacts of EV rollout
 - Therefore no detailed analysis on buying behaviour
 - Focus on preferences and acceptance of delayed charging and off-peak charging
 - It was decided to focus on the intended behaviour of the 'general public'
 - Charging questions and assumptions defined in discussions with the project consortium
 - Countries: DE, FR, IT, NL, SE, ES, UK, PT
 - Each questionnaire available in the respective language
 - NB: Not all of the EU thinks and counts in km or € → additional effort to adapt questionnaire



Electric cars



Grid for Vehicles

Hello,

Welcome to this questionnaire about electric cars. This anonymous questionnaire will give you the opportunity to indicate your preferences related to electric cars. It is open for everybody living in the European Union (above the age of 18) no matter how much you know about electric cars. Answering the questions will only take 10-15 minutes of



Carros eléctricos



Grid for Vehicles

Olá

Bem-vindo a este questionário sobre carros eléctricos. Este questionário anónimo solicita a sua informação sobre preferências relacionadas com carros eléctricos. É um questionário para todas as pessoas a viver na União Europeia (com idade superior a 18 anos) independentemente do conhecimento prévio sobre carros eléctricos. Este questionário demorará apenas entre 10 a 15 minutos a preencher na sua totalidade e exigirá apenas alguns clicks.

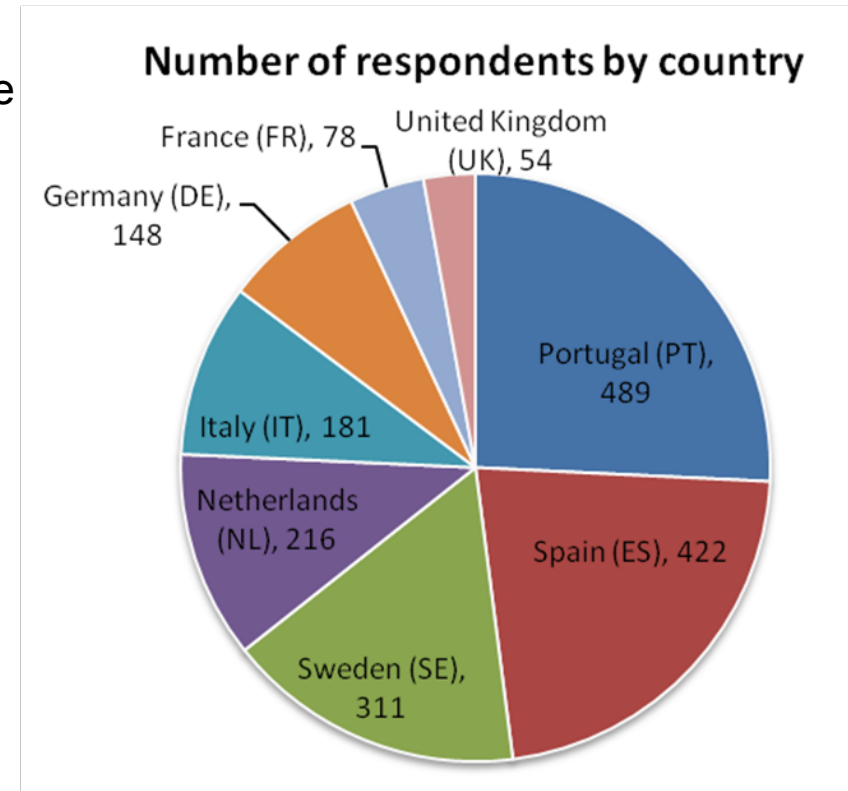
As suas respostas terão grande valor para nós e por isso agradecemos em antemão o tempo dedicado.

A equipa do questionário

*Este questionário é parte do projecto Europeu Grid for Vehicles – G4V – sobre o carregamento de veículos eléctricos, e é financiado pela Comissão Europeia. Mais informação sobre o projecto encontra-se em www.g4v.eu. Os resultados deste questionário serão também publicados neste site de 2011.

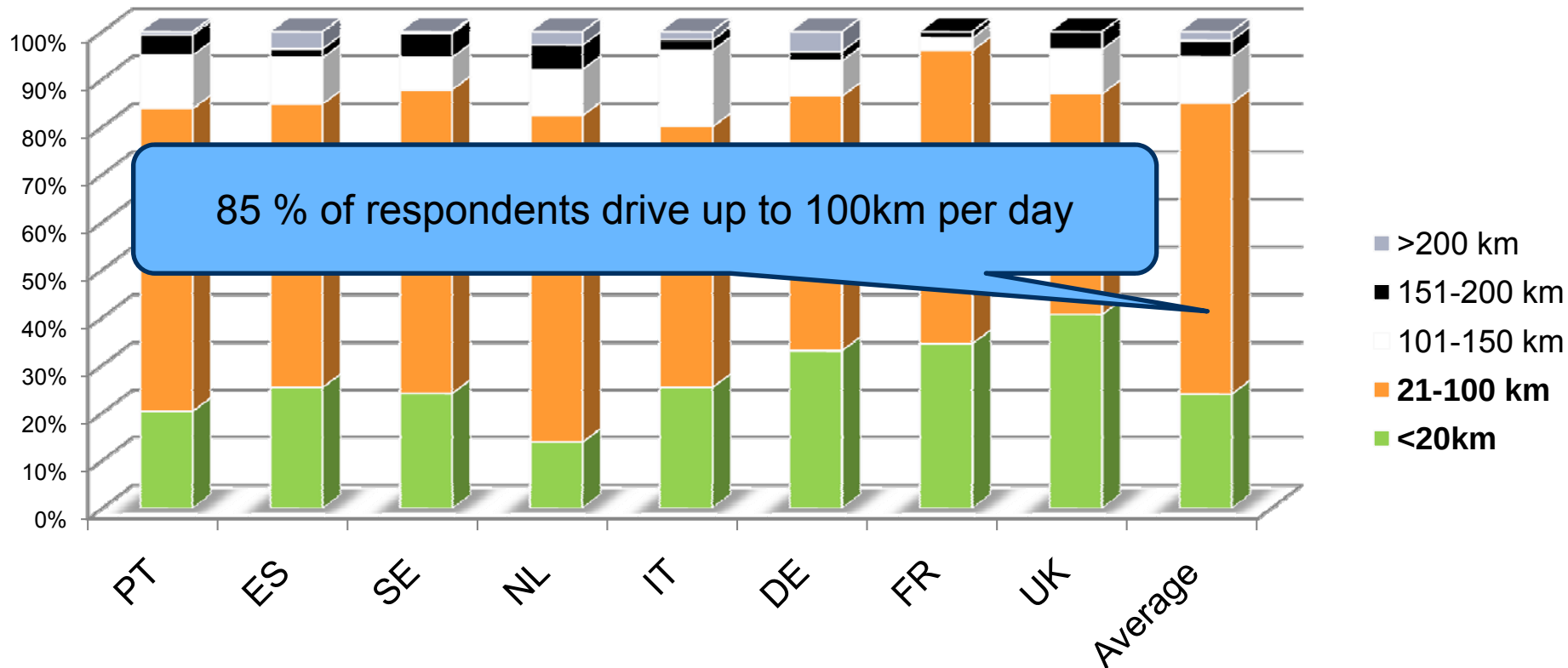
Próximo

- Survey distribution via G4V website and project partners in respective countries
 - Questionnaire access via hyperlink (one per language)
 - Questionnaire open from December-February
 - **1900** replies in total
 - But number of responses among countries differ
 - Perfect statistical sample not possible within G4V (small task) – but outcomes already provide useful directions



- Currently moderate interest of consumers to buy an EV
 - Not surprising because limited models & infrastructure available
- People willing to buy an EV in 2 years:
 - Live in smaller municipalities and have a private parking place
- Indicated EV driving range (120km) perceived as not sufficient
 - Occasional long trip plus mistrust (lack of awareness) in battery performance
- Preferred charging location: whenever possible at home!
 - Even people that don't have a private parking place would prefer to charge at home
- Relatively high interest to join delayed (off-peak) charging scheme
 - Less interest to participate in V2G schemes → BUT €60 p.a. can make a difference
 - Leased battery: does not change the picture dramatically
 - High concerns about battery persists

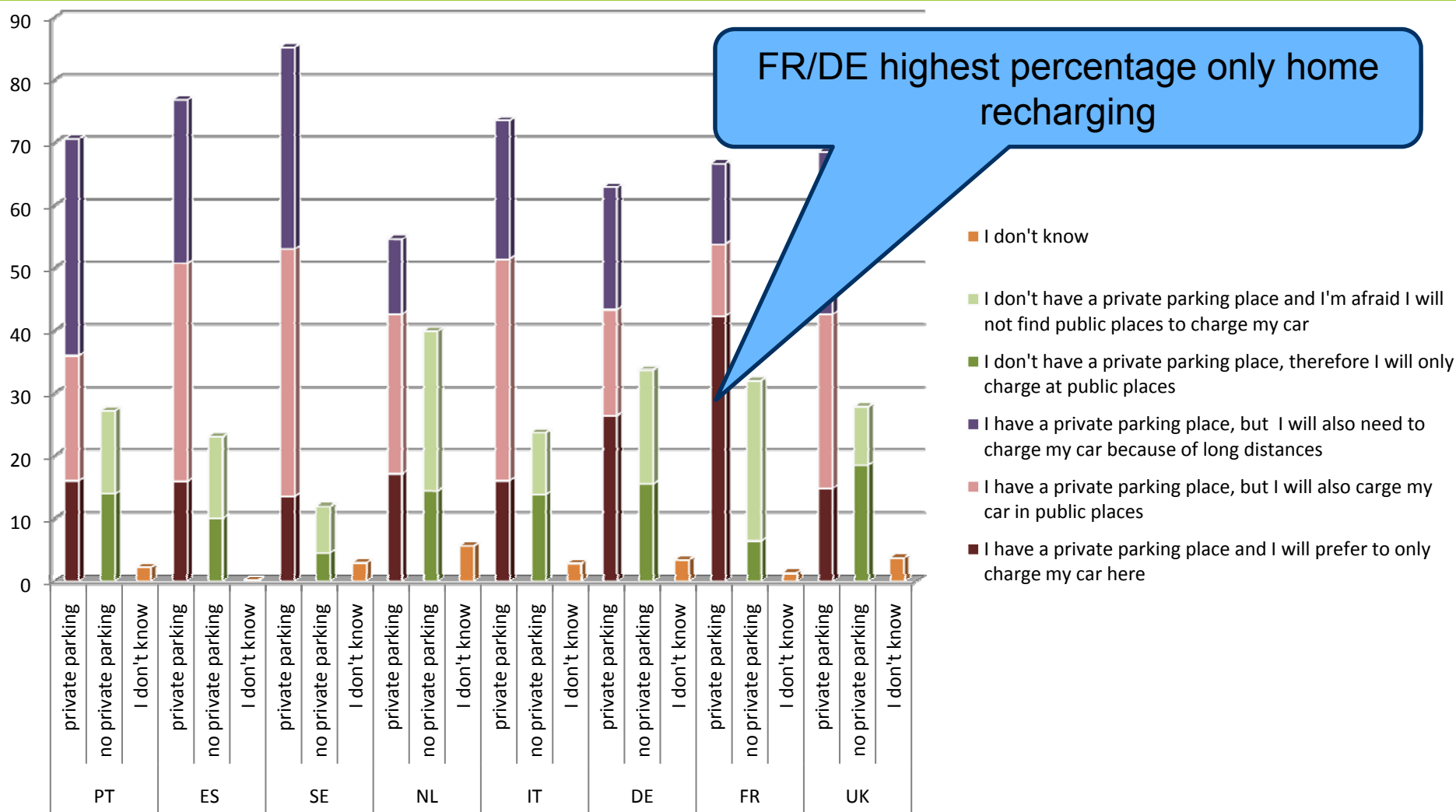
Survey results: current daily kilometers



BUT: required battery capacity to be interested in buying EV: 308km (NL 389km)!

People take into account the occasional longer trip

Preferred charging location



Survey results: preferred charging location

- 70% respondents has private parking place
 - 1/3 prefers to only charge at home/work
 - 1/3 also wants to charge at public places
 - 1/3 also needs to charge at public places because of long distances

30% without private parking place
Of these: 12% is afraid they will not find a place to charge

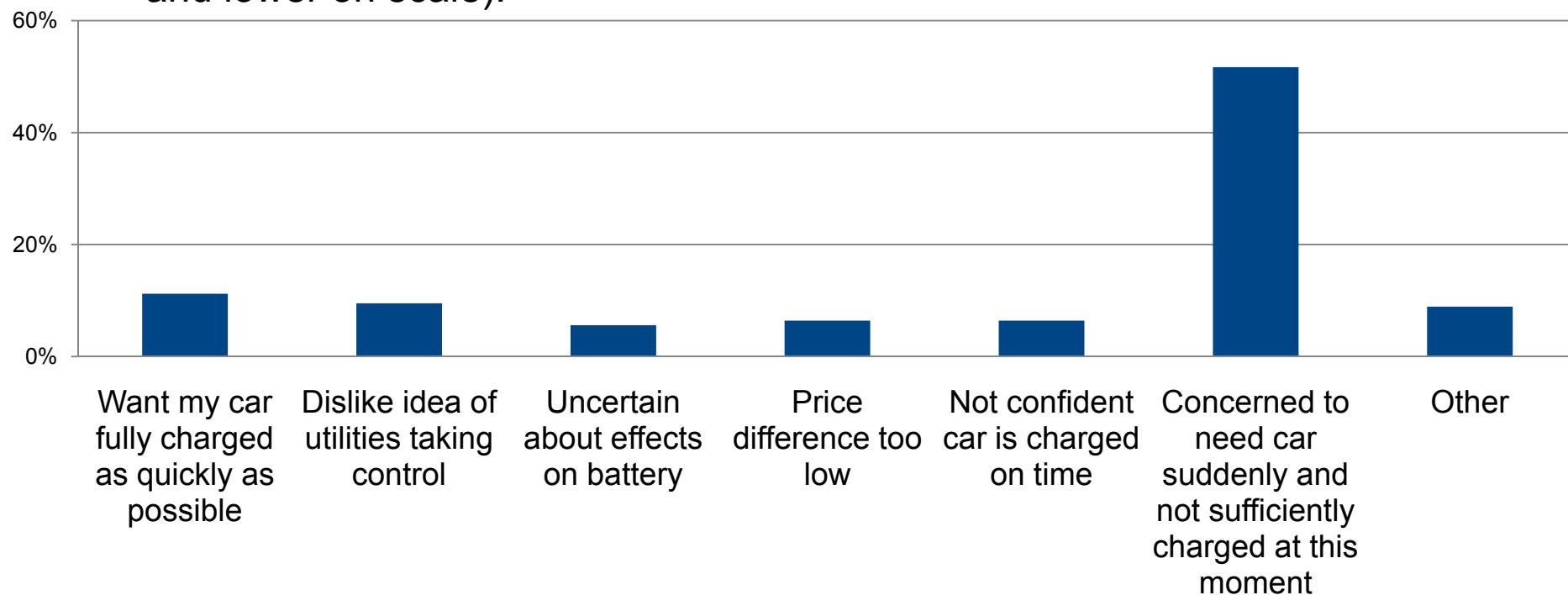
25% of these only want to charge at home with price incentive (!)

With price incentive (€ 5 vs 3)
53% will only charge at home or work

These people are also more interested in buying EV in coming 2 years

Survey results: interest in delayed charging (with price incentive)

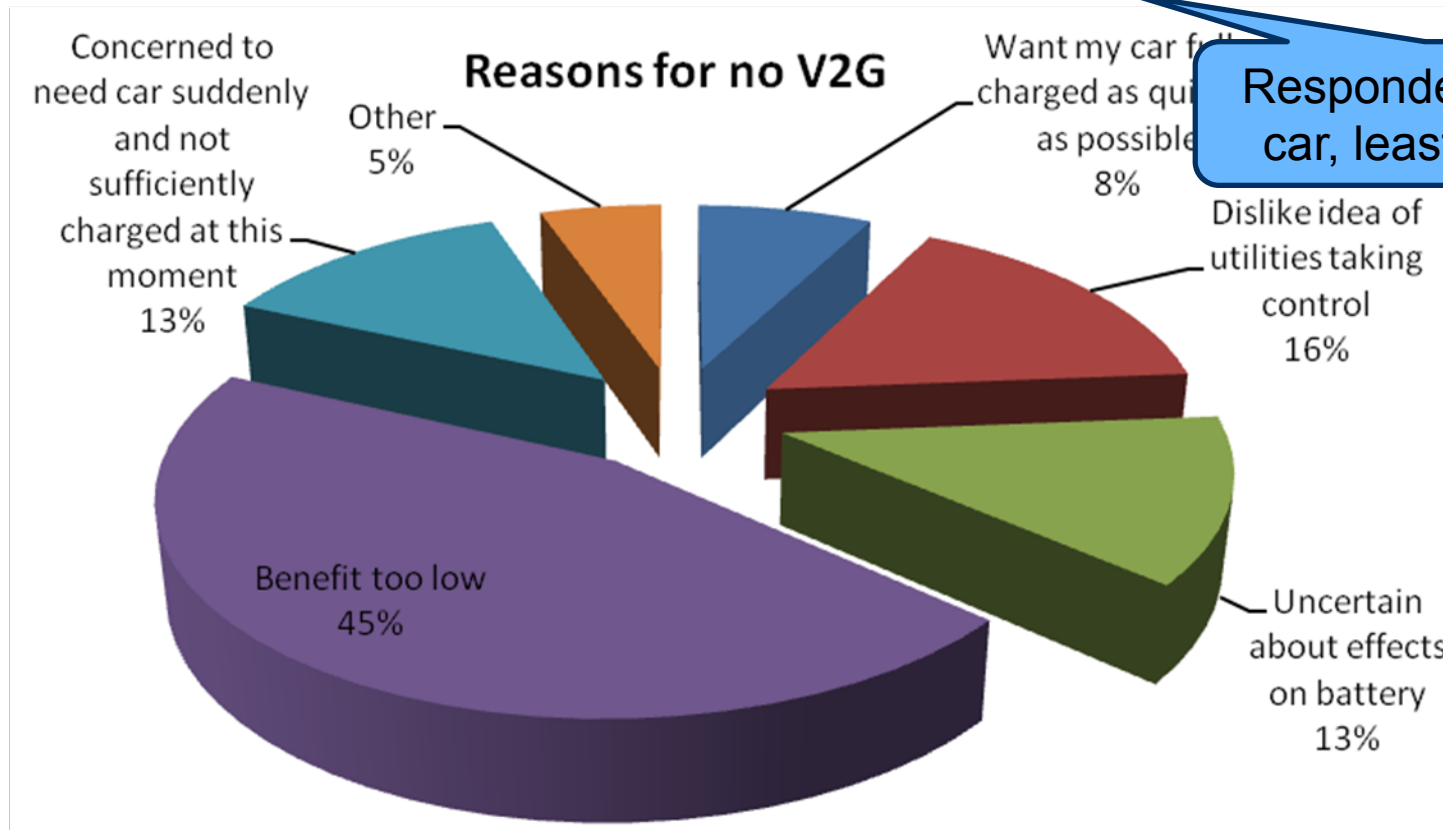
- Delayed charging = night charging, battery full in the morning, 2 vs 3 euro
- Average high interest in delayed charging (5.74 on 1-7 scale)
- Reasons for not being interested in delayed charging (everyone ticking 4 and lower on scale):



Results V2G

- V2G: unload & recharge whenever plugged in
- Least interest compared to delayed charging (4.4 on 1-7 scale)

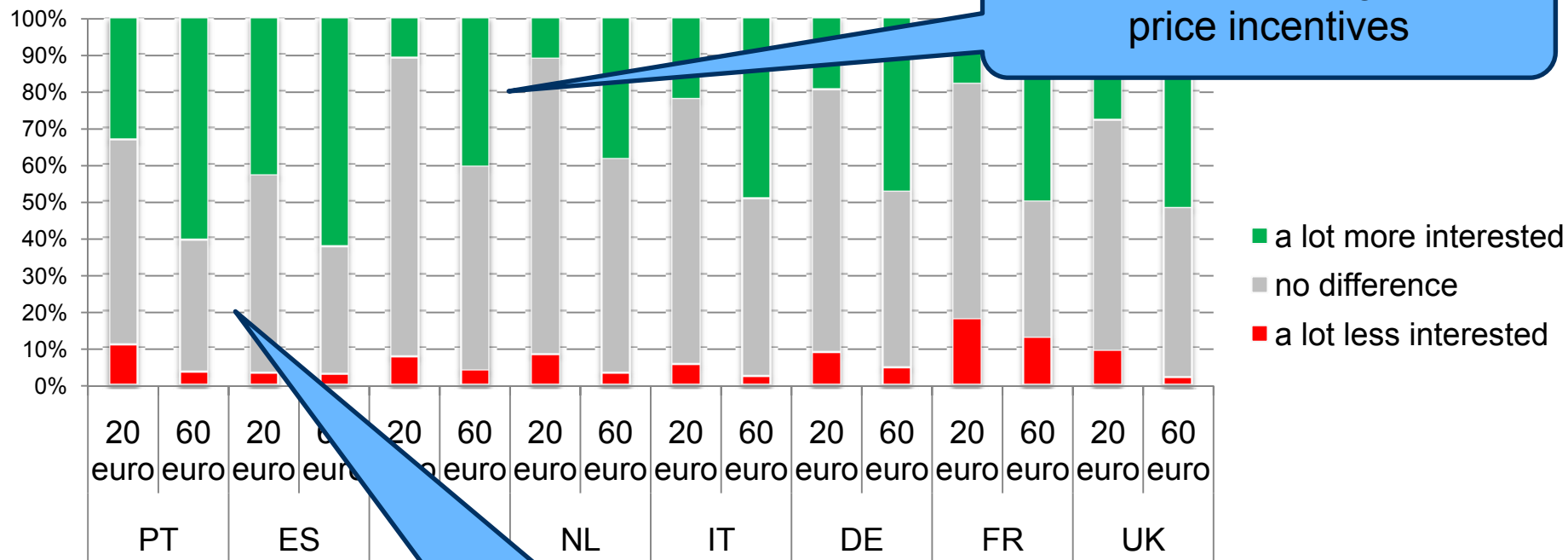
Young people & respondents (currently) without car, most interested



Respondents with big car, least interested

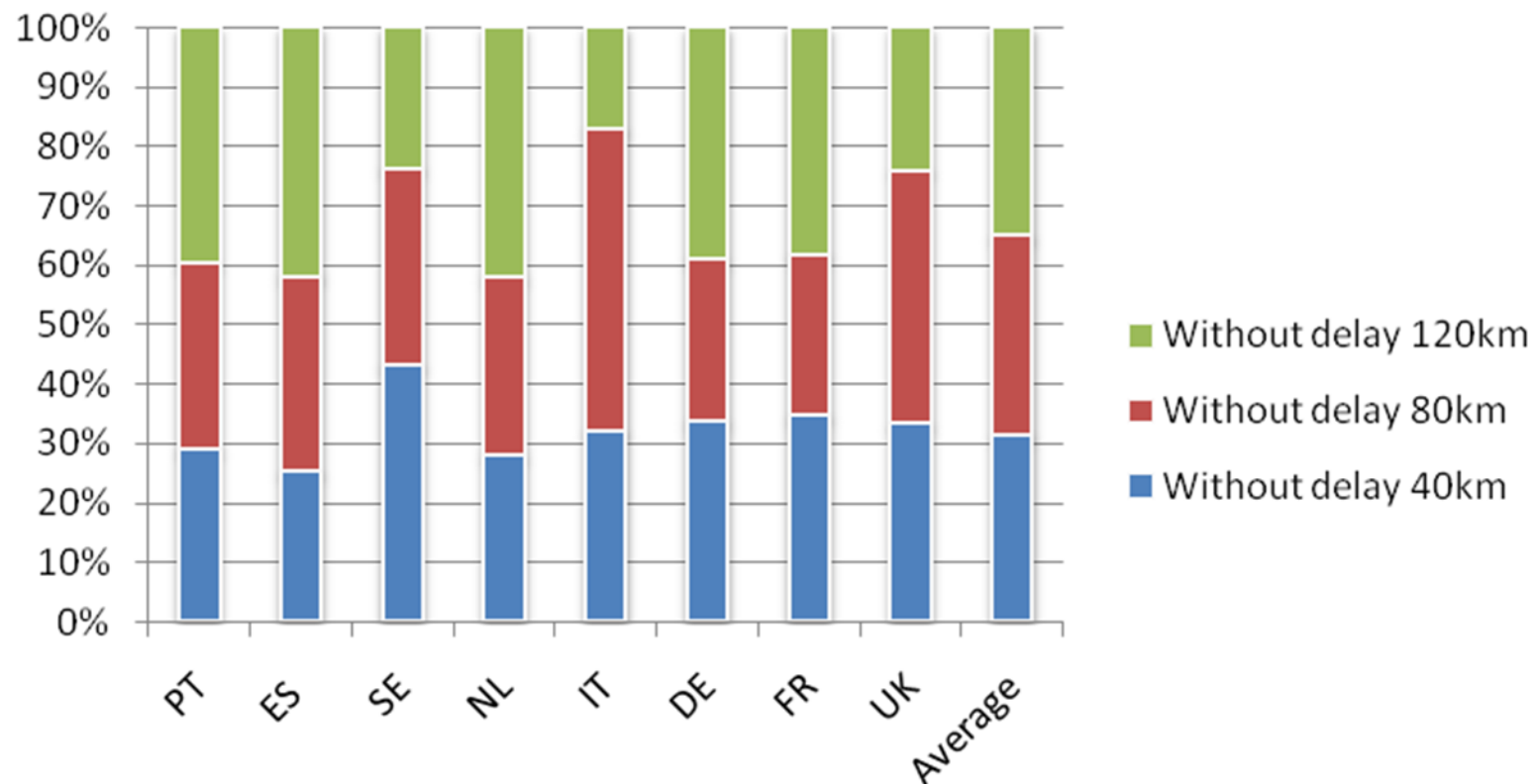
Interest in V2G – Impact of price incentives

- Interest to participate in V2G services with price incentive of € 20 and € 60 / year:

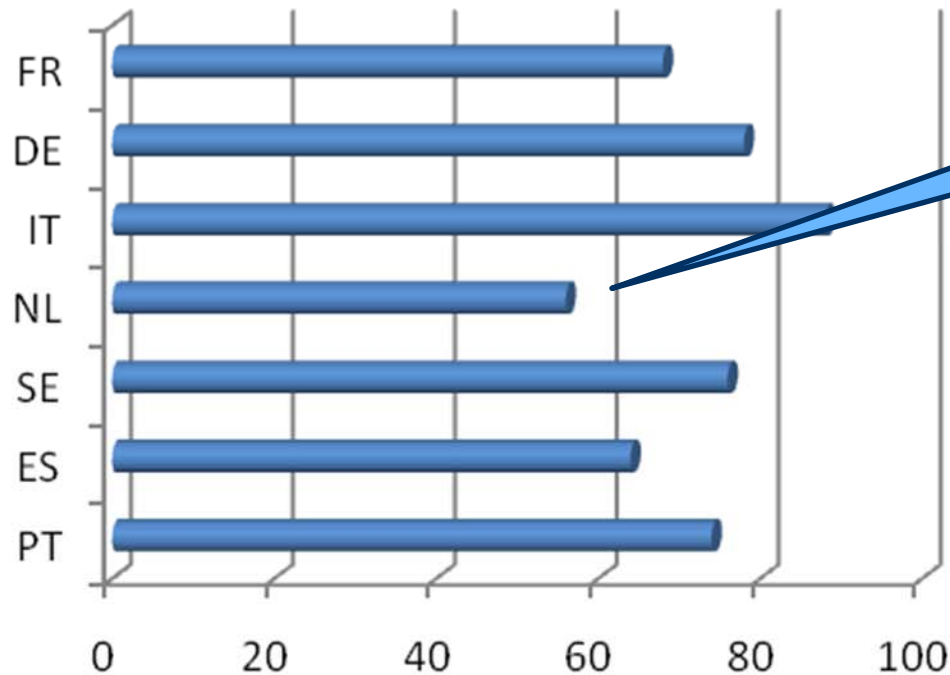


- Options: Recharge battery up to 40km:€2 80km:€2.5 120km: €3

Recharging with specified battery capacity



Minimum required battery capacity of 120km or less

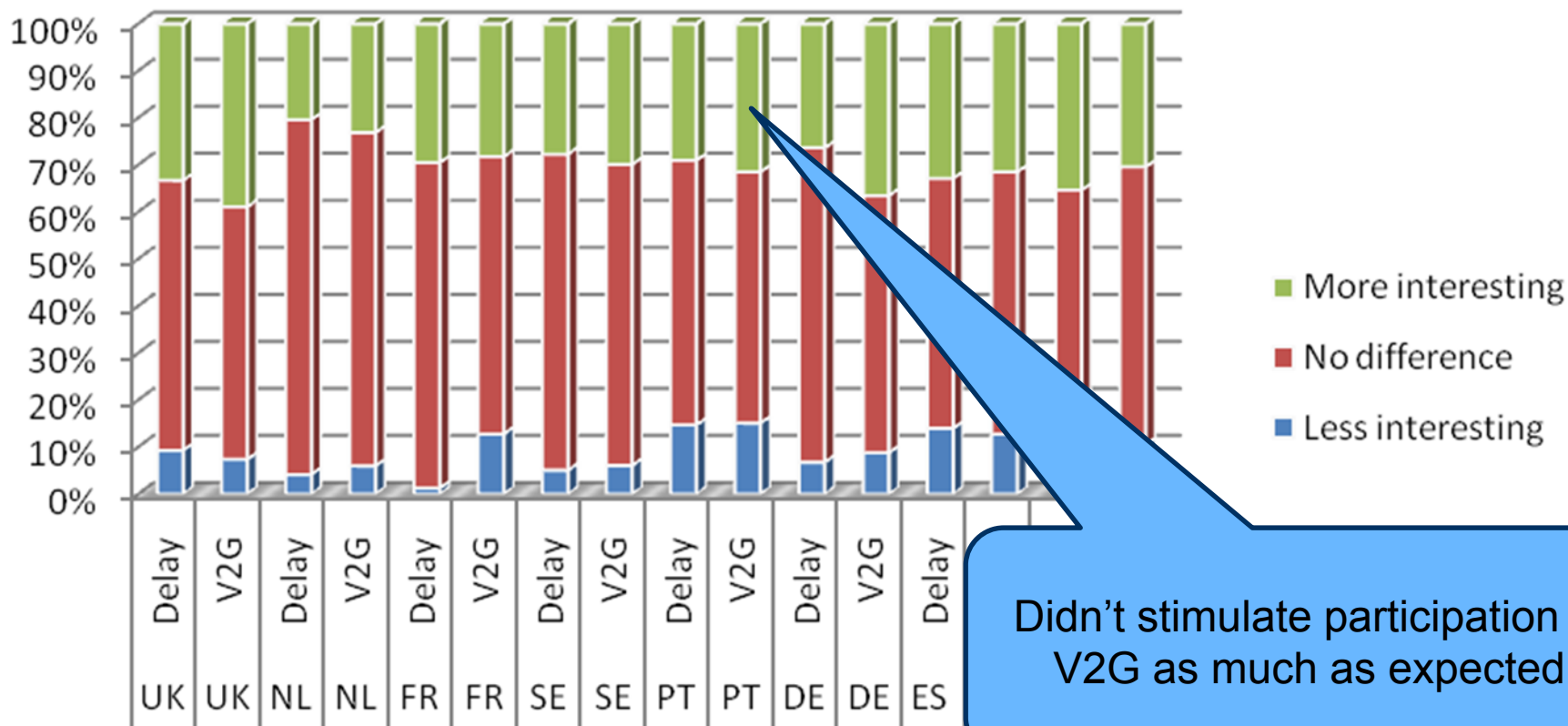


On average 70km
considered sufficient

■ percentage of respondents
indicating 120km or less

Survey results: Impact of leased battery

Impact of leased battery



- People indicate preference for mixture of home/work recharging and public recharging spots
 - With price incentives, it is possible to influence behaviour towards charging at home/work → Users in the next 2 years
- Urban/suburban infrastructure
 - People living in smaller communities (<100,000) will charge at home/work
 - People living in large cities → most afraid of being 'stranded'
 - Cities: Recharging at points of interest (large office parks, shopping centres)
 - Fast charging, inductive charging? → help to reduce fears of city dwellers
- Initial user group willing to participate in delayed charging schemes as they have mostly private parking → home recharging
 - Price incentives positive effect to influence consumer behaviour
- V2G schemes generally lower acceptance levels
 - On average 70km should remain in the battery → provides indication which battery capacity could be used for services

Thanks!



Remarks, questions?