



Consumers, Vehicle and Energy Integration (CVEI) project

Dr George Beard

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About TRL

Vision

World leader in creating the future of transport and mobility, using evidence-based solutions and innovative thinking

300

engineers, scientists, psychologists, IT experts and statisticians




Providing world-leading research, technology and software solutions for surface transport modes and the related markets of automotive, motorsport, insurance and energy

Mission

Challenge and influence our chosen markets, driving sustained reductions (ultimately to zero) in:

- Fatalities and serious injuries
- Harmful emissions
- Barriers to inclusive mobility
- Unforeseen delays
- Cost inefficiencies

1000 clients in

145 countries

What is the Consumers, Vehicles and Energy Integration project?

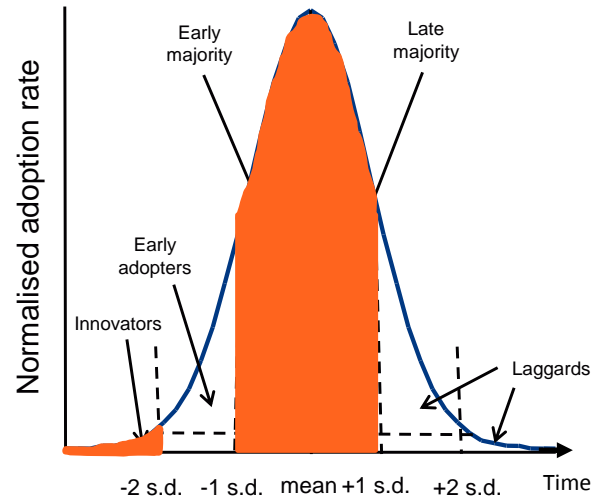
- £5 million pound project commissioned and funded by the Energy Technologies Institute (ETI)
- Aims:
 - To address challenges and opportunities involved in transitioning to secure and sustainable low-carbon vehicles.
 - To examine integration of vehicles with the energy supply system
 - To develop outputs that will:
 - help inform UK and European government policy
 - help shape energy and automotive industry products
- Stage 1: Detailed design and analysis
- Stage 2: Obtain empirical data, test solutions and assess responses; field trials with mainstream consumers



Consumer adoption model and 'mainstream consumers'

Early stages of adoption

- UK market still in "Innovators" stage
- To date, trials in UK have been conducted using only Innovators
- Attitudes and behaviours are not representative of the majority of users



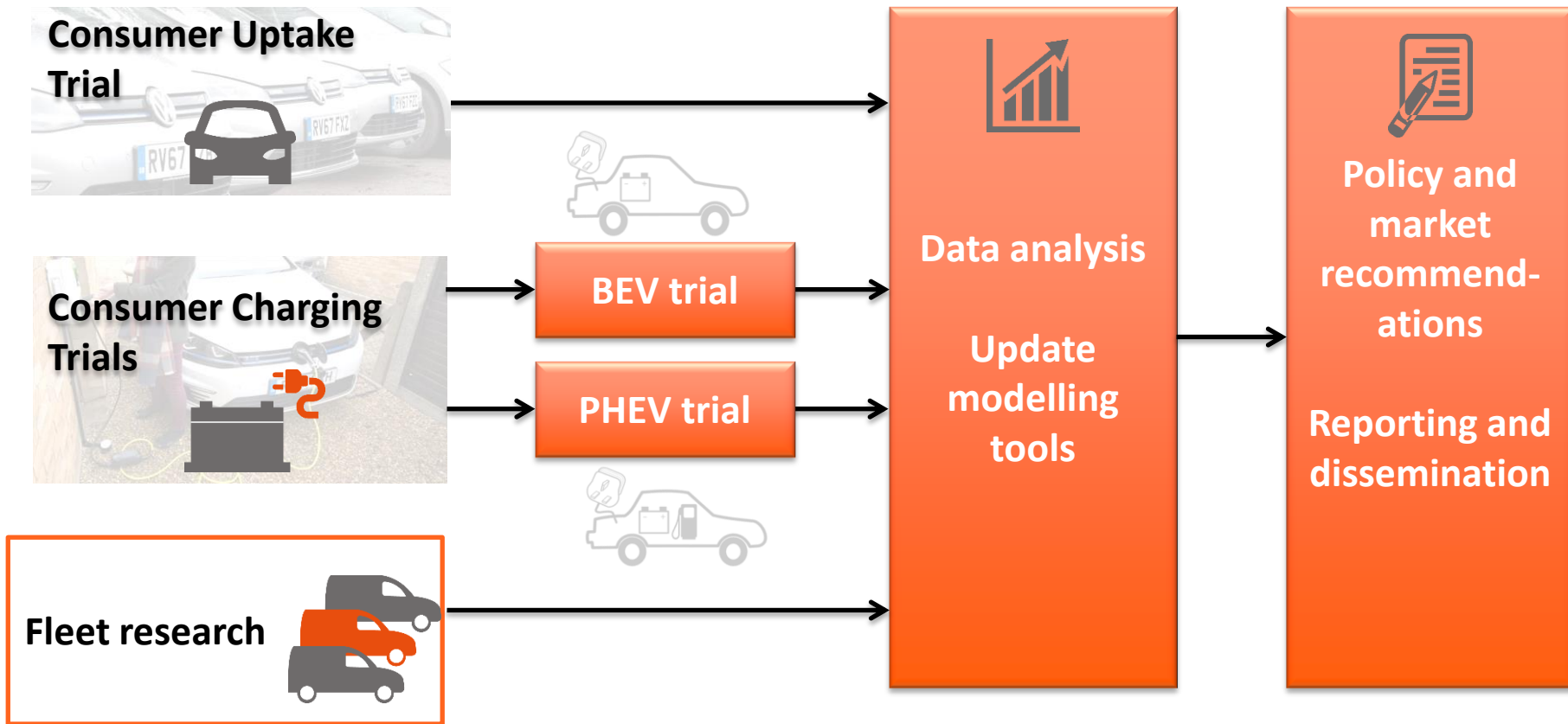
Future majority 'mainstream' consumers

- Much larger numbers of users
- Will significantly influence the energy system
- Very different motivations, attitudes and behaviours to those of Innovators

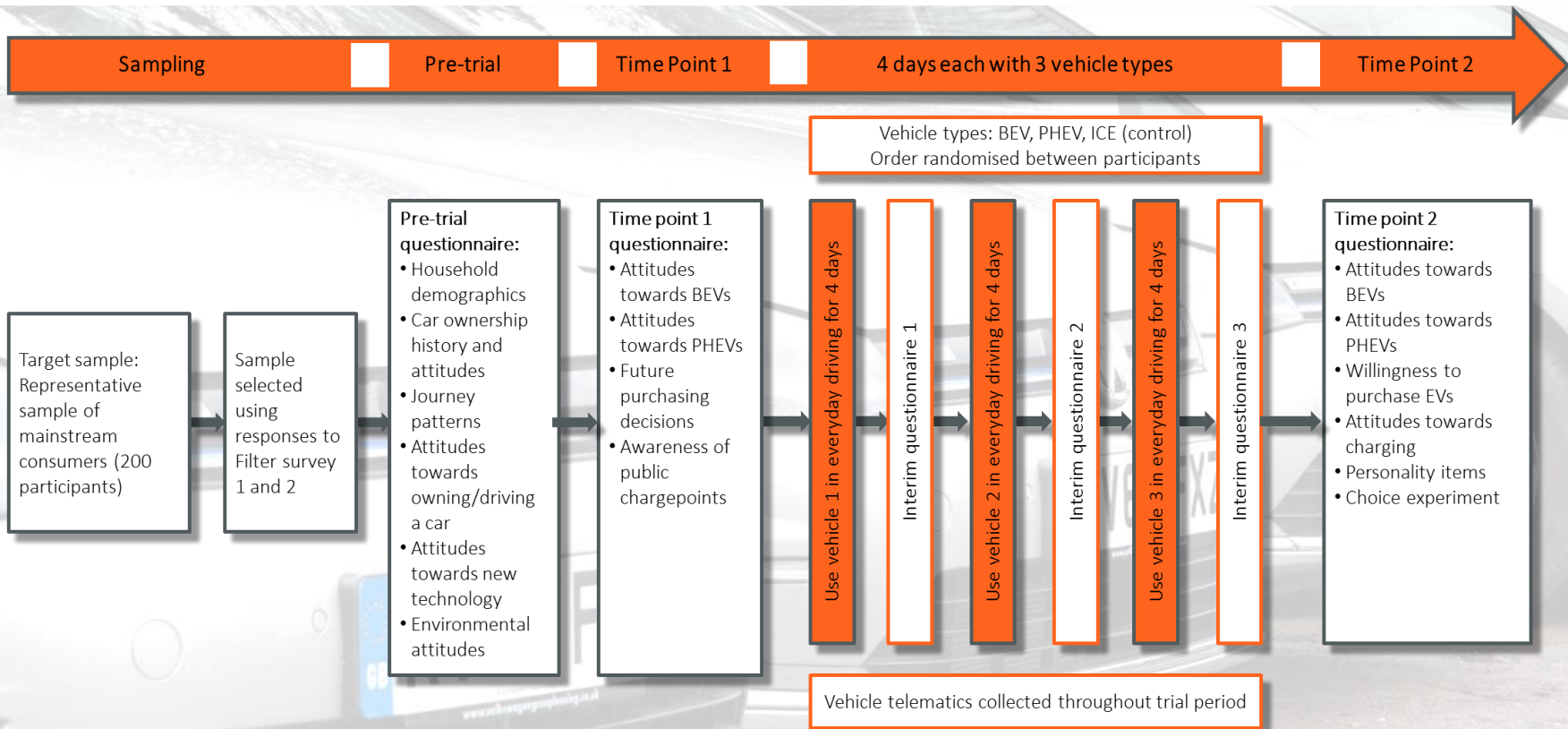
Consumer trials

- Key aims
- To address gaps in research:
 - Research with 'mainstream consumers'
 - Research with mainstream consumers who have direct experience of using a PiV
- To generate a large and robust dataset:
 - Vehicle usage
 - Charging behaviours
 - Attitudes towards PiVs
 - Willingness to purchase
 - Barriers and motivators

What are we doing?



Uptake Trial



Uptake Trial

- 3 vehicle types, matched trim



- 12 BEVs
- VW e-Golf

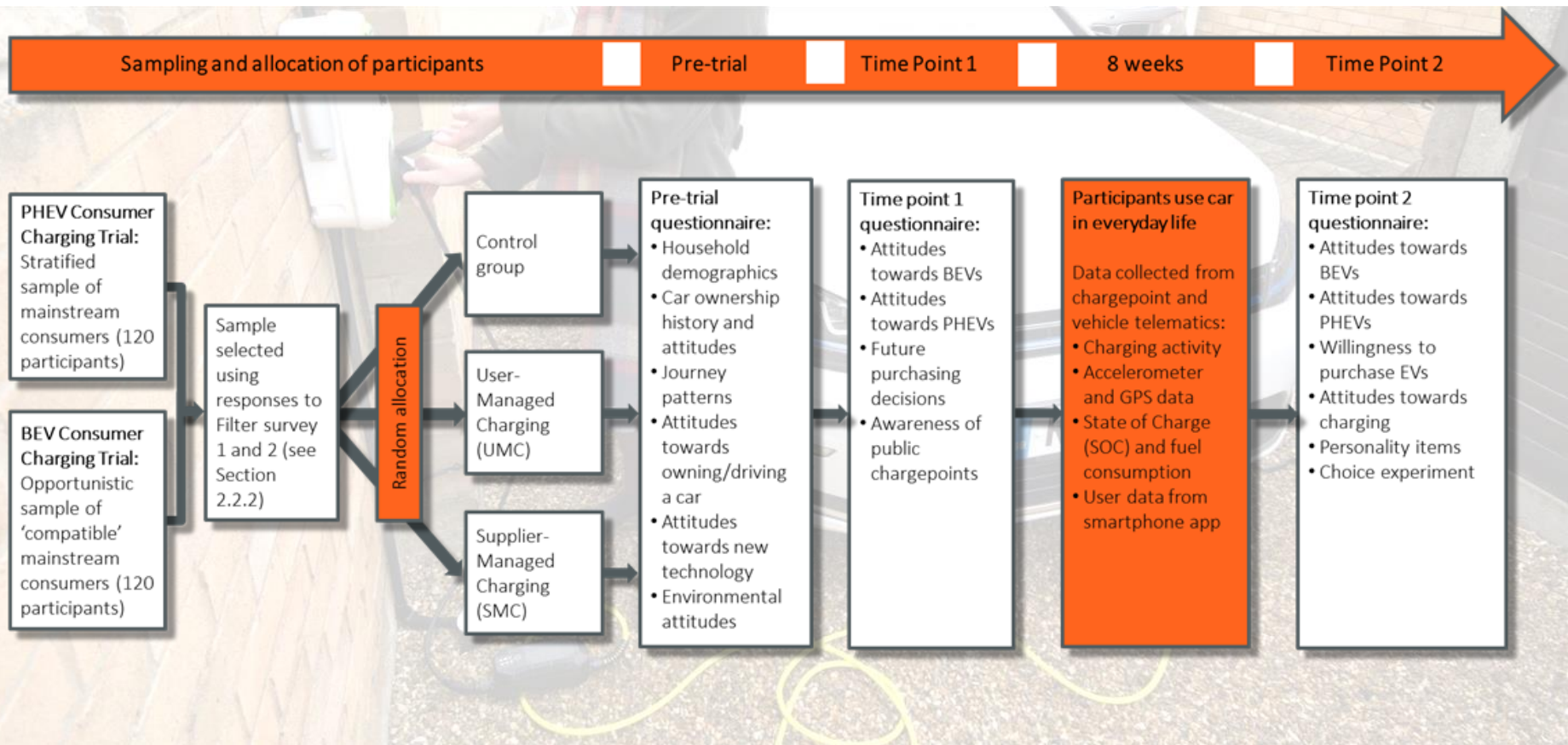


- 12 PHEVs
- VW Golf GTE

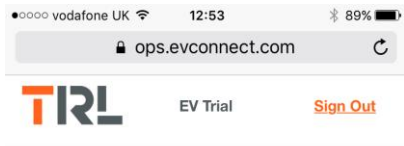


- 12 ICEs
- VW Golf GT Edition

Charging Trials



Managed Charging (MC) schemes



Status: **Connected**

State of Charge (SOC):

25-Jul-2017 12:34:00

13%

Refresh ↻



CONTROL GROUP



Please choose from the following options.

Please provide desired start and stop charge times.

Start Time (default: 14:00):

14:00 | Medium

Stop Time (optional, default: 14:30):

14:30 | Medium

Estimated savings points: 0

Save as default

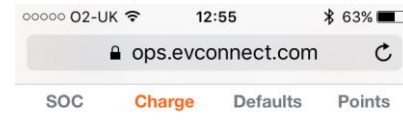
Go

- OR -

Charge Now



USER-MANAGED
CHARGING



Please choose from the following options.

Set your SOC and departure time requirements.

Desired SOC (default: 90%):

90%

Departure Time (default: 09:00):

09:00

Save as default

Go

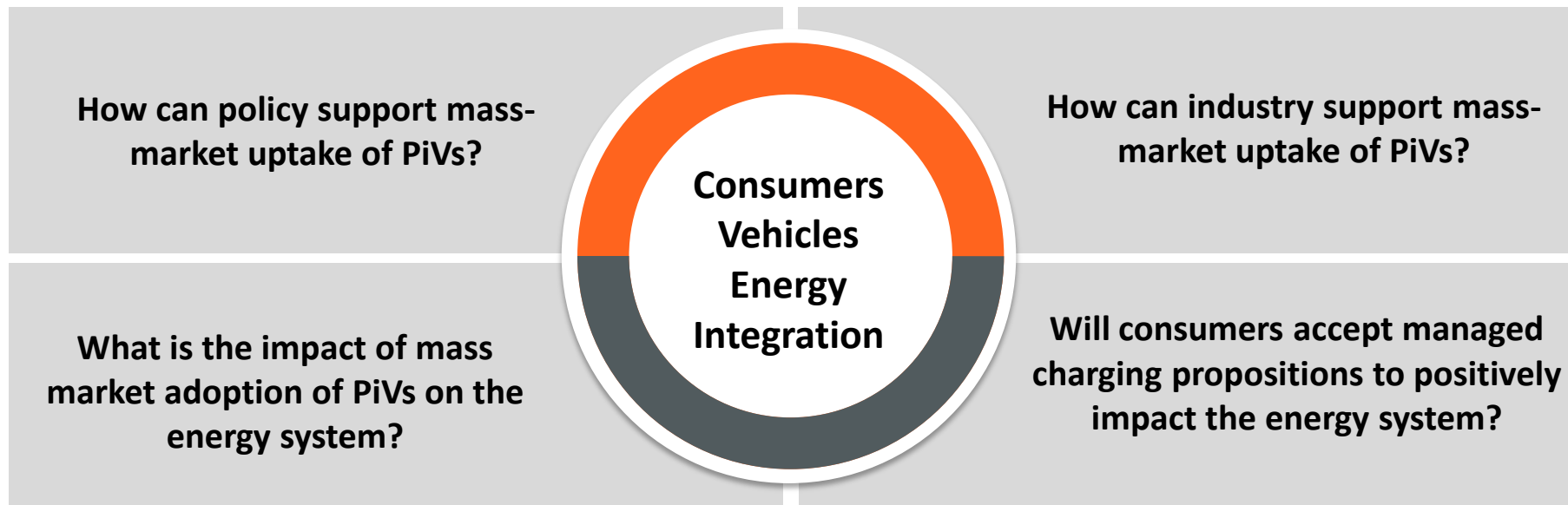
- OR -

Charge Now



SUPPLIER-MANAGED
CHARGING

Why is this project relevant?



Next steps

- Data collection for Uptake Trial due to finish end of May 2018 (next week!)
- Analysis and reporting due to be complete September / October 2018

- Data collection for the Charging Trials due to finish end of August 2018
- Analysis and reporting due to be complete December 2018 / January 2019

- Updates to Analytical Tools, Final conclusions and Recommendations for policy expected around February 2019

- All reports will be published online: cveiproject.trl.co.uk
 - Preparatory work inc. literature review and qualitative work undertaken in Stage 1 also published on this website

Opportunities for future work

- TRL always open to opportunities for collaboration
- Our projects typically funded by a mix of UK and International government departments, commercial clients and research councils
- We have access to a number of frameworks which other organisations do not – submitting joint proposals can strengthen chances of securing funding for research
- We have access to unique behavioural and attitudinal data for trial participants in relation to PiV adoption and charging



Questions?

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