

Consumers, Vehicle and Energy Integration (CVEI) project

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1. Project aims and approach
2. Results and Roadmap



What is the Consumers, Vehicles and Energy Integration project?

CVEI

- Innovative and ambitious project commissioned by the Energy Technologies Institute in 2015
- Project: investigate **challenges and opportunities in transitioning to a low carbon fleet**
- Market Design and System Integration analysis: provide insights into **the most promising actions** by government and industry to **facilitate efficient mass-market deployment and use of Ultra Low Emission Vehicles** and the **impacts of their integration** into the energy system

1

What are the **impacts on costs and operation** of the system of Ultra Low Emission Vehicle deployment and use?

2

How do we determine **which configurations are good** or more optimal than others?

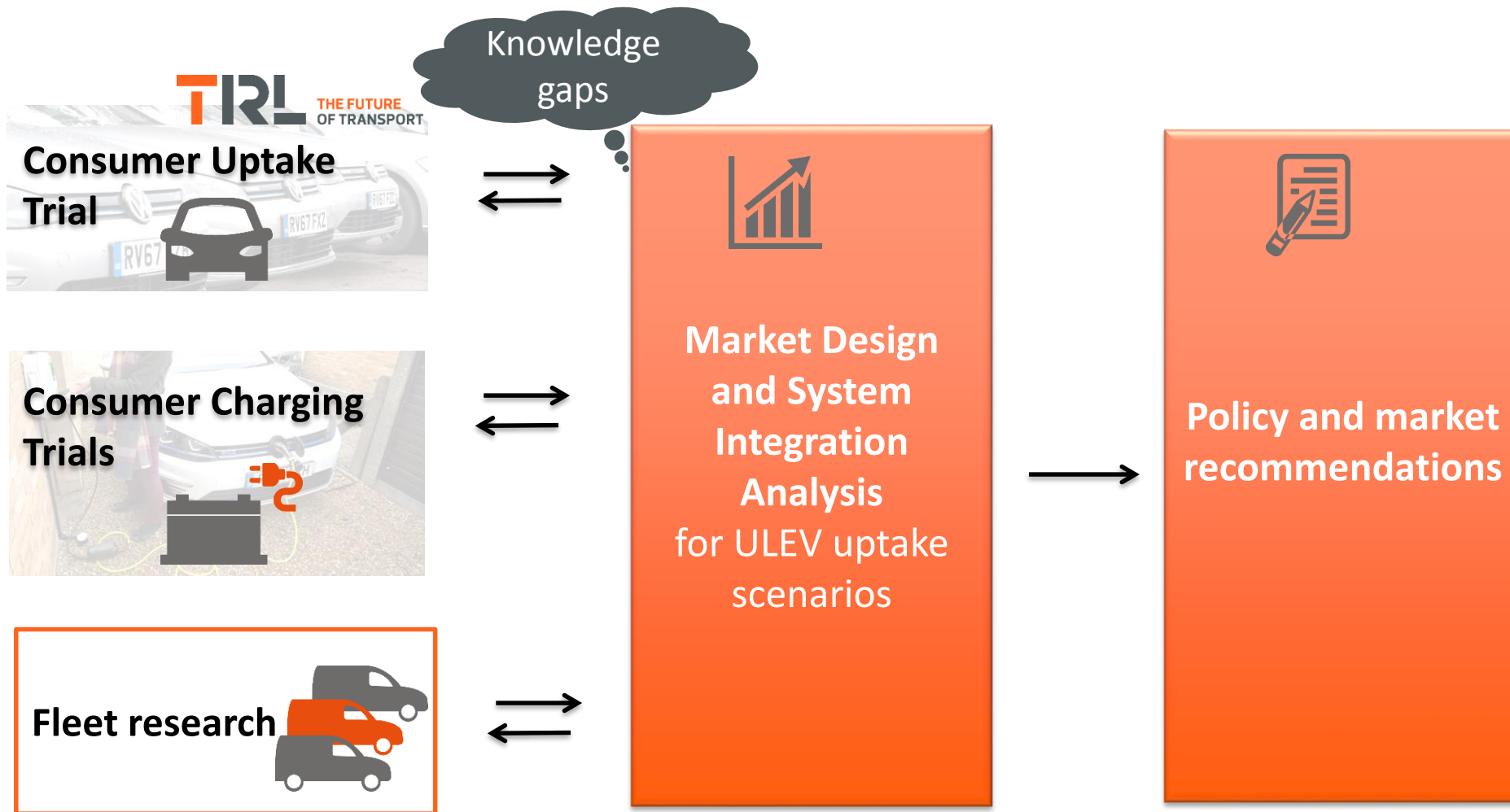
3

What is needed for **delivery of a good solution** for mass-market uptake and use of Ultra Low Emission Vehicles?



THE
BEHAVIOURAL
INSIGHTS TEAM

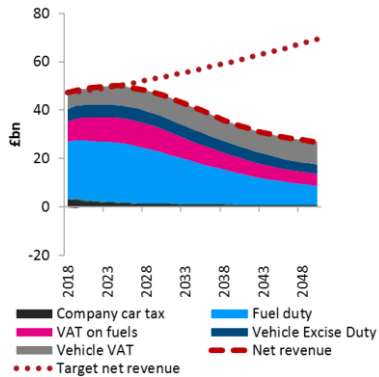
What did the project do?



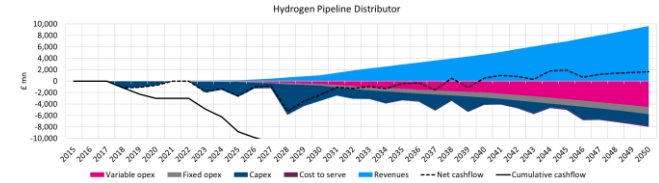
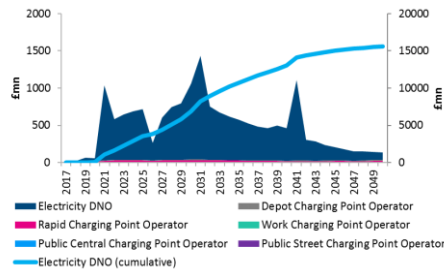
Novel, holistic framework for exploring ULEV uptake & use to 2050

CVEI

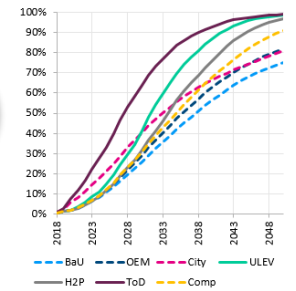
- Impacts of Government policy?
- Implications for public finances?



- How much transport energy infra.?
- Impact on the wider energy system?



- Viability of commercial entities?
- Retail price seen by consumers?



- Uptake (behaviour + economics)?
- Choice of PiV charging tariffs?

Key quantitative metrics

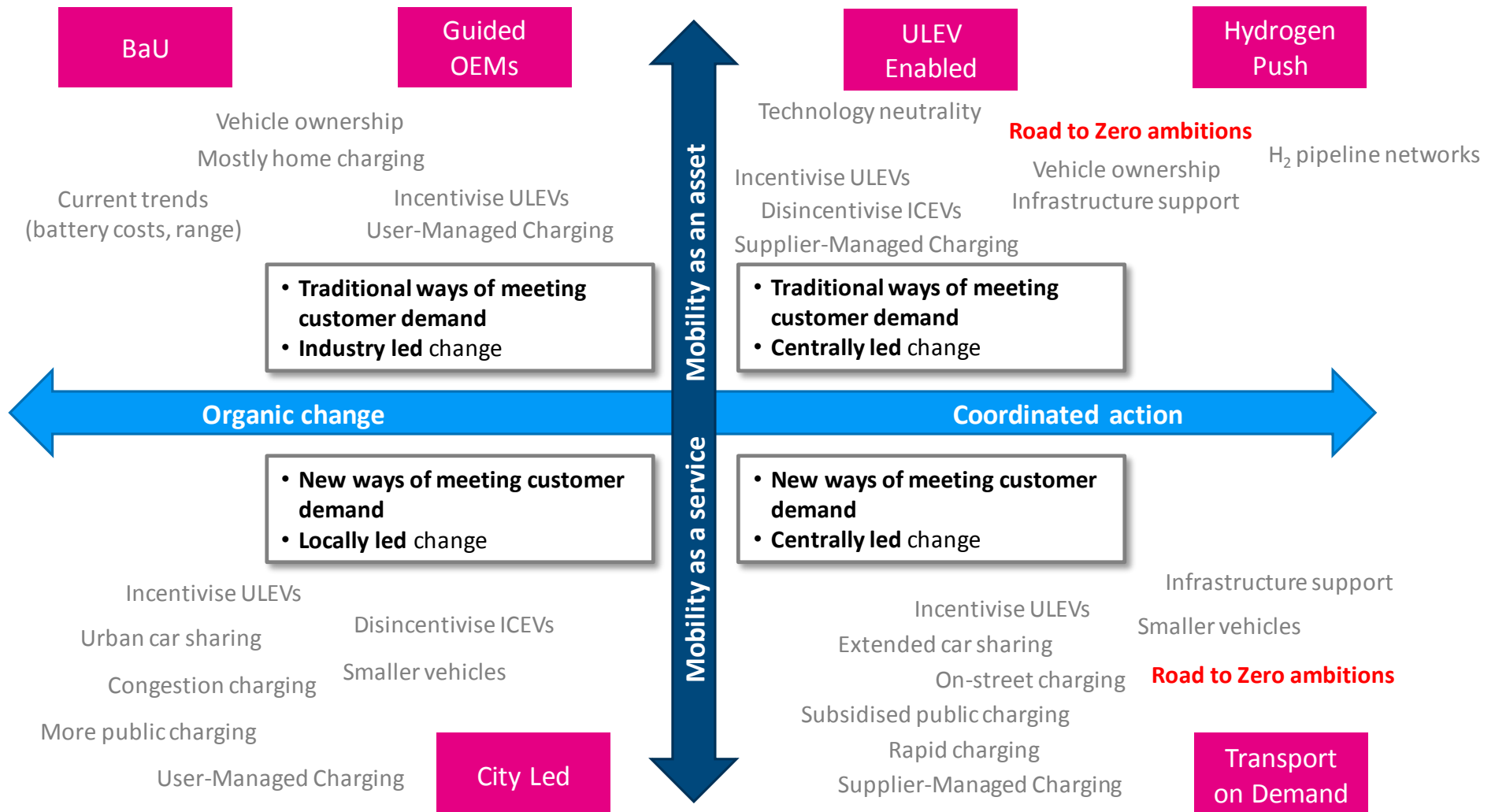
Customer	Low carbon vkm 2050	%
	Car transport costs 2050	p/km

BaU OEM City ULEV H2P ToD Comp

75%	82%	81%	99%	97%	99%	91%
23.0	22.3	22.0	20.7	18.8	20.0	22.2



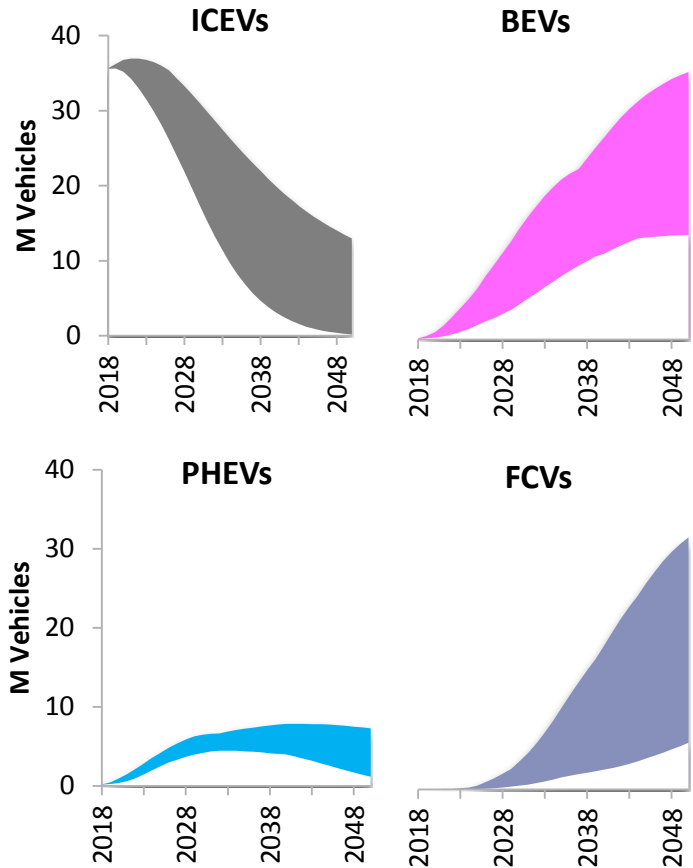
Rich and highly structured set of plausible future worlds for ULEVs



1. Project aims and approach
- 2. Results and Roadmap**



Evolution of the vehicle parc by Narrative



- Significant uptake of BEVs across Narratives including BaU
- Material longer term role for FCVs – particularly vans
- PHEVs play a largely transitional role
- Considerable intervention needed to reach RtZ levels
- High-levels of car sharing can materially reduce parc size

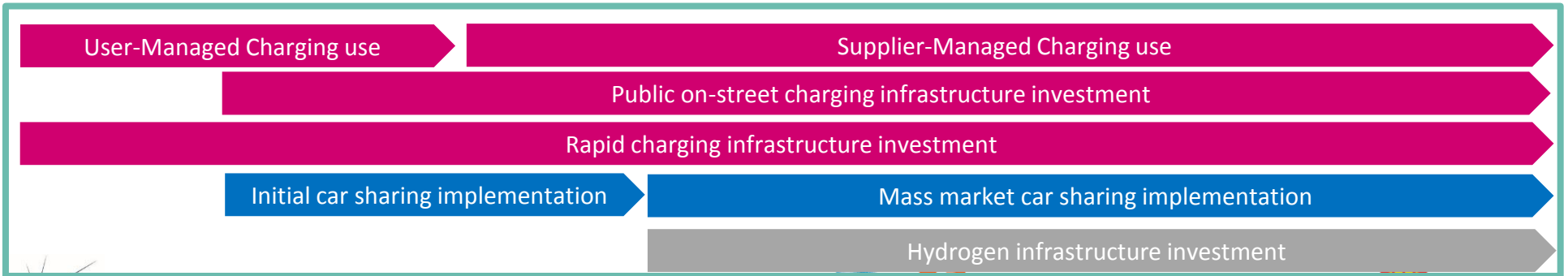
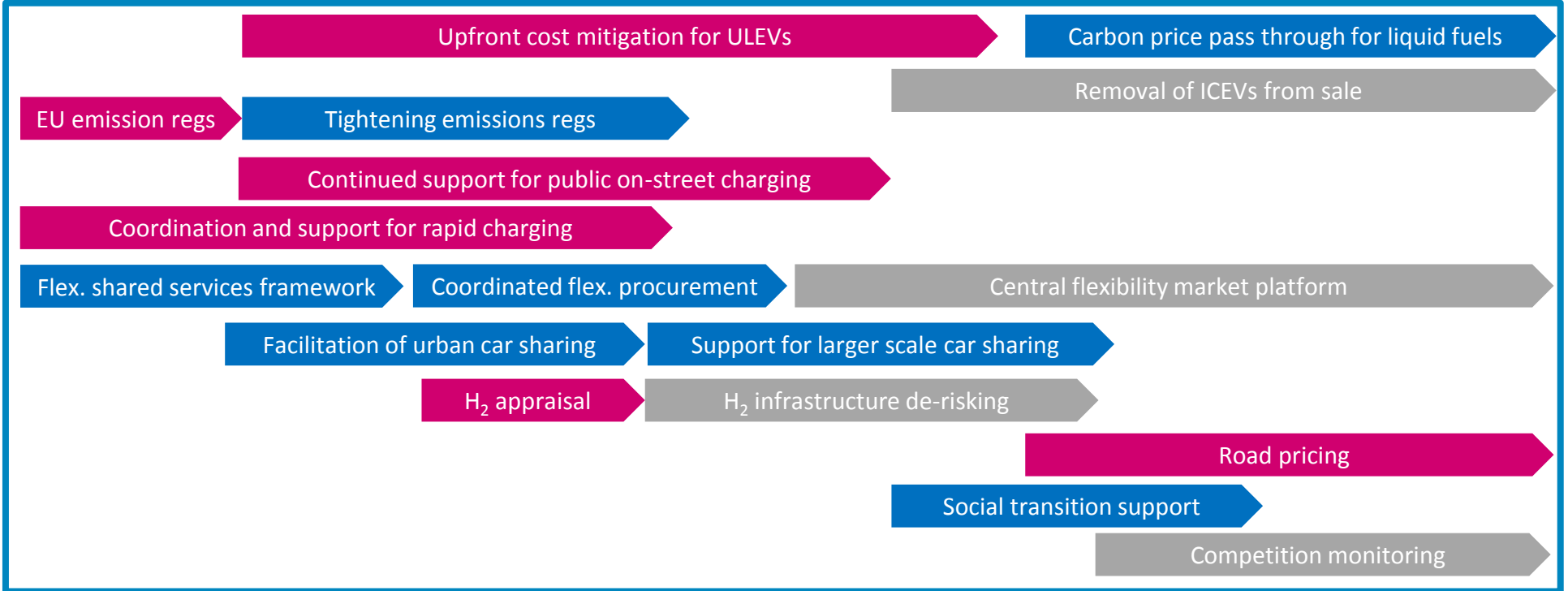
Policy Roadmap

Government policy and market intervention

Actions by commercial entities



2019 2020 2030 2040 2050





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