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Consumers, Vehicles and Energy Integration (CVEI) project

LCV – Electric Vehicles and Energy Systems: Smart Charging Projects and V2G session

Wednesday 6th September 2017

Liam Lidstone – Strategy Manager

ETI10 TEN YEARS
OF INNOVATION
2007 – 2017

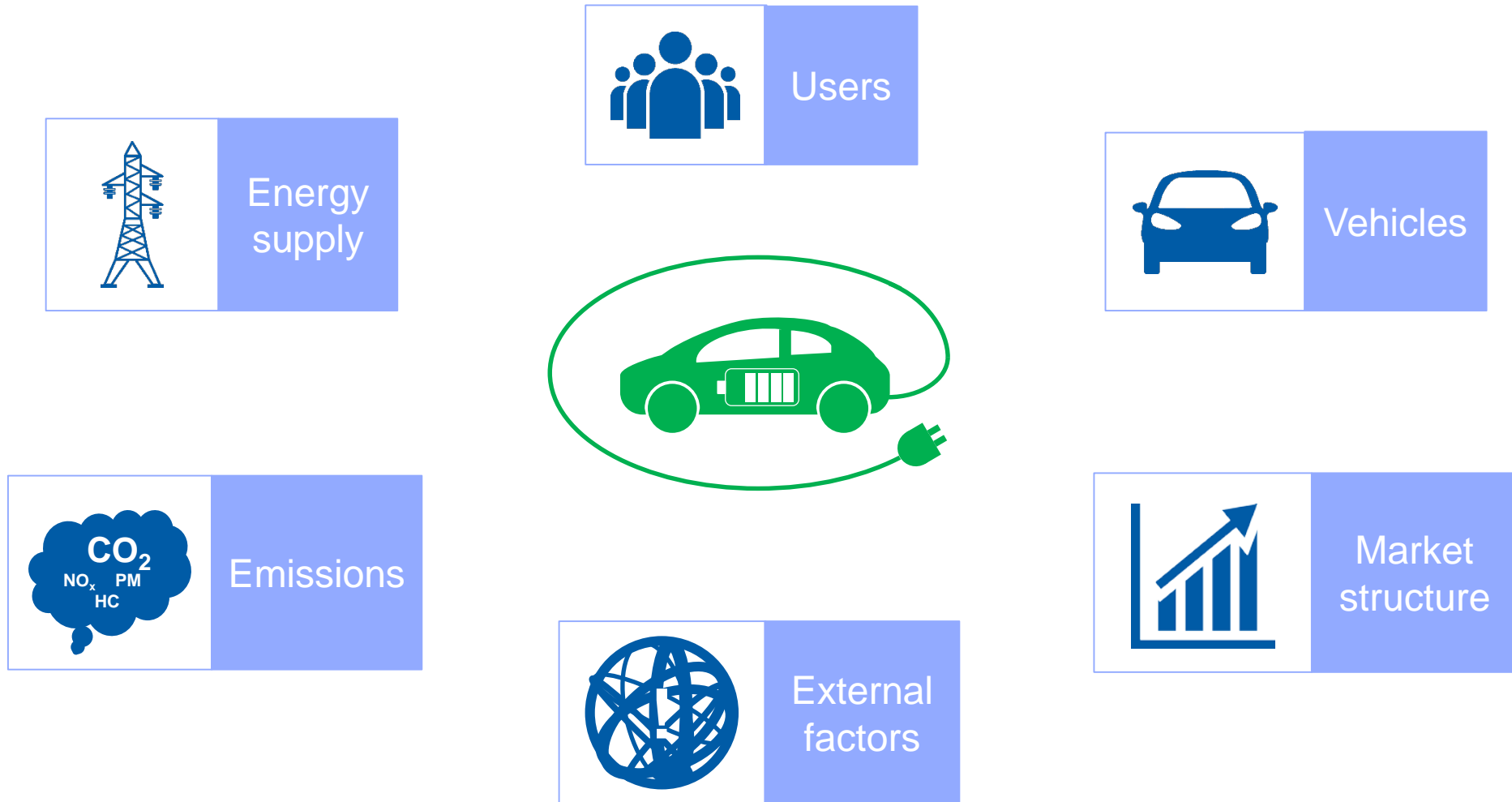
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Vehicle electrification



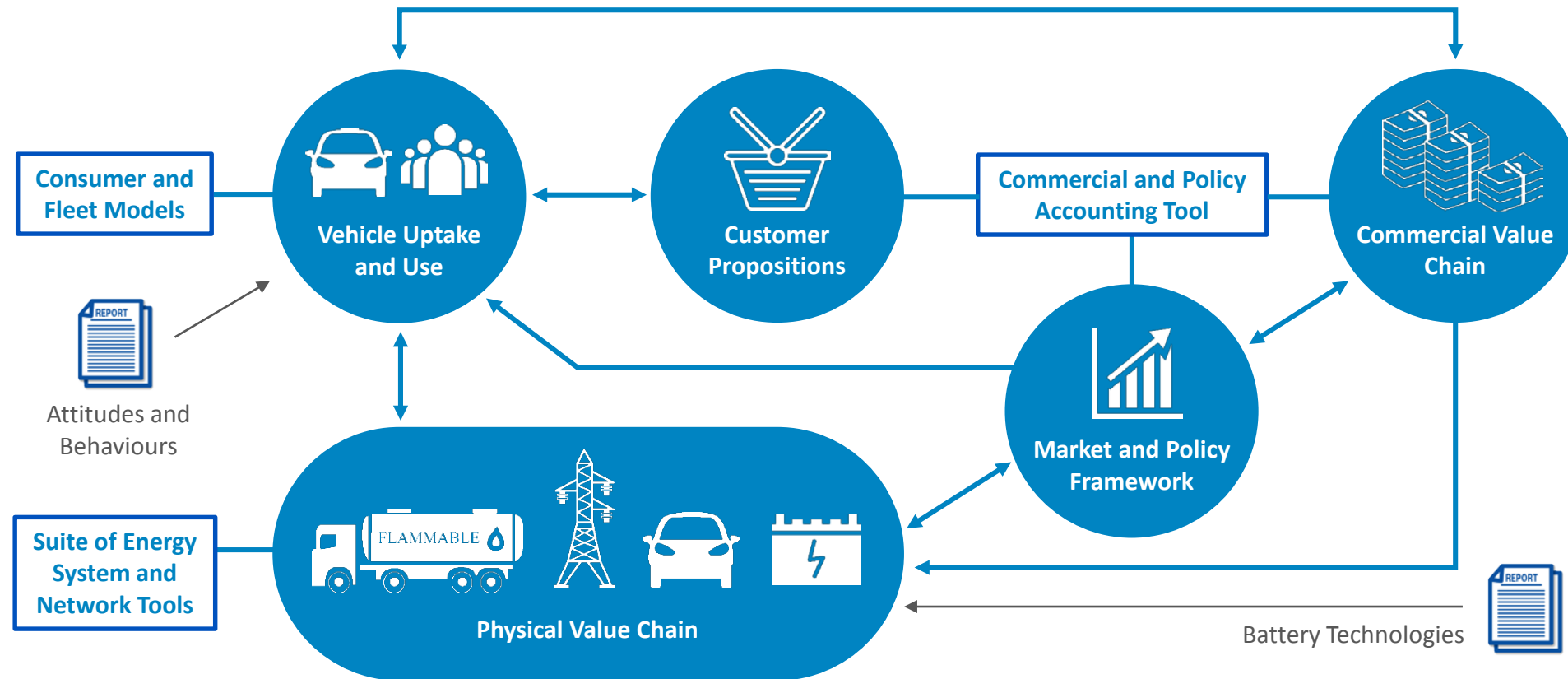


The project requires a broad range of expertise





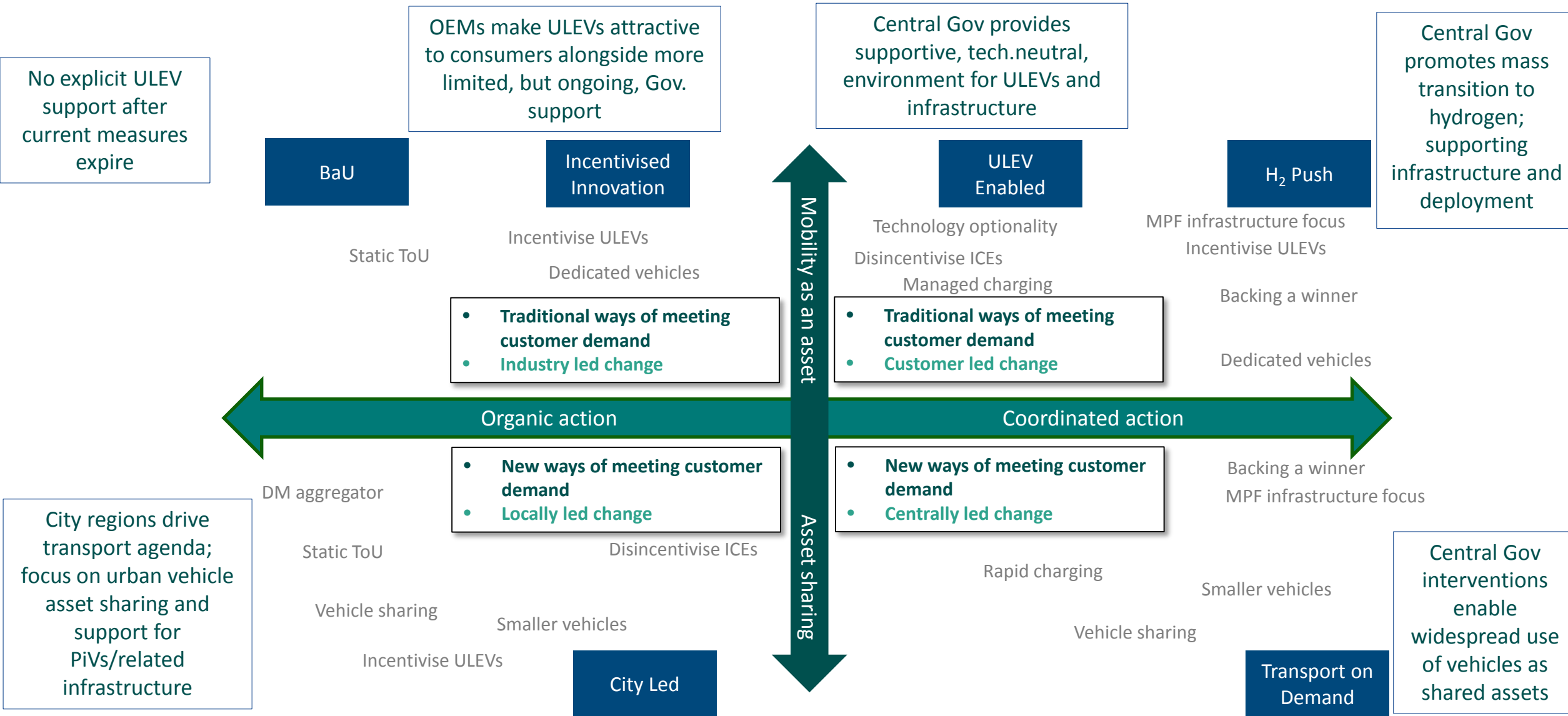
Modelling capability



A combined set of modelling tools have been developed to provide an *integrated, holistic* means of quantifying and qualitatively assessing the impacts on and from *infrastructure, consumers, vehicle uptake and use, policy measures and commercial models* across the system



Scenarios have been developed to test further factors





Interim findings



Reducing the upfront cost of ULEVs is a crucial driver of uptake in the near to medium term



ULEV uptake can lead to a sizeable drop in net transport-related Government revenues



A moderate uptake of ULEVs can be expected even with limited Government intervention but this does not result in the lowest Government revenue gap



The economic benefits of car sharing appear material



Charging behaviour is primarily driven by EV owner preferences, convenience and habit, rather than cost



Amongst adopters to date:

- Changes to “main” and “second” car dynamic
- EVs being driven comparable mileages to ICEs



Rapid charging development is a priority to enable sufficient deployment for the medium term



Awareness of public charge points may be more important than actual availability



Infrastructure entities likely to be loss-making in the near to medium term but would appear profitable in the long term

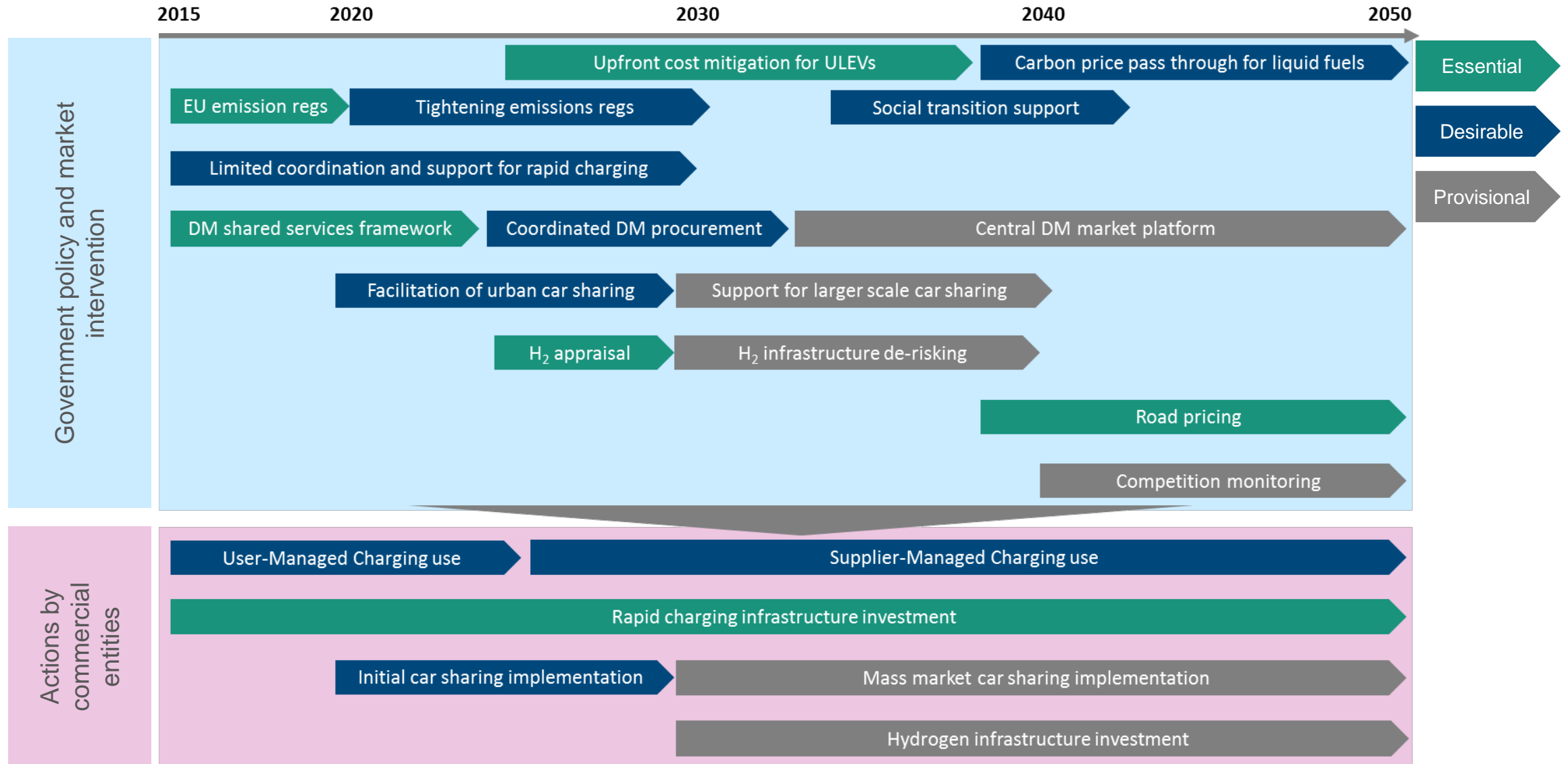


Successful demand management reduces balancing and network costs – must be tested with mainstream consumers

Image from www.goultralow.com



Roadmap for efficient ULEV uptake and use





Trials will deliver further robust evidence

Charging Behaviour Trial

- Assess response to different tariff propositions – user-managed (ToU tariff) versus supplier-managed charging
- 240 consumers, 2 months with a vehicle, (parallel) BEV and PHEV trials
- Data on use and charging with additional questionnaires and choice experiments



BEV



PHEV

Vehicle Uptake Trial

- To enhance understanding of adoption of EVs
- 200 consumers, given 4 days with each of 3 vehicles in turn (BEV, PHEV, ICE)
- Additional questionnaires and choice experiments (with reduced ‘psychological distance’)

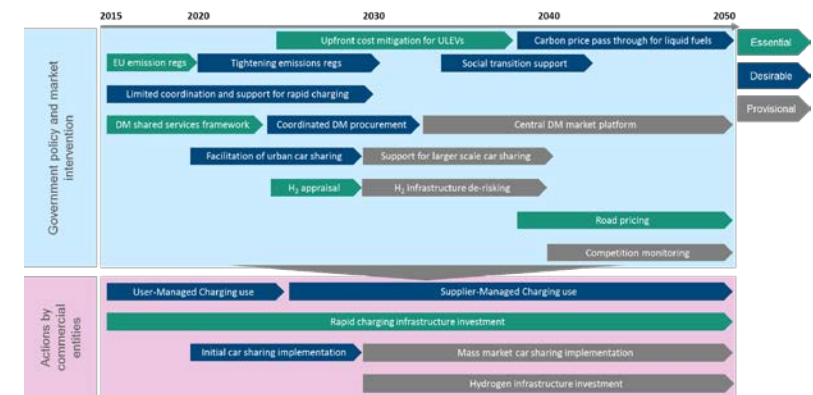
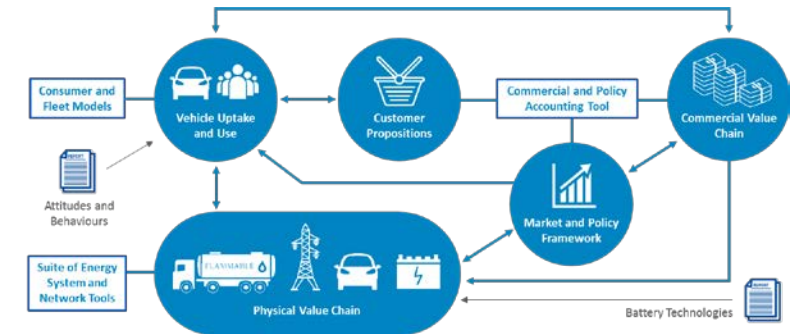


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Summary

- The **Consumers, Vehicles and Energy Integration** project is seeking to address the challenges involved in transitioning to a secure and sustainable low carbon vehicle fleet
- An **integrated modelling toolset** has been developed able to examine the implications for energy supply, infrastructure, vehicles, users, policy and commercial models – and with it, it is possible to test a wide range of scenarios
- Findings from several areas are already available and have been incorporated into a **roadmap** for delivering efficient vehicle decarbonisation
- Upcoming trials will deliver further robust **evidence** on how consumers respond to different charging propositions and attitudes to ULEV adoption





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