Powershift: The impact of EVs on your energy strategy

Session Chair

Brendan Coyne – The Energyst

Speakers

Andy Kershaw – Marston's PLC

Peter White – Western Power Distribution

Teddy Spasova – Arup

Chris Rimmer – Cenex

Marston's Electric Vehicle Rapid Charger Rollout

Andy Kershaw – Marston's Head of Facilities & Capex

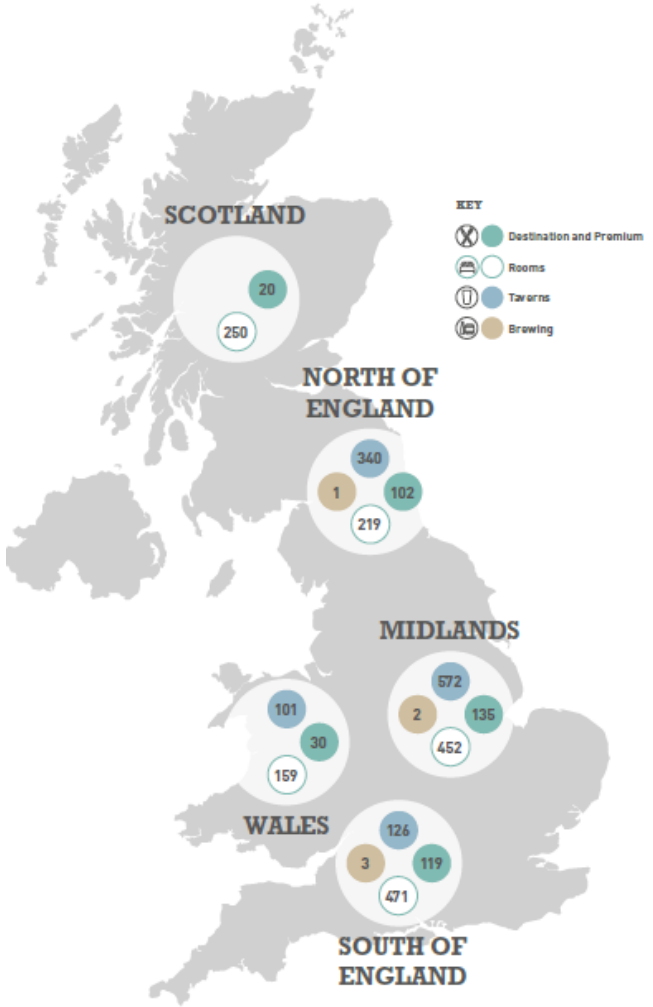
engenie

MARSTON'S

Marston's PLC

MARSTON'S ENERGY HEROES

- FTSE 250 pub and brewing company
- 1,600 pubs, 6 breweries and 10 transport depots
- 14,000 employees
- £1 billion t/o
- Head office in Wolverhampton
- Premium beer accounts for 74% of brewed beer
- Contract services business – brew, can and bottle beer for other businesses
- National distribution network with over 10,000 customers
- UK distributor of Warsteiner, Estrella and Shipyard



MARSTON'S

Marston’s Pubs and Bars

MARSTON'S ENERGY HEROES

- Diverse estate of 1,600 pubs, 1500 hotel rooms and bars – managed, franchised, tenanted and leased

Drivers to install EVC and why now?

- Will attract the fast-growing EV population to our pubs, bringing new customers (business, people with no off-street parking)
- Being an early adopter allows us to secure electric grid capacity before our competitors
- Helps us meet planning conditions on New Build
- Helps us achieve our CSR goals
- Rapid charging technology
- We foresee fleet managers moving to EV soon – reviews are underway!

EVC Rollout Overview

MARSTON'S ENERGY HEROES

- Completed review of market in early 2018
- Partnered with Engenie mid-2018 to rollout 2 x 50kw rapid chargers to 200 sites over two years
- 80-100 mile charge in 30 minutes
- Engenie provide the investment, design, plan and carry out the installation. They manage and maintain the chargers once live.
- Engenie lease the spaces (usually 3) on a profit share model
- Turnkey installation process

engenie

MARSTON'S

Why Engenie?

- Chargers 100% funded and managed by Engenie
- Independent electricity supply from pub
- 100% renewable energy
- Dwell time is perfect for our model
- Contactless payment – open protocol
- Online portal
- Marketing Support and EV Engagement days in conjunction with Octopus Energy

Current Status

- Phase 1 – October to April 21 sites
- Learnings from phase 1 incorporated into phase 2
- 18 sites live at the moment
- Usage in line with expectations
- 46 in pre construction with grid secured
- 60 sites pending grid
- Phase 2 – May to December 2019 - 90 sites

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Working with you to deliver the EV charging network

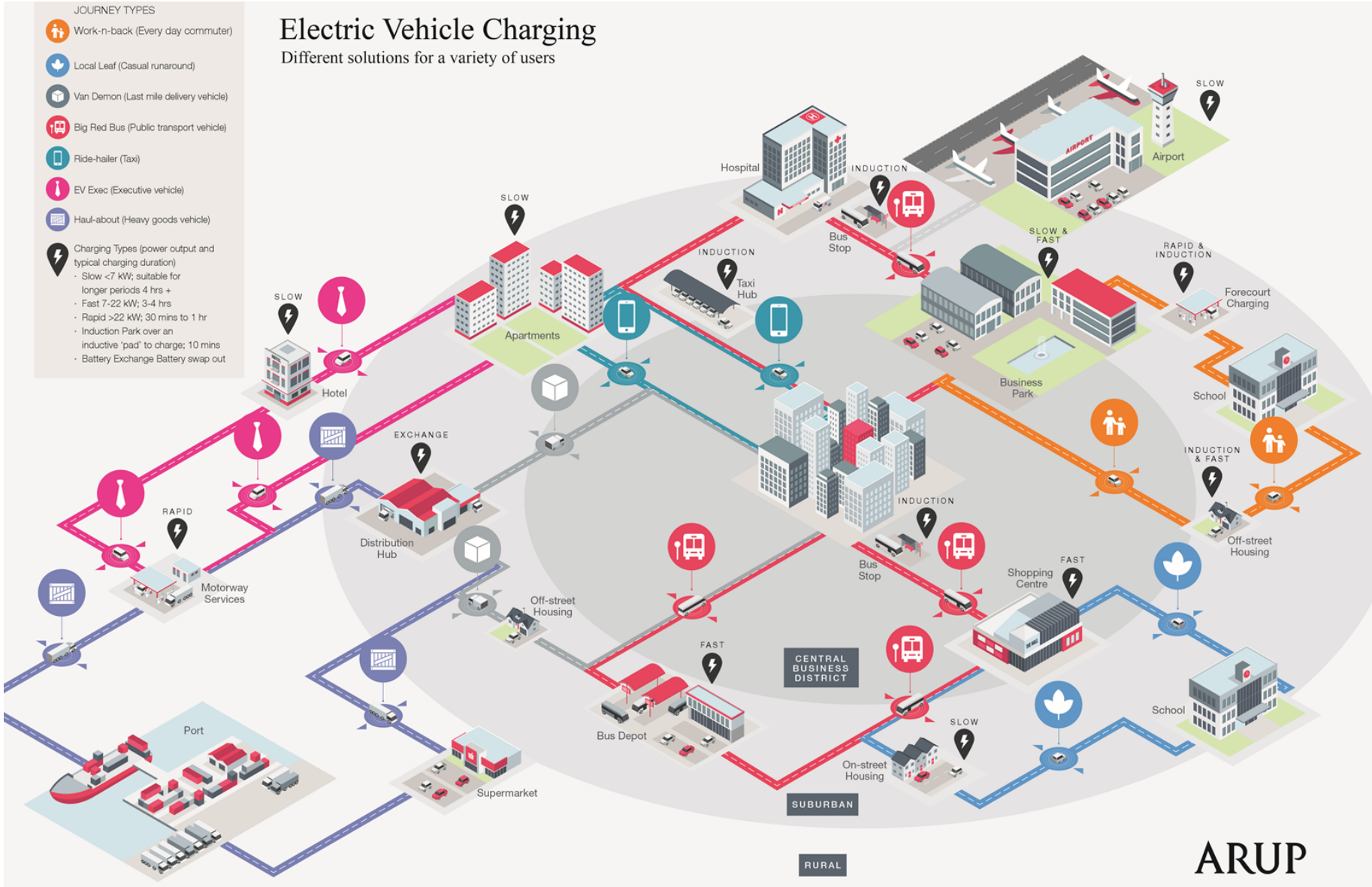
Peter White
V1

EV Charging
Market Considerations

MAY 2019

ENERGYST – CONVERGENCE EVENT

TEDDY SPASOVA

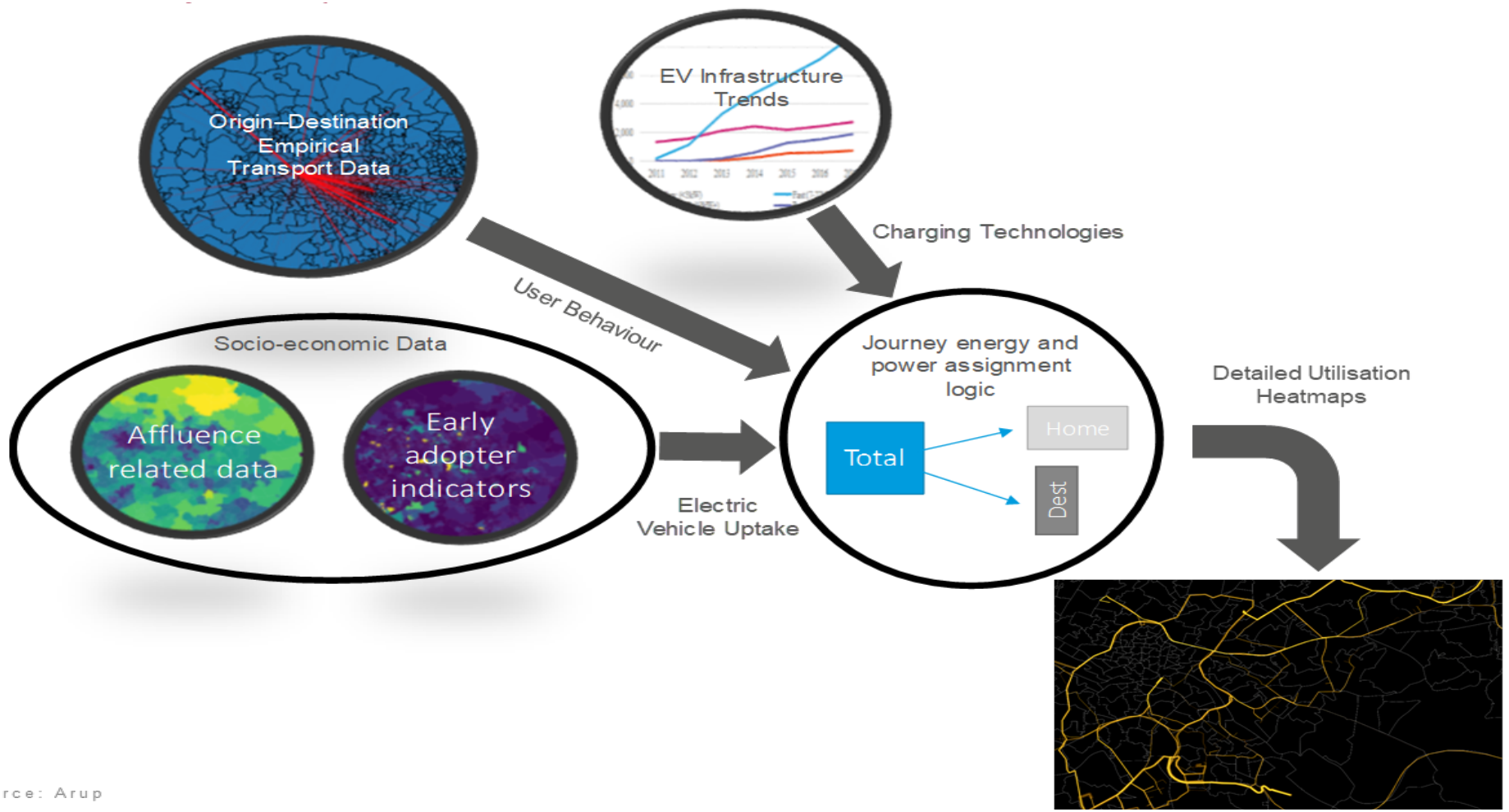


ARUP

Mitigating utilisation risk

Temporal-spatial dimensions of demand

Understanding and driver behaviour and driving patterns through better data is key to sizing the infrastructure

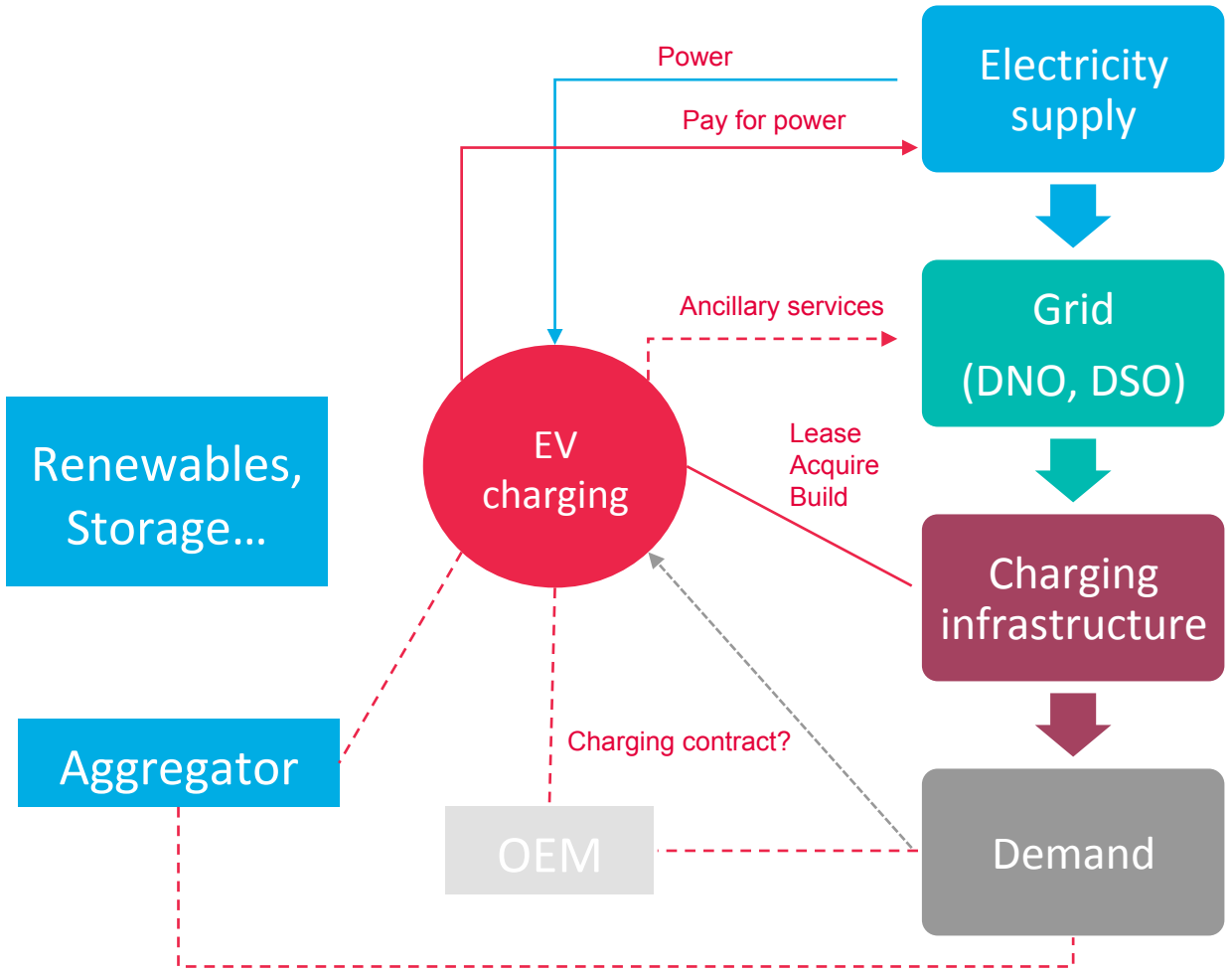


Source: Arup

Elements of the EV and energy strategy

Multiple players required to make EV charging work most efficiently

Partnerships are common



Centre of Excellent for Low Carbon and Fuel Cell Technologies

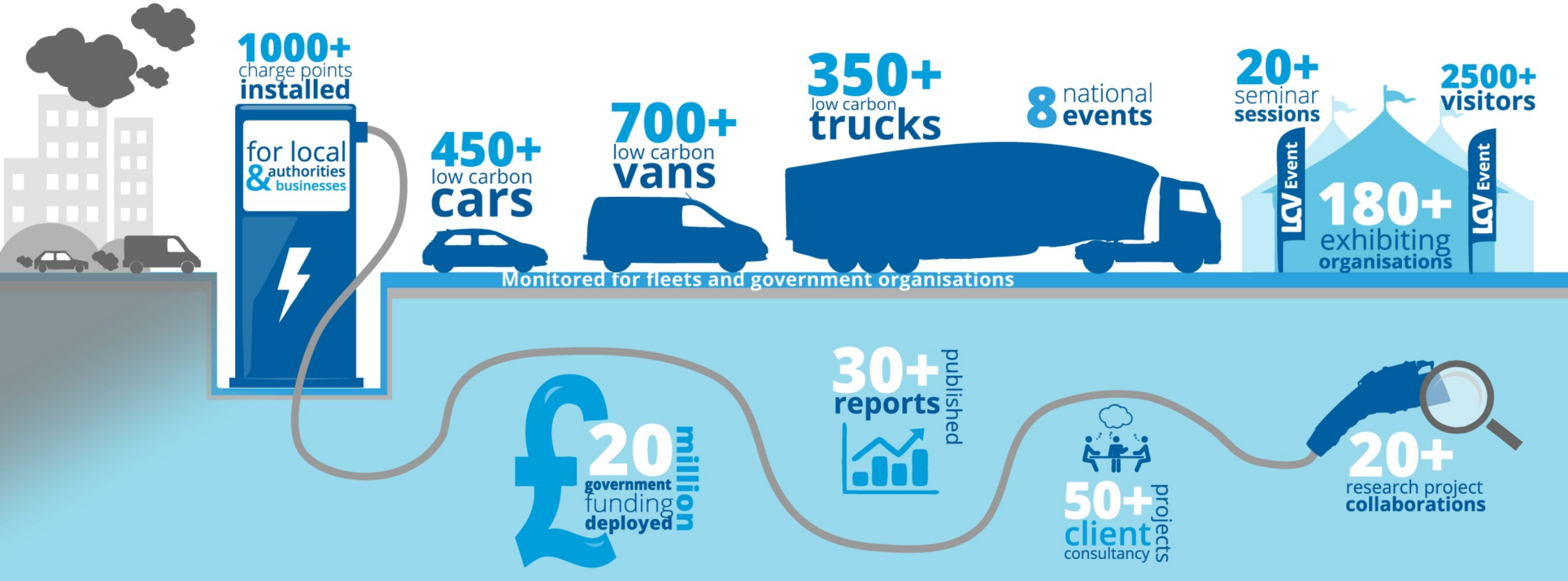
Chris Rimmer

Infrastructure Strategy Lead

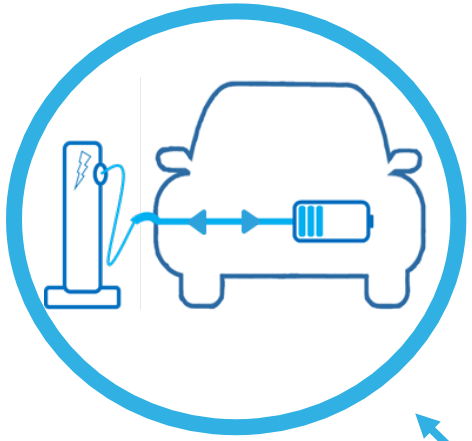
chris.rimmer@cenex.co.uk

Cenex is a not-for-profit, independent consultancy

Based in Loughborough and Amsterdam



Cenex's V2G activities



Infrastructure & V2G technologies

Technical & Business Modelling

Live Customer Trials

Pilot and real-world experience

- Feasibility
  - *Western Isles* – model benefits of V2G for 2 Scottish Isles
  - *V2Grid-Britain* – assess techno-economic viability of V2G in Britain
- Proofs of Concept
  - *EFES* – UK's first domestic V2G installation
- At-scale Demonstrators
  - *E-Flex* – explore real-world performance of V2G in London fleets
  - *Sciurus* – demonstration of 1,000 domestic V2G units
- Commercial Evaluations
  - *SEEV4-city* – define how V2X improves energy autonomy, low carbon mileage and avoided grid investment
  - *EV-elocity* – valuation of V2G commercial service in real-world scenarios

Pilot and real-world experience

- Feasibility
  - *Western Isles* – model benefits of V2G for 2 Scottish Isles
  - *V2Grid-Britain* – assess techno-economic viability of V2G in Britain
- Proofs of Concept
  - *EFES* – UK's first domestic V2G installation
- At-scale Demonstrators
  - *E-Flex* – explore real-world performance of V2G in London fleets
  - *Sciurus* – demonstration of 1,000 domestic V2G units
- Commercial Evaluations
  - *SEEV4-city* – define how V2X improves energy autonomy, low carbon mileage and avoided grid investment
  - *EV-elocity* – valuation of V2G commercial service in real-world scenarios

Insights so far

Positives:

- ✓ EVs are technologically suited to provide energy system services
- ✓ There is already financial value available from variable, smart and V2G charging
- ✓ V2G-ready chargepoints are starting to come through the supply chain

Risks to watch:

- ? Without grid services, smart charging can already match 85% of V2G value
- ? FFR will become saturated, reducing the value, but other services offer lower returns
- ? Value is strongly linked to plug-in behaviour and duty cycles
- ? Return on investment is greatly impacted by capital investment costs

Outstanding Questions:

- ❑ Impact of V2G cycles on battery management and degradation?
- ❑ Customer acceptance of V2G in public charging spaces?
- ❑ How market design affects the potential value of V2G?

Centre of Excellent for Low Carbon and Fuel Cell Technologies

Chris Rimmer

Infrastructure Strategy Lead

chris.rimmer@cenex.co.uk

Powershift: The impact of EVs on your energy strategy

Session Chair

Brendan Coyne – The Energyst

Speakers

Andy Kershaw – Marston's PLC

Peter White – Western Power Distribution

Filippo Gaddo – Arup

Chris Rimmer – Cenex

ARUP