

Setting the scene - The Need for Innovation

Shamala Gadgil, Coventry City Council &
Josey Wardle, Innovate UK

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Highway Challenges & the need for Innovative Charging Solutions

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Why Should Local Authorities be Responsible for Providing Electric Vehicle Charging Infrastructure? and

Who are these interventions necessary?

Types of dwellings within a local authority conurbation:

- Flats/apartments

- Terraced houses

- Maisonettes

- flats above retail units

- Bungalows/Cottages without off street parking

Properties without off-street parking facilities

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Where Can Local Authorities [LA] Provide Electric Vehicle Charging Infrastructure

- Highway
 - kerbside
 - laybys
 - verge parking
- LA owned car parks
- Hubs on LA owned land

For Properties without off-street parking facilities

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Challenges When Installing Electric Vehicle Charging Infrastructure in the highway

Highways Act 1980

115B Provision etc. of services and amenities by councils

<https://www.legislation.gov.uk/ukpga/1980/66/section/115B>

115E Execution of works and use of objects etc. by persons other than councils.

<https://www.legislation.gov.uk/ukpga/1980/66/section/115E>

New Roads and Street Works Act 1991

50 Street works licences.

<https://www.legislation.gov.uk/ukpga/1991/22/section/50>

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How to overcome these challenges?

Consultation

On-street Residential Chargepoint Scheme [ORCS] or
Local Electric Vehicle Infrastructure [LEVI]



Consultation



Early consultation with
local DNO



Ward Councilors



Residents association



Drop in sessions



Finalise locations with all stakeholders onboard

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New Innovative Solutions

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EV Charging Innovation

TTF EV Infrastructure Working Group

21st February 2024



Dr. Josey Wardle

Innovation Lead – ZEV Infrastructure

Email: josey.wardle@iuk.ukri.org

Innovate UK

We are the UK's innovation agency

A key delivery body of the UK Government's Innovation Strategy

We support business-led innovation in all sectors, technologies and UK regions

Our Mission

To help UK businesses grow through the development and commercialisation of new products, processes, and services, supported by an outstanding innovation ecosystem that is agile, inclusive, and easy to navigate

Benefiting everyone through knowledge, talent and ideas

UK Research and Innovation brings together the 7 Research Councils, Innovate UK and Research England

As part of UK Research and Innovation, Innovate UK drives productivity and economic growth by supporting businesses to develop and realise the potential of new ideas including those from the UK's world-class research base



**UK Research
and Innovation**

Faraday Battery Challenge

£330 million in research and innovation projects & scale up facility

Automotive Transformation Fund
Automotive decarb facilities up to £1bn

APC programme
Automotive decarbonisation technology
£5m-£40m

Zero Emission Road Freight (ZEHID)
44 tonne HGV demonstrations - £200m total

ATI Programme
Decarbonising aircraft technologies £5m-£40m

Tess Valley Hydrogen Transport Hub
H2 vehicles and infra £100k-£1m

UK SHORE
Maritime decarb - vessels and infra £100k-£10m

Freight Innovation Fund
Freight system efficiency and resilience

Future Flight
connect people, deliver goods & provide services £5m-£40m

Rail First of a Kind
Rail decarb & other improvements £100k-£1m

V2X bidirectional charging
Using EVs for energy flexibility - £12m total

CCAV programme
Connected & Autonomous Vehicles £250k-£10m

Zero Emission Propulsion
£250k-£1.5m for early stage decarbonisation

TRIG
£30k - Proof-of-concept in all types of transport innovation

Smart Grants
All innovations - including transport up to £2m

EPSRC
Transport decarbonisation research

Transport Decarbonisation

Improving Transport for The User

Fundamental science

Proof of Concept

Demonstration

Scaling

All modes

Not IUK



Transport Vision

[IUK-110122-UK-Transport-Vision-2050.pdf \(ukri.org\)](https://ukri.org/publications/IUK-110122-UK-Transport-Vision-2050.pdf)

Currently being updated

- Transport & Travel demand
- Energy vectors
- Infrastructure
- Business Models
- Connectivity
- Automation
- Digitalization

UK TRANSPORT VISION 2050:
investing in the future of mobility



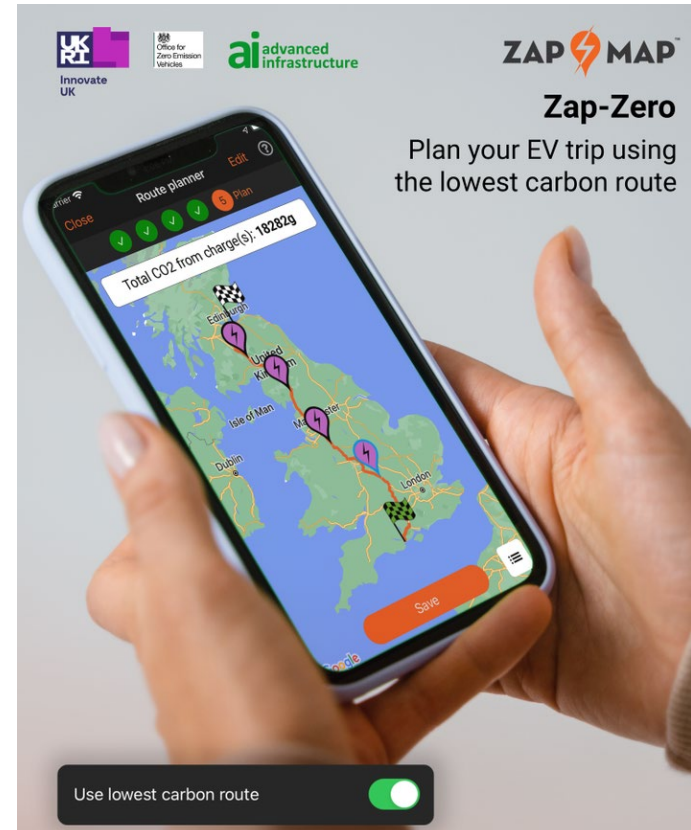
Innovations in EV charging

- Funded CR&D programmes to develop & demonstrate scalable solutions addressing infrastructure barriers to ZEV adoption
- Infrastructure barriers:
 - Reliability
 - Availability
 - Accessibility
 - Cost
 - Convenience
 - Safety & security
- Focus areas:
 - ✓ Fleets
 - ✓ Public charging in residential areas
 - ✓ Improving the customer experience
 - ✓ Energy solutions & smart systems interaction



Innovative EV charging products & services

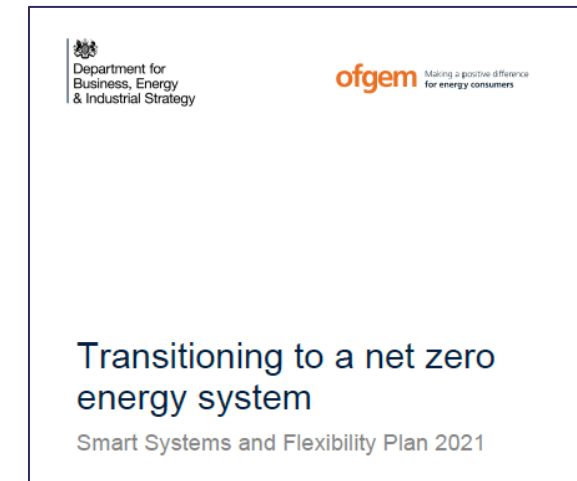
- ✓ EV filling stations
- ✓ On-street infrastructure
- ✓ Wireless charging
- ✓ Autonomous charging
- ✓ Mobile charging products
- ✓ Community charging solutions
- ✓ Improving reliability & availability
- ✓ Smart charging services
- ✓ Optimizing Fleet charging – all locations
- ✓ Off-grid energy solutions incl. generation, storage, micro-grids,
- ✓ Route planning & reservation services
- ✓ Payment services
- ✓ Chargepoint planning tools
- ✓ Charging asset business models
- ✓ Improving accessibility for disabled users



Addressing the energy question

- Increasing demand for electricity, with larger fluctuations than at present
- Increasing renewable, variable generation as part of decarbonised power system & different demand profiles
- Strategies:
 - ✓ Smart Systems and Flexibility Plan (2021)
 - ✓ EV Smart Charging Action Plan (2023)
 - ✓ EV Smart Charge Points Regulations (in force from 2022)
- EVs can provide significant energy flexibility potential
 - ✓ shift energy consumption to balance supply & demand
 - ✓ store renewable energy locally
 - ✓ export energy back to a system - grid, home, building

V2X Innovation Programme - [V2X Innovation Programme - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/programmes/v2x-innovation-programme)



STATUTORY INSTRUMENTS	
2021 No. 1467	
ROAD TRAFFIC	
The Electric Vehicles (Smart Charge Points) Regulations 2021	
Made	15th December 2021
Coming into force	30th June 2022
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Thank you

EV Infrastructure contact:

Josey Wardle

josey.wardle@iuk.ukri.org



<https://www.v2g-hub.com/>

