How CABLED has influenced understanding of EV business

Neil Butcher - Arup

ARUP

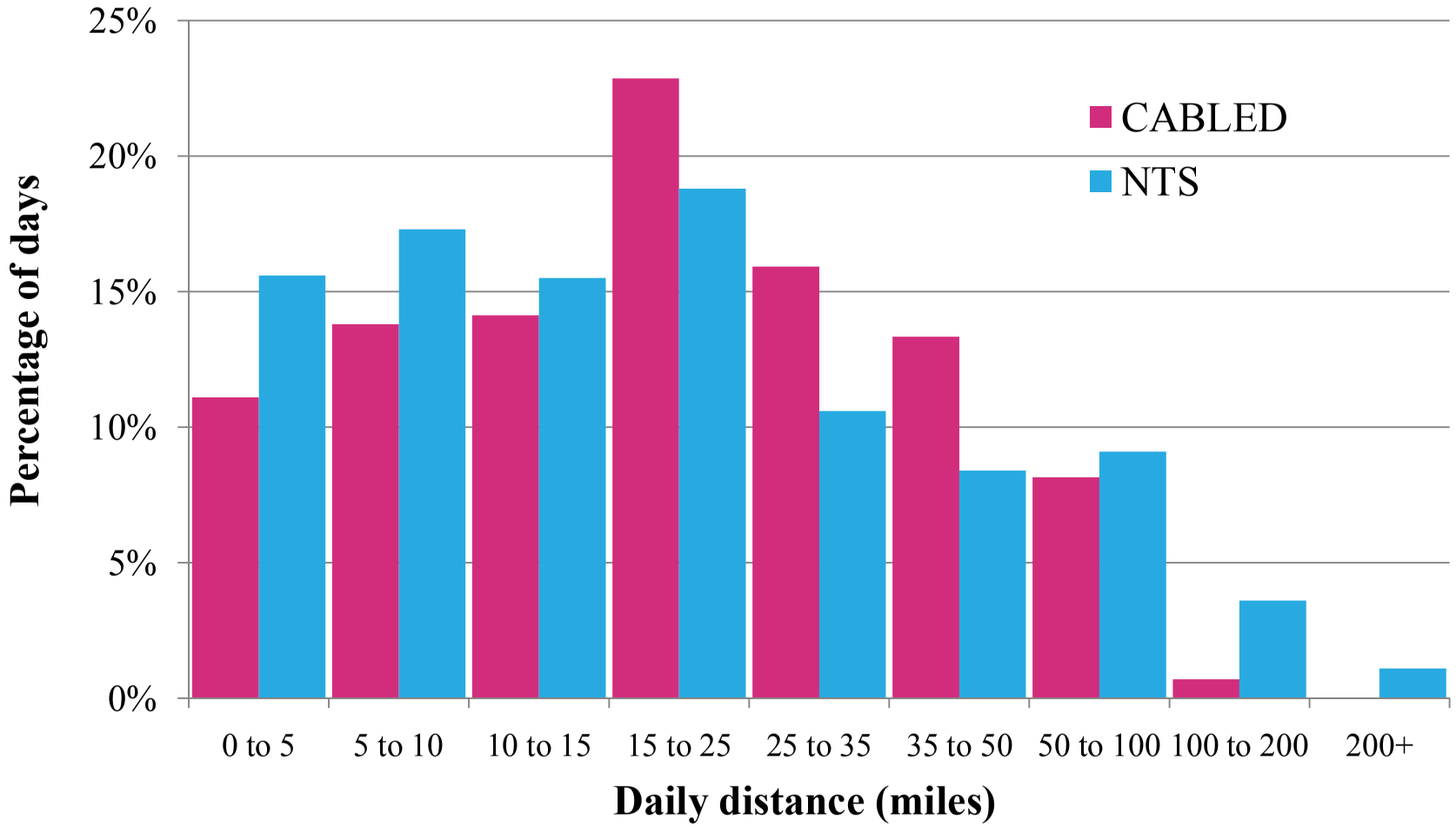
Introduction

- CABLED Aims
  - Showcase low carbon vehicles (LCVs)
  - Deliver public charging infrastructure
  - Demonstrate long term, real world usage of LCVs
  - Collect data on vehicle usage
  - Publicise benefits and progress of LCVs
  - Demonstrate a variety of LCV technologies

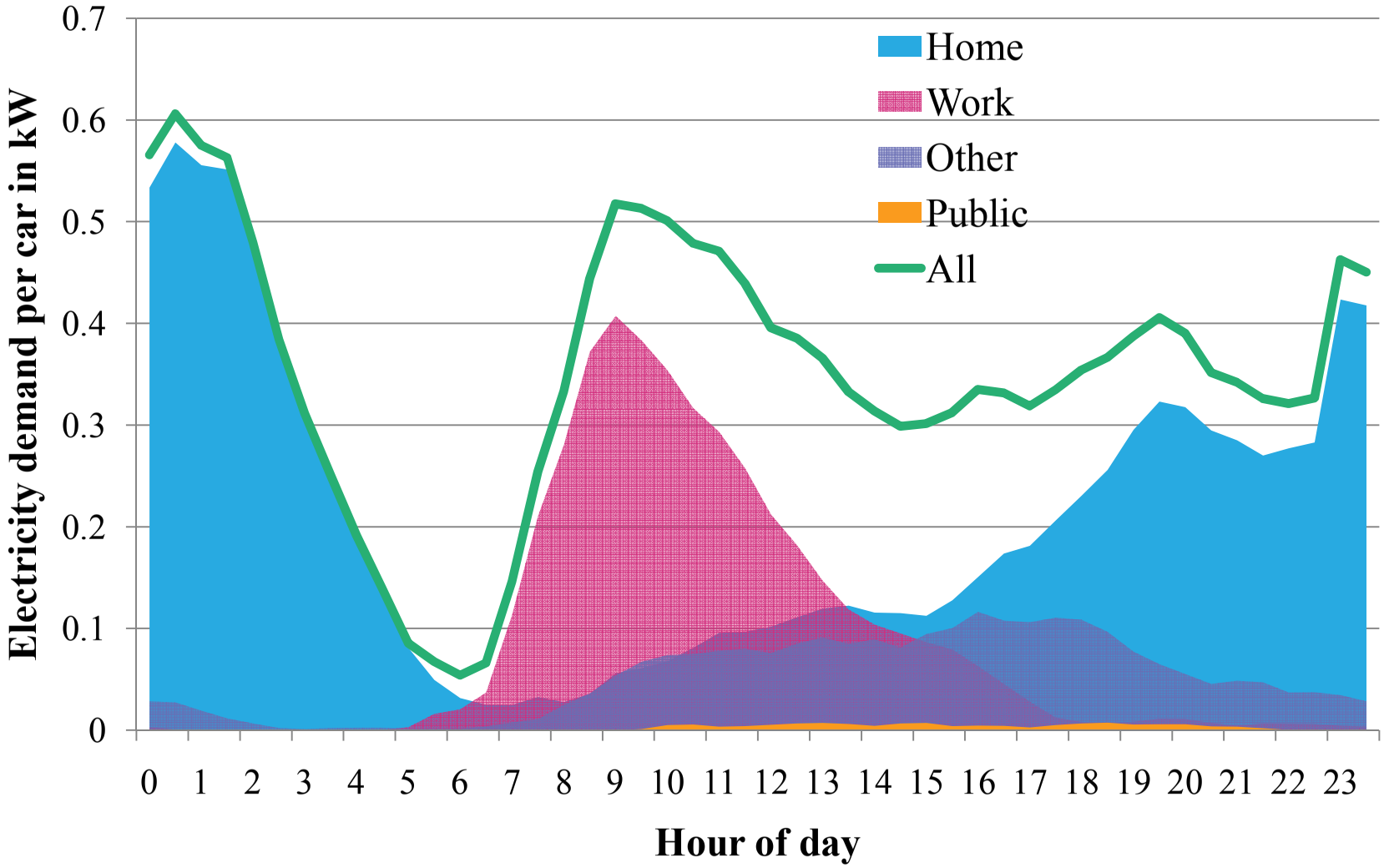
Introduction

- 25 Mitsubishi i MiEVs
- 25 Tata Indica Vista EVs
- 45 smart fortwo electric drives
- 5 Range Rover Range-e
- 2 Halo IPT Citroen EV'ie
- 8 Microcab urbancars
- 36 public charge points
- 28 workplace charging points } installed by EON
- 73 domestic charging points
- Hydrogen refuelling stations

Compared to National Travel Survey



When and where people charge



Mitsubishi

Trial results matched Japanese trials confirming practicality for UK & European markets

Customer driving style and charging behaviour evolved – underlining need for education

Helped identify ‘tweaks’ to specification to enhance vehicle range

smart

Provided hard evidence that smart electric drive represents viable and realistic mode of transport for many drivers.

Provided motivation to enhance capability of personnel in the smart dealer network and in Mercedes-Benz UK particularly HV training and vehicle diagnostics.

Showed that the majority of vehicle charging on the trial takes place at home or workplace.

JLR

It is possible to produce a large premium plug-in hybrid that delivers <100g/km CO2 without compromising JLR brand values.

On completion:

Real world usage requirements for a plug-in hybrid

Real world fuel economy

ARUP

Tata

Insight into customer behaviour

Technical understanding

Programme integrity

ARUP

E.ON

Positive experience of participants – it is the future!

98% of charging takes place at home and work

Home wiring inspections and safety of charging sockets essential

E.ON to offer convenient EV bundles to consumers and fleets

ARUP

Coventry City Council

A lead local authority in EV technology

Key to success is the optimum location of charge points

Now advising on best practice for Midlands PiP

ARUP

Birmingham City Council

Has stimulated interest in EVs in Birmingham

Difficulties of Traffic Regulation Order system and importance of street signage

Popularity of EV pool cars

Coventry University

Fuel cells are not an “off-the-shelf” item

Integration of sub-systems is not easy

Fuel cell hybrids appear to be viable as an urban commuter vehicle

ARUP

Aston University

Understanding of real EV driving behaviour

Understanding of charging requirements of EVs

Experience in handling GPS transport data

ARUP

University of Birmingham

Relative performance of BEVs and HFCEVs

Future fuel cell demonstrations

Fuel cell reliability

ARUP

Arup

Practicalities of living with EVs

Real life usability of Halo IPT induction charging

Developing understanding of needs for successful deployment of EVs

Summary

- How vehicles perform in real-life use
- What users want from their vehicles and infrastructure
- Where users charge their cars
- When users charge their cars
- Where to installing charge points and best process to use
- How to mitigate health and safety risks