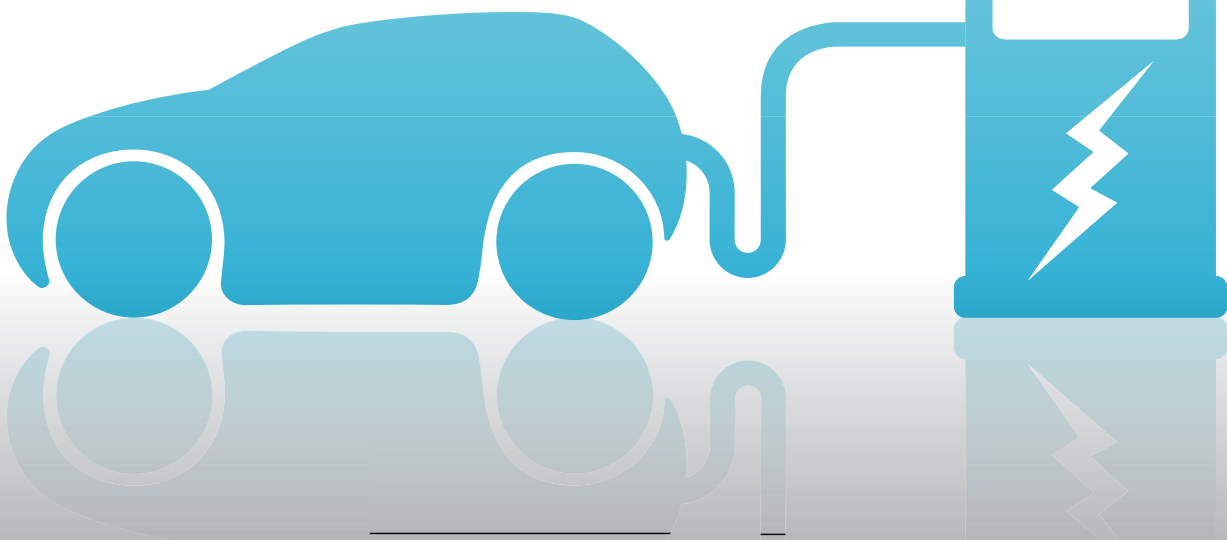


Successfully Implementing a Plug-in Electric Vehicle Infrastructure

A Technical Roadmap for Local Authorities and their Strategic Partners

Matthew Lumsden



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Abbreviations

BEV	battery electric vehicle
CHAdeMO	Japanese standard for rapid charging protocols
CL	central whitelist
CMS	charge-post management systems
CNG	compressed natural gas
CYC	Charge Your Car
DfT	Department for Transport
DNO	distribution network operator
ENEVATE	European Network of Electric Vehicles and Transferring Expertise
ERDF	European Regional Development Fund
E-REV	extended-range electric vehicle
EV	electric vehicle
EVSE	electric vehicle supply equipment
FIT	feed-in tariff
GHG	greenhouse gas
GM	General Motors
GMPTe	Greater Manchester Passenger Transport Executive
GPRS	general packet radio service
HEV	hybrid electric vehicle
HGV	heavy goods vehicle
HMI	human-machine interface
IC	internal combustion
ICE	internal combustion engine
ICT	information and communication technology
IPT	inductive power transfer
ITS	intelligent transport systems
LAN	local area network
LCV	low-carbon vehicle (or light commercial vehicle)
LDFs	local development frameworks
LE	low emission
LED	light-emitting diode
LES	low emission strategy
LEV	low emission vehicle
LNG	liquefied natural gas
LSTF	Local Sustainable Transport Fund
LTP3	third Local Transport Plan
MECC	Manchester Electric Car Company
NCP	National Car Parks Ltd
NAIGT	New Automotive Innovation and Growth Team
NPPF	National Planning Policy Framework
OCPP	open charge point protocol
OEM	original equipment manufacturer
OLEV	Office for Low Emission Vehicles
PHEV	plug-in hybrid electric vehicle
PIEV	plug-in electric vehicle
PiP	Plugged-in Place
PPG	planning policy guidance
PV	photovoltaics
QA	quality assurance
Q4	fourth quarter of year

Q2	second quarter of year
RAB	regulated asset base
R&D	research and development
RCD	residual current device
RFID	radio frequency identification
SME	small or medium-sized enterprise
SMMT	Society of Motor Manufacturers and Traders
TfGM	Transport for Greater Manchester
TMA	traffic management agreement
TRO	traffic regulation order
TSB	Technology Strategy Board
ULCV	ultra-low-carbon vehicle

About the author

Matthew Lumsden began working in the field of e-mobility in 2008 when he worked with a range of stakeholders to develop an electric vehicle strategy for the north-east of England. In 2009 he established Future Transport Systems in recognition of the need for expertise spanning the automotive and energy sectors to help the development of e-mobility. Since then he and Future Transport Systems have developed several regional strategies, been intimately involved in the Plugged-in Places programme and have managed the SWITCH EV ultra-low-carbon vehicle demonstrator project.



With an interest in maintaining leading expertise, Future Transport Systems is now involved in several technology development and implementation projects linking e-mobility with the energy sector.

Matthew is also involved with several regions of north-west Europe where he is working with a range of stakeholders to share knowledge in the interests of developing e-mobility projects. With others in Future Transport Systems focusing on the technical issues, Matthew's main areas of interest are in relation to the sustainable development of e-mobility and its integration with other transport modes and energy networks.

For the ten years prior to setting up Future Transport Systems, Matthew was a director of energy consultancy TNEI and worked on a wide range of energy efficiency and renewable energy related projects.