

A sufficient & intelligent charging infrastructure - examples from Denmark

Smart Charging Webinar Series

2019.12.10



EV Policy developments in the UK

The screenshot shows the legislation.gov.uk website. At the top, it says 'legislation.gov.uk' with the Royal Coat of Arms. Below that, there's a navigation bar with 'Home', 'Understanding Legislation', 'EU Legislation and UK Law', 'Browse Legislation', and 'Changes To Legislation'. A search bar is on the right. Below the navigation bar, there's a search filter section with 'Title:', 'Year:', 'Number:', and 'Type: All Legislation (excluding draft)'. The main content area shows 'Automated and Electric Vehicles Act 2018' with a breadcrumb trail 'UK Public General Acts > 2018 c. 18 > Table of contents'. There are tabs for 'Table of Contents', 'Content', 'Explanatory Notes', and 'More Resources'. On the left, there's a 'What Version' section with 'Latest available (Revised)' and 'Original (As enacted)'. Below that, there's an 'Opening Options' section and 'More Resources'. The main content area is titled 'PART 1 Automated vehicles: liability of insurers etc' and lists 8 items: 1. Listing of automated vehicles by the Secretary of State, 2. Liability of insurers etc where accident caused by automated vehicle, 3. Contributory negligence etc, 4. Accident resulting from unauthorised software alterations or failure to update software, 5. Right of insurer etc to claim against person responsible for accident, 6. Application of enactments, 7. Report by Secretary of State on operation of this Part, 8. Interpretation. Below that, there's 'PART 2 Electric vehicles: charging' with sub-sections: 'Introductory', 'Definitions', 'Requirements and prohibitions' (items 10-15), and 'General and supplementary' (items 16-17).

Closed consultation Electric vehicle smart charging

Published 15 July 2019
Last updated 19 July 2019 — [see all updates](#)
From: [Department for Transport](#) and [Office for Low Emission Vehicles](#)

We are analysing your feedback

Visit this page again soon to download the outcome to this public feedback.

Summary

Proposals for regulations to ensure that electric vehicle chargepoints sold or installed in the UK have smart charging functionality included.

This consultation ran from
15 July 2019 to 11:45pm on 7 October 2019

Consultation description

Consultation on proposals for electric vehicle chargepoint smart technology regulations. The proposed regulations would require that electric vehicle chargepoints sold or installed in the UK have smart charging functionality included.

<https://www.gov.uk/government/consultations/electric-vehicle-smart-charging>

Annex E: Draft regulations

DRAFT STATUTORY INSTRUMENT

2020 No.

ROAD TRAFFIC

The Electric Vehicles (Smart Charge Points) Regulations 2020

Approved by Parliament

Made - - - - - ***

Laid before Parliament ***

Coming into force in accordance with Regulation 1

The Secretary of State, in exercise of the powers conferred by sections 15, 16, 17 and 18 of the Automated and Electric Vehicles Act 2018 (a) ("the 2018 Act"), makes the following Regulations.

In accordance with section 18(4) of the 2018 Act, a draft of this instrument has been laid before Parliament and approved by a resolution of each House of Parliament.

The Secretary of State has consulted such persons as the Secretary of State considered appropriate in accordance with section 18(3) of the 2018 Act before making these Regulations.

PART 1

Introduction and application

1. These Regulations may be cited as the Electric Vehicles (Smart Charge Points) Regulations 2020 and come into force on [date].

Interpretation

2. In these Regulations—

- "enforcement authority" means the Secretary of State or any person authorised by the Secretary of State in accordance with regulation 14;
- "certification body" means a person authorised by the Secretary of State to carry out the functions referred to in regulations 8 and 12 or, if no such person has been authorised, the Secretary of State;
- "cyber attack" means exploitation of a charge point's smart functionality or of systems or networks connected to it to cause harm or disruption;



Government Support

Policy paper
The Grand Challenges

Updated 21 May 2018

Contents

Artificial Intelligence and data
Ageing society
Clean growth
Future of mobility



The [Industrial Strategy](#) sets out Grand Challenges to put the UK at the forefront of the industries of the future, ensuring that the UK takes advantage of major global changes, improving people's lives and the country's productivity.

Put the UK at the forefront of the design and manufacturing of zero emission vehicles and for all new cars and vans to be effectively zero emission by 2040.



The Road to Zero

Next steps towards cleaner road transport and delivering our Industrial Strategy



Setting out government support

Policy paper

Charging Infrastructure Investment Fund

A request for proposals to raise and manage the government's Charging Infrastructure Investment Fund.

Published 23 July 2018

Last updated 14 September 2018 — [see all updates](#)

From: [HM Treasury](#) and [Infrastructure and Projects Authority](#)

Documents



[Charging Infrastructure Investment Fund Request for Proposals](#)

PDF, 148KB, 13 pages

This file may not be suitable for users of assistive technology. [Request an accessible format.](#)

News story

£30 million investment in revolutionary V2G technologies

Electric vehicles to help power people's homes helped by almost £30 million funding.

Published 12 February 2018

From: [Department for Transport](#), [Office for Low Emission Vehicles](#), [Innovate UK](#), [Department for Business, Energy & Industrial Strategy](#), and [Jesse Norman MP](#)



Landing Page- Smart Charging Webinar series

- ▶ YouTube Recordings
- ▶ Slides
- ▶ Details for future events

The screenshot shows the Newcastle University website. At the top, there is a navigation menu with links for 'Who we Are', 'Work with Us', 'Research', 'Study', 'Alumni', and 'Staff & Students', along with a search icon. The main header identifies the 'National Centre for Energy Systems Integration'. A breadcrumb trail reads: 'Newcastle University > National Centre for Energy Systems Integration > Events > Webinars > Webinar Series - EV Smart charging'. A left-hand sidebar contains a menu with items: 'Research', 'Working with Industry', 'About Us', 'Our Team', 'News', 'Events', 'Launch Event', 'Webinars', 'Webinar Series - EV Smart charging' (highlighted in red), 'Contact Us', 'Twitter', 'Blog', and 'CESI Newsletter'. The main content area is titled 'Electric Vehicles' Smart Charging Webinar Series' and includes a descriptive paragraph: 'This series of webinars provides an introduction to vehicle to grid (V2G) and smart charging projects and topics, with invited guest speakers from institutions in the UK and overseas. View the [webinar playlist here](#).' Below this is a list of seven webinar topics, each with a green plus icon to its right:

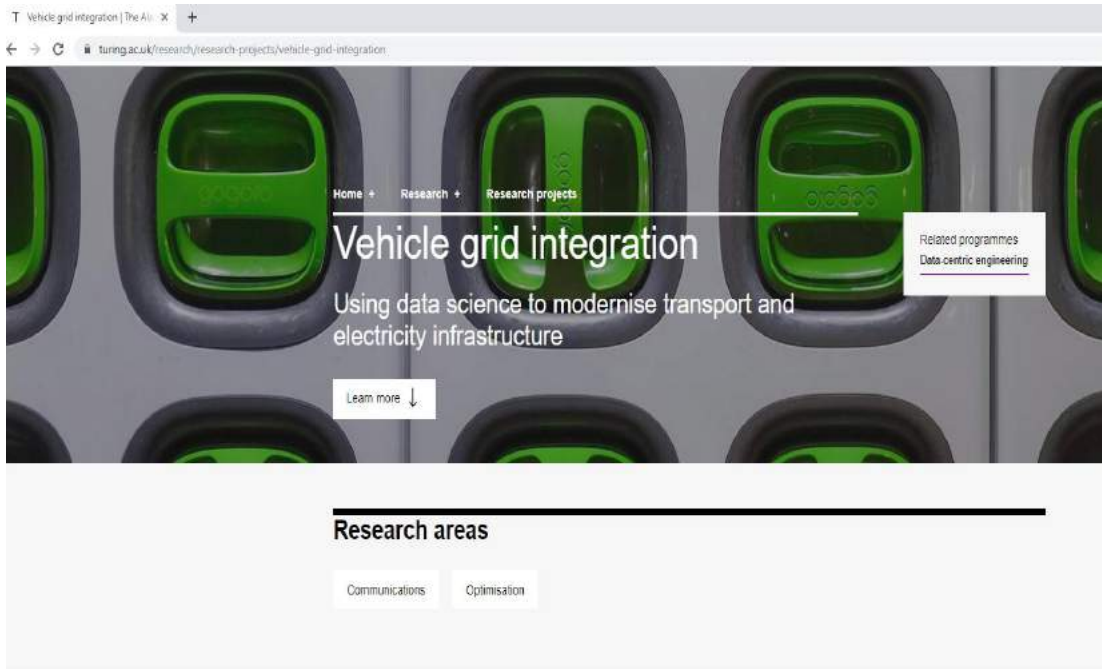
- Smart Charging and V2G Webinar: Caltech and Idaho National Laboratory
- Meet OCPP. Robert de Leeuw. Open Communication Protocols for Electric Vehicles Smart Charging
- Meet OpenADR. Rolf Bienert and guests. Open Communication Protocols for Electric Vehicles Smart Charging
- Open Communication Protocols for Smart Charging: real world demonstrators - GreenFlux and Carbon Co-op
- Open Communication Protocols for Smart Charging: real world demonstrators - Allego
- Meet ISO 15118. Dr Marc Mültin. Open Communication Protocols for Electric Vehicles Smart Charging
- A sufficient & intelligent charging infrastructure - examples from Denmark
- Integrating Plug-In Electric Vehicles with the Grid in California

<https://www.ncl.ac.uk/cesi/events/webinars/v2gwebinars/>

Upcoming events

- ▶ *17th December 2019.* **Noel Crisostomo**, [California Energy Commission](#). Integrating Plug-In Electric Vehicles with the Grid in California
- ▶ *15th January 2020.* **Paul Bertrand**. Meet IEC 63110. International IEC standard for Management of EV Charging Stations.

Alan Turing Institute- Vehicle Grid Integration Group



- ▶ Apply and develop data science methods and tools to help in the transformation of electricity and transport infrastructure.
- ▶ Contribute to open communication protocols for vehicle grid integration.
- ▶ Assess security of communication, hardware and software of grid-integrated EV charging infrastructure.

Introduction

Electric vehicles (EVs) can break our dependence on fossil fuels in transport and energy sectors. However, mass adoption of EVs introduces significant and disruptive electricity demand to meet the charging needs of these vehicles. Vehicle grid integration strategies, underpinned by data science, ensure that electric vehicle charging infrastructure is synergistic with the electricity grid, reliable, cost effective and sustainable.

Explaining the science

Jump to

- Research areas
- Introduction
- Explaining the science
- Project aims
- Applications
- Organisers
- Researchers
- Contact info

<https://www.turing.ac.uk/research/research-projects/vehicle-grid-integration>

Today's speaker

- ▶ **Dr. Peter Bach Andersen**, Technical University Of Denmark (DTU). *A sufficient & intelligent charging infrastructure - examples from Denmark.*

Topics discussed will include:

- ▶ Description of a charging infrastructure which is both sufficient (in numbers and geographical concentration) and intelligent (allows controlled charging) to support and integrate electrical vehicles.
- ▶ Analysis of the charging infrastructure needed in Denmark to meet ambitious EV adoption targets.
- ▶ How intelligent (V2G enabled) charging infrastructure has been utilized in a Danish pilot project for frequency regulation.