

Setting the standard for electric vehicle charging installations

Qualification overview

Housekeeping



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Everyone is on mute

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Agenda

Welcome and Introduction

Market Context

Qualification Overview

Qualification Approval

Further information

Close



Speakers



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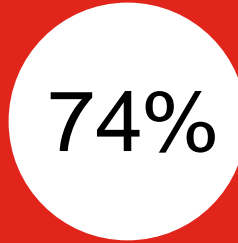
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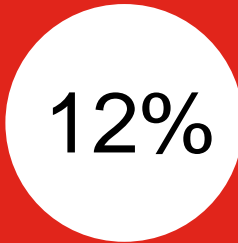
Context

Complex interdependency of stakeholders:

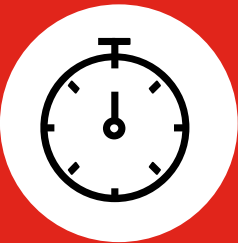
- Car manufacturers
- Regulating authorities
- Power generation suppliers
- Transmission and Distribution Network Operators
- Component Manufacturers
- Charge Point Operators
- Charge Station Manufacturers



74% Sales growth in chargeable vehicles in 2021



Only 12% of 1.7m new cars sold in 2021 had plugs



Hydro-carbon new car sales banned from 2030



10m plug-in electric cars in the UK by 2030

Context

Post an audit report conducted in 2020 for both Domestic and Commercial EVCP (Electric Vehicle Charging Points)

- Almost 20% of installations were found to be potentially dangerous
- Only one third were deemed satisfactory
- A number of requirements within BS7671 were not being met or adhered to
- Poor practices of wiring during installation or deficiencies in the provision of Residual Current Device protection (RCDs)



No insulation on service head (ID466)



Meter tails double insulation not taken into enclosure (ID186)



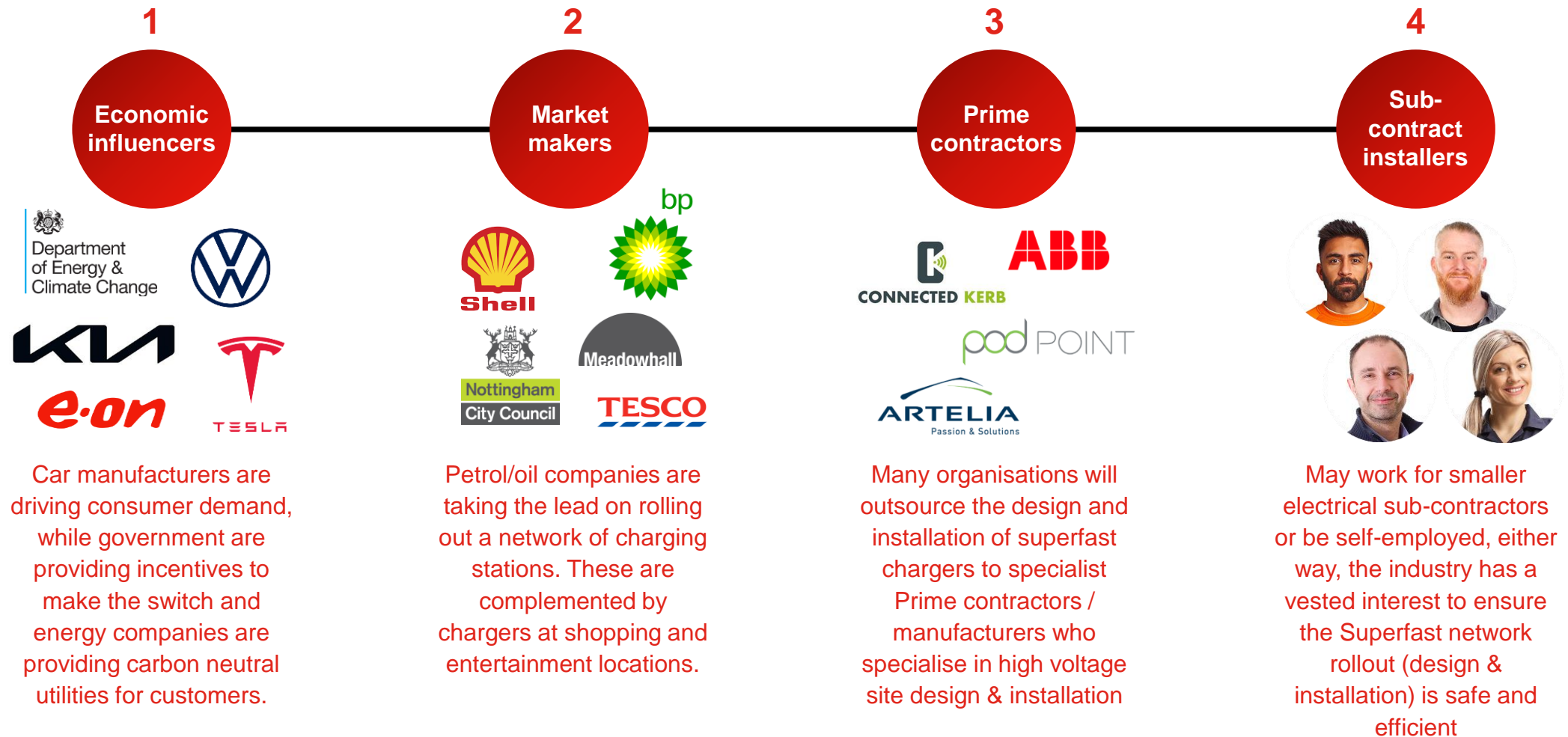
Issues with service head: Damage to service head (ID909)



Seal ring of fuse carrier broken (ID706)

Market dynamics – working with industry

City & Guilds is working closely with market makers, prime contractors and sub-contract installers to design a standard they can rely on as installations grow and become an integral part of the UK infrastructure



Reskilling the workforce to install...

Three qualification pathways:

- Domestic chargers
- Largescale chargers
- Installation design



Domestic chargers

Take several hours to charge but are necessary as cars must be charged this way regularly, to maintain a stable battery

Can be installed by domestic electricians with the correct training and certification

7-12kw

12h Charge

£800 (equipment)



Largescale chargers

Found in parking locations, service stations and hydro-carbon retailers. Can't be used exclusively as damage battery but far quicker

Only installed by qualified specialist electrical engineers - need to deal with high power units

350kw

20min Charge

£100K (equipment)

For existing electricians and electrical engineers looking to design installations including largescale EVC sites.

Installation design

Design of location for high-current units at petrol filling stations, or multiple charge points at factory or fleet carparks.

How the new skills standard has developed

Industry requires a qualified workforce to install Electrical Vehicle Charger (EVC) points to reduce the risk of not meeting the future market installation requirements from a safety and time perspective

The Qualifications have been designed in consultation with the industry and key stakeholders of the EVC market

Electrotechnical Certification Scheme (Gold Card):

Qualifications will lead to a recognised status for installers of being able to carry out EVC installation services.

The qualification specification was reviewed by ECS. They were pleased to see the introduction of minimum entry requirement. The revised specification that City & Guilds has built into the qualification will proceed to the ECS Steering Committee in May 2022 with the aim for the standard to be part of the ECS card scheme.



Qualification overview

Electric vehicle charging

Qualifications

2921-31

Design and installation of domestic and small commercial electric vehicle charging installations

2921-32

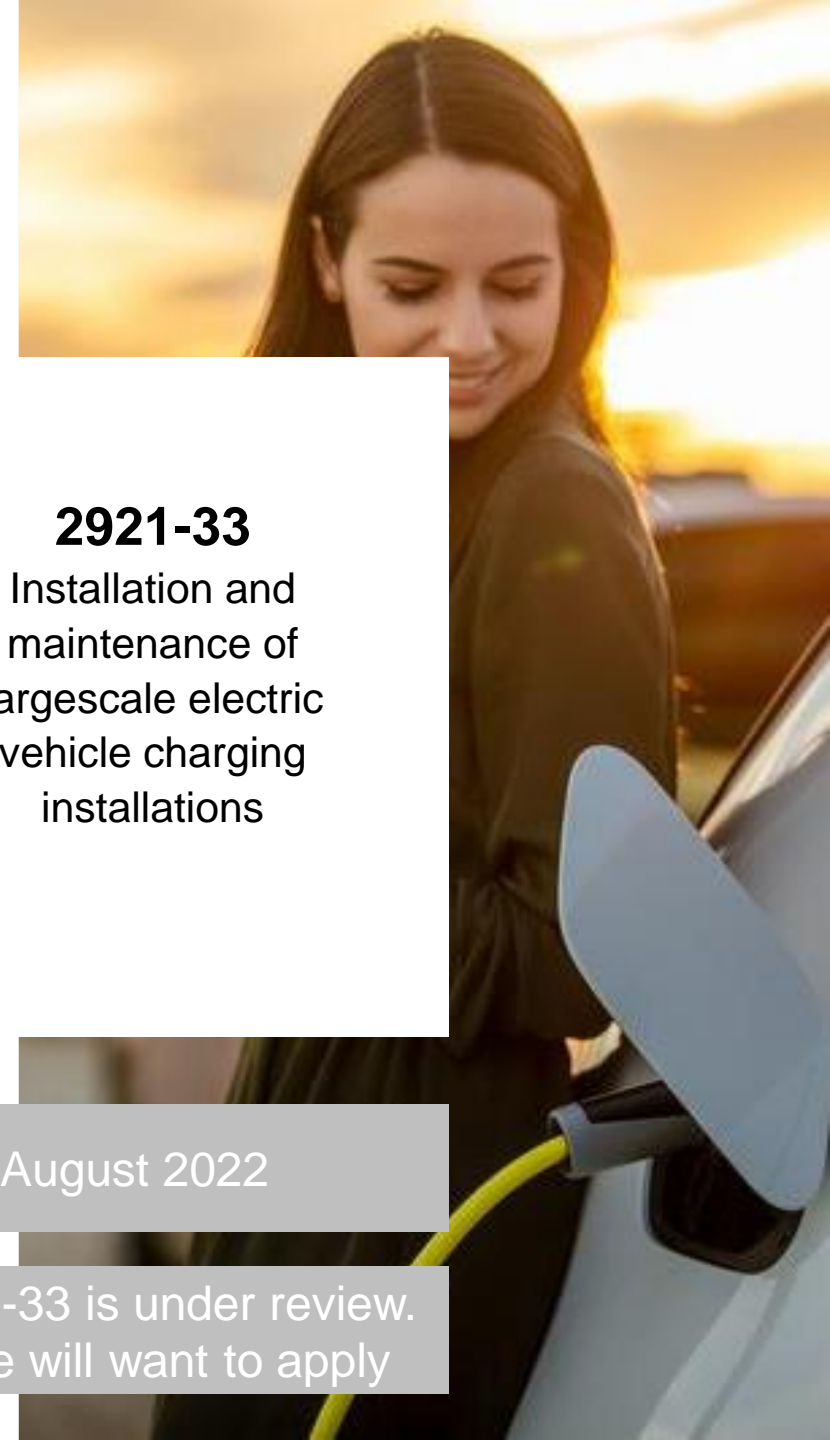
Design and Quality Assurance of largescale electric vehicle charging installations

2921-33

Installation and maintenance of largescale electric vehicle charging installations

Existing qualification 2919 will be closing for registrations on 31 August 2022

Approval process for 2921-32 and 2921-33 is under review. Contact us if you anticipate your centre will want to apply



What is different to 2019

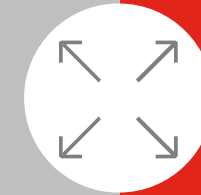
- Entry requirements are now prerequisites. The qualifications are designed as CPD for qualified, practicing electricians and electrical engineers.
- The qualifications are not for beginners. They supplement knowledge and understanding gained previously.
- Examinations and assessments have been amended to focus on issues that specifically effect EVC installations
- Examinations & assessments are not used to test the candidates' ability on general understanding of electrical principles and regulations.
- Re-testing of skills from prior learning has been removed from assessments. Such as a candidates ability to install cables.



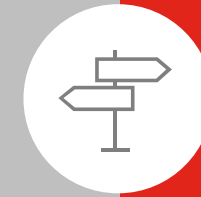
2019

Closing on 31/08/22

Catered for
three areas in
two qualification
pathways



No mandatory entry
requirements



Electrical principles,
wiring and regulation
understanding
tested



2021 - New set
of qualifications

Catering for three
areas in three
qualification
pathways

Mandatory entry
requirements:
Qualified, practicing
electricians only

More focus on
installation plus
health and safety

Qualifications overview

Qualification pathway: 2921-31

Design and installation of **domestic** and small commercial electric vehicle charging installations

Qualification Pathway: 2921-32

Design and Quality Assurance of largescale electric vehicle charging installations

Qualification pathway: 2921-33

Installation and maintenance of **largescale** electric vehicle charging installations

Domestic installations

16
GLH

Guided learning hours:

Indication of the amount of supervised learning and assessment that is required

22
TQT

Total qualification time:

Indication of time, in hours expected to be spent by a learner to achieve a qualification. It includes:

Teaching
Hours spent in preparation
Study
Undertaking assessment activities

Qualifications

2921-31

Design and installation of domestic and small commercial electric vehicle charging installations

Description

Aimed at existing practising electricians:

The purpose of this qualification is to install domestic and small commercial electric vehicle charger units. The qualification centres around being able to know the key requirements relating to electric vehicle charging equipment, including types of equipment. It includes how to design an installation, inspect, test, commission and maintain installations.

Assessment

Online Evolve Test

Assignment: Short answer test and scenario based – Externally set by C&G internally marked by the centre



Qualifications

Assessment Design and installation of domestic and small commercial electric vehicle charging installations

On-screen Evolve is City & Guilds secure platform. E-volve helps learners and apprentices to sit tests and exams securely and easily giving you peace of mind for the integrity of your testing.
The Evolve test for 2921-31 is 45 minutes

Assignment The assignment is made up of a series of short answer questions and a scenario based question
The assignment is carried out under exam conditions and lasts 1.5 hours



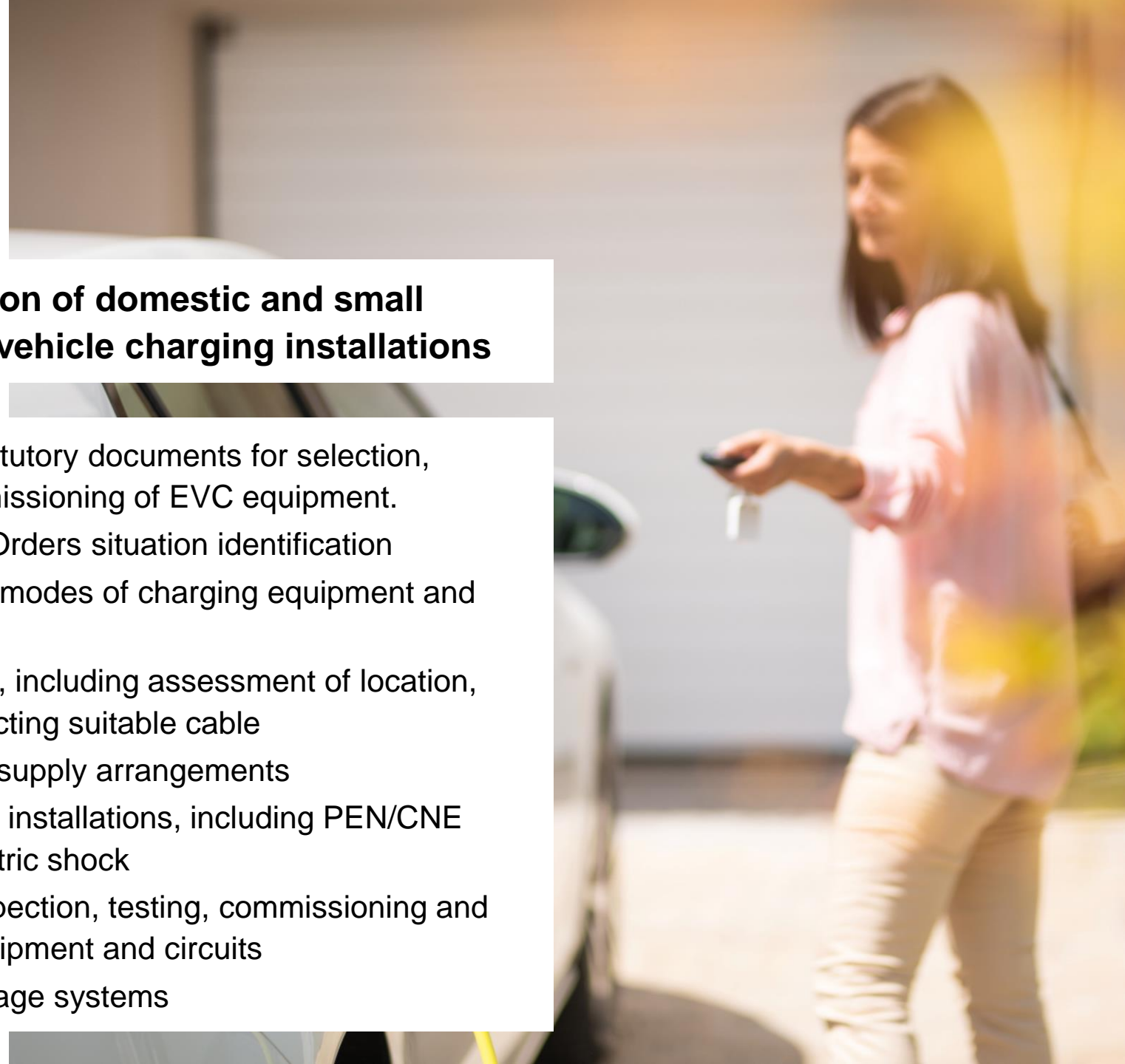
Qualifications

2921-31

Design and installation of domestic and small commercial electric vehicle charging installations

Topics Include:

- Statutory and non-statutory documents for selection, installation and commissioning of EVC equipment.
- Traffic Management Orders situation identification
- Suitability of different modes of charging equipment and connections
- Design an installation, including assessment of location, and methods for selecting suitable cable
- System earthing and supply arrangements
- Risks associated with installations, including PEN/CNE conductor faults, electric shock
- Requirements for inspection, testing, commissioning and handover of EVC equipment and circuits
- Electrical energy storage systems



Qualification Approval

Electric vehicle charging

Learner Entry Requirements

Learners wishing to enter onto the following qualification must already hold either of the qualifications below prior to registration. Other A/O equivalents are also accepted

For individuals holding older legacy qualifications a current ECS installation Gold card will be acceptable

External Quality assurance process will be in place to ensure the learner entry requirements are being implemented

- 2357 Level 3 NVQ Diploma in Installing Electrotechnical Systems and Equipment (Buildings, Structures and the Environment)
- 2357 Level 3 NVQ Diploma in Electrotechnical Services (Electrical Maintenance)
- 5357 Level 3 Electrotechnical qualification
- 2356 Level 3 NVQ in Electrotechnical Services Experienced Worker
- 2346 Level 3 Electrotechnical Experienced Worker Qualification



Qualification status

Qualification	Goes Live	Handbooks and materials	Approval	Candidate registrations
2921-31 Design and installation of domestic and small commercial electric vehicle charging installations	16 May 2022	Qualification handbooks and assessment materials will be made available on the Qualification pages of cityandguilds.com Search 2921 or navigate on our Qualifications pages to our Building Services Engineering Installation qualifications	Existing 2919 customers auto-approved New customers Full approval	Candidates can be registered on Walled Garden from 16 May 2022 * 2919 will be closing at the end of August 2022

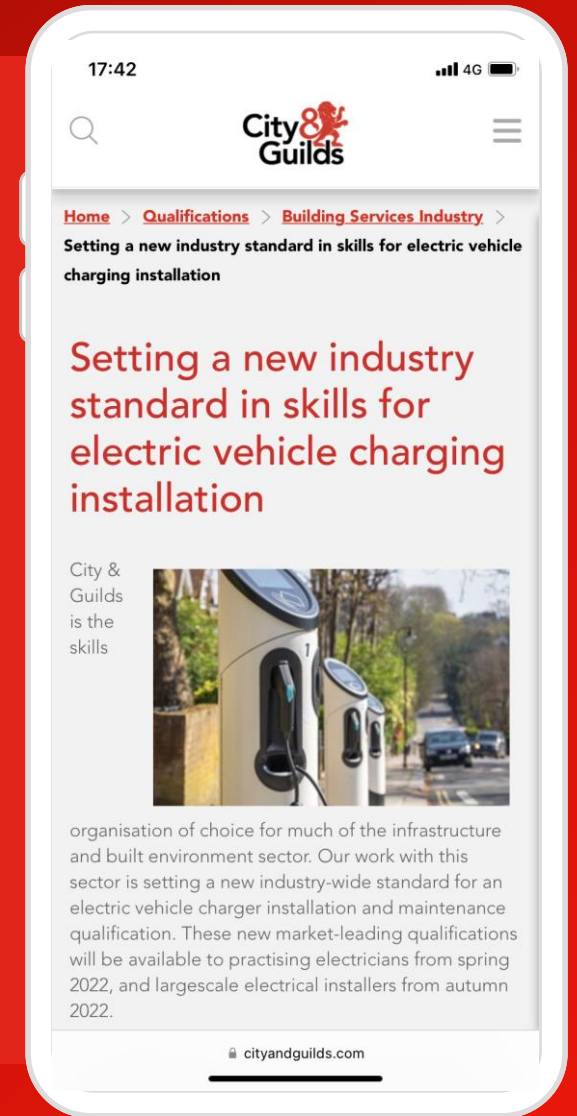
Further information

For more information click this link:

[Setting a New Industry Standard in Skills for Electric Vehicle Charging Installation | City & Guilds \(cityandguilds.com\)](https://www.cityandguilds.com)

Or

Go to [cityandguilds.com](https://www.cityandguilds.com) and search 2921 (live next week w/c May 16th)



Thank you