



Contractors and wholesalers –
working together to deliver net
zero
EDA and ECA

Agenda

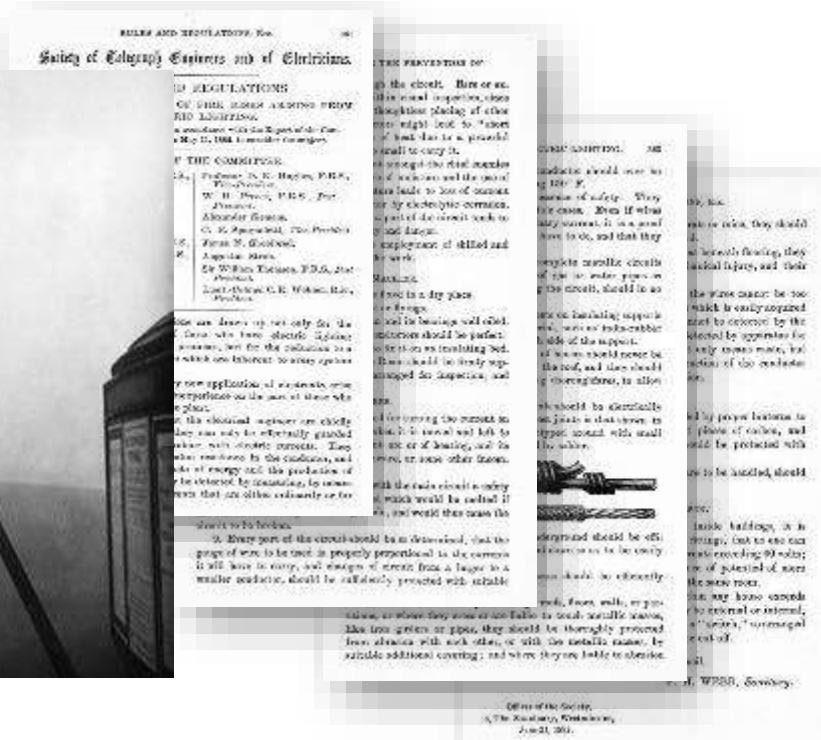
- The history of the electrical contractor
- The energy contractor
 - EV
 - PV
 - Batteries
- Upselling and awareness
- Summary
- Q&A

The birth of an industry

The history of the electrical contractor

The birth of the electrical contractor

- In 1882 the Society of Engineers and of Electricians published the *Rules and Regulations for the prevention of fire risks in connection with electric lighting*
- This came about after electric lighting started to replace gas



The birth of the electrical contractor

- The guide developed at pace over the next 100 or so years due to increasing demand for electrical installations
- Sockets, earthing, bonding all became the norm
- Electrical contractors started diversifying, installing emergency lighting and fire alarm systems



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ECA Technical

RULES AND REGULATIONS, No. 10

10

Society of Telegraph Engineers and of Electricians

RULES AND REGULATIONS

FOR THE PREVENTION OF FIRE HAZARDS ALONG TELEGRAPH LINES.

Revised by the Technical Committee of the Society of Telegraph Engineers and of Electricians and approved by the Board of Directors on May 25, 1911. Issued by Telegraph Engineers and of Electricians.

MEMBERS OF THE COMMITTEE

President: W. H. Atwood, F.R.S.	Secretary: W. H. Hayes, F.R.S.
Dr. Charles E. Angoff.	W. H. Hayes, F.R.S., Pres.
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John H. Hayes, F.R.S.	W. H. Hayes, F.R.S., Vice-President.
Robert H. Hayes.	Chairman.
Dr. H. H. Jackson.	Johnathan C. E. Wilson, Vice-President.

These rules and regulations are issued by the president and members of the Society of Telegraph Engineers and of Electricians, for the guidance of a committee of three of their members who are to enforce these rules and regulations.

The members of the committee are to apply these rules and regulations to the use of their lines and property in the regular place.

The difficulties that beset the electrical engineer are clearly internal and localities, and they can only be effectively guarded against by "isolating" or "padding" with electric currents. They depend directly on biology and on mechanics. In the conductors, and insulators, which lead to waste of energy and the production of heat. These faults can only be detected by measuring, by means of special apparatus, the currents that are either conducted or lost.

Methods to be followed.

1. Any part of the circuit should be so dimensioned that the power of heat to be used is properly proportioned to the currents that are to move, and enough of current from a larger to a smaller conductor, should be sufficiently provided with suitable

THE PREVENTION OF

fire in the circuit. But in order to accomplish this, the following placing of these metal parts to "insure" heat due to a possible short circuit.

2. Strength of the circuit members and insulation and the use of conductors made from or by electrolytic corrosion, is a good way to do, and the circuit looks to great danger.

3. Employment of skilled and experienced men.

4. Maximum of heat in a dry place.

5. Dry floors.

6. Good bearings and oil, insulation should be perfect, insulation as insulating oil. Bushings should be freely supported for inspection, and

7. Insulating the conductors in such a way that heat will not be lost or be heated, and in such a way as to not injure the insulation.

8. With the ends of the conductors which are to be melted off, and would thus cause the

CAUSES OF IGNITION. 100

Insulators should never be in the fire.

Insulation of cables. Every insulation. Even if when properly covered, it is a good time to do, and that they

complete insulation of the cables, passing through the circuit, should be as

far as insulating supports, such as iron insulators, as possible. Insulators should never be in the fire, and they should be thoroughly, in all

ways, to identify them as insulation is dangerous in great amount, with small the value.

9. Insulating the conductors in such a way that heat will not be lost or be heated, and in such a way as to not injure the insulation.

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The birth of the electrical contractor

- Data, fibre optic installations, periodic testing all allowed the electrotechnical contractor the opportunity to expand their business and diversify
- Training changed, apprenticeships changed
- Soon electricians became designers, testers, metal fabricators etc.

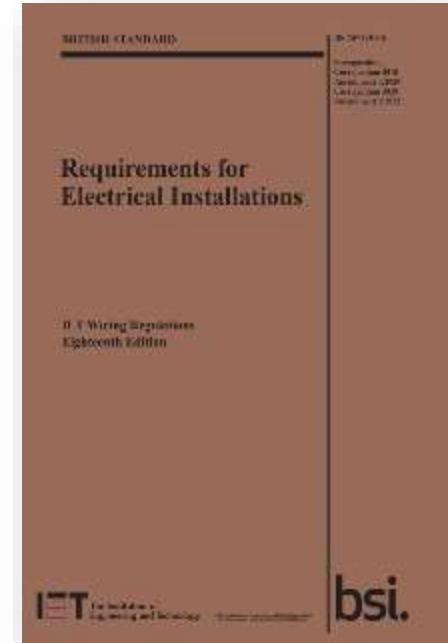


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The Wiring Regulations – and its 7 usual parts?

- The Wiring Regulations, or BS 7671, developed into a document more than 600 pages long
- In 2022 a new Part 8 was introduced that brought about phrases such as prosumer and prosumers electrical installations
- These are new terms to the industry that bring big opportunities



The birth of a NEW industry

The energy contractor



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ECA Technical Team

The energy contractor

- Now we are seeing a new industry develop and grow
- The electrical contractor is changing into an energy contractor
- Buildings are changing, client demands are changing and wholesalers need to change to meet those demands
- Do you only want to sell gas lights?



The energy contractor

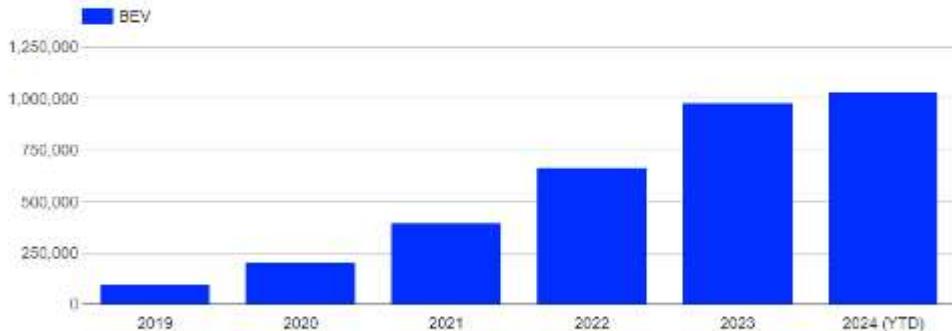
- The rise of the renewables industry has been rapid and is unlikely to slow any time soon
- Electric vehicle installations, solar PV and battery energy storage systems are becoming common place
- This is your opportunity to service your clients
- But don't take my word for it...



The wave of a new industry – Electric vehicles

- Since 2019 EV sales have rocketed
- Over 1,000,000 are on UK roads
- Each need a charger plus public charge points

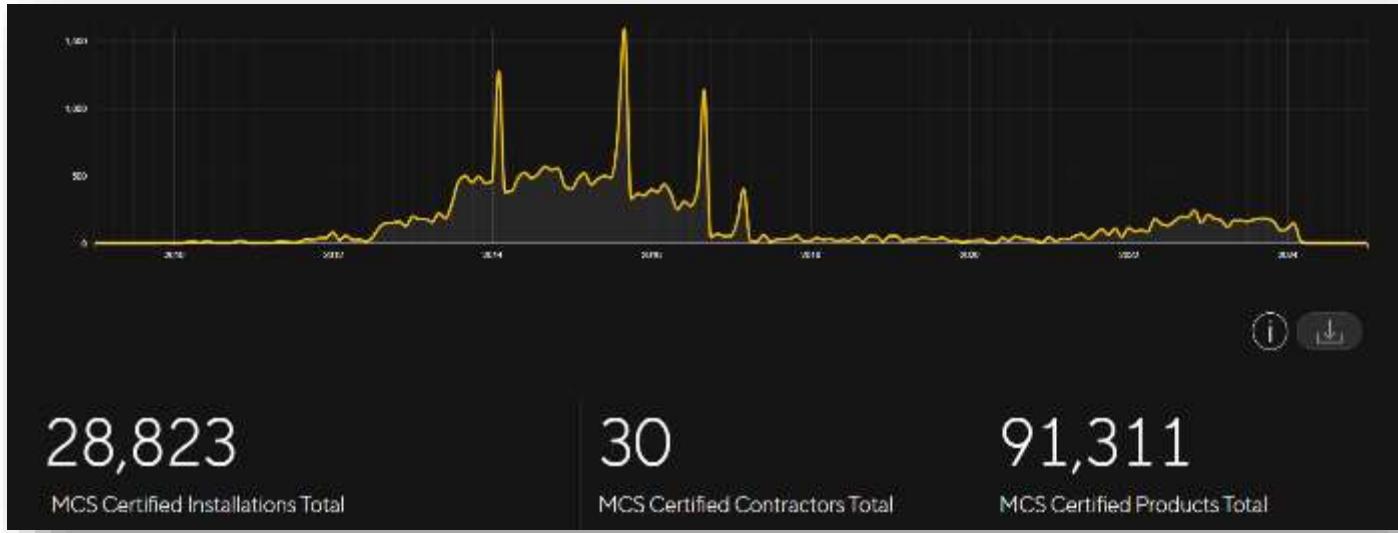
Cumulative number of battery-electric cars in the UK (2019 to date)



Source: SMMT, February 2024

The wave of a new industry – Solar PV

- Since 2009 almost 1.5 million small scale PV systems have been installed in the UK with 29,000 in NI



Electrical energy storage systems - EESS

- Add to this the recent developments in EESS
- This *new* technology helps to join up solar PV, EVs and can provide close to free fuel

“When a man gets on to accumulators or rechargeable batteries his inherent capacity for lying comes out”

Thomas Edison - 1908

Some hints and tips

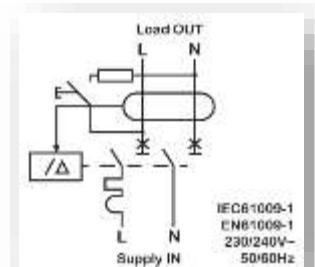
Upselling and awareness

How can you help your customers?

- Working with your customers you can help to keep them informed of changes to requirements, new technology and research
- This is an opportunity for you to work with your customers to share information and upsell
- We are all learning when it comes to renewables – so here are some easy tips

Electric vehicles– upselling and tips

- RCDs – some charge point manufacturers provide ‘digital RCDs’ in their units
- These **do not** comply with the Standards and many now state you need an additional RCD upstream
- It needs to be a specific Type
- And switch all live conductors

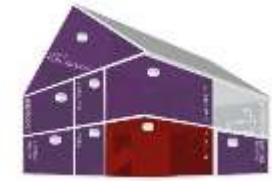


A Hager Type A 2 pole RCD – a compliant and reputable product

Solar PV – upselling and tips

- If installing the inverter in the loft (more on this later) then there must be a suitable smoke alarm system in the loft too*
- Protective devices must be double pole
- And should be capable of dealing with power flowing both ways
- This is known as being bi-directional, many older devices are not capable of this

*See BS 5839-6



Battery storage systems – upselling and tips

- If adding to an existing PV system, inverters have a life span of approx. 10 years so it could be cheaper to replace the existing inverter
- They SHOULD NOT be installed in lofts – if anyone is buying a battery, please make this clear*
- They are a dangerous good and should only be transported by people with appropriate training and insurances

*See PAS 63100:2024

Competence is key

- As with anything, it is vital that designers and installers are competent
- You can help by informing your customer of suitable training courses to ensure that they are up to speed with the latest rules and requirements
- Some may not know what they don't know



An example of a battery being installed in a new loft courtesy of Google Images

Competence is key

- Competence is needed by everyone, including you
- EDA can support you with their online training modules including specific ones on renewables
- Visit www.eda.org.uk for more information



**RENEWABLES
INCLUDING EV CHARGING**

Technical innovation and dwindling fossil fuel supplies are driving cheaper and cleaner energy for homes and businesses. Photovoltaic, wind, geothermal, combined heat and power, energy storage and energy conservation are covered in this module, focusing on the products you sell. And of course, there's a whole chapter dedicated to Electric Vehicles (EV).

"This is an exciting time for electrotechnical engineers. The knowledge acquired through this training means I can help you advise on customers involved in installing renewable generation or purchasing electric vehicles."

Key areas:

- Formation of grids of generation
- Solar photovoltaic
- Geothermal energy storage systems
- Electric vehicles
- Heat pumps
- Wind turbines
- Energy conservation

TEXTBOOK COURSE
ELECTRICAL COURSE

DATA ACCESS

Putting this together

Summing this all up

Summary

- We are on the brink of a new industry
- Your support and work is vital in the electrification of the built environment
- Ensure you understand your customers needs
- Competence is everything, including yours
- Make sure you offer the best service by staying ahead of the ever changing requirements

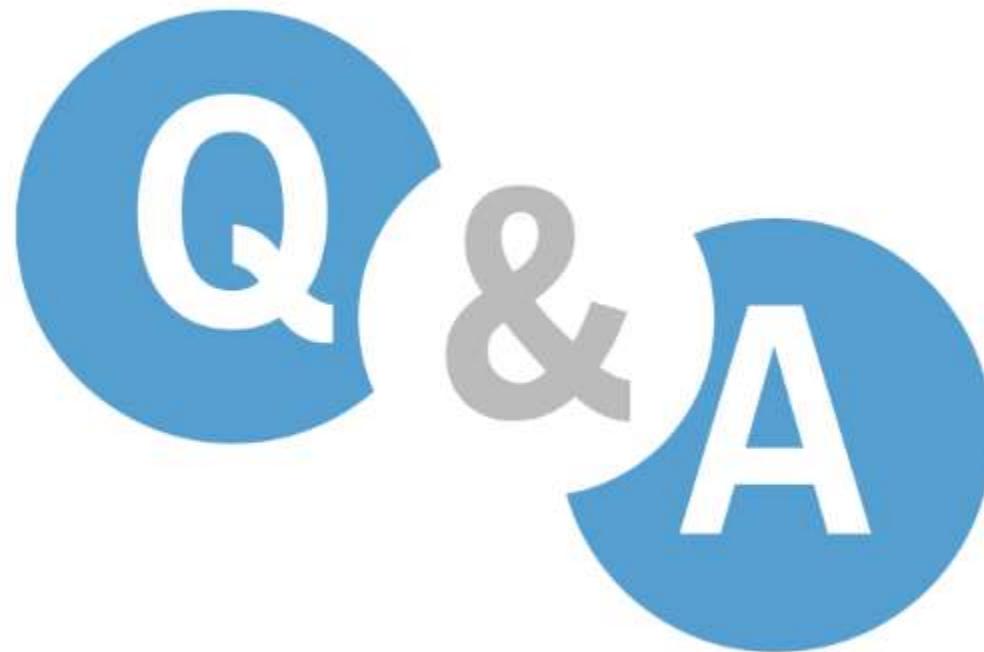
And finally, RenewableNI

- RenewableNI is the voice for the renewables industry in NI
- Their mission is to ensure that NI reaches its net zero requirements
- Their aim is to have clean, zero carbon energy by 2035 and have 80% renewables by 2030
- That is just 6 years!

<https://renewableni.com/>

RenewableNI

Questions?



Links

- <https://pages.bsigroup.com/PAS63100:2024>
- <https://renewableni.com/>
- https://niceic.com/for-the-trades-1/develop-your-skills/training/training-brochure/?gad_source=1&gclid=Cj0KCQjwztOwBhD7ARIsAPDKnkCSx3FC-LjUidaTm7OB4gp6VKgo4t0OxQm36zSDZXmWXY2ID57Z-ZlaAIU-EALw_wcB
- <https://www.eda.org.uk/training-apprenticeships/modules/>