Net Zero
The Journey Continues

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ECA Greater London
Region Conference 2022

Welcome

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ECA Greater London Region Conference 2022

ECA Greater London Region - Chair's Welcome

Adam Smith, NRT Building Services Group Ltd

Thank You to our Supporters

It's ~~Not~~ Easy Being Green – Part 1

Luke Osborne and Darren Crannis

ECA Technical Team

It's ~~not~~ easy being GREEN

How legislation and regulations are guiding the direction of electrical installations

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ECA Technical

Achieving Net Zero Carbon

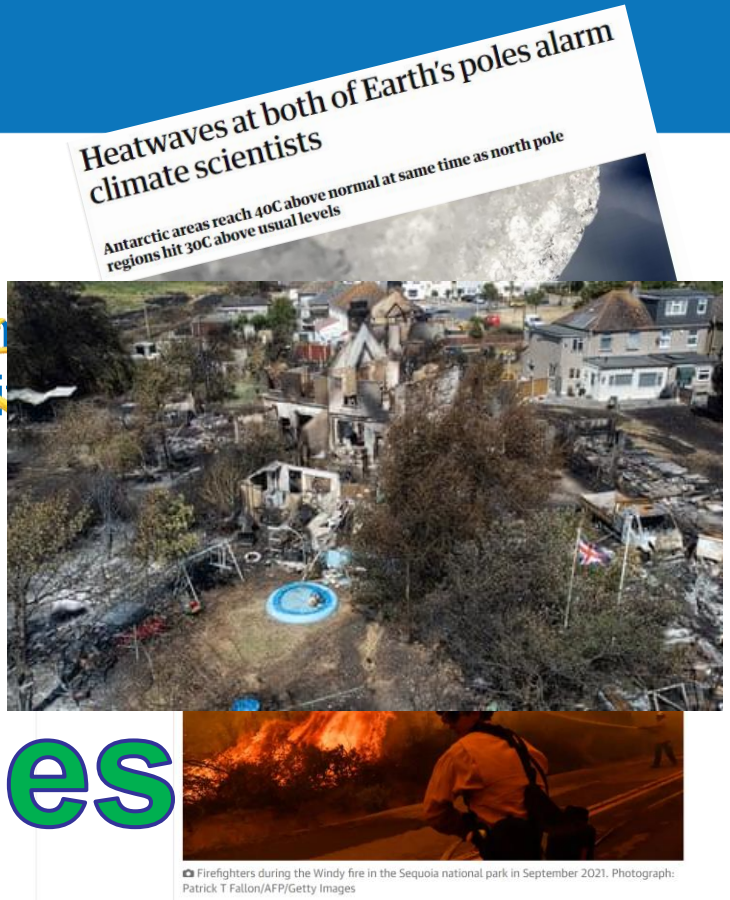
- How many of you have children?
- How many of you have grandchildren?
- How many of you have either of the above, and/ or have nieces, nephews or friends with kids?

YOU HAVE THE POWER TO INFLUENCE THEIR FUTURE

Achieving Net Zero Carbon

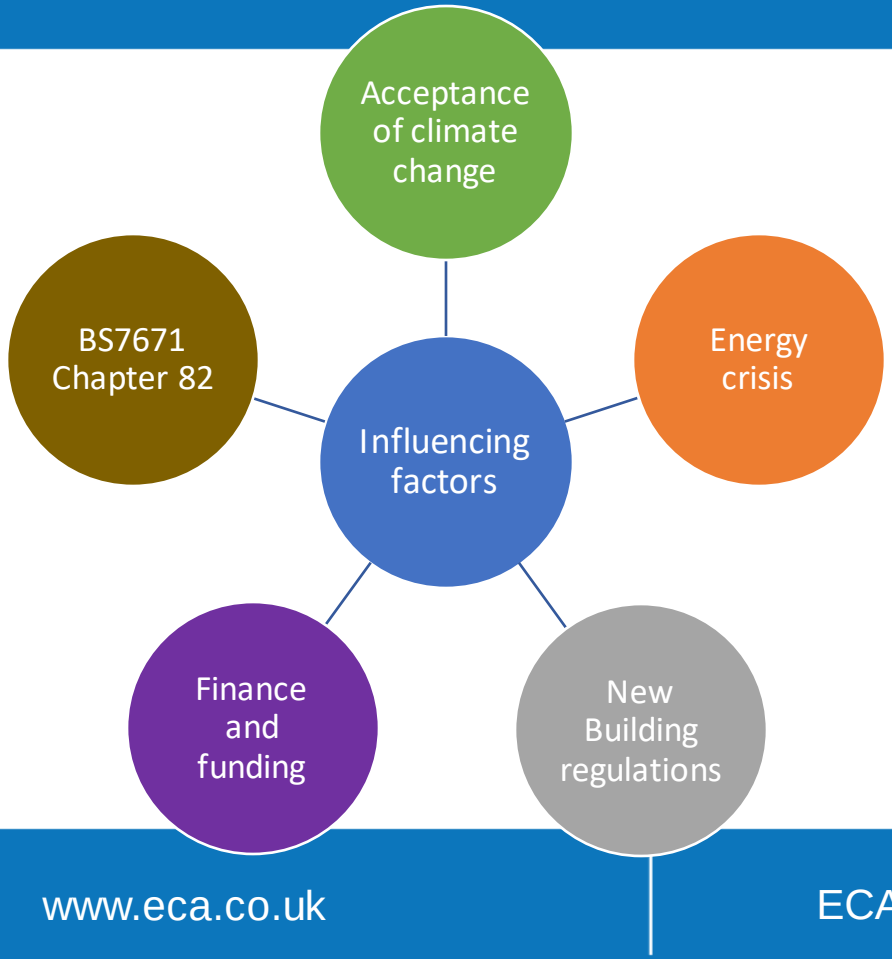
- Climate change is undeniable
- Very short period of time to make the chan needed to mitigate against the severity of i impact
- Decarbonation of transport fully underway
- Now to focus on the built environment

Opportunities



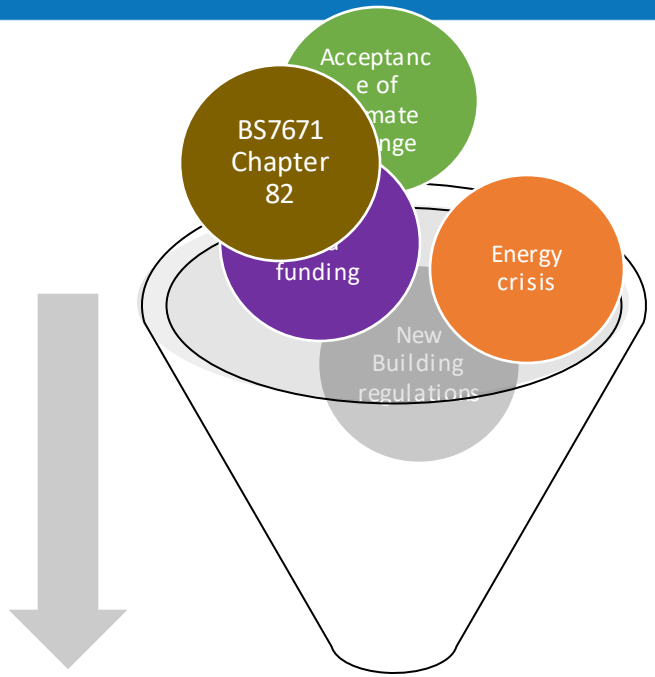
Influencing factors

Perfect conditions for getting it done



Influencing factors

Perfect conditions for getting it done



Demand and delivery

Influencing factors: The Wiring regulations BS7671 origins

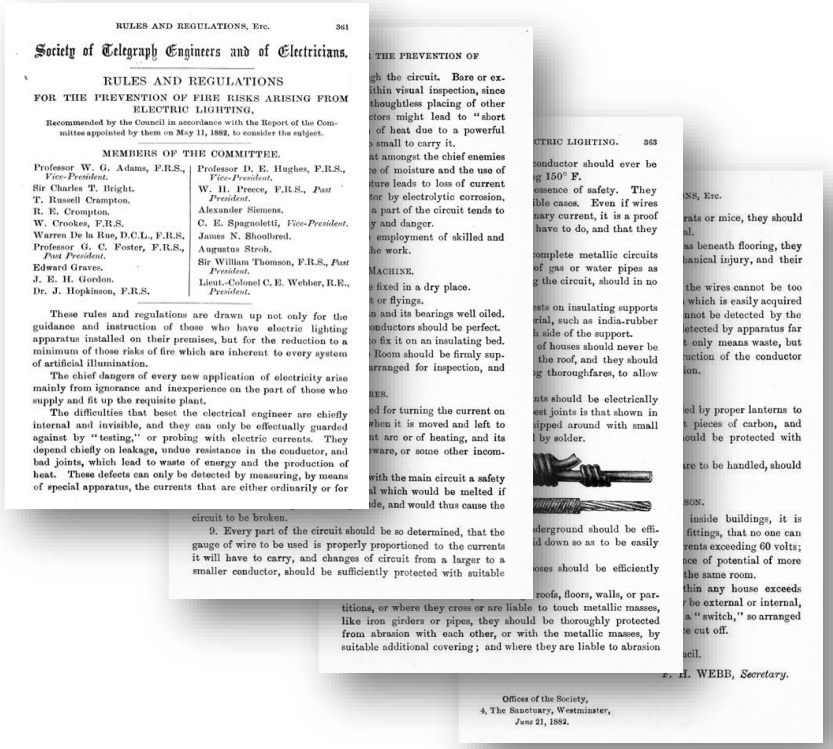
BS7671
Chapter 82

In 1882 the Society of Telegraph Engineers and of Electricians created the *Rules and Regulations for the prevention of fire risks arising from electric lighting*

- This came about after **electric street lighting** started to replace gas lighting

The Wiring Regulations BS7671 origins

- 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
- Technologies, training and apprenticeships changed
- The regulations continue to evolve



RULES AND REGULATIONS, Etc. 361

Society of Telegraph Engineers and of Electricians.

RULES AND REGULATIONS

FOR THE PREVENTION OF FIRE RISKS ARISING FROM ELECTRIC LIGHTING.

Recommended by the Council in accordance with the Report of the Committee appointed by them on May 11, 1882, to consider the subject.

MEMBERS OF THE COMMITTEE.

Professor W. G. Adams, F.R.S., *Vice-President.*
Sir Charles T. Bright.
T. Russell Crampton.
R. E. Crompton.
W. Crookes, F.R.S.
Warren De la Rue, D.C.L., F.R.S.
Professor G. C. Foster, F.R.S., *Past President.*
Edward Graves.
J. E. H. Gordon.
Dr. J. Hopkinson, F.R.S.
Professor D. E. Hughes, F.R.S., *Vice-President.*
W. H. Preece, F.R.S., *Past President.*
Alexander Siemens.
C. E. Spagnoletti, *Vice-President.*
James N. Shoolbred.
Augustus Stroh.
Sir William Thomson, F.R.S., *Past President.*
Lieut.-Colonel C. E. Webber, R.E., *President.*

These rules and regulations are drawn up not only for the guidance and instruction of those who have electric lighting apparatus installed on their premises, but for the reduction to a minimum of those risks of fire which are inherent to every system of artificial illumination.

The chief dangers of every new application of electricity arise mainly from ignorance and inexperience on the part of those who supply and fit up the requisite plant.

The difficulties that beset the electrical engineer are chiefly internal and invisible, and they can only be effectually guarded against by "testing," or probing with electric currents. They depend chiefly on leakage, undue resistance in the conductor, and bad joints, which lead to waste of energy and the production of heat. These defects can only be detected by measuring, by means of special apparatus, the currents that are either ordinarily or for

THE PREVENTION OF

gh the circuit. Bare or ex-
thin visual inspection, since
thoughtless placing of other
tors might lead to "short
of heat due to a powerful
small to carry it.
at amongst the chief enemies
e of moisture and the use of
ture leads to loss of current
tor by electrolytic corrosion,
a part of the circuit tends to
y and danger.
employment of skilled and
he work.

MACHINE.

e fixed in a dry place.
or flyings.
n and its bearings well oiled.
onductors should be perfect.
o fix it on an insulating bed.
Room should be firmly sup-
arranged for inspection, and

HES.

ed for turning the current on
hen it is moved and left to
nt are or of heating, and its
ware, or some other incom-

with the main circuit a safety
al which would be melted if
ide, and would thus cause the

circuit to be broken.

9. Every part of the circuit should be so determined, that the gauge of wire to be used is properly proportioned to the currents it will have to carry, and changes of circuit from a larger to a smaller conductor, should be sufficiently protected with suitable

CTRIC LIGHTING. 363

conductor should ever be
g 150° F.
essence of safety. They
ible cases. Even if wires
nary current, it is a proof
have to do, and that they

complete metallic circuits
of gas or water pipes as
g the circuit, should in no

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rial, such as india-rubber
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of houses should never be
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g thoroughfares, to allow

nts should be electrically
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lipped around with small
by solder.

derground should be effi-
d down so as to be easily

oses should be efficiently

roofs, floors, walls, or par-
titions, or where they cross or are liable to touch metallic masses, like iron girders or pipes, they should be thoroughly protected from abrasion with each other, or with the metallic masses, by suitable additional covering; and where they are liable to abrasion

F. H. WEBB, *Secretary.*

Offices of the Society,
4, The Sanctuary, Westminster,
June 21, 1882.

NS, Etc.

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SON.

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fittings, that no one can
rents exceeding 60 volts;
ce of potential of more
the same room.
thin any house exceeds
be external or internal,
a "switch," so arranged
e cut off.
cil.

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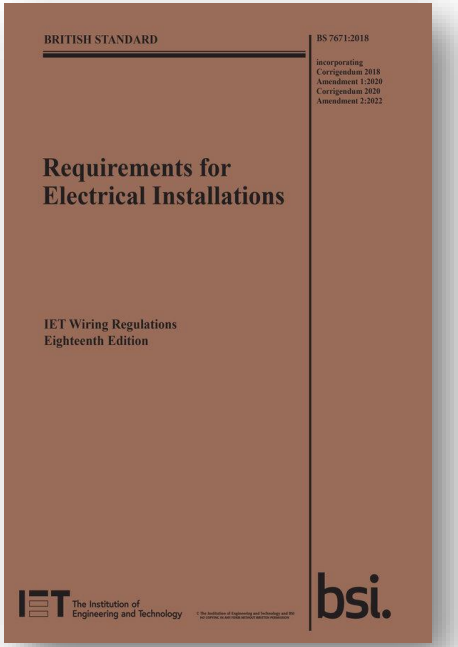
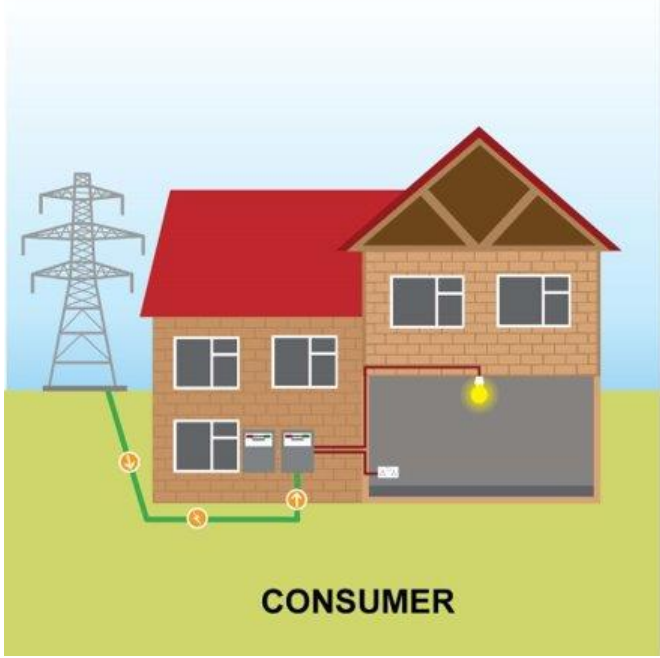
The Wiring Regulations – continuing to adapt

- The Wiring Regulations, or BS 7671, developed into a document more than 500 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 Wiring Regulations – with its new Part 8

- What is a prosumer?
- Well, first we need to consider what is a consumer. That is, electrically, a building that consumes energy
- A prosumer is a building that both consumes and produces energy
- Integration is key!



The Wiring Regulations – with its new Part 8

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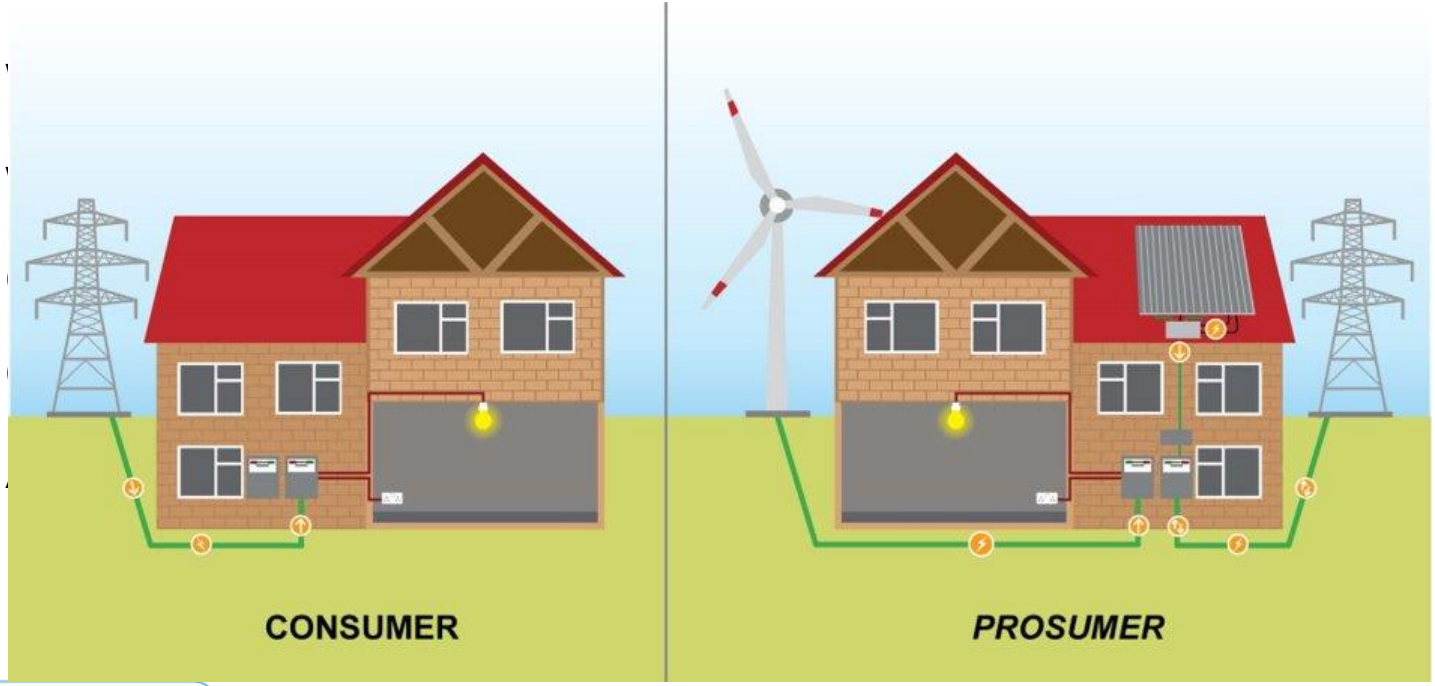


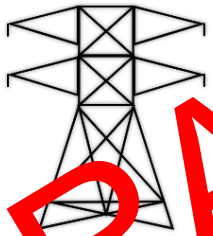
BS 7671 Chapter 82

BS 7671
Chapter 82

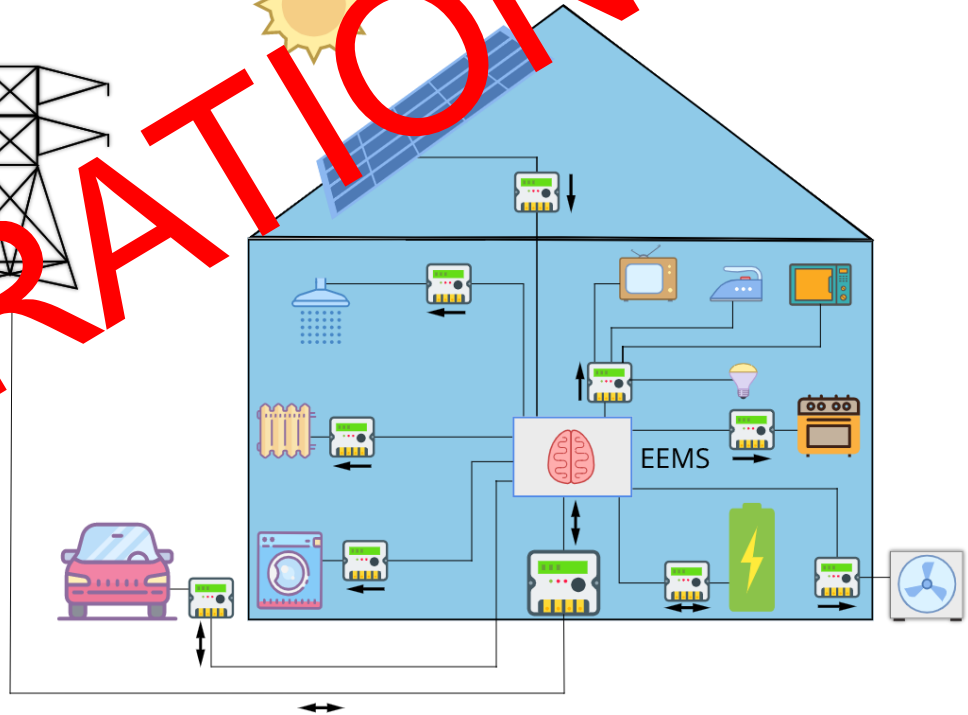
Energy Efficiency

Energy Storage

Onsite generation



The Energy Prosumer



INTEGRATION

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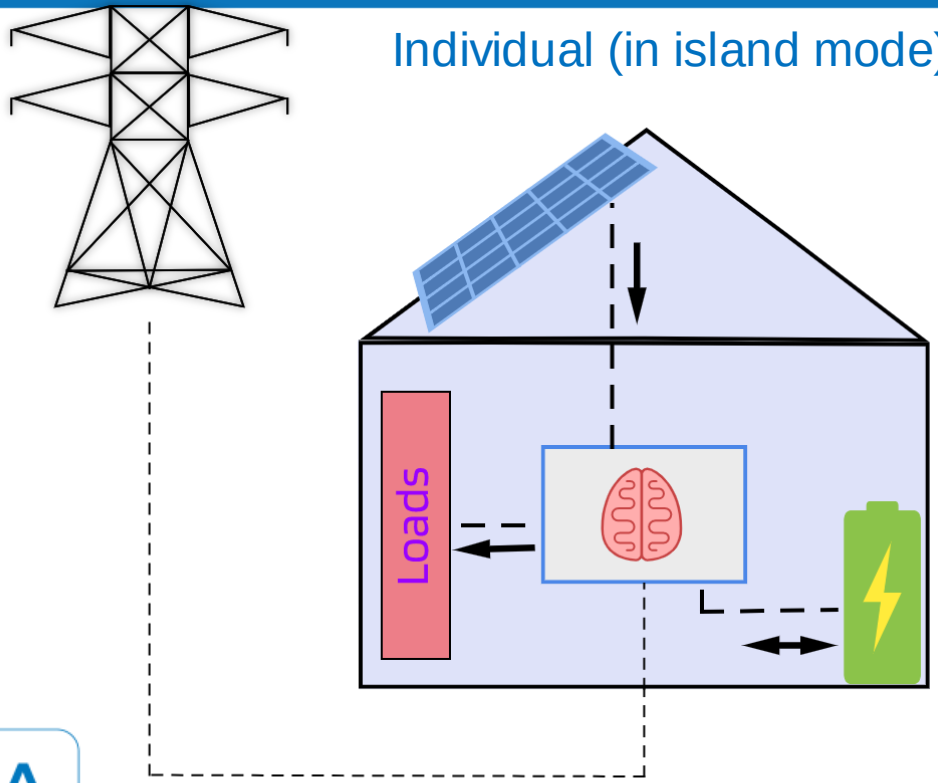
Prosumer configurations and connections

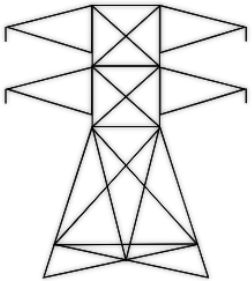
Prosumers Electrical Installations: Individual

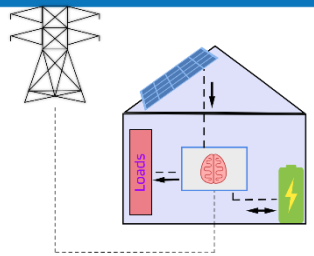
Individual (in island mode)

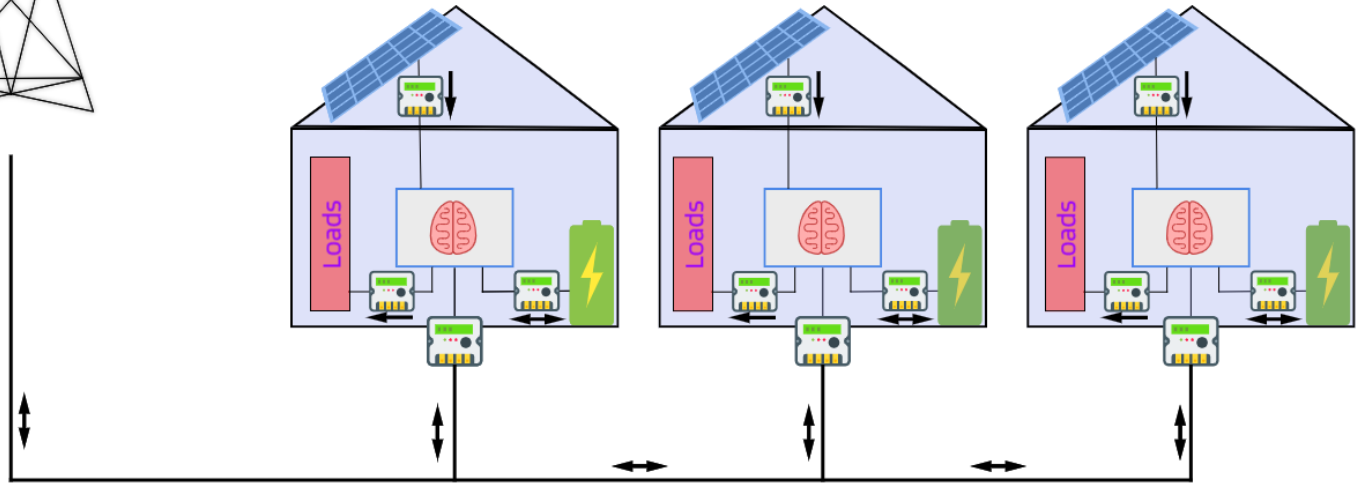


Prosumers Electrical Installations: Shared Assets

Shared Assets

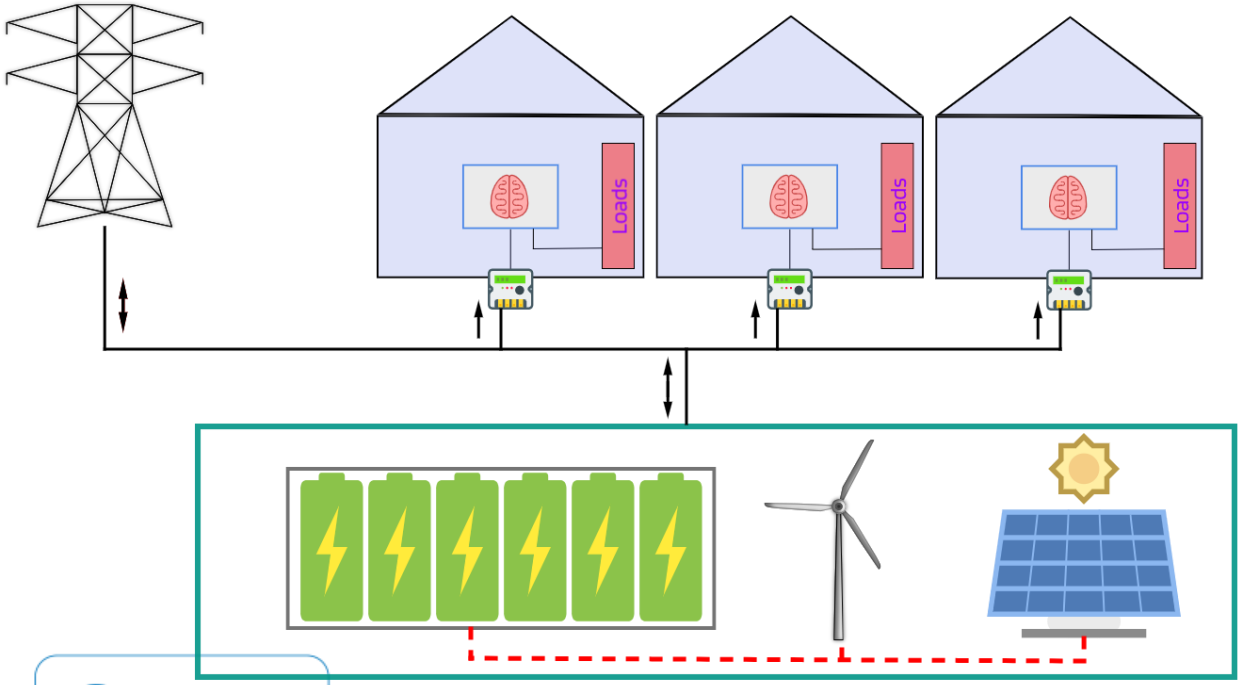


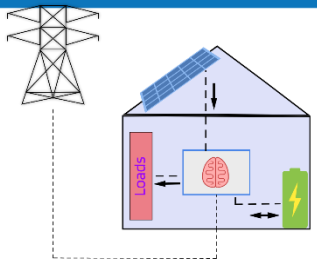


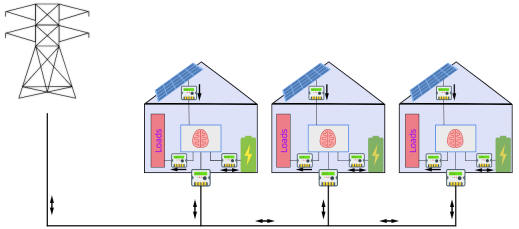


Prosumers Electrical Installations: Shared Assets

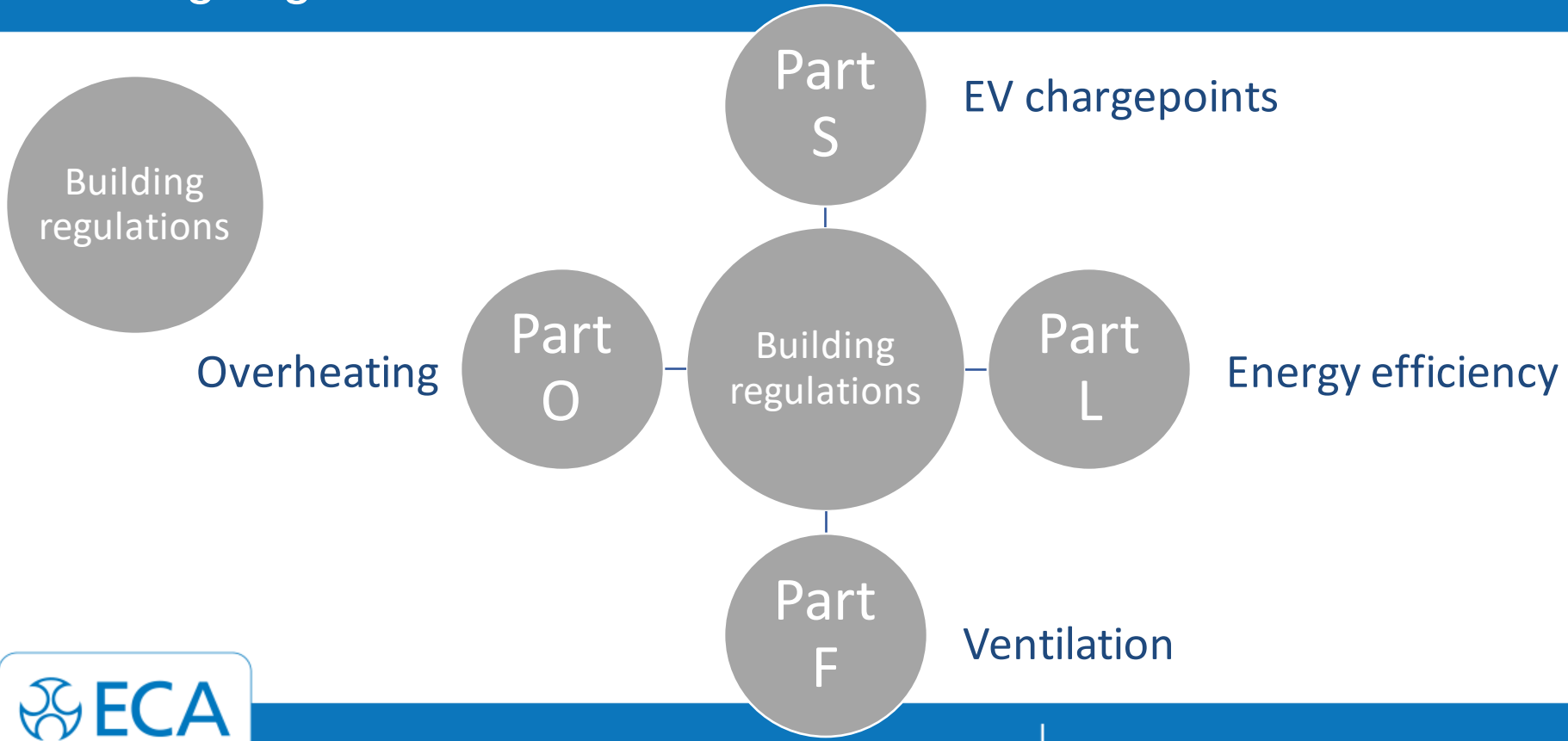
Collective Assets



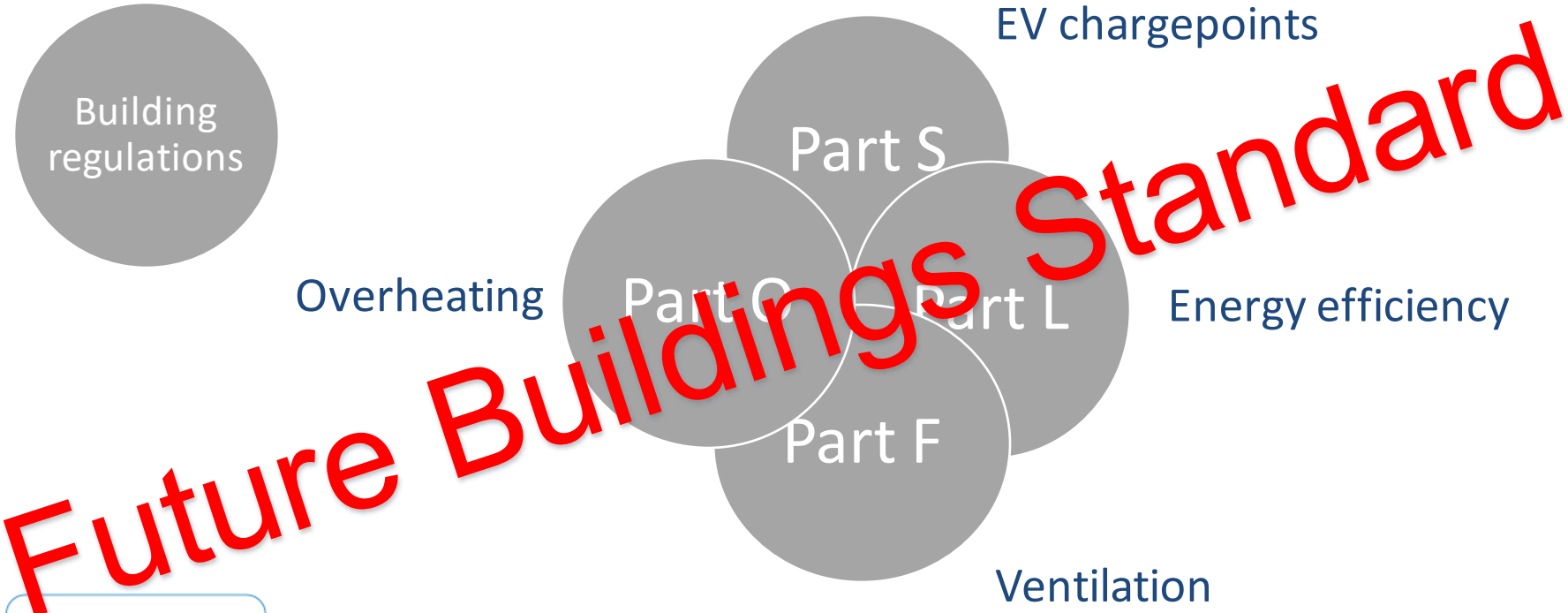




Building regulations



Building regulations



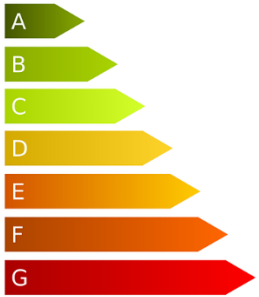
Approved Document L: Conservation of fuel and power

Part L

- 2 Parts:
- Volume 1: **Dwellings**
  - Now favours electrification of heat due to increased renewables in generation (Primary Energy Factor)
    - Not just heatpumps
    - Smart Electrical Storage / Infrared (good for efficient buildings)
  - Heating systems designed for max flow temperature of 55 deg C
    - (Heatpump ready)
  - Require PV systems sized to min 40% ground floor area/6.5
    - (equates to min 4kWp for a 8m x 8m property)

Approved Document L: Conservation of fuel and power

Part L



- Volume 2: Buildings ***other than*** dwellings
  - Adjustment factors favouring automatic **energy monitoring** and **power factor correction**
  - Zoning and sub-division of heating and cooling zones
    - Controls for timing *and* temperature
    - Specific requirements for heating & lighting controls and efficiencies
  - Energy submetering
    - Lighting, heating, cooling (to account for at least **90%** energy use)

Approved Document L: Conservation of fuel and power

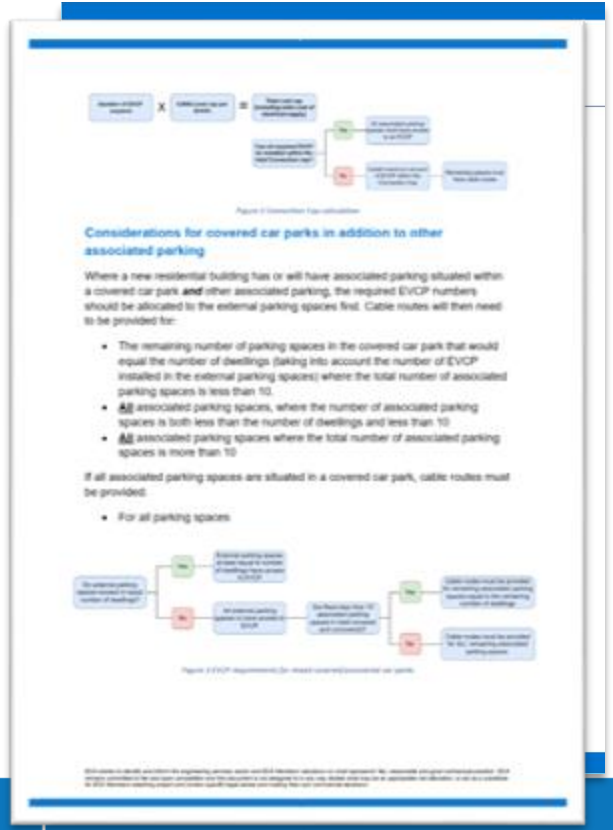
Part L

- Volume 2: Buildings **other than** dwellings (cont)
  - Increased use of **Building Automation Control Systems (BACS)** required (heating / cooling >180kW)
  - Increased **onsite generation** and **storage**
    - Appropriate to site, available grid connection and on-site energy demand
    - All **opportunities** for the electrical contractor

Approved Document S: Infrastructure for charging of EVs

Part S

- Extensive & prescriptive requirements
- Both for:
  - New buildings
  - Buildings and carparks undergoing significant renovations
- Increased requirements for chargepoints and ducting for future additions



Considerations for covered car parks in addition to other associated parking

Where a new residential building has or will have associated parking situated within a covered car park **and** other associated parking, the required EVCP numbers should be allocated to the external parking spaces first. Cable routes will then need to be provided for:

- The remaining number of parking spaces in the covered car park that would equal the number of dwellings (taking into account the number of EVCP installed in the external parking spaces) where the total number of associated parking spaces is less than 10.
- **All** associated parking spaces, where the number of associated parking spaces is both less than the number of dwellings and less than 10
- **All** associated parking spaces where the total number of associated parking spaces is more than 10

If all associated parking spaces are situated in a covered car park, cable routes must be provided:

- For all parking spaces

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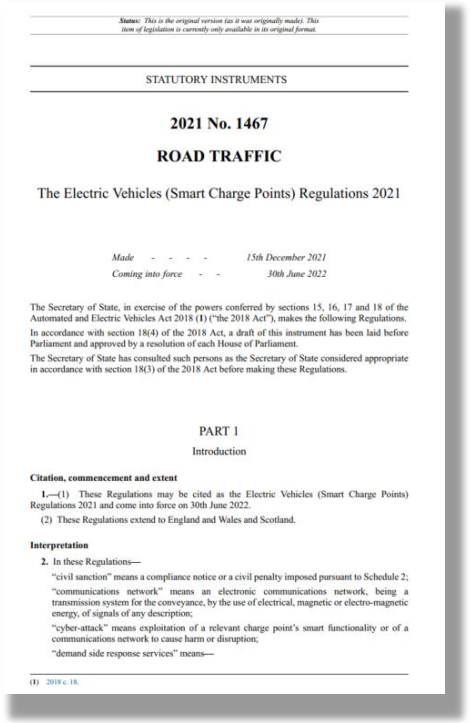
EV Smart Charge Regulations

Part S

BS 7671 Section 722

- Prescriptive requirements for integration with energy flexibility
- Smart controls include:
  - Timed user settings
  - Ability to respond to local DNO signals
  - Cyber-security aspects
- Should be seen as a clear direction for **energy flexibility**
- This is the vanguard of flexibility legislation
  - Likely to be followed by similar for heating and high consumptive loads
- Rigorous powers of enforcement



Status: This is the original version (as it was originally made). This item of legislation is currently only available in its original format.

STATUTORY INSTRUMENTS

2021 No. 1467

ROAD TRAFFIC

The Electric Vehicles (Smart Charge Points) Regulations 2021

Made - - - - 15th December 2021
Coming into force - - 30th June 2022

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 (1) ("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

Citation, commencement and extent

1.—(1) These Regulations may be cited as the Electric Vehicles (Smart Charge Points) Regulations 2021 and come into force on 30th June 2022.

(2) These Regulations extend to England and Wales and Scotland.

Interpretation

2. In these Regulations—

"civil sanction" means a compliance notice or a civil penalty imposed pursuant to Schedule 2;

"communications network" means an electronic communications network, being a transmission system for the conveyance, by the use of electrical, magnetic or electro-magnetic energy, of signals of any description;

"cyber-attack" means exploitation of a relevant charge point's smart functionality or of a communications network to cause harm or disruption;

"demand side response services" means—

(1) 2018 c. 18.

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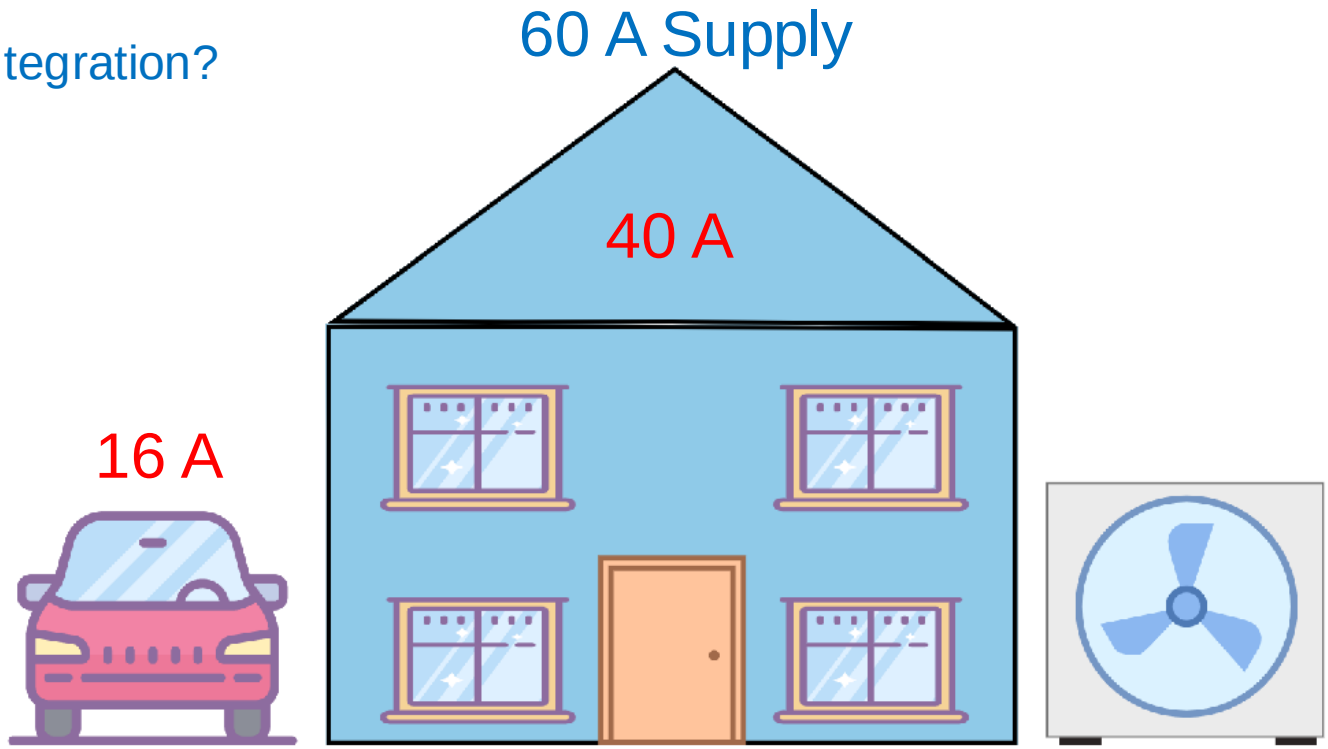
Why do we need integration?

- Load control and robust load management
- Real time visibility
- Interaction within the building
- Interaction within the grid

Domestic scenario load control

Why do we need integration?

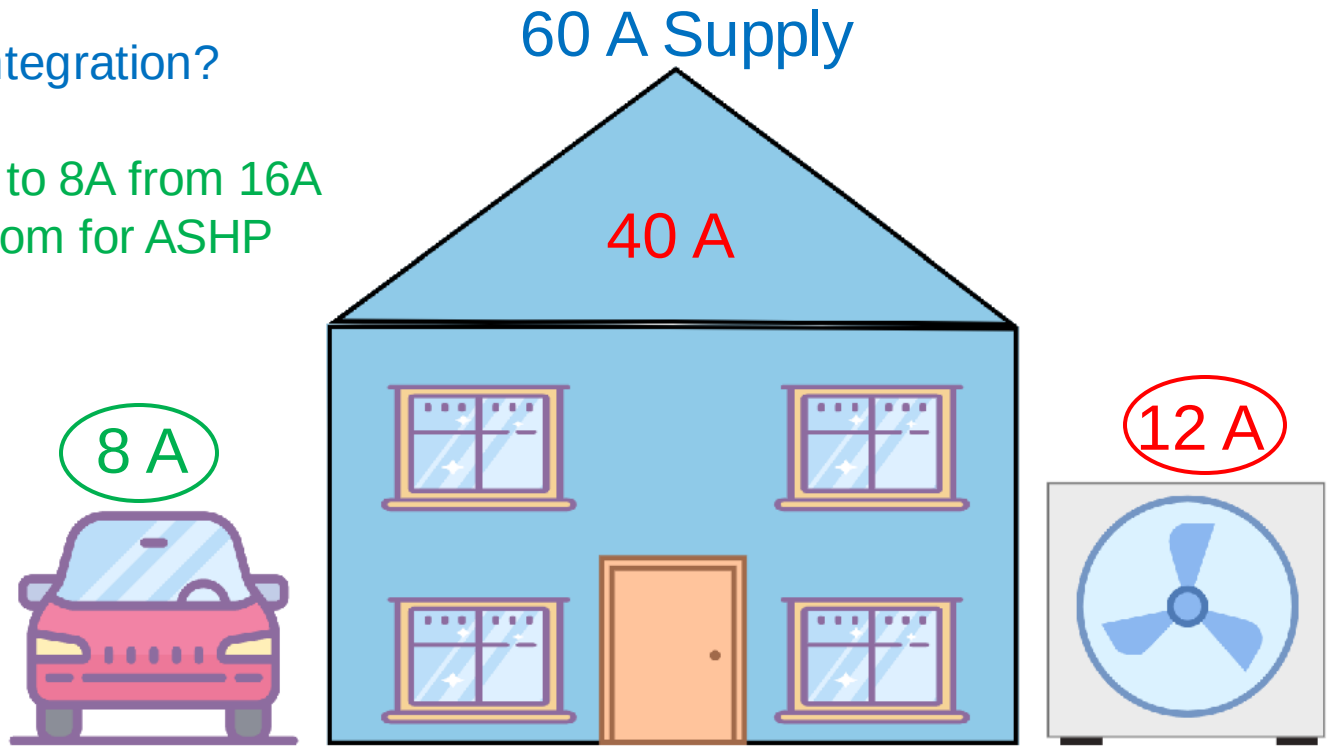
- Load control



Domestic scenario load control

Why do we need integration?

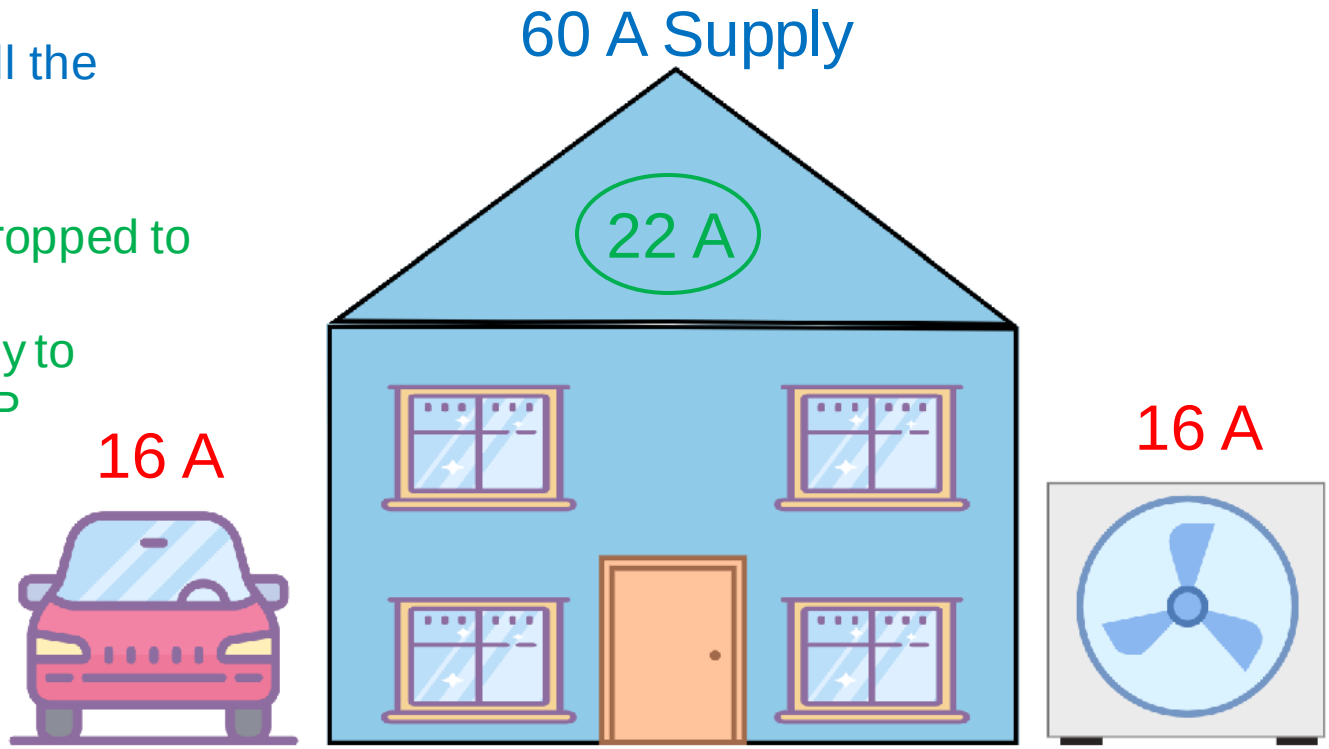
- Load control
- EVCP- dropped to 8A from 16A
- Allowing headroom for ASHP



Domestic scenario load control

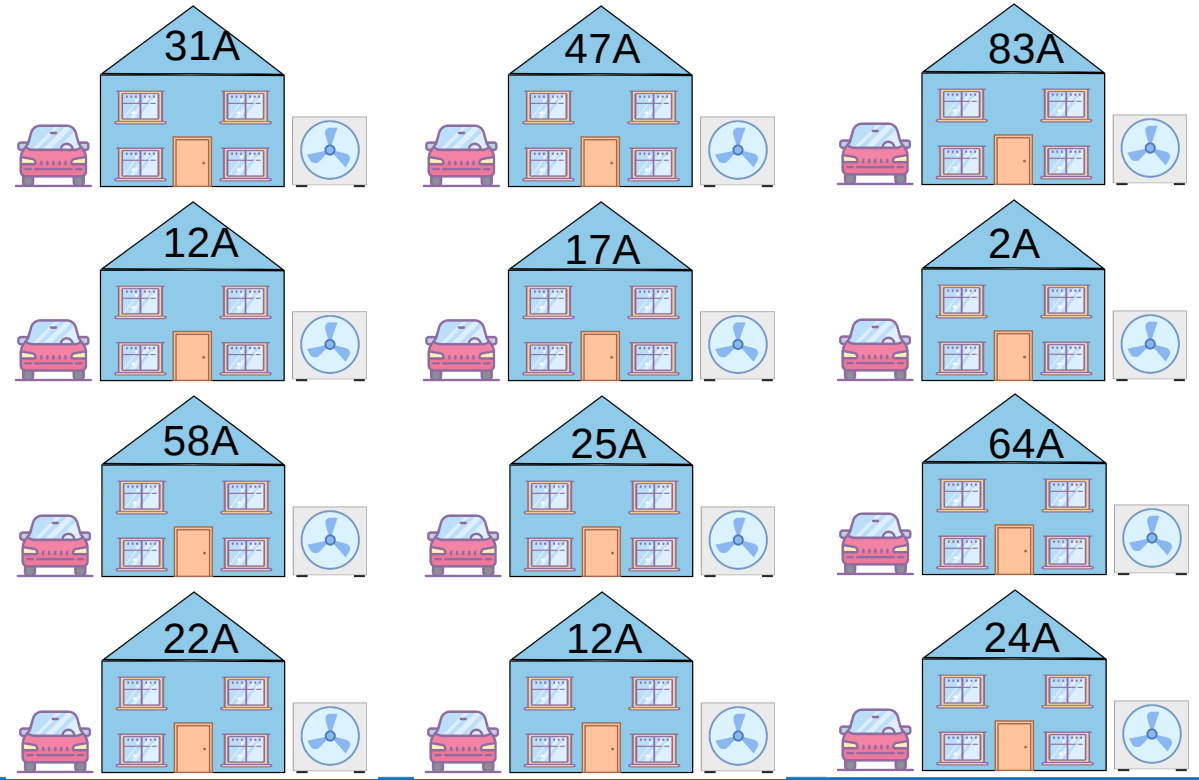
Why do we need all the metering?

- Load control
- Building load- dropped to 22A from 40A
- Allows full supply to ASHP and EVCP



Domestic scenario load control

- Energy pinch points may not just be at the building level
- Multiple (most) buildings will need to be in the mix
- PAS 1878 / 1879 developed to provide common communication protocol



The role of the GREEN electrician

Heating controls

BEMS

Electric vehicles

Solar PV

BACS

Power quality

Battery storage systems

Heat pumps

Wind farms

PoE

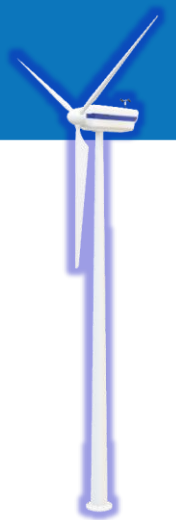
Electric railways

Smart metering

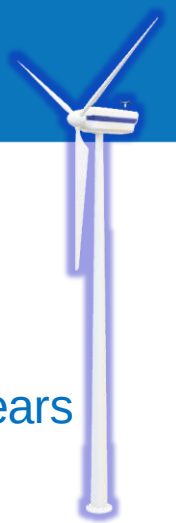
Data

Electric heating

MVHR systems



The role of the GREEN electrician



Electric vehicles

Heating controls

BACS

Battery storage systems

BEMS

Solar PV

Power quality

Electric railways

Data

Wind farms

Electric heating

MVHR systems

Heat pumps

Smart metering

PoE

- These are all new areas for your business
- Much like those pioneering contractors 100+ years ago
- Why would you stick to just **electric street lighting**?
- These are all opportunities

INTEGRATION

Questions?

Coffee and Networking

Please return at 12 Noon

It’s ~~Not~~ Easy Being Green – Part 2

Luke Osborne and Darren Crannis

ECA Technical Team

It's ~~not~~ easy being GREEN

Practical applications

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Energy Efficiency- Lighting

- Low hanging fruit
- Often assumed that this has already been tackled….
  - Often this isn't the case
- Opportunities with manufacturers
  - Profile customers
  - Produce detailed designs and payback calculations
  - Comply with BS 5266 (Emergency lighting)

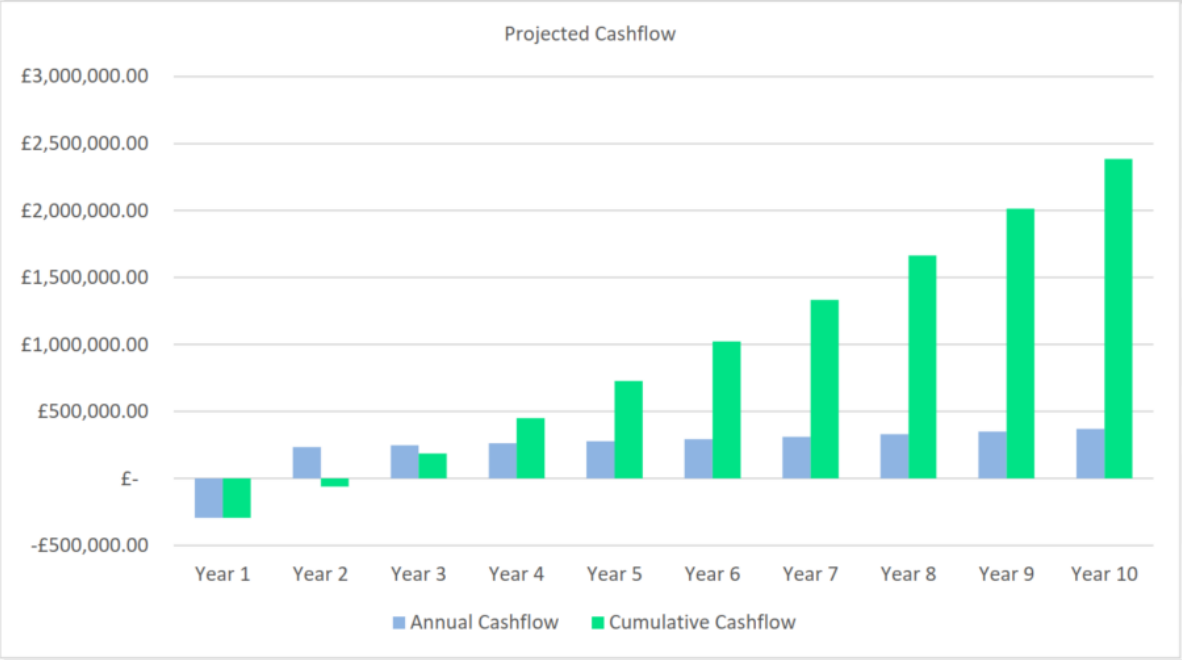
Energy Efficiency- Lighting Typical Warehouse

Summary of benefits		
Annual operating costs Including estimated Maintenance cost (averaged over a over 10 yr period)	Annual NEW costs Including estimated Maintenance cost (averaged over a over 10 yr period)	Average **Annual** energy and maintenance cost savings with New Lighting
£419,640.40	**£129,725.31**	**£289,915.10**
	30% Controls Savings Applied	

Luminaire Cost	Installation and Prof Services Cost	Project Investment	Total Estimated Savings over the 10 year period
£305,144.05	**£209,226.00**	**£514,370.05**	**£2,871,716.67**
	Estimated Price, customer to confirm		
	(Client capital investment)		(Based on agreed assumptions)

Energy Efficiency- Lighting Typical Warehouse

Cashflow Forecast



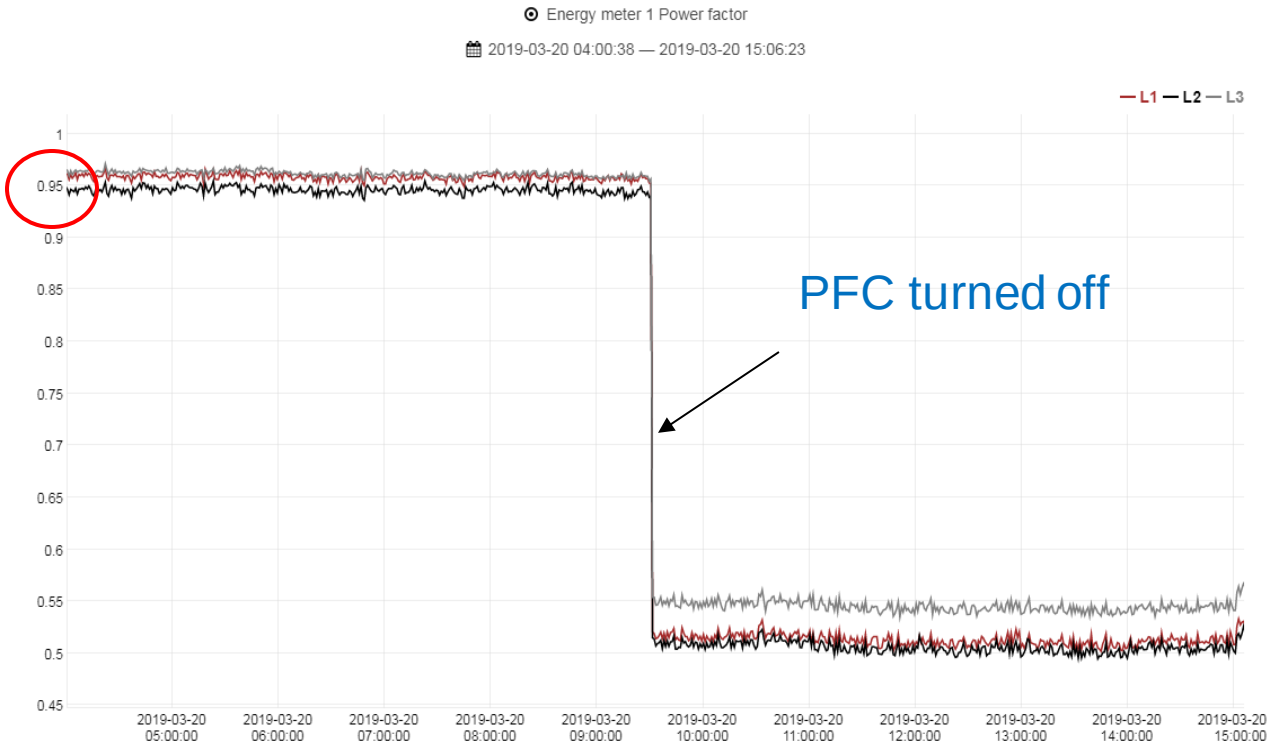
Annual Climate Change Levy saving (Ave)
£2,743.43
Load before upgrade (kW)
177.89 kW
Load after upgrade (kW)
55.74 kW
Power (Load) Reduction
122.15 kW

10 year total cost of ownership
(Based on 6% energy cost increase per annum)

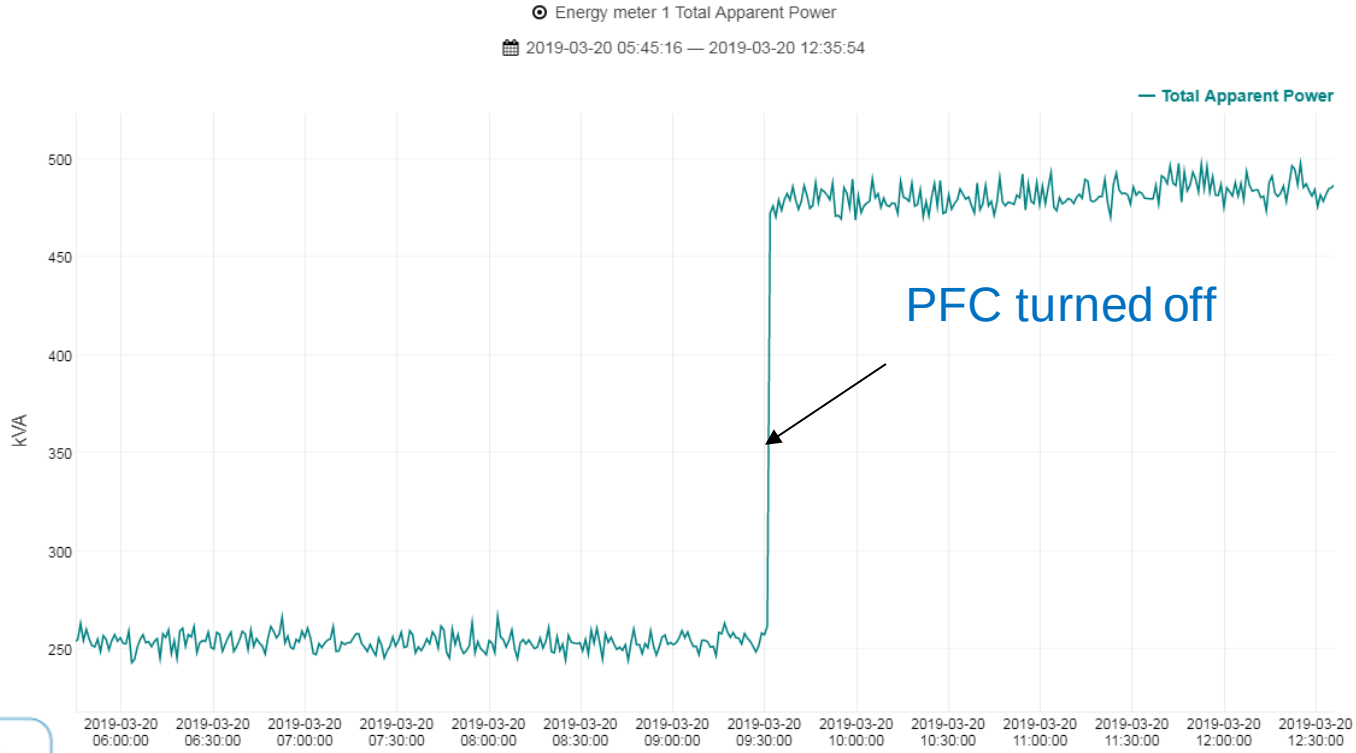
Energy Efficiency- Power Factor Correction

- Degree of electrical efficiency
- Lagging PF: when the current lags the voltage
- Leading PF: when the current leads the voltage
- Lag – power factor too low – Hi Inductance
- Lead – too much capacitance

Energy Efficiency- Power Factor Correction



Energy Efficiency- Power Factor Correction



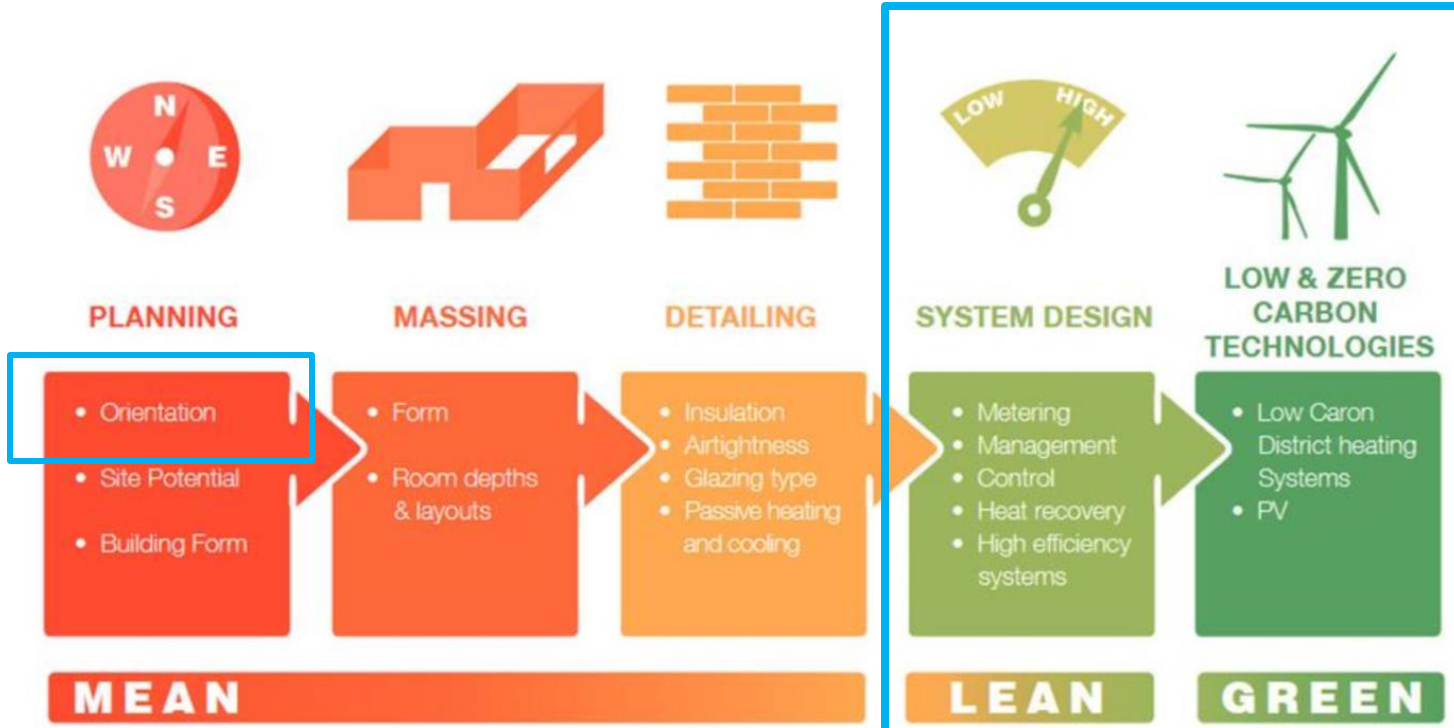
Energy Efficiency- Power Factor Correction

- Reduction KW/h Losses
- Reduction in Capacity / Demand
- Removal of Reactive Surcharges
- Reduced Maintenance Costs
- PFC required in Building Regulations Part L Volume 2
- Leading tyre manufacturer pay-back = 6 months

Full commercial projects NOMA 2&3 Angel Square

Passive Design Approach

Essential for solar thermal gains / PV generation →



11 & 12 Wellington Place

4 Air Source Heat Pumps
Heating and cooling provided by highly efficient reversible heat pumps, removing the requirement for gas into the building.

2 Photovoltaic Panels (PV)
Harvesting renewable energy from the sun to supplement building energy use.

3 High Efficient Ventilation Systems
High efficiency air handling units and demand control ventilation (VAV control).

6 Triple Glazed Façade
Provides high levels of thermal insulation, minimising heat loss through glazing.

7 Improved Fabric
Highly efficient curtain walling with a target air permeability of 2m³/h m² @50Pa.

1 Advanced Controls & Analytics
Advanced controls and analytics driving low energy use.

> *"11 & 12 Wellington Place is the first in a set of developments at the scheme set to revolutionise sustainable construction while always keeping social responsibility at their heart."*
>
> ***Paul Pavia***
> *Commercial Director, MEPC*

P

5 Electrical Vehicle (EV) Charging
10% of spaces incorporate EV. Infrastructure for an additional 10% of spaces.

Project Summary

5*	2 star	407 tonnes
NABERS rating targeted	*Fitwell rating targeted*	*of carbon forecast to be saved annually*

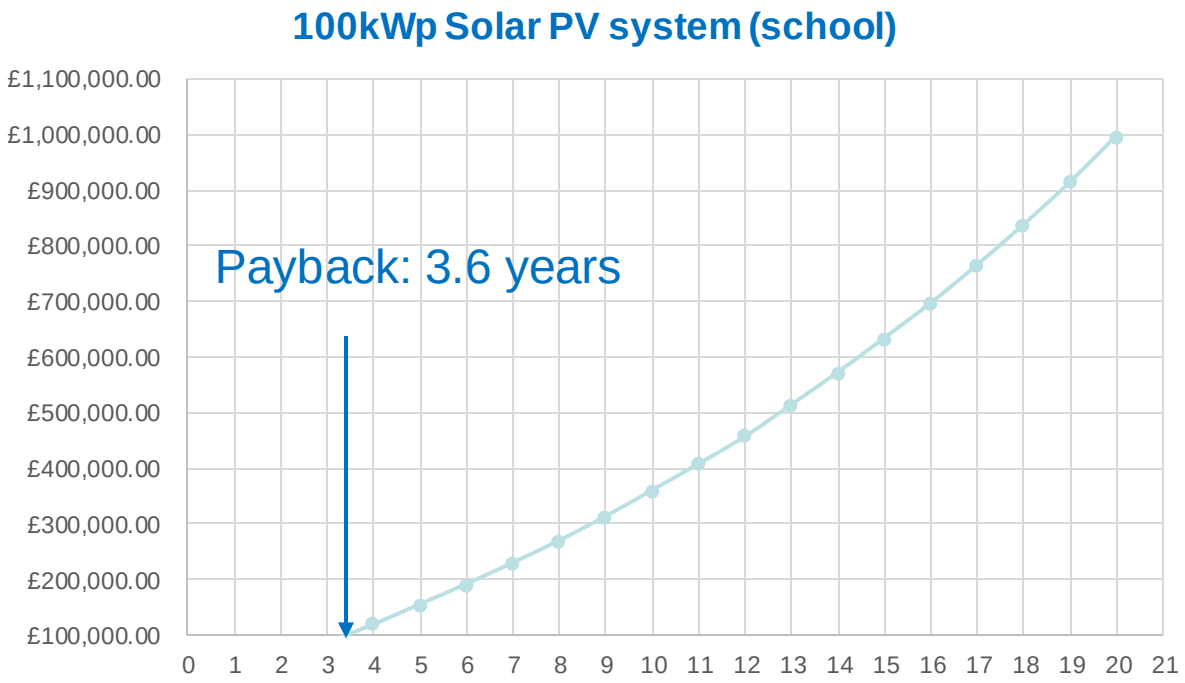
PV and Battery Storage

- PV is an established technology
- Electrical Energy Storage Systems (batteries) complementary technology
- Facilitates increased use of generated energy
- IET Code of Practice and industry training available

PV Case study: Conservative school case 100kWp

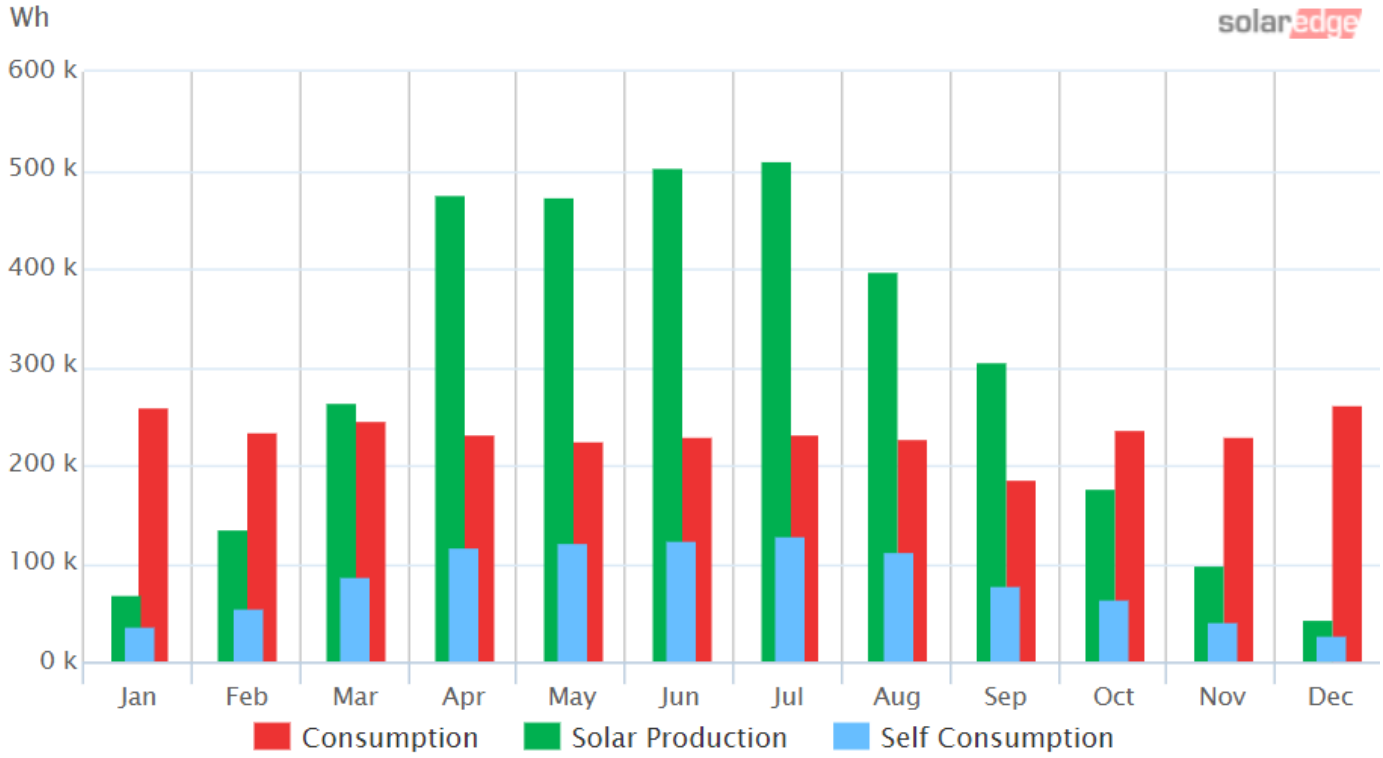
Assumptions

- 0.38 ppkW import cost
- £1000 per kWp installed
- Consumed estimate: 60%
- SEG: 7.5ppkWh
- **Annual return 27.8%**
- **38,580 tonnes CO2 offset**



Data is your friend- Domestic Use case 4kWp system

- Annual profile
- Should a Battery be added?

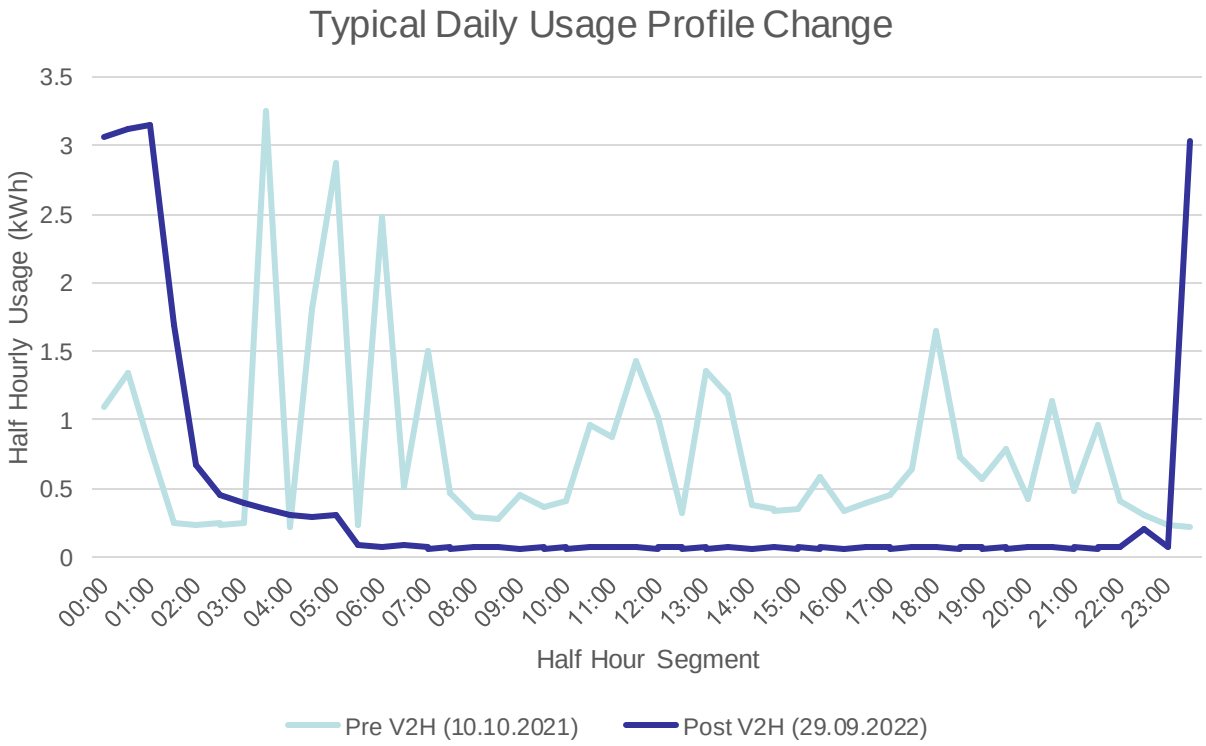


Monitoring

- From March to September a battery system would have negated most of the imported electricity charges
  - (except standing charges…we're working on that!)

Other use cases for Battery storage systems

- Not just with PV
- Time-of-use tariffs and load shifting being trialled and pushed by energy suppliers
- Significant benefits for user (and the network)
- Example from ECA member from V2G trial



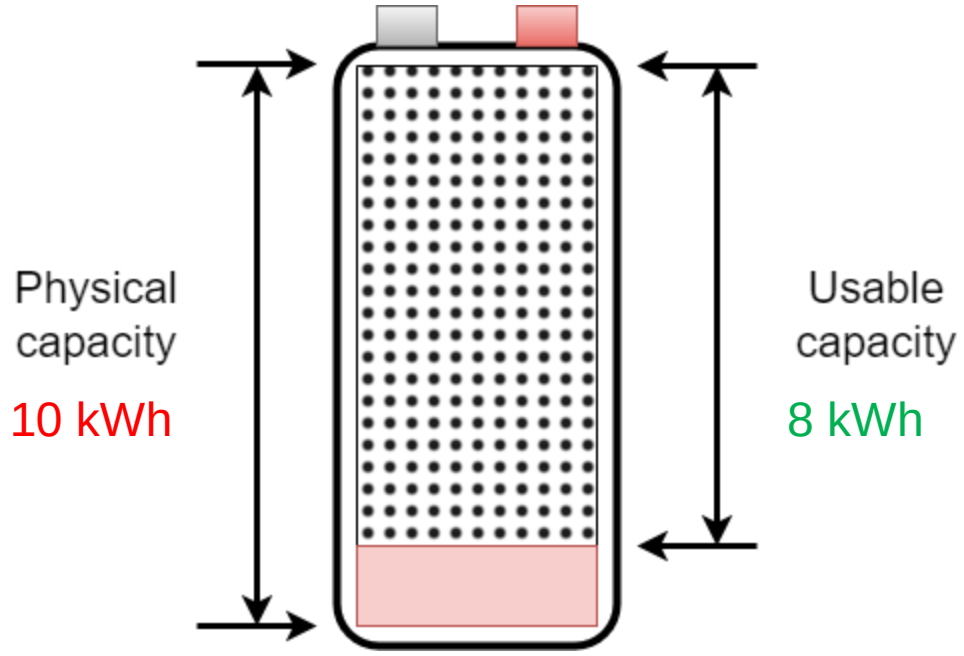
Understanding the marketing

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

Thomas Alva Edison- 1908

Understanding the marketing- Batteries

- Usable capacity
- **Stated** capacity may not be what you think
- 10kWh Battery
- Could contain 8kWh of usable power
- Know your product
  - The end user will expect the ‘available power’



Understanding the marketing- C rate

Example:

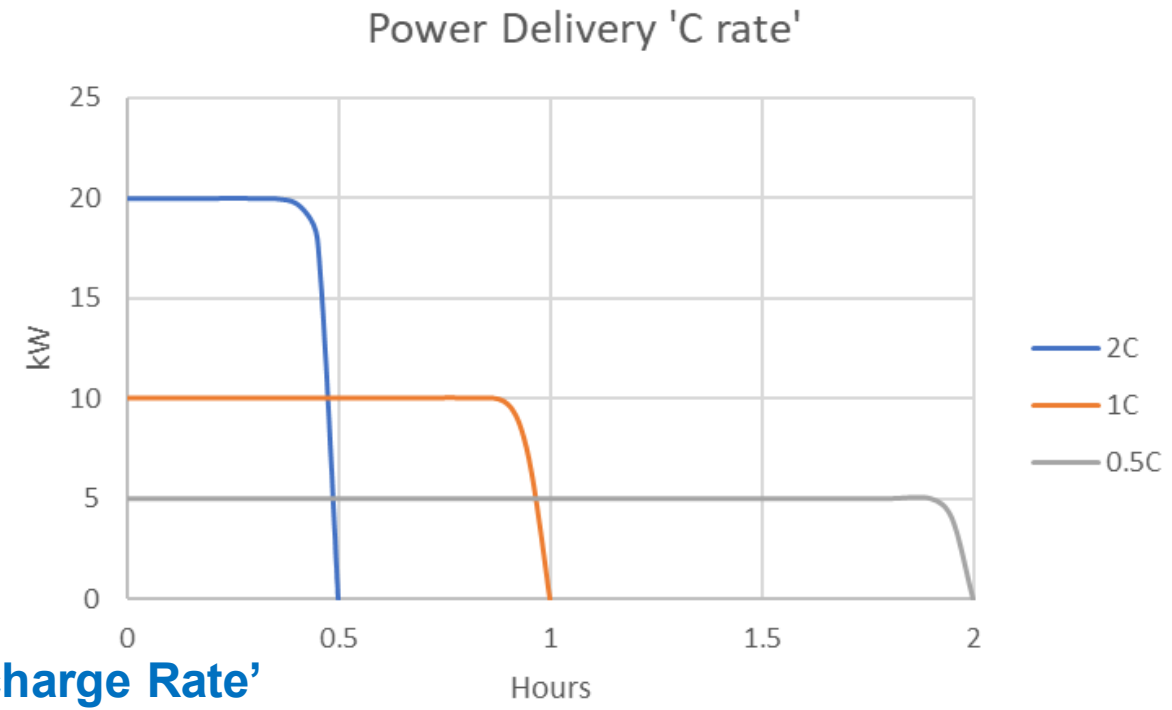
10kWh Battery

Deliverable power:

- 1C: 10kW for 1 hour
- 2C: 20kW for 30 minutes
- 0.5C: 5kW for 2 hours

Also described as:

‘Maximum Continuous Discharge Rate’



Low cost energy storage and use

- Why export power at 7.5ppkWh and buy it back at 38ppkWh?
- Use immersion ‘diverters’ for hot water cylinder
- Consider point of use water heater
- Encourage user behaviour changes
  - Use washing machine, dishwasher, cookers etc during times of generation
  - Charge EV (using smart EV chargepoint)

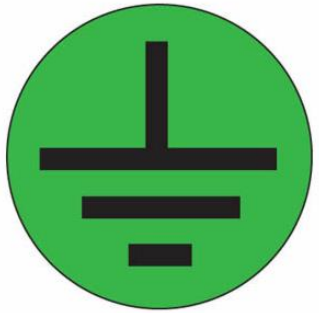
Notifications and considerations

Importance of notifications- network visibility!

- Success of the system relies on connectivity and transparency
- Heatpumps, EVCP, On-site generation and EESS **must be notified** to DNOs
  - G98, G99/G100 for generation or storage
  - ENA or DNO specific portal for EVCP and HP
    - If total demand is <13.8 kVA per phase- install and notify within 28 days
    - If total demand is >13.8 kVA per phase- must apply to connect
      - (also if there are concerns with the supply equipment)
- Companies such as EV-Comply simplify the process for you

Considerations: Local Earthing - ‘Can I run off grid?’

- **Island Mode**
- When running a building from an alternative energy source- the earthing arrangements from the DNO cannot be **relied** upon for protection by automatic disconnection of supply (551.4.3.2.1)
- **Additional earthing** arrangements need to be provided:
  - Earth electrodes, earth mat or foundation earthing
  - To protect against an instance of open-PEN
    - (a combined neutral and earthing conductor feeding the property)
  - All live conductors must be disconnected from the DNO supply
  - The earthing from the DNO **doesn’t need to be disconnected** but the additional earthing is required.



Considerations: Local Earthing - ‘Can

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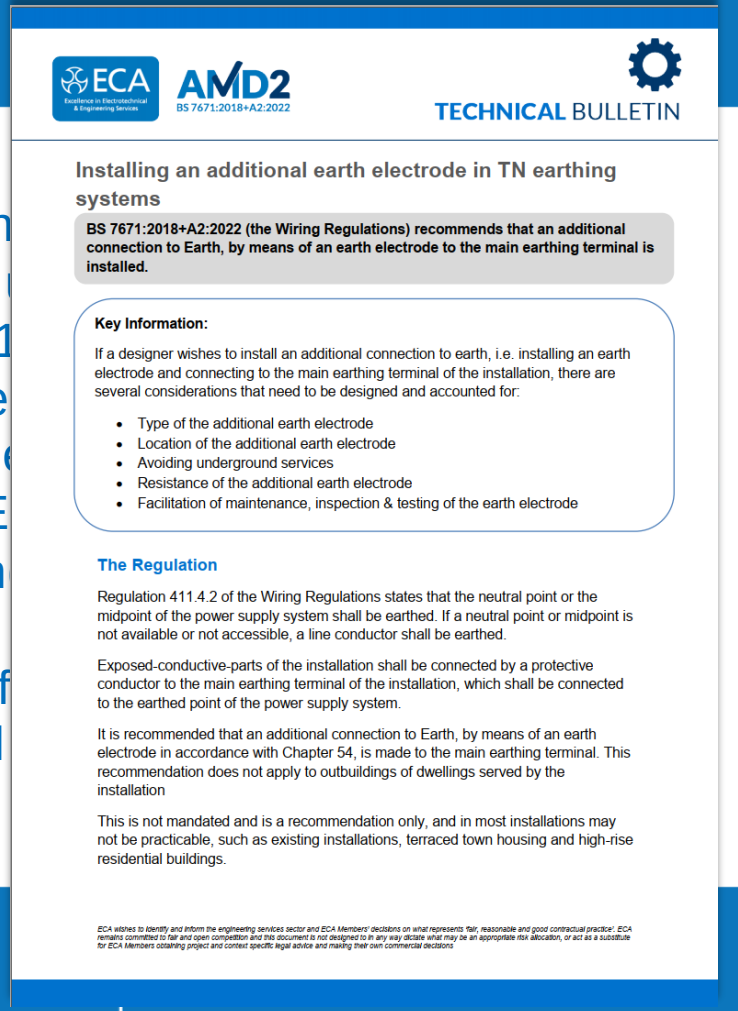


ECA AMD2 BS 7671:2018+A2:2022

TECHNICAL BULLETIN

Installing an additional earth electrode in TN earthing systems

BS 7671:2018+A2:2022 (the Wiring Regulations) recommends that an additional connection to Earth, by means of an earth electrode to the main earthing terminal is installed.

Key Information:

If a designer wishes to install an additional connection to earth, i.e. installing an earth electrode and connecting to the main earthing terminal of the installation, there are several considerations that need to be designed and accounted for:

- Type of the additional earth electrode
- Location of the additional earth electrode
- Avoiding underground services
- Resistance of the additional earth electrode
- Facilitation of maintenance, inspection & testing of the earth electrode

The Regulation

Regulation 411.4.2 of the Wiring Regulations states that the neutral point or the midpoint of the power supply system shall be earthed. If a neutral point or midpoint is not available or not accessible, a line conductor shall be earthed.

Exposed-conductive-parts of the installation shall be connected by a protective conductor to the main earthing terminal of the installation, which shall be connected to the earthed point of the power supply system.

It is recommended that an additional connection to Earth, by means of an earth electrode in accordance with Chapter 54, is made to the main earthing terminal. This recommendation does not apply to outbuildings of dwellings served by the installation

This is not mandated and is a recommendation only, and in most installations may not be practicable, such as existing installations, terraced town housing and high-rise residential buildings.

ECA wishes to identify and inform the engineering services sector and ECA Members' decisions on what represents 'fair, reasonable and good contractual practice'. ECA remains committed to fair and open competition and this document is not designed to in any way dictate what may be an appropriate risk allocation, or act as a substitute for ECA Members obtaining project and context specific legal advice and making their own commercial decisions

A lot of information

- We have extensive guidance on the topics discussed
- The PDF accompanying this presentation has hyperlinks to the relevant guidance notes
- Technical Team are here to assist

Questions?

ECA documents

Note: Log in to the ECA website to access the following documents:

- The Green Pivot: Low-carbon and energy saving opportunities for the electrical contractor
- ECA Guide: Chapter 82: The Energy Prosumer
- 712 Solar Photovoltaic (PV) power supply systems
- ECA guide to 2021 Building Regulations Approved Documents
- ECA guide to Building Regulations Approved Document S
- ECA TB Electric Vehicle (Smart Charge Points) Regulations 2021
- ECA TB Changes to Domestic Low-Carbon Heating Funding (BUS)
- Installing an additional earth electrode in TN earthing systems
- Energy saving checklist- Members
- Energy saving and carbon reduction- customer checklist
- ECA guide to Power Factor Correction
- ECA & UKPN EVCP connection process guide
- EV chargepoint Installations and risk assessments
- When is TN-C-S PME and when isn't it?

Journey to Net Zero

Joe Mee, Regional Director - London
Edmundsons

JOURNEY TO NET ZERO

JOE MEE

REGIONAL DIRECTOR - LONDON

ECA
Excellence in Electrotechnical & Engineering Services

GREATER LONDON REGION ANNUAL CONFERENCE 2022

TOWER OF LONDON

EDMUNDSON ELECTRICAL

EDMUNDSON ELECTRICAL

ELECTRIC CENTER

EDMUNDSON ELECTRICAL CABLETECH

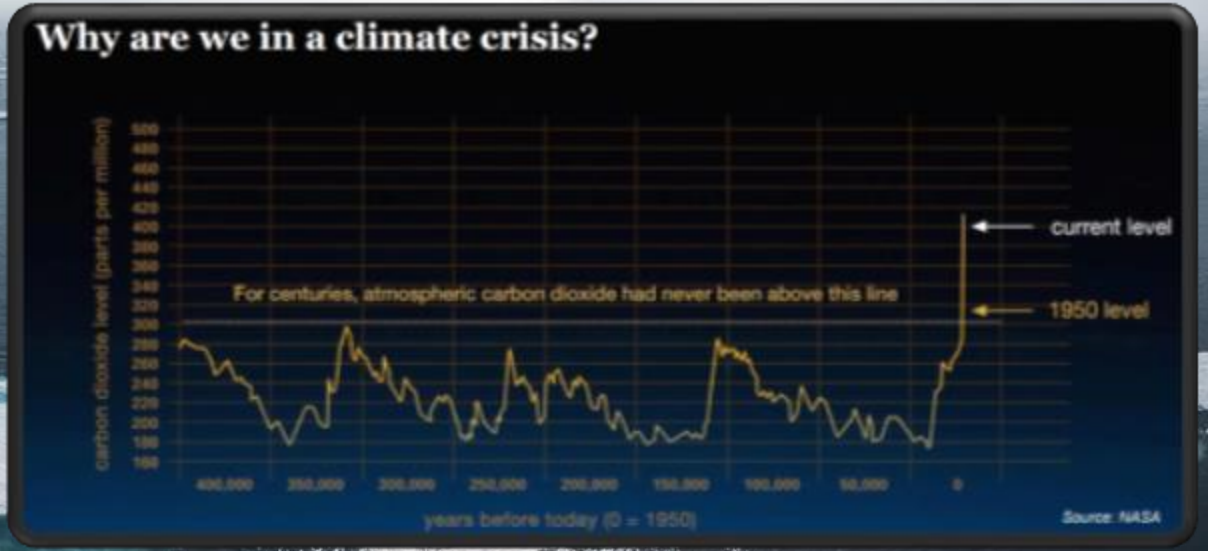
EDMUNDSON ELECTRICAL DATATECH

UK GREENTECH
Part of Edmundson Electrical Ltd

Sustainability Strategy

THE BACKGROUND

The effects of the climate crisis.



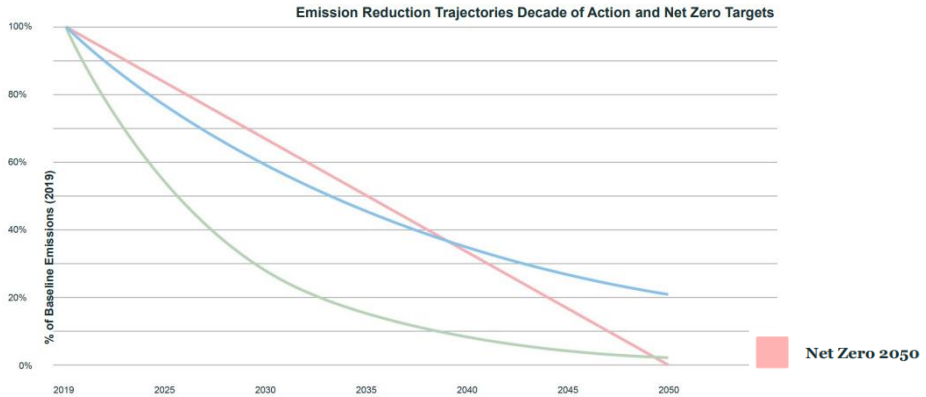
We are the first generation to feel the effect of climate change and the last generation who can do something about it.

Barack Obama
Former US President

- Government led obligations for Businesses to achieve Net Zero Operation by 2050

- This must be genuine 90% reduction of Carbon emissions from operations and 10% off-set if necessary e.g. Funding the planting of trees.

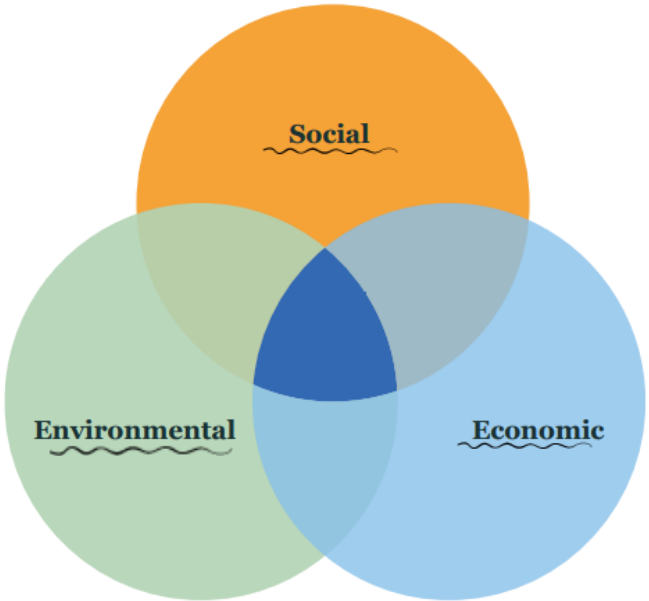
- Interlinked with Sustainability action Is the increased focus on Social Value or Corporate Social Responsibility (CSR)



Social Value.

Social value is the net social and environmental benefits generated by an organisation to society through its corporate and community activities.

Sustainability: It just makes business sense.



Attract and retain talent
79% of millennial employees are loyal to companies that care about their effect on society.

Grow profits
As customers reward sustainable businesses.

Future proof the business
From understanding long-term effects of social and environmental issues.

Increase cost savings
From energy bills, retaining staff and more financial security.

Greater transparency
Leads to progress, collaboration and customer trust.

Gain competitive advantage
From understanding long-term effects of social and environmental issues.

WHERE ARE WE NOW?

- Full review completed for each brand
- Soon available to download online
- Forms basis of moving forward with Sustainability strategy

Service Centre Team

Chris Jagger
Richard McCartney
Roger Drinkwater
Alex Leigh

Engaged an External Recognised Certification Consultant…..

WHERE ARE WE NOW?

PlanetMark

We enable meaningful *CHANGE* that creates a more sustainable, equitable world.

We do this by supporting forward-thinking businesses in their sustainability goals and certifying their achievements. When you see a Planet Mark certified member, you know that they are driving continuous positive change through their actions, people and reach.

Business Certification

Our Business Certification recognises the commitment to continuous improvement; measuring and reducing a business' carbon emissions, energy and water consumption, travel and waste.

Our commitment

We are committed to helping you achieve your sustainability goals. On average, Planet Mark certified businesses make a 24% cut in absolute carbon emissions per year, 17% carbon saving per employee per year through reductions in energy, waste, water, travel and procurement.

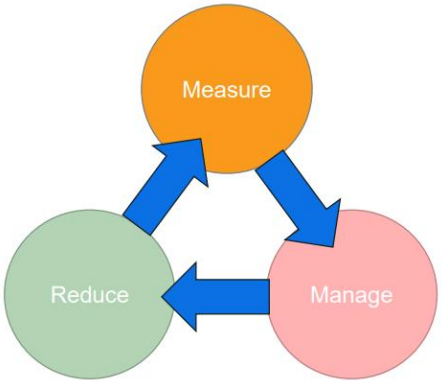
98% of our members achieve their targets in order to renew their certification year-on-year. Every business that becomes certified through the programme protects an acre of rainforest through our partnership with Cool Earth.

Who do Planet Mark work with?

What Next with Planet Mark….

Sustainable change, in three SIMPLE steps.

Measure



Engage

Business Sustainability is a collective effort

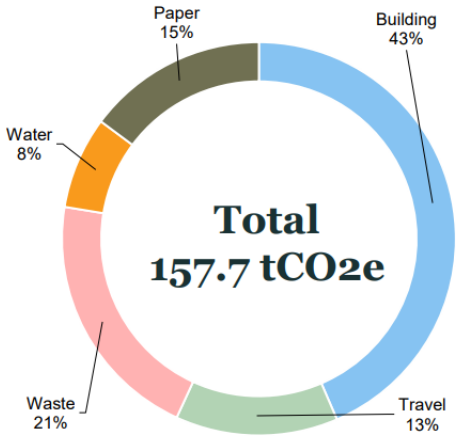
Communicate

What Next with Planet Mark….

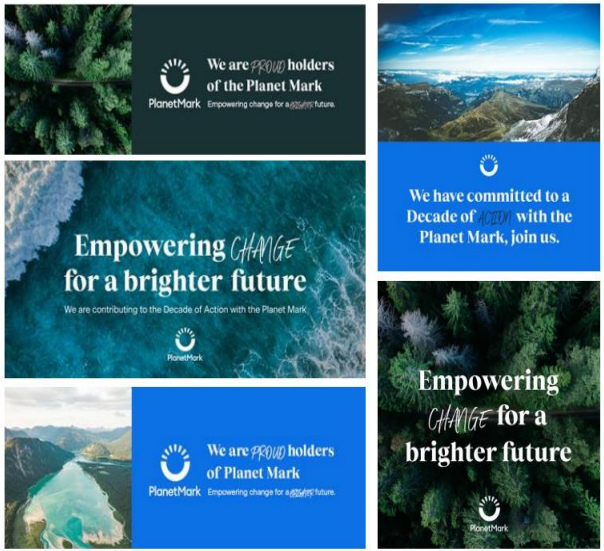
Measure

- Full review of Carbon Emissions under way
- Scope 1 – Waste, Fleet, Electric and Gas, Water
- Scope 2 – Carbon emissions resulting from the production of energy used
- This will create a total CO2 footprint across 5 areas

Building Waste Travel Procurement Water



What Next with Planet Mark….



- Once the review is completed for December 2022 the Company will commit to a % reduction in Carbon each year until Net Zero is achieved
- The carbon footprint of the company will be continually reviewed, and targets renewed for each financial reporting year
- This will require engagement from all stakeholders to achieve targets we set
- Continually meeting the reviewed targets will sustain the PlanetMark certification
- The certification demonstrates the company's commitment to achieving our carbon reduction goals

Social Values

Where does your social value come from?				
YOUR PEOPLE	COMMUNITY	VOLUNTEERING & DONATIONS	PROCUREMENT	WELLBEING
				

- We are already very strong in terms of our interaction and Engagement with communities
- PlanetMark will assist in considering and then implementing initiatives to enhance our Corporate Social Responsibility

How Can We Help You?

How Can You Help Us?

SALES PITCH

4 POINTS

EDMUNDSON ELECTRICAL

- **Our Stockholding**
  - **£200Million 140’000 Product Lines**
  - **£35 Million in London alone**
- **Lowest Cost Provider**
  - **Competitive & Profitable – Long Term Partner**
- **Our Decentralised Philosophy**
  - **Complete local autonomy**
- **Our Managers**
  - **The best in the business**

EDMUNDSON ELECTRICAL

EDMUNDSON ELECTRICAL

ELECTRIC CENTER

EDMUNDSON ELECTRICAL CABLETECH

EDMUNDSON ELECTRICAL DATATECH

UK GREENTECH
Part of Edmundson Electrical Ltd

QUESTIONS?

Sustainability Strategy

Apprenticeships and Green Skills at New City College

Sarah Clayton – Business Development Manager

Alison Tansley - Work Experience & Industry Placements Team Leader

Sarah Clayton - Business Development Manager
Alison Tansley – Work Experience & Industry Placements Team Leader


beyond possibility
ECA
Excellence in Electrotechnical & Engineering Services
UNLOCK YOUR POTENTIAL WITH ECA
RSHIP THAT WORKS FOR YOU:
support
r tools
support
t webinars & podcasts
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ndustry

New City for Business

- The Corporation was formed by the merger of 6 London FE Colleges;
- **Hackney, Rainham, Poplar, Havering, Redbridge & Epping**
- Each Campus has its own branding, local provision and Principal
- Courses are offered to 20,000 students in age groups: 14-16, 16-18 and 19+
- NCC is the 2nd largest College group in London
- Includes two 6th form colleges and a successful language college
- NCC group have recently been graded Good by Ofsted

Apprenticeships, Work Experience and Industry Placements

NCC offers in excess of 40 apprenticeships across the group from Level 2 to Level 5
With currently 600 apprentices on programme.

We have 6294 students across the group from Level 1 to Level 3 all of which are required to do 30 hours of Work Experience and 1400 students highlighted for an Industry Placement

New City for Business

Electrical Apprenticeship

- Level 3 Installation Electrician – Maintenance Electrician ST0152
- Duration 42 months + 3 months for the EPA
- Entry requirements – grade 4 GCSE maths & English
- Funding £18000
  - 16-18 years olds with less than 50 employees fully funded
  - 19+ employers have to pay 5% contribution £900
  - Levy payers (Employers with a pay bill of over £3million)
- Day release options – Hackney or Rainham
- Next intake of year 1 apprentices
  - Hackney Campus - February 2023
  - Hackney & Rainham September 2023

New City for Business

Recruitment Service

5 You will be assigned an Apprenticeship Partnership Manager who will provide ongoing support and feedback regarding your apprentice and support you through this journey.

4 Once your apprentice starts, New City for Business will arrange for the apprentice to be enrolled and complete the necessary paperwork.

3 Select your apprentice through your normal interview process. You may want to include a short task or activity to help identify a suitable candidate.

2 Advertise your apprenticeship. New City for Business will advertise the role on the National Apprenticeship Service website on your behalf as well as share the opportunity with candidates currently on our books. We will screen and shortlist suitable candidates as they apply and send across suitable CVs for your consideration.

1 New City for Business can support in identifying the appropriate apprenticeship standard based on your business needs.

Ongoing support

A dedicated Apprenticeship Partnership Manager or Work Experience Co-ordinator will support you and your students/employees throughout the duration of their placement/apprenticeship

The above act as the lynchpin and co-ordinates and triangulates all of the information between curriculum the employer and apprentice/student.

Progress reviews will take place to review performance and record off the job training

Green Skills & Net Zero

Strategic Development Fund Project (14 Further Education Partners) - Central London Forward area (12 Central London local authorities)

Our project focuses on ensuring the community in the Central London Forward area can access opportunities to learn about, start a career, or further develop their career in the low carbon technology industry. ***Vital to our success is working with local employers to help shape what "green skills" opportunities should be available to best meet the needs of industry and the community.***

Experienced teaching staff are being trained with the aim of rolling out a range of courses from 2023. These will include:

- Level 3 install and maintain Solar PV / Solar Thermal / Air Source Heat Pumps / Electric Vehicle Charging / Battery storage.
- We are also preparing to be able to deliver Level 2 Understanding Domestic Retrofit and Level 3 Energy Efficiency.

NCC are very keen to work with employers to help shape what low carbon technology/green skills should be offered to meet the needs of industry, and to arrange paid industry placements for teaching staff to spend some time in industry, as well as paying employers to share some of their expertise in the classroom.

New City for Business

Commercial

We offer a range of short and long courses to meet your needs, and offer support to plan and provide qualifications for your existing staff

An example of some of the courses were able to provide are:

18th Edition

2391-51 Inspection & Testing

2391-52 Periodic Testing

Electric Vehicle Charing

F- Gas

Introduction to Plumbing

AM2 Prep

New City for Business

Thank you for listening

Any questions?

Industry Panel Discussion

How can each of these organisations help your business?

Vicki Leslie from ECIS, Grace Ellis from EIC, Jay Parmar from JIB

Swaffham Prior Project

Matt Brown, Senior Authorising Engineer Electrical

Bouygues E&S Solutions Ltd

STRONGER TOGETHER FOR OUR PLANET

BOUYGUES ENERGIES & SERVICES

Shared **innovation**

ENERGIES & SERVICES DIVISION OF BOUYGUES CONSTRUCTION

Bouygues E&S Solutions Ltd

- Part of the Bouygues Group which employs 200,000 people across 81 countries
- 85,000 employees approx., since the acquisition of Equans
- Soft and Hard FM services
- Street and Motorway Lighting Projects – LED conversion
- Energy Projects

Swaffham Prior Heat Network

STRONGER TOGETHER FOR OUR PLANET

axione BOUYGUES BOUYGUES BOUYGUES linkcity uliving VSL A member of Bouygues Construction

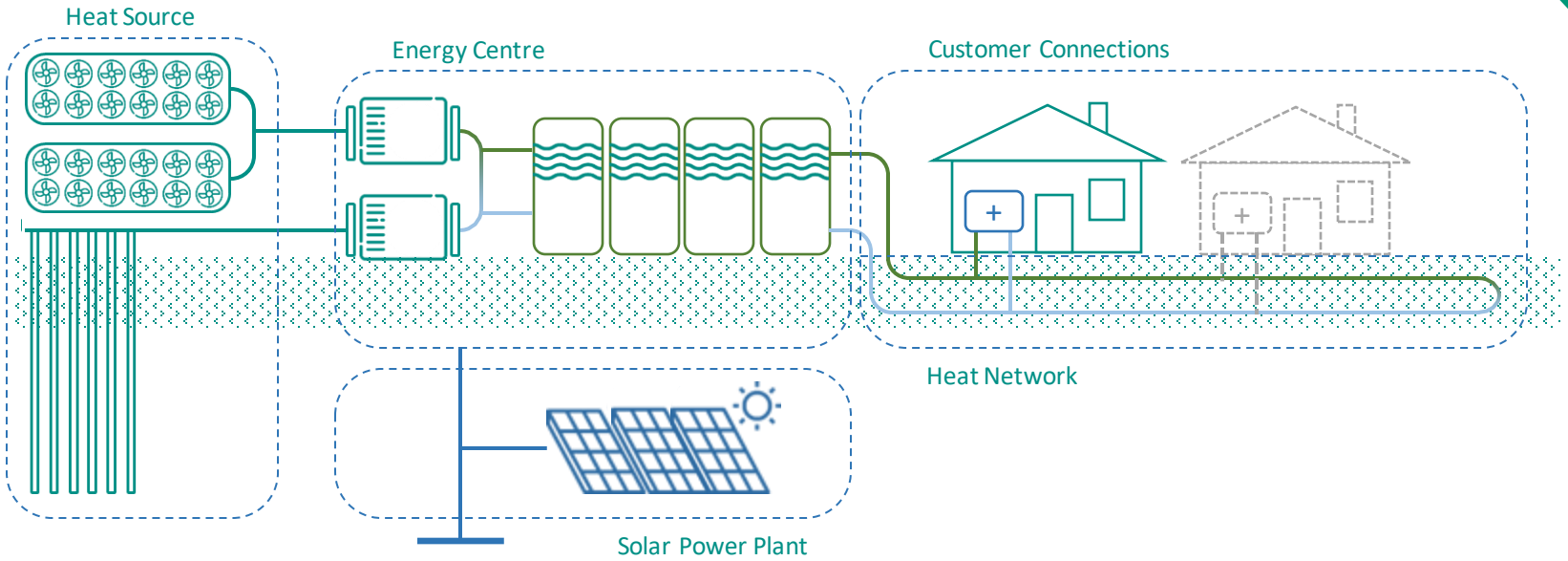
Swaffham Prior Heat Network – Key Challenges

- Rural village community – No gas…
- Oil fired boilers and LPG
  - higher carbon emissions,
  - prohibitive cost of heating,
  - poor air quality
- 300+ rural dwellings, poor insulation, traditional heating systems
- Retrofit **zero carbon heat network!**

The Challenge

- Help the local council meet its commitment of Net Zero Carbon by 2050.
- 100% of the thermal energy supplying the village to be from renewable sources.
- Over 15000 tonnes of carbon abatement over the next 40 years.
- 300+ homes to have access to the network, which are currently, off-gas.
- Over 90% reduction in carbon emissions
- To be a replicable demonstrator of rural decarbonisation

Swaffham Prior Heat Network – Solution



Swaffham Prior Heat Network – Solution

- Novel high-temperature ground source / air source hybrid (a logical combination – ground in winter, air in summer)
- 200m^3 thermal energy stores – optimises supply with demand (cheaper than batteries!)
- 7km heat network, compatible retrofit with conventional heating systems (without tertiary system / insulation upgrades)
- Private wire connection to BYES solar farm – low cost, zero carbon electricity.

Swaffham Prior Heat Network – Solution

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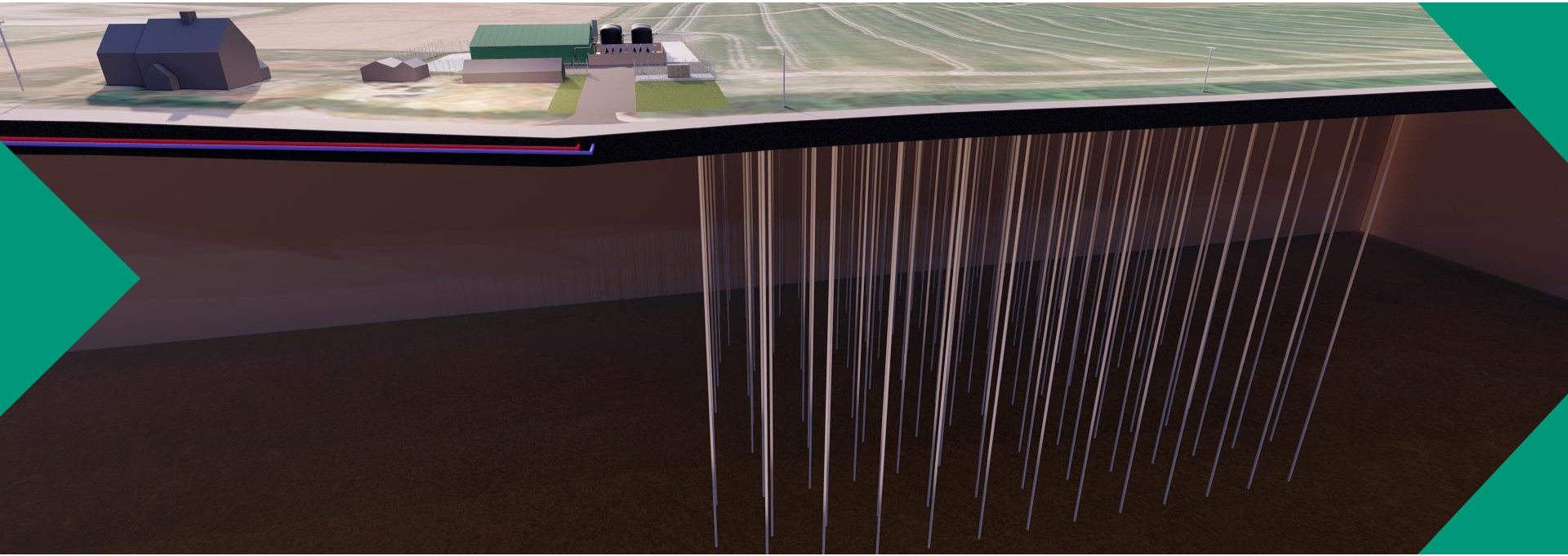
Swaffham Prior Heat Network – Solution



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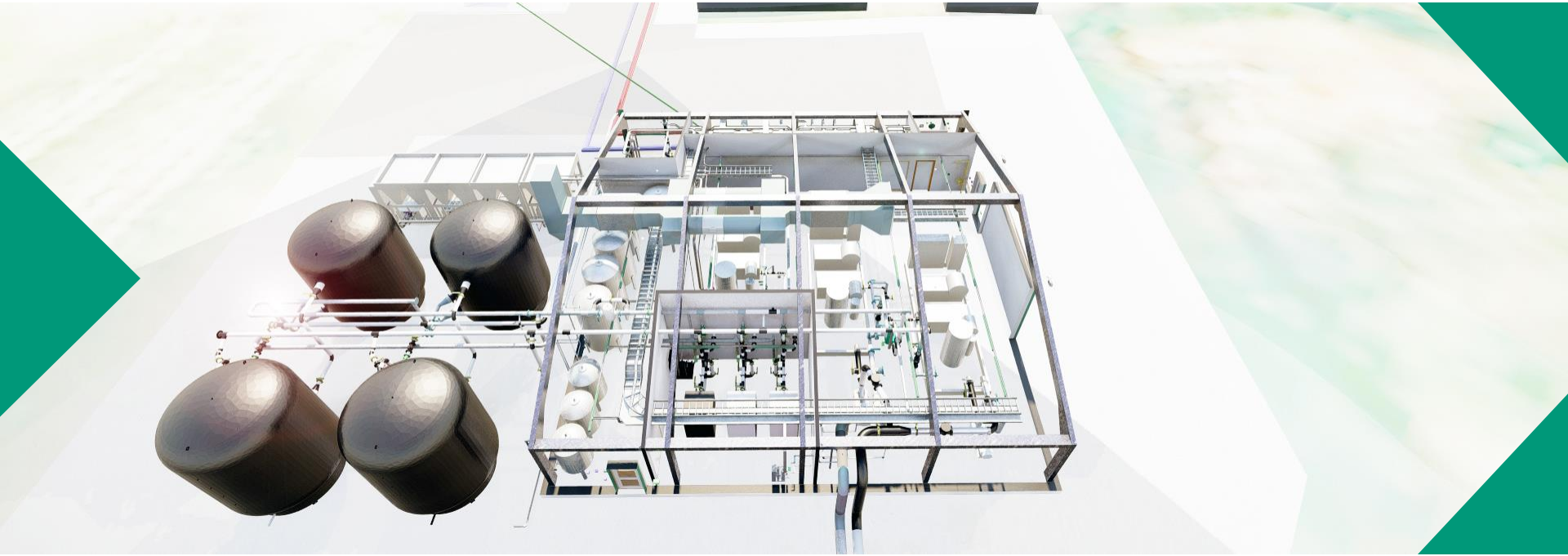
Swaffham Prior Heat Network – Solution



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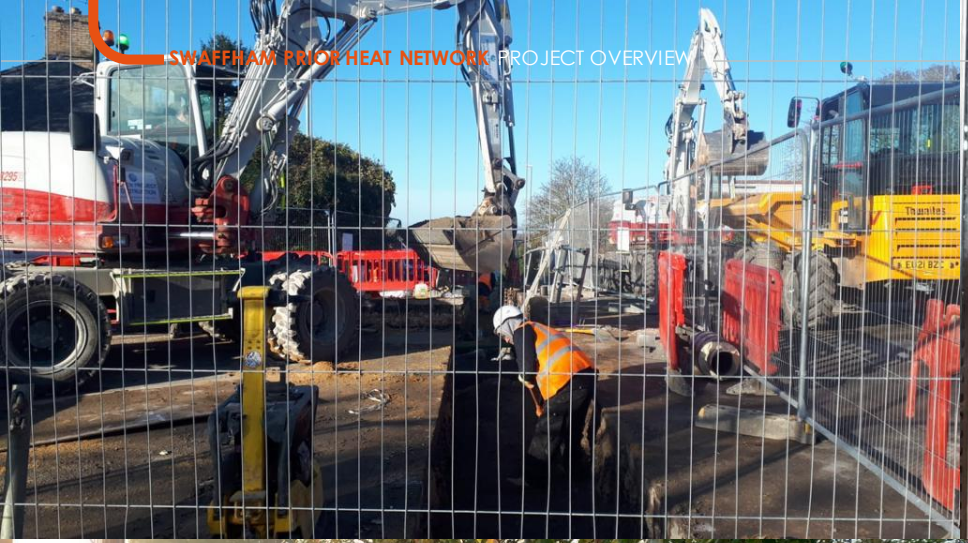
Main LV Switchboard

Network Pumps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HSS Hire

STRONGER TOGETHER FOR OUR PLANET

BOUYGUES ENERGIES & SERVICES

Shared **innovation**

ENERGIES & SERVICES DIVISION OF BOUYGUES CONSTRUCTION

The Year Ahead

Paul Reeve, ECA Corporate Social Responsibility Director

ECA Greater London Region – Chair's Thanks and Closing

Adam Smith, NRT Building Services Group Ltd

Thursday 16 November 2023

Venue to be confirmed

ECA
Excellence in Electrotechnical & Engineering Services

www.eca.co.uk

ECA Greater London Region Conference