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Great JOBS

Shining a light on the jobs that power the country

Uncovering the opportunities and challenges facing the UK Energy sector

Nov 2022

"The UK energy sector is currently facing a shortage of up to 59,000 workers and will need a further 400,000 in the decades to come."

Kirstie Donnelly MBE

Chief Executive City & Guilds

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Foreword

At the beginning of 2022, we released our Great Jobs 2022 report, an in-depth survey of the UK's most essential industries' workforces. In uncovering the trends and challenges faced by each sector, we hope to also discover various opportunities and solutions to the skills shortages that almost every essential industry seems to be confronting.

An estimated

400,000

new workers will be needed between 2020 and 2050 to get the UK to Net Zero.

One of the industries being placed under immense pressure is the nation's indispensable energy and utilities sector. Thanks to the UK's ambitious Net Zero targets, and with recent surges in energy prices, new emphasis is being placed on the importance of renewables and developing energy independence.

The success of these plans will depend on reskilling a significant proportion of the energy workforce, as well as developing new qualifications and apprenticeships to allow new entrants to train to do the new jobs that are being created. This will allow the sector to deliver the upgrades and improvements required to maintain a modernised, green power network.

Although salaries in the energy sector are potentially very high, our research found that many people didn't recognise that. We also uncovered that many are intimidated by careers in energy, as they believe they don't possess relevant skills. However, willing and enthusiastic people could be trained in the skills required if employers are willing to invest in their development. This would allow employers to fill stubborn skills gaps and create the workforce of tomorrow.

Our research also reveals that energy has a diversity problem, with far fewer women employed than men in the workforce. It's no surprise then that just 14% of women told us that they would consider a career in this sector (compared to 28% of men). In addition, the energy sector is heavily dominated by white workers, with just 14% of workers from ethnic minority groups.

1https://www.engineeringuk.com/research/data/2019-excel-resource/

Making the sector more appealing to more diverse groups of people would allow the sector to diversify and enjoy all of the benefits that diversity brings. This could be achieved by helping people to understand that energy is a welcoming and flexible place to work, with great benefits.

Another issue affecting the sector's ability to attract new recruits is a lack of public awareness of the many career opportunities in energy and utilities. More work is clearly needed to promote careers in the sector to help raise awareness of the range of interesting and well-paid careers available.

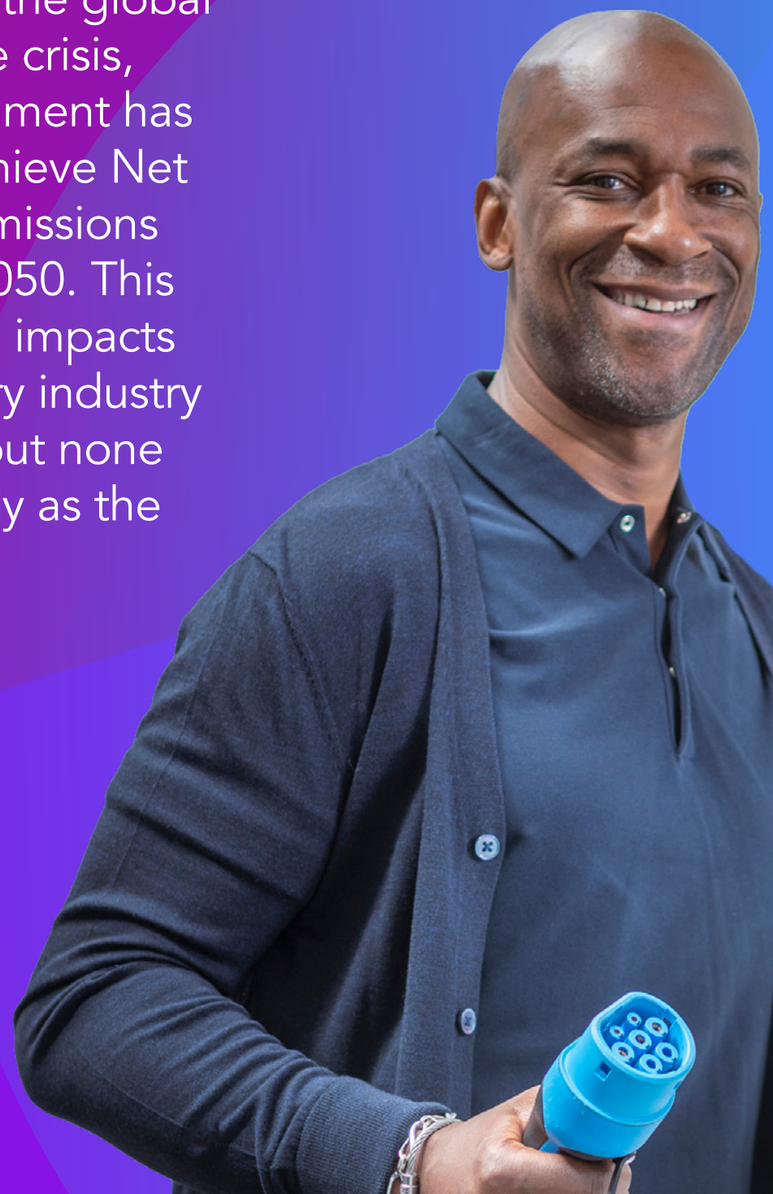
Together we need to find creative ways of rewarding staff and enticing them to stay where they are needed most – in an industry that not only keeps the lights on in every home and business across the UK but will play a pivotal role in reducing our carbon footprint and contributing to saving the planet.

Kirstie Donnelly MBE
Chief Executive
City & Guilds

Energy UK

An industry in revolution

In response to the global climate change crisis, the UK Government has pledged to achieve Net Zero carbon emissions in the UK by 2050. This ambitious goal impacts just about every industry in some way, but none quite so directly as the energy sector.



Reaching Net Zero will demand that we build new infrastructure and transfer operations to cutting-edge, clean technology – a feat that cannot be achieved without the right people in the right roles.

According to research conducted by National Grid, the energy sector's workforce dynamic is set for dramatic change:

- An estimated 400,000 new workers will be needed between 2020 and 2050, peaking between 2030 and 2040, a decade that will require 154,000 new people.
- This figure covers the replacement of workers expected to retire (an astounding 260,000), as well as new roles created by industry growth and fast technological progression (140,000).
- Including the supply chain, the energy sector currently employs approximately 270,000 workers in oil and gas. These people will need additional re-skilling to pivot their careers toward roles in clean, renewable energy.

The energy sector currently employs approximately

270,000

workers in oil and gas.

"The journey to Net Zero will inevitably mean the decline of the oil and gas sectors,"

says Craig Smith, Managing Director City & Guilds Gen2.

"Current workers are going to need a lot of support to navigate the transition into new sectors, such as renewables and nuclear. We can't afford to lose a single one of these workers. That's why attracting skills, upskilling, and skills retention is going to be critical to the UK's energy sector."

https://www.nationalgrid.com/stories/journey-to-net-zero/net-zero-energy-workforce

Confronting challenges in the energy sector

The energy sector is subject to the same challenges seen across many of our most important industries – one being an aging workforce.

According to an Engineering UK report published in 2022, the industry can expect to lose 20,000 skilled employees per year, over the next six years. Over and above the steep reskilling demands placed on traditional energy industries (oil and gas), these retirement losses pose a significant threat to the green agenda.

Typical of the Great Resignation, talent turnover in essential industries is at all-time high, with only 31% of workers in this sector confirming their intention to remain in their position for five years or more, according to the City & Guilds Great Jobs 2022 report.

While statistically one of the higher-paying essential industries, factors that present a challenge to attractiveness of the energy sector includes the impact of Brexit and public misperceptions of the industry as a whole.

Ongoing research into the sector reveals more:

15%

Women make up just 15% of technical roles in the energy sector and are proven to be half as likely as men to consider a role in the field according to our research.

13%

People from ethnic minority groups are vastly under-represented in the UK's energy sector, with only 13% of workers falling outside of the 'white British/European' category.

46%

46% of workers in the industry, and recruiters linked to energy, identify skills shortages as one of the biggest issues facing the sector. 48% of these cite lack of quality training and education as the prime cause of this, while 40% refer to the loss of expertise due to an ageing workforce.

"In order to inspire people to explore careers in energy, we have to understand their motivating and demotivating factors,"

says, Craig Smith
Managing Director,
City & Guilds Gen2

"Once we can grasp this, we've taken the first step in building a bridge between the right people to the right jobs."

Electrifying energy

Clarifying industry misperceptions

As with the other sectors we have investigated in our Great Jobs series, the energy sector has suffered from a range of misperceptions about the jobs available.

Only

21%

of people who are not employed in the energy sector would consider a career in energy.

Craig Smith, Managing Director City & Guilds Gen2, comments on research findings, saying,

"We wanted to explore why so many people were overlooking energy jobs entirely, and especially young people. The responses were enlightening and if employers in the industry take action upon them, we could serve to improve the desirability of an industry that has so much to offer."

According to Great Jobs 2022, only 21% of people who are not employed in the energy sector would consider a career in energy.

As with many essential industries, there's a misperception that most jobs in energy require a lot of manual labour. This acts as a deterrent to people with physical restrictions and anyone who simply isn't enthusiastic about doing manual labour every day.

32% of people who do not work in the energy sector feel discouraged from doing so, because they believe they do not possess the relevant skills, or access to programmes where they might acquire those skills. So, sharing information about entry-level opportunities and apprenticeships with a wider group of people would potentially drive up applications to the sector.

According to an annual study by POWERFul Women, these misperceptions contribute to the low female occupancy in energy. Furthermore, only 27% of executive board seats are held by women in UK-based energy organisations, and 75% of energy companies have no women in executive director positions at all.

https://www.engineeringuk.com/research-policy/industry-workforce/net-zero-workforce/.
https://catapult.org.uk/our-work/case-studies/tackling-the-lack-of-diversity-in-the-energy-sector/.
https://www.lancashirebusinessview.co.uk/latest-news-and-features/uk-energy-industry-grapples-with-ageing-workforce-and-the-shift-to-renewables.

The bright side of energy careers

On the bright side, our Great Jobs 2022 findings shed light on the opportunities that could be leveraged in our collective efforts to build a robust, highly-skilled workforce in energy and utilities.

What does the general public think about roles in energy and utilities?

The overall public sentiment about the sector remains positive – energy workers enjoy the admiration of most people, for the important work that they do in keeping the lights on across the UK.

Of the reasons why people might consider careers in energy, the most popular were good pay (42%), sociable hours (23%) and the respected status of the role (23%).

81% of people believe that jobs in the energy sector are valuable to society, providing an essential service which we could not do without.

45% of people would feel proud to work in the energy sector, and 72% said they would be proud for their child or grandchild to do so.

31% of people stated that they've developed greater respect for those employed by the energy sector more since Covid-19.

What do energy workers think about their sector?

Despite the challenges being faced on the ground, those employed in the energy sector have a typically optimistic outlook on their careers.

65% of workers in energy enjoy an authentic sense of pride in the work they do.

83% say that it gives them a sense of purpose, while 68% believe that they're making a valuable contribution to society.

50% of energy sector workers say that higher pay would make them feel prouder to do their job, while 20% called for better benefits or working conditions.

Case Study

Fabian Nwese
Team Leader at VINCI Facilities (Shell Account)
Electrical Vehicle (EV) Charging learner

As an Electrical Supervisor for a mainstream filling station brand, Fabian Nwese's existing skills formed a fantastic foundation for further development in the fast-changing vehicle-powering industry.

Recognising this, Fabian took the plunge and enrolled in a City & Guilds EV Charging course, in order to both further his career and pivot it toward the growing green energy industry.

Reporting back on his learning experience, Fabian points out the benefits of completing the qualification. His feedback is as follows:

- Fabian found the course informative and that it gave insight into the principles of EV and how it works.
- Fabian found it valuable to understand the differences between the high voltage charging points and domestic installations.
- The course is tailored to commercial, which Fabian felt to be very relevant to what he does.
- The course is tailored to train learners to stay on top of how the technology is developing. This is essential, as workers in the industry deal with many different types of electric vehicle supplies.
- The importance of safety is highlighted throughout the course, preparing learners for the powerful nature of the supply and what's involved in using the equipment correctly.

"I've worked in this industry for years," says Fabian. "It's surprising that there is still so much you can learn."

Speaking of the qualification that facilitated his move into green energy, and the importance of the nation's Net Zero agenda, Fabian also states,

"The course helped me to understand the environmental implications of electric vehicles and why there's more need for them. It's something we're already aware of but the course really emphasised why the shift to electric is so important."

In his new position as Team Leader at VINCI Facilities, where he plays a daily role in powering change, Fabian confirms that the organisation is looking to ramp up the amount of EV vehicles within their fleet and that the course is extremely encouraging. While we all know that a different type of power source is needed, it will take time – and many more committed and skilled people like Fabian – to get there.

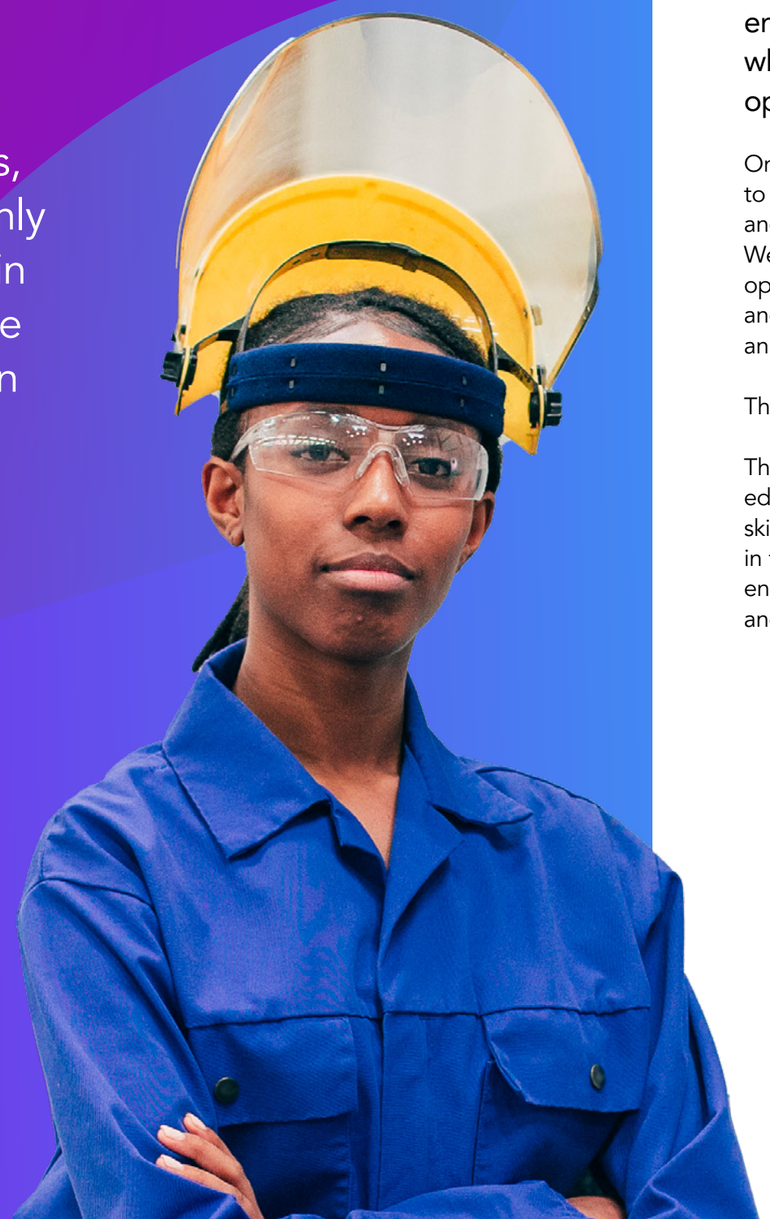
"In the meantime," concludes Fabian, "We can increase our knowledge and promote the use of electric vehicles and safe use of charging installations."

Fabian Nwese,
Team Leader at VINCI Facilities

Scaling the sector through skills

How to entice the right people for sector growth success

As with so many UK industries, the skills shortage crisis not only impacts daily operations within the energy sector, but puts the government's Net Zero goal in jeopardy.



According to information gathered by Engineering UK, the 400,000 roles that we can expect to open up in the years leading up to Net Zero 2050 fall within grid infrastructure only. In other words, these exclude an estimated 208,000 jobs in related sectors: wind power, solar PV, hydro-power, nuclear and hydrogen. Located across the UK, many of these vacancies – although not all of them – will be in science, technology, engineering and maths (STEM) fields, which presents both challenges and opportunities.

On one hand, people typically doubt their ability to achieve STEM qualifications, especially women and people from disadvantaged backgrounds. We prefer to cast more light on the element of opportunity, which is that these are higher-paying and utterly achievable roles in a sector that will play an important role in the UK in the decades ahead.

The future of energy is bright, indeed.

That said, government, organisations and education providers will need to tackle the growing skills shortages and changing skills requirements in the sector and do so with a sense of urgency to enable the transition to a cleaner energy economy, and to reinforce employment in the UK.

1. Tap into government-funded initiatives and programmes

Government-funded training is often under-utilised, with up to £2bn of apprenticeship levy revealed to have gone back to the treasury in the last 5 years, and adult education budget often going unspent. Education providers and industry should consider the availability of bootcamps and apprenticeships – these intensive skills development measures for entry-level roles serve to prepare people interested in careers in energy.

2. Transfer great skills from other sectors

Even without direct experience in renewable and nuclear energy, workers from other fields can bring immeasurable value in experience and transferable skills. Increased focus needs to be placed on re-skilling opportunities, such as short course interventions and apprenticeships, to entice people into exciting careers that underpin the growth of the UK economy and its sustainable energy.

3. Commit to care, and then deliver

Despite many misrepresentations of the sector, the energy and utilities sector can offer a bright and promising future for its workers. To increase sector desirability, emphasis should be placed on the potential for higher salaries, flexible working conditions and sociable working hours, ideal for family-oriented workers.

4. Create robust career entry points for young people

Sustainable talent pipelines help to tackle the problem of aging workforces. By engaging with training routes such as T Levels, Bootcamps, apprenticeships and traineeships, employers provide clear and achievable careers paths which introduce young people to promising careers in energy and utilities.

5. Develop recognised training programmes

Studies show that, even amidst the Great Resignation, people are more likely to stay with a company (or transfer to a company) that delivers learning and development opportunities backed by recognised certification. For energy and utilities organisations offering on-the-job learning, this powerful skills development solution contributes to the further growth of this essential sector, while serving to attract and retain diverse talent.

6. Attract younger workers to a career with purpose

Younger generations have proven their passion for combating climate change time and again, and this serves as a powerful motivating factor for many. By highlighting the jobs that young people could access in the sector to support climate action, employers may find they are better able to attract younger, more passionate workers.

It's also vital to ensure that people understand the up-and-coming pathways into STEM careers, available through a myriad of programmes, apprenticeships and T Levels – many of which form a foundation for further studies and career development.

7. Connect people with positions through strategy

We encourage education providers to take a regional approach, working with employers across the UK and exploring how devolved government funding and private investment can best support surrounding communities, as well local industries and supply chain.

8. Consider the might of older workers

While the energy sector expects to lose up to 260,000 of its workers to retirement by 2050, industry leaders are urged to investigate alternative options for older people by offering flexible training roles or contractual work.

In addition, it could be worth considering later-in-life career switchers, utilising schemes such as apprenticeships and Bootcamps.

9. Nurture an industry culture of equality and diversity

To tap into an underutilised talent pool, companies should seek to actively recruit from underrepresented groups, such as young women, people of different races and cultures, and disadvantaged communities. By working together to welcome diversity through role modelling and education, the industry can draw willing, enthusiastic candidates to a variety of careers in energy.

Once these groups have been recruited, it's important to foster a culture of inclusivity within businesses to maximise staff retention.

What the experts in energy say

a City & Guilds podcast

Perhaps one of the most powerful things that we can do at the cross-over between industry and education providers is to collaborate. Forming part of our Great Jobs 2022 podcast series, our Great Jobs in Energy podcast welcomed Melanie Onn, Deputy Chief Executive at RenewableUK, to discuss the current skills dynamics in energy and utilities, compared to ambitious zero-emission goals.

Craig Smith, Managing Director of Gen2 at City & Guilds hosted the discussion

"The energy sector is facing a period of change and transformation linked to the green agenda," begins Craig. "Last year's COP26 served as a watershed moment for commitments being made by governments around the world to cut emissions and timelines set for Net-Zero. However, making these ambitious plans a reality will depend on upskilling huge swathes of the workforce with new green skills."

Melanie Onn notes that the renewable energy sector has a certain level of appeal in terms of the high levels of pay and job security – especially when compared to the traditional sector, which has dwindled and where skilled work is largely acquired via zero-hour contracts.

Onn and Smith uncover some of the barriers into the renewable energy sector, finding that many of them are rooted in mere myths, misguided attitudes, and lack of information.

Gender disparity

Onn notes that although there is a huge way to go to achieve the UK's target of 30% female participation in the renewable sector by 2030, the fact that the disparity has been recognised is an essential step toward addressing it. The sector has also embarked on a programme of measuring results, surveying companies that work in the renewable offshore sector. "The progress is slow," says Onn. "But it is happening. Role modelling successful women in renewables is key to bringing in the right female talent."

Industry misperceptions

While working in an offshore technical role may not be built for comfort, the misperception about renewables is that that's all there is. The reality is that the renewable energy sector has a vast breadth of roles in varying degrees of skills – hands-on marine work, project management and planning, welding, navel architecture, health and safety, corporate business… Onn points out that there really is a role in renewables for anybody.

Lack of accurate accessible information

Onn notes that while the renewable energy sector is at the very forefront of technological development, its means of attempting to attract talent has been typically archaic and ineffective. In-school education regarding renewable opportunities is outdated and somewhat negatively positioned. There's also a greater need to run educational campaigns along the mediums which young people are consuming information, and to do so in a way that inspires peer-to-peer engagement.

Misunderstanding skills requirements

Our research into the energy sector shows that nearly a third of the respondents would not consider a career in renewable energy because they believe that they lack the skills. "We have a mix of labour shortages and skills shortages," says Onn. "Increasingly, we're looking at skills and experience, and how those can be transferred into the sector, while technical skills can be trained. We need to be more reasonable with how we advertise roles, and what we expect from new recruits upfront."

Smith and Onn explore the topic of skills development in renewable energy in the 30-minute podcast – how training providers and employers can collaborate, the role of supply chain, and effective use of apprenticeships and bootcamps in paving progression pathways from junior roles to higher skilled roles.

Onn emphasises the importance of working together, for the long term, saying,

"The ability for people to congregate and share their experiences is invaluable, and helps to focus people's minds on the key challenges and how to overcome them collectively; to have solutions that are for the long term as well, not just a once-off activity or a gimmick."

Care to listen?

Access the podcast here.

Transforming the nation one skill at a time

How City & Guilds connects people with careers in energy

With the UK's Net Zero goal almost within reach, we are committed to playing our part in connecting the right people to the right jobs in energy, through high quality skills development and training programmes.

From T Levels to apprenticeships and in-house solutions, all City & Guilds' qualifications live up to the minimum standards set by industry specialists. This means City & Guilds' learners in this sector have the edge, as they are valued by employers. With digital credentials allowing individuals to showcase their learning, skills and talents career progression is enabled.

T levels

T Levels have been developed in collaboration with key employers to ensure the content equips learners with the skills and knowledge that businesses want, preparing them for work, higher education, or an apprenticeship.

T Levels are available in England only and a choice for learners alongside apprenticeships and A-levels.

Find out more about;

T Level Technical Qualification in Building Services Engineering for Construction

T Level in Agriculture, Environment and Animal Care

T Level Technical Qualification in Maintenance, Installation and Repair for Engineering and Manufacturing

Recognition services

Every organisation is unique, and so are your goals. High-quality, relevant and tailored training is key to remaining competitive, and recognising skills will set your business apart – making you fit for the future.

Our suite of recognition services supports your organisation to be future fit by adding value, credibility, and recognition to your brand.

Discover our recognition services and let us help you unlock your growth potential through the power of skills.

Find out more

https://www.cityandguilds.com/recognition-services

Funded units

A range of Environmental Awareness and Sustainability funded units and short qualifications are available, and a number of our qualifications have sustainability units embedded into them.

View the range of funded units

Green Skills Sustainability and Awareness Funded units and short qualifications available (cityandguilds.com)

The Future is Green

Helping the transition to Net Zero with a range of cross-sector units and qualifications to reduce negative environmental impacts and increase positive impacts.

Green skills

Sustainability and Green environment awareness award

This qualification introduces learners to climate change, Net Zero, sustainability and the environment.

Find out more

Building Services Engineering

Retrofit award

This qualification raises awareness of Retrofit while focusing on PAS 2035. The content allows learners to gain knowledge on the key topic areas to do with the retrofitting of buildings.

Find out more

Energy

Green Deal Advisor

The Green Deal is the UK Government's flagship policy on energy efficiency in buildings. The assessment process will make recommendations for energy efficiency improvements at a property.

Find out more

Energy Assessment

Energy Assessment is a regulated industry in the UK and is undertaken across a number of different situations including domestic buildings, non-domestic and commercial buildings, and air-conditioning systems.

Find out more

Construction

Electric Vehicle (EV) Charging Installation Qualifications

City & Guilds has worked with employers and key industry bodies to co-design a new flagship portfolio of EV Charging design and installation qualifications that set a new skills standard across the UK.

Find out more

Utilities qualifications

These qualifications support the construction, installation and maintenance of the infrastructure our economy relies upon daily. They provide the underpinning skills and knowledge for those working on gas, water and electricity distribution networks.

Find out more

Automotive Maintenance and Repair

Electric Vehicle (EV) Charging Installation Qualifications

City & Guilds has worked with employers and key industry bodies to co-design a new flagship portfolio of EV Charging design and installation qualifications that set a new skills standard across the UK.

Find out more

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