

apprenticeship FRAMEWORK

The Power Sector (Wales)

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Issue date: 29 January 2014

Published by
Energy and Utility Skills

apprenticeship
FRAMEWORKS ONLINE
www.afo.sscalliance.org

The Power Sector (Wales)

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Framework summary

The Power Sector

Foundation Apprenticeship in the Power Sector

Pathways for this framework at level 2 include:

Pathway 1: Foundation Apprenticeship in Power Transmission and Distribution

Competence qualifications available to this pathway:

- C1 - City & Guilds Level 2 Diploma in Electrical Power Engineering - Underground Cables (QCF)
- C2 - City & Guilds Level 2 Diploma in Electrical Power Engineering - Overhead Lines (QCF)
- C3 - City & Guilds Level 2 Diploma in Electrical Power Engineering - Substation Plant (QCF)

Knowledge qualifications available to this pathway:

- K1 - Certificate in Electrical Power Engineering - Distribution and Transmission Technical Knowledge (QCF)

Combined qualifications available to this pathway:

N/A

This pathway also contains information on:

- Employee rights and responsibilities
- Essential skills

The Power Sector

Apprenticeship in the Power Sector

Pathways for this framework at level 3 include:

Pathway 1: Apprenticeship in Wind Turbine Operations and Maintenance

Competence qualifications available to this pathway:

- C1 - Level 3 NVQ Diploma in Electrical Power Engineering - Wind Turbine Operations and Maintenance (QCF)

Knowledge qualifications available to this pathway:

- K1 - Level 3 Diploma In Electrical Power Engineering - Wind Turbine Maintenance (Technical Knowledge) (QCF)

Combined qualifications available to this pathway:

N/A

This pathway also contains information on:

- Employee rights and responsibilities
- Essential skills

Pathway 2: Apprenticeship in Power Generation

Competence qualifications available to this pathway:

- C1 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (Electrical) (NVQ) (QCF)
- C2 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (Mechanical) (NVQ) (QCF)
- C3 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (Combined Electrical & Mechanical) (NVQ) (QCF)
- C4 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (Control & Instrumentation) (NVQ) (QCF)
- C5 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (Combined Electrical and Control & Instrumentation) (NVQ) (QCF)
- C6 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (NVQ) (QCF)

Knowledge qualifications available to this pathway:

- K1 - Pearson BTEC Level 3 Diploma in Electrical / Electronic Engineering (QCF)
- K2 - Pearson BTEC Level 3 Extended Diploma in Electrical / Electronic Engineering (QCF)
- K3 - Pearson BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)
- K4 - Pearson BTEC Level 3 Extended Diploma in Operations and Maintenance Engineering (QCF)
- K5 - Pearson BTEC Level 3 Diploma in Mechanical Engineering (QCF)
- K6 - Pearson BTEC Level 3 Extended Diploma in Mechanical Engineering (QCF)

Combined qualifications available to this pathway:

N/A

This pathway also contains information on:

- Employee rights and responsibilities
- Essential skills

Pathway 3: Apprenticeship in Power Transmission and Distribution

Competence qualifications available to this pathway:

- C1 - City & Guilds Level 3 Diploma In Electrical Power Engineering (QCF)

Knowledge qualifications available to this pathway:

- K1 - City & Guilds Level 3 Diploma In Electrical Power Engineering - Distribution and Transmission (Technical Knowledge) (QCF)

Combined qualifications available to this pathway:

N/A

This pathway also contains information on:

- Employee rights and responsibilities
- Essential skills

Pathway 4: Apprenticeship in Wind Turbine Installation and Commissioning

Competence qualifications available to this pathway:

- C1 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Wind Turbine Engineering Installation and Commissioning (QCF)

Knowledge qualifications available to this pathway:

- K1 - Level 3 Diploma In Electrical Power Engineering - Wind Turbine Maintenance (Technical Knowledge) (QCF)

Combined qualifications available to this pathway:

N/A

This pathway also contains information on:

- Employee rights and responsibilities
- Essential skills

The Power Sector

Higher Apprenticeship in Power Engineering

Pathways for this framework at level 4 include:

Pathway 1: Higher Apprenticeship in Power Engineering

Competence qualifications available to this pathway:

C1 - EAL Level 4 Diploma in Managing Engineering Activities in the Electricity Supply Industry (QCF)

Knowledge qualifications available to this pathway:

K1 - EAL Level 4 Diploma in Power Engineering (QCF)

Combined qualifications available to this pathway:

N/A

This pathway also contains information on:

- Employee rights and responsibilities
- Essential skills

Framework information

Information on the Publishing Authority for this framework:

Energy and Utility Skills

The Apprenticeship sector for occupations in electricity, gas and water supply, and waste management (also includes gas utilisation, recycling and waste water collection and treatment)

Issue number: 3	This framework includes:
Framework ID: FR02654	Level 2 Level 3 Level 4
Date this framework is to be reviewed by: 31/07/2017	This framework is for use in: Wales

Short description

The Power Sector faces some key challenges including an ageing workforce and a skills deficit in craft and technical roles.

The purpose of this Apprenticeship is to support the sector to address these challenges by developing occupational competence in a wide range of job roles.

Contact information

Proposer of this framework

This framework has been updated to reflect a range of changes in the sector. Employers have been instrumental in this development; employer working groups were convened to lead and conduct development activity with wide ranging input across the sector.

The outputs of the working groups have been consulted with and ratified by the following employer groups:

- The Higher Skills Strategy Group - chaired by Siemens - a strategic group to address the current and future demand for higher skills in the sector.
- The Power Transmission and Distribution Network Group - chaired by Northern Power Grid - a strategic group with representative membership across UK power transmission and distribution companies with a purpose to ensure that the sector has the skills it needs now and in the future.
- The Electricity Standards and Qualification Group (ESQG) - chaired by National Grid - an operational employer group that advises on, contributes to and monitors delivery of work packages that are prioritised by the network group.

The employers contributing to the development process include:

ABB, Alstom, AMEC, Areva, ARMSA Consulting, Babcock, Balfour Beatty, Carillion, Centrica, CIET, EA Technology, Electricity Network Solutions, Electricity Northwest, E.ON, Enterprise, ESB Networks, Freedom Group, Mainstream Renewable Power, Morgan Sindall, Morrison, National Grid, Northern Ireland Electricity, Northern Powergrid, O'Connor Utilities, Powerteam, RWE Npower, Scottish and Southern Energy, Scottish Power, Siemens, 3Sun, UK Power Networks, Vesta Offshore, Vital Power, Western Power Distribution.

This framework is proposed by EU Skills and the employers referenced on behalf of the Power Sector.

Developer of this framework

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Revising a framework

Contact details

Who is making this revision: Helen Hawkins
Your organisation: Energy & Utility Skills
Your email address: enquiries@euskills.co.uk

Why this framework is being revised

This framework has been updated to:

1. Include a level 3 pathway in Wind Turbine Installation and Commissioning.
2. Include a level 4 pathway in Power Engineering.
3. Update qualifications in the level 3 pathways in Power Transmission and Distribution, Power Generation and Wind Turbine Operations and Maintenance.

Summary of changes made to this framework

See above.

Qualifications removed

The following qualifications have been removed:

City & Guilds Level 3 Diploma In Electrical Power Engineering - Overhead Lines (QCF)
500/7318/7

City & Guilds Level 3 Diploma In Electrical Power Engineering - Lead Overhead Lines Person (QCF) 500/8007/6

City & Guilds Level 3 Diploma in Electrical Power Engineering - Substation Plant (QCF)
500/7323/0

City & Guilds Level 3 Diploma in Electrical Power Engineering - Lead Substation Crafts Person (QCF) 500/7971/2

City & Guilds Level 3 Diploma In Electrical Power Engineering - Underground Cables (QCF)
500/7324/2

City & Guilds Level 3 Diploma in Electrical Power Engineering - Wind Turbine Maintenance (Technical Knowledge) (QCF) 600/0604/3

Edexcel BTEC Level 3 Diploma in Engineering (Specialist: Operations and Maintenance) (QCF) 500/8163/9

Qualifications added

The following qualifications have been added:

City & Guilds Level 3 Diploma In Electrical Power Engineering (QCF) - 601/2519/6

City & Guilds Level 3 Diploma in Electrical Power Engineering - Wind Turbine Maintenance (Technical Knowledge) (QCF) 600/2700/9

City & Guilds Level 3 Diploma in Electrical Power Engineering - Wind Turbine Engineering - Wind Turbine Installation and Commisisoning (QCF) 600/6845/0

EAL Level 4 Diploma in Managing Engineering Activities in the Electricity Supply Industry (QCF) 6001/8030/9

EAL Level 4 Diploma in Power Engineering (QCF) 600/8096/6

Qualifications that have been extended

No qualifications have been extended.

Purpose of this framework

Summary of the purpose of the framework

The Power Sector covers the activities associated with the generation, national transmission and local distribution of electricity, up to, and including, the customer's meter. The industry employs more than 87,000 people and is fundamental to the well-being of the UK economy.

The sector faces some key challenges; these include improving the efficiency of transmission and distribution systems to minimise power losses and meeting ambitious government targets to generate 15% of the UK's energy from renewable sources by 2020. While some of the changes can be integrated into relatively routine maintenance and upgrades, many will require a step change in technology and skills over a relatively short period due to environmental and legal pressures.

With manufacturing and the transport infrastructure dependent on power, the sector is seeing significant and growing skills shortages and an increasing demand for more and more power.

It is critical to facilitate an adequate supply of competent people to develop, maintain and enhance the sector for the future. An ageing workforce, replacement and growth of electrical infrastructure, rapid advancement of new technologies and strong competition for talent in the marketplace will all impact the power industry over the next 5-15 years, with dramatic results if not addressed now.

By 2024, the Power Sector will need to have recruited around 45,000-55,000 new employees. The Bain Report (2008) concluded that 10,000-20,000 of these need to be construction, installation, operations and maintenance workers to support the growing demand for power generated by wind energy. This is as well as upskilling existing staff, whilst managing the loss of 80% of its existing workforce. A skilled and competent workforce is critical in maintaining the security of the UK power supply.

Within the power distribution business, there is a forecast requirement to train 9,000 new learners over the next six years (26,000 by 2024) to replace and reinforce the distribution network. Within the power transmission business, the forecast is that over 1,000 people will be required by 2012 to maintain overhead power lines.

This data demonstrates the acute and ongoing demand for skilled workers in the sector. As one mechanism to address these shortages, 13 job titles within the power transmission and distribution sector (including Linesperson) have been listed on the Shortage Occupation List maintained by the Migration Advisory Committee.

This Apprenticeship provides a sustainable opportunity to address the current and future skills shortages identified by the sector. It will support the attraction of new entrants by providing a

structured route to job competence and career progression and can also be used to up skill existing staff. It provides the ability for employers to “grow their own” workforce where technically competent individuals are increasingly difficult to recruit. The Apprenticeship enables employers to identify managers of the future and support succession planning whilst delivering tangible benefits such as reduced staff turnover.

Occupationally specific ICT skills are important in the Power Sector and are addressed in this Apprenticeship through either the competence qualifications or Essential Skills Wales ICT. In a pathway, where ICT is addressed through the competence qualification, Essential Skills Wales ICT is not included as a mandatory outcome.

The Apprenticeship supports delivery of the skills required to address the Government's energy challenge and support a low-carbon, resource-efficient economy.

Aims and objectives of this framework (Wales)

Aim:

To contribute to the development of a sustainable workforce for the UK Power Sector.

Objectives:

1. To attract new workers.
2. To develop occupationally competent workers in a wide range of job roles thereby addressing skills shortages.
3. To facilitate progression.
4. To contribute to meeting the skills priorities for Wales.

Entry conditions for this framework

Responsibility for the selection and recruitment of apprentices lies with the employer who will have a clear idea of their requirements.

The qualifications included within this Apprenticeship are demanding and many employers will look for applicants who have gained the Welsh Baccalaureate Intermediate Diploma or above to demonstrate an ability to complete the Apprenticeship.

However, employers are asked to be flexible when recruiting people onto the Apprenticeship. Where employers/providers have robust learner support systems in place (such as tutorials and mentoring programmes), an individual who historically has not done particularly well at reading, writing and numeracy may thrive on an Apprenticeship where the relevance and application of these subjects is understood.

Applicants with level 2 engineering qualifications would be well suited for this Apprenticeship although these skills can be developed through the programme.

Applicants should be mindful of the following (in no particular order of preference):

- Electricity can be dangerous if not handled correctly so the safety of apprentices, their work colleagues and the public are of the up most importance in this job. Apprentices must be very safety conscious and have a very responsible attitude to work.
- These are physically demanding jobs that involve bending and lifting so a basic level of fitness is important to be able to conduct the job efficiently.
- Overhead Linesworkers and Wind Turbine Engineers will be working at heights so individuals with a fear of heights would not be suited to these roles.
- Potentially all wind turbine engineers could work offshore and spend significant periods at sea so applicants for these roles should be prepared to consider this if required.
- These jobs involve work outdoors, so apprentices should be prepared to work in any kind of weather.
- Apprentices will need to have good practical skills for handling tools and instruments and be prepared for some hard work. These are very skilled jobs and some aspects require significant amounts of concentration.
- Excellent communication skills are needed plus the ability to work within a team and independently.
- The job may involve travelling as apprentices are often field based and will respond to emergencies day or night. Apprentices therefore need to be adaptable and flexible and a driving license is desirable.
- Cable core identification is often coloured and in these circumstances correct colour vision is important. If potential applicants are concerned about colour blindness they should discuss this with the recruiting employer to identify any reasonable adjustments that can be made.
- Some of these job roles will involve working in confined spaces. If potential applicants are

concerned about claustrophobia they should discuss this with the recruiting employer to identify any reasonable adjustments that can be made.

- Apprentices will need a keen interest in the Power Sector and in mechanical/electrical/physical equipment and networks.

RULES TO AVOID REPEATING QUALIFICATIONS

Processes exist to make sure that applicants with prior knowledge, qualifications and experience are not disadvantaged by having to repeat learning. Training providers and awarding organisations will be able to advise on the current rules for accrediting prior learning and recognising prior experience. Refer to the on and off the job training section for guidance about prior attainment and achievement.

In the meantime, this is a short summary:

There are no relaxations or proxies for any qualifications specified in a framework in SASW, however, providers are encouraged to identify additional on-the-job training programmes that customise the learning to the new workplace.

1. Essential Skills Wales.

- If applicants already have GCSEs in English, Maths and/or Information and Communications Technology (ICT) they still have to do the Essential Skills Wales at the relevant level as these are new qualifications and proxies do not exist.
- If applicants already have achieved Key Skills at the relevant level, they will not have to do the relevant Essential Skills Wales (ESW), however, apprentices can be encouraged to complete ESW at a higher level if appropriate.

2. Knowledge qualifications. If applicants already have the Level 2 Knowledge qualifications before they started their Apprenticeship, (see knowledge qualifications page in this framework) they can count this and do not have to redo the qualification, providing that they have achieved this qualification within 3 years of applying for the Apprenticeship Completion Certificate. The hours they spent gaining this qualification will also count towards the minimum hours required for this framework.

3. Competence qualifications. If applicants already have the Level 2 Competence qualification for the Apprenticeship they do not have to repeat this qualification, however, this qualification must have been achieved within 1 year of applying for the Apprenticeship Completion Certificate and they will still have to demonstrate competence in the workplace.

4. Prior experience. Applicants already working in the sector will be able to have their prior experience recognised by the Awarding Organisation and this will count towards the competence and the knowledge qualifications in this framework.

Initial assessment

Initial assessment will be used by training providers and/or employers to identify prior learning and experience to tailor the Apprentice's Individual Learning Plan, not for screening out applicants. In the case of APL for competence, knowledge or Essential Skills Wales, the Apprenticeship programme must be tailored to allow the Apprentice to undertake new learning, including learning at a higher level and develop new skills.

Level 2

Title for this framework at level 2

Foundation Apprenticeship in the Power Sector

Pathways for this framework at level 2

Pathway 1: Foundation Apprenticeship in Power Transmission and Distribution

Level 2, Pathway 1: Foundation Apprenticeship in Power Transmission and Distribution

Description of this pathway

The Foundation Apprenticeship in Power Transmission and Distribution requires a minimum total of 85 credits to be achieved. These are broken down as follows:

- Competence - 37
- Knowledge - 36
- ESW - 12

A total of 674 on and off the job training hours must be achieved.

Entry requirements for this pathway in addition to the framework entry requirements

There are no entry requirements for this pathway in addition to the general framework entry requirements.

Job title(s)	Job role(s)
Linesperson	Conduct routine overhead line activities on wooden poles and steel towers to install, maintain, repair and dismantle overhead line plant and equipment.
Electrical Fitter	Conduct routine substation activities to install, inspect, maintain and repair the electrical plant and apparatus which forms part of the electrical network.
Cable Jointer	Conduct routine cable jointing activities in trenches and excavations at various depths to install, connect and repair the network of underground cables and fittings.

Qualifications

Competence qualifications available to this pathway

C1 - City & Guilds Level 2 Diploma in Electrical Power Engineering - Underground Cables (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/1672/3	City & Guilds	37	133-238	N/A

C2 - City & Guilds Level 2 Diploma in Electrical Power Engineering - Overhead Lines (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	600/1673/5	City & Guilds	53	177-339	N/A

C3 - City & Guilds Level 2 Diploma in Electrical Power Engineering - Substation Plant (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C3a	600/1671/1	City & Guilds	53	171-181	N/A

Knowledge qualifications available to this pathway

K1 - Certificate in Electrical Power Engineering - Distribution and Transmission Technical Knowledge (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/9992/9	City & Guilds	36	360	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

Apprentices must complete both a competence qualification relevant to their job role and a knowledge qualification.

Competence Qualifications

- Apprentices employed as a Cable Jointer must complete C1.
- Apprentices employed as a Linesperson must complete C2.
- Apprentices employed as an Electrical Fitter must complete C3.

Knowledge Qualification

- K1 provides the underpinning knowledge and understanding for all job roles and for qualifications C1 - C3.

Learners that have already achieved competence and/or knowledge qualifications before entry to the Apprenticeship must select relevant options which will equip them with new skills and learning.

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	Level 1	6
Application of numbers	Level 1	6
IT	Not applicable	Not applicable

Progression routes into and from this pathway

Progression routes into the pathway:

Applicants may come from a range of routes including:

- Relevant work or work experience
- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as the Welsh Baccalaureate
- Achievement of Essential Skills Wales
- Pathways to Apprenticeship Programme in a related occupation

Individuals must meet the entry conditions of the Foundation Apprenticeship and the recruiting employer.

Existing members of the workforce may also progress into this Foundation Apprenticeship.

Progression routes out of the pathway:

The apprentice's knowledge about career pathways, information sources and the names of relevant professional bodies are developed as part of the Employee Rights and Responsibilities component of this Foundation Apprenticeship.

Throughout any career in the Power Sector, individuals will be provided with the necessary on-going on and off job training, including refresher training and new skills training, to enable them to carry out their job role competently.

On completion of the Foundation Apprenticeship under normal circumstances, apprentices may continue to work in their current job role.

Completion of the Foundation Apprenticeship supports progression onto the Apprenticeship in

the Power Apprenticeship. Apprentices can also progress horizontally within the sector to complete competence qualifications at the same level or complete components of the Apprenticeship such as level 3 competence units relevant to the job role.

For the right individual, this Foundation Apprenticeship can provide a springboard to an exciting career in the sector.

For further information on careers in the Power Sector please visit www.thinkpowersector.co.uk/ and www.greenstem.org.uk

Employee rights and responsibilities

To ensure full coverage of the nine national outcomes/standards for ERR, an ERR workbook has been developed by EU Skills in partnership with Adams Associates. The workbook is not accredited, but records and formally assesses learning for ERR and must be completed by all apprentices as one of the mandatory outcomes of the Apprenticeship. The workbook can be downloaded from EU Skills' website: www.euskills.co.uk

Assessment is conducted by the assessor who also assesses the apprentice's competence and knowledge qualifications. Quality assurance is achieved through existing centre Internal Verifier and External Verifier processes.

The knowledge in the workbook is intended to be covered throughout the Apprenticeship; therefore, whilst induction is a critical way of meeting some of the ERR requirements; the workbook should be revisited throughout the Apprenticeship to embed learning.

Completion of the workbook is evidenced at the point of claiming an Apprenticeship Completion Certificate through the ERR declaration. A completion certificate cannot be issued without this declaration.

Level 3

Title for this framework at level 3

Apprenticeship in the Power Sector

Pathways for this framework at level 3

- | | |
|------------|---|
| Pathway 1: | Apprenticeship in Wind Turbine Operations and Maintenance |
| Pathway 2: | Apprenticeship in Power Generation |
| Pathway 3: | Apprenticeship in Power Transmission and Distribution |
| Pathway 4: | Apprenticeship in Wind Turbine Installation and Commissioning |

Level 3, Pathway 1: Apprenticeship in Wind Turbine Operations and Maintenance

Description of this pathway

The Apprenticeship in Wind Turbine Operations and Maintenance requires a minimum total of 166 credits to be achieved. These are broken down as follows:

- Competence - 76
- Knowledge - 78
- ESW - 12

A total of 1320 on and off the job training hours must be achieved.

Entry requirements for this pathway in addition to the framework entry requirements

In addition to the general framework entry requirements, employers would expect apprentices to hold a Level 2 NVQ Diploma in Performing Engineering Operations (QCF) prior to commencing the Apprenticeship.

Learners without this qualification are not excluded from the Apprenticeship, but would be expected to complete it as an additional employer requirement of the framework.

Job title(s)	Job role(s)
Wind Turbine Apprentice Technician	Undertaking the inspection and maintenance of wind turbine systems and the location and diagnosis of faults as well as removing and replacing systems and components. Apprentices must comply with statutory regulations and organisational safety requirements and will be working with others.

Qualifications

Competence qualifications available to this pathway

C1 - Level 3 NVQ Diploma in Electrical Power Engineering - Wind Turbine Operations and Maintenance (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/0811/8	City & Guilds	76	408	N/A

Knowledge qualifications available to this pathway

K1 - Level 3 Diploma In Electrical Power Engineering - Wind Turbine Maintenance (Technical Knowledge) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/2700/9	City & Guilds	78	715	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

Apprentices must complete both C1 and K1.

K1 provides the underpinning knowledge for C1. These qualifications are appropriate for learners employed as a Wind Turbine Apprentice - Operations and Maintenance.

Learners that have already achieved competence and/or knowledge qualifications before entry to the Apprenticeship must select relevant options which will equip them with new skills and learning.

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	Level 2	6
Application of numbers	Level 2	6
IT	Not applicable	Not applicable

Progression routes into and from this pathway

Progression routes into the pathway:

Applicants may come from a range of routes including:

- Relevant work or work experience
- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as the Welsh Baccalaureate Intermediate Diploma
- Achievement of Essential Skills Wales
- Successful completion of a relevant Foundation Apprenticeship, for example in Engineering.

Individuals must meet the entry conditions of the recruiting employer.

Existing members of the workforce may also progress into this Apprenticeship.

Progression routes out of the pathway:

The apprentice's knowledge about career pathways, information sources and the names of relevant professional bodies are developed as part of the Employee Rights and Responsibilities component of this Apprenticeship.

Throughout any career in the Power Sector, individuals will be provided with the necessary on-going on and off job training, including refresher training and new skills training, to enable them to carry out their job role competently.

On completion of the Apprenticeship under normal circumstances, apprentices may continue to work in their current job role. Progression thereafter will depend on the performance and motivation of the individual and the vacancies/opportunities available within the organisation and other organisations in the sector.

For the right individual, this Apprenticeship can provide a springboard to an exciting career in the Power Sector.

A vertical progression pathway could be as follows: Apprentice Technician – Trainee Technician – Competent Technician/Technician – Authorised Technician – Trainee Site Supervisor – Site Supervisor – Senior Site Supervisor.

When an individual reaches Authorised Technician horizontal progression opportunities are available. An Authorised Technician could progress to a Blade Technician or to a Safety Trainer and then Technical Trainer.

For further information on careers in the Power Sector please visit <http://www.thinkpowersector.co.uk/> and www.greenstem.org.uk.

UCAS points for this pathway: Not applicable

Employee rights and responsibilities

To ensure full coverage of the nine national outcomes/standards for ERR, an ERR workbook has been developed by EU Skills in partnership with Adams Associates. The workbook is not accredited, but records and formally assesses learning for ERR and must be completed by all apprentices as one of the mandatory outcomes of the Apprenticeship. The workbook can be downloaded from EU Skills' website: www.euskills.co.uk

Assessment is conducted by the assessor who also assesses the apprentice's competence and knowledge qualifications. Quality assurance is achieved through existing centre Internal Verifier and External Verifier processes.

The knowledge in the workbook is intended to be covered throughout the Apprenticeship; therefore, whilst induction is a critical way of meeting some of the ERR requirements; the workbook should be revisited throughout the Apprenticeship to embed learning.

Completion of the workbook is evidenced at the point of claiming an Apprenticeship Completion Certificate through the ERR declaration. A completion certificate cannot be issued without this declaration.

Level 3, Pathway 2: Apprenticeship in Power Generation

Description of this pathway

The Apprenticeship in Power Generation requires a minimum total of 227 credits to be achieved. These are broken down as follows:

Competence - 89

Knowledge - 120

ESW - 18

A total of 1475 on and off the job training hours must be achieved.

Entry requirements for this pathway in addition to the framework entry requirements

There are no additional requirements other than the general entry requirements.

Job title(s)	Job role(s)
Craftsperson/Fitter - Electrical	Conduct complex + routine activities that include the maintenance, inspection, fault diagnosis + repair of electrical plant + assets. Working on own initiative with limited supervision to approved, safety + environmental standards + regulations. Controlling + directing resources.
Craftsperson/Fitter - Mechanical	Conduct complex + routine activities that include the maintenance, inspection, fault diagnosis + repair of mechanical plant + assets. Working on own initiative with limited supervision to approved, safety + environmental standards + regulations. Controlling + directing resources.
Craftsperson/Fitter - Electrical + Mechanical	Conduct complex + routine activities including the maintenance, inspection, fault diagnosis + repair of electrical + mechanical plant + assets. Working on own initiative with limited supervision to approved, safety + environmental standards + regulations. Controlling + directing resources.
Craftsperson/Fitter - Control + Instrumentation	Conduct complex + routine activities including the maintenance, inspection, fault diagnosis + repair of control + instrumentation plant + assets. Working on own initiative with limited supervision to approved, safety + environmental standards + regulations. Controlling + directing resources.
Craftsperson/Fitter - Electrical + Control + Instrumentation	Conduct complex + routine activities including maintenance, inspection, fault diagnosis + repair of electrical + control + instrumentation plant + assets. Working on own initiative with limited supervision to approved, safety+ environmental standards + regulations. Controlling + directing resources.

Qualifications

Competence qualifications available to this pathway

C1 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (Electrical) (NVQ) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	500/9729/5	City & Guilds	209	1277	N/A

C2 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (Mechanical) (NVQ) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C2a	500/9730/1	City & Guilds	209	1277	N/A

C3 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (Combined Electrical & Mechanical) (NVQ) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C3a	500/9986/3	City & Guilds	269	1637	N/A

Competence qualifications available to this pathway (cont.)

C4 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (Control & Instrumentation) (NVQ) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C4a	500/9731/3	City & Guilds	209	1277	N/A

C5 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (Combined Electrical and Control & Instrumentation) (NVQ) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C5a	500/9778/7	City & Guilds	289	1637	N/A

C6 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Power Plant Maintenance (NVQ) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C6a	500/9732/5	City & Guilds	89	513	N/A

Knowledge qualifications available to this pathway

K1 - Pearson BTEC Level 3 Diploma in Electrical / Electronic Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	500/8098/2	Pearson Education Ltd	120	720	N/A

Knowledge qualifications available to this pathway (cont.)

K2 - Pearson BTEC Level 3 Extended Diploma in Electrical / Electronic Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K2a	500/8097/0	Pearson Education Ltd	180	1080	N/A

K3 - Pearson BTEC Level 3 Diploma in Operations and Maintenance Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K3a	500/7315/1	Pearson Education Ltd	120	720	N/A

K4 - Pearson BTEC Level 3 Extended Diploma in Operations and Maintenance Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K4a	500/7317/5	Pearson Education Ltd	180	1080	N/A

K5 - Pearson BTEC Level 3 Diploma in Mechanical Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K5a	500/7283/3	Pearson Education Ltd	120	720	N/A

Knowledge qualifications available to this pathway (cont.)

K6 - Pearson BTEC Level 3 Extended Diploma in Mechanical Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K6a	500/7296/1	Pearson Education Ltd	180	1080	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

Apprentices must complete one competence qualification and one knowledge qualification. The qualifications chosen must be appropriate to the Apprentices job role.

Craftsperson/Fitter - Electrical

The appropriate competence qualifications are C1 & C6.

The appropriate knowledge qualifications are K1 & K2.

Craftsperson/Fitter - Mechanical

The appropriate competence qualification is C2.

The appropriate knowledge qualifications are K5 & K6.

Craftsperson/Fitter - Electrical & Mechanical

The appropriate competence qualification is C3.

The appropriate knowledge qualifications are K1, K2, K5 & K6.

Craftsperson/Fitter - Control & Instrumentation

The appropriate competence qualification is C4.

The appropriate knowledge qualifications are K3 & K4.

Craftsperson/Fitter - Electrical & Control & Instrumentation

The appropriate competence qualification is C5.

The appropriate knowledge qualifications are K1, K2, K3 & K4.

Learners that have already achieved competence and/or knowledge qualifications before entry to the Apprenticeship must select relevant options which will equip them with new skills and learning.

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	Level 2	6
Application of numbers	Level 2	6
IT	Level 2	6

Progression routes into and from this pathway

Progression routes into the pathway:

Applicants may come from a range of routes including:

- Relevant work or work experience
- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as the Welsh Baccalaureate Intermediate Diploma
- Achievement of Essential Skills Wales
- Successful completion of a relevant Foundation Apprenticeship for example, in Engineering.

Individuals must meet the entry conditions of the recruiting employer.

Existing members of the workforce may also progress into this Apprenticeship.

Progression routes out of the pathway:

The apprentice's knowledge about career pathways, information sources and the names of relevant professional bodies are developed as part of the Employee Rights and Responsibilities component of this Apprenticeship.

Throughout any career in the Power Sector, individuals will be provided with the necessary on-going on and off the job training, including refresher training and new skills training, to enable them to carry out their job role competently.

On completion of the Apprenticeship under normal circumstances, apprentices may continue to work in their current job role. Progression thereafter will depend on the performance and motivation of the individual and the vacancies/opportunities available within the organisation and other organisations in the sector.

The following Foundation Degrees are available and provide future progression opportunities for apprentices:

Electrical Power Engineering and Renewable Energy delivered by Loughborough College
Electrical Power Engineering delivered by Loughborough College
Engineering for Power Industries delivered by Selby College
Power Systems Management delivered by Loughborough College
Engineering delivered widely across the UK

For the right individual, this Apprenticeship can provide a springboard to an exciting career in the Power Sector.

For further information on careers in the Power Sector please visit
www.thinkpowersector.co.uk/ and www.greenstem.org.uk

UCAS points for this pathway: Not applicable

Employee rights and responsibilities

To ensure full coverage of the nine national outcomes/standards for ERR, an ERR workbook has been developed by EU Skills in partnership with Adams Associates. The workbook is not accredited, but records and formally assesses learning for ERR and must be completed by all apprentices as one of the mandatory outcomes of the Apprenticeship. The workbook can be downloaded from EU Skills' website: www.euskills.co.uk

Assessment is conducted by the assessor who also assesses the apprentice's competence and knowledge qualifications. Quality assurance is achieved through existing centre Internal Verifier and External Verifier processes.

The knowledge in the workbook is intended to be covered throughout the Apprenticeship; therefore, whilst induction is a critical way of meeting some of the ERR requirements; the workbook should be revisited throughout the Apprenticeship to embed learning.

Completion of the workbook is evidenced at the point of claiming an Apprenticeship Completion Certificate through the ERR declaration. A completion certificate cannot be issued without this declaration.

Level 3, Pathway 3: Apprenticeship in Power Transmission and Distribution

Description of this pathway

The Apprenticeship in Power Transmission and Distribution requires a minimum total of 176 credits to be achieved. These are broken down as follows:

- Competence - 81
- Knowledge - 77
- ESW - 18

A total of 1033 on and off the job training hours must be achieved.

Entry requirements for this pathway in addition to the framework entry requirements

There are no entry requirements for this pathway in addition to the general framework entry requirements.

Job title(s)	Job role(s)
Technician	First line supervisory role involving the organising and controlling of work and technical responsibilities including switching activities and fault diagnosis.
Linesperson	Conduct routine and non routine overhead line activities on wooden poles and steel towers to install, maintain, repair and dismantle overhead line plant and equipment whilst controlling and directing resources.
Cable Joiner	Conduct routine cable and non routine jointing activities in trenches and excavations at various depths to install, connect and repair the network of underground cables and fittings whilst controlling and directing resources.
Electrical Fitter	Conduct routine and non routine substation activities to install, inspect, maintain and repair the electrical plant and apparatus which forms part of the electrical network whilst controlling and directing resources.

Qualifications

Competence qualifications available to this pathway

C1 - City & Guilds Level 3 Diploma In Electrical Power Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	601/2519/6	City & Guilds	81	426-597	N/A

Knowledge qualifications available to this pathway

K1 - City & Guilds Level 3 Diploma In Electrical Power Engineering - Distribution and Transmission (Technical Knowledge) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/1221/3	City & Guilds	77	395	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

Apprentices must complete both the competence and knowledge qualification.

Within the competency qualification, apprentices must choose the unit group relevant to their job role.

Learners that have already achieved competence and/or knowledge qualifications before entry to the Apprenticeship must select relevant options which will equip them with new skills and learning.

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	Level 2	6
Application of numbers	Level 2	6
IT	Level 2	6

Progression routes into and from this pathway

Progression routes into the pathway:

Applicants may come from a range of routes including:

- Relevant work or work experience
- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as the Welsh Baccalaureate
- Achievement of Essential Skills Wales
- Successful completion of the Foundation Apprenticeship in the Power Sector

Individuals must meet the entry conditions of the recruiting employer.

Existing members of the workforce may also progress into this Apprenticeship.

Progression routes out of the pathway:

The apprentice's knowledge about career pathways, information sources and the names of relevant professional bodies are developed as part of the Employee Rights and Responsibilities component of this Apprenticeship.

Throughout any career in the Power Sector, individuals will be provided with the necessary on-going on and off job training, including refresher training and new skills training, to enable them to carry out their job role competently.

On completion of the Apprenticeship under normal circumstances, apprentices may continue to work in their current job role. Progression thereafter will depend on the performance and motivation of the individual and the vacancies/opportunities available within the organisation and other organisations in the sector.

Completion of the Apprenticeship supports progression onto the Higher Apprenticeship in Power Engineering. The following Foundation Degrees are available and provide future progression opportunities for apprentices:

Electrical Power Engineering and Renewable Energy delivered by Loughborough College
Electrical Power Engineering delivered by Loughborough College
Engineering for Power Industries delivered by Selby College
Power Systems Management delivered by Loughborough College
Engineering delivered widely across the UK

For the right individual, this Apprenticeship can provide a springboard to an exciting career in the Power Sector.

For further information on careers in the Power Sector please visit
www.thinkpowersector.co.uk/ and www.greenstem.org.uk

UCAS points for this pathway: Not applicable.

Employee rights and responsibilities

Within this pathway the nine national outcomes/standards for ERR are met through a mandatory QCF unit included in the knowledge qualification.

The unit title is Employment Rights and Responsibilities in the Energy & Utility Sector.

Reference number: R/602/2775. Credits: 2. GLH: 20

Completion of ERR must be evidenced at the point of claiming an Apprenticeship Completion Certificate. ERR will be evidenced through the certificate of achievement for the knowledge qualification and through the ERR declaration. A completion certificate cannot be issued without this declaration.

EU Skills has developed an ERR workbook with Adams Associates to support delivery of this unit. Use of this workbook is optional and completion of the workbook does not need to be evidenced at the point of certification. The workbook can be downloaded from EU Skills' website: www.euskills.co.uk

Level 3, Pathway 4: Apprenticeship in Wind Turbine Installation and Commissioning

Description of this pathway

The Apprenticeship in Wind Turbine Installation and Commissioning requires a minimum of 175 credits to be achieved. These are broken down as follows:

- Competence - 85
- Knowledge - 78
- Essential Skills Wales - 12

A total of 1374 on and off the job training hours must be achieved.

Entry requirements for this pathway in addition to the framework entry requirements

In addition to the general framework entry requirements, employers would expect apprentices to hold a Level 2 NVQ Diploma in Performing Engineering Operations (QCF) prior to commencing the Apprenticeship.

Learners without this qualification are not excluded from the Apprenticeship, but would be expected to complete it as an additional employer requirement of the framework.

Job title(s)	Job role(s)
Wind Turbine Apprentice - Installation & Commissioning	Undertaking the installation and commissioning of wind turbine systems. Apprentices must comply with statutory regulations and organisational safety requirements and will be working with others.

Qualifications

Competence qualifications available to this pathway

C1 - City & Guilds Level 3 Diploma in Electrical Power Engineering - Wind Turbine Engineering Installation and Commissioning (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/6845/0	City & Guilds	85	462-472	N/A

Knowledge qualifications available to this pathway

K1 - Level 3 Diploma In Electrical Power Engineering - Wind Turbine Maintenance (Technical Knowledge) (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/2700/9	City & Guilds	78	715	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

K1 provides the underpinning knowledge for C1. These qualifications are appropriate for learners employed as a Wind Turbine Apprentice - Installation and Commissioning.

Apprentices must complete both qualifications (C1 & K1).

Learners that have already achieved competence and/or knowledge qualifications before entry to the Apprenticeship must select relevant options which will equip them with new skills and learning.

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	2	6
Application of numbers	2	6
IT	N/A	N/A

Progression routes into and from this pathway

Progression routes into the pathway:

Applicants may come from a range of routes including:

- Relevant work or work experience
- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as four GCSEs grade A* - C including 3 STEM subjects.
- Welsh Baccalaureate Intermediate Diploma
- Achievement of Essential Skills Wales
- Successful completion of a relevant Foundation Apprenticeship, for example in Engineering.
- Ex forces
- Individuals must meet the entry conditions of the Apprenticeship and the recruiting employer.
- Existing members of the workforce may also progress into this Apprenticeship.

Progression routes out of the pathway:

The apprentice's knowledge about career pathways, information sources and the names of relevant professional bodies are developed as part of the Employee Rights and Responsibilities component of this Apprenticeship.

Throughout any career in the Power Sector, individuals will be provided with the necessary on-going on and off job training, including refresher training and new skills training, to enable them to carry out their job role competently.

On completion of the Apprenticeship under normal circumstances apprentices will continue to work in their current job role. Progression thereafter will depend on the performance and motivation of the individual and the vacancies/opportunities available within the organisation

and other organisations in the industry.

Completion of the Apprenticeship supports progression onto the Higher Apprenticeship in Power Engineering.

For the right individual, this Apprenticeship can provide a springboard to an exciting career in the Power Sector.

For Apprentices who wish to multiskill across both wind turbine installation and commissioning and wind turbine operations and maintenance it is possible to complete the 5 additional units within the competence qualification. It is expected that this could be achieved within 12 months of completing the Apprenticeship.

A vertical progression pathway could be as follows: Apprentice Technician – Trainee Technician – Competent Technician/Technician - Authorised Technician – Trainee Site Supervisor – Site Supervisor – Senior Site Supervisor.

When an individual reaches Authorised Technician horizontal progression opportunities may be available. An Authorised Technician could progress to a Blade Technician or to a Safety Trainer and then Technical Trainer.

Job titles will vary depending on the employer.

Relevant programmes that support progression include:

- Foundation Degree in Subsea Engineering offered by Newcastle College
- Foundation Degree in Renewable Energy Technologies offered by Newcastle College
- Foundation Degree in Electrical Power Engineering offered by Aston University and Tyne Metropolitan College

For further information on careers in the Power Sector please visit www.thinkpowersector.co.uk/ and www.greenstem.org.uk

UCAS points for this pathway: Not applicable

Employee rights and responsibilities

To ensure full coverage of the nine national outcomes/standards for ERR, an ERR workbook has been developed by EU Skills in partnership with Adams Associates. The workbook is not accredited, but records and formally assesses learning for ERR and must be completed by all apprentices as one of the mandatory outcomes of the Apprenticeship. The workbook can be downloaded from EU Skills' website: www.euskills.co.uk

Assessment is conducted by the assessor who also assesses the apprentice's competence and knowledge qualifications. Quality assurance is achieved through existing centre Internal Verifier and External Verifier processes.

The knowledge in the workbook is intended to be covered throughout the Apprenticeship; therefore, whilst induction is a critical way of meeting some of the ERR requirements; the workbook should be revisited throughout the Apprenticeship to embed learning.

Completion of the workbook is evidenced at the point of claiming an Apprenticeship Completion Certificate through the ERR declaration. A completion certificate cannot be issued without this declaration.

Level 4

Title for this framework at level 4

Higher Apprenticeship in Power Engineering

Pathways for this framework at level 4

Pathway 1: Higher Apprenticeship in Power Engineering

Level 4, Pathway 1: Higher Apprenticeship in Power Engineering

Description of this pathway

The Higher Apprenticeship in Power Engineering - level 4 requires a minimum of 337 credits to be achieved.

These are broken down as follows:

- Competence - 150
- Knowledge - 175
- ESW - 12

A total of 1119 on and off the job training hours must be achieved.

Entry requirements for this pathway in addition to the framework entry requirements

The Higher Apprenticeship does not impose any restrictions to entry. Responsibility for selection and recruitment of apprentices lies with the employer who will have a clear idea of their requirements.

Employers wish to attract applicants who have an interest in working in an engineering environment and who come from a diverse range of backgrounds with a wide range of experience, achievements or qualifications.

Applicants may:

- hold a variety of qualifications such as A Levels in Science, Technology, Engineering or Manufacturing (STEM) subjects (grades A/B), Certificate/Diploma in relevant Engineering disciplines, Advanced Level Apprenticeship in relevant Engineering disciplines (i.e. the Power Sector or Engineering) and GCSEs in English, Maths, and Science - grade C or above OR
- without formal qualifications can show, possibly through a portfolio, that they have the

potential to complete this Higher Apprenticeship, through having previously worked/currently work in the sector at level 3 and can demonstrate the appropriate level of mathematics ability.

In some cases, employers may wish to recruit apprentices who have the ability to eventually undertake a Higher Apprenticeship - level 5 or a level 6 qualification, who would start initially at level 4. Under these circumstances, applicants would need to have appropriate STEM A levels and/or other relevant qualifications that would allow them entry to higher education at level 5 or 6.

Job title(s)	Job role(s)
Asset Management/Strategy Engineer	Produce long term plans - take account of new technology, regulatory requirements, internal & external factors. Example activities: analyse electrical networks, seek methods of improving performance i.e. develop innovative solutions, study historic data.
Design and/or Planning Engineer	Produce designs to meet statutory & industry standards. Example activities: produce high level designs & detailed plans considering client requirements, protection, earthing, network strategy, power systems analysis, budget constraints.
Programme Planning Engineer	Ensure work programmes are delivered to meet time, quality, cost and safety requirements. Example activities include: formulate programmes of work; establish review criteria, measure performance, identify delivery issues.
Operations Engineer	To plan, undertake and manage a range of engineering operations to meet safety, time, cost and quality requirements. Example activities include: maintenance, construction, commissioning, protection.

Qualifications

Competence qualifications available to this pathway

C1 - EAL Level 4 Diploma in Managing Engineering Activities in the Electricity Supply Industry (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
C1a	600/8030/9	EAL	150	240	N/A

Knowledge qualifications available to this pathway

K1 - EAL Level 4 Diploma in Power Engineering (QCF)					
No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
K1a	600/8096/6	EAL	175	720	N/A

Combined qualifications available to this pathway

N/A

Relationship between competence and knowledge qualifications

Apprentices must complete both C1 and K1.

K1 provides the underpinning knowledge for C1. These qualifications are appropriate for learners employed in the job roles this Higher Apprenticeship has been designed to underpin. The range of optional units in the qualifications allow employers to tailor the qualification directly to the apprentices' job role. For example, if the Apprentice is a Programme Planning Engineer operating in primarily a mechanical engineering environment, the optional units relating to mechanical engineering should be chosen to ensure the apprentice develops the underpinning knowledge appropriate to their job role.

Learners that have already achieved competence and/or knowledge qualifications before entry to the Apprenticeship must select relevant options which will equip them with new skills and learning.

Transferable skills (Wales)

Essential skills (Wales)

	Minimum level	Credit value
Communication	2	6
Application of numbers	2	6
IT	N/A	N/A

Progression routes into and from this pathway

Progression routes into the pathway:

Applicants may come from a range of routes including those who:

- have A levels (grades A/B) in Science, Technology, Engineering or Mathematics subjects and GCSEs in English, Maths, and Science - grade C or above
- Advanced level Welsh Baccalaureate
- have completed an appropriate Advanced Level Apprenticeship i.e in the Power Industry or in Engineering
- hold NVQ Level 3; BTEC National; Ordinary National Diploma (OND); Ordinary National Certificate (ONC) in appropriate engineering disciplines
- have previous suitable work experience or employment in engineering at level 3 or above

Progression routes out of the pathway:

The apprentice's knowledge about career pathways, information sources and the names of relevant professional bodies are developed as part of the induction process. Throughout any career in the Power Sector, individuals will be provided with the necessary on-going on and off job training, including refresher training and new skills training, to enable them to carry out their job role competently.

On completion of the Higher Apprenticeship under normal circumstances apprentices may transition into or continue to work as a competent engineer. Progression thereafter will depend on the performance and motivation of the individual and the vacancies/opportunities available within the organisation and other organisations in the sector.

Completion of the Higher Apprenticeship supports progression to suitable Foundation Degrees for example, the Foundation Degree in Power Engineering offered by Aston University. Aston

University offers the following streams within the Foundation Degree:

- Electrical Power Engineering (Distribution)
- Electrical Power Engineering (Transmission)
- Electrical Power Engineering (Power System Management)
- Electrical Power Engineering (Renewable Energy & Embedded Generation)
- Electrical Power Engineering (Construction Management)

Aston University has mapped the content of the EAL Level 4 Diploma in Power Engineering (QCF) to the Foundation Degree streams and has agreed that by selecting appropriate units within the knowledge qualification, apprentices are eligible for transition to year 2 of the Foundation Degree. Learners would need to study the module titled "Introduction to the Power Industry" delivered by Aston University, since this contextualises the Foundation Degree. A list of the units which must be chosen to enable direct entry to the Foundation Degree at year 2 is available at www.euskills.co.uk.

Employers may develop relationships with other providers and offer similar progression routes. Further academic progression for successful learners is available. The appropriate course choice will depend on the requirements of the employer and the choice of units taken as part of the Higher Apprenticeship.

Recognising that professional registration is important to individuals and employers, professional institutions have been consulted in the development of this Higher Apprenticeship. Both the Institution of Engineering and Technology (the IET) and the Institution of Mechanical Engineers (IMechE) are working with EU Skills, the National Skills Academy for Power and employers to ensure that the content of the Higher Apprenticeship will support individuals' registration journey both to EngTech and from EngTech to IEng.

Successful completion of the Higher Apprenticeship will provide evidence individuals could use as part of their application for registration at EngTech level with the appropriate Institution. Further work is on-going to map the criteria and required outputs to support progression to IEng.

For the right individual, this Higher Apprenticeship can provide a springboard to an exciting career in the Power Sector. For further information on careers in the Power Sector please visit www.greenstem.org.uk and www.thinkpowersector.co.uk/

UCAS points for this pathway: Not applicable.

Employee rights and responsibilities

To ensure full coverage of the nine national outcomes/standards for ERR, an ERR workbook has been developed by EU Skills in partnership with Adams Associates. The workbook is not accredited, but records and formally assesses learning for ERR and must be completed by all apprentices as one of the mandatory outcomes of the Apprenticeship. The workbook can be downloaded from EU Skills' website: www.euskills.co.uk

Assessment is conducted by the assessor who also assesses the apprentice's competence and knowledge qualifications. Quality assurance is achieved through existing centre Internal Verifier and External Verifier processes.

The knowledge in the workbook is intended to be covered throughout the Apprenticeship; therefore, whilst induction is a critical way of meeting some of the ERR requirements; the workbook should be revisited throughout the Apprenticeship to embed learning.

Completion of the workbook is evidenced at the point of claiming an Apprenticeship Completion Certificate through the ERR declaration. A completion certificate cannot be issued without this declaration.

The remaining sections apply to all levels and pathways within this framework.

How equality and diversity will be met

Under-representation in the sector

The Power Sector is affected by a gender imbalance with females constituting only 26.8% of the workforce compared to the 43% UK average. Females are even more poorly represented in technical roles at 1.7% of the workforce compared the UK average of 8.6%. In addition, only 4% of the Power Sector workforce is from a black or minority ethnic (BME) background compared to 8% of the UK workforce.

Barriers to entry and progression

Unfounded social perceptions about the suitability of technical roles within the sector for women provide the main barrier to entry and progression for these under-represented groups.

Actions being taken to address barriers to take up and progression

Apprentices are seen as a vital route to encourage and facilitate a greater diversity of individuals into the industry. This Apprenticeship does not discriminate. Employers/providers must be able to demonstrate that there are no overt or covert discriminatory practices in selection and employment. All promotion, selection and training activities must comply with relevant legislation, in particular, the protected characteristics of the Equality Act 2010. For guidance please refer to:

www.equalityhumanrights.com/advice-and-guidance/new-equality-act-guidance/

Energy & Utility Skills and Power Sector employers have established the National Skills Academy for Power to develop the capacity, capability, quality and consistency of training and education to deliver the skills needs of a sustainable UK Power sector. One of the Skills Academics' strategic objectives is to:

"Increase the attractiveness and diversity of the sector to future and existing employees, learners and trainers, demonstrating clear recognised career and development paths and 'connecting up' the promotion of the sector to new recruits and learners in line with the education system through schools, careers advisors and Further and Higher Education."

The Skills Academy has established the Sector Attractiveness Working Group with the purpose to:

"Broaden the "pool" of potential employees in the power industry through increased sector profile and attractiveness."

The working group has produced a sector attractiveness strategy which focuses on two key

activity areas: stakeholder engagement and learner engagement. It will identify solutions to entry and progression.

The Think Power website www.thinkpowersector.co.uk is one example of how sector attractiveness is being addressed.

On and off the job training (Wales)

Summary of on- and off-the-job training

Training hours relate to training which is designed to achieve clear and specific outcomes which contribute directly to the achievement of the Apprenticeship framework. Training hours must be delivered during contracted working hours under an Apprenticeship Agreement or during a 5 year qualifying period ending on the date of application for a certificate.

Training hours:

- must be planned, reviewed and evaluated jointly between the apprentice and tutor, teacher, mentor or manager;
- must allow training support via a tutor, teacher, mentor or manager;
- are delivered through one or more of the following methods: individual and group teaching, e-learning, distance learning, coaching, mentoring; feedback and assessment; collaborative/networked learning with peers; guided study;

In order to complete the Apprenticeship the training hours detailed below must be achieved.

Off-the-job training

Off the job training hours, are the hours associated with learning to develop the knowledge required for the job role, that takes place "away from the immediate pressures of the job" i.e. in a training room on the employers' premises.

Over the duration of the Foundation Apprenticeship a minimum of 541 training hours must be completed off the job. It is anticipated that these training hours will be broken down as follows:

21 - induction

360 - knowledge qualification

90 - ESW

30 - related to completion of the Employment Rights and Responsibilities workbook

10 - progress reviews (at least one hour every 12 weeks for the duration of the programme)

30 - mentoring (at least one hour every month for the duration of the programme)

Over the duration of the Apprenticeship - Wind Turbine Operations and Maintenance pathway, a minimum of 912 training hours must be completed off the job. It is anticipated that these training hours will be broken down as follows:

21 - induction

715 - knowledge qualification

90 - ESW

30 - related to completion of the Employment Rights and Responsibilities workbook

14 - progress reviews (at least one hour every 12 weeks for the duration of the programme)

42 - mentoring (at least one hour every month for the duration of the programme)

Over the duration of the Apprenticeship - Wind Turbine Installation and Commissioning pathway, a minimum of 912 training hours must be completed off the job. It is anticipated that these training hours will be broken down as follows:

21 - induction

715 - knowledge qualification

90 - ESW

30 - related to completion of the Employment Rights and Responsibilities workbook

14 - progress reviews (at least one hour every 12 weeks for the duration of the programme)

42 - mentoring (at least one hour every month for the duration of the programme)

Over the duration of the Apprenticeship - Power Generation pathway, a minimum of 962 training hours must be completed off the job. It is anticipated that these training hours will be broken down as follows:

21 - induction

720 - knowledge qualification

135 - ESW

30 - related to completion of the Employment Rights and Responsibilities workbook

14 - progress reviews (at least one hour every 12 weeks for the duration of the programme)

42 - mentoring (at least one hour every month for the duration of the programme)

Over the duration of the Apprenticeship - Power Transmission and Distribution pathway, a minimum of 607 training hours must be completed off the job. It is anticipated that these learning hours will be broken down as follows:

21 - induction

395 - knowledge qualification

135 - ESW

14 - progress reviews (at least one hour every 12 weeks for the duration of the programme)

42 - mentoring (at least one hour every month for the duration of the programme)

Over the duration of the Higher Apprenticeship in Power Engineering, a minimum of 879 training hours must be completed off the job. It is anticipated that these training hours will be broken down as follows:

21 - induction

720 - knowledge qualification

90 - ESW

12 - progress reviews (at least one hour every 12 weeks for the duration of the programme)

36 - mentoring (at least one hour every month for the duration of the programme)

How this requirement will be met

Training hours delivered under an Apprenticeship agreement may vary depending on the previous experience and attainment of the apprentice. The amount of off-the-job training required to complete the Apprenticeship under the Apprenticeship agreement may then be reduced accordingly, provided the total number of off-the-job hours for this framework can be verified for Apprenticeship certification.

Previous attainment

Where a learner enters an apprenticeship agreement having previously attained parts or all of the relevant qualifications, this prior learning needs to be recognised using either QCF credit transfer for achievements within the QCF; or through recording certificated learning outside of the QCF, for example Principal Learning qualifications. For apprentices who have already achieved the relevant qualifications, they must have been certificated within five years of applying for the Apprenticeship Certificate.

Previous experience

Where a learner enters an Apprenticeship agreement with previous work-related experience, this prior learning needs to be recognised [see QCF Guidance on Claiming Credit for further details]. To count towards Apprenticeship certification, previous experience must be recorded using the appropriate Awarding Organisation's CQFW 'Recognition of Prior Learning' (RPL) procedures and the hours recorded may then count towards the off-the-job hours required to complete the Apprenticeship. For apprentices with prior uncertificated learning experience, the off-the-job learning must have been acquired within five years of application for the Apprenticeship Certificate or have been continuously employed in the relevant job role in the industry for three years duration.

Delivery and recording of off the job training hours:

Off-the-job training hours will be delivered through the knowledge qualification, Essential Skills Wales, ERR, progress reviews, mentoring and coaching. This could include training hours delivered through access to a computer through working hours, day release, block release etc.

EU Skills recommends that a plan is developed at the outset of the Apprenticeship to determine how the training hours requirement will be met. Training hours must be recorded by the apprentice; for example through a diary, portfolio or timesheets.

Evidence of completion of the total off the job training hours:

Off-the-job training hours will be evidenced through the record kept by the apprentice and through the certificate of achievement for the knowledge qualification and Essential Skills Wales.

At the point of applying for an Apprenticeship Completion Certificate, a declaration signed by the provider and apprentice, must be provided to confirm that the training hours requirements of the Apprenticeship have been achieved. The Apprenticeship Completion Certificate cannot be issued without this declaration -available at Apprenticeship Certification Wales (ACW - <https://acwcerts.co.uk>)

A completion certificate will only be issued through ACW when all component parts of the framework, including training hours, have been achieved, evidenced and checked by Energy & Utility Skills (the Certification Body).

On-the-job training

Over the duration of the Foundation Apprenticeship a minimum of 133 training hours must be completed on the job.

Over the duration of the Apprenticeship - Wind Turbine Operations and Maintenance pathway, a minimum of 408 training hours must be completed on the job.

Over the duration of the Apprenticeship - Wind Turbine Installation and Commissioning pathway, a minimum of 462 training hours must be completed on the job.

Over the duration of the Apprenticeship - Power Generation pathway, a minimum of 513 training hours must be completed on the job.

Over the duration of the Apprenticeship - Power Transmission and Distribution pathway, a minimum of 426 training hours must be completed on the job.

Over the duration of the Higher Apprenticeship in Power Engineering, a minimum of 240 training hours must be completed on the job.

Training hours in all pathways will be achieved through the competency qualification.

How this requirement will be met

On-the job training is defined as skills, knowledge and competence gained within normal work duties. These hours may vary depending on previous experience and attainment of the apprentice. Where a learner enters an Apprenticeship agreement having previously attained or acquired the appropriate competencies or knowledge, this prior learning needs to be

recognised and documented using the relevant QCF credit transfer, QCF exemption or RPL procedures (as off-the-job above). The amount of on-the-job training required to complete the Apprenticeship under the Apprenticeship agreement may then be reduced accordingly, provided the total number of on-the-job hours for this framework can be verified for Apprenticeship certification.

Apprentices who commence training under a new Apprenticeship agreement with a new employer may bring a range of prior experience with them. When an apprentice can claim 25% or more hours towards the on-the-job framework total through prior learning acquired from previous full-time education, employment or other vocational programmes, then the apprentice's learning programme should include 'customisation'. Training providers are encouraged to identify additional on-the-job training programmes that customise the learning to the new workplace. Customisation programmes may include:

- selecting appropriate additional Unit(s) from QCF qualifications, or relevant units recognised as Quality Assured Lifelong Learning [QALL] through a CQFW recognised body
- following Essential Skills at a level higher than that specified in the framework
- including one or more Wider Key Skills or other competency-based qualifications/units relevant to the workplace.

For apprentices who have already achieved the relevant qualifications, they must have been certificated within 5 years from the date of application for the Foundation Apprenticeship/Apprenticeship Certificate or have been continuously employed in the industry for three years. Job roles within the Power Sector require a thorough level of technical competence and knowledge, which will be undertaken through work-based training, practice and experience.

Delivery, recording and evidence of on the job training hours:

On-the-job training hours will be delivered, recorded and evidenced through successful completion (demonstrated through a certificate of achievement) of the relevant competence qualification.

EU Skills recommends that a plan is developed at the outset of the Apprenticeship to determine how the training hours requirement will be met. Training hours must be recorded by the apprentice; for example through a diary, portfolio or timesheets.

At the point of applying for an Apprenticeship Completion Certificate, a declaration signed by the provider and apprentice, must be provided to confirm that the training hours requirements of the Apprenticeship have been achieved. The Apprenticeship Completion Certificate cannot be issued without this declaration -available at Apprenticeship Certification Wales (ACW - <https://acwcerts.co.uk>)

A completion certificate will only be issued through ACW when all component parts of the framework, including training hours, have been achieved, evidenced and checked by Energy &

Utility Skills (the Certification Body).

Wider key skills assessment and recognition (Wales)

Improving own learning and performance

This is not a mandatory outcome of the framework because these skills are not essential for effective performance in the job role; however, apprentices are encouraged to complete this wider key skill where they are able to and providers should support apprentices that wish to do so.

Working with others

This is not a mandatory outcome of the framework because these skills are not essential for effective performance in the job role; however, apprentices are encouraged to complete this wider key skill where they are able to and providers should support apprentices that wish to do so.

Problem solving

This is not a mandatory outcome of the framework because these skills are not essential for effective performance in the job role; however, apprentices are encouraged to complete this wider key skill where they are able to and providers should support apprentices that wish to do so.

Additional employer requirements

Apprentices completing the Wind Turbine Operations and Maintenance and Wind Turbine Installation and Commissioning pathways would be expected to complete the Level 2 NVQ Diploma in Performing Engineering Operations (QCF) as part of the Apprenticeship if they don't hold this qualification prior to commencing the programme.

apprenticeship
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