ENERGY & ENVIRONMENT AWARDS

Skills for a greener world

EEA Level 4 End-point Assessment for Lead Engineering Maintenance Technician

Specification

QAN 610/6010/0
ST0999 V1.0 V1.1 V1.2

Specification for

EEA Level 4 End-point Assessment for Lead Engineering Maintenance Technician

QAN 610/6010/0

Updates to this specification

Since the first publication of Energy & Environment Awards Lead Engineering Maintenance Technician (LEMT) Specification the following updates have been made.

Version	Date first published	Section updated	Page(s)
v2.0	August 2025	Rebranded	All
v1.0	March 2024	First published	All

Section 1: At a Glance EPA Summary

Qualification name	EEA Level 4 End-point Assessment for Lead Engineering Maintenance Technician
Ofqual qualification number	610/6010/0
Standard reference	ST0999
Assessment plan	V1.0
Standard title	Lead Engineering Maintenance Technician
Level	4
Gateway pre-requisites submitted to Energy & Environment Awards	Apprentice has: • achieved English and maths in line with the apprenticeship funding rules • achieved BTEC Higher National Certificate in Engineering (General Engineering) or BTEC Higher National Certificate in Engineering (Operations Engineering) • compiled and submitted a 500-word project brief and agreed the project title and scope with Energy & Environment Awards for the project: report and presentation with questions at gateway • compiled and submitted a portfolio of evidence, which the professional discussion will be based
On-programme duration	Typically 36 months
Gateway readiness	Apprentice has met all Gateway pre-requisites. Employer completes, signs and submits Gateway Eligibility Form (GER) form to Energy &

	Environment Awards. See Appendix B, Lead Engineering Maintenance Technician Supporting Documents 'Gateway Eligibility Form.'
End-point assessment duration	Typically 6 months after the Gateway
End-point assessment methods and their order	The assessment components can be delivered in any order. • Project: Report and presentation with questions • Professional discussion (based on portfolio of evidence)
End-point assessment methods and component grading	Project: Report and presentation with questions: Fail; Pass or Distinction Professional discussion based on a portfolio of evidence: Fail; Pass or Distinction
Overall Grading	Fail; Pass; Merit or Distinction
Certification	Energy & Environment Awards request Apprenticeship completion certificates from the ESFA
Glossary of Terms	Appendix A, LEMT Supporting Documents

Objective

The purpose of the Lead Engineering Maintenance Technician (LEMT) end-point assessment (EPA) is to confirm that an apprentice is fully capable of doing their job before they receive their apprenticeship certificate. It also helps to demonstrate that what an apprentice has learned can be applied in the real world.

Once the apprentice has completed the LEMT end-point assessment requirements successfully and has been certified they could take on the following job roles:

- Installation technician
- Process technician
- Product support technician
- Senior maintenance technician
- Test and commissioning technician

Professional recognition

The apprenticeship standard meets the professional standards of the Engineering Council for registration as Engineering Technician (Eng Tech) by an appropriate Professional Engineering Institution.

Gateway Readiness

Gateway takes place before the EPA can start. The employer and training provider will review their apprentice's knowledge, skills and behaviours to see if they have met the minimum requirements of the apprenticeship set out in the apprenticeship standard, and are ready to take the assessment. Only apprentices who complete gateway successfully can start the EPA. Gateway pre-requisites are listed in the summary table above. The Gateway Eligibility Form must be completed see LEMT Supporting Documents Appendix B.

Important: the Project is a critical part of the end-point assessment for this standard and the employer and provider must assure themselves that they have scope and opportunity for the apprentice to carry out a Project that has the necessary breadth and depth as detailed in this specification.

Recognition of prior learning (RPL)

Energy & Environment Awards does not recognise any apprentice prior learning (RPL) or prior achievement (RPA) for the purpose of amending the assessment requirements of any end-point assessments.

Please refer to Energy & Environment Awards RPL and RPA policy at Please refer to Energy & Environment Awards RPL and RPA policy at https://energyenvironmentawards.co.uk/policies-and-fees/

In order for Energy & Environment Awards to award an end-point assessment qualification, the apprentice must successfully complete all required assessment components with Energy & Environment Awards. This means that:

- each of the EPA components must be completed in full with Energy & Environment Awards
- where an apprentice transfers to Energy & Environment Awards from another EPAO they have to undertake the entire EPA with Energy & Environment Awards
- components of the EPA cannot be certificated in isolation
- evidence for portfolio and the interview must be produced while the apprentice is on-programme

This does not affect the Gateway requirements which must be met in order for an apprentice to be eligible for end-point assessment.

This does not affect any reasonable adjustments that may be granted.

Section 2: End-point Assessment Components

This EPA has 2 assessment components:

- Component 1: Project – Report and presentation with questions
- Component 2: Professional Discussion based on the portfolio of evidence

The above assessment components can be delivered in any order. The result of one assessment component does not need to be known before starting the next.

Component 1: Project – Report and presentation with questions

Overview

The project involves the apprentice completing a significant and defined piece of work that has a real business application and benefit. The project must start after the apprentice has gone through the gateway. It gives the apprentice the opportunity to demonstrate the knowledge, skills and behaviours (KSBs) mapped to this assessment component to the highest available grade. The project must meet the needs of the employer's business and be relevant to the apprentice's occupation and apprenticeship. The employer/training provider must submit on behalf of the apprentice a 500 word project brief, agree the project title and scope with Energy & Environment Awards.

This assessment has 2 sections:

- Section 1: Project with a project output (Project Report)
- Section 2: Presentation with questions

This project:

- is a holistic assessment, allowing the apprentice to demonstrate KSBs in an integrated way
- allows for a range of lead engineering maintenance activities to be demonstrated
- makes use of the apprentice's employer's workplace, equipment and resources, and should contribute to workplace productivity

Section 1: Project with a project output (Project Report)

Overview

The project output must be in the form of a report. The apprentice must submit the 500 word project brief, title and scope to Energy & Environment Awards at gateway. Energy & Environment Awards will sign-off the project report title and scope at gateway to confirm it is suitable. See Appendix C, Lead Engineering Maintenance Technician Supporting Documents 'LEMT 500 Word Project Brief, Project Title, Scope, Declaration and Sign-off Form.' The apprentice must start the project report after gateway once sign-off is confirmed by Energy & Environment Awards. The project report and its components must be produced by the apprentice unaided. The apprentice must submit the project report to Energy & Environment Awards by the end of week 13 of the End-point Assessment (EPA) period.

Step-by-Step Guide

The table below provides a step-by-step guide on how the project report will be carried out:

Assessors	1 independent assessor, appointed by Energy & Environment Awards.
Project report structure	**The apprentice must start the project after gateway.** The employer/training provider should ensure the apprentice has the time and resources, within this period, to plan and complete their project. The apprentice must produce a project output in the form of a report which can be based on any of the following: • a specific problem • a recurring issue • an idea or opportunity The project: • must include a maintenance, fault finding and repair related activity • can be a desk study, a site-based project or a combination of both • must explore technical leadership in maintenance concepts and practices in depth • cover the following assessment themes:

Assessment Theme	Amplification and Guidance
Health and Safety	Implementing health and safety policies, risk assessment
Procedures and work instructions	Following manufacturers' instructions, standard maintenance procedures
Task management	Planning and scheduling tasks, managing tasks, evaluating tasks
Problem solving	Problem identification, application of methods to identify cause and solutions to problem, interpretation of engineering data applied to changes
Technical leadership	Technical leadership of maintenance, repair and fault finding practices and techniques
Communication	Written communication techniques (informal and formal)

The apprentice may work as part of a team to complete the project which could include technical internal or external support. However, the project output the report and its components must be the apprentice's own work and reflective of their own role and contribution. The apprentice and their employer/training provider must confirm:

- that the project report is the apprentice's own work when it is submitted to Energy & Environment Awards, see Appendix I, Lead Engineering Maintenance Technician Supporting Documents 'LEMT Final Submission Project: Report, Presentation Declaration and Sign-off Form.'

Apprentices are assessed to confirm that they can apply their knowledge. **See pages 15 - 25 for the list of knowledge, skills and behaviours (KSBs) to be** covered in the project report and its components.

The project report must be:

- a holistic assessment component, allowing the apprentice to demonstrate KSBs in an integrated way

The apprentice must submit the project report to Energy & Environment Awards by the end of week 13 of the End-point Assessment (EPA) period.

What will the apprentice need to include in the report?	The report must include at least: • a 200 word executive summary • an introduction • the scope of the project (including key performance indicators, aims and objectives) • project plan that includes stakeholder considerations and a brief rationale of how the aims and objectives will be met. This must include consideration of the maintenance method i.e. planned, preventative, predictive and reactive • data analysis outcomes • project outcomes • recommendations and conclusions • references • appendix containing mapping of KSBs in the report The project report has a word count of 5000 words. A tolerance of 10% (500 words) above or below the word count is allowed at the apprentice's discretion. Appendices, references and diagrams are not included in this total. The apprentice must map their evidence, see LEMT Supporting Documents Appendix F 'Section 1: Project: Report Mapping Document', to show how they have mapped the KSBs.
What resources can the apprentice use?	Equipment and resources needed for the project report and its components must be: • provided by the employer or training provider • all the materials required to complete the project report effectively Relevant work instructions/manuals must be available in hard copy or electronically.
Grading	The project components will be assessed holistically by the independent assessor when they are deciding the grade. Project: Report and presentation with questions are graded together: Fail, Pass or Distinction.

Section 2: Presentation with questions

Overview

In the presentation with questions the apprentice delivers a presentation to an independent assessor on a set subject in their workplace or in a suitable environment away from the workplace. The independent assessor will ask questions following the presentation. This gives the apprentice the opportunity to demonstrate the KSBs mapped to this assessment method.

Step-by-Step Guide

The table below provides a step-by-step guide on how the presentation with questions will be carried out:

Assessors	1 independent assessor, appointed by Energy & Environment Awards.
Presentation with questions practical structure	**Submission of presentation, speaker notes and supporting materials:** • The employer/training provider must submit the apprentice's presentation, speaker notes and supporting materials to Energy & Environment Awards on behalf of the apprentice at the same time as the project report and its contents **by the end of week 13 of the End-point Assessment (EPA) period** **Technical requirements:** • Energy & Environment Awards Service Delivery Team will contact the employer/provider prior to the presentation to arrange a technical check to ensure the presentation will work over Microsoft teams **Resources required for the presentation:** The employer/training provider in collaboration with Energy & Environment Awards must ensure the apprentice has access to: • audio-visual presentation equipment • flip chart and writing and drawing materials • computer • any other requirements previously notified to Energy & Environment Awards **Location:**

	• Employer's premises or a suitable venue for example a training provider's premises Or It can be conducted by video conferencing or Microsoft teams • The presentation with questions should take place in a quiet room, free from distractions and influence **Number of questions:** • The independent assessor will ask at least 4 standardised open questions to assess the related underpinning knowledge, skills and behaviours • may ask follow-up questions in order to seek clarification **Time**: • The presentation and questions must last 45 minutes and this will typically include a presentation for 20 minutes and questioning lasting 25 minutes • The independent assessor can increase the total time of the presentation and questioning by up to 10% (4.5 minutes). This time is to allow the apprentice to complete their last point or respond to a question if necessary **Notification of presentation with questioning:** • Energy & Environment Awards will give the apprentices at least 2 weeks notice of the date of when the presentation with questioning will take place **Number of apprentices assessed at one time:** • The apprentice must deliver their presentation to the independent assessor on a one-to-one basis
What must the presentation cover?	**The apprentice must deliver a presentation to the independent assessor on a set subject. The presentation must include:** • an overview of the project • the project scope (including key performance indicators) • summary of actions undertaken by the apprentice • project outcomes and how these were achieved

	The presentation with questioning must also allow the apprentice to demonstrate the KSBs listed in the next section. **For further details refer to 'Knowledge, Skills and Behaviours (KSBs) Coverage' pages below 15 - 25.**
What will the questions focus on?	The independent assessor's questions will be to assess the following themes: • health and safety • procedures and work instructions • task management • problem solving • technical leadership • communication The independent assessor's questions will also: • seek clarification on the report or presentation • verify that the project is the apprentice's own work by reviewing Appendix I 'Lead Engineering Maintenance Technician Supporting Documents 'LEMT Final Submission Project Report, Presentation Declaration and Sign-off Form' • assess the depth and breadth of knowledge, skills and behaviours, see pages above 15 – 25
When will the questions be asked?	The independent assessor will ask questions after the presentation.
Grading	Project: Report and presentation with questions are graded together: Fail, Pass or Distinction.

Project: Report and Presentation with Questions - Knowledge, Skills and Behaviours (KSBs) coverage

The Project: Report and Presentation with Questions Covers:

Project: Report and Presentation with Questions Health and Safety KSBs	Amplification and Guidance
K2 Risk identification, risk assessments, mitigations and safe systems of work	• List potential hazards, evaluate the likelihood and severity of impact by calculation method • Understand process of generic risk assessments and dynamic risk assessments • Identify minor and major level risks • Conduct risk reviews • Implement controls with risk management for mitigating actions, owners, and closure dates • Understand requirements for safe and controlled isolations and deisolation in line with approved company procedures • Understand different types of stored energy using approved and safe methods by qualified personnel • Review relevant workplace regulations, see LEMT Supporting Documents Appendix H 'Workplace Regulations'
S4 Identify and document risks and hazards in the workplace. Advise on and apply control measures	• Record risk assessments following the above steps • Define skills needed for how to identify and classify risks • Define skills needed for how to manage and close risks
B2 Prioritise and promote health and safety	• Know and understand how to include risk assessments in work planning and documentation such as: work Instructions, method Statements and permits to work

Project: Report and Presentation with Questions Health and Safety KSBs	Amplification and Guidance
	• Know and understand how to communicate health and safety news • issues and regulation updates, issue advice through emails, intranet websites, newsletters, bulletins, meetings, and noticeboards

Project: Report and Presentation with Questions Procedures and work instructions KSBs	Amplification and Guidance
K10 Manufacturers' instructions: what they are and how to use them. Warranties: what they are and impact on engineering maintenance work	• Know where to find, understand and how to use manufacturer's instructions such as: product descriptions, intended use, limitations, Installation/set up guidelines, assembly settings, disassembly precautions, stored energy, consumables, spares parts list, operating instructions, maintenance requirements, safety precautions, care and cleaning, troubleshooting, warranty information, disposal guidelines and contact information • Know how to use manufacturers' manuals, revision control and obsolescence • Know how to interpret engineering drawings (1st and 3rd angle projection), schematics, circuits, bill of materials (BOM)/item lists • Know how to interpret technical specifications • Know and understand warranty information, what is covered, technical support, limitations on maintenance and repair, replace threshold requirements, what invalidates the warranty with operation, maintaining and upkeep

Project: Report and Presentation with Questions Procedures and work instructions KSBs	Amplification and Guidance
S3 Follow manufacturers' instructions and standard maintenance procedures	• Follow instructions and guidelines as set out in above instructions • Define skills needed for how to use/interpret manufacturer's installation, disassembly, and maintenance instructions • Define skills needed to check information • Define skills needed to escalate technical issues

Project: Report and Presentation with Questions Task management KSBs	Amplification and Guidance
K5 Engineering materials: characteristics, properties and impact on use	• Identify the most suitable materials for the project with regards to fit, form and function • Identify the basic materials information such as: material group, ferrous metals, non-ferrous metals, polymers, ceramics and composites • Identify relevant manufacturing processes in maintenance and impact to mechanical properties. e.g. cold working of wires during forming on repair • Identify chemical and physical material properties • Understand material selection for applications e.g. mechanical, electrical and thermal
K7 Maintenance and engineering strategies, practices and techniques: planned, preventative, predictive and reactive	• Describe the maintenance and engineering strategies employed to optimise the reliability, performance and life of the plant and equipment

Project: Report and Presentation with Questions Task management KSBs	Amplification and Guidance
	• Identifying the correct strategy for the equipment considering costs, industry standards, quality standards and organisational requirements. To also consider equipment downtime, equipment efficiency and reliability • Describe the maintenance and engineering strategies employed in predictive maintenance programmes for continuous use, for detection in step change in operating conditions, using different types of sensors, such as: pressure, flow and Strain • Describe the maintenance and engineering strategies employed for condition-based monitoring on preventative maintenance programmes, using different types of diagnostic equipment, such as: vibration analysers, temperature guns and oil sample analysis • Identify repair and replace strategies, justification models and influencing factors • Understand maintenance requirements and differentiate between overhaul maintenance programmes, alteration/modifications, and rework for upgrade/retrofit • Describe the maintenance level requirements, based on repair, replace, rework, salvage and timeline for standard maintenance routines • Understand the impact to downtime and be able to perform cost calculations • Manage functional testing of machinery and systems • Know how to lead on troubleshooting testing activities • Know how to lead on commissioning activities • Understand inspection techniques for measurements at component, sub-assembly, and assembly/equipment level

Project: Report and Presentation with Questions Task management KSBs	Amplification and Guidance
	• Know inspection techniques for a variety of parameters such as: pressure, flow, temperature, vibration, speed, torque, weight, strain, oil sample analysis, electrical and parameters
K15 Planning, prioritising, work scheduling, workflow and time management techniques. Work management systems. Work categorisation systems	• Plan for maintenance requirements and logistics • Know and understand how to factor in to task management the following: asset management, resource management, schedule management, spares and lead-time, cost analysis, budgets and warranties • Know and understand how to: set goals/milestones, prioritise tasks, use schedules, use technology, apply LEAN management, review a task/project, work in collaboration, resource plan, select the correct system for the project dependent on size of the task, number of personnel and resources
K19 Resources: Human, physical, space, documentation, tooling, specialist equipment, spares and materials: Stock and services considerations	• Human; Skill levels, knowledge gaps, use of contractors/collaborators and training requirements • Physical such as: workspace, remote working, collaboration areas • Documentation such as: work instructions, maintenance schedules, installation guides, manufacturer's manuals, work orders, method statements, risk assessments, engineering drawings and technical specifications • Tools, equipment, measuring devices, test instruments and machinery for manufacturing and maintenance, office equipment, stationery and service support
K22 Project management techniques: Strengths, Weaknesses, Opportunities, Threats	• Manage internal and external stakeholders, such as: asset owners, operators, supply chain and suppliers, contractors, sub-contractors, auditors/regulators and customers

Project: Report and Presentation with Questions Task management KSBs	Amplification and Guidance
(SWOT), stakeholder matrices, risk mapping and summary risk profiles	• Managing internal, external customers and operators at senior levels, responsibilities, warranties, liabilities, and penalties • Risk Management
S6 Plan and schedule tasks, projects or resources in the workplace	• See guidance for K15 • Planning tools such as Gannt charts, use of MS project software to plan maintenance tasks
S7 Manage tasks, projects or resources in the workplace	• Use of appropriate project management methods such as: waterfall and agile • Project skills for Gantt charts in spreadsheets or the use of MS Project for resource management
S8 Evaluate tasks, projects or resources in the workplace	• Clearly defined outcomes such as: Key Performance Indicators (KPIs), progress reports, quality assurance, reliability statistics, step change in performance data, in service failure modes, warranties and feedback (internal/external stakeholders) • Review goals/milestones, project scope, cost and resources, timeline, communication, risks, stakeholder satisfaction and project adjustments

Project: Report and Presentation with Questions Problem solving KSBs	Amplification and Guidance
K4 Engineering mathematical and scientific principles: methods,	To be applied to specialised areas of engineering such as mechanical, electronic and electrical engineering:

Project: Report and Presentation with Questions Problem solving KSBs	Amplification and Guidance
techniques, graphical expressions, symbols, formulae and calculations	• Identification and use of correct Engineering mathematical and scientific principles such as: ○ **Mathematical**: calculus with differential and integral equations, statistics, algebraic methods, exponential-trigonometric-hyperbolic functions, sinusoidal functions, trigonometry, Pythagorean theorem, arithmetic mean, geometric mean, volume and area ○ **Graphical expressions**: line graphs, bar charts, pie charts, histograms, schematics, vector diagrams and trigonometrical function graphs ○ **Scientific principles**: electromagnetism, thermodynamics, fluid mechanics, mechanics, materials science and electrical principles ○ **Methods** such as: root cause analysis, failure modes and lean six sigma ○ **Techniques** such as: simulation, failure analysis, system modelling and signal processing ○ **Identify and use symbols** such as: mathematical, engineering and scientific ○ **Formulae** such as: Newton's 1st, 2nd, 3rd Laws of motion, Hooke's Law, Ideal gas law, Boyle's law and Charles law ○ **Electrical formulae** such as: Ohm's Law, power formula, Kirchoff's current law, Kirchoff's voltage law, Capacitance, Power factor, efficiency and frequency ○ **Mechanical** formulae such as: Pascal's law, gear ratios, efficiency, torque, power, heat energy, work done and density • Identify and use the correct mechanical calculations for their application such as: power, heat transfer, flow rate, force, stress and strain

Project: Report and Presentation with Questions Problem solving KSBs	Amplification and Guidance
	• Identify and use the correct calculations for their application such as power factor • Identify and use International Systems of Units (SI), base SI units and derived SI units • Unit conversion, magnitude of and metric, imperial
K6 Problem solving techniques: diagnostics, root cause analysis, 6 thinking hats, DMAIC (Define, Measure, Analyse, Improve, Control), PDCA (Plan Do Check Act). Fault finding techniques: root cause analysis, 5 Whys', fishbone, half-split	• Be able to identify and use the most suitable technique for the situation, utilising various methods including use of brainstorming and the aid of diagrams for problem solving
S17 Identify problems and apply methods to identify causes and solutions. Escalate issues or concerns	• Apply root cause analysis and use correct method for recording, reporting, and escalating the problems and issues • Communication techniques
S19 Interpret and use information from engineering data sources to apply changes	• See guidance for K10 and K4

Project: Report and Presentation with Questions Technical Leadership KSBs	Amplification and Guidance
K8 Standard operating procedures and work instructions: rationale, review and updates	• Be aware of, know the reason for and where to find Standard Operating Procedures (SOPs) and method statements and work instructions • Know how to complete all documentation correctly and fully • Know how to identify the latest issue of documentation and where to get updates as required
K9 Engineering, manufacturing and maintenance technical information, related documentation, such as job records, service reports, checklists and condemn notices; representations, drawings, graphical information, visuals and symbols	• Be aware of, know the reason for and where to find all relevant technical information • Know how to interpret all relevant information • Be able to decipher and analyse technical information and data • Understand and be able to work with standard engineering units and symbols • Be able to interpret and work with engineering drawings and items lists, bill of materials (BOM) • Maintenance manuals, design briefs, test procedures, operations procedures, calibration data and records, out of calibration quarantine areas, Portable Appliance Testing (PAT) test results, asset performance and operational data
S14 Provide technical leadership for maintenance practices and techniques	• Be able to offer engineering support, technical leadership, and expertise. • Be aware of and understand the steps for providing technical leadership in maintenance practices and techniques. • Identify the current state of the situation, communication, clear goal setting, clear maintenance strategies, promoting best practice, training, continuous professional development, continuous improvement of methods, processes, promoting lessons learned and leading by example

Project: Report and Presentation with Questions Technical Leadership KSBs	Amplification and Guidance
	• Drive effective teamworking • Manage cost reduction initiatives • Participate in Design to Cost activities and engineering design reviews
S15 Provide technical leadership for repair practices and techniques	• Be aware of and understand the steps for providing technical leadership in repair practices and techniques • Promote training, prioritising repairs, communication, quality control, continuous professional development, continuous improvements, lead by example and motivation
S16 Provide technical leadership for fault finding techniques and practices	• Be able to guide the team with identifying and diagnosing faults • Improve training and diagnostic skills, critical thinking, use of diagnostic methods and root cause analysis

Project: Report and Presentation with Questions Communication KSBs	Amplification and Guidance
K17 Communication techniques: written. Writing using plain English principles. Report writing	• Graphic communications such as: fishbone root cause analysis, project Gantt charts, pie charts, histograms and graphs • Verbal communication • Hand signs onsite • Radio communications on plant
S10 Communicate in writing	• Be able to communicate in writing and provide examples such as: written memo, emails, test reports, defect reports, permits, safety briefings, work instructions, service records, handover reports, root cause analysis reports, ear misses/accident forms, lessons learned, improvements, engineering change requests, written numerical calculations and analysis

Project with a Project Report and Contents: Roles and Responsibilities

Role	Responsibility
Independent Assessor	Review the project report and its components. Record and report assessment outcome decisions for each apprentice, following instructions and using assessment recording documentation provided by Energy & Environment Awards.
Employer/ Training Provider	The training provider must liaise effectively with the employer to ensure the apprentice is prepared for the project and that the project: • involves the apprentice completing a significant and defined piece of work that has a real business application and benefit • meets the needs of the employer's business and is relevant to the apprentice's occupation and apprenticeship • title and scope are signed-off at gateway by Energy & Environment Awards to confirm it is suitable to progress, see LEMT Supporting Documents Appendix C 'LEMT 500 Word Project Brief, Project Title, and Scope, Declaration and Sign-off Form.' • final submission is the apprentices' own work by completing Appendix I, Lead Engineering Maintenance Technician Supporting Documents 'LEMT Final Submission Project: Report, Presentation Declaration and Sign-off Form'. • liaises with Energy & Environment Awards to submit the final project report (and presentation) by the end of week 13 of the EPA period If the apprentice is to work as part of a team to complete their project the employer/training provider must ensure the apprentice has access to technical internal or external support. Provide all necessary tools, materials and equipment for the apprentice to attempt all aspects of the project. Ensure the apprentice has access to the resources used on a daily basis.

Role	Responsibility
Energy & Environment Awards	To review the project title and scope and to confirm it is suitable to progress. See LEMT Supporting Documents Appendix C ‘LEMT 500 Word Project Brief, Project Title, and Scope, Declaration and Sign-off Form.’

Presentation with Questions: Roles and Responsibilities

Role	Responsibility
Independent Assessor (IA)	Must have at least 2 weeks to review the project report, presentation, speaker notes and supporting documents, to allow them to prepare questions. Provide verbal instructions for the presentation and questions. Ask questions in line with Energy & Environment Awards requirements. Record and report assessment outcome decisions for each apprentice, following instructions and using assessment recording documentation provided by Energy & Environment Awards.
Employer/ Training Provider	The training provider must liaise effectively with the employer to ensure the apprentice is prepared for the presentation with questions. The training provider must notify Energy & Environment Awards, at the point, of any technical requirements for the presentation and ensure during the presentation the apprentice has access to resources listed in the step-by-step guide for the presentation. Ensure that the presentation, speaker notes and supporting materials are **submitted to Energy & Environment Awards at the same time as the report by the end of week 13 of the EPA period.** Provide the venue for the presentation with questions which must be suitably equipped to allow the apprentice to attempt all aspects of the presentation. Provide all necessary equipment and materials for the apprentice. Ensure the apprentice has access to the resources.
Energy & Environment Awards	Arrange for the presentation with questions to take place, in consultation with the employer/training provider and independent assessor. Provide 2 weeks notice of the date of when the presentation with questions will take place.

Component 2: Professional Discussion (based on a portfolio of evidence)

Overview

The professional discussion is based on the apprentice's portfolio of evidence and focuses on the knowledge, skills and behaviours (KSBs) on pages 34 - 44. The professional discussion allows for testing of responses where there are a range of potential answers. In the discussion, an independent assessor and apprentice have a formal two-way conversation.

The apprentice can refer to and illustrate their answers with evidence from their portfolio of evidence. It gives the apprentice the opportunity to demonstrate their competency across the KSBs mapped to this EPA component.

The portfolio, compiled throughout the apprenticeship and completed by Gateway must be submitted to Energy & Environment Awards.

Step-by-Step Guide

The table below provides a step-by-step guide on how the professional discussion based on the portfolio of evidence is carried out:

Assessors	1 independent assessor approved by Energy & Environment Awards will conduct the professional discussion.
Professional Discussion (based by the portfolio of evidence) structure	**Professional discussion date:** • Energy & Environment Awards will give the employer/training provider 2 weeks notice of the professional discussion **Time:** • 60 minutes – The independent assessor has the discretion to increase the time of the professional discussion by up to 6 minutes, to allow the apprentice to complete their last answer **Number of questions:** • At least 7 open questions must be asked. Additional follow up questions are allowed, to seek clarification **Location:** • Employer's premises or a suitable venue for example a training provider's premises • In a quiet room, free from distractions and influence

	The professional discussion will be: • conducted by 1 independent assessor see 'Assessors' above • face to face or remote, as agreed • recorded in writing using the professional discussion record template provided by Energy & Environment Awards • video recorded using relevant technology such as Microsoft Teams or an audio recording device • conducted under examination conditions The apprentice will have access to their portfolio of evidence throughout the professional discussion. **Portfolio of evidence**: • The apprentice's Manager/Mentor will typically support the development of the portfolio of evidence in accordance with company policy and procedures • See 'Portfolio of Evidence Requirements' guidance below on the content of evidence • The portfolio must contain sufficient quality evidence relating to each element of the standard covered by the professional discussion. Typically, this will be contained in small number of job write-ups produced towards the end of the training periods • Although questioning will cover ALL the elements of the standard (listed below in this section of the Specification), they will prioritise areas according to what they see in the portfolio
What topics will be covered?	The independent assessor's questions will assess the following topics (themes): • Health and safety • Environmental and sustainability • People management • Engineering standards • Continuous improvement • Handovers • Information technology For further details refer to 'Knowledge, Skills and Behaviours (KSBs) Coverage pages below 34 - 44.'

When will the portfolio of evidence be submitted and referred to?	**The portfolio of evidence:** • will be reviewed by the independent assessor 2 weeks before the professional discussion **Note**: the portfolio of evidence is not directly assessed. **Submission:** • must be submitted to Energy & Environment Awards at least 2 weeks prior to the professional discussion
Grading	Fail, Pass or Distinction

Portfolio of Evidence Requirements

The requirements are as follows:

The apprentice must include evidence of work:

- carried out over a period of time
- that has been carried out during the on-programme period of the apprenticeship
- of which a minimum of 2 and no more than 3 activities carried out by the apprentice that demonstrate the KSBs

For further information see Section 5 of this Specification 'what to include in the portfolio?'

Portfolio Mapping Document

The apprentice must map their portfolio of evidence to the KSBs as this evidence will be used by the independent assessor to assess the apprentice during the professional discussion. The professional discussion mapping document must be clearly referenced and included at the front of the portfolio.

For further guidance on mapping refer to:

- Section 5 Practice Guidance on portfolio of evidence and apprentice mapping
- Appendix G, LEMT Supporting Documents 'Portfolio Mapping Document.'

How will the training provider submit the apprentice's Portfolio to Energy & Environment Awards?

As part of the pre-requisite gateway requirements the apprentice must have compiled and submitted a portfolio of evidence that includes a portfolio mapping document (placed at the front of the portfolio), which the professional discussion will be based on.

The apprentice's portfolio must be submitted to Energy & Environment Awards at least 2 weeks in advance of the professional discussion.

Professional Discussion Knowledge, Skills and Behaviours (KSBs) coverage

The Professional Discussion is based on the portfolio of evidence which covers:

Professional Discussion Health and safety KSBs	Amplification and Guidance
K1 Awareness of health and safety regulations, relevance to the occupation and the technician's responsibilities. Health and safety regulations.	• Demonstrate instances of where they have identified the relevant health and safety regulations, technician's responsibilities, employer's responsibilities, and relevant control measures put in place, pertinent to the task • Understand requirements for safe and controlled isolations and deisolation in line with approved company procedures • Review relevant workplace regulations, see LEMT Supporting Documents Appendix H 'Workplace Regulations'
S1 Comply with health and safety regulations and procedures. Apply safe systems of work.	• Explain and demonstrate where they have complied with all relevant health and safety regulations and workplace procedures • Carry out safe and controlled isolations and deisolation in line with approved company procedures • Manage different types of stored energy using approved and safe methods by qualified personnel • Review relevant workplace regulations, see LEMT Supporting Documents Appendix H 'Workplace Regulations'

Professional Discussion Environmental and sustainability KSBs	Amplification and Guidance
K3 Awareness of environment and sustainability regulations, relevance to the occupation and the technician's responsibilities. Environment and sustainability. Environmental Protection Act - responsibilities. Types of pollution and control measures: noise, smells, spills, and waste. Sustainability. Resource Management. Environmental permits. Waste management. Waste Electrical and Electronic Equipment Directive (WEEE). Hazardous waste regulations. Re-cyclable materials and waste disposal procedures. Energy consumption and usage profiling. Data logging to optimise energy performance. The Climate Change Agreements. Carbon Reduction Commitment (CRC).	• Be aware of the relevant environmental and sustainability regulations that apply to their task • Understand their responsibilities with regards to waste disposal and recycling in accordance with regulations and workplace procedures • Understand their responsibilities with regards to sustainability and energy reduction • Review relevant workplace regulations, see LEMT Supporting Documents Appendix H 'Workplace Regulations' • Be aware of their company's policy regarding reducing their carbon footprint and any carbon off setting initiatives • Integrate into the design process and on behalf of maintenance repair and overhaul, and input into the product design life cycle for sustainability during maintenance and disposal/recycling at end of product life
S2 Comply with environmental and sustainability regulations and procedures when using resources. Segregate resources for re-use, recycling and disposal applying sustainability principles.	• Give examples of where they have followed the relevant environmental regulations and company policy regarding waste disposal, recycling, and sustainability • Review relevant workplace regulations, see LEMT Supporting Documents Appendix H 'Workplace Regulations'

B1 Prioritise and promote the environment and sustainability.	• Demonstrate where they have prioritised and promoted consideration for the environment and sustainability

Professional Discussion People management KSBs	Amplification and Guidance
K12 The function of an engineering maintenance department. Limits of autonomy and reporting channels. Different teams and functions involved in operation and interdependencies.	• Understand an engineering maintenance department's role in the business • Understand the function of interfacing departments such as design engineering, safety, reliability and quality • Manage internal and external stakeholders, such as asset owners, operators, supply chain and suppliers, contractors, sub-contractors, auditors/regulators and customers • Managing internal and external customers and operators at senior levels, responsibilities, warranties, liabilities, and penalties
K13 Leadership and management techniques: customer relationship management, negotiating, influencing, networking, commercial awareness, conflict management and assertiveness.	• Understand different leadership styles and management techniques • Demonstrate leadership to enhance/improve customer relations, increase customer satisfaction, be aware of suitable customer relationship management to track customer interactions, preferences, and other relevant information • Understanding negotiation techniques such as good communication, active listening, common ground, maintaining good relationships, understanding the customer's requirements

Professional Discussion People management KSBs	Amplification and Guidance
	• Awareness of soft skills required to negotiate with internal and external customers and with other stakeholders internal and external to the business • Be aware of strategies used to change decisions, behaviours, or opinions such as understanding your audience, using relatable language, building rapport and using your authority • Understanding commercial awareness and business acumen such as being aware of market forces, trends, external and economic factors • Being aware of the need to identify and resolve conflicts and disputes. Use of good communication skills, active listening, understanding different perspectives, compromising, negotiation and collaboration • Setting of boundaries and expectations, clear communication of feelings and thoughts in a direct and respectful manner. Taking your stance whilst considering the rights and perspective of others • Be able to resolve conflicts in the workplace at lower and high levels
K14 Workplace training and development and competence assurance techniques in the workplace. How to pass on knowledge to colleagues and provide guidance to customers or stakeholders.	• Be able to handover knowledge to technicians using controlled and effective processes • Has the means to provide customers and all types of stakeholders

Professional Discussion People management KSBs	Amplification and Guidance
K16 Verbal communication techniques: Matching style to audience. Barriers in communication and how to overcome them. Engineering terminology.	• Understand the need for using different communication techniques to match the level of the audience. • Understand barriers to communication and how to overcome them. • Understands engineering terminology and can adjust / adapt to different levels. • Can be flexible in approach to verbally communicate without compromising the intent
K25 Equality, diversity and inclusion in the workplace.	• Be aware of the requirements and techniques available to promote equality, diversity and inclusion in the workplace such as development of policies to promote equal, diverse and fair hiring practices, diversity and ethics training, communication and accessibility facilities
S9 Communicate with colleagues and stakeholders verbally.	• Demonstrate where they have used several different communication techniques to match the level of the audience • Use of clear language, respectful tone, active listening, thoughtful response, be aware of nonverbal cues and listen to person communicating with
S11 Negotiate with colleagues or stakeholders. For example, to access equipment or arrange system outage.	• Using some of the techniques in K13, refer to page 13

Professional Discussion People management KSBs	Amplification and Guidance
S12 Identify potential conflicts and apply resolution strategies.	• Using some of the techniques in K13, refer to page 13
S13 Identify training needs of team members in the workplace.	• Use of Training needs analysis • Identify strengths and weaknesses of team members • Perform skills gap analysis
B3 Apply a professional approach.	• Demonstrate where they have used communication techniques to promote good working relationships and a professional approach at all levels
B5 Committed to professional development of self and others.	• Execute a reflective approach to your own learning and development as part of your continuous professional development plan • Drive training programmes for self-development with internal/external training for others
B7 Act ethically.	• Demonstrate ethics in the workplace in accordance with company policy
B8 Collaborate within teams, across disciplines and external stakeholders.	• Demonstrate working with cross-functional teams and departments within the business • Demonstrate working with stakeholders, such as asset owners, operators, supply chain and suppliers, contractors, sub-contractors, auditors/regulators and customers

Professional Discussion Engineering Standards KSBs	Amplification and Guidance
K11 Awareness of engineering international, national and regulatory standards, relevance to the occupation and technician's responsibilities. British Standards (BS). International Organisation for Standardisation standards (ISO). European Norm (EN).	• Demonstrate understanding of abbreviations used for different standards • Demonstrate awareness, where to access standards from a reputable source • Awareness of basic engineering British Standards which impact the role of maintenance engineering technicians working for lead maintenance engineering technicians in the workplace, such as BS 8888 Technical Product Documentation and Specification, which replaces the conventional BS 308 for engineering drawings, as part of interpretating technical information to carry our maintenance
K18 The engineering maintenance sector. Regulators. Types of employers. Clients. Supply chain. Stakeholders. Audits.	• Be aware of their relevant engineering sector and regulators associated with that sector • Be aware of the types of employers associated with their sector, members of the supply chain and other stakeholders which they will interact with • Be aware of the needs, requirements and types of audits within their sector • Be aware of internal audits and requirements in preparation for regulatory external audits • Be aware of non-compliances found in external audits and impact to company

Professional Discussion Engineering Standards KSBs	Amplification and Guidance
K20 Awareness of Quality Management Systems (QMS) and the principles of Quality Control and Assurance, principles and practice in a maintenance and engineering environment. Relevance to the occupation and the technician's responsibilities.	• Understand the purpose of quality standards to the company and its customers • Understand quality assurance and how this impacts requirements for maintenance programmes
S18 Comply with engineering standards and regulations. For example, ISO9001.	• Understand purpose of ISO 9001 Quality Management Systems, improving performance, meeting customer expectations, demonstrating the company's commitment to quality • Understanding maintaining status / rating to meet customer expectation

Professional Discussion Continuous improvement KSBs	Amplification and Guidance
K21 Continuous improvement techniques: lean, 6-sigma, KAIZEN, 5 S (Sort, set, shine, standardise and sustain).	• Understand continuous improvement techniques and how they can be implemented in the workplace • Understand the processes in maintenance to input back into the engineering process for design and manufacturing improvements to improve performance to meet requirements and meet reliability to meet maintenance targets

Professional Discussion Continuous improvement KSBs	Amplification and Guidance
	• Accommodate improvement proposals to method statements, work instructions from maintenance technicians in the field • Knowledge of the engineering change request for improvements coming from maintenance
S20 Lead on continuous improvement projects. Apply continuous improvement techniques. Devise suggestions for improvement.	• Participate, engage, and manage activities for ideas generation for continuous improvement within the department

Professional Discussion Handovers KSBs	Amplification and Guidance
K24 Business operation considerations: efficiency, customer satisfaction, competitiveness, minimising risks to operation, finance, business ethics and licenses.	
S21 Manage technical handover of completed repair or maintenance activity.	• Manage handover for reactive maintenance for repair and replace • Manage handover for routine maintenance programmes for planned preventative maintenance programmes
B6 Take responsibility for work.	• Personal traits of professionalism in standard of your work and enforce in others • Drive others to always inspect their work to meet company standards

Professional Discussion Handovers KSBs	Amplification and Guidance
	• Drive a self-managed responsibility and discipline with being honest, motivated, trustworthy, reliable, punctual and a respectful to peers, subordinates, management, customers, and all stakeholders that you interact with in role

Professional Discussion Information Technology KSBs	Amplification and Guidance
K23 Information **technology:** Management Information Systems (MIS), spreadsheets, presentation, word processing, email, virtual communication and learning platforms. **General Data Protection Regulation (GDPR). Documentation and data collection:** principles, methods and requirements - electronic and paper. Analytical data, job records, timekeeping, service reports, checklists and condemn notices. Technological development and innovation in the engineering sector. Industry 4.0. IT networking and digital twinning.	• Be aware of the different Management Information Systems and software available to them to help with and support their work • Be aware of General Data Protection Regulations (GDPR) and adhere to the rules surrounding this with being mindful of how/where the data is used and putting the necessary controls in place to protect that data in line with the regulations • Be aware of the types of data available to them to support their job role and the efficient function of the business • Be aware of step changes in technology and innovation for processes and techniques used in engineering maintenance

S5 Record or enter information - paper based or electronic. For example, job sheets, risk assessments, equipment service records, test results, handover documents and manufacturers' documentation, asset management records, work sheets, checklists, waste environmental records and any legal reporting requirements.	• Understanding of different formats for records during maintenance, using manual paper-based methods, to using tablets and laptops for accessing job packs and recording/accessing maintenance information
S22 Use information technology. For example, for document creation, communication, and information management in line with breakdown, repair and maintenance activities. Comply with GDPR	• Examples of reports and documents they have created and used within their job role • Examples of accessing databases to extract lessons learned information regarding previous fault diagnosis • Examples of accessing public domain sources on web for manufacturing instructions subject to approval of source
B4 Promote adoption of emerging and advanced engineering and maintenance technologies.	• Understand how to access reliable and approved sources of information relating to emerging and advanced engineering and maintenance technologies and how to vet the validity of information for step changes in approach in maintenance engineering

Professional Discussion Roles and Responsibilities

Role	Responsibility
Independent Assessor	The independent assessor must ensure they have at least 2 weeks to review the portfolio of evidence. Record and report assessment outcome decisions for each apprentice, following instructions and using assessment recording documentation provided by Energy & Environment Awards.
Employer/Training Provider	The professional discussion must be scheduled with Energy & Environment Awards for a date and time which allow the apprentice to be well prepared. Ensure the apprentice has access to their portfolio before and on the day of the professional discussion.
Energy & Environment Awards	Arrange for the independent assessor to have access to the portfolio of evidence and have at least 2 weeks to carry out the review. Arrange for the professional discussion to take place, in consultation with the employer/training provider and independent assessor. Energy & Environment Awards will give 2 weeks notice of the professional discussion to the employer/training provider.

Section 3: Grading and Grading Criteria

Component 1: Project: Report and presentation with questions (note that the Report and Presentation with questions are graded holistically to determine the grade for this component)

Project: Report and Presentation with Questions Health and Safety KSBs	To achieve a Pass the apprentice must achieve **ALL** of the pass descriptors	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and **ALL** of the Distinction descriptors
K2 Risk identification, risk assessments, mitigations and safe systems of work. **S4** Identify and document risks and hazards in the workplace. Advise on and apply control measures. **B2** Prioritise and promote health and safety.	• Undertakes risk assessment and completes documentation in compliance with regulations and company policy. Advises on and implements risk mitigation measures to promotes and prioritises health and safety within the workplace (**K2; S4 and B2**)	

Project: Report and Presentation with Questions Procedures and Work Instructions KSBs	To achieve a Pass the apprentice must achieve **ALL** of the pass descriptors:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and **ALL** of the Distinction descriptors
K10 Manufacturers' instructions: what they are and how to use them. Warranties: what they are and impact on engineering maintenance work. **S3** Follow manufacturers' instructions and standard maintenance procedures.	• Determines what manufacturer's instructions and standard operating procedures should be followed for the project and considers the impact of warranties on work (**K10 and S3**)	

Project: Report and Presentation with Questions Task Management instructions KSBs	To achieve a Pass the apprentice must achieve **ALL** of the pass descriptors:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and **ALL** of the Distinction descriptors
K5 Engineering materials: characteristics, properties and impact on use. **K7** Maintenance and engineering strategies, practices and techniques: planned, preventative, predictive and reactive. **K15** Planning, prioritising, work scheduling, workflow, and time management techniques. Work	Outlines the planning and scheduling tasks to meet the project brief considering: • engineering materials (characteristics, properties and impact on use) • maintenance and engineering strategies, practices and techniques (planned, preventative, predictive and reactive)	• Analyses their planning and scheduling of resources to identify areas of improvement to benefit the business **(K15; K19 and S6)** • Evaluates their own management of tasks, projects or resources, including the techniques, timescales and tools used (**K22 and S7**)

Project: Report and Presentation with Questions Task Management instructions KSBs	To achieve a Pass the apprentice must achieve **ALL** of the pass descriptors:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and **ALL** of the Distinction descriptors
management systems. Work categorisation systems. **K19** Resources: Human, physical, space, documentation, tooling, specialist equipment, spares and materials: Stock and services considerations. **K22** Project management techniques: Strengths, Weaknesses, Opportunities, Threats (SWOT), stakeholder matrices, risk mapping and summary risk profiles. **S6** Plan and schedule tasks, projects or resources in the workplace. **S7** Manage tasks, projects or resources in the workplace. **S8** Evaluate tasks, projects or resources in the workplace	• resources (human, physical, space, documentation, tooling, specialist equipment, spares and materials, stock and services) (**K5; K7; K19 and S6**) Applies selected project management techniques to: • deliver outcomes (including SWOT, stakeholder matrices, risk mapping and summary risk profiles) • plan and prioritises tasks • use (where appropriate) work scheduling, workflow and time management techniques, work management and or categorisation systems (**K15; K22 and S7)** • Evaluates the workplace engineering maintenance tasks undertaken for the project (**S8**)	

Project: Report and Presentation with Questions Problem Solving KSBs	To achieve a Pass the apprentice must achieve **ALL** of the pass descriptors:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and **ALL** of the Distinction descriptors
K4 Engineering mathematical and scientific principles: methods, techniques, graphical expressions, symbols, formulae and calculations. **K6 Problem solving techniques**: diagnostics, root cause analysis, 6 thinking hats, DMAIC (Define, Measure, Analyse, Improve, Control), PDCA (Plan Do Check Act). Fault finding techniques: root cause analysis, 5 Whys', fishbone, half-split. **S17** Identify problems and apply methods to identify causes and solutions. Escalate issues or concerns. **S19** Interpret and use information from engineering data sources to apply changes.	• Applies problem solving techniques in line with the project brief to identify specific causes and solutions, escalating issues or concerns within the scope of their responsibility (**K6 and S17)** • Interprets engineering data and applies mathematical and scientific principles to decision making to achieve project objectives (**K4 and S19**)	• Analyses their choice of applied problem-solving techniques, identifying the benefits and risks to meeting the project objectives (**K6 and S17**) • Justifies their choice of mathematical and scientific principles to interpret data and inform decision making within the project delivery (**K4 and S19**)

Project: Report and Presentation with Questions Technical Leadership KSBs	To achieve a Pass the apprentice must achieve **ALL** of the pass descriptors:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and **ALL** of the Distinction descriptors
K8 Standard operating procedures and work instructions: rationale, review and updates. **K9** Engineering, manufacturing and maintenance technical information, related documentation, such as job records, service reports, checklists and condemn notices, representations, drawings, graphical information, visuals and symbols. **S14** Provide technical leadership for maintenance practices and techniques. **S15** Provide technical leadership for repair practices and techniques. **S16** Provide technical leadership for fault finding techniques and practices.	Provides technical leadership, to complete maintenance, fault-finding and repair tasks in line with the project brief, considering: • the engineering practices and techniques used • the standard operating procedures and work instructions followed • the selection and use of technical documents and recording of information (**K8; K9; S14; S15 and S16**)	• Justifies their technical leadership approach to completing tasks and maintaining documents, explaining how this supports business objectives (**K8; S14; S15 and S16**)

Project: Report and Presentation with Questions Communication KSBs	To achieve a Pass the apprentice must achieve **ALL** of the pass descriptors:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and **ALL** of the Distinction descriptors
K7 Communication techniques: written. Writing using plain English principles. Report writing. **S10** Communicate in writing.	• Uses written communication techniques suitable for the context, adapting style and use of terminology to suit the audience. Uses sector and industry terminology correctly (**K17 and S10**)	

Component 2: Professional discussion based on the portfolio of evidence

The apprentice must demonstrate core KSBs in an integrated way. The following criteria are indicative of the pass and distinction criteria the independent assessor will be looking for when the apprentice carries out the professional discussion.

Professional Discussion Health and Safety KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:
K1 Awareness of health and safety regulations, relevance to the occupation and the technician's responsibilities. Health and safety regulations **S1** Comply with health and safety regulations and procedures. Apply safe systems of work	• Describes how they select and apply health and safety regulations appropriate to the task, their occupation, and technician's responsibilities, complying with safe systems of work in line with company policies (**K1 and S1)**	• Analyses the extent to which adhering to safe systems of work and health and safety regulations impacts on workplace schedules and maintenance procedures (**K1 and S1**)

Professional Discussion Environmental and Sustainability KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:
K3 Awareness of environment and sustainability regulations, relevance	• Analyses the extent to which the re-use, recycling and disposal of resources within the	• Evaluates how current working practices in their role prioritise and promote the environment

Professional Discussion Environmental and Sustainability KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:
to the occupation and the technician's responsibilities. Environment and sustainability. Environmental Protection Act - responsibilities. Types of pollution and control measures: noise, smells, spills, and waste. Sustainability. Resource Management. Environmental permits. Waste management. Waste Electrical and Electronic Equipment Directive (WEEE). Hazardous waste regulations. Re-cyclable materials and waste disposal procedures. Energy consumption and usage profiling. Data logging to optimise energy performance. The Climate Change Agreements. Carbon Reduction Commitment (CRC).	company is in line with environmental and sustainability regulations and procedures (**K3; S2 and B1**)	and sustainability (**K3; S2 and B1**)

Professional Discussion Environmental and Sustainability KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:
S2 Comply with environmental and sustainability regulations and procedures when using resources. Segregate resources for re-use, recycling and disposal applying sustainability principles. **B1** Prioritise and promote the environment and sustainability.		

Professional Discussion People Management KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:
K12 The function of an engineering maintenance department. Limits of autonomy and reporting channels. Different teams and functions involved in operation and interdependencies.	• Describes how they select and apply verbal communication techniques appropriate to the audience, using the correct engineering terminology and delivered by applying a professional approach in line	• Analyses the techniques they use to overcome issues faced during negotiations or conflict resolution, explaining the impact these have on the business (**K13; S11 and S12**)

Professional Discussion People Management KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:
K13 Leadership and management techniques: customer relationship management, negotiating, influencing, networking, commercial awareness, conflict management and assertiveness. **K14** Workplace training and development and competence assurance techniques in the workplace. How to pass on knowledge to colleagues and provide guidance to customers or stakeholders. **K16** Verbal communication techniques: Matching style to audience. Barriers in communication and how to overcome them. Engineering terminology. **K25** Equality, diversity and inclusion in the workplace.	with company policies and procedures (**K16; S9 and B3**) • Justifies their choice of leadership and management technique when dealing with customer relations, negotiation, influencing, networking, commercial awareness, conflict resolution and assertiveness in line with the ethical standards set out in company policies and procedures (**K13; S11; S12 and B7**) • Outlines the function(s) of their engineering maintenance department, the limits of their autonomy, identifies reporting channels, collaborates with departmental teams, other disciplines and external stakeholders (**K12 and B8**)	• Analyses the impact professional development of themselves and others has on business performance (**K14; S13 and B5**)

Professional Discussion People Management KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:
S9 Communicate with colleagues and stakeholders verbally. **S11** Negotiate with colleagues or stakeholders. For example, to access equipment or arrange system outage. **S12** Identify potential conflicts and apply resolution strategies. **S13** Identify training needs of team members in the workplace. **Core Behaviours** **B3** Apply a professional approach. **B5** Committed to professional development of self and others **B7** Act ethically. **B8** Collaborate within teams, across disciplines and external stakeholders.	• Explains how they identify the training needs of team members in the workplace and establish an approach to co-worker's workplace training and competence assurance which is in line with organisational guidelines and policies on equality, diversity and inclusion. Assumes responsibility for their own personal development and shares expertise gained to build the capability of colleagues within their team(s) (**K14; K25; S13 and B5**)	

Professional Discussion Engineering Standards KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:
K11 Awareness of engineering international, national and regulatory standards, relevance to the occupation and technician's responsibilities. British Standards (BS). International Organisation for Standardisation standards (ISO). European Norm (EN). **K18** The engineering maintenance sector. Regulators. Types of employers. Clients. Supply chain. Stakeholders. Audits. **K20** Awareness of Quality Management Systems (QMS) and the principles of Quality Control and Assurance, principles and practice in a maintenance and engineering environment. Relevance to the occupation and the technician's responsibilities.	• Outlines the structure of the engineering maintenance sector, has an awareness of quality control and management systems and compliance with regulatory standards, applying them to a maintenance environment specific to their role (**K11; K18; K20 and S18**)	• Evaluates how compliance with engineering standards and or regulations impacts business outcomes (**K11; K18; K20 and S18**)

Professional Discussion Engineering Standards KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:
S18 Comply with engineering standards and regulations. For example, ISO9001.		

Professional Discussion Continuous Improvement KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:
K21 Continuous improvement techniques: lean, 6-sigma, KAIZEN, 5S (Sort, set, shine, standardise and sustain). **S20** Lead on continuous improvement projects. Apply continuous improvement techniques. Devise suggestions for improvement.	• Leads continuous improvement projects and applies continuous improvement techniques to these including lean, 6-sigma, KAIZEN, and the 5S's, outlining suggestions for improvement (**K21 and S20**)	• Evaluates the impact of suggestions from a continuous improvement project on either maintenance procedures and or business outcomes (**K21 and S20**)

Professional Discussion Handovers KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:

K24 Business operation considerations: efficiency, customer satisfaction, competitiveness, minimising risks to operation, finance, business ethics and licenses.
 	
S21 Manage technical handover of completed repair or maintenance activity.
 	
B6 Take responsibility for work.
	• Analyses business operation considerations, including:
	  ○ Efficiency
	  ○ Customer satisfaction
	  ○ Competitiveness
	  ○ Minimising risks to operation, finance, business ethics and licenses with respect to their role.
	  ○ Manages the technical handover of repair and or maintenance activities taking responsibility for the quality of finished work in line with company policies and procedures (**K24; S21 and B6**)	

Professional Discussion Information Technology KSBs	To achieve a Pass the apprentice must achieve **ALL** of the following:	To achieve a Distinction the apprentice must achieve **ALL** of the Pass descriptors and ALL of the Distinction descriptors:

K23 Information technology: Management Information Systems (MIS), spreadsheets, presentation, word processing, email, virtual communication and learning platforms. General Data Protection Regulation (GDPR). Documentation and data collection: principles, methods and requirements - electronic and paper. Analytical data, job records, timekeeping, service reports, checklists and condemn notices. Technological development and innovation in the engineering sector. Industry 4.0. IT networking and digital twinning.
 	
S5 Record or enter information - paper based or electronic. For example, job sheets, risk assessments, equipment service records, test results, handover documents and manufacturers'
	• Outlines their use of information technology to record or enter information including:
	  ○ MIS
	  ○ Spreadsheet
	  ○ Presentation
	  ○ Word processing
	  ○ Email
	  ○ Virtual communication
	  ○ Learning platforms, for documentation and data collection
	  ○ Collecting analytical data, job records, timekeeping, service reports, checklists and condemn notices
	  ○ Applies General Data Protection Regulation (GDPR)
	  ○ Adheres to company policy to promote
		• Evaluates the impact of adopting emerging and advancing engineering and maintenance technologies across workplace activities (**K23 and S22**)

documentation, asset management records, work sheets, checklists, waste environmental records and any legal reporting requirements. **S22** Use information technology. For example, for document creation, communication, and information management in line with breakdown, repair and maintenance activities. Comply with GDPR. **B4** Promote adoption of emerging and advanced engineering and maintenance technologies.	technological development and innovation in the engineering maintenance sector including industry 4.0. IT networking and digital twinning (**K23; S5; S22 and B4**)	

Overall grading

The apprenticeship will be graded fail, pass, merit or distinction. The final grade will be determined by collective performance in the two assessment components.

The Project: Report and presentation with questions and Professional discussion are all marked separately and awarded a fail, pass or distinction.

The overall grade for the LEMT Standard is based on the grades in individual components as follows and illustrated in the table below:

- Distinction – If a Distinction is awarded in both components
- Merit – If a combination of a pass or distinction is awarded across the 2 components
- Pass – If a Pass is awarded in both components
- Fail – If a Fail is awarded for at least one of the components

Project: Report and presentation with questions	Professional discussion based by a portfolio of evidence	Overall Grading
Any grade	Fail	Fail
Fail	Any grade	Fail
Pass	Pass	Pass
Pass	Distinction	Merit
Distinction	Pass	Merit
Distinction	Distinction	Distinction

The scoring criteria that will be applied for each assessment criteria along with additional details can be found in Section 3 of this Specification.

Section 4: Resits and retakes

Apprentices who fail one or more EPA components can re-sit or re-take the failed component at the employer's discretion. The apprentice's employer needs to agree that a re-sit or re-take is appropriate. A re-sit does not need further learning, but a re-take does. Apprentices should have a supportive action plan to prepare for a re-sit or a re-take.

The employer and Energy & Environment Awards agree the timescale for a re-sit or re-take. A re-sit is typically taken within 2 months of the EPA outcome notification. The timescale for a re-take is dependent on how much re-training is required and is typically taken within 4 months of the EPA outcome notification. Failed EPA components must be re-sat or re-taken within the 6 month end-point assessment period, otherwise the EPA will need to be re-sat or re-taken in full.

Re-sits and re-takes are not offered to apprentices wishing to move from pass to a higher grade.

If a re-sit or re-take is taken in either component by the apprentice, the maximum overall EPA grade that can be achieved is a Pass.

Energy & Environment Awards resit and re-take policy can be found at: https://energyenvironmentawards.co.uk/policies-and-fees/

Section 5: Practical Guidance

Preparing for the Project Report

Project brief, title and scope

For the project: report and presentation with questions, the employer/training provider must submit a 500 word project brief, project title and scope to Energy & Environment Awards for each apprentice registered on this standard. This is to agree with Energy & Environment Awards that the project title and scope allows the apprentice to meet the KSBs mapped to this assessment component to the highest available standard. Energy & Environment Awards will sign-off the project's title and scope at gateway to confirm if it is suitable, see Appendix C, LEMT Supporting Documents 'LEMT 500 Word Project Brief, Project Title, Scope, Declaration and Sign-off Form.'

The purpose of this service is to ensure that the project report meets the requirements of the assessment component. The sign-off helps ensure the proposed title and scope are sufficiently complex to allow the apprentice to demonstrate the required knowledge, skills and behaviours against the relevant elements of LEMT specification. Details of the relevant elements are included in Section 2 of the Specification.

The employer/training provider must ensure:

- the 500 word project brief, title and scope involve the apprentice completing a significant and defined piece of work that has a real business application and benefit
- enables the assessment of core and specific knowledge, skills and behaviours
- the project includes a maintenance, fault finding and repair related activity. It can be a desk study, a site-based project or a combination of both. It must explore technical leadership in maintenance concepts and practices in depth, and cover the assessment themes identified in Section 2, Step-by-Step Guide of this specification

The apprentice may work as part of a team to complete the project which could include technical internal or external support. However, the project report and contents must be the apprentice's own work which must be reflective of their own role and contribution. The apprentice and their employer/training provider must confirm that the project report and its contents is the apprentice's own work by completing the declaration, see Appendix I Lead Engineering Maintenance

Technician Supporting Documents ‘LEMT Final Submission Project; Report, Presentation Declaration and Sign-off Form.’

Submitting the form to Energy & Environment Awards

The employer/training provider should complete and submit the ‘LEMT 500 Word Project Brief, Project Title, Scope, Declaration and Sign-off Form’ to Energy & Environment Awards Service Delivery Team for approval by gateway. The form should be accompanied with the supporting materials: 500 word project brief, title and scope.

Energy & Environment Awards Review Process

Once the approval form has been received the sign-off process will be conducted by Energy & Environment Awards. The outcomes will be shared with the employer/training provider no later than 5 working days following the review.

Please be aware:

- Project title and scope sign-off does not guarantee that the apprentice will pass the project: report and presentation with questions
- No health and safety risk assessment has been carried out by Energy & Environment Awards
- Energy & Environment Awards sign-off does not remove any of the training provider obligations to ensure full coverage of the standard, and full compliance with relevant legislation
- Energy & Environment Awards sign-off is based only on information supplied and is not a guarantee that the final project: report and presentation will be sufficient for an EPA pass
- The information provided in this ‘LEMT 500 Word Project Brief, Project Title, Scope, Declaration and Sign-off Form,’ must only be shared with the apprentice who is carrying out this area of work

Preparing for the Presentation with Questions

Where possible, the employer/training provider should provide the apprentice with the opportunity to carry out a presentation with questions as close to the real assessment described in Section 2 of the specification (Component 1).

The employer/training provider should prepare the apprentice for the presentation for the live assessment. A suitable person should be chosen to play the part of the assessor.

A template is provided to help ensure that the activities assessed during the presentation with questions will give complete coverage of the standard. See Appendix D, LEMT Supporting Documents 'Practice Project: Report and Presentation with Questions Template.'

Preparing for the Professional Discussion

A practice professional discussion should take place between the apprentice and the person acting the role of an assessor. The apprentice should draw on evidence from their portfolio during the discussion.

Guidance on Portfolio of Evidence

The portfolio is not assessed. It serves the following purpose:

- Provides the opportunity to demonstrate the core and specific KSBs required across the standard
- The assessor reviews the portfolio before the professional discussion to help focus and contextualise their questions
- A carefully prepared mapped portfolio supports the apprentice during the professional discussion

Quality vs Quantity

The apprentice should be supported in selecting and mapping evidence for their portfolio in the mapping document. They must gather evidence on the full range of KSBs required by the standard.

The portfolio must be sufficient to evidence the apprentice can apply the KSBs required in a variety of tasks.

In theory one comprehensive job-write up could cover all the required KSBs. In practice, this is more likely to be in several job write-ups plus a few smaller pieces of evidence targeting specific elements of the standard.

Choose the best pieces of evidence that have been mapped for each KSB covered by the professional discussion based on the portfolio. An independent assessor will look for one suitable piece of evidence for each KSB. To be confident of meeting the standard, apprentices should aim to have a minimum of two pieces of evidence, and no more than three, mapped to each KSB. This should ensure that the apprentice has quality evidence to draw on in the professional discussion. Progress review documents should also be included.

What to include in the Portfolio?

The portfolio of evidence:

- must contain a mapping document where evidence is mapped against the KSBs. A template has been produced to help the apprentices with collecting and mapping their evidence. A copy of the template is included. See Appendix G, LEMT Supporting Documents 'Portfolio Mapping Document.'
- must contain **at least one piece of quality evidence relating to each KSB**. This piece of quality evidence must demonstrate the KSBs as outlined in Section 2 of this Specification which will be assessed by the professional discussion based on the portfolio
- must include evidence that **covers all KSBs** required
- will typically contain 10 discrete quality pieces of evidence
- **written accounts of activities** that have been completed and referenced against the knowledge, skills and behaviours supported by appropriate photographic evidence and work products, for example workplace documentation and records, witness statements, work instructions, safety documentation, workplace policies and procedures as appropriate to the activities
- **progress review documentation** - reviews which should be completed and recorded to determine progression towards competence across the entire occupational Standard
- will be available, during the professional discussion, allowing the apprentice to refer to it
- must contain demonstrations of work carried out over a period of time and must include evidence of work carried out during the on programme period
- must contain a minimum of 2 and no more than 3 activities carried out by the apprentice that demonstrates the higher order knowledge, skills and behaviours

- where practicable this should include:
    - annotated photographs
    - annotated images
    - annotated diagrams
    - job descriptions and witness evidence/testimony
    - situations that have been difficult and challenging, and how these have been overcome e.g. equipment breakdown which has results in a change in working practice while still adhering to company procedures
    - any employer contributions must focus on direct observation of evidence (e.g. review/witness statements) of competence rather than opinions

The above is not a definitive list. The apprentice can include other relevant evidence sources. The portfolio must not contain any reflective accounts or any methods of self-assessment.

Evidence must be:

- produced by the apprentice (authentic)
- relevant to the standard (K, S or B) that it is mapped to
- produced during the time the apprentice is carrying out their on-programme training

What can the apprentice do?

The apprentice should:

- be familiar with the structure of their portfolio
- know the KSBs covered by the professional discussion
- know the grading criteria
- ensure there is evidence to cover every KSB in the professional discussion
- practise mapping evidence and completing the evidence mapping grid

The role of the employer/training provider

Employer/training providers are expected to support the apprentice in preparing their portfolio by:

- clarifying responsibility for supporting the apprentice to select and map evidence for the portfolio, including employer coaches/mentors where applicable

- advising on which pieces of evidence to select to ensure that when looked at as a whole, they provide coverage of all the required elements of the standard assessed in the professional discussion
- supporting the mapping of evidence and production of a mapping document
- authenticating evidence as valid
- signing off the portfolio
- submitting the portfolio to Energy & Environment Awards as part of Gateway

What to expect in the practice professional discussion?

The practice professional discussion will be based on the portfolio which will provide the apprentice with the opportunity to practice discussing their KSBs gained throughout their on-programme and by referring to the evidence from their portfolio using the portfolio mapping document. A suitable person should be chosen to play the part of the assessor.

A practice professional discussion based on the portfolio template is provided for use to prepare the appropriate questions to ask and to record the apprentices' performance. See Appendix E, LEMT Supporting Documents 'Practice Professional Discussion Template.'
As part of the practice exercise, apprentices should have access to their portfolio to support their responses.

Section 6: Authenticity and security of apprentice work

The apprentices must be advised by their training provider and employer that copying of any work (whether it is from another apprentice or from internal, external documents or source) and presenting it as their own will be deemed as malpractice and will lead to their work being disqualified. Apprentices must not share their work or allow any person to copy their work as this is not allowed and would also be deemed as malpractice.

In signing off the portfolio, training providers and employers must be satisfied that the evidence in the portfolio is:

- **adequate**: evidence must cover all relevant KSBs within the assessment plan. Adequate does not mean a large quantity of evidence. The evidence should focus on quality rather than quantity
- **authentic**: apprentices must be able to confirm and talk about the evidence that they submit with the independent assessor, appointed by Energy & Environment Awards. It is vitally important apprentices only submit evidence relating to them
- **appropriate**: all evidence must be relevant to the KSBs assessed during the technical interview
- **recent and up to date**: all evidence must be linked to KSBs must be recent and current which demonstrate the apprentice's competence. The independent assessors, appointed by Energy & Environment Awards will assess current competencies, and the apprentice must map the evidence to demonstrate the relevant work to the KSB. Apprentices must gather the evidence during their on-programme training