



ENERGY &  
UTILITY SKILLS

Skills for a greener world

# EUIAS Level 3 End-point Assessment Apprentice Guide for

Low Carbon Heating Technician V1.1

QAN 610/4956/6

# EUIAS Level 3 End-point Assessment

## Apprentice Guide for

### Low Carbon Heating Technician V1.1

QAN 610/4956/6

Updates to this Guide .....	4
Introduction.....	6
How This Apprentice Guide Is Organised.....	6
How to Use This Guide .....	6
Section 1: The Basics .....	7
What is an Apprenticeship Standard?.....	7
What is an Assessment Plan?.....	7
What is an end-point assessment (EPA)? .....	8
What are the Gateway Requirements?.....	8
What is the EPA Specification?.....	9
Section 2: Apprentice EPA Journey.....	10
Let us Begin Your EPA Journey.....	10
How will you be assessed in the end-point assessment?.....	10
Your EPA Journey in a Diagram.....	11
Section 3: End-point Assessment Components.....	12
Component 1: Practical assessment with questions.....	12
Practice Component 1: Practical assessment with questions .....	16
Component 2: Professional Interview based on an EPA portfolio.....	17
EPA portfolio requirements.....	18
Practice Component 3: Professional Interview based on an EPA portfolio ...	21
Component 3: Multiple-choice Test.....	22
Practice Component 3: Multiple-choice test .....	26
Overall grading .....	27



Section 4: Resits and retakes.....	28
Section 5: Appendices .....	29
Appendix A: Glossary .....	30
Appendix B: EPA Portfolio Evidence Log .....	31

## Updates to this Guide

Since the first publication of the EUIAS Low Carbon Heating Technician (LCHT) Apprentice Guide, the following updates have been made.

Version	Date first published	Section updated	Page(s)
v1.0	December 2024	First published	All


**At A Glance Component 1: Practical assessment with questions**

<b>Date(s):</b>	
<b>Time:</b>	
<b>Location:</b>	
<b>Examination Conditions:</b>	With an EUIAS Independent assessor in a simulated environment, which relates to your natural work environment
<b>Additional Requirements:</b>	
<b>Assessed and marked by:</b>	Independent assessor/EUIAS


**At A Glance Component 2: Professional interview based on an EPA portfolio**

<b>Date(s):</b>	
<b>Time:</b>	
<b>Location:</b>	
<b>Examination Conditions:</b>	With an EUIAS Independent assessor at your employer's premises or a suitable venue for example a training provider's premises.
<b>Additional Requirements:</b>	
<b>Assessed and marked by:</b>	Independent assessor/EUIAS


**At A Glance Component 3: Multiple-choice test**

<b>Date(s):</b>	
<b>Time:</b>	
<b>Location:</b>	
<b>Examination Conditions:</b>	Controlled by an invigilator
<b>Additional Requirements:</b>	
<b>Assessed and marked by:</b>	EUIAS

## Introduction



EUIAS has been selected by your employer to carry out end-point assessment (EPA) and it is our job to ensure that you are assessed fairly.

## How This Apprenticeship Guide Is Organised

- ✓ Section 1:  
What is in the Apprenticeship Guide?
- ✓ Section 2:  
An Apprenticeship's End-point Assessment Journey
- ✓ Section 3:  
End-point Assessment Components

## How to Use This Guide

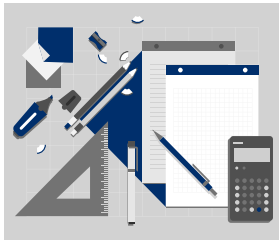


This guide has been split into 3 sections. You can dip into each section that you are working on where you will find useful information, practical advice, tips you need and useful dates to successfully complete your EPA.

Throughout we have used headings and cross referenced to our EPA Low Carbon Heating Technician (LCHT) v1.0 Specification which provides details of the EPA components.

## Section 1: The Basics

### What is an Apprenticeship Standard?



An apprenticeship standard is a description of your apprenticeship and it is based on the Low Carbon Heating Technician standard, which was written by employers. It contains the low carbon heating technician's job profile, and describes the knowledge, skills and behaviours (KSBs):

- Knowledge: (as part of KSBs) – specific information, technical detail, and 'know-how' identified as part of the apprenticeship standard that must be evidenced during your end-point assessment
- Skills: (as part of KSBs) – the practical application of knowledge identified as part of the apprenticeship standard that must be evidenced during end-point assessment
- Behaviours (as part of KSBs) – specific mindsets, attitudes or approaches identified as part of the apprenticeship standard that must be evidenced during end-point assessment

The standard can be accessed via the link below:

<https://www.instituteforapprenticeships.org/apprenticeship-standards/low-carbon-heating-technician-v1-1>

Select the occupational standard tab.

### What is an Assessment Plan?

An Assessment Plan is also written by employers and provides details of what is required for you to pass your end-point assessment. It includes details of what you will be assessed on, how each assessment will take place, what methods will be used and who will assess you.

EUIAS designed the end-point assessment (EPA) to meet the requirements of the Assessment Plan. The Assessment Plan can be accessed via the link below:

<https://www.instituteforapprenticeships.org/apprenticeship-standards/low-carbon-heating-technician-v1-1>

Select the EPA plan tab.

## What is an end-point assessment (EPA)?

The end-point assessment is the assessments you take at the end of your apprenticeship. You will typically spend 36 months on-programme working towards your standard. You are required to spend a minimum of 12 months on-programme. After this you have a Gateway meeting with your employer or training provider to confirm you are ready for the end-point assessments. The words end-point means that you will be assessed at the end of your on-programme (training) to confirm you have met the standard. Your EPA period will typically last 4 months.

## What are the Gateway Requirements?

Gateway is a meeting where your employer, training provider and you ensure that you are confident that you can demonstrate all the KSBs defined in the apprenticeship standard and you are ready for EPA. After the meeting, your training provider will confirm the outcomes of the Gateway meeting by sending a signed document to EUIAS. The document confirms that you have met the following Gateway requirements:

- confirmed that you are ready to take the EPA
- achieved English and mathematics qualifications in line with the apprenticeship funding rules
- compiled an EPA portfolio, which your will professional interview will be based on

Your training provider will send copies of these documents to EUIAS.



## What is the EPA Specification?

The end-point assessment specification provides details of:

EUIAS Level 3 End-point Assessment for Low Carbon Heating Technician

### Specification

QAN 610/4956/6  
ST1020 V1.1

- the assessment methods used in your EPA
- KSBs that are covered by each assessment
- KSBs amplification and guidance

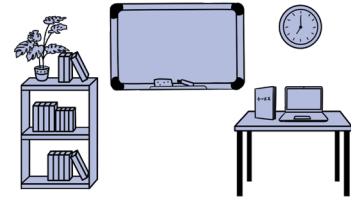
The Specification can be accessed via this [link](#).



## Section 2: Apprentice EPA Journey

Let us Begin Your EPA Journey.

Find a quiet place and read on....



Your EPA journey consists of 3 elements:

- A training programme with on the job, off the job elements, typically 36 months
- Gateway meeting window
- End-point Assessment (EPA) typically 4 months

Your journey begins with the training program. Your employer and training provider are responsible for this part. This is where you will gain the required Knowledge, Skills and Behaviours (KSBs).

### How will you be assessed in the end-point assessment?

You will be assessed on the following components, which can be taken in any order:

- 1. Practical assessment with questions**
- 2. Professional interview based on an EPA portfolio**
- 3. Multiple-choice test**

Each component has a preliminary grade and each grade is carried forward to award a final grade. You must pass all components to achieve this qualification. For further guidance refer to Section 3 End-point Assessment Components.

The final grade can be a Fail, Pass, Merit or Distinction.

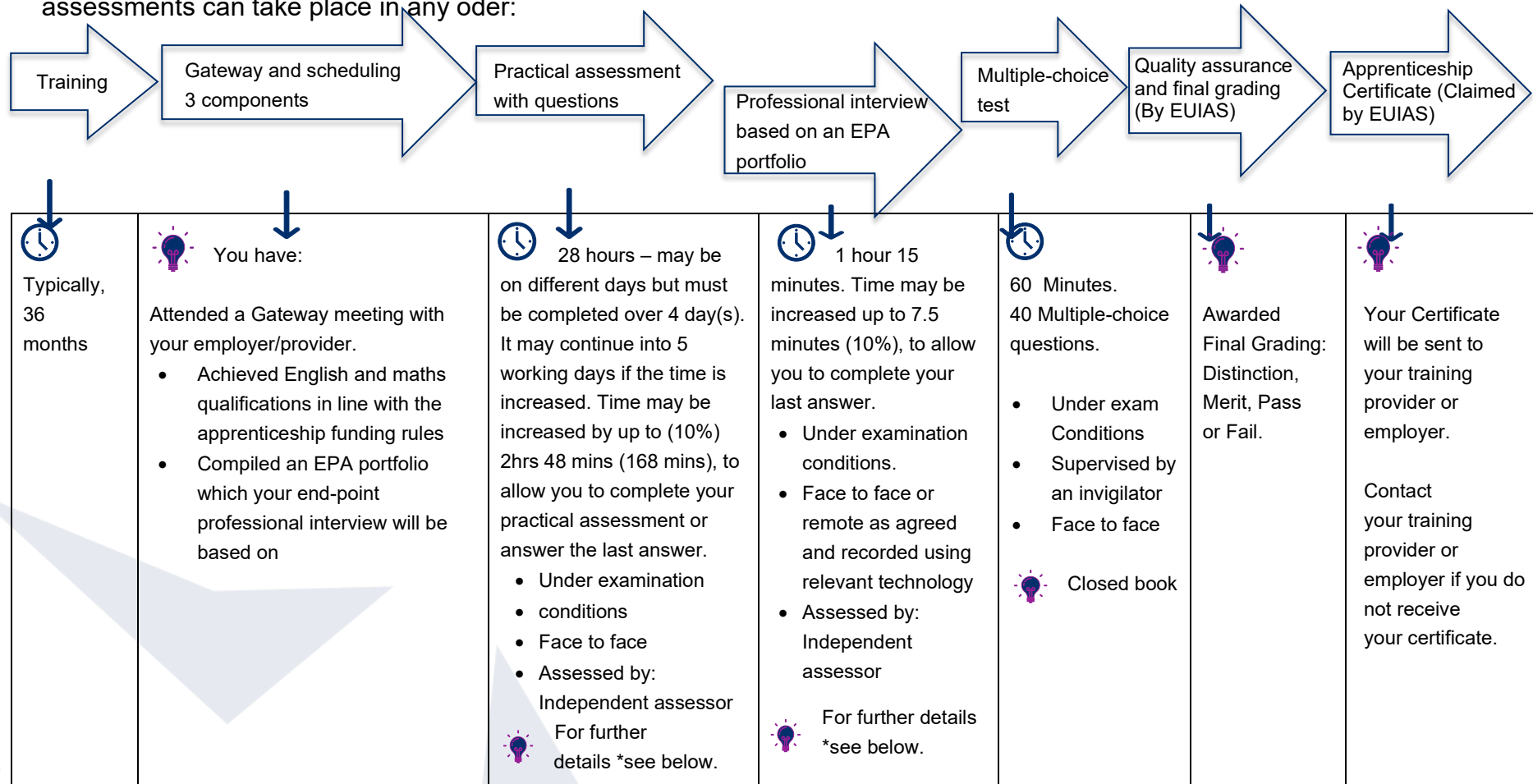
It is important for you to keep a record of when your 3 components are scheduled. We suggest you use the 'At a Glance' tables on page 5.

### Reasonable adjustments

A reasonable adjustment is any action that helps to reduce the effect of a disability or difficulty that places you at a substantial disadvantage during assessments. If this applies to you make sure you tell your training provider who can make an application for a reasonable adjustment to EUIAS on your behalf.

## Your EPA Journey in a Diagram

The diagram below illustrates the order of your EPA **journey** from the day you register to your final certification. Please note that assessments can take place in any order:



\*For further details refer to Section 3 in this Apprentice Guide or Section 2 of the Specification.

## Section 3: End-point Assessment Components

Now let us continue your journey through EPA. There are 3 components that you must pass to be awarded a certificate.


### Component 1: Practical assessment with questions

#### Overview

A practical assessment with questions involves an independent assessor, approved by EUIAS observing and questioning you in a simulated environment which must closely relate to your natural working environment. You will be observed carrying out a series of set tasks, allowing you to demonstrate the application of your job role knowledge, skills and behaviours (KSBs). The independent assessor will ask you questions during or after the practical assessment. You will be given at least **2 weeks notice** of the assessment.




The following table outlines the procedure for conducting a practical assessment with questions:

<p>Structure of your practical assessment with questions</p>	 <p>The total assessment time is 28 hours and this includes questioning. The assessor can increase the time by up to 2 hours and 48 minutes (10%) to allow you to complete your work or respond to a question if necessary.</p> <p>The assessment may be split into discrete sections held over different days but must be completed over 4 working day(s). If necessary, it may continue into 5 working days if the assessor increases the time by 10%.</p> <ul style="list-style-type: none"> <li>• The independent assessor will be observing you and may observe up to three other apprentices at the same time</li> <li>• Breaks may be taken during the practical assessment with questions to allow you to move from one location to another and for meal/comfort breaks</li> <li>• During breaks the clock will be stopped. The assessment time is not reduced</li> </ul>
<p>Where will the assessment take place?</p>	<ul style="list-style-type: none"> <li>• In a simulated environment that must relate to your natural work environment.</li> </ul>

	<ul style="list-style-type: none"> <li>• Questioning that occurs after the assessment should take place in a quiet location free from distractions and influence.</li> </ul>
<p>What tasks will I have to cover?</p>	<p>You will be expected to carry out the following 2 tasks (Component 1 and 2):</p> <ul style="list-style-type: none"> <li>• <b>Component 1 – Installation (Typically 23 hours)</b></li> </ul> <p>You will be provided with a written brief detailing a customer’s low carbon heating and hot water installation specification. This specification will include a low carbon heating and hot water system, which could include but is not limited to:</p> <ul style="list-style-type: none"> <li>• ground source heat pump</li> <li>• air source heat pump</li> <li>• water source heat pump</li> <li>• solar thermal system</li> </ul> <p>You will then carry out planning and installation practices, including the following:</p> <ul style="list-style-type: none"> <li>• compliance with health and safety regulations</li> <li>• production of a work programme, risk assessment and method statement</li> <li>• planning, sizing and selecting the system</li> <li>• installing the system</li> <li>• testing and commissioning the system</li> <li>• conducting a customer handover</li> </ul> <p>The independent assessor will play the role of the customer when you conduct the customer handover.</p> <ul style="list-style-type: none"> <li>• <b>Component 2 – Maintenance (Typically 5 hours)</b></li> </ul> <p>The independent assessor will pre-install <b>two commonly found faults</b> on a low carbon heating and hot water installation that could include but is not limited to:</p> <ul style="list-style-type: none"> <li>• ground source heat pump</li> <li>• air source heat pump</li> <li>• water source heat pump</li> <li>• solar thermal system</li> </ul> <p>You will <b>carry out maintenance practices</b> on the low carbon heating and hot water installation, including the following:</p> <ul style="list-style-type: none"> <li>• safe isolation of electrical supply</li> <li>• compliance with health and safety regulations</li> </ul>

	<ul style="list-style-type: none"> <li>• servicing the system</li> <li>• diagnosis of a minimum of two commonly found faults (for example, wrong pipe size, wrong type of insulation, etc.)</li> <li>• rectification of two commonly found faults</li> </ul> <p>The practical task must allow you to undertake the activities required for a practical assessment with questions.</p> <p><b>For further details refer to ‘Knowledge, Skills and Behaviours (KSBs) Coverage’ in the LCHT Specification on pages 11 - 31. A link to the LCHT Specification is available on page 9.</b></p>
<p>What knowledge, skills and behaviours (KSBs) do I have to demonstrate during the practical assessment with questions?</p>	<p><b>NOTE:</b> You are only required to demonstrate your job role specific knowledge, skills and behaviours and your employer/training provider will ensure that you have the opportunity to cover all aspects of the KSBs in an integrated way in a simulated environment. The simulated environment must relate to your natural working environment.</p> <p><b>Health and Safety Knowledge (KSBs):</b></p> <p><b>S1</b> Operate in a safe working manner by complying with health and safety legislation, approved codes of practice and guidance and applying safe working practices.</p> <p><b>B1</b> Takes personal responsibility for and promotes health and safety.</p> <p><b>Planning for installation (KSBs):</b></p> <p><b>K21</b> Planning, sizing and selecting practices for low carbon heating and hot water systems and components.</p> <p><b>K24</b> Risk assessments, method statements and work programmes: production methods and requirements.</p> <p><b>S3</b> Produce work programmes for tasks within low carbon heating and hot water industry.</p> <p><b>S4</b> Produce risk assessments and method statements for the low carbon heating and hot water systems work.</p> <p><b>S13</b> Plan, size and select low carbon heating and hot water systems.</p> <p><b>Installation and testing (KSBs):</b></p>

	<p><b>K11</b> Testing and commissioning practices and techniques applicable to low carbon heating and hot water systems.</p> <p><b>S5</b> Install, low carbon heating and hot water systems.</p> <p><b>S6</b> Test, commission and handover low carbon heating and hot water systems, including providing operational advice.</p> <p><b>B4</b> Takes responsibility for completing work.</p> <p><b>Service and maintenance (KSBs):</b></p> <p><b>K16</b> Routine service and maintenance practices and techniques applicable to low carbon heating and hot water systems.</p> <p><b>K19</b> Fault finding, diagnosis and rectification practices and techniques applicable to low carbon heating and hot water systems.</p> <p><b>S9</b> Service, maintain, diagnose faults and rectify low carbon heating and hot water systems, including safe isolation of supply.</p> <p> For further details refer to 'Knowledge, Skills and Behaviours (KSBs) Coverage' in the LCHT Specification on pages 11 - 31. <b>A link to the LCHT Specification is available on page 9.</b></p>
<p>What resources can I use?</p>	<p>Equipment and resources needed for the practical assessment must be:</p> <ul style="list-style-type: none"> <li>• provided by your employer or training provider</li> <li>• a suitable premises</li> <li>• the plant, machinery, equipment and PPE required for the job</li> <li>• in good and safe working condition</li> </ul> <p>Relevant work instructions/manuals must be available for you to use in hard copy or electronically.</p>
<p>How many questions will I be asked?</p>	<p>The independent assessor:</p> <ul style="list-style-type: none"> <li>• will ask at least 5 open questions to assess the related underpinning knowledge</li> <li>• may ask follow-up questions in order to seek clarification from you</li> </ul>
<p>Who will assess me?</p>	<p>An independent assessor, approved by EUIAS.</p>

<p>Preliminary Grading</p>	<p>The independent assessor will award a preliminary grade. To gain a Pass, you must successfully achieve <b>ALL</b> of the pass descriptors for each KSB. To achieve a Distinction you must successfully achieve <b>ALL</b> the Pass descriptors and <b>ALL</b> of the descriptors from each of the Distinction boxes.</p>
<p>Overall grading for this component</p>	<p>Fail, Pass or Distinction.</p>

### Practice Component 1: Practical assessment with questions


You should have an opportunity to have a practice practical assessment with questions which mirrors the real assessment. A practice practical would be set up for you using the structure in the table above by your employer or training provider.




## Component 2: Professional Interview based on an EPA portfolio

### Overview

The professional interview is based on your EPA portfolio. It is to allow you to demonstrate how you have met the KSBs in order to carry out your occupational role as a lead traffic management technician effectively and safely. The professional interview allows for testing of responses where there are a range of potential answers that cannot be tested through the multiple-choice test. You will be given at least **2 weeks notice** of the professional interview.

 The following table outlines the procedure for conducting a professional interview based on your EPA portfolio:

Who will assess me?	1 independent assessor, approved by EUIAS will conduct the professional interview.
How will the professional interview based on an EPA portfolio be organised?	<p><b>Locations:</b> Your professional interview will take place at your employer's premises or a suitable venue.</p> <p> <b>Time:</b> Your professional interview must last 75 minutes (1 hour 15 minutes). The independent assessor can increase the time of the professional interview by 7.5 minutes (10%). This time is to allow you to respond to a question if necessary.</p> <p><b>Your professional interview will be:</b></p> <ul style="list-style-type: none"> <li>• a discussion between you and the independent assessor</li> <li>• face to face or remote, as agreed</li> <li>• assessed and outcomes will be recorded by the assessor on official EUIAS professional interview documents</li> <li>• recorded using the relevant technology such as Microsoft Teams or an audio recording device</li> </ul> <p>You will have access to your EPA portfolio throughout the professional interview.</p>
What topics will I have to cover?	<p>The professional interview will focus on the five tasks in your EPA portfolio:</p> <ul style="list-style-type: none"> <li>• Environmental and sustainability</li> <li>• Electrical and electronic control systems</li> <li>• Decommissioning</li> <li>• Communication and collaboration</li> </ul>

	<ul style="list-style-type: none"> <li>• Continuous professional development (CPD) and well-being</li> </ul> <p>For further details refer to Knowledge, Skills and Behaviours (KSBs) coverage in the LCHT Specification on pages 36 - 71. <b>A link to the LCHT Specification is available on page 9.</b></p>
How many questions will I be asked?	<ul style="list-style-type: none"> <li>• The independent assessor will ask at least 8 questions to explore your level of knowledge, skills and behaviours</li> <li>• Standardised open questions will be asked based on the contents of the evidence in your portfolio</li> <li>• Follow-up questions in order to seek clarification</li> </ul>
Preliminary Grading	<p>The independent assessor will award a preliminary grade.</p> <p>To gain a Pass, you must successfully achieve <b>ALL</b> of the pass descriptors for each KSB.</p> <p>To achieve a Distinction you must successfully achieve <b>ALL</b> the Pass descriptors and <b>ALL</b> of the descriptors from each of the Distinction boxes.</p>
Overall grading for this component	Fail, Pass or Distinction.

## EPA portfolio requirements

The requirements are as follows:

### EPA Portfolio Template

Throughout the on-programme part of your apprenticeship you must compile an EPA portfolio to support you in your professional interview. During the Professional interview the independent assessor will ask questions based on the evidence contained in your EPA portfolio.

For further guidance refer to:

- Section below 'How do I organise my portfolio of evidence?'
- LCHT Specification Section 5: Guidance on EPA portfolio

## How do I organise my EPA portfolio?

You must complete an EPA Portfolio Template. You should request the EPA Portfolio Template from your training provider.

Your EPA portfolio template comprises five tasks to support the compilation of the portfolio. Each task should help you focus on the specific knowledge, skills and behaviours that will be assessed in the professional interview.

For each task there is:

- a series of questions to be answered
- a text box following each question for you to provide your response. These boxes will expand to take more text; however, quality of answer is more important than quantity. You will be able to use your answers as prompts in the professional interview
- tables for you to record evidence that supports the examples provided in response to the questions. A copy of the tables can be found in Appendix B

Your EPA portfolio is **not assessed**. It serves the following purposes:

- A carefully prepared EPA portfolio will support you during the professional interview
- Your organised EPA portfolio will allow you to refer to examples and discuss the evidence with the independent assessor
- It allows the assessor to review it before the professional interview to help focus and contextualise the questions that you will be asked

## What should I include in my portfolio?

### Quality vs quantity



You should be supported in selecting evidence for your EPA portfolio by your employer or training provider.

We would advise you to choose the best pieces of evidence to support the answer to each question in the EPA portfolio template. The completed EPA portfolio should contain the five tasks with your responses and at least one piece of evidence. No other evidence should be included.

### Examples of acceptable evidence:

- evidence/proof of what you learned and did at work, showing you have the knowledge, skills and behaviours needed for your job role
- workplace documentation and records for example job task sheets/job card/times sheets, equipment maintenance /service records related to the apprentice
- workplace policies and procedures
- witness statements signed and dated by coaches/trainers
- annotated photographs
- video clips with a maximum total duration of 10 minutes; you must be in view and identifiable carrying out the tasks

The above is not a definitive list. You can include other relevant evidence sources.



You **must not** include in your EPA portfolio any methods of self-assessment.

### Evidence must be:

- produced by you (authentic)
- relevant to the task
- cross referenced and easily accessible in the portfolio
- produced during the time you were carrying out your on-programme training

### What can I do to prepare for the professional interview based on an EPA portfolio?

#### You should:

- ensure there is quality evidence to cover the KSBs in the EPA portfolio template
- be familiar with the structure of your EPA portfolio
- know the tasks/KSBs covered by the professional interview
- know where you have referenced your evidence by referring to your EPA Portfolio Evidence Log. A copy is included in Appendix B
- know how you will be graded

### The role of your employer or training provider

Employers or training providers are expected to support you in preparing your EPA portfolio by:

- providing clear instruction and deadlines to allow you to plan and compile your portfolio in preparation for the Gateway meeting
- advising on which pieces of evidence to select

- authenticating evidence as valid
- signing off the EPA portfolio
- submitting the portfolio to EUIAS as part of Gateway requirements

### Practice Component 3: Professional Interview based on an EPA portfolio

You should have an opportunity to have a practice professional interview based on an EPA portfolio which mirrors the real assessment. The practice professional interview would be set up for you using the structure in the table above by your employer or training provider.

## Component 3: Multiple-choice Test

### Overview

The multiple-choice test is a computer or paper-based test. You will have 60 minutes to complete the test. The test consists of 40 questions.

The multiple-choice questions will have four possible answers of which one will be correct.

You must be given at least **2 weeks notice** of the date and time of the multiple-choice test.



The following table outlines the procedure for conducting the multiple-choice test:


Who will start and finish my multiple-choice test?	You will sit your multiple-choice test in the presence of an invigilator.
What format will my test take?	<p>The test may be paper-based or taken online. Your training provider will let you know what the format of your test is.</p> <p>All other aspects of the test are exactly the same, including:</p> <ul style="list-style-type: none"> <li>• content</li> <li>• timings</li> <li>• question types</li> <li>• scoring</li> </ul>

How will the question appear in a paper-based test?

Here is an example of how the question will appear:

Question 1	
In a workplace, who is responsible for maintaining health and safety?	
Possible answers	
a)	Everyone
b)	Employers
c)	Safety managers
d)	Most senior person on-site

You must **select one answer** that you think is correct. You will be provided with an answer sheet where you will be expected to shade in the answer you have selected. Here is an example:



ENERGY & UTILITIES  
INDEPENDENT  
ASSESSMENT SERVICE

Candidate ID .....	Attempt .....
Last Name .....	
First Name .....	
Exam Date .....	Paper .....
Centre Name .....	
Centre Number .....	

**MARKING INSTRUCTIONS**

**ANSWER COMPLETED CORRECTLY**

Examples of how NOT to mark your examination sheet. *These will not be recorded*

**DO NOT** partially shade the answer circle.

**DO NOT** use ticks or crosses.

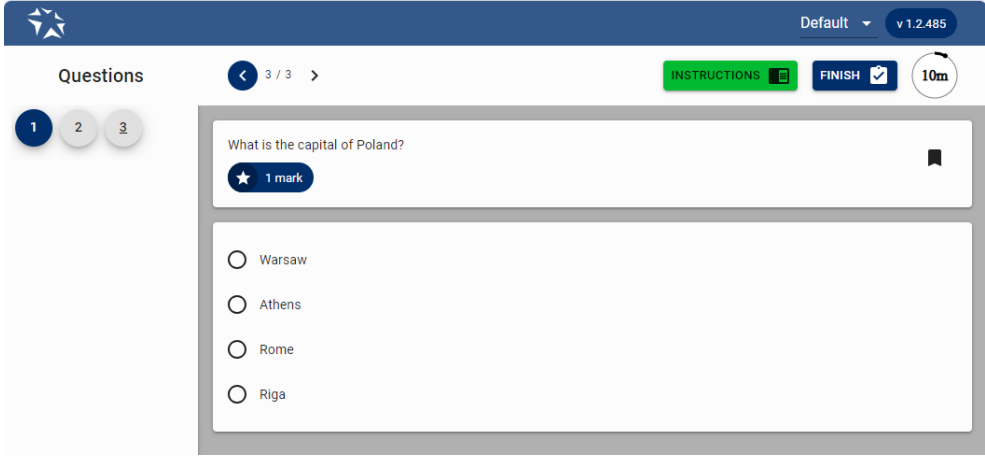
**DO NOT** use circles.

**DO NOT** shade over more than one circle.

1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	21 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	41 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
2 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	22 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	42 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
3 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	23 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	43 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>





**Always have a go even if you are not sure that it is the correct answer.**

<p>How will the question appear in an online test?</p>	<p>Here is an example of how the question will appear in an online version of the test:</p>  <p>You must <b>select one answer</b> that you think is correct.</p>
<p>Can I take any resources into the exam room?</p>	<p>The test is closed book which means that you cannot refer to reference books or any other materials. You will be provided with stationery on the day. You can take into the exam a scientific non-programmable calculator.</p>
<p>Can I have access to the internet?</p>	<p>No access to the internet is allowed and this means you must not take your SMART watch into the exam room.</p>
<p>How will the multiple-choice test be organised for me?</p>	<p><b>Locations:</b> Your multiple-choice test will take place at your employer's or training provider's premises or a suitable venue.</p> <ul style="list-style-type: none"> <li>• You will take the test in a quiet space and in the presence of an invigilator</li> <li>• Your test will be scheduled by your employer or training provider with the EUIAS</li> <li>• If you fail the multiple-choice test, you can re-sit or re-take the failed test at your employer's discretion. There are no limits to the number of re-sits or re-takes you can take but it is important to revise and ensure that you are confident with the knowledge you are being tested on</li> </ul>
<p>What criteria will I have to learn?</p>	<p>The multiple-choice test questions are based on core knowledge. Below is a list of the knowledge criteria, assessed in the multiple-choice test along with the range of questions that will be allocated to an assessment paper:</p>



<p><b>AND</b></p> <p>How many questions will be asked on each criteria?</p>	<p>Number of Questions</p>	<p>Criteria</p>
	<p>1 – 3</p>	<p><b>K1:</b> Health and safety legislation, approved codes of practice and guidance and safe working practices applicable to work in the building services and wider construction industry.</p>
	<p>4 – 6</p>	<p><b>K3:</b> Common installation practices and techniques used in the installation and maintenance of low carbon heating and hot water systems (air source, water source and ground source heat pumps, solar thermal systems, unvented hot water systems, connections to cold water systems, lower temperature wet central heating).</p>
	<p>4 – 5</p>	<p><b>K4:</b> Scientific and mechanical principles applicable to how low carbon heating, cooling and hot water systems work, including coefficient of performance (COP) and seasonal performance factor (SPF).</p>
	<p>2 – 3</p>	<p><b>K5:</b> Roles and responsibilities of persons within the low carbon heating and hot water systems industry and related trades.</p>
	<p>2 – 4</p>	<p><b>K6:</b> Legislative requirements and sources of information applicable to low carbon heating and hot water system installation, service and repair.</p>
	<p>1 – 2</p>	<p><b>K8:</b> Layout features, working principles and legislative requirements of cold water systems connected to low carbon heating and hot water systems.</p>
	<p>3 – 5</p>	<p><b>K9:</b> Layout features and working principles of low carbon heating and hot water systems.</p>
	<p>2 – 4</p>	<p><b>K10:</b> Sustainability: sources of renewable and non-renewable energy, current energy efficiency advice and guidance, UN Sustainability Development Goals, decarbonisation.</p>
	<p>3 – 4</p>	<p><b>K17:</b> F-Gas regulations: purpose and application</p>

	<p><b>K26:</b> Electrical safety: working with electricals in low carbon heating and hot water systems.</p> <p>3 – 4 Understanding limits of competence, what not to do, and when to engage a competent electrician, as well as other trades</p> <hr/> <p> <b>Remember</b> the questions have been written to reflect the low carbon heating technician role. For Amplification and Guidance refer to Section 2 of the LCHT Specification. <b>A link to the Specification is available on page 9.</b></p>
<p>What should I do to prepare for the multiple-choice test?</p>	<p><b>You should be prepared to:</b></p> <ul style="list-style-type: none"> <li>• revise the knowledge criteria listed above</li> <li>• ask your employer or training provider for additional questions that they have prepared to support you</li> <li>• attend the multiple-choice test which will last 60 minutes</li> </ul> <p> While on-programme, the employer or training provider must ensure you are:</p> <ul style="list-style-type: none"> <li>• familiar with all areas assessed by the multiple-choice test as listed above</li> <li>• supported in completing a practice test and provide you with constructive feedback to enable you to identify areas you need to carry out further revision in</li> </ul>

### Practice Component 3: Multiple-choice test



You should have an opportunity to have a practice multiple-choice test which mirrors the real assessment. The practice multiple-choice test would be set up using the structure in the table above by your employer or training provider. The feedback provided will assist you with preparing for the actual multiple-choice test.

## Overall grading

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

In order to gain a pass, you must achieve a minimum of a pass in each EPA component. A pass represents full competence against the standard.

To achieve a merit, you must achieve a distinction in the practical assessment with questions as well as a distinction in one other assessment component and a pass in the remaining assessment component.

To achieve a distinction grade, you must achieve a distinction in each EPA component.

Grades from individual assessment components will be combined in the following way to determine your overall EPA grade as a whole.

The multiple-choice test, practical assessment with questions and professional interview are all marked separately and awarded a fail, pass or distinction.

The multiple-choice test is based on the minimum and maximum marks achieved.

Grade	Minimum marks required	Maximum marks required
Fail	0	27
Pass	28	34
Distinction	35	40

The grade and mark for the practical assessment with questions and professional interview is based on the number and level of criteria achieved.

The overall grade for the LCHT Standard is based on the grades in individual components as follows:

Practical assessment with questions	Professional interview based on an EPA portfolio	Multiple-choice Test	Overall grading
Any grade	Any grade	Fail	Fail
Any grade	Fail	Any grade	Fail
Fail	Any grade	Any grade	Fail
Pass	Pass	Pass	Pass
Pass	Pass	Distinction	Pass
Pass	Distinction	Pass	Pass
Distinction	Pass	Pass	Pass
Pass	Distinction	Distinction	Pass

Practical assessment with questions	Professional interview based on an EPA portfolio	Multiple-choice Test	Overall grading
Distinction	Pass	Distinction	Merit
Distinction	Distinction	Pass	Merit
Distinction	Distinction	Distinction	Distinction

## Section 4: Resits and retakes

If you fail one or more EPA component you can re-sit or a re-take the failed component at your employer's discretion. Your 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. You should have a supportive action plan to prepare for your re-sit or re-take.

Your employer and EUIAS will agree the timescale for your re-sit or re-take. Failed EPA component(s) are typically re-sat or re-taken within 4 months of the end-point assessment (EPA) period fail 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 assessment component(s) must be re-sat or re-taken within a 6-month period from the EPA outcome notification, otherwise the entire EPA will need to be re-sat or re-taken in full.

Re-sits and re-takes will not be offered to you if you wish to move from pass to a higher grade:

You will get a maximum EPA grade of a pass if you need to re-sit or re-take one or more assessment methods, unless EUIAS determines there are exceptional circumstances.

The EUIAS resit and re-take policy can be found at:  
<https://www.euias.co.uk/end-point-assessment/policies-and-fees/>



## Section 5: Appendices

Appendix A: Glossary

Appendix B: EPA Portfolio Evidence Log

## Appendix A: Glossary

**Amplification** – provides more detail on how individual knowledge, skills or behaviours statements should be interpreted. Where the KSB statements, themselves are deemed self-explanatory, no amplification is provided. Assessment may include questions on anything identified in the amplification

**Behaviours** – mindsets, attitudes or approaches needed for competence. Whilst these can be innate or instinctive, they can also be learnt. Behaviours tend to be very transferable. They may be more similar across occupations than knowledge and skills. For example, team worker, adaptable and professional

**Elements** – are the knowledge, skills and behaviours and what is needed to competently undertake the duties required for an occupational standard

**Guidance** – is only provided where it is required to support interpretation of the KSB statements

**Gateway** – the stage of the apprenticeship where the apprentice, employer and trainer determine whether the apprentice is ready to undertake the End-Point Assessment

**Independent Assessor** – Will holistically assess the knowledge, skills and behaviours (KSBs) that you have been learnt throughout the apprenticeship. Their role as an Independent Assessor would involve assessing components 1 (practical assessment with questions) and 2 (professional interview based on an EPA portfolio)

**Knowledge** – the information, technical detail, and ‘know-how’ that someone needs to have and understand to successfully carry out the duties. Some knowledge will be occupation-specific, whereas some may be more generic

**Skills** – the practical application of knowledge needed to successfully undertake the duties. They are learnt through on and/or off-the-job training or experience

**Standard** – An occupational standard is a description of an occupation. It contains occupational profile, and describes KSBs needed for someone to be competent in the occupation’s duties. The occupational standards are developed by employers for occupations that meet the Institute for Apprenticeships & Technical Education current criteria. For further details refer to:

<https://www.instituteforapprenticeships.org/apprenticeship-standards/low-carbon-heating-technician-v1-1>

**Topic** - is a collection of elements grouped into a theme e.g., Health and Safety



## Appendix B: EPA Portfolio Evidence Log

Employer Name	
---------------	--

Full Name of Apprentice	
The work submitted in this EPA portfolio is my own	<input type="checkbox"/>
Date	

Supervisor/Mentor Name	
The work submitted in this EPA portfolio is the apprentice's own	<input type="checkbox"/>
Date	

Environment and sustainability		
Supporting evidence provided (please check box)		<input type="checkbox"/>
Date of activity	Description of evidence	Reference

Please add additional rows if needed

Electrical and electronic control systems		
Supporting evidence provided (please check box)		<input type="checkbox"/>
Date of activity	Description of evidence	Reference

Please add additional rows if needed



Decommissioning		
Supporting evidence provided (please check box)		<input type="checkbox"/>
Date of activity	Description of evidence	Reference

Please add additional rows if needed

Communication and collaboration		
Supporting evidence provided (please check box)		<input type="checkbox"/>
Date of activity	Description of evidence	Reference

Please add additional rows if needed

Continuous Professional Development (CPD) and well-being		
Supporting evidence provided (please check box)		<input type="checkbox"/>
Date of activity	Description of evidence	Reference

Please add additional rows if needed

© **Energy & Utility Skills**

All rights reserved. No part of this publication may be reproduced, stored in a retrievable system, or transmitted in any form or by any means whatsoever without prior written permission from the copyright holder.

[www.euskills.co.uk](http://www.euskills.co.uk)