Smart Metering

Self-Assessment Report (SAR)

1. What is the Smart Metering Upskilling Scheme?

The Smart Metering registration scheme is intended for all persons who will be required to carry out smart meter installations on gas or electrical sites. The NSAP (the National Skills Academy for Power) has worked in collaboration with its member employers and major industry stakeholder partners to develop a national accreditation process for smart meter installers.

All major energy suppliers are currently supporting the Skills Academy's accreditation process via the draft Ofgem Smart Meter Installation Code of Practice (SMICoP).

For a copy of such, please click on the link below;
https://www.ofgem.gov.uk/ofgem-publications/57316/smartmeteringinstallationcodeofpractice-pdf

All meter installers (existing and new entrants) will undertake appropriate upskilling training, development and assessment programme which must incorporate the industry agreed Skills Academy National Assessment Specification for smart metering (electricity and gas versions).

The specification is based upon existing employer meter installer assessment documentation and has been reviewed by major industry stakeholders (including the Energy Networks Association, Smart Meter Operations Group (SMOG), MOCoPA and MAMCoP.

It includes an assessment of the installation (electricity version), testing and commissioning of smart metering equipment, communications and customer interaction requirements and must be carried out by a competent assessor at an NSAP-Approved Provider.

Through this scheme, training providers can deliver a nationally endorsed procedure, leading to a consistent standard of installation safety, quality of work and customer service for upskilled existing installers and new sector entrants.

Registration is available in the following categories:

- Smart Metering (Electricity) Single Phase
- Smart Metering (Electricity) Multi-rate
- Smart Metering (Electricity) Single Phase off Multi-phase
- Smart Metering (Electricity) Multi-phase
- Smart Metering (Gas) Low Pressure
- Smart Metering (Gas) Medium Pressure

Registration is based on successful completion of training and submission of scheme evidence requirements. It is valid for 3 years from the date of training.

In order to have a training programme approved by NSAP for Smart Metering, there are a number of requirements that training providers need to meet:

1) You will need to be approved as a training provider. The Quality Framework – which sits at the heart of provider approval - sets the minimum criteria for learning and development practices, and links into the programme approval process. Sometimes provider approval can be carried out at the same time as the approval of a training programme. If you are not yet an NSAP-approved training provider, then you should visit the Energy & Utility Skills website (www.euskills.co.uk) to find out further details.

2) You will need to meet the generic training programme criteria for an approved skills-based programme. These are the general requirements that any approved training programme must meet.

3) You will need to meet the requirements of the Smart Metering units and standards.

Training and assessment programmes must be mapped to these units standards, and then they are approved for delivery by NSAP, as well as resources, delivery plans and internal quality assurance processes.

2. Smart Metering programme approval process

As an approved training provider, the first step is to complete and submit this Self-Assessment Report (SAR) as well as the mapping to the Smart units and national standards for which you require approval. Your SAR, mapping and evidence will be reviewed and if it meets all the required criteria, we will confirm our approval of your Smart Metering training programme.

In more detail, the approval process requires that you:

- Read and understand fully this Self-Assessment Report (SAR) and ensure that your Smart Metering programme is fully compliant with the NSAP requirements.

- A mapping document must be provided, as part of the approval process, to show how the programme has been mapped to the standards and units. Contact the Quality team who can provide you with examples of mapping documentation.

- In addition to mapping your programme to the Smart Metering requirements, it is important that you submit examples of relevant supporting evidence, eg delivery plans, lesson plans, activity materials, assessment materials etc. Contact the Quality team who can help you with identifying the best ways to support your submission with scheme documentation.

- Ensure that you have met all requirements (use the checklist) before submitting the programme/s for approval.

- A signature from an individual with appropriate authority in your organisation (ie a director, senior manager) is required to confirm that a thorough and honest self-assessment has taken place and that all requirements have been fully met.

- You must also gain employer sponsorship of your programme. Failure to do so will mean that we cannot approve your programme.

3. The flow chart below summarises the process for programme approval

Provider Approval

- You must be an approved provider and adhere to the Quality Framework
- Once approved you can apply for Smart Metering Upskilling Programme Approval

Discussion

- Informal discussions - advice and guidance on the endorsement process

Self-Assessment Record (SAR)

- Complete and confirm your compliance with our required criteria
- Evidence, including any mapping, is also provided

Desktop Review

- We conduct a desktop review of your SAR, we will contact you with any questions or queries
- We confirm any missing detail before arranging for a technical visit

Technical Visit

- A competent External Quality Assurance (EQA) representative will come out to check your site and set you actions, recommendations and suggestions to ensure your site meets the requirements
- The EQA will conduct checks against your mapping process and check your delivery mechanisms to our standards and units

Panel Approval

- We confirm our approval of your training programme and check your mapping of the whole delivery programme to our units and standards
- You are invited to the panel to support your application

Approval

- We grant approval of your training programme, issue you with certification and give you actions, recommendations or suggestions for your next provider and technical audit

4. On-going monitoring and audits of Smart Metering training programmes

All training programmes that are approved by NSAP are subject to our on-going quality assurance monitoring which includes regular audits.

We use our Quality Framework to support our monitoring and audits. We audit all of our training providers at least every 12 months, sometimes more often if we deem them or the training programmes they offer to be of a 'higher risk'. To keep this as easy and efficient as possible, supporting evidence for our audits can be provided in a variety of ways eg. electronic or photographic.

As well as having a provider audit, you will also need to have a technical audit, so there are two audits you are expected to have as an approved provider on this training programme.

All Approved Programmes are subject to audit by the NSAP. Failure to satisfy the audit requirements may result in Provider Approval being withdrawn.

Auditing Process

The frequency and scope of the audit may be based on Provider Approval outcome or based on what the Quality Assurance Lead feels is appropriate. Currently, most of the outcomes for audits could follow the generic outcome and are annual.

An additional visit is required for Smart Metering provision, by a competent External Quality Assurer. This to verify continued compliance to the Smart-specific programme criteria. Your audit is estimated therefore to take a minimum of two working days for this training programme approval.

You will be expected to provide programme evidence as a mandatory part of this visit. Evidence will include samples of the following:

- Learning Strategy/Materials
- Assessment Strategy/Materials
- Evaluation Strategy/Materials
- Verification Strategy/Material

In the event of Provider Approval being withdrawn, authorisation to use the NSAP and Energy & Utility Skills' approval logos will cease and your information on the EUSR/Energy & Utility Skills website will be withdrawn.

5. Registration and renewal

Initial registration

Individuals who have taken and passed an approved Smart metering programme and submitted scheme evidence requirements will be registered with EUSR for 3 years.

Evidence Requirements – all Electricity Categories

Copies of one of the following certificates:

Level 2 Diploma in Smart Metering – Power (QCF)

NSAP Approved Training Programme certificate issued by NSAP approved provider (for appropriate registration category)

and

Copy of employer's company MOCoPA Certificate

Copy of individual's company authorisation

Evidence Requirements – all Gas Categories

Copies of one of the following certificates:

Level 2 Diploma in Smart Metering – Gas (QCF)

NSAP Approved Training Programme certificate issued by NSAP approved provider (for appropriate registration category)

and

Copy of Gas Safe card (front and back)

Evidence Requirements – Dual Fuel

Copies of one of the following certificates:

Level 2 Diploma in Smart Metering – Dual Fuel (QCF)

Dual Fuel Smart Meter Installer (Electricity & Gas) Apprenticeship (Level 2)

NSAP Approved Training Programme certificate issued by approved training provider

and

Copy of employer's company MOCoPA Certificate

Copy of individual's company authorisation

Copy of Gas Safe card (front and back)

Registration Renewal

After 3 years, an individual must renew their registration by successfully completing the relevant National Assessment Specifications (NAS) through an NSAP-approved Smart Metering provider, and by submitting the following evidence requirements upon re-registration:

- Either a copy of the certificate awarded by NSAP Approved Provider for successfully completing the NAS at re-registration (for appropriate registration category) OR a fully completed and signed copy of the NAS document(s) (for appropriate registration category)
- Copy of Gas Safe card (front and back) – Gas and Dual Fuel (Electricity/Gas)
- Copy of employer's company MOCoPA Certificate – Electricity and Dual Fuel (Electricity/Gas)
- Copy of candidate's individual company authorisation – Electricity and Dual Fuel(Electricity/Gas)

The Approved Assessor Scheme assumes that the individual will be re-assessed within an organisation's training environment.

Re-assessment 'in the field'

Alternatively, an individual can undertake the NAS outside the training provider environment, 'in the field', as a part of their day to day job role. Where this route to renewal is preferred, then the approved training provider must demonstrate to NSAP the way in which an 'in the field' re-assessment of an individual against the NAS will work and add a new level of provider approval (Re-assessment 'in the field') to their existing level of approval (NSAP approved provider).

This additional level of approval is only available to existing NSAP approved providers (and to organisations approved for renewal under the Approved Assessor scheme for Smart) and is not an approval category in its own right. This additional level of approval presupposes that all approved provider requirements (eg compliance with the Smart Metering Person Specification) continue to be met.

In order to add a new level of approval to its existing training provider approval, each organisation must demonstrate the way in which it will cover off the requirements of the NAS at re-assessment for individuals. This must be through the development of an 'in the field' **Re-assessment Plan** which will demonstrate the following requirements.

Within an approved training provider's Re-assessment Plan, there must be:

Number	Requirement
1	A demonstration of how the individual's re-assessment will be primarily observation-based, with approximately two-thirds of the NAS having been observed for re-assessment purposes in the last 12 months
2	Measures identified for addressing gaps in the NAS that won't always be observed, ie strategies for addressing less common installs, the role of simulation, uses of training centres, the uses of recent audit evidence (within the last 12 months)
3	Measures identified for addressing underpinning knowledge requirements, ie testing, professional discussion, the uses of recent audit evidence (within the last 12 months)
4	Identification of how the individual's re-assessment will be planned, collated, reviewed and quality assured
5	Planning that addresses assessment contingency and makes provision for individuals failing to meet the requirements of the NAS at re-assessment
6	Planning that addresses and makes provision for issues (ie Health &Safety) occurring 'in the field' which may compromise re-assessment

The approved training provider should record their responses to each of these requirements in the template spreadsheet below. Where there is supporting information that appropriately demonstrates/supports the responses in the template spreadsheet, then these should also be included in the overall submission. Completed Re-assessment Plans should be sent for review to the Quality Team at quality@euskills.co.uk

Smart Metering
Re-Assessment in the

Upon receipt of this Re-assessment Plan, NSAP will desktop review the contents and request any further information where necessary. NSAP reserves the right to visit approved training providers to review in person the Re-assessment Plan prior to approval.

Once satisfied that each of the above requirements have been met, the NSAP approved provider will be approved to deliver re-assessment 'in the field'. For those NSAP approved providers with this extra level of approval, NSAP will quality assure the ongoing satisfaction of the above requirements as a part of its annual approved training provider audit.

Once approved to deliver re-assessment ‘in the field’, then the following evidence requirements must be submitted upon re-registration:

- Copy of certificate awarded by NSAP Approved Provider
- Copy of gas safe card (front and back) - Gas and Dual Fuel (Electricity/Gas)
- Copy of employer's company MOCoPA Certificate – Electricity and Dual Fuel (Electricity/Gas)
- Copy of candidate's individual MOCoPA Certificate – Electricity and Dual Fuel (Electricity/Gas)

6. Smart metering upskilling programme approval requirements

This section addresses in more detail the Smart Metering Upskilling Programme Approval requirements identified above. In particular, it identifies the:

1) Generic training programme criteria

2) Smart-specific programme criteria

Generic training programme criteria

The criteria below outlines the type of information we will require to support your application to have your Smart training programme approved by Energy & Utility Skills. Please contact the Quality team (email: quality@euskills.co.uk) us if you require any additional information or have any questions. Please use the mapping spreadsheet below the criteria in order to best map your programme to the scheme training standards.

Evidence Requirement	Supporting information
1.Qualifications, CVs and CPD - for all staff involved in the training programme design and delivery (eg. trainers, assessors, internal quality assurers)	• CVs – occupational competence – a minimum of 2 years • CPD – evidence of ongoing CPD
2. Planning	• Mapping to industry standards, qualifications, apprenticeships or Energy & Utility schemes • Learning outcomes are clearly stated with clear aims and objectives • Duration of the training programme • Description of an average/typical individual attending the training programme • Structure of training programme including any Rules of Combination, barring of modules etc. • Recognition of Learning or Accreditation of Prior Learning process • Reasonable adjustments and special consideration process • Schemes of work and/or lesson plans

4. Lesson Delivery	• Delivery methodologies • Delivery timetables • Delivery support materials, resources and activities – for trainers and learners • Mapping to relevant industry standards, qualifications, Energy and Utility Schemes or apprenticeships • Mapping of delivery materials to learning outcomes • Mapping of assessment materials to delivery materials • Methodologies and materials used to deliver programmes
5. Information, advice and guidance to support individuals	• Information, advice and guidance for prospective learners (marketing material, website, leaflets, helplines, joining instructions) • Pre-training programme information availability eg joining instructions containing information on the programme including learning aims, objectives and outcomes, programme overview, costs, pre-requisites such as competence or knowledge, logistics such as venue, timings, catering, dress code, PPE requirements etc. • Information for current individuals (eg. specification, handbook, manual, industry standards, working practices, print-out of slides, workbooks, suggested additional reading lists, suggested additional activities or exercises, case studies) • Advice and guidance for current individuals (eg support mechanisms in place, specialist support availability, progression information, careers advice).
6. Assessment	• Assessment methodologies • Assessment mark schemes/guides • Assessment plans/evidence matrices • Assessor written evidence/IQA written plans • Assessment feedback

7. Internal Quality Assurance	• IQA methodology (minimum requirements for assuring quality of delivery and assessment) • Sampling plan • Processes, policies, proformas, templates, and records • Standardisation processes • Invigilation process (if appropriate)
8. Feedback	• Evaluation mechanism • 360 feedback loop
9. Review	• Regular and appropriate review of the training programme including support materials

Smart Specification Mapping Document V

Smart-specific programme criteria

The criteria below prescribes the additional criteria that must be met in addition to the Generic programme criteria on the previous page.

SM1 (A)	The learning material maps to the prescribed training standard – APPENDIX A. *The mapping document must be provided as part of your submission.*
SM2 (B)	The programme ensures learners satisfy the agreed industry requirements as documented within the National Installation Code of Practice (SMICoP) (available via https://www.ofgem.gov.uk/ofgem-publications/57316/smartmeteringinstallationcodeofpractice-pdf). *An explanation must be provided as part of your submission, including explicit detail in relation to the energy efficiency and advice and installer interaction with the customer; including management of vulnerable customers.*
SM3 (C)	The facilities and equipment meet the criteria as specified within the 'Smart Metering Facilities and Equipment Specification'. APPENDIX B

	This will be confirmed as part of your site visit. Failure to meet the specification will delay the approval process.
SM4 (D)	The individuals involved in delivery, assessment or verification meet the criteria as specified within the 'Smart Metering Delivery Specification'. APPENDIX C *You must supply appropriate evidence to demonstrate such with your submission. This may be in the form of CVs, role specifications and/or performance reports for those in scope AND the completed assessments for all involved.*
SM5 (E)	The embedded assessment material (see Section 7) is integrated and used within the programme effectively.
SM6 (F)	The programme is sponsored by an organisation who meets the Employer Sponsor criteria outlined within APPENDIX D, and commits to provide mentoring, development and real work environment (RWE) assessment of cut-out and electricity/gas metering equipment situations. *Please ask the sponsor to complete a copy of the Employer Sponsor Form (INSERT LINK) and include within your initial submission***.**
SM7 (J) & (6.2 Quality Framework)	The submission includes evidence of systems for ensuring your programme sufficiently aligns with customer expectations, contextualising to customer policy and process e.g. electrical test procedures, where identified and requested.
SM8	The Energy Network Association Gas Engineering Recommendations and the MOCOPA Guidance for Service Termination Issues documentation (see Section 8) is issued and communicated to candidates as part of the programme design.
SM9	The programme, in classroom content, meets the minimum duration requirements in Section 9. *Please clearly indicate programme timescales within your submission.*

7. National assessment specifications (Electricity and Gas)

To build confidence nationally, all existing meter installers and new entrants will be required to undertake the Skills Academy's common national assessment, which must be embedded into your programme.

The assessment material is based upon existing employer meter installer assessment documentation and has been reviewed by major industry stakeholders, including members of the Energy Networks Association, Smart Meter Operations Group (SMOG), as well as existing providers of training and assessment.

Assessment Material

Smart Metering Elec NAS v4.docx

(Electricity) Assessment Specification

Smart Metering NAS GAS LOW.docx

Smart Metering GAS MED.docx

(Gas) Low Pressure Assessment Specification

(Gas) Medium Pressure Assessment Specification

8. Energy Network Association – Gas engineering recommendations

The Energy Network Association have created a package of documentation designed to describe to all industry parties the Gas Distribution Network responsibilities in respect of the Business as Usual (BAU) processes that are affected by the introduction of smart meters as well as a detailed summary of the issues (i.e. defects) that installers may come across when installing smart meters, or undertaking other work at gas service positions.

These common issues are described within the document below.

Guidance on Gas Service Termination Is

|MOCOPA| Guidance for service termination issues

The MOCOPA issues sub-group reviewed business processes for reporting issues associated with Distribution Business service termination assets. There was a recognition that there will be increased activity at service positions during the smart meter roll out. The attached guidance provides unique codes that are used to report defects to a Distribution Business. This guide has been developed to assist meter operatives to identify specific defects and issues relating to Distribution Business assets that they may encounter whilst undertaking their work. It should be available to all persons undertaking metering work at all times. It shall be used by all persons undertaking metering work to ensure that there is correct diagnosis of the specific issues detailed within the guide and the correct actions are followed to ensure that identified issues and defects are reported correctly.

MOCOPA-guide-version-3.5.pdf

It is a requirement of approval to ensure all defect categories and specific defect codes are fully understood by all candidates and that these potential issues, as well as approach for resolution, highlighted within the documentations listed above are included within your programme and issued to candidates.

9. Minimum Durations and Assessor to Learner Ratio

i) Minimum durations

The following outlined the minimum duration for the training content submitted for each category

Competency Category	Minimum In Classroom Duration
Smart Metering (Electricity): Single Phase Cut-Out	Minimum of 2 weeks
Smart Metering (Electricity): Single Phase Multi-rate Meters	Minimum of 2 days*
Smart Metering (Electricity): Single Phase off Multi-Phase Cut-Out	Minimum of 2 days*
Smart Metering (Electricity): Multi-Phase off Multi-Phase Cut-Out	Minimum of 2 days*
Smart Metering (Gas): Low Pressure up to U6 only	Minimum of 5 weeks
Smart Metering (Gas): Medium Pressure up to U6 only	Minimum of 1 day
	Total for dual fuel training (all categories): 8 weeks and 2 days

***Note**: these optional categories take a minimum of 2 days to deliver. This assumes that providers spend 2 days wholly focussed upon the delivery of these units, and that all other requirements of the programme (i.e. Induction, Working Safely, Energy Efficiency, Customer Service, Smart Meter Communication Systems and Single Phase) are all covered explicitly outside the requirements of these categories.

ii) Learning/assessment ratios

The following ratios represent guidance to providers and are not mandatory requirements. As they are, however, best practice and represent the consensus of existing installers and providers, they should be utilised. Providers deviating from this guidance can be expected upon audit to be asked to justify the nature of their deviation(s).

Background requirements to Smart metering delivery

The optimum tutor-to-individual ratio size will always depend on the nature of the individuals and the activity concerned. At their broadest, the issues are informed by Government targets, organisational budgets, commercial benefits, availability of physical space and experience of instructors to the methods of instruction used in the classroom and workshop.

Within this, the main consideration for tutor-to-individual ratios is the opportunity for active participation and interaction, which is critical for successful learning. Given the goals of any Smart Metering programme, ie the development of an individual's knowledge and practical competence, there must be the opportunity for frequent and meaningful tutor-to-individual and individual-to-tutor interaction, monitored practice, and individual feedback during instructional time.

Both large and small training providers alike must manage the learning and assessment process to ensure both the safety of individuals and that judgements of role competence are consistent with the standards set in the Smart metering training standards. It goes without saying that a necessary pre-condition for best practice is the training venue itself, which must meet acceptable health and safety standards and be conducive to learning, i.e. size, floor surfaces, seating, writing surfaces, toilet facilities, ventilation, lighting, heating, access, exits, cleanliness, absence of distracting noise, equipment used for the purposes of assessment complies with the requirements of relevant Health and Safety legislation etc.

Tutor-to-individual learning ratios

An essential part of the training of Smart meter installers is the exposure of individuals to a range of meter installations using varied equipment, installation types and changing environmental conditions. The tutor-to-individual ratio is critical here in ensuring that individuals are developing the right kinds of skills that make for safe, competent installers. In these circumstances, tutor involvement in practical exercises is intensive requiring close direction, guidance and feedback. In these instances, experience generally teaches us that high tutor-to-individual ratios are not conducive to the effective development of individual skills.

Based on the historical experiences of approved providers and meter operators/meter installation companies, we would recommend the following guide for Smart metering group sizes:

- An upper limit of 14 individuals per tutor in theory groups.
- A basic upper limit of 8 individuals per tutor for practical workshop groups.
- Gas assessment assessor-to-individual ratio of 1:4 in line with industry norm.
- Electric assessment assessor-to-individual ratio of 1:1 with an upper limit of assessor-to-individual ratio of 1:2 for non-electrical elements of assessment, eg use of PPE, fitting meter to wall etc.

The practical workshop ratio is ‘basic’ because it assumes individuals with no prior electrical experience, and practical training conditions, ie training bays, which may not provide for continuous, safe, all round visibility of working practices. Where individuals do have prior experience and practical conditions are more ‘open plan’, then this basic upper limit ratio can be flexed upwards by no more than 2 individuals (ie to 1:10).

These ratios would also require the following learning and assessment conditions to ensure their appropriate application:

- A robust mechanism of internal quality assurance to monitor and support that the ratios and the learning is in place.
- Sufficient workshop facilities and equipment to accommodate individual, realistic working environment work stations for each individual safely in proportion to the class sizes and tutor ratios.
- Documented control measures to ensure the safety of individuals are in place in relation to the tutor-to-individual ratios being used.
- Documented records of safety performance and success rates to validate the learning provision.
- Trainers are sufficiently experienced to meet the range of individuals’ needs.

NSAP approved providers will need to undertake regular self-assessment and evaluation to ensure that their programme is meeting its objectives, is of value to the individuals, and the tutors and assessors have sufficient time, resources and authority to perform their role and responsibilities effectively.

All tutor-to-individual, assessor-to-individual ratios are subject to external review, evidence of which is made available to the NSAP Quality Assurance Auditor upon request, to ensure their ongoing validity and fitness-for-purpose. Possible sources of evidence would include a record of ratios and time allocation, and oral confirmation from tutors/assessors and learners.

A number of NSAP approved providers use a “buddy” system where learners work in pairs in workshops, one carrying out the install and one directing, observing and providing feedback. Whilst there are some advantages to this approach, there is also the issue that each learner will carry out only 50% of the installs for a similar duration course with no buddy system in place. Best practice would dictate that where approved providers wish to use ‘buddy’ systems that they take into account this fact and make allowances to ensure that any reductions in hands-on workshop time are accounted for. Again, NSAP approved providers should be prepared to address their approach to this issue upon request from the NSAP Quality Assurance Auditor.

10. Smart Metering Registration Categories

The following table outlines the routes for both experienced and new entrants into Smart metering Electricity, Gas and Dual Fuel registration:

<table>
<tr><th rowspan="2">Category</th><th colspan="2">Routes to registration</th></tr>
<tr><th>Single Fuel Installers Recruited</th><th>Dual Fuel Installers</th></tr>
<tr><td>Smart Metering (Electricity): Single Phase Cut-Out</td><td rowspan="3">EITHER:
• Level 2 in Diploma in Smart Metering – Power – with an embedded NSAP-approved training programme
OR
• Successfully complete and pass an NSAP-approved training programme for Smart Metering, which includes the embedded National Assessment Specification
AND
• MOCoPA Certificated</td><td rowspan="4">One of the following approved routes:
• Framework-based apprenticeship: Smart Meter Installations (Dual Fuel) with an embedded NSAP-approved training programme
• Standards-based apprenticeship: Dual Fuel Smart Meter Installer with an embedded NSAP-approved training programme
• Level 2 Diploma in Smart Metering – Dual Fuel – with an embedded NSAP-approved training programme
• Successfully complete and pass an NSAP-approved training programme for Smart Metering, which includes the embedded National Assessment Specification</td></tr>
<tr><td>Smart Metering (Electricity): Single Phase off Multi-Phase Cut-Out</td></tr>
<tr><td>Smart Metering (Electricity): Multi-Phase off Multi-Phase Cut-Out</td></tr>
<tr><td>Smart Metering (Gas): Low Pressure up to U6 only</td><td>EITHER:
• Level 2 Diploma In Smart Metering – Gas – with an embedded NSAP-approved training programme</td></tr>
</table>

Smart Metering (Gas): Medium Pressure up to U6 only	OR Successfully complete and pass an NSAP-approved training programme for Smart Metering, which includes the embedded National Assessment Specification AND • CMA1/CMA3, MET1 and REGT1 - medium pressure gas only • Gas Safe Registered	AND • CMA1/CMA3, MET1 and REGT1 - medium pressure gas only • MOCoPA Certificated • Gas Safe Registered

Please note: **Appendix E: Verifying the competence of existing installers** supports the information in this section by identifying the routes into meter installation/operating companies for existing installers. We have attempted to identify the main routes and have offered guidance for companies on due diligence checks/activity for verifying the competence of the individual joining their organisation.

11. Minimum requirements and qualifications

To satisfy section 3.7 of the Smart Meter Installation Code of Practice 'Provision of Energy Efficiency Guidance', the National Skills Academy's Smart Metering approved providers will deliver the following minimum standards for energy efficiency:

Evidence of smart meter installers receiving training and assessment against these minimum standards can be demonstrated by:

a) Providing evidence of installers completing a Level 1 Award in promoting energy efficiency to customers (1 credit, 7 hours guided learning)
b) Providing mapping against an equivalent energy efficiency standard or qualification
c) Providing mapping against an employer's internal development and assessment programme

All accredited centres are to map their strategy for delivering these minimum standards for energy efficiency and submit them for inspection.

The assessment MUST meet ALL of the following requirements –

1. Prior to the practical assessment each delegate must have been assessed as having sufficient underpinning knowledge as outlined within the scheme rules
2. The practical assessment must be completed following completion of a work placement
3. The assessment must be conducted by a person who has gained ALL of following; –
    a) Successfully achieved the National Assessment Specification for the category against which they are assessing.
    b) Proven occupational experience of work in the context of the activity for which they are assessing
    c) One or more of the following assessor awards identified in APPENDIX C: SMART METERING PEOPLE SPECIFICATION

12. The Self-Assessment Report

In this section, you must begin to tell us about your Smart metering training programme. This section of the SAR must be fully completed and accompany the mapping of your programme/s.

1) Training Programme Information

Please complete the fields below so that we have full details of your programme/s

Full Programme Title	
EUSR number, Name and telephone number of your Main Contact for the programme	
Estimated Number of Learner Registrations Year 1	
How long will learner registration last before refresher training is required? E.g. '3 Years'	
Please indicate in the box provided that the programme submitted meets the criteria within the Code of Practice for Learning and Assessment and associated Design Criteria.	☐

Company Name:				
Address including postcode:				
Lead Contact Name*				
Application for	Electricity	☐	Gas	☐
Indicate categories	Single Phase Smart Meter Installer	☐	Low Pressure	☐
	Single Phase off Multi-Phase Cut-Out	☐	Medium Pressure	☐

	Multi-Phase Installer Off Multi-Phase Cut-Out	☐		
	Multi-Rate	☐		
Sponsoring Smart Metering Employer(s):				
Completed Employer Declaration Form Provided (Form) (Y/N)				

2) Criteria and evidence checklist

This part of the SAR must accompany your mapping of your programme against the relevant criteria, and confirms that you have fully completed the approval submission process.

Criteria and Evidence Checklist – PLEASE TICK TO CONFIRM		
SM1 (A)	The learning material maps to the prescribed training standard – APPENDIX A. *The mapping document must be provided as part of your submission.*	☐
SM2 (B)	The programme ensures learners satisfy the agreed industry requirements as documented within the National Installation Code of Practice (SMICoP) (available via https://www.ofgem.gov.uk/ofgem-publications/57316/smartmeteringinstallationcodeofpractice-pdf). *An explanation must be provided as part of your submission, including explicit detail in relation to the energy efficiency and advice and installer interaction with the customer; including management of vulnerable customers.*	☐
SM3 (C)	The facilities and equipment meet the criteria as specified within the 'Smart Metering Facilities and Equipment Specification'. APPENDIX B ***This will be confirmed as part of your site visit. Failure to meet the specification will delay the approval process.***	☐
SM4 (D)	The individuals involved in delivery, assessment or verification meet the criteria as specified within the 'Smart Metering Delivery Specification'. APPENDIX C *You must supply appropriate evidence to demonstrate such with your submission. This may be in the form of CVs, role specifications and/or performance reports for those in scope AND the completed assessments for all involved.*	☐
SM5 (E)	The embedded assessment material (see Section 7) is integrated and used within the programme effectively.	☐
SM6 (F)	The programme is sponsored by an organisation who meets the Employer Sponsor criteria outlined within APPENDIX D, and commits to provide mentoring, development and real work environment (RWE) assessment of cut-out and electricity/gas metering equipment situations.	☐

	Please ask the sponsor to complete a copy of the Employer Sponsor Form (INSERT LINK) and include within your initial submission.	
SM7 (J) & (6.2 Quality Framework)	The submission includes evidence of systems for ensuring your programme sufficiently aligns with customer expectations, contextualising to customer policy and process e.g. electrical test procedures, where identified and requested.	☐
SM8	The Energy Network Association Gas Engineering Recommendations and the MOCOPA Guidance for Service Termination Issues documentation (see Section 8) is issued and communicated to candidates as part of the programme design.	☐
SM9	The programme, in classroom content, meets the minimum duration requirements in Section 9. *Please clearly indicate programme timescales within your submission.*	☐
To support the Self-Assessment against the criteria I have attached the following evidence:		

3) Website information

This information will be used by NSAP to promote your endorsed training programme on our website.

Leave blank if you do not require the information to be listed on our website				
Provide an overview of the programme including why it has been developed, target audience and the aims and objectives of the course and assessment methodology				
Please detail any course pre-requisites you would like displayed				
Please state the length of the course/course duration				
Contact details to be displayed on product listing. Include name, email and/or telephone number as appropriate				
Name and telephone number of your Main Contact for the programme				
Please state in which sectors the programme will be delivered. e.g. gas, power,				
Locations in which the training will be delivered. Please select each as they apply:	Channel Islands		East Midlands	
	East of England/East		London	
	N E England		N W England	
	Northern Ireland		Republic of Ireland	
	Scotland		S E England	
	West Midlands		S W England	
	Yorkshire and The Humber		Wales	
	All			

4) Named person declaration

This section confirms that a senior member of your organisation has reviewed the submission and agrees that the submission represents a thorough and honest self-assessment of the programme/s. It also confirms that the submission meets the full requirements of the scheme.

I confirm that **[**Insert Company Name**]** has conducted a thorough and honest self-assessment of the **[**Smart Metering Installer Programme**]** and that it meets the criteria specified within the NSAP Smart metering-specific programme criteria.

I understand that Energy and Utility Skills reserves the right to seek further verification of the product described as part of the application and ongoing monitoring process in order to preserve the integrity of the product approval process, and understand that any inconsistencies and suspected deception may put the approval status at risk.

I understand and confirm that all learners who attend this programme will be registered with EUSR, as stated within the overarching conditions, and that each registration will be charged at the rate published on the EUSR website, unless otherwise agreed and confirmed in writing.

Name			
Job Title			
Company Address			
Telephone no			
Email address			
Signature		Date	

APPENDIX A: Smart Metering Standards (New Metering Staff, Dual Fuel Installer)

As part of your submission, training provides must demonstrate that their learning material fully aligns to the relevant Smart Metering unit specifications and submit a mapping document to verify such, defining clearly within your submission where each of the areas has been addressed.

Unit 01 Working Safely and Effectively in the Smart Metering Sector (Knowledge Unit)	Mandatory Unit	Unit 07a – Install and Change Single Phase Multi-Rate Meters and Associated Equipment	Optional Unit for Electricity
Unit 02 - Energy Efficiency (Knowledge Unit applied in Unit 03 Delivering Customer Service)	Mandatory Unit	Unit 08 - Install and Change Single Phase Meter and Associated Equipment off Multi Phase Cut-Out	Optional Unit for Electricity
Unit 03 – Delivering Customer Service in the Smart Metering Sector	Mandatory Unit	Unit 09 - Install and Change Multi Phase Meter and Associated Equipment off Multi Phase Cut-Out	Optional Unit for Electricity
Unit 04 - Install and Commission Smart Meter Communication Systems	Mandatory Unit	Unit 010 – Principles for Installing Low Pressure Natural Gas Meters up to 6.0m³/hr (Knowledge)	Mandatory Unit for Gas
Unit 05 – Working Safely on Electricity Smart Meter Installations (Knowledge Unit)	Mandatory Unit for Electricity	Unit 011 - Prepare, Install and Commission Low Pressure Natural Gas Smart Meter and Regulator up to 6.0m³/hr	Mandatory Unit for Gas
Unit 06 - Remove, Test and Insert Cut-out Fuses	Mandatory Unit for Electricity	Unit 012 - Prepare, Install and Commission Medium Pressure Natural Gas Smart Meter and Regulator up to 6.0m³/hr	Optional Unit for Gas
Unit 07 - Install and Change Single Phase Meter and Associated Equipment	Mandatory Unit for Electricity	Unit 013 - Medium Pressure Gas SMART Meter Tightness Testing and Direct Purging	Mandatory Unit for Gas

Unit 001 – Working Safely and Effectively in the Smart Metering Sector (Knowledge Unit)

Ref	Knowledge Criteria
K1	The principles of health, safety and environmental legislation in relation to work on or near electrical and gas metering systems and equipment
K2	The organisation's safety rules, policies, procedures and authorisation processes relating to work on or near electrical and gas metering systems
K3	The organisation's isolation and locking-off procedure/s relating to work on electrical and gas metering systems
K4	The organisation's safety document procedures that apply to work on smart metering equipment and systems
K5	How to carry out a site specific risk assessment and identify workplace hazards
K6	The hazards associated with work on or near electrical systems and equipment and how to deal with them
K7	How to select, inspect and use PPE for work on or near electrical metering systems
K8	The dangers of gas and electricity and how an electric shock can be received including: direct contact, induced voltage and arcing
K9	How to respond in the event of an emergency situation in the workplace environment; including electric shock
K10	How to update, report and record information in accordance with organisation procedures
K11	How to leave the work area in a safe and secure condition. e.g. security systems, locking and labelling procedures
K12	The potential risks of electrical shock resulting from the existing electrical installation and faulty electrical tools and equipment. • common electrical dangers on construction sites, in business and private properties • signs of damaged or worn electrical cables, power tools and property hard wiring systems • signs of visual faults in electrical components • trailing cables • proximity of cables to any service pipework and meter installation

	• buried and hidden cables • avoidance of cables under wooden floor
K13	How to identify COSHH substances and the procedure for taking the appropriate action in line with organisational procedures
K14	How to handle waste materials in line with statutory procedures
K15	How to identify appropriate measures to be taken when working at heights in accordance with organisational procedures
K16	How to identify appropriate measures to be taken when working in confined spaces in accordance with organisational procedures
K17	How to identify hazards and risks in the gas and power industry, and the appropriate action to mitigate identified hazards and risks
K18	Identify appropriate measures to be taken to ensure compliance with legislation. To include; a) HASAWA b) SMICoP c) GSUIR d)EAWR
K19	The relevant technical information sources appropriate for the activity covering: • job instructions • testing schedules PAT • company information procedures • material specification, procedures and British Standards • risk assessment • method statements, when required
K20	The relevant diagrammatic and pictorial information sources appropriate for the activity will be covered in the following: • General assembly drawings • Wiring/circuit diagrams • Installation drawings • Fabrication drawings • Manufacturer's manuals and drawings, where supplied

K21	How to interpret technical information to carry out the work activity, covering: • De-commissioning procedure • Installation procedure • Commissioning procedure • Test results procedure • Handover procedure
K22	The harm asbestos can do to a person's health
K23	Where you might find asbestos and how to identify the different types
K24	The precautions and actions to take when encountering asbestos
K25	The Company reporting procedure for the identification of asbestos

Dual Fuel Smart Meter Installer

Unit 002 - Energy Efficiency (Knowledge Unit applied during 003 Customer Service)

Ref	Knowledge Criteria
K1	The major concerns potential customers may have over energy costs
K2	How energy efficiency measures can - • reduce energy consumption • make energy bills more affordable
K3	How future increases in energy costs make energy efficiency measures attractive to potential customers
K4	The benefits to potential customers of financial support available with no up-front costs
K5	The impact on energy consumption of: • numbers of people occupying home • frequency of occupancy • patterns of energy use
K6	The funding and incentives available to potential customers through major national/regional initiatives in relation to: • eligibility • funding providers • energy assessors
K7	The products available which will improve energy efficiency in relation to: • insulation of lofts, pipes, cavity walls and solid walls • efficient use of heating controls and products

	• efficient use of lighting controls and products • double glazing • draught proofing • water metering • reduction in water use
K8	How to offer energy advice and use of the system in a way in which the customer understands

Dual Fuel Smart Meter Installer

Unit 003 – Delivering Customer Service in the Smart Metering Sector

Ref	Performance Criteria
P1	Determine the purpose for visiting the customer from the technical information given
P2	Select tools and assets to complete all work activities before attending
P3	Prepare relevant information and documentation prior to visiting the customer. Including: a) Personal/Company identification b) Job documentation c) Company information
P4	Introduce and identify self to customers in line with company requirements
P5	Explain to the customer the purpose of the visit
P6	Listen to the customer and respond appropriately to customer requirements
P7	Provide energy efficiency advice, brand information and agreement in governance with current legislation
P8	Agree work-plan with the customer, providing all relevant information
P9	Record relevant information from the work activity
P10	Respond appropriately to customer concerns and issues in line with company procedures: a) Resolve customer issues on site within own level of responsibility b) Resolve customer issues on site when outside own area of responsibility by referring to an appropriate person c) Report issues which cannot be resolved on site d) Provide the customer with contact details of other personnel if requested

Ref	Knowledge Criteria
K1	How to present and introduce yourself to customers in a professional manner as a representative of the Company
K2	How to communicate the outcomes, site specific risk assessment and workplace hazards
K3	How to update, report, record and communicate in an appropriate manner, information in accordance with Company procedures with the inclusion of industry unsafe classifications and distribution service termination issue reporting
K4	The importance of confirming the purpose of the visit to the customer
K5	The relevant information and documentation required
K6	The organisation's customer service policy aligned with SMICoP requirements
K7	The organisation's policy for working with vulnerable customers
K8	The additional risks of working within customer premises
K9	How to resolve customer queries and concerns within your level of responsibility
K10	How to escalate customer service queries and concerns outside of your responsibility
K11	How to recognize and understand the process of dealing with vulnerable customers
K12	The effective methods to be used when: • greeting potential customers • initiating a conversation • responding to queries • answering questions • engaging the customer in a discussion • checking potential customer level of understanding and interest

K13	The additional sources of information and advice available to potential customers on energy efficiency measures
K14	Ways of signposting potential customers to additional sources of information and advice
K15	The limits of own authority and expertise and when referral to others is appropriate

Dual Fuel Smart Meter Installer

Unit 004 - Install and Commission Smart Meter Communication Systems

Ref	Knowledge Criteria
K1	How communication systems for smart metering work
K2	The benefits of communication technologies used in smart metering for both customers and energy suppliers
K3	The different types of in house display equipment
K4	The available range of communication systems for WAN & HAN relevant to different geographic locations
K5	How to assess the installation location for correct operations of the communication system e.g. signal strength
K6	How to Inform the customer if the installation cannot be completed and what actions are required for successful completion
K7	How to prepare the location to accommodate the planned installation using information from customer discussions and the site specific risk assessment
K8	The checks needed to ensure that equipment and components provided are correct for the planned installation
K9	The process for assembling and installing the communication system & in home display/software as required
K10	How to connect the installation to services
K11	How to achieve interoperability between meters
K12	How to test the communication reception system for transmitting and receiving data
K13	How to use relevant diagnostic procedures to determine the causes of system faults in line with manufacturer's guidelines

K14	The methodology for reporting system faults in equipment and components that cannot be rectified on site
K15	How to update, report and record information in accordance with Company procedures
K16	The guidelines on replacing defective components where applicable
K17	How to communicate operation of the following as required: a) Operation of IHU b) Access to supplier web based energy information c) Appending credit and accessing relevant energy usage information d) Pairing smart meter with compatible appliances e) Operation of export tariffs
K18	How to leave the work area in a safe and secure condition, e.g. security systems, locking and labeling procedures

Dual Fuel Smart Meter Installer

Unit 005 – Working Safely Electricity Smart Meter Installations (Knowledge Unit)

Ref	Knowledge Criteria
K1	How to select, inspect and use approved tools and test equipment to carry out low voltage testing procedures
K2	The purpose of the differing low voltage electrical testing procedures and the Company test values for the electrical testing being carried out
K3	How to interpret the results of low voltage test procedures and make judgments based on the results gained
K4	How to identify differing earthing arrangements and select test equipment to match earthing arrangements
K5	The effects of a short circuit at a service position
K6	How to identify common hazards associated with distribution service termination equipment e.g. broken carriers, migration of compound, live exposed terminals, loose terminations, smell of burning, discoloration etc
K7	The purpose of removing load prior to fuse removal
K8	The purpose of carrying out testing procedures including polarity, supply and phase rotation/sequence
K9	The implications and hazards of cross polarity
K10	How to identify looped and shared neutrals and the associated hazards
K11	The purpose of ensuring effective isolation and proving that the cut-out and associated equipment is not live
K12	The purpose of carrying out earth loop impedance testing (not applicable to MOCOPA staff)
K13	The principles of operation and method of use of polarity test equipment including – test lamp, phase finders, neo-mains testers and non-contact testers (volt sticks)

K14	How to interpret the results of using supply, polarity and phase rotation/sequence test equipment
K15	The effects of incorrect polarity and phase rotation/sequence on single and three phase systems
K16	The effects of high earth loop impedance
K17	The effects of lost neutrals
K18	The possible effects of back feeds from solar panels, micro generation systems and illegal abstraction
K19	The importance of conducting a visual inspection of all associated wiring connections before inserting cut-out fuses
K20	The implications and hazards of cross polarity and loose connections
K21	The implications of inserting the incorrect type and/or size of fuse on the safety of the installation
K22	The identification of multi-rate metering configurations and their function
K23	The implications and hazards relating to off peak metering and switching circuits

Dual Fuel Smart Meter Installer

Unit 006 Remove, Test and Insert Cut-out Fuses

Ref	Performance Criteria
P1	Identify the distribution cut-out fuses to be worked on using available information
P2	Select and wear the PPE compatible with the work plan, risk assessment and health and safety regulations
P3	Carry out a site specific risk assessment of the work area, identifying the hazards and implementing the control measures required
P4	Carry out a pre use inspection of the tools and test equipment to be used inspecting for condition and service information
P5	Carry out a visual inspection of the integrity of the apparatus and identify and report any distribution service termination equipment damage, defects, condition in accordance with MOCOPA guidance for service termination issue reporting and/or illegal abstraction in accordance with Company procedures
P6	Communicate information effectively with customers and relevant third parties and inform all affected parties of the intended work plan, in line with Company procedures and MOCOPA guidance for service termination issue reporting
P7	Resolve problems within the limits of own competence and authorisation and refer matters outside of the responsibility of the job role in accordance with Company procedures
P8	Remove the customers load and use test equipment to confirm the cut-out casing is at zero potential
P9	Remove security seals then the cut out fuse/fuses and store in accordance with risk assessment and Company procedures
P10	Use equipment to carry out **ALL** of the following electrical tests in accordance with Company procedures: a) Supply voltage b) Polarity c) Phase rotation/sequence at fuse terminals

P11	Interpret test results and (where applicable) report non-standard wiring and/or test results in accordance with Company procedures
P12	Test for back-feed from solar panels, micro generation systems and illegal abstraction
P13	Shroud exposed live terminals in accordance with Company procedures
P14	Ensure effective isolation of all supplies and prove not live at the point of work
P15	Apply appropriate control measures to ensure the work area is in a safe and suitable condition
P16	Identify the correct fuse type and rating
P17	Before re-insertion, use equipment to carry out electrical tests in accordance with Company procedures
P18	Insert the cut out fuse/fuses in accordance with Company procedures
P19	Ensure the security of the installation e.g. cut-out, meter seals and associated equipment

Dual Fuel Smart Meter Installer

Unit 007 - Install and Change Single Phase Meters and Associated Equipment

REF	Performance Criteria
P1	Identify the location of the metering work by using Company systems and available information
P2	Carry out a site specific risk assessment of the work area, identifying the hazards and implementing the control measures required (e.g. barriers, warning notices and informing others)
P3	Select, inspect and wear PPE compatible with the work plan, risk assessment and health and safety regulations
P4	Identify the meter and associated equipment to be installed/changed, in line with the work plan
P5	Carry out a pre-use inspection of the tools and equipment to be used, checking condition and service information
P6	Carry out pre install / change inspections and tests to establish the condition of the equipment to be worked on in line with Company procedures and MOCOPA guidance for service termination issue reporting
P7	Carry out the safe removal of the cut-out fuse in accordance with Company policies / procedures (See Unit 006)
P8	Carry out pre install / change electrical testing operations in line with Company procedures
P9	Install/Change single phase meters and associated equipment using selected tools and equipment, in line with the work plan and risk assessment. Installation to include at least 2 single phase single rate meters from different manufacturers
P10	Install an isolator on at least one occasion, in line with the work plan
P11	Perform post install / change electrical testing operations in line with Company procedures
P12	Carry out the safe insertion of the cut-out fuse in accordance with Company policies / procedures (See Unit 006)

P13	Check the completed installation complies with work instructions, equipment specifications and Company policies
P14	Check meter details and record/report data of the install/change operation in accordance with Company procedures
P15	Store tools and equipment safely and securely and leave the work area in a safe and secure condition in line with Company procedures
P16	Complete required post activity documentation

Dual Fuel Smart Meter Installer

Unit 007a - Install and Change Single Phase Multi-Rate Meters and Associated Equipment

N.B. To reduce duplication, the delivery of Performance Criteria P8 – P10 may be incorporated into the delivery of mandatory Unit 007 Install and Change Single Phase Meter and Associated Equipment and / or the associated electrical Optional Units 008 and 009 where necessary

Ref	Performance Criteria
P1	Identify the location of the metering work by using Company systems and available information
P2	Carry out a site specific risk assessment of the work area, identifying the hazards and implementing the control measures required (e.g. barriers, warning notices and informing others)
P3	Select, inspect and wear PPE compatible with the work plan, risk assessment and health and safety regulations
P4	Identify the meter and associated equipment to be installed/changed, in line with the work plan
P5	Carry out a pre-use inspection of the tools and equipment to be used, checking condition and service information
P6	Carry out pre install/change inspections and tests to establish the condition of the equipment to be worked on in line with company procedures
P7	Carry out the safe removal of the cut-out fuses in accordance with Company policies/procedures (See Unit 006)
P8	Carry out pre electrical testing operations in line with Company procedures. To include both PME and SNE testing
P9	Install **ALL** of the following multi rate meter types and apparatus in line with Company procedures – a) Two-rate meter and mechanical timeswitch with load (if available) b) Exchange a mechanical timeswitch for teleswitch or contactor c) 5-terminal two-rate meter with integrated teleswitch d) Two-rate meter without load (4-terminal)

	e) Two-rate meter with switching pair (load) f) Two-rate 4 terminal meter with a timeclock/teleswitch switching the rate (not switching a load)
P10	Perform post electrical testing operations in line with Company procedures. To include both PME and SNE testing
P11	Carry out the safe insertion of the cut-out fuse/s in accordance with company policies/procedures (See Unit 006)
P12	Check the completed installation complies with work instructions, equipment specifications and Company policies
P13	Check meter details and record/report data of the install/change operation in accordance with Company procedures
P14	Store tools and equipment safely and securely and leave the work area in a safe and secure condition in line with company procedures
P15	Complete required post activity documentation

Dual Fuel Smart Meter Installer

Unit 007a - Single Phase Multi-Rate Meters and Associated Equipment (Knowledge)

Ref	Knowledge Criteria
K1	The function and operating principles of single phase multi-rate meters and their associated equipment including – a) Time switches b) Teleswitches c) Contactors d) Auxiliary switches
K2	The operating principles and characteristics of ALL of the following types of metering equipment - a) 5 terminal prepayment b) 5 terminal credit c) Credit with teleswitch (4 & 5 terminal) d) Credit with twin-element electromechanical
K3	Using and interpreting multi-rate wiring diagrams / configurations, including principles and identification of – a) Looped neutrals b) Crossed neutrals c) Reverse polarity d) Back feed
K4	The electrical testing procedures and methodology for single phase multi-rate metering, including the electrical testing procedures for - a) Separate Neutral Earth (SNE) supplies b) Protective Multiple Earth [PME] supplies
K5	Background and awareness of SSC (tariffs) including the timings and functionality of E7, E10 and arrangements where the meter is purely off peak.

K6	Recognition and awareness of wiring setups that include the 2/4/6amp in line pressure fuse that would feed the timeclock live motor. Including the effect of using a cut-out as a direct feed to a tele-switch / timeclock
K7	Recognition and awareness of the potential danger of installing a 5 terminal meter where the customer has an RCD (creating an imbalance as the off peak no longer follows the same path through the RCD)

Dual Fuel Smart Meter Installer

Unit 008 - Install and Change Single Phase Meters and Associated Equipment off Multi Phase Cut-Out

Ref	Performance Criteria
P1	Identify the location of the metering work by using Company systems and available information
P2	Carry out a site specific risk assessment of the work area, identifying the hazards and implementing the control measures required (e.g. barriers, warning notices and informing others)
P3	Select, inspect and wear PPE compatible with the work plan, risk assessment and health and safety regulations
P4	Identify the meter and associated equipment to be installed/changed, in line with the work plan
P5	Carry out a pre-use inspection of the tools and equipment to be used, checking condition and service information
P6	Carry out pre install / change inspections and tests to establish the condition of the equipment to be worked on in line with Company procedures and MOCOPA guidance for service termination issue reporting
P7	Carry out the safe removal of the cut-out fuses in accordance with Company policies / procedures (See Unit 006)
P8	Carry out pre install / change electrical testing operations in line with Company procedures
P9	Install/change single phase meters off multi-phase cut-outs using selected tools and equipment, in line with the work plan, risk assessment and Company procedures. Installation to include at least 4 single-phase single rate meters off multi-phase cut-out. This should include: a) new installation single-phase meter with isolator; b) change of an existing single-phase meter; c) change an existing single-phase meter with looped neutral; d) installation of a single-phase meter off a MSDB
P10	Perform post install / change electrical testing operations in line with Company procedures
P11	Carry out the safe insertion of the cut-out fuse/s in accordance with Company policies / procedures (See Unit 006)
P12	Check the completed installation complies with work instructions, equipment specifications and Company policies

P13	Check meter details and record/report data of the install/change operation in accordance with Company procedures
P14	Store tools and equipment safely and securely and leave the work area in a safe and secure condition in line with Company procedures
P15	Complete required post activity documentation

Dual Fuel Smart Meter Installer

Unit 009 - Install and Change Multi Phase Meters and Associated Equipment off Multi Phase Cut-Out

Ref	Performance Criteria
P1	Identify the location of the metering work by using Company systems and available information
P2	Carry out a site specific risk assessment of the work area, identifying the hazards and implementing the control measures required (e.g. barriers, warning notices and informing others)
P3	Select, inspect and wear PPE compatible with the work plan, risk assessment and health and safety regulations
P4	Identify the meter and associated equipment to be installed/changed, in line with the work plan
P5	Carry out a pre-use inspection of the tools and equipment to be used, checking condition and service information
P6	Carry out pre install / change inspections and tests to establish the condition of the equipment to be worked on in line with Company procedures
P7	Carry out the safe removal of the cut-out fuses in accordance with Company policies / procedures (See Unit 006)
P8	Carry out pre install / change electrical testing operations in line with Company procedures
P9	Install/Change multi-phase meters off multi-phase cut-outs using selected tools and equipment, in line with the work plan, risk assessment and Company procedures. Installation to include at least 3 multi-phase single rate meters off multi-phase cut-outs from different manufacturers. This should include: a) new installation multi-phase meter with isolator; b) change of an existing multi-phase meter; c) installation of a multi-phase meter off a MSDB and d) the identification of a looped neutral situation
P10	Perform post install / change electrical testing operations in line with Company procedures
P11	Carry out the safe insertion of the cut-out fuse/s in accordance with Company policies / procedures (See Unit 006)
P12	Check the completed installation complies with work instructions, equipment specifications and Company policies

P13	Check meter details and record/report data of the install/change operation in accordance with Company procedures
P14	Store tools and equipment safely and securely and leave the work area in a safe and secure condition in line with Company procedures
P15	Complete required post activity documentation

Unit 010 – Principles for Installing Low Pressure Natural Gas Meters up to 6.0m³/hr (Knowledge)

Ref	Knowledge Criteria
K1	Mitigating the dangers of electricity on gas installations and how an electric shock can be received including; direct contact, induced voltage and arcing
K2	The different types of earthing used in properties, including main and supplementary protective bonding: e) Requirements and procedures for use of temporary continuity bonding f) Earthing methods and sizing g) Main equipotential bonding h) Supplementary bonding i) Temporary bonding j) Electrical earth bonding labels
K3	The types of gas meters currently used in the gas industry and the gas rate for each of them
K4	The correct operating pressures for low pressure in the natural gas network
K5	Outline the network pressure tiers
K6	The need for, and use of, pressure regulators including factors affecting pressure loss
K7	How to correctly use pressure gauges to include digital and water
K8	The characteristics of: a) Complete and incomplete combustion including air and fuel requirements b) Pre and post aerated flames c) The effects of carbon monoxide on building occupants d) Identify, visually, burner faults resulting in incomplete combustion

K9	How to identify correct and incorrect service entries into buildings: a) Damp proof course b) Other services entering properties in close proximity
K10	How to identify suitable and unsuitable routes within buildings for the installation of gas pipework and fittings: a) Types of pipe materials and fittings suitable for carrying gas b) Jointing of materials and fittings including copper capillary, compression, push-fit joints, consider removing due cost, have to include CSST c) Steel including threaded and union joints d) Suitable pipe supports and fixings including methods used for a variety of walls and brick e) Concrete, thermalite block, studded, dry lined and timber frame f) Location of pipes, route and appearance g) Pipework in walls, voids, ducts/shafts and under floors h) Exterior pipework i) Interrelation with other services j) Corrosion protection k) Gas pipe identification l) Disconnection of pipes and fittings including use of temporary continuity bond
K11	The need for ventilation for gas fuelled appliances, ventilation paths and their effect upon sizes
K12	How to identify correct and incorrect ventilators and installations in line with scope of competency
K13	How to identify the different types of open flue and room sealed chimney systems in line with scope of competency: a) Natural b) Fanned draught c) Rigid chimney types: brick/masonry, single and double wall, metallic and non-metallic d) Flexible metallic liners e) Shared (common) chimney systems f) SE & U Ducts

K14	The correct and incorrect chimney outlet positions for open flue chimneys and room sealed appliances in line with scope of competency
K15	The scope and purpose of regulations, legislation and standards relating to work activities covering: a) Gas Safety (Installation and Use) Regulations b) RIDDOR
K16	How to visually identify unsafe situations in appliances, meters and installation pipework in line with scope of competency
K17	Unsafe situations procedure and how the information at each level is passed on to the customer
K18	How to test for the presence of voltage at the meter installation using an approved voltage sensing device
K19	What to look for when carrying out a visual inspection and correct operation of tools and equipment e.g. manometer
K20	The appropriate industry and organisational standards and procedures that directly impact on the work to be undertaken
K21	The actions to be taken in case of non-compliance of the meter installation
K22	The procedures for temporary and permanent de-commissioning of meters and regulators, including the use of temporary continuity bonds
K23	The precautions to be taken to ensure they do not prevent safety hazards
K24	How and where to access information relating to the installation
K25	Who to liaise with when procedures or routines may be affected by the suspension of the gas supply and the importance of this
K26	The actions to be taken if earthing and bonding are inadequate
K27	The gas industry and organisational unsafe situations procedure and when this applies including when to isolate unsafe gas appliances, systems and components
K28	How to select and operate equipment to include: a) Digital and mechanical manometers

	b) Leak detection foam
K29	How to inspect and determine dimensions and/or values for metering and associated equipment, to include: a) Purge volumes and capacity b) Meter size c) Pipe d) Pipe size e) Supply pressures

Unit 011 - Prepare, Install and Commission Low Pressure Natural Gas Smart Meter and Regulator up to 6.0m³/hr

Ref	Performance Criteria
P1	Identify the location of the metering work by using Company systems and available information
P2	Communicate the planned work activity to all affected parties in accordance with Company policies and procedures
P3	Carry out a site specific risk assessment of the work area, identifying the hazards and implementing the control measures required (e.g. barriers, warning notices and informing others)
P4	Carry out a pre-use inspection of the tools and equipment to be used, checking condition and service information
P5	Record/report results of the removal/installation operation in accordance with Company procedures
P6	Communicate the technical requirements of the completed work activity to all affected parties and provide answers to technical queries in a polite and professional manner
P7	Store tools, equipment and resources safely and securely and leave the work area in a safe and secure condition in accordance with Company procedures
P8	Identify and agree the work location and job details, including meter readings and serial numbers, using available information
P9	Check the work site for damage or defects and inform the correct parties
P10	Inform all affected parties of their intended work plan, in line with industry and organisational standards
P11	Conduct a site specific risk assessment, completing required documentation in line with health and safety regulations and industry and organisational standards
P12	Test for the presence of voltage at the meter installation using an approved voltage sensing device

P13	Confirm the siting of the emergency control valve is accessible, correctly labelled and operating correctly, reporting any defects to the network owner for rectification
P14	Select, inspect and wear PPE compatible with the work plan, risk assessment and health and safety requirements
P15	Plan the work to be undertaken to comply with industry and organisational standards and manufacturer's guidelines taking into account risk assessment, location, ventilation and carry out a pre installation check on all working appliances
P16	Select and prepare tools and equipment compatible with the work plan, risk assessment and industry and organisational standards
P17	Check suitability, defects and or shortages of new equipment to be installed
P18	Apply correct control measures to ensure the work site is in a safe and suitable condition for work and the area is protected from damage being caused throughout the work
P19	Identify and confirm the meter installation is supplied with low pressure and operating within maximum capacity (75mbar or less)
P20	Check that conditions within the gas and earthing systems permit safe de-commissioning
P21	Use designated safe isolation methods, tests and procedures to de-commission meters, regulators, gas installation and components
P22	Take appropriate precautionary action to ensure that temporarily de-commissioned meters, regulators and gas installation components do not present a safety hazard
P23	Permanently remove and disconnect meters, regulators, gas systems and components as required ensuring the appropriate labelling, storage and waste management procedures are followed
P24	Correctly label any live gas pipes following permanent removal of a meter leaving a permanent bond or other electrical safety measures in place
P25	Communicate appropriately with responsible persons in the de-commissioning process
P26	Work in accordance with relevant health, safety, environmental, industry and organisational standards throughout the installation

P27	Install the identified natural gas smart meter (2.5 to 6.0m3/hr) and associated equipment on low pressure gas service using selected tools and equipment, in line with the work plan, risk assessment, manufacturer's specifications and relevant regulations and standards
P28	Use the appropriate pipe jointing method, from the list below: • join mild steel pipe using appropriate fittings, methods and agents • join copper tube using appropriate capillary end feed fittings, methods and agents • join copper tube and mild steel pipe using appropriate mechanical (compression) fittings, methods and agents
P29	Correctly carry out testing procedures on completed installations in line with industry and organisational standards
P30	Check the completed installation meets and complies with the work plan and equipment specifications
P31	Check for adequate earthing and bonding to the installation
P32	Confirm the integrity of the installation and gas system using tightness and purging procedures (low pressure testing only)
P33	Complete and attach a warning notice where the situation requires
P34	Resolve any problems encountered during the installation safely and efficiently in line with industry and organisational standards, referring matters which cannot be resolved to an appropriate person
P35	Complete all relevant documentation/electronic data relating to the installation in line with industry and organisational standards
P36	Handle waste materials in line with statutory procedures
P37	Confirm that conditions within the gas installation are suitable and will permit safe commissioning
P38	Select and use appropriate tools and equipment for the commissioning and de-commissioning activity (including use of temporary continuity bonds)
P39	Confirm the gas operating pressure is correct for the activity and adjust or inform the network owner if not able to achieve the correct pressure

P40	Visually inspect to confirm the safe operation of the installation conforms to manufacturers, industry and organisational standards and British Standards
P41	Relight any previously connected appliances to manufacturer's instructions and visually inspect for unsafe situations

Dual Fuel Smart Meter Installer

Unit 012 - Prepare, Install and Commission Medium Pressure Natural Gas Smart Meter and Regulator up to 6.0m³/hr

Ref	Performance Criteria
P1	Identify the location of the metering work by using Company systems and available information ie in relation to medium pressure installations
P2	Communicate the planned work activity to all affected parties in accordance with Company policies and procedures
P3	Carry out a site specific risk assessment of the work area, identifying the hazards and implementing the control measures required (e.g. barriers, warning notices and informing others) ie outside installation
P4	Carry out a pre-use inspection of the tools and equipment to be used, checking condition and service information
P5	Record/report results of the removal/installation operation in accordance with Company procedures
P6	Communicate the technical requirements of the completed work activity to all affected parties and provide answers to technical queries in a polite and professional manner
P7	Store tools, equipment and resources safely and securely and leave the work area in a safe and secure condition in accordance with Company procedures
P8	Identify and agree the work location and job details, including meter readings and serial numbers, using available information
P9	Check the work site for damage or defects and inform the correct parties
P10	Inform all affected parties of their intended work plan, in line with industry and organisational standards
P11	Conduct a site specific risk assessment, completing required documentation in line with health and safety regulations and industry and organisational standards
P12	Test for the presence of voltage at the meter installation using an approved voltage sensing device

P13	Confirm the siting of the emergency control valve is accessible, correctly labelled and operating correctly, reporting any defects to the network owner for rectification
P14	Select, inspect and wear PPE compatible with the work plan, risk assessment and health and safety requirements
P15	Plan the work to be undertaken to comply with industry and organisational standards and manufacturer's guidelines taking into account risk assessment, location, ventilation and carry out a pre installation check on all working appliances
P16	Select and prepare tools and equipment compatible with the work plan, risk assessment and industry and organisational standards
P17	Check suitability, defects and or shortages of new equipment to be installed
P18	Apply correct control measures to ensure the work site is in a safe and suitable condition for work and the area is protected from damage being caused throughout the work
P19	Identify medium pressure regulator sets as recognised in BS 6400 - 2 i.e. PRS 28/29 where the maximum operating pressure (MOP) at the outlet of the emergency control valve (ECV) is above 75mbar but not exceeding 2bar
P20	Check that conditions within the gas and earthing systems permit safe de-commissioning
P21	Use designated safe isolation methods, tests and procedures to de-commission meters, regulators, gas installation and components
P22	Take appropriate precautionary action to ensure that temporarily de-commissioned meters, regulators and gas installation components do not present a safety hazard
P23	Permanently remove and disconnect meters, regulators, gas systems and components as required ensuring the appropriate labelling, storage and waste management procedures are followed
P24	Correctly label any live gas pipes following permanent removal of a meter leaving a permanent bond or other electrical safety measures in place
P25	Communicate appropriately with responsible persons in the de-commissioning process

P26	Work in accordance with relevant health, safety, environmental, industry and organisational standards throughout the installation
P27	Install the identified natural gas smart meter (2.5 to 6.0m3/hr) and associated equipment on a medium pressure gas service using selected tools and equipment, in line with the work plan, risk assessment, manufacturer's specifications and relevant regulations and standards
P28	Check all components between the ECV and inlet connect are appropriate and factory made assembled (as per BS 6400-2 6.3.1)
P29	Correctly carry out testing procedures on completed installations in line with industry and organisational standards
P30	Check the installation conforms to BS 6400-2
P31	Check for adequate earthing and bonding to the installation conforms to BS 6400-2 8.6
P32	Confirm the integrity of the installation and gas system using tightness and purging procedures where the maximum operating pressure (MOP) at the outlet of the emergency control valve (ECV) is above 75mbar but not exceeding 2bar and where either: a) Meter inlet valve (MIV) is fitted b) No meter inlet valve (MIV) is fitted
P33	Complete and attach a warning notice where the situation requires
P34	Resolve any problems encountered during the installation safely and efficiently in line with industry and organisational standards, referring matters which cannot be resolved to an appropriate person
P35	Complete all relevant documentation/electronic data relating to the installation in line with industry and organisational standards
P36	Handle waste materials in line with statutory procedures
P37	Confirm that conditions within the gas installation are suitable and will permit safe commissioning
P38	Select and use appropriate tools and equipment for the commissioning and de-commissioning activity (including use of temporary continuity bonds)

P39	Confirm the gas operating pressure is correct for the activity and adjust or inform the network owner if not able to achieve the correct pressure
P40	Visually inspect to confirm the safe operation of the installation conforms to manufacturers, industry and organisational standards and British Standards
P41	Relight any previously connected appliances to manufacturer's instructions and visually inspect for unsafe situations
P42	Inspection and maintenance five yearly BS 6400 – 2 Clause 18.2
P43	Inspection and maintenance ten yearly BS 6400 – 2 Clause 18.3

Unit 013 - Low Pressure Gas SMART Meter Tightness Testing and Direct Purging

Ref	Performance Criteria
P1	Confirm visually the siting of the gas supply, meter, internal installation and provision of ventilation meets the industry requirements for tightness testing and direct purging
P2	Plan the work to be undertaken to comply with industry standards and company procedures taking into account risk assessment, location and ventilation
P3	Check and confirm that conditions within the gas installation permits safe access for isolation
P4	Select and use the correct tools and equipment for de-commissioning activities
P5	Use designated safe isolation methods, tests and procedures to tightness test and purge installations and components
P6	Communicate with others who may be affected by the suspension of the gas supply, including the customer
P7	Apply methods of working which protect the building décor, customer property and existing systems and components
P8	Carry out a tightness test and ensure any leakage is within permissible limits. If outside limits follow company guidelines on unsafe situations and no smell of gas
P9	Carry out low pressure purging procedures to the current standard to confirm the safe supply of gas to the installed gas pipe work and appliances
P10	Re-light appliances, advise turn off or Isolate unsafe gas appliances, gas systems and components and apply the gas industry unsafe situations procedure
P11	Complete all records and documentation in line with industry standards following tightness testing and direct purging

P12	Safely collect and dispose of all waste, including system contents that may be hazardous to health or the environment in line with legislative requirements

Appendix B: Smart metering facilities and equipment specification

Electrical Facilities, Materials and Equipment Specification

1. If centres are applying for multiple categories, the same workstations can be used for single and multi-phase installs if an effective changeover procedure is identified and sufficient space is made available.
2. The number of workstations should match maximum learner numbers.

Single Phase

Workstations must include:

3. Sufficient space to simulate meter positions to include meter board, electricity meter, gas meter, communications equipment and simulated customer installation.
4. Single phase supply to cut-out electrically protected to ensure learner/tutor/assessor safety at all times.
5. All installed equipment must meet actual install specifications.
6. At least one 3 phase supply for testing purposes.
7. At least one test facility to enable electrical testing practice and assessment with the ability to apply typical fault situations to include:
    a) Cross polarity – cut-out
    b) Cross polarity - Meter
    c) Cross polarity - customer installation
    d) No supply
    e) Lost neutral
    f) Live extraneous metalwork (Live Extraneous metal work test should be done on an isolated test bay. This is felt to be a dangerous scenario to have on a normal work Rig of 230v.)
8. Visual examples to include:
    a) Exposed conductors
    b) Incorrect conductor sizes
    c) Damaged/obsolete insulation types
    d) Incorrect phase/neutral identification
    e) Damaged equipment
9. Samples of old type cut-outs including metal clad, fused neutral etc. and examples of illegal extraction.

Meters and ancillary equipment

10. At least 2 single phase single rate meters from different manufacturers. A range of meters both credit and Pre-Payment, and where possible Specific meters to a partnering company should be sourced to enable familiarisation.
11. Samples of various historic meters for demonstration
12. Single phase prepayment
13. At least 2 single phase dual rate
14. Ancillary equipment to include time-switches, contactors, connector blocks, isolators of a type that will typically be encountered during installs in the partner company(s)
15. Simulated customer installation to enable polarity testing and safe isolation procedures to be demonstrated.

Tools & Equipment

16. Full tool Kit of a type approved by the partner company(s). Personal issue to delegates preferred.
17. Full PPE of a type approved by the partner company(s). Personal issue to delegates preferred.
18. Electrical test equipment of a type approved by the partner company(s). Personal issue to delegates preferred.
19. Sufficient Meter tails and Earth conductors, blanking plugs, polarity identifiers, seals and sealing wire for exercises to be undertaken.
20. Effort should be made to simulate on site conditions typically encountered including outside viewing boxes, meters with restricted access and high level (above 1.8m) installations.

Single Phase off Multi-Phase

Workstations must include:

21. Sufficient space to simulate meter positions to include meter board, electricity meter, gas meter, communications equipment and simulated customer installation.
22. Three phase supply to three phase cut-out electrically protected to ensure learner/ tutor/ assessor safety at all times.
23. All installed equipment must meet actual install specifications.
24. At least one test facility to enable electrical testing practice and assessment with the ability to apply typical fault situations to include;
    a) Cross polarity – cut-out
    b) Cross polarity - Meter
    c) Cross polarity - customer installation.
    d) Abnormal phase/neutral sequence
    e) Phase-phase fault - two phases
    f) No supply
    g) Looped neutral
    h) Lost neutral
    i) Live extraneous metalwork (Live Extraneous metal work test should be done on an isolated test bay. This is felt to be a dangerous scenario to have on a normal work Rig of 230v.)
25. Visual examples to include:
    a) Exposed conductors
    b) Incorrect conductor sizes
    c) Damaged/ obsolete insulation types
    d) Incorrect phase/neutral identification
    e) Damaged equipment
26. It would be advantageous to have samples of old type 3 phase cut-outs including metal clad, fused neutral etc. and examples of illegal extraction.

Meters and ancillary equipment

27. Smart meters at least 2 single phase single rate meters from different manufacturers. Samples of various historic meters for demonstration.
28. Smart meters single phase prepayment
29. Smart meters at least 2 single phase dual rate
30. Ancillary equipment to include time-switches, contactors, connector blocks, isolators of a type that will typically be encountered during installs in the partner company(s)
31. Simulated customer installation to enable polarity testing and safe isolation procedures to be demonstrated.
32. Ability to show physical examples of looped neutrals and exercise to include looped neutrals.

33. BEMCO type distribution boards, or similar, where these will be encountered.

Tools & Equipment

34. Full tool Kit of a type approved by the partner company(s). Personal issue to delegates preferred.
35. Full PPE of a type approved by the partner company(s). Personal issue to delegates preferred.
36. Electrical test equipment of a type approved by the partner company(s). Personal issue to delegates preferred.
37. Sufficient Meter tails and Earth conductors, blanking plugs, polarity identifiers, seals and sealing wire for exercised to be undertaken.
38. Effort should be made to simulate on site conditions typically encountered including outside viewing boxes, meters with restricted access and high level installations.

Multi-Phase

Workstations must include:

39. Sufficient space to simulate meter positions to include meter board, electricity meter, gas meter, communications equipment and simulated customer installation.
40. Three phase supply to three phase cut-out electrically protected to ensure learner/ tutor/ assessor safety at all times.
41. All installed equipment must meet actual install specifications.
42. At least one test facility to enable electrical testing practice and assessment with the ability to apply typical fault situations to include;
    a) Cross polarity – cut-out
    b) Cross polarity - Meter
    c) Cross polarity - customer installation.
    d) Abnormal phase/neutral sequence
    e) Reverse phase rotation
    f) Phase-phase fault - two phases
    g) No supply
    h) Looped neutral
    i) Lost neutral
    j) Live extraneous metalwork

43. Visual examples to include:
    a) Exposed conductors
    b) Incorrect conductor sizes
    c) Damaged/obsolete insulation types
    d) Incorrect phase/neutral identification

e) Damaged equipment

44. It would be advantageous to have samples of old type 3 phase cut-outs including metal clad, fused neutral etc. and examples of illegal extraction.

Meters and ancillary equipment

45. Smart meters at least 2 three phase single rate meters from different manufacturers. Samples of various historic meters for demonstration. (When available)
46. Smart meters at least 2 three phase dual rate (When available)
47. Ancillary equipment to include time-switches, contactors, connector blocks, isolators of a type that will typically be encountered during installs in the partner company(s)
48. Simulated customer installation to enable polarity testing and safe isolation procedures to be demonstrated.
49. Ability to show physical examples of looped neutrals and exercise to include looped neutrals.
50. BEMCO type distribution boards, or similar, where these will be encountered.

Tools & Equipment

51. Full tool Kit of a type approved by the partner company(s). Personal issue to delegates preferred.
52. Full PPE of a type approved by the partner company(s). Personal issue to delegates preferred.
53. Electrical test equipment of a type approved by the partner company(s). Personal issue to delegates preferred.
54. Sufficient Meter tails and Earth conductors, blanking plugs, polarity identifiers, seals and sealing wire for exercised to be undertaken.
55. Effort should be made to simulate on site conditions typically encountered including outside viewing boxes, meters with restricted access and high level installations.

Smart Communications equipment

56. Sufficient smart electricity and gas meters, IHD”s and communication hubs to enable binding and pairing exercises to be undertaken and assessed. Equipment should match partner company(s) specification. Simulated binding and pairing should be available through on site head end simulation.
57. Company hand held devices for commissioning should be made available to simulate a live communications install.

Workstations must include:

58. Sufficient space to simulate meter positions to include meter board, electricity meter, gas meter, communications equipment and simulated customer installation.
59. All installed equipment must meet actual install specifications.
60. At least one test facility to enable live gas testing practice and assessment with typical faults.
61. Enable demonstration of:
    a) Meter installation and removal
    b) Use of suitable temporary continuity bond
    c) Labelling and notices
    d) Checking meter regulator Operating Pressure
    e) Setting meter regulator Operating Pressure
    f) Sealing meter regulator
    g) Disconnecting meter and sealing meter, service and outlet connections.
62. Products and characteristics of combustion:
    a) Selection of satisfactory and defective burners
    b) Selection of open flue appliances with defects
    c) Selection of suitable and unsuitable CO detectors and indicators
    d) MIs and appropriate reference documents
    e) Selection of flues and chimneys including flue liners, double walled & pre-cast concrete blocks
63. Ventilation (for domestic appliances) to include a selection of:
    a) Air bricks
    b) Air vents
    c) Correct and incorrect domestic air vents
    d) Scenarios enabling domestic appliance/installation ventilation to be calculated
64. Installation of pipework and fittings (pipework within meter installation)
    a) Pipe and fittings for joining and assembling components comprised in a typical meter inlet connection.
    b) Pipe and fittings for joining pipework.
    c) Meter installation, to enable demonstration of use of temporary earth continuity bonding, tightness testing and purging.
    d) Pre-installed domestic gas meter installation to enable identification of safe and unsafe primary meter installations by inspecting and testing.
    e) Live outlet gas supply, connected to a meter and ECV utilising suitable pipe and fittings, enabling demonstration of installing a copper capillary fitting and testing and purging, while observing all safety precautions.
    f) Meter installation, to enable identification of pipework defects.

65. Tightness testing and purging (to IGE/UP/1B)
    a) Meter installation including: a Low Pressure domestic gas meter, installed and connected to BS 6891 installation pipework, with a selection of appliances, connected to a Natural Gas supply.
    b) Create a small gas escape for straightforward tracing and repair, measurable as a pressure drop on a gauge.
    c) An installation or test rig including a medium pressure fed gas meter (≤6m3/h) installation with appropriate regulator:
        Where no meter inlet valve has been installed
        Where a meter inlet valve is installed
        (The medium pressure fed supply can be simulated by utilising compressed air or inert gas).
66. Checking and/or setting meter regulators
    a) Meter installation, including: a Low Pressure domestic meter installed and connected to installation pipework with a selection of appliances, connected to a Natural Gas supply.
67. Unsafe situations, use of emergency notices and warning labels
    a) Unsafe situations to identify at least one each of ID, AR and RIDDOR reportable (R) installations/appliances
    b) Full range of do not use and advisory notices.
68. Operation and positioning of emergency isolation controls and valves
    a) Correctly and incorrectly positioned ECV.
    b) Correct and incorrect operation of ECV.
    c) Selection of correct and incorrect ECVs and advisory labels.
69. Re-establish existing gas supply and re-light appliances/plant
    a) Selection of domestic gas appliances connected to a Natural Gas supply to enable demonstration of re-lighting; one to include simulated signs of spillage of products of combustion.
    b) Appropriate sets of MIs.

Medium Pressure Gas

70. The following **additional** (to Low Pressure Gas) equipment needs to be available to deliver Medium Pressure Gas installations (BS 6400-2 Figure 8) for example one PRS 28 installation and one PRS 29 installation:
    a) Selection of different models of domestic Medium Pressure meter regulators:
        - Pressure relief valve
        - Meter installation incorporating an excess flow valve
        - Regulator incorporating a Safety Shutoff Valve (SSV)
    b) MIs on selected Medium Pressure regulators in use (PRS 28/29)
    c) Suitable means of pressurising regulator to be tested.

d) Test and purge apparatus including: purge hose and flame trap.
e) Small receptacle to contain water (relief valve test).
f) Selection of labels and certificates appropriate to a domestic Medium Pressure meter installation.

Appendix C: Smart metering people specification

NSAP-approved Smart metering programmes

Minimum requirement for assessors:

- Understanding the principles or practice of assessment (Unit certificate from any Ofqual regulated Awarding Body, mostly known as TAQA from City and Guilds)
- Level 3 Certificate in Assessing Vocational Achievement
- Level 3 Award in Assessing Competence in the Work Environment
- Working towards one of the above
- or hold one of the predecessor qualifications, which includes:
- A1 Assess candidates using a range of methods
- A2: 'Award in Assessing Candidates' Performance through observation
- D32/33 Assess candidate performance, using differing sources of evidence

AND
For those involved in the verification of the programme, they must meet at least one of the following requirements:

- Level 4 Award In the External Quality Assurance of Assessment Processes and Practice
- Level 4 Award In Understanding the External Quality Assurance of Assessment Processes and Practice
- Level 4 Certificate In Leading the External Quality Assurance of Assessment Processes and Practice
- Level 4 Award in Understanding the Internal Quality Assurance of Assessment Processes and Practice
- Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practice
- Level 4 Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practice
- V1 for Internal Verifiers
- V2 for External Verifiers
- Recognised alternative to A1 / A2 (e.g. D34/D35 or per the minimum unit requirement listed above in the assessor awards or equivalent section)
- (A mandatory action to be applied to any individuals falling within this category; confirming successful completion)

AND
All individuals involved in delivery, assessment or verification activity must be able to demonstrate vocational knowledge, experience and understanding of current field operations

for the specific discipline for which they will be involved and have experience of carrying out assessments within the gas and/or power industry

Note: The sufficiency of occupational experience must be determined and approved by the submitting organisation and will not be formally assessed as part of the application criteria.

The individuals must provide evidence that they have completed, and successfully passed, the National Assessment Specification (and, ideally, be EUSR registered).

There is no additional criteria beyond such within the code of practice.

The programme has a delivery design that ensures those involved in training delivery, assessment and verification shall have clearly defined and recorded accountabilities, responsibilities and authorities.

Re-assessment 'in the field'

The above people specification requirements apply for Re-assessment 'in the field'. It is permissible, however, to use company auditors to re-assess individuals within the renewal process.

Where company auditors are used in the re-assessment process, then each auditor must:

- meet the occupational experience requirements identified above
- have completed and successfully passed the National Assessment Specifications (NAS) (and, ideally, be EUSR registered)
- be supervised and quality assured by a Smart Metering assessor throughout the renewal process (all renewal submissions must be made by a qualified assessor).

Appendix D: Smart metering employer sponsor specification and mentoring guidance

i) Smart metering employer sponsorship

It is mandated that any Smart Metering learning and assessment material, submitted for approval by the National Skills Academy for Power (NSAP), is sponsored by a Meter Operator or Meter Installation company.

The sponsor organisation must commit to provide the learners undergoing Smart Metering training and assessment with sufficient mentoring, development and real work environment (RWE) assessment of cut-out and electricity/gas metering equipment situations.

The employer sponsor must commit to;

1) Provide sufficient support, mentoring and development to support (see Mentoring guidance section below).
2) Provide sufficient real work environment assessment to ensure individual competence, including opportunity to;
    a) Carry out a thorough and rigorous risk assessment to ensure safety of customer, self and property on arrival, during install/exchange, commission/decommission and upon exit
    b) Work safely and efficiently in line with current Health, Safety and Environmental legislation
    c) prepare and sequence equipment and tasks in the order prescribed in relevant operational standards or according to a specific regulations or set of rules
    d) Conduct meter installation activities safely in a real world environment.
    e) demonstrate a knowledge of gas and electrical testing and assessment procedures needed to establish the condition of the equipment and installation and the actions needed as a result
    f) Use a variety of appropriate communication methods to interact with customers and others to give/receive information accurately, in a timely and positive manner in order to deliver the best possible experience to customers. This will include practical advice and the benefits of using the equipment
    g) Deliver polite, courteous professional service to all customers and members of the public whilst safeguarding customer welfare and recognising vulnerability.

If the employer is unable to commit to provide the work placement in line with the requirements outlined above, alternative arrangements must be made with another appropriate sponsor organisation. Note; the organisation must collect and hold a declaration from each in scope employer sponsor, along with a record of the learners supported for the life time of their registrations.

Note: An Employer Sponsor Declaration Form can be found on page 82.

ii) Smart metering mentoring guidance

Purpose of this guidance

This guidance is designed to help develop best practice in relation to the mentoring of Smart meter installers by sponsoring Meter Operators/Meter Installation Companies.

Currently, all providers seeking approval to deliver an NSAP Smart metering programme of learning and assessment are required to have the formal support of a sponsoring Meter Operator/Meter Installation Company. Whilst the declaration currently signed by such organisations requires a commitment to support, mentor and provide sufficient real work environment assessment to individuals for the duration of their training, there is a recognised need to identify what this kind of experience should amount to in practical and detailed terms.

This guidance provides this level of practical and detailed guidance and represents a best practice standard for sponsoring organisations. Whilst not mandatory in relation to the scheme, it is strongly recommended that Meter Operators/Meter Installation Companies/approved training providers align their current mentoring practices to the details identified below. This guidance underpins the practical requirements of SMICOP Section 2.6 which details the Training and Assessment requirements for a Smart meter installer in advance of an Installation visit.

The guidance has three sections; the first addresses the best practice profile of a Mentoring organisation; the second addresses the best practice profile of a Mentor; the third addresses the installation requirements that should underpin an individual's experience.

Requirements of the Mentoring organisation

Meter operators and installers should put in place a systematic and comprehensive approach to the mentoring of trainee operatives. This should include as a minimum:

- A description of the purpose of mentoring and its place within the overall delivery of the Smart programme of learning.
- A description of the purpose and requirements of the Mentor role.
- Standard rules for who can act as a Mentor.
- A mentoring process for trainee individuals, including the stages of mentoring (ie from supported learning through to solo installation), and defined approaches to real work installation requirements (see below).
- Details of how individuals' activities/progress will be recorded, reviewed and assessed to ensure progression.
- A quality assurance process for standardising activity among mentors and reviewing and improving the overall company process.

The Mentor profile and role

This section addresses the basic requirements of the Mentor role. This should be used by organisations planning an approach to the mentoring of trainee operatives.

A Mentor should meet the following background requirements. They should:

- Be appointed to the individual for the duration of the individual's programme.

- Be occupationally competent in the Smart meter installation role, and the person carrying out supervision during on-site supervised activities.

- Have no serious, safety critical incidents on gas and/or electrical installations.

- Be trained/accredited in the mentoring process, which may be through either an in-company programme or an externally-recognised programme/qualification (eg relevant mentoring qualifications are offered through Chartered Institute of Personnel and Development (CIPD), Institute of Leadership and Management (ILM) etc). Alternatively, NSAP's Smart meter mentoring specification identifies the requisite skills and knowledge in order to undertake the mentor role, and may offer a useful benchmark to those key requirements necessary to conduct the role appropriately.

- Be ideally, assessor qualified (eg currently through Training, Assessment and Quality Assurance (TAQA) units or previously through 'D' or 'A/V' units of competence).

The Mentor should:

- Have clearly defined and associated responsibilities with support mechanisms for guidance/ escalation if required.

- Demonstrate technical Smart metering working activities and procedures for which they are qualified to carry out.

- Use open and closed questioning techniques to gain knowledge from an inexperienced individual.
- Provide guidance in a constructive and positive manner to encourage development.
- Plan work activities for inexperienced individuals which require the candidate to use a wide range of the skills required.
- Monitor and maintain a safe work environment while allowing the individual to take responsibility for the work.
- Make objective decisions on the competence of an individual under their control.
- Give feedback and devise action plans to address and support individual requirements.
- Maintain accurate records of an individual's progress and report on development in line with Company procedures.

(Source: NSAP's Smart Metering Specification – Smart Meter Mentor)

Any reports/observations or action plans arising from the training programme should be made available to mentors prior to on the job training commencing, and the Mentor should factor any consequences of these into the way in which they choose to work with each individual.

The Mentor should assist in portfolio building with individuals and undertake regular (ideally, weekly) reviews to track an individual's progress, action plan for that individual, and develop opportunities to close gaps in an individual's experience. Mentors should provide constructive feedback and challenge all deviations from company policy/procedures and stop work activities if health and safety issues are evident. Mentors should communicate back with approved trainers to ensure that any identified issues with individuals are appropriately addressed.

Questioning and professional discussion should take place during installations to reinforce and check application of learning. In particular, and to ensure appropriate breadth of learning, questions relating to alternative equipment, environments and scenarios that could be encountered should be asked(eg when to report a specific safety hazard, what to do if a customer is violent/vulnerable, suspected CO poisoning/energy theft, etc). Mentors should meet regularly to agree and standardise practice and process to ensure that all learners are receiving a comparable level of support and guidance.

Real work installation requirements

This section addresses a variety of real work installation requirements, and should be used by organisations planning an approach to the mentoring of trainee operatives.

Minimum numbers and variation of installation

The minimum required standard for individuals should be 10 dual fuel installations (in line with existing awarding body practice). As many companies insist on significantly more installations, 10 dual fuel installations should be viewed as an absolute minimum. More importantly, the

variation in job types should dictate the number of installations an individual should perform. 10 installations simply on new properties would not give the learner the required variation of activities, environmental diversity or customer contact experience. Every effort, therefore, should be made to ensure a variation of installations. Consequently, the Mentor's role should include arranging exposure to a number of different installations/environments/equipment types and the mentor should pro-actively seek opportunities to achieve this variation.

The following should be considered by the Mentor in addition to standard single phase electricity and low pressure gas installations:

Electricity

- Historic equipment e.g. metal clad cut-outs (if part of the authorisation)
- Multi-rate equipment
- Multi-phase equipment, geographic and manufactures variants
- Environments with restricted access and working at heights
- Build material issues, old properties, displacement between gas/electricity meters etc

Gas

- Pipework
- Medium pressure (if part of the authorisation)
- Environments with restricted access and working at heights
- Build material issues, old properties, displacement between gas/electricity meters etc

A range statement should be developed by the meter operator/installer to capture a minimum number of the above. For consistently difficult to encounter scenarios, a possible solution is to build simulation into the training programme. This could also be an additional duration of training activity post on-site experience. A common example may be if no multi-phase or pipework activity has taken place.

Time pressures and efficiency standards

Allowance should be made by companies to accommodate the additional time-needs of individuals during on-site experience and during the initial solo live installations undertaken by individuals. The same allowance should be applied to the efficiency standards by which individuals during mentoring are judged. Whilst final solo live installations might be judged against company standards, initial, supported and solo installations should not be judged by the same efficiency standards.

There are instances where individuals only observe installations because of time pressures regarding the number of installations per day or unexpected delays on-site. In these instances, the Mentor/installer inevitably carries out the installation. These situations may not be the most appropriate for inexperienced individuals who will always take additional time to complete installations, and Mentors/organisations should guard against this situation becoming a norm during the mentoring period.

Balance of training and real work experience

Meter operators/installers/mentors should work with approved training providers to ensure that individuals have a balanced approach to learning both on-programme and in the real working environment. We are aware that, in some instances, a number of dual fuel learners carry out formal training on both fuels and then undertake a period of on-site experience. A number of learners have found this an overwhelming initial experience having to remember and utilise the technical content of both fuels. We are aware that a period of on-site experience following formal training on the first fuel type appears to achieve a less overwhelming and better balanced combination of knowledge and application. Mentors/approved providers should factor these considerations into the delivery of their programmes.

Portfolios

Building a portfolio is the best method for recording programme learning, tracking on-site experience and ensuring sufficient exposure has taken place around a cross-section of job types.

The following elements should make up a portfolio:

- Copy of standards (where required)
- Individual's CV
- Individual's certificates from formal Smart training and other related activities e.g. first aid, asbestos awareness etc
- Programme of activity - formal learning and on-the-job training
- Reports and assessments from formal learning and on-the-job training
- Action plans and objectives, if required
- Diary of on-the-job activity
- Evidence to meet, at least, minimum criteria which may include the following:
    - Reports of work completed, written by the individuals to the required level of detail
    - Photographic evidence
    - Job sheets/other supporting documentation
    - Observations by Mentor/Assessor
    - Witness statements for Mentor/Assessor identifying areas of competence demonstrated and further development needs
    - Sign of facility by Mentor/Assessor/individual
    - Internal verification sign off/report

Post-real work experience support

Companies should have an ongoing audit programme for installers which is both more rigorous for recently appointed installers (ie increased quality assurance) and more flexible to develop competence appropriately (ie reduced initial workload, 'investigations/lessons learnt' policy when things go wrong).

A ‘helpline’/formal contact point should be made available for new installers should they encounter installations that require technical advice form an experienced installer to enable them to proceed. Every effort should be made during the formal and on-the-job training to introduce problem-solving ability and promote a culture of “stop and ask” where required.

Employer sponsorship declaration

It is mandated that any Smart Metering learning and assessment material submitted for approval by the National Skills Academy for Power (NSAP) is sponsored by a Meter Operator or Meter Installation company who has capacity to ensure individuals complete the programme.

The sponsoring organisation must move beyond the initial training and assessment.

They must provide sufficient mentoring, development and real work environment assessment to gain the core competency measures to achieve Gas Safe registration, Meter Operators Code of Practice (MOCoPA) and meet with the Smart Metering Installation Codes of Practice (SMICoP), energy efficiency, customer service and managing vulnerable customers.

Name of Training Provider that I commit to Sponsor:	

I commit to provide the learners undergoing Smart Metering training and assessment with the Training Provider named above with mentoring, development and real work environment (RWE) assessment of cut-out and electricity/gas metering equipment situations.

I will;

1) Provide sufficient support, mentoring and development to support.
2) Provide sufficient real work environment assessment to ensure individual competence, including opportunity to;
    a) Carry out a thorough and rigorous risk assessment to ensure safety of customer, self and property on arrival, during install/exchange, commission/decommission and upon exit
    b) Work safely and efficiently in line with current Health, Safety and Environmental legislation
    c) Prepare and sequence equipment and tasks in the order prescribed in relevant operational standards or according to a specific regulations or set of rules
    d) Conduct meter installation activities safely in a real world environment.
    e) Demonstrate a knowledge of gas and electrical testing and assessment procedures needed to establish the condition of the equipment and installation and the actions needed as a result
    f) Use a variety of appropriate communication methods to interact with customers and others to give/receive information accurately, in a timely and positive manner in order to deliver the best possible experience to customers. This will include practical advice and the benefits of using the equipment
    g) Deliver polite, courteous professional service to all customers and members of the public whilst safeguarding customer welfare and recognising vulnerability.

Name			
Job Title			
Company Address			
Telephone no			
Email address			
Signature		Date	

Appendix E: Verifying the competence of existing installers

There are a number of routes into meter installation/operating companies for existing installers. We have attempted to identify the main routes and have offered guidance for companies on due diligence checks/activity for verifying the competence of the individual joining their organisation.

This list of 'routes in' is not exhaustive, and individual circumstances will always need additional, professional judgment, but it is intended to give meter installation/operating companies assistance in developing best practice competence verification in relation to existing installers.

Route into a meter installation role for an existing installer	**Possible method for verifying competence and induction to the business**
1. Gas Safe Registered and/or previous Company MOCoPA Authorisation Certificate, has successfully undertaken NSAP-approved Smart training (using the National Assessment Specifications), is registered with EUSR and is currently working as an installer	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Demonstration of current EUSR registration ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications
2. Gas Safe Registered and/or previous Company MOCoPA Authorisation Certificate, has successfully undertaken NSAP-approved Smart training (using the Level 2 Diploma), is registered with EUSR and is currently working as an installer	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Demonstration of current EUSR registration ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications
3. Gas Safe Registered and/or previous Company MOCoPA Authorisation Certificate, has successfully undertaken NSAP-approved Smart training (using the National Assessment Specifications), is **not** registered	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Demonstration of having successfully undertaken NSAP-approved Smart training

with EUSR and is currently working as an installer	➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications
4. Gas Safe Registered and/or previous Company MOCoPA Authorisation Certificate, has successfully undertaken NSAP-approved Smart training (using the Level 2 Diploma), is **not** registered with EUSR and is currently working as an installer	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Demonstration of having successfully undertaken NSAP-approved Smart training ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications
5. Gas Safe Registered and/or previous Company MOCoPA Authorisation Certificate, has successfully undertaken non-NSAP-approved training, ie using the Level 2 Diploma and is currently working as an installer	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Completion of the 'National Assessment Specification' at an approved NSAP provider ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications
6. Gas Safe Registered and/or previous Company MOCoPA Authorisation Certificate, has successfully undertaken non-NSAP-approved training (not nationally-recognised form of assessment), and is currently working as an installer	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Completion of the 'National Assessment Specification' at an approved NSAP provider ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications
7. Gas Safe Registered and previous Company MOCoPA Authorisation Certificate, has successfully undertaken the Dual Fuel framework-based apprenticeship, is registered on EUSR and is currently working as an installer	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Demonstration of current EUSR registration ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications

8. Gas Safe Registered and previous Company MOCoPA Authorisation Certificate, has successfully undertaken the Dual Fuel standards-based apprenticeship (trailblazer apprenticeship), is registered on EUSR and is currently working as an installer	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Demonstration of current EUSR registration ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications
9. Gas Safe Registered and previous Company MOCoPA Authorisation Certificate, has successfully undertaken the Dual Fuel framework-based apprenticeship, is **not** registered on EUSR and is currently working as an installer	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Demonstration of successful completion of apprenticeship (with an embedded NSAP-approved training programme) ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications
10. Gas Safe Registered and previous Company MOCoPA Authorisation Certificate, has successfully undertaken the Dual Fuel standards-based apprenticeship (trailblazer apprenticeship), is **not** registered on EUSR and is currently working as an installer	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Demonstration of successful completion of apprenticeship (with an embedded NSAP-approved training programme) ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications
11. Gas Safe Registered and previous Company MOCoPA Authorisation Certificate, dumb meter trained, but not Smart meter trained, and currently working as a 'non-smart/traditional' installer	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Successful completion of an NSAP-approved Smart metering training programme at an NSAP-approved provider ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications

12. Qualified (as per one of the above routes), but not currently working in the smart metering industry	➢ Demonstration of valid and current Gas Safe Registered / New employers MOCoPA Authorisation Certificate ➢ Demonstration of current EUSR registration (ie if they have this) ➢ Demonstration of having successfully undertaken NSAP-approved Smart training (ie if they have this) ➢ Completion of the 'National Assessment Specification' at an approved NSAP provider ➢ Any additional training/assessment they may need for Smart Metering, ie Smart Communications