Becoming a Chartered Engineer (CEng) through the Energy Institute

- ✓ **What becoming a CEng could mean for you**
- ✓ **The standards you will need to meet**
- ✓ **How to apply**
- ✓ **What you can do now if you aren't yet ready to apply**

Why chartered status?

Chartered status confirms that an individual has the skills, knowledge, understanding and integrity to practice as a professional in the UK. It gives formal recognition of professional standing, and its recognised and highly valued in many parts of the world.

Many employers in the energy sector look for professional qualifications, or a commitment to achieving professional qualifications, as an indication of quality and professionalism when looking to recruit new staff - and restrict the management of larger projects to those in their organisation who are formally qualified.

If you are looking to develop a successful professional career, professional qualifications are a 'must'.

About the CEng title

Chartered Engineers working in energy are professionals who develop solutions to energy-engineering problems using new or existing technologies, through innovation creativity and change and/or they may have technical accountability for complex systems with significant levels of risk. Whatever their role they will have a deep knowledge of their area, an understanding of the wider context of their work and the sector and will work at a significant level of responsibility.

The Energy Institute awards the CEng title under Licence from the Engineering Council, in conjunction with a choice of two titles which are unique to the EI, Chartered Energy Engineer and Chartered Petroleum Engineer. If you make an application to become a CEng through the Energy Institute, you will be asked which of these two energy specific titles you would like to apply for alongside the CEng title.

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Should I apply for Chartered Energy Engineer or Chartered Petroleum Engineer?

Whichever feels most appropriate to the work you do – petroleum or other aspects of energy. The standards are the same. The difference is the context in which you demonstrate your competence. There is more information to help you decide at Appendix B

What are the requirements for CEng?

To successfully apply for registration as a Chartered Engineer, you will need to demonstrate that you have **both** the following

- ✓ the appropriate **foundation theoretical knowledge** in engineering and
- ✓ **competence and commitment** – that you have gained sufficient experience and professional development in the workplace to practice to a competent, nationally

recognised standard in your work as an engineer in the energy sector and the professional and personal commitment to society, your profession and the environment. This includes the requirement to exercise your responsibilities in an ethical manner.

The standards against which you will be assessed for the Chartered Engineer title are set by the Engineering Council– the foundation theoretical knowledge you will need to demonstrate is described in a document called Accreditation of Higher Education Programmes (AHEP) and the standards of competence and commitment in UK Standard for Professional Engineering Competence (UK-SPEC).

Foundation technical knowledge skill and understanding

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Professional competence and commitment

Fig 1 Requirements for qualifying as a Chartered Engineer

Demonstrating your foundation theoretical knowledge

Automatically recognised or accredited qualifications

Some qualifications or combinations of qualifications are automatically recognised as providing evidence that you meet the foundation technical knowledge, skills and understanding you will need to demonstrate to become a Chartered Engineer. This is because they have been assessed and approved by the Engineering Council or are recognised via an international agreement.

If you studied in the UK, you can check whether your qualifications are accredited by the Engineering Council by visiting the Engineering Council's website. [1]

If you studied outside the UK, your qualifications may also be automatically recognised if

- you studied in the EU and you have a second cycle (i.e. Masters level) qualification which appears on FEANI's European Engineering Education Database (Formerly the FEANI Index) or the database of EU-ACE labelled programmes.
- you hold a qualification approved by one of the countries which have signed up to the Washington Accord.

[1] Qualifications accredited by the Engineering Council for CEng are either

- An accredited Bachelors degree with honours in engineering or technology, plus either an appropriate Masters degree or Engineering Doctorate (EngD) accredited by a professional engineering institution;
- An accredited integrated MEng degree

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What if I am not sure about the status of my qualifications?

The above websites should help, but if you are not sure, you can apply for **Interim Registration** and we will check them for you (and advise you what to do next if not). Interim Registration certifies that you have the foundation technical knowledge for a particular professional title, are committed to your progression and have taken the first step towards becoming fully qualified, as well as giving you your first engineering qualification.

Other qualifications, training, and experience

Not everyone has automatically recognised qualifications - energy is very diverse and so it is not unusual for professionals come into energy engineering with a range of different qualifications, backgrounds, and experience.

If you don't have accredited or recognised qualifications, you can still apply to become a chartered engineer. You will first need to apply for **Interim Registration** so that we can review all your qualifications, experience, and any training you have undertaken under our individual case procedure.

The process is simple: Complete the Interim Registration application form. Based on the information you have given us, we will then ask you to provide more detailed information about how you have covered the foundation technical knowledge required - for example through your other qualifications and/or experience. This will then be assessed by our Individual Case Procedure (ICP) Panel. The ICP Panel will review all the information you have submitted in detail. They will then either confirm that you have demonstrated you meet the standard or provide you with further guidance on any gaps you will need to address to meet the foundation technical knowledge requirements for engineering.

You can apply for Interim Registration at any time, but it can be advisable to do so as soon as you can so that you are not delayed, particularly if you have a lot of experience already and hope to go on to achieve CEng relatively soon.

Demonstrating your professional competence and commitment

In addition to the appropriate foundation theoretical knowledge to successfully apply to become registered as a Chartered Engineer you will need to show that have undertaken sufficient practical experience and professional development in the workplace to be able to apply your knowledge, skills and understanding to a competent standard - and demonstrate your personal and professional commitment to society, your profession and the environment, including exercising your responsibilities in an ethical manner.

The specific standards of competence and commitment (or 'competences') you will need to show that you meet to be registered as a Chartered Engineer are detailed in an Engineering Council document UK-SPEC; you will also find them included in this information note as an appendix, alongside the Engineering Council's CPD Code for Registrants and the Engineering Council and the Royal Academy of Engineering's Statement of Ethical Principles and the EI's Code of Conduct (for those who are also joining the EI for the first

time as members) . UK-SPEC and other documents related to professional membership registration are updated from time to time, so if you have printed this information note for your reference, you should always check our website and/or the Engineering Council for updates before you make your application.

As part of your application, you will need to show how you meet the standards for CEng in UK-SPEC specifically in the context of energy, by completing a **competence grid**. This is Part B of the application form and is a simple document where you relate your experience to the competences and explain how you have met those competences, giving examples. You will find it in the application pack which you can download from the EI website.

Professional membership of the EI

To become qualified as a Chartered Engineer vis the Energy Institute, you will also need to hold professional membership, as either a Member (MEI) or Fellow (FEI).

If you aren't already a professional member of the EI, you can either:

- apply for MEI or FEI in advance of making your application for Chartered Engineer.
- apply for professional membership, as a Member, at the same time as you make your application for Chartered Engineer, in which case you will need to demonstrate how you meet the competences for both CEng and MEI. The competences for being a Member are included in the appendices and you will find a Part B form in the application pack. The application process to join as a Fellow is a separate procedure and cannot be done at the same time as seeking professional registration.

Making your application

You can download the application pack from the membership section of the EI website at www.energyinst.org. The pack includes the application form, guidance on how to apply and all the templates you will need to complete

The application form is divided into two sections;

Part A	**Part A** asks you to provide basic information about you, what you are applying for and why, and your background. This includes your contact details, qualifications and a list of the positions you have held, and where you current sit within your organisation (indicating your level of responsibility). You will also need to provide evidence of your continuing professional development and a statement giving an overview of how you have developed your career to date. At the end of the form, you are asked to sign a declaration that the contents of your application are accurate, you accept the Terms and Conditions of Membership (including the EI's Privacy Policy) and agree to be bound by the EI's Code of Conduct and any conditions of registration set by the Engineering Council.

Part B	**Part B** is the competence grid, where you will need to give details of how you have met each competence for the title or titles you are applying for. You will need to complete a Part B for each professional membership or registration you are applying for (so, for example, if you are applying to become a Member of the EI (MEI) and Chartered Engineer, you will need to complete and submit a Part B competence grid for each title.

You will need to attach evidence for some sections of the form.

Don't forget that you are applying for a qualification which focuses on your professionalism, so it's essential that you follow the application guidelines and format and supply all the information requested. All professional qualifications require the ability to communicate effectively, so make sure your communication skills are demonstrated in the way you put together your application. There is more information on how to complete the application form in the document in the application pack.

When do I need to apply?

You can submit your application anytime but there are six application deadlines each year, which feed into specific meetings of the EI's Membership Panel. You will find information on the next deadline in the membership section of the EI website.

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How do I know when I am ready to apply?

There is no set amount of experience you need to have before you can apply – everyone is different, and the type of work and development opportunities you'll have will also vary from person to person. The most important thing is that you can show you meet the standards for the membership or registration you are applying for. If you have evidence that you can fully meet the competences, and understand the obligations on you as a professional, you should be ready to apply. Discussing your application with others can often help.

What happens next?

We'll acknowledge your application within 5 working days of receipt and ask you to pay the application fee online.

Once your fee is received the Professional Membership Team will check that your application is complete and will then send it on to our assessors. They will review your application and determine whether, on paper, you have provided sufficient and relevant evidence in relation to the title or titles you are applying for to demonstrated that you meet the standards.

The assessor will then make a recommendation to the next meeting of the EI's Membership Panel. (the EI's Membership Panel oversees all applications for professional membership and registration). The decision of the Membership Panel will be either that

- you should be asked to attend a professional interview; or
- you should be asked to provide further information before the application can proceed, or
- based on the evidence you have submitted, you have not demonstrated that you meet the standards. If this is the case, the feedback from the Panel will indicate the areas of competence which you have not demonstrated in your current application, and in which they recommend you undertake more learning and experience before you reapply.

We will write to you within 10 working days to confirm the Membership Panel's decision.

The professional interview

Your professional interview will normally be held locally to you but in some instances may be conducted online. It will normally take between 45 and 75 minutes and we will write to you in advance giving your more information.

The interview will take into account your experience and career history and will explore how you have demonstrated the standards of competence and commitment for the titles you are applying for. This includes the Codes of Conduct and guidelines relevant to the registration you are applying for.

As part of your preparation, you should review your application and the relevant competences, and come to the interview ready to talk about the energy sector, your career, your responsibilities as an energy professional as well as how you meet the requirements for the title you are applying for.

Not yet ready to apply? Things you can do now...

It takes most people a few years to develop their applied knowledge and get enough practical experience in energy engineering to be able to meet all the competences in full and be ready to apply for Chartered Engineer. There is no set period within which you need to get qualified, and it is entirely fine to work at your own pace.

However, there are a few things you can do now to put yourself in the best possible position to move forward when you are ready. Here are some suggestions, in no particular order

1.Join the EI √	Become an EI member as soon as you can. You'll need to be a member to apply for a professional grade or registration and it means you will have access to resources, networking and support right from the start. Associate Member of the EI (AMEI) is the EI's membership grade for those who are intending to work towards a professional title or registration – and you will be awarded your first post nominals, which you can use professionally, in your CV and in job applications.

2.Get networking √	Attend as many professional events as possible and in particular get involved with your branch and/or your Young Professionals Network. Networking will help develop your knowledge and broaden your perspective - and getting involved will give you access to learning and events, new experiences and maybe even new friendships. You could also talk to your nearest Energy Institute branch or YPN about setting up a regular meeting to discuss topics relevant to the CEng competences, to help build your knowledge.
3.Make sure you know the standards √	Make sure you understand the competences for the titles you are applying for and any related codes, requirements or guidelines. UK-SPEC is the key reference point describing the standard of practice, including competence and commitment required for professional engineers in the UK. Download a copy from the Engineering Council's website.
4.Work on your knowledge √	Take every opportunity to learn about the sector, wider society and how they impact on one another. Read about the latest technologies, talk to colleagues, and find out their views, and look for other opportunities to expand your knowledge and widen your perspective and experience. All this learning is Continuing Professional Development (CPD), which you will need to demonstrate in your application. For more information on how to approach your CPD so it works for you, read the EI's CPD booklet, *The Best You Can Be* in the CPD section of the EI website. There are also CPD templates you can download to record your learning and development, ready for when you apply.
5. Sign up for updates √	The EI and the Engineering Council provide regular news bulletins and updates. Make sure you are signed up so that you get the latest news on the sector and updates which may affect the registrations you already hold or for which you are applying.
6.Get a mentor or critical friend √	It can often be helpful to work with a more experienced professional who is happy to act as a mentor as a sounding board, especially as you get closer to making your application. Ask them to review what you have written and help you make sure its comprehensive, and to give you a mock professional interview. They may be willing to act as your sponsor. If there is no one suitable in your company, your branch may be able to help. Sign up to EI Connect.

7.Apply for interim registration √	Interim registration certifies that you already have the foundation technical knowledge you need for a professional registration as an engineer. If you don't have accredited or recognised qualifications, we will need to assess your other qualifications and experience on an individual basis to see if it meets the standards, so it can make sense to apply for Interim Registration as soon as you are ready.
8. Start collecting your evidence √	Review the competences and start gathering evidence as you go along so that when you come to complete the competence grid as part of your application you already have examples and notes to refer to. The EI offers a free online tool, MyCareerPath, to help you to do this and keep your evidence in order. You will find a link to MyCareerPath in your online account on the EI website. After you log in, look at the tabs on the left hand side of the screen.
9. Sign up to one of our webinars √	We run regular webinars to explain the process to get qualified and help you get started. Visit the EI website to sign up.
10. Get in touch! √	We are here to help! If there is anything you aren't sure about, get in touch with us on +44(0)20 7467 7100 or membership@energyinst.org

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Some key documents

There are a number of documents you will need to refer to in the course of putting together your application, and/or which you will be expected to be aware of and adhere to if your application is successful and you are granted professional membership or registration. You may also be asked about them specifically in your interview, including how they affect your practice and conduct as a professional.

Some or all of these documents are reproduced in the appendices to this guidance note. Please be aware that these documents will be updated from time to time, and so you should check for updates before you make your application. To help you keep up to date, we recommend that you join the EI and sign up to our regular updates, and to those produced by the Engineering Council

- **The EI Code of Professional Conduct** The EI Code of Conduct describes the standards of conduct you must abide by as a member of the Energy Institute. A breach of the code could lead to disciplinary procedures being brought against you.
- **UK-SPEC** Produced by the Engineering Council, the UK Standard for Professional Engineering Competence (UK-SPEC) sets out the competence and commitment required for registration as an Engineering Technician (EngTech), Incorporated Engineer (IEng) or Chartered Engineer (CEng). It also includes examples of activities that demonstrate the required competence and commitment.
- **Statement of Ethical Principles** Produced by the Engineering Council and the Royal Academy for Engineering, the statement gives guidelines which should be read in conjunction with the EI's Code of Professional Conduct
- **CPD Code for Registrants** All Engineering Council registrants make a commitment to maintain and enhance their competence. The Code explains the requirements for CPD in more detail.
- Competences of a **Member of the EI**

Other documents

- **The best you can be**. This document explains the EI's CPD requirements and gives simple guidance on how to approach your CPD to get the most from your professional development. It is downloadable from the EI website at www.energyinst.org.
- **Chartered Engineer ebook** A downloadable guide to CEng, produced by the Engineering Council https://www.engc.org.uk/professional-registration/the-professional-titles/chartered-engineer/chartered-engineer-ebook/

Appendices

Appendix A	The Energy Institute Code of Professional Conduct
Appendix B	Definitions: Chartered Energy Engineer and Chartered Petroleum Engineer
Appendix C	Competence and Commitment Standard for Chartered Engineers (from UK-SPEC 4th edition)
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Appendix F	Competences: Member of the Energy Institute

Appendix A

The EI Code of Professional Conduct

All members of the Energy Institute sign the Code of Professional Conduct when they join the EI. In doing so they show that they recognise the importance of their professional activities for the quality of life and the benefit of society as a whole. They accept a personal obligation to act ethically and with integrity in the public interest and to maintain and improve their competence.

The following Code, which is written in general terms, is designed to cover these broad principles. The Code is set by the Council of the Energy Institute in accordance with the Bylaws. While it is not exhaustive it indicates the manner in which all members are required to conduct themselves in most situations. In other situations, members are required to order their conduct in accordance with the principle that in any conflict between the members' professional duties and their duty to other parties and interests, the members' professional duties will prevail.

Some Members will hold professional registrations awarded by the EI under license from another body. Where this is the case, in addition to adhering to the EI Code, they must ensure that they are aware of and uphold the standards and ethical codes relevant to the professional registrations or titles they hold.

1. Health, safety, security and the environment

1.1 Members will at all times take care to ensure that their work and the products of their work constitute no avoidable danger of death or injury or ill-health to any person.

1.2 Members will have due regard for the need to protect the environment and to provide energy services in a way that is safe and sustainable. They will make a systematic assessment of environmental, health and safety risks related to their work, their individual legal liability and the requirements of the jurisdiction in which they work, and seek to manage and communicate this effectively.

1.3 Members will act with skill, care and diligence and will ensure that their work complies with relevant quality standards and legislation as appropriate.

1.4 Members will adopt a security minded approach to their work, taking step to assess, manage and communicate vulnerabilities in assets, system and operations and to prevent avoidable risks to both physical and cyber security.

1.5 Members will hold professional indemnity insurance where appropriate to the area and context of their practice, and will inform clients whether professional indemnity insurance is held if specifically asked.

2. Maintaining and developing competence

2.1 Members will take all reasonable steps to maintain and develop their professional competence, keeping records to demonstrate their ongoing development as appropriate. Where possible they will encourage and support the development of their staff and others, including in the achievement of appropriate professional membership and qualifications with the EI or appropriate professional body.

3. Integrity and responsibilities

3.1 Members will discharge their professional responsibilities with integrity and will accept personal responsibility for all work done by them, or under their supervision or direction, and will take all reasonable steps to ensure that persons working under their authority are competent to carry out the tasks assigned to them.

3.2 Members will ensure that they and the persons working under their authority undertake technical tasks for others only if qualified by training or expertise and after full disclosure of relevant limitations.

3.3 Members will treat people fairly, with respect and without bias. They will not discriminate based on disability, age, gender, gender reassignment, sexual orientation, ethnicity, religion or belief, marriage or civil partnership, pregnancy and maternity, or discrimination by association, and should seek to promote an inclusive working environment.

4. Gratuities, commissions and conflicts of interest

4.1 Members will reject bribery and all forms of corrupt behaviour, and make positive efforts to ensure others do likewise. They will not accept remuneration in connection with professional services rendered to their employer other than from their employer or with their employer's consent; nor will they receive directly or indirectly any royalty, gratuity or commission on any article or process used in or for the purpose of the work in respect of which they are employed unless or until such royalty, gratuity or commission has been authorised by their employer.

4.2 Members will not, without disclosing the fact in writing to their clients and to their employer, wittingly be a director or member of, or a shareholder in, or act as agent for, any contracting or manufacturing company or firm or business with which they may have occasion to deal on behalf of their clients or employer, or have any financial interest in or receive any benefit from or on behalf of such a business.

4.3 Members will not make false or exaggerated claims, or advertise any such claims expressly, in letters or articles for publication; nor will they permit others to use their name to endorse any such claims or in any form of advertising in relation to any product or process.

4.4 Members will not improperly seek work as an independent adviser, or consultant, either directly or through an agent; nor will they improperly pay any person for the introduction of such work.

4.5 Members will not seek to represent the Energy Institute, its members or its staff, unless expressly requested by the Chief Executive. Neither shall they use the EI or the designatory letters to which they are entitled to imply that they are acting on behalf of, or with the authority of, the Institute, except when conducting Institute business in the capacity of an EI Code of Professional Conduct January 2018 Page 3 honorary officer. If a member is invited to represent the EI on an external body, application should be made to the Chief Executive for details of EI's policy.

4.6 Members shall not use designatory letters to which they are not entitled.

5. Professional reputation

5.1 Members called upon to give an opinion in their professional capacity will, to the best of their ability, give an opinion that is objective and reliable and that includes clear statements of the impact and consequences of decisions and projects.

5.2 Subject to Paragraph 5.1, members will not set out to challenge the professional reputation of others unless it is in the public interest or necessary to protect their own professional reputation.

6. Improper conduct

6.1 Members will at all times uphold the good name and further the interests of the profession. They must notify the EI on receiving a civil court order or criminal conviction (excluding road traffic offences), becoming bankrupt or disqualification under the Company Directors' Disqualification Act, 1986. It will be for Council to consider whether such conviction, bankruptcy or disqualification is damaging to the EI or otherwise renders the member concerned unfit to be a member of the EI.

6.2 Members will act to raise a concern about a danger, risk, malpractice or wrongdoing which affects others ('blow the whistle'), and support a colleague or any other person to whom they have a duty of care who in good faith raises any such concern.

7. Confidentiality

7.1 Members will not divulge any information acquired by them which is not within the public knowledge or any information given to them in confidence without the express authority of the appropriate party, other than in evidence before a parliamentary committee, by order of a Court, or as required by law.

8. Violation by others

8.1 Members will report in writing to the Head of Professional Affairs any violation of these rules by another member of the EI.

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Appendix B

Definitions: Chartered Energy and Petroleum Engineer

Chartered Energy Engineer

A Chartered Energy Engineer is an individual concerned with the design, development, application and promotion of new, more efficient engineering applications and/or technologies for the exploration, extraction, production, transportation, transmission, storage or utilisation of energy in all its forms with due consideration for health, safety and the environment. A Chartered Energy Engineer is likely to be involved in the design of energy engineering solutions and applications relating to, but not exclusively, at least one of:

- **Fuel and Energy:** including: Fossil fuels; Biomass fuels, Stored energy (pressure energy, or other large scale energies such as large scale storage of flammable or hazardous material); Energy conversion; Combustion processes; Heating applications; Engines and propulsion systems; Economics.
- **Gas engineering:** Including: Properties of gaseous fuels; Production and processing of natural gases; Gas manufacture; Gas transmission and distribution; Control of supply and demand; Structural engineering; Utilisation of gas; Safety and controls
- **Nuclear engineering:** Including: Reactor physics; Reactor materials; Thermal and hydraulic performances; Reactor kinetics; Reactor types and applications of nuclear energy; Fusion; Reactor operation, safety and siting; Components of the fuel cycle, processing, fabrication, in-core fuel management, reprocessing and waste disposal.
- **Electrical Power Utilisation:** Including: Energy sources; Supply systems and transmission networks; System analysis and operation; Generators and transformers; Circuit breakers and protection; Rectifiers and inverters; Industrial installation; Electroheat and electrochemical technology; Industrial machines; Control systems; Electrical energy storage; Plant performance and optimisation.
- **Energy Conservation and Management:** Including: Energy Management; Thermal Systems; Process Services; Control and Systems Engineering; Electrical Engineering; Sources of Thermal Energy (e.g. geothermal, solar etc.); Sources of Mechanical Energy (e.g. hydroelectric, tidal, wind etc.)
- **Fire Engineering:** Including: Fire Chemistry; Fire Protection; Active Fire Protection; Hazard and Risk Assessment; Chemical Hazards; Flame Dynamics and Smoke Movement; Fires in Buildings; Fire Legislation and Regulation.
- **Built Environment:** Including: Building Physics and Energy Transfer in/through Building Structures and Materials; Building Thermography and Energy Transfer Measurement; Passive Solar and Passive Ventilation Design; Building-integrated Renewable Energy Systems Design; Combustion Technology; Risk Assessment and Management; Resilient and Combined Energy Supply Systems in Buildings; District Energy Networks and Metering; Energy Monitoring, Energy Metering and Control Systems; Built Environment Energy Policy and Regulation.
- **Policy and Markets:** Including: Global issues; Market Analysis of Energy Supply and Demand; Energy Policy and Regulation; Strategic Future Energy Demand Projection; Energy Security Analysis; Economic and Social Aspects of Energy Distribution; Analysis of Energy Demand and Behavioural Change.

Chartered Petroleum Engineer

A Chartered Petroleum Engineer is concerned with the design, development, application and promotion of new, more efficient engineering applications and/or technologies for the exploration, drilling, extraction, production, storage, transportation, transmission or utilisation of petroleum in all its forms with due consideration for health, safety and the environment. A Chartered Petroleum Engineer is involved in the design of engineering solutions and applications relating to, but not exclusively, at least one of:

- **Drilling and Extraction** – this involves drilling, well management (casting, cementing, solids controls and well completion), tubing, fracture and acidification, artificial lift and logging.
- **Reservoir management and operations** – this involves core analysis, PVT analysis, fluid flow, recovery conditions and scope.
- **Downstream production** – this involves distillation, cracking reforming and blending.

Appendix C

Competence and Commitment Standard for Chartered Engineers (from UK SPEC 4th edition)

Chartered Engineers develop solutions to complex engineering problems using new or existing technologies, and through innovation, creativity and technical analysis.

Chartered Engineers shall demonstrate:

- The theoretical knowledge to solve problems in new and established technologies and to develop new analytical techniques
- Successful application of the knowledge to deliver innovative products and services or taking technical responsibility for complex engineering systems
- Responsibility for the financial and planning aspects of projects, sub-projects or tasks
- Leadership and development of other professional staff through management, mentoring or coaching
- Effective interpersonal skills in communicating technical matters
- Understanding of the safety and sustainability implications of their work, seeking to improve aspects where feasible
- Commitment to professional engineering values

A Chartered Engineer will be able to demonstrate their competence in all of the areas listed, but the depth and extent of their experience and competence will vary with the nature and requirements of their role. They will demonstrate a level of competence and commitment in each area, (A1–E5), at a level which is consistent with their specific role. It is to be expected that they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas. However, they need to demonstrate an understanding of, and familiarity with, the key aspects of competence in all areas as a minimum requirement while demonstrating higher levels of competence in those areas which are critical to their role. Overall, they will demonstrate an appropriate balance of competences to perform their role effectively at Chartered Engineer level.

The examples of evidence are intended as guidance to help identify activities that might demonstrate the required competence and commitment for Chartered Engineer registration. They are intended as examples only as the most appropriate evidence will vary with each individual role. The list is not exhaustive and other types of evidence might be valid. There is no requirement to provide multiple examples of evidence for each area of competence, but examples from two or three projects or tasks
would be useful.

A Knowledge and understanding

Chartered Engineers shall use a combination of general and specialist engineering knowledge and understanding to optimise the application of advanced and complex systems.

This competence is about the ability to understand underpinning technical principles relevant to the applicant's area of practice and applying them to develop technical solutions. This could involve technical solutions for novel problems or dealing with significant technical complexity. This may involve the integration of a range of technologies and consideration of other factors. This competence requires that an applicant is maintaining and developing their knowledge in their field of practice and not just that required for specific tasks.

You shall demonstrate that you:		Examples of evidence:
A1	**Have maintained and extended a sound theoretical approach to enable you to develop your particular role.**	• Formal training related to your role • Learning and developing new engineering knowledge in a different industry or role • Understanding the current and emerging technology and technical best practice in your area of expertise • Developing a broader and deeper knowledge base through research and experimentation • Learning and developing new engineering theories and techniques in the workplace
A2	**Are developing technological solutions to unusual or challenging problems, using your knowledge and understanding and/or dealing with complex technical issues or situations with significant levels of risk.**	• Carrying out technical research and development • Developing new designs, processes or systems based on new or evolving technology • Carrying out complex and/or non-standard technical analyses • Developing solutions involving complex or multidisciplinary technology • Developing and evaluating continuous improvement systems • Developing solutions in safety-critical industries or applications

B Design, development and solving engineering problems

Chartered Engineers shall apply appropriate theoretical and practical methods to the analysis and solution of engineering problems.

This competence is about the ability to apply engineering knowledge effectively and efficiently to the individual tasks which need to be undertaken in your role.

You shall demonstrate that you:		Examples of evidence:
B1	**Take an active role in the identification and definition of project requirements, problems, and opportunities**	• Identifying projects or technical improvements to products, processes, or systems • Preparing specifications, taking account of functional and other requirements • Establishing user requirements • Reviewing specifications and tenders to identify technical issues and potential improvements • Carrying out technical risk analysis and identifying mitigation measures • Considering and implementing new and emerging technologies

You shall demonstrate that you:		Examples of evidence:
B2	**Can identify the appropriate investigations and research needed to undertake the design, development and analysis required to complete an engineering task and conduct these activities effectively**	• Identifying and agreeing appropriate research • Methodologies • Investigating a technical issue, identifying potential solutions and determining the factors needed to compare them • Identifying and carrying out physical tests or trials and analysing and evaluating the results • Carrying out technical simulations or analysis • Preparing, presenting and agreeing design recommendations, with appropriate analysis of risk, and taking account of cost, quality, safety, reliability, accessibility, appearance, fitness for purpose, security (including cyber security), intellectual property constraints and opportunities, and environmental impact
B3	**Can implement engineering tasks and evaluate the effectiveness of engineering solutions.**	• Ensuring that the application of the design results in the appropriate practical outcome • Implementing design solutions, taking account of critical constraints, including due concern for safety, sustainability and disposal or decommissioning • Identifying and implementing lessons learned • Evaluating existing designs or processes and identifying faults or potential improvements including risk, safety and life cycle considerations • Actively learning from feedback on results to improve future design solutions and build best practice

C Responsibility, management and leadership

Chartered Engineers shall demonstrate technical and commercial leadership.

This competence is about the ability to plan your own work and manage or specify the work of others effectively, efficiently, and in a way which provides leadership at an appropriate level, whether technical or commercial. Leadership is not necessarily about having a formal line management role. In matrix management and other types of organisational structure, where Chartered Engineers are working within complex and varied working relationships, they will provide leadership to achieve objectives. This competence is also about the ability to consider and identify improvements to quality.

You shall demonstrate that you:		Examples of evidence:
C1	**Plan the work and resources needed to enable effective implementation of a significant engineering task or project**	• Preparing budgets and associated work programmes for projects or tasks • Systematically reviewing the factors affecting the project implementation including safety, sustainability and disposal or decommissioning considerations • Carrying out a task or project risk assessment and identifying mitigation measures • Leading on preparing and agreeing implementation plans and method statements • Negotiating and agreeing arrangements with customers, colleagues, contractors and other stakeholders, including regulatory bodies • Ensuring that information flow is appropriate and effective
C2	**Manage (organise, direct and control), programme or schedule, budget and resource elements of a significant engineering task or project**	• Operating or defining appropriate management • systems including risk registers and contingency systems • Managing the balance between quality, cost and time • Monitoring progress and associated costs and cost forecasts, taking appropriate actions when required • Establishing and maintaining appropriate quality standards within legal and statutory requirements • Interfacing effectively with customers, contractors and other stakeholders
C3	**Lead teams or technical specialisms and assist others to meet changing technical and managerial needs**	• Agreeing objectives and work plans with teams and individuals • Reinforcing team commitment to professional standards • Leading and supporting team and individual development • Assessing team and individual performance, and providing feedback • Seeking input from other teams or specialists where needed and managing the relationship • Providing specialist knowledge, guidance and input in your specialism to engineering teams, engineers, customers, management and relevant stakeholders • Developing and delivering a teaching module at Masters level, or leading a University research programme

You shall demonstrate that you:		Examples of evidence:
C4	**Bring about continuous quality improvement and promote best practice.**	• Promoting quality throughout the organisation as well as its customer and supplier networks • Developing and maintaining operations to meet quality standards eg ISO 9000, EQFM • Supporting or directing project evaluation and proposing recommendations for improvement • Implementing and sharing the results of lessons learned

D Communication and interpersonal skills

Chartered Engineers shall demonstrate effective communication and interpersonal skills.

This is the ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.

You shall demonstrate that you:		Examples of evidence:
D1	**Communicate effectively with others, at all levels, in English**	• Preparing reports, drawings, specifications and other documentation on complex matters • Leading, chairing, contributing to and recording meetings and discussions • Exchanging information and providing advice to technical and non-technical colleagues • Engaging or interacting with professional networks
D2	**Clearly present and discuss proposals, justifications, and conclusions**	• Contributing to scientific papers or articles as an author • Preparing and delivering presentations on strategic matters • Preparing bids, proposals or studies • Identifying, agreeing and leading work towards collective goals
D3	**Demonstrate personal and social skills and awareness of diversity and inclusion issues.**	• Knowing and managing own emotions, strengths and weaknesses • Being confident and flexible in dealing with new and changing interpersonal situations • Identifying, agreeing and working towards collective goals • Creating, maintaining and enhancing productive working relationships, and resolving conflicts • Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion

E Personal and professional commitment

Chartered Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.

This competence is about ensuring that the you are acting in a professional manner in your work and in your dealings with others. A Chartered Engineer should set a standard and example to others with regard to professionalism.

You shall demonstrate that you:		Examples of evidence:
E1	**Understand and comply with relevant codes of conduct**	• Demonstrating compliance with the EI Code of Professional Conduct • Identifying aspects of the Code which are particularly relevant to your role • Being aware of the legislative and regulatory frameworks relevant to your role and how they conform to them • Leading work within relevant legislation and regulatory frameworks, including social and employment legislation
E2	**Understand the safety implications of their role and manage, apply, and improve safe systems of work**	• Identifying and taking responsibility for your own obligations and ensuring that others assume similar responsibility for health, safety and welfare issues • Ensuring that systems satisfy health, safety and welfare requirements • Developing and implementing appropriate hazard identification and risk management systems and culture • Managing, evaluating and improving these systems • Applying a sound knowledge of health and safety legislation, for example: HASAW 1974, CDM regulations, ISO 45001 and company safety policies
E3	**Understand the principles of sustainable development and apply them in their work**	• Operating and acting responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously • Providing products and services which maintain and enhance the quality of the environment and community, and meet financial objectives • Recognising how sustainability principles, as described in the Guidance on Sustainability, can be applied in your day-to-day work • Understanding and securing stakeholder involvement in sustainable development • Using resources efficiently and effectively in all activities • Taking action to minimise environmental impact in your area of responsibility

You shall demonstrate that you:		Examples of evidence:
E4	**Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in their own area of practice**	• Undertaking reviews of your own development needs • Planning how to meet personal and organisational objectives • Carrying out planned and unplanned CPD activities • Maintaining evidence of competence development • Evaluating CPD outcomes against any plans made • Assisting others with their own CPD
E5	**Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner.**	• Understanding the ethical issues that you may encounter in your role • Giving an example of where you have applied ethical principles as described in the Statement of Ethical Principles • Giving an example of where you have applied or upheld ethical principles as defined by your organisation or company

Appendix D

Engineering Council and Royal Academy of Engineering's Statement of Ethical Principles for Engineering Professionals 2017

The Engineering Council and the Royal Academy of Engineering have jointly created a Statement of Ethical Principles for all engineering professionals

Engineering professionals work to enhance the wellbeing of society. In doing so they are required to maintain and promote high ethical standards and challenge unethical behaviour. There are four fundamental principles for ethical behaviour and decision-making. These are set out below, together with examples of how each should be applied. Engineering professionals should read this Statement in conjunction with their relevant Code of Conduct or Licence to Practise. The Statement by itself is not prescriptive: it is neither a Regulation nor a Standard.

Honesty and integrity

Engineering professionals have a duty to uphold the highest standards of professional conduct including openness, fairness, honesty and integrity. They should:

- act in a reliable and trustworthy manner
- be alert to the ways in which their work and behaviour might affect others and respect the privacy, rights and reputations of other parties and individuals
- respect confidentiality
- declare conflicts of interest
- avoid deception and take steps to prevent or report corrupt practices or professional misconduct
- reject bribery and improper influence

Respect for life, law, the environment and public good

Engineering professionals have a duty to obey all applicable laws and regulations and give due weight to facts, published standards and guidance and the wider public interest. They should:

- hold paramount the health and safety of others and draw attention to hazards
- ensure their work is lawful and justified
- recognise the importance of physical and cyber security and data protection
- respect and protect personal information and intellectual property
- protect, and where possible improve, the quality of built and natural environments
- maximise the public good and minimise both actual and potential adverse effects for their own and succeeding generations
- take due account of the limited availability of natural resources
- uphold the reputation and standing of the profession

Accuracy and rigour

Engineering professionals have a duty to acquire and use wisely the understanding, knowledge and skills needed to perform their role. They should:

- always act with care
- perform services only in areas in which they are currently competent or under competent supervision
- keep their knowledge and skills up to date
- assist the development of engineering knowledge and skills in others
- present and review theory, evidence and interpretation honestly, accurately, objectively and without bias, while respecting reasoned alternative views
- identify, evaluate, quantify, mitigate and manage risks
- not knowingly mislead or allow others to be misled

Leadership and communication

Engineering professionals have a duty to abide by and promote high standards of leadership and communication. They should:

- be aware of the issues that engineering and technology raise for society, and listen to the aspirations and concerns of others
- promote equality, diversity and inclusion
- promote public awareness and understanding of the impact and benefits of engineering achievements
- be objective and truthful in any statement made in their professional capacity
- challenge statements or policies that cause them professional concern

Appendix E

The Engineering Council's CPD Code for Registrants

Continuing Professional Development

Continuing professional development (CPD) is essential for maintaining and enhancing the required competence and commitment, as well as for developing new competences. This obligation underpins the value of the professional titles of EngTech, IEng and CEng, and enables society to have confidence in the engineering profession.

CPD has several purposes:

- To assure continuing competence in a current job
- To prepare for a different role
- To follow a longer-term career development plan
- To enhance professionalism in a wider context than a specific job role.

More details on the nature, purpose and value of CPD can be found in the CPD Policy Statement.

For more information please see: www.engc.org.uk/cpd

CPD Code for Registrants

Engineering professionals should take all necessary steps to maintain and enhance their competence through CPD. In particular, they should:

- Take ownership of their learning and development needs and develop a plan to indicate how they might meet these, in discussion with their employer, as appropriate
- Carry out a variety of development activities, both in accordance with this plan and in response to other opportunities which might arise
- Record their CPD activities
- Reflect on what they have learned or achieved through their CPD activities and record these reflections
- Evaluate their CPD activities against any objectives they have set and record this evaluation
- Review their learning and development plan regularly, following reflection and assessment of future needs
- Support the learning and development of others through activities such as mentoring and sharing professional expertise and knowledge

At Professional Review, all applicants will need to demonstrate how they meet their CPD obligations and show that they understand that this requires an ongoing commitment.

Appendix F

Competences: Member of the Energy Institute

Member of the Energy Institute (MEI) is a title created *by* the energy sector *for* the energy sector. MEI recognises your achievements, and gives formal recognition of your skill, knowledge, understanding and professionalism in your field.

You can apply to become an MEI whatever the work you do in energy – engineering, energy savings and efficiency, environmental mitigation, renewables, research, energy law or economics, product development – the most important thing is that the focus of your work is the energy sector. You'll also need to have a track record in a responsible role which requires the use of professional judgment and expertise– for example, you might be overseeing projects, staff or processes. Whatever your specialism, you will be applying complex principles in your work and be developing and innovating in your role.

Becoming an MEI can also be a first step on the path towards professional registration – for example, if you are hoping to apply for to become a Chartered or Incorporated Engineer, Chartered Environmentalist, or a Chartered Energy Manager at some point in the future. MEI or FEI status is a prerequisite for making an application, though you can also apply for Member alongside your application for registration.

What are the requirements?

You will need to demonstrate that you have appropriate foundation knowledge and have gained sufficient experience and professional development in the workplace to practice to a competent standard. The specific competences you will need to meet as a Member are given below

A Knowledge and understanding of energy industry

	Competence
A1	Have an in-depth knowledge of your own sector of the energy industry and how it relates to other sectors
A2	Have a broad knowledge of the wider energy scene and the key challenges facing it
A3	Demonstrate a familiarity with various sources of knowledge relevant to the energy industry

B Practical application of your energy knowledge to your job role

	Competence
B1	Understand your role and its relevance to the energy industry
B2	Demonstrate how you apply your knowledge for the advancement of the industry
B3	Show how you add value to your organisation, the energy industry and society
B4	Demonstrate how you are able to apply existing skills and knowledge to new areas of work

C Management and leadership

	Competence
C1	Demonstrate an ability to manage your own work effectively
C2	Manage projects, processes and plans as appropriate
C3	Demonstrate problem-solving skills and solutions
C4	Demonstrate an awareness of budgets and resources and their effective management

D Interpersonal skills

	Competence
D1	Be able to communicate coherently and effectively in spoken and written English
D2	Be able to produce a variety of documents/communications including letters, reports, spreadsheets and presentations
D3	Participate in meetings and take on the role of chair, convenor, co-ordinator etc. as required
D4	Work effectively as part of a team to identify, agree and achieve collective goals
D5	Offer advice, recommendations and evaluations to colleagues, customers etc. as appropriate
D6	Know and manage own emotions, strengths and weaknesses
D7	Be aware of the needs and concerns of others

E Professional standards and the energy professional's obligations to society, the profession and the environment

	Competence
E1	Comply with the EI's Code of Professional Conduct
E2	Demonstrate how relevant legislation (including HSE, social and employment legislation) is applied in your role
E3	Ensure compliance with relevant health and safety legislation by yourself and your team as appropriate
E4	Show how good practice and quality standards operate in your field of expertise
E5	Demonstrate your approach to continuous improvement in working practices
E6	Demonstrate how your role takes account of environmental and social needs and strives for sustainability of the energy industry
E7	Demonstrate how you ensure your own continuing professional development and those of your team through professional memberships, active participation in CPD and the development of yourself and others through plans and objectives. Act as a mentor for others seeking professional recognition.