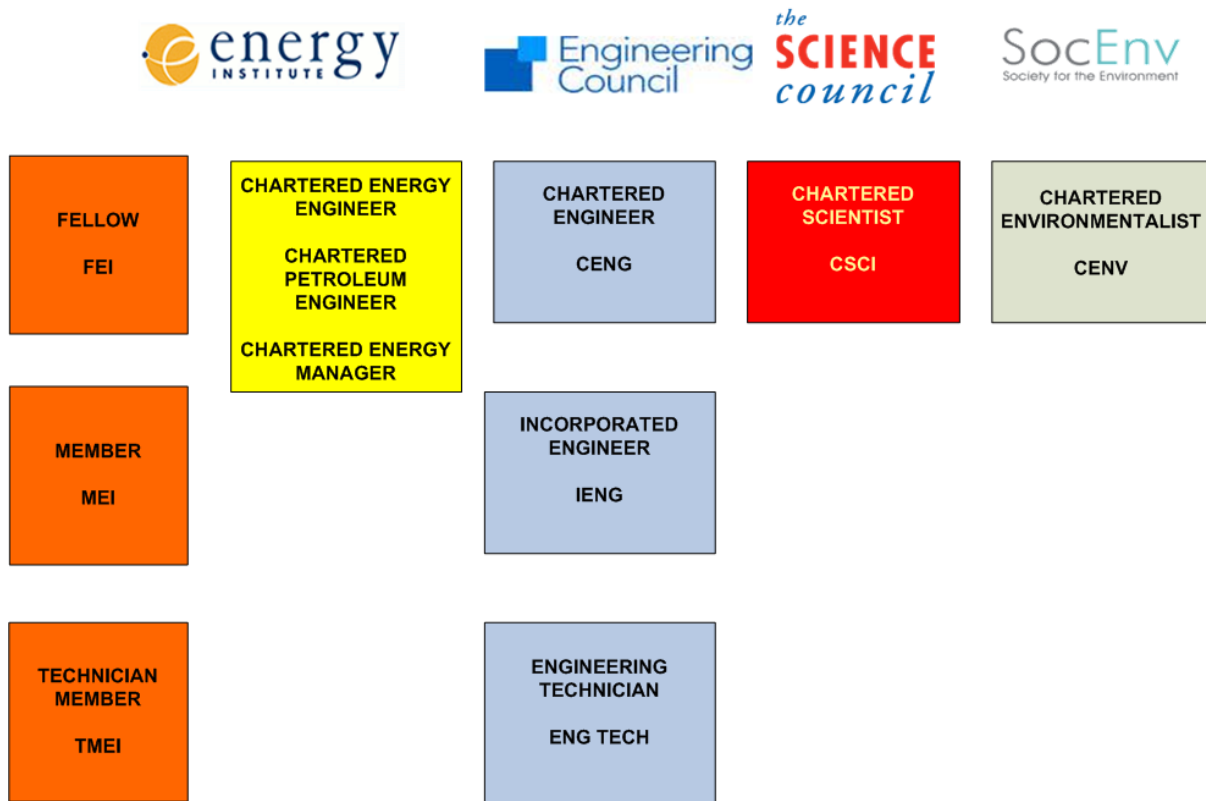


Professional Membership Options

1. You can apply for an EI grade of membership by itself FEI, MEI, TMEI and for a registration option subsequently if you wish
2. You can apply for an EI grade of membership together with an optional Engineering Council, Science Council, Society for the Environment registration, EI exclusive chartered title (yellow box)



Professional Profiles

A **Fellow** is someone whose seniority in the energy industry is attested to by management responsibilities at a strategic level as well as an advanced level of knowledge about and experience in the energy industry. For this reason a Fellow is unlikely to have less than seven years' postgraduate experience with at least five of these being at a senior level in an energy related role.

A **Member** is an individual concerned with the production, conversion, transmission and/or utilisation of energy in various forms with due consideration for health, safety and the environment. They may be involved in energy policy/economics, design, development, application, maintenance and/or promotion of energy efficient systems. Key characteristics are management and direction, professional judgement, assumption of responsibility. **Members** are concerned with, for example, finance, human resources, business management, planning, policy or R&D in an energy-related environment through innovation, creativity and change. They oversee and introduce new, more efficient techniques and pioneer new services and management concepts.

Chartered Engineers develop solutions to 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.

Chartered Engineers are able to demonstrate:

- The theoretical knowledge to solve problems in new technologies and develop new analytical techniques
- Successful application of the knowledge to deliver innovative products and services and/or take technical responsibility for complex engineering systems
- Accountability for project, finance and personnel management and managing trade-offs between technical and socio-economic factors
- Skill sets necessary to develop other technical staff
- Effective interpersonal skills in communicating technical matters.

There are two additional Chartered Engineer titles unique to the EI:

Chartered Energy Engineer – This 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 and 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 – you will be concerned with the design, development, application and promotion of new, more efficient engineering applications and/or technologies for the exploration, drilling, extraction, production, transportation, transmission and 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.

These are available to members who satisfy the requirements for CEng registration with the Engineering Council but may be applied for at the same time as MEI/FEI CEng registration.

Incorporated Engineers maintain and manage applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operation.

Incorporated Engineers are able to demonstrate:

- The theoretical knowledge to solve problems in developed technologies using well proven analytical techniques
- Successful application of their knowledge to deliver engineering projects or services using established technologies and methods
- Responsibility for project and financial planning and management together with some responsibility for leading and developing other professional staff
- Effective interpersonal skills in communicating technical matters
- Commitment to professional engineering values.

Chartered Scientist - will be an individual able to demonstrate a systematic understanding of knowledge, and critical awareness of current problems or new insights, much of which is informed by the forefront of their field of study or area of professional practice. Characterised by their ability to develop appropriate solutions to scientific problems, using new or existing technologies, through a combination of high-level knowledge, innovation and creativity.

Chartered Environmentalist: *“Demonstrating technical competence and effective interpersonal skills through their Membership of the Energy Institute, Chartered Environmentalists will be involved a range of energy-related sectors, including education and transport. They will be collaborative professionals who are able to visualise beyond the immediate context of their practice or the project. Chartered Environmentalists will possess and actively encourage wider understanding of environmental, social, economic and governmental issues.*

Chartered Environmentalists will also be able to debate a range of interpretations for “sustainability” in the context of a specialised, complex and more latterly technological civilisation with its ever-increasing demands on energy resources. They will have a wider ethical foundation and be able to debate the relationship between energy, economic growth and population growth. They will also able to illustrate the social and environmental benefits and costs. Chartered Environmentalists will demonstrate and maintain a commitment to

understanding, enabling and contributing to a more sustainable energy paradigm and be able to debate how that could materialise.

Chartered Environmentalists in the Energy Institute are therefore advocates who seek to improve as well as maintain current good practice, who are motivated with vision and capable of strategic influence over policy, management and design. Chartered Environmentalists will apply their knowledge with purpose, transparency and with responsibility, demonstrating a personal commitment to professional standards and their obligations to society, to the profession and the environment.”

Chartered Energy Manager (unique to the EI) – is an individual concerned with the management and efficient use of energy in various forms. He / she will have expertise in energy management and a broad knowledge of the energy sector as a whole. He / she will provide a lead role in their organisation with regard to the management of energy and provide advice on the development and implementation of energy policies.

Technician Members apply proven knowledge, techniques and procedures to the solution of energy technology or management problems in a variety of contexts. They contribute, for example, to analysis, development, data gathering, energy administration operations, processes or services. They will have an element of personal responsibility and may also be involved in the supervision and guidance of others.

Engineering Technicians apply proven techniques and procedures to the solution of practical engineering problems. Engineering Technicians are required to apply safe systems of work and are able to demonstrate:

- Evidence of their contribution to either the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes or services
- Supervisory or technical responsibility
- Effective interpersonal skills in communicating technical matters
- Commitment to professional engineering values.