

## **Your Degree in Sustainable Energy Engineering...What Next?**

Sustainable energy is one of the great challenges facing the world today: how to source and supply energy to meet the needs of citizens and industry. Renewable energy targets have been set by the EU and Ireland is investing in a range of sustainable energy solutions in an effort to meet those targets. Since 2011, Ireland has saved over €1 billion on fossil fuel imports thanks to renewable energy.

Sustainable Energy Engineers are specialists in understanding and applying engineering and technology principles of energy conversion and use. Graduates have opportunity to work in the following areas:

- Energy systems design, conventional and renewable
- Energy management and project management
- Process engineering
- Design engineering
- Research and development
- Manufacturing industry, particularly big energy users, such as food, pharmaceuticals and transport industries
- Consultancy.

### **Responsibilities**

The workload can be extremely varied depending on the sector or individual project. In general, tasks may involve:

- Being part of designing, developing and building renewable energy technologies;
- Combining renewable energy production with existing power systems;
- Arranging new supplies and negotiating tariffs with fuel providers;
- Carrying out site inspections and energy surveys;
- Designing and selecting equipment;
- Using mathematical and computer models to complete design and specification calculations;
- Carrying out lab experiments and adapting them to large-scale industrial processes;
- Preparing detailed schedules of work, feasibility studies and cost estimates;
- Checking site and ground conditions for the installation of renewable technologies, such as wind turbines;
- Negotiating service agreements and managing associated costs and revenues;
- Liaising and negotiating with fuel providers, specialist contractors, geologists and other relevant organisations;
- Contributing to sustainable energy initiatives and researching new energy methods;

- Keeping up to date with legislation and environmental standards and making sure systems and processes comply;
- Monitoring new technologies or applications and developing performance indicators;
- Developing technical expertise in all matters to do with energy and environmental control.

### **What skills have I gained?**

A qualification in engineering is highly regarded and valued by many employers for the relevant, transferable skills and competencies you can bring to a wide range of professional fields.

### **Core skills gained from your engineering degree include:**

- Analysis and problem solving
- Logical and mathematical reasoning
- Research and analytical skills
- Teamwork
- Technical skills
- An interest in science, technology and the environment;
- General understanding of the energy market;
- Knowledge of relevant legislation surrounding energy efficiency and carbon emissions;
- Good communication skills, both written and oral;
- Organisational and negotiation skills;
- IT skills, including knowledge of 3D software such as AutoCAD;
- The ability to manage change;
- Commercial awareness and an understanding of business;
- Project management skills;
- Initiative and the ability to recognise emerging problems and pro-actively develop solutions.

<https://www.prospects.ac.uk/job-profiles/energy-engineer>

Graduating from your engineering degree leaves you with a range of opportunities to think about and you need to spend time in your final year carefully researching your options, either **graduate employment or further study**.

### **EMPLOYMENT**

Employment opportunities in the 'green economy' are on the increase in the design, development, testing production, storage and maintenance of renewable and sustainable sources of energy. There is growing development in wind energy; tidal energy; biomass and solar power.

All major industries are now required to monitor energy use, which means opportunities for sustainable energy engineering graduates across all sectors of industry, such as in the food industry, pharmaceuticals and bio-pharmaceuticals, medical devices and transport sectors.

Also, as more sustainable energy systems come on stream for both consumer and industry use, opportunities are growing in manufacturers of energy systems, such as solar panels, wind turbines etc.

Graduates over the past 5 years have been employed as process engineers, design engineers and energy analysts. All major industry now requires that its energy use be minimised, and so energy graduates are working in all sectors of industry, including, biopharmaceutical, biomedical devices, energy supply utilities, and manufacturers of energy systems.

**Potential Areas of Employment**

- Energy Management
- Energy Systems Design
- Energy Project Management
- R&D Energy Engineer
- Process Engineer
- Design Engineer
- Engineering Consultant

**Employers include:**

- SSE Airtricity
- Electric Ireland
- ESB International
- Ervia (formerly Bord Gáis)
- Energia
- Schneider Electric
- EirGrid plc
- PM Group
- DCC Group
- Topaz Energy
- Whitegate
- Chris Mee Safety Engineering
- AbbVie
- Ge
- SWS
- Veolia
- Valero Energy Corporation
- Local Authorities
- Large Hospitals.
- Tullow Oil

See more Energy companies with Irish operations [here](#).

**What are the 2015 graduates doing?**

Company	Role
Agility	Project Engineer
GE Healthcare	Junior Utilities Engineer
Verde Led	Applications Engineer
Enerco Energy	Project Engineer
Jacobs Engineering	Commissioning & Qualification Engineer
Fexco	Customer Service Representative
Henry Construction Projects Limited	Graduate Engineer
Em3	Energy Engineer
EPS	Industry Sales Engineer
Enerco Energy Limited	Project Engineer - Solar
Alternative Heating and Cooling	Heating Technician
EPS Water Group	Product Development & Technical Support
Regeneron	Biotech Production Specialist
Dew Valley foods	Factory Technician/Supervisor
Glan Agua Ltd	Graduate Engineer
MSD	Production Operator

## GRADUATE PROGRAMMES

You may wish to apply for a place on a graduate programme. These are paid work programmes, sometimes at various locations and many also offer opportunities for further training/education.

Companies often advertise graduate programmes or graduate jobs on the job page of a College/University Careers Service website as well as on [www.gradireland.com](http://www.gradireland.com)

We recommend that you register with gradireland to get email alerts on employment opportunities as well as job search advice [www.gradireland.com](http://www.gradireland.com). You can pick up a current copy of the **Gradireland Careers Directory** for Ireland (north and south) in the Careers Services office, 2<sup>nd</sup> Floor, Student Centre, CIT.

## POSTGRADUATE STUDY

A postgraduate qualification enables you to gain, more specialized knowledge of your primary degree field or develop knowledge in a complementary area. Postgraduate studies can give you a specific technical, vocational or professional qualification and facilitate you in developing a range of key skills including: research, analysis, evaluation and written communication.

For further information, go to the 'Further/Postgraduate Study' link on the Students page of our website; <http://www.mycit.ie/careers>.

See also [www.postgradireland.com](http://www.postgradireland.com) and Engineers Ireland [www.engineersireland.ie](http://www.engineersireland.ie)

## PROFESSIONAL ACCREDITATION

Engineers Ireland (EI) is the professional body in Ireland for engineers from all disciplines. Your BEng (Honours) degree from CIT is fully accredited by Engineers Ireland (EI) for membership eligibility. Since 2013, a Level 9 qualification is required to become a chartered engineer.

Visit: [www.engineersireland.ie](http://www.engineersireland.ie) to find out more.

EI runs a programme for graduates in their first job. The graduate transition programme is called the Future Professionals Programme and is run with a number of employers. See [more](#).

Your Sustainable Energy Engineering degree is also accredited by the Energy Institute, the professional body for the energy industry in the UK, which has an Irish branch and its members' events are held at Engineers Ireland's head office in Dublin. See their job-search advice at [Careers & Job Search](#)

The EI can also provide a range of professional development opportunities and help you work towards professional membership including Chartered Engineer (CEng), as well as Chartered Energy Engineer, Chartered Petroleum Engineer and Chartered Energy Manager.

## **MORE INFORMATION**

### *Jobs and salary information*

Environment Analyst	<a href="http://www.environment-analyst.com">www.environment-analyst.com</a>
Countryside Jobs Service (CJS)	<a href="http://www.countryside-jobs.com">www.countryside-jobs.com</a>
Ecological Recruitment	<a href="http://www.eco-uk.com">www.eco-uk.com</a>
ENDS Environmental Job Search	<a href="http://www.endsjobsearch.co.uk">www.endsjobsearch.co.uk</a>
Environment Jobs website	<a href="http://www.environmentjobs.co.uk">www.environmentjobs.co.uk</a>
Environmental Careers	<a href="http://www.ciwemjobs.org">www.ciwemjobs.org</a>
Green jobs and sector information	<a href="http://www.greenjobs.ie">www.greenjobs.ie</a>
The Environment Post	<a href="http://www.environmentpost.co.uk">www.environmentpost.co.uk</a>
Green Roles	<a href="http://www.greenroles.co.uk">www.greenroles.co.uk</a>
Greenjobs recruitment site	<a href="http://www.greenjobsonline.co.uk">www.greenjobsonline.co.uk</a>
Nature Jobs	<a href="http://www.nature.com/naturejobs">www.nature.com/naturejobs</a>
New Scientist Jobs	<a href="http://www.newscientistjobs.com">www.newscientistjobs.com</a>

### *Sector specific resources*

Association of Consulting Engineers of Ireland	<a href="http://www.acei.ie">www.acei.ie</a>
British Ecological Society	<a href="http://www.britishecologicalsociety.org">www.britishecologicalsociety.org</a>
Chartered Institution of Building Services Engineers	<a href="http://www.cibseireland.org">www.cibseireland.org</a>
Chartered Institution of Wastes Management	<a href="http://www.ciwim.co.uk">www.ciwim.co.uk</a>
Chartered Institution of Water & Environmental Mgmt	<a href="http://www.ciwem.org">www.ciwem.org</a>
Climate Change and Sustainability resource	<a href="http://www.emissions.org">www.emissions.org</a>
Composting Association of Ireland (CRE)	<a href="http://www.cre.ie">www.cre.ie</a>
Department of Environmental, NI (and NIEA)	<a href="http://www.doeni.gov.uk">www.doeni.gov.uk</a>
Directory of businesses in all industries	<a href="http://www.kompass.com">www.kompass.com</a>
Ecological/Conservation Research and Training Engineers Ireland	<a href="http://ert-conservation.co.uk">http://ert-conservation.co.uk</a>
Environmental Data Interactive Exchange – UK	<a href="http://www.edie.net">www.edie.net</a>
Environmental Data Services Careers Report & Directory	<a href="http://www.endsreport.co.uk">www.endsreport.co.uk</a> and <a href="http://www.endsdirectory.co.uk">www.endsdirectory.co.uk</a>
Environmental News	<a href="http://www.enviro-solutions.com/news.htm">www.enviro-solutions.com/news.htm</a>
Environmental Protection Agency – Ireland	<a href="http://www.epa.ie">www.epa.ie</a>
Environmental Sciences Association of Ireland	<a href="http://www.esaiweb.org">www.esaiweb.org</a>
Environmental Services UK	<a href="http://www.esauk.org">www.esauk.org</a>
Green Directory Ireland	<a href="http://www.greenifsc.ie">www.greenifsc.ie</a>
Institute of Ecology & Environmental Management	<a href="http://www.ieem.net">www.ieem.net</a>
Institute of Environmental Mngt & Assessment	<a href="http://www.iema.net">www.iema.net</a>
Institute of Geologists of Ireland	<a href="http://www.igi.ie">www.igi.ie</a>
Institution of Chemical Engineers	<a href="http://www.icheme.org">www.icheme.org</a>
Irish BioEnergy Association	<a href="http://www.irbea.org">www.irbea.org</a>
Irish Department of Environment/Local Government	<a href="http://www.environ.ie">www.environ.ie</a>
Irish Environmental Law Association	<a href="http://www.iela.ie">www.iela.ie</a>
Irish Environmental Organisation Network	<a href="http://www.ien.ie">www.ien.ie</a>
Irish Mining and Quarrying Society	<a href="http://www.imqs.ie">www.imqs.ie</a>
Irish Planning Institute	<a href="http://www.ipi.ie">www.ipi.ie</a>

Irish Wind Energy Association	<a href="http://www.iwea.com">www.iwea.com</a>
Marine Conservation Society – UK	<a href="http://www.mcsuk.org">www.mcsuk.org</a>
Marine Institute - Ireland	<a href="http://www.marine.ie/home">www.marine.ie/home</a>
Marine Renewables Industry Association – Ireland	<a href="http://www.mria.ie">www.mria.ie</a>
National Parks and Wildlife Service – Ireland	<a href="http://www.npws.ie">www.npws.ie</a>
National Trust – UK	<a href="http://www.nationaltrust.org.uk">www.nationaltrust.org.uk</a>
Northern Ireland Environment Link (NIEL)	<a href="http://www.nienvironmentlink.org">www.nienvironmentlink.org</a>
NI Coastal and Marine forum	<a href="http://www.nimtf.org">www.nimtf.org</a>
Northern Ireland charity promoting sustainability	<a href="http://www.sustainableni.org">www.sustainableni.org</a>
Northern Ireland conservation volunteers	<a href="http://www.cvni.org">www.cvni.org</a>
Society for the Environment – UK	<a href="http://www.socenv.org.uk">www.socenv.org.uk</a>
Sustainability Change Agents – UK	<a href="http://www.changeagents.org.uk">www.changeagents.org.uk</a>
Sustainable Energy Authority of Ireland	<a href="http://www.seai.ie">www.seai.ie</a>
Sustainable Northern Ireland	<a href="http://www.sustainableni.org">www.sustainableni.org</a>
Teagasc – Agriculture and Food Development	<a href="http://www.teagasc.ie">www.teagasc.ie</a>
Wildlife Trust – Ireland	<a href="http://www.iwt.ie">www.iwt.ie</a>
Working Group on Applied Agricultural Meteorology	<a href="http://www.met.ie/agmet/agmet.asp">www.met.ie/agmet/agmet.asp</a>
International Association of Hydrogeologists (Irish Group)	<a href="http://www.iah-ireland.org">www.iah-ireland.org</a>