Do you have an R&D Idea but lack the Expertise or Resource to Develop it?

The Heriot-Watt Company-Led Engineering Design Challenge is now open to SMEs and larger businesses that want to work with one of the UK’s leading universities in engineering and business. Projects can be in any area and are proposed by you, the company with work that should be self-contained, undertaken by a group of 4 students working in a team over a 24-week period during Q4 2016 and Q1 2017.

If that describes you, we want to work with you by providing the resources for projects that provide our engineering students relevant work experience as part of their degree studies and improve their chances of employment on graduation whilst impacting on you as a business. By working with Heriot-Watt you not only get to work with our enthusiastic engineering students, but the benefit of the expertise of their academic supervisors and a means of evaluating potential new employees after graduation.

Taking part in the initiative is free. You need to submit project proposals by mid-August (but the initiative is very popular and is often over-subscribed so we suggest you contact the organizer I.McEwan@hw.ac.uk asap or if you are working in energy, the Energy Academy would like to hear from you. We’ll send you an application form and arrange to meet you.

The project could cover all stages of an engineering design assignment and include market research, concept generation and selection, simulation, design for manufacture, costing, sustainability analysis, prototyping, assessment and materials testing.

Innovate UK Infrastructure Systems Competition Brokerage Event – Glasgow
Thursday July 7th, Glasgow
More information and registration
https://www.eventbrite.co.uk/e/infrastructure-systems-competition-brokerage-event-glasgow-tickets-255991326957
ETP Industry Engagement Fund

The Energy Technology Partnership is an alliance of 12 universities in Scotland all engaged in world-class research. The ETP Knowledge Transfer Network supports a team of business development managers covering the low-carbon sector across the university network. Their role is to foster and manage collaboration between industry and academy. The Energy Academy works closely with the ETP. Where our University does not have the skill set to support a particular project, we will refer you to the relevant ETP business manager.

The ETP has recently received additional funding and has launched the ETP Industry Engagement Fund. Up to £20K is available for collaborative research between SMEs and the academic base in Scotland. The ETP promises a fast turnaround concerning approval of proposals and ETP BDMs will work with you and the Energy Academy to develop a proposal for funding. Once we’ve identified a project with you, and you’ve met with the ETP BDMs, an application can be submitted. There’s a presentation on how the application process works together with other information about the ETP KEN at [http://www.etp-scotland.ac.uk/Portals/57/document%20library/ETP%20KIC%2020160421.pdf](http://www.etp-scotland.ac.uk/Portals/57/document%20library/ETP%20KIC%2020160421.pdf)

There’s also a useful ‘slide’ on where ETP funding sits alongside other funding for R&D in Scotland.

To contact the ETP, send an e-mail to contact@etp-scotland.ac.uk or if you’re a Heriot-Watt researcher interested in working with an SME but unsure of how to fund your project and are considering the ETP, contact Energy@hw.ac.uk

Fledge Grant Fund 2016

Six projects have been supported under the 2016 Fledge initiative. If you are working in these areas, contact the project lead or the Energy Academy to find out more about each project. The projects were:

New carbon additives for transition metal sulphides anode materials: Development of the new generation energy materials has been on high demand due to the ever increase in energy consumption. If you are interested in this area, contact H.Yiu@hw.ac.uk

Stochastic Modelling of Energy Demand: There is a growing interest in accurately predicting energy demand. This project is proposing to develop a robust stochastic modelling framework for estimating energy demand patterns at a considerably small temporal (1 sec) and spatial (individual residential building) scale. Interested? S.Patidar@hw.ac.uk

Hyper-accurate on-demand localized weather forecasting for energy markets: Precise forecasts (e.g. from 1 to 48 hours ahead) of temperature, cloud-cover, and wind-speed (among others) are vital in a variety of applications that depend on exploiting renewable energy resources and/or energy storage. Working with Spotsensors Ltd we will develop an API to be used by a new version of a commercial ‘smart sensor’ product, which will lead directly to marketing and exploiting this technology in new markets, ranging from domestic ‘smart home’ control to sports and events planning. D.W.Corne@hw.ac.uk

Mechanochemistry as a Low Energy Manufacturing Technique for Energy-Focused Porous Materials. The aim of this study is to produce three classes of porous materials, all of which are of interest in energy research for CO2 capture, through mechanochemical production. Interested in materials for CO2 capture, contact G.O.Lloyd@hw.ac.uk

Understanding the microscale controls on fracturing in carboniferous limestones and their implications for carbon capture and storage. Faults and fractures at a site are very likely to impact on the potential for storage of CO2 and natural fractures may well induce fresh operational fractures during CO2 injection. S.Zihms@hw.ac.uk

Cultural factors in the resilience of Scottish island communities to energy developments: Professor Bernadette O’Rourke is looking at how energy developments may impact upon island communities in terms of language, social organization and cultural diversity. Want to know more? B.M.A. O’rourke@hw.ac.uk

National Women in Engineering Day 23rd June 2016

To celebrate National Women in Engineering Day 2016 on Thursday 23rd June an exciting and informative morning of talks, networking opportunities with refreshments and poster competition will be held in Post Graduate Centre, of Heriot-Watt’s Edinburgh Campus.

- PhD student Judith Abolle will give the welcome address.
- Energy Academy Director, Professor Mercedes Maroto-Valer will share some interesting statistics with us and share some of her personal experiences.
- Dr Sila Pia Pueyo will talk of the importance of female role models for women in engineering and science and the influence that other female scientists have had in her development as a scientist.

To register for the event please go to the Eventbrite page [http://bit.ly/1TZdzvb](http://bit.ly/1TZdzvb)

A networking lunch and poster competition sponsored by the Institute of Mechanical, Process and Energy Engineering and the School of Energy, Geoscience, Infrastructure and Society will provide a unique opportunity for engineers to present their work, engage with fellow researchers and raise the profile of women in engineering at Heriot-Watt University.
Innovate UK has announced it is to hold an event focused on dissemination of learnings from the first Low Carbon Truck Demonstrator programme launched in 2013. The event will be held in Birmingham on 14 July.

The Innovate UK team will also talk about possible future plans for low emission freight.

The first demonstrator programme funded 12 projects with £11.3m of public grant support. The demonstrator has so far part funded 380 low carbon trucks and helped to improve or establish 25 re-fuelling sites.

The day will offer valuable opportunity for companies and organizations to network and exchange ideas in the hope that strong consortia begin to form that could exploit any future grant funded opportunities.

Delegates will also hear from Innovate UK on their plans to advance the demonstration of Low Carbon Vehicles in the coming months and years.

To register for this event see: https://connect.innovateuk.org/web/energy-efficiency/events-view/-/events/32636412

One-to-one meeting facilities will be available to delegates. Meeting Mojo enables you to book meetings with each other online, ahead of the event. This facility will open 2 weeks prior to the event and registered attendees will receive login details. You can then search or browse company/delegate listings, and request one-to-one meetings with other delegates which will take place at the event.

Innovate UK Energy Catalyst Round 4 Project Partner Brokerage Event

4th July, London

Register at: https://www.eventbrite.co.uk/e/energy-catalyst-round-4-project-partner-brokerage-event-tickets-25861786299

KTN, in partnership with Innovate UK and DFID, will be hosting a brokerage event to bring together energy innovators and organizations with expertise in developing country energy issues - the purpose being to help applicants develop relationships and proposals that are more relevant to the energy access needs of people in Sub-Saharan Africa and South Asia where energy grids are unreliable.

The event will also be an opportunity to learn about an additional £10m funding for Round 4 that is being made available by Innovate UK.

More information at: https://connect.innovateuk.org/web/energy-catalyst/article-view/-/blogs/energy-catalyst-round-4-project-partner-brokerage-event?utm_campaign=415621_Energy%20Events%20Newsletter&utm_medium=email&utm_source=dotmailer&dm_i=2VFU,8WP1,2CMYD9,TI98,1

Innovate UK has approved additional grant funding of up to £10m for Energy Catalyst Round 4. This is in addition to (up to) £6m from DFID and up to £3m from EPSRC that is already committed to Round 4, bringing the total available funding for Round 4 up to £19m.

Innovate UK’s £10m additional funding in Round 4 will be available to projects as follows:

- early-stage applications: maximum project cost has been increased from £200k to £300k
- up to 12-month projects: only projects completing by 31st March 2018 are fundable by Innovate UK
- co-funding with DFID (and EPSRC) of projects that meet DFID scope
- funding (and co-funding with EPSRC) of projects that address the energy trilemma but that are not in scope for DFID funding

International Partners: are not fundable by Innovate UK; are fundable by DFID, where projects are in scope for DFID funding

For details on how to apply for Energy Catalyst funding, see Innovate UK’s competition webpages at https://www.gov.uk/government/publications/funding-competition-energy-catalyst-round-4.

DFID support enables the co-funding of projects that address challenges that are of particular relevance to developing countries, and to this end partnerships between lead applicants and those from developing countries are encouraged. Many of the enterprises interested in participating in this Round are relatively new and small, and while working on ideas and innovation that are relevant to energy access challenges in developing countries, have not expanded their market or reach beyond the UK and so lack overseas contacts and partners. This brokerage event aims to address these barriers by bringing together energy innovators from UK business and academia and from developing countries with experts in developing country needs and programme operations, creating a platform to facilitate information exchange between interested parties and relevant networks.
Professor Mercedes Maroto-Valer, holder of the Robert M Buchan Chair in Sustainable Energy Engineering at Heriot-Watt and Director of the Heriot-Watt Energy Academy, has received a prestigious European Research Council Advanced Award to pursue frontier research. Her team will grow ‘smart rocks’ which can ‘talk’ to them about what actually goes on deep underground.

The €3 million award was one of only 16 awards made across Europe in the products and process engineering panel, with over 1,900 applicants received across all panels and disciplines. The grants are awarded under the ‘excellent science’ pillar of Horizon 2020, the EU’s research and innovation programme for senior researchers, to enable them to pursue their most promising ideas and carry out frontier research with potentially ground-breaking impact on science and society.

The security of water, food and energy supplies, including large scale enterprises ranging from the efficient extraction of oil and gas from oilfields to the potential for storing captured carbon dioxide underground, all depend on a thorough understanding of how liquids and gases travel through porous rocks in the subsurface.

This is a complex field, depending on the type of rock and variations in temperature and pressure which occur deep underground, where direct dynamic observation at pore level is impossible.

The problem, says team leader Professor Maroto-Valer is that the rocks cannot talk to us. Her answer is simple: make your own rocks that can.

“We are very excited about this award and the opportunity to bring interdisciplinary innovation building upon Heriot-Watt’s world leading expertise in process and petroleum engineering and manufacturing. This will allow us to unlock engineering research challenges in reactive transport in porous networks, transforming technological and environmental engineering applications.”

Professor Mercedes Maroto-Valer

Professor Maroto-Valer’s team plan to use 3D printing to create their own porous rocks that incorporate micro sensors. Thus they will replicate in laboratory conditions what actually happens deep underground and provide information at a microscopic level which was simply not available before.

Professor Maroto-Valer said, “While extensive work over the years has given us some idea about how liquids and gases move through porous rocks at a large scale, we haven’t been able to understand how the process works at the very small pore scale, and how that process can differ between different types of porous rocks.

“By 3D printing our own core samples we can decide exactly what sort of rock we wish to study, and implanted micro-sensors will be able to tell us directly, in real-time, what is going on as gases and liquids pass through them. This fundamental knowledge at such a tiny scale will feed hugely into our understanding of such processes at the large scale and enable us to maximize the success of industries from oil extraction to water safety and the storage of captured CO2.”

Professor Richard A Williams, Principal of Heriot-Watt University, said, “I am really pleased to see that Professor Maroto-Valer has received this advanced ERC Award for a wonderfully innovative project designed to solve real-world problems through a lateral, multi-disciplinary approach.

“This is a prime example of Heriot-Watt as a leader in ideas and solutions, delivering innovation and excellence.”

Professor Richard Williams

This project has received funding from the European Research Council (ERC) under the European Union’s Horizon 2020 research and innovation programme (grant agreement No 695070).
We hope to produce a system which is both cost effective and environmentally sound.

Professor Mercedes Maroto-Valer

The UK Government has an ambitious target to reduce CO2 emissions by 80% by 2050. While much attention has been focused on CO2 produced by energy providers, industrial processes account for 25% of total EU CO2 emissions, and moreover, they are already operating at or close to the theoretical limits of efficiency. Therefore, CO2 capture and storage (CCS) is the only technology that can deliver the required emission reductions. However, efficiency and capital cost penalties associated with CO2 capture are hindering the deployment of CCS.

Industry, however, tends to produce CO2 at a smaller scale than power plants, which means different challenges for CO2 capture in a cost effective manner. There is an opportunity here for industrial CCS to operate at a wider range of temperatures and to integrate available thermal streams with heat required for on-site sorbent regeneration.

The new process will not only involve a special clay-based material, called hydrotalcite, to capture the CO2, but will then use waste heat from the original industrial process itself to extract the concentrated CO2 from the hydrotalcite, after which it can be sent for utilization or storage. The project will also investigate novel fluidized bed configurations, with 3D printed test micro-beds giving flexibility of design and followed by large scale testing.

This multidisciplinary collaboration brings together leading teams from Heriot-Watt University, Newcastle University and University of Hull with industrial partners covering the breadth of the sectors impacted. The project is led by Heriot-Watt’s Professor Mercedes Maroto-Valer together with Dr Susana Garcia and Prof Graeme White from the Institute of Mechanical, Process and Energy Engineering, and has received £1m funding from the Engineering and Physical Sciences Research Council (EPSRC) EP/N024540/1.

Professor Maroto-Valer, holder of the Robert M Buchan Chair in Sustainable Energy Engineering at Heriot-Watt, said, “This funding will allow us to bring together a range of interdisciplinary expertise and use novel materials to solve a real and pressing issue in an energy efficient and cost sensitive manner.

“We believe that industry is open to the benefits of carbon capture and storage, but are deterred by inefficiencies and cost implications of some traditional systems. We hope to bring our range of expertise to bear on these issues and produce a system which is both cost effective and environmentally sound.”

This article first published in http://www.hw.ac.uk/news/mopping-up-industry-co2-with-a-clay-sponge.htm 10 May 2016

Post-Doctoral Research Fellowship – The Centre of Expertise on Climate Change Reference CxC2016/02

CxC has a one-year grant with expectation of a further two-years for a post-doctoral research fellowship to evaluate the effectiveness of local authority-led integrated energy efficiency pilots that are being funded by the Scottish Government as part of the development phase of Scotland’s Energy Efficiency Programme (SEEP).

To read the full specification see: http://www.climatexchange.org.uk/files/9714/6531/5830/CxC-_Invitation_to_Submit_Proposals_-_SEEP_PDRF_-_7_June_2016.pdf

The deadline for submissions is noon on the 28 June 2016. Submissions should be sent electronically to chris.rich@gov.scot and copied to Ragne.Low@ed.ac.uk. If you have any questions about the Invitation or the Fellowship, please contact chris.rich@gov.scot.
New £20m EPSRC National Centre for Energy Systems Integration

A new £20m National Centre for Energy Systems Integration, involving specialists at Heriot-Watt University, will take a full overview of UK energy network and provision. The Centre, funded by the Engineering and Physical Sciences Research Council (EPSRC), with £15M of industrial support, will bring together energy experts from around the world to help unravel the energy network and understand future supply and demand.

The Centre is designed to bridge a major information gap in the drive towards a fully integrated, smart energy network, by looking for the first time at the energy system as a whole; gas, power, renewables, heating and cooling. By taking this holistic approach, and providing robust messages about the real world, the Centre will be crucial to improving energy efficiency, driving down customer bills and reducing carbon emissions by optimizing the energy network as a whole and informing future government policy.

An interdisciplinary team of researchers across Heriot-Watt’s Research Institutes will draw on the expertise of leading academics from the universities of Newcastle, Sussex, Edinburgh and Durham.

Centre Associate Director Dr David Flynn, Director of the Smart Systems Group at Heriot-Watt University, said, “To ensure that the UK has an energy network fit for purpose, we must take a whole systems approach to ensure that the infrastructure (physical assets) and policies that influence its future are focused on a sustainable energy network that is centred on meeting the needs of the society that it serves.

“This new National Centre will provide us with an unparalleled source of data and we must support the energy community in converting that into actionable information to inform policy and design of the energy network. This will allow us to develop solutions that deal with the inherent risk and uncertainty within the energy network so we can confidently inform government policy.

“It gives us an opportunity here in the UK to really drive forward the smart energy revolution and become international leaders in this space. We are delighted to be working with our colleagues at Newcastle, Edinburgh, Durham and Sussex.”

And now, with the Project due to start in September, the Heriot-Watt team is looking to bring together Heriot-Watt researchers doing work on Energy Demand around a table to chat about opportunities. David Jenkins, part of the Centre team commented

“It would be good to get people in who have not previously interacted with the Energy Academy (for whatever reason) to engage with us. We are also looking to use the Centre to develop internal networks within HW around the theme of Energy Demand. There is also clear potential to use this as a springboard for other project proposals in and around the area of Energy Demand, still a relatively well funded RCUK theme. The existence of the Centre, and our role within it, is quite unique and we are therefore keen to exploit this as we move forward”. The carrot for Heriot-Watt researchers is, that “CESI will, eventually, act as a national network around energy systems. As part of this function, “£1M flexible funding will be available for (mostly) small projects that can run in parallel to the core activities of the Centre. This funding will often involve CESI partners (such as ourselves) but can, and should, include organizations and individuals outside CESI.”

It is intended to open up this forum to organizations outside of the University but at this stage, the ‘team’ is looking to bring together researchers interested in areas such as “building energy demand modelling; transport modelling; communication between energy supply and energy demand in the future; asset management/operation within energy networks; energy economics (centred on demand but with an awareness of supply-side issues); behavioral patterns of energy demand; and energy demand policy. Heriot-Watt researchers interested in engaging with CESI should contact D.P.Jenkins@hw.ac.uk

Low Carbon Scotland - Meeting the Emissions Reduction Targets 2016

in partnership with Carbon Club and 3ppp

Tuesday 28th June, Dynamic Earth, Edinburgh 08:00 – 17:00

Programme : www.Low-carbonscotland.scot

Join the Energy Academy at Dynamic Earth. Some funded place invited places available for the public-and third sectors

Contact Ron.pusey@3ppp.co.uk / 07962 188749 for information
Local Energy Scotland’s Infrastructure and Innovation Fund is now open to applications!

Grant funding of up to £70K is available for communities to investigate and develop projects that link local energy generation with local energy use, or projects that wish to develop innovative distribution and storage solutions.

In many parts of Scotland there are restrictions or long lead-in times on adding additional generation capacity to the National Grid. Energy storage and network management technologies can allow the efficient substitution of fossil fuels with renewable energy, but these need to be piloted through real world, community-based situations.

The overall aim of IIF is to stimulate innovative approaches to unlock potential for local renewable energy generation. The following areas are priorities for the fund:

- overcoming barriers relating to grid capacity issues;
- energy storage and active network management;
- linking local energy demand with local renewable energy generation;
- delivering renewable heat and electricity to local consumers;
- addressing barriers that communities face in areas of constrained electricity networks.

Funded by the Scottish Government through the Community and Renewable Energy Scheme (CARES), the Infrastructure and Innovation Fund seeks to support low carbon, whole system, small scale projects, both heat and electricity. To register an interest in the fund, potential applicants are encouraged to contact Local Energy Scotland staff to discuss project ideas and to develop an application. See:

http://www.localenergyscotland.org/iif

InnovateUK Innovation grants for business: apply for funding

Innovate UK is investing up to £15 million in innovative R&D projects. The competition is open to the best business-led ideas or concepts drawn from any technology, engineering or industrial area, including Innovate UK’s 4 priority sectors for growth. Projects should demonstrate disruptive, cutting-edge innovations and businesses should demonstrate ambition and potential for growth.

The competition is open to both small and medium-sized enterprises and large companies. They can work individually or collaboratively.

Projects may focus on:

- market research
- technical feasibility
- industrial research
- experimental development

Projects may last 6 to 36 months. They can range in size from total eligible project costs of £25,000 up to £1 million, depending on the type of project.

There are two options to apply into this competition. These are dependent on the size and length of your project. These options are called streams. Stream 1 is for projects under 12 months and under £100,000. Stream 2 is for projects over 12 months or over £100,000.

The competition opens on 6 June 2016: To apply you must register before noon on 31 August 2016. The deadline for applications is at noon on 7 September 2016.

Glasgow Information event: https://www.eventbrite.co.uk/e/infrastructure-systems-competition-brokerage-event-glasgow-tickets-25599132695?utm_campaign=415621_Energy%20Events%20Newsletter&utm_medium=email&utm_source=dotmailer&dm_i=2VFU,8WP1,2CMYD9,T99,1
See also: https://www.gov.uk/government/publications/innovate-uk-open-funding-competition

NERC Follow-on Fund

Applications are invited to NERC’s Follow-on Fund.

The Follow-on Fund picks up where research grants leave off, and enables research outputs to be further developed so that their commercial potential can be realized.

Examples of activities funded include technology licensing, launching technology-based products or services, selling know-how based consultancy services, and the commercialization of NERC-funded datasets. Proposals are invited for projects pursuing any of these approaches, or indeed others.

Further information on the Follow-on Fund can be found at: http://www.nerc.ac.uk/funding/available/schemes/followon/

A maximum of 125k (£100k NERC contribution at 80% FEC) may be requested.

Closing Date for applications 27th September

You will need to be confident that you have a good understanding of the market environment for your technology, a clear idea of who you believe will be interested in it and why, and that you have a credible plan for driving your project towards an appropriate commercial outcome. If you are uncertain on any of these issues, you are strongly advised to apply for a Pathfinder grant before making an application to the Follow-on Fund. The Pathfinder scheme supports small-scale, specific activities that can help develop a better understanding of the likely market potential for the technology around which a Follow-on Fund project is based. See: http://www.nerc.ac.uk/funding/available/schemes/pathfinder/
Launching the infocus Awards for Women In Innovation

“Women are under-represented in the field of innovation, and that needs to change. It means as a nation we’re failing to harness, capitalize on and celebrate the entrepreneurial talent of female innovators to the detriment of our economy. Boosting female entrepreneurship could deliver approximately £60bn extra to the UK economy.”

Innovate is launching a special award for women working in innovation. The infocus Awards will celebrate and reward women working across 4 key sectors - Materials & Manufacturing, Health & Life Sciences, Infrastructure Systems, Emerging & Enabling Technologies.

Twelve women will benefit from a valuable tailor-made package of support and four of these will each receive a £50,000 grant.

What’s Infocus About?

Next Steps

- the competition opens on 1 June 2016 and the deadline for registration is noon on 24 August 2016
- the awards are open to any woman in the UK working in business innovation in any of Innovate UK’s four sectors
- applicants can be a company owner, employee or sole trader in any size of business and must be legally and contractually able to use the grant funding on offer
- a briefing for potential applicants will be held on 20 June 2016.

https://www.eventbrite.co.uk/e/women-in-innovation-200k-funding-briefing-registration-25734578818

Future of Utilities - Utilities of the Future

How will technological innovations in distributed generation reshape the electric power sector?

The electric power sector is experiencing fundamental transformations at multiple fronts and at an unprecedented pace. How will these developments evolve over time, and what may be the implications for the electric power sector? Fereidoon P Sioshansi is President Menlo Energy Economics His professional experience includes working at Southern California Edison Company (SCE), the Electric Power Research Institute (EPRI), National Economic Research Associates (NERA), and Global Energy Decisions (GED). He is also the editor and publisher of EEnergy Informer, a monthly newsletter with international circulation, which is regularly featured in The Electricity Journal, AEL Energy, Energy Spectrum (UK), European Energy Policy Blog (France), IAEE Forum (US), Energize and Vector (So Africa) and other publications.

On August 22nd, Dr Sioshansi will be at Heriot-Watt as a guest of the Energy Academy when at 12noon in Room 2.02 of the Post-Graduate Centre he will talk about his new book entitled “The Future of Utilities: Utilities of the Future” published in April 2016 and discuss his view on technological innovation in the sector.

Register at: https://www.eventbrite.co.uk/e/future-of-utilities-utilities-of-the-future-tickets-25050754481

More information and registration: https://www.weentech.co.uk/trainingcourses/icee2016/

Contact the Heriot-Watt Energy Academy

Tel: 44 131 451 3881
E:energy@hw.ac.uk
Web: www.energy.hw.ac.uk

Business Development: Dr Patrick McCarthy
Tel: 44 7989536218
E:p.mccarthy@hw.ac.uk

The 1st International Conference on Energy, Environment and Economics (ICEEE 2016) will be held in Heriot-Watt University, Riccarton, Edinburgh, Lothians EH14 4AS, UK, 16-18 August 2016. ICEEE2016 focuses on energy, environment and economics of energy systems and their applications.

Scope:

Energy
- Solar Energy Technologies (Solar thermal and PV)
- Sustainable building design & Low Impact Architecture
- Biomass (Bio fuels, bio gas)
- Waste to energy
- Tidal energy
- Ground thermal storage and Geothermal Energy
- Fuel Cells, Hydrogen generation
- Energy system modelling
- Hybrid energy systems
- Wind energy
- Heat recovery
- Smart grids

Environment
- Greenhouse gas
- Carbon di oxide mitigation
- Climate change
- Life cycle assessment

Economics
- Economics of energy systems
- Payback of energy systems
- Market feasibility of energy systems
- Energy and cost saving potential
- Economic aspects: Policy
- Trends: past, present, future

More information and registration: https://www.weentech.co.uk/trainingcourses/icee2016/