



# Institute of Industrial Engineers

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## **CERTIFICATE IN ENERGY EFFICIENCY & SUSTAINABLE TECHNOLOGIES**

**Cost: €1,500**

**(IIE & €collective members - €1,200)**

### ***Introduction***

The programme is designed to meet the training and certification needs of both public and private sector staff involved in improving energy efficiency and evaluating renewable/alternative energy options for industrial and commercial premises.

### ***Methodology***

The programme will be delivered by a team of IIE approved trainers who have extensive national and international experience in the area of Energy Efficiency and Renewable Technologies. The total duration of the Programme is six days and will be delivered in two day blocks spread over a period of time. In addition to the training a number of work related practical projects will be undertaken and evaluated.

### ***Certification***

The programme, which will include modular and competency assessments tests, will be certified by the Institute of Industrial Engineering (IIE) and will also carry a Further Education and Training Awards Council (FETAC) Skills Certificate (Level 6) in Energy Efficiency and Renewable Technologies.

### ***Programme Content***

<b>Module 1</b>	<b><i>Policies/Directives in Sustainable Energy</i></b> <ul style="list-style-type: none"><li>• EU and National Policies Overview</li><li>• Standards and Directives in Sustainable Development</li><li>• Building Energy Ratings</li><li>• Roles of Irish Organisations in Implementing Policy and Legislation</li></ul>
<b>Module 2</b>	<b><i>Energy Management</i></b> <ul style="list-style-type: none"><li>• Overview of the Irish Energy Market</li><li>• Energy Management</li><li>• Energy Data Management (<i>online electricity data</i>)</li><li>• Energy Auditing</li></ul>
<b>Module 3</b>	<b><i>Energy Efficiency in Buildings</i></b> <ul style="list-style-type: none"><li>• Introduction to Energy Use in All Buildings</li><li>• Minimising Energy Demand in New Buildings</li><li>• Minimising Energy Demand in Existing Buildings</li><li>• Introduction to Boilers and Heat Distribution Systems</li><li>• Overview of Hot Water Services</li><li>• Introduction to Heating, Ventilation and Air Conditioning</li><li>• Lighting</li><li>• (<i>other equipment – facilitated discussion</i>)</li></ul>

<b>Module 4</b>	<b><i>Energy Efficiency Motive Power Applications</i></b>
	<ul style="list-style-type: none"> <li>• Introduction to Motive Power</li> <li>• Motors &amp; Drives – Energy Saving Opportunities</li> </ul>
<b>Module 5</b>	<b><i>Building Energy Management Systems (BEMS)</i></b>
	<ul style="list-style-type: none"> <li>• Overview of BEMS and BEMS Applications</li> <li>• Installing and Managing a BEMS</li> <li>• Demonstrations of BEMS</li> </ul>
<b>Module 6</b>	<b><i>Biomass Thermal Systems</i></b>
	<ul style="list-style-type: none"> <li>• Introduction to Biomass Thermal Systems</li> <li>• Biomass Fuels</li> <li>• Biomass Boilers and Sizing of Systems</li> <li>• Conversion of Existing Systems to Biomass</li> <li>• Costs and Payback of Systems</li> <li>• Planning and Consenting of Systems</li> </ul>
<b>Module 7</b>	<b><i>Ground/Water/Air Source Heat Pumps</i></b>
	<ul style="list-style-type: none"> <li>• Introduction to Ground/Water/Air Source Heat Pumps</li> <li>• Specifying and Sizing System</li> <li>• Integration with other Systems</li> <li>• Costs, Payback and Supply of Systems</li> <li>• Planning and Consenting</li> </ul>
<b>Module 8</b>	<b><i>Solar Thermal</i></b>
	<ul style="list-style-type: none"> <li>• Introduction to Solar Thermal</li> <li>• Specifying and Sizing Systems</li> <li>• Integration with Other Systems</li> <li>• Costs, Payback and Supply of Systems</li> <li>• Planning and Consenting</li> </ul>
<b>Module 9</b>	<b><i>Renewable Energy Technologies for Electrical Integration</i></b>
	<ul style="list-style-type: none"> <li>• Introduction to RE Technologies for Electrical Integration</li> <li>• Specifying and Sizing System for Maximum Output</li> <li>• Exporting to the Grid</li> <li>• Costs, Payback and Supply of Systems</li> <li>• Planning and Consenting</li> </ul>
<b>Module 10</b>	<b><i>Combined Heat and Power (CHP)</i></b>
	<ul style="list-style-type: none"> <li>• Introduction to CHP</li> <li>• Specifying and Sizing Systems</li> <li>• Economics of CHP and Legal and Regulatory Requirements</li> </ul>
<b>Module 11</b>	<b><i>Managing and Evaluating RE Projects</i></b>
	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Feasibility Assessments &amp; Feasibility Exercises</li> <li>• Discussion of Results from Exercise</li> <li>• Project Implementation and Evaluation</li> </ul>

### ***Programme Schedule***

<b>Date</b>	<b>Modules</b>	<b>Location</b>
18 <sup>th</sup> March 2009	Module 1 Policies / Directives on sustainable energy Module 2 Energy Management	TBA
19 <sup>th</sup> March 2009	Module 3 Energy Efficiency in Buildings Module 4 Energy Efficiency Motive Power applications	TBA
1 <sup>st</sup> April 2009	Module 5 Building Energy Management Systems Module 6 Biomass Thermal Systems	TBA
2 <sup>nd</sup> April 2009	Module 7 Ground/Air/Water Pumps Module 8 Solar Thermal	TBA
15 <sup>th</sup> April 2009	Module 7 Ground/Air/Water Pumps Module 8 Solar Thermal	TBA
16 <sup>th</sup> April 2009	Module 9 Renewable energy technologies Module 10 Combined Heat and power Module 11 Managing and Evaluating RE projects	TBA
1 <sup>st</sup> April 2009	Practical Assignment 1 to be completed and returned to tutor	
1 <sup>st</sup> May 2009	Practical assignment 2 to be completed and returned to tutor	
15 <sup>th</sup> May 2009	Award of Certificate and FETAC award	

### ***Contact and Enquiry Details***

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