

Learning Objectives During this Day Course pupils should learn:	Day Course Programme	
<ul style="list-style-type: none"> ✓ How electricity is generated by renewable means in a real context. ✓ To recognise dangers associated with electricity and industrial installations. ✓ To understand their responsibility to maintain a sustainable environment for future generations. ✓ To evaluate experimental materials and processes. ✓ To recognise ways in which people can improve their environment. <p>(Some objectives are dependent on choice of afternoon options)</p>	<p>Introduction: A CEES teacher will welcome your group to the Energy Works Education Centre at Coldham and describe the day's programme and the learning objectives.</p>	
<p>Pupils will also:</p> <ul style="list-style-type: none"> ✓ Learn safely in a new environment. ✓ Gain an appreciation of the environment and understand their role in caring for it. 	<p>Session A: This session will begin with an introduction to the site and to renewable energy and wind turbine technology. Pupils will then view the on-line management system used to control the wind turbines. Following a briefing on safety, pupils will be issued with safety hats and glasses and will then travel by coach to the control buildings and wind turbines for a close up view of the turbine blades and tower. Pupils will use compasses and measuring equipment to record the dimensions of the turbine, and weather elements including wind speed and direction, to compare to those recorded by the electronic management system. Finally, pupils will be encouraged to consider the environmental impacts of wind generation.</p>	
<p>Adult : Pupil ratios For this day course CEES' recommended ratio for safety is 1 : 8 Three working groups will be needed, each with an adult. Additional adults may be needed with classes where individual pupils need 1 : 1 support</p>	<p>Session B: After lunch at the education centre, the following options are available, including those which may be delivered separately as workshops in school:</p> <p>Option 1: Visiting Sutton Bridge Gas Fired Power Station and using hands-on displays to explore electricity production using magnets, scale models and an exercise bike (maximum 30 pupils per class). N.B. morning visit with afternoon visit to Coldham.</p> <p>Option 2: Activities closely linked to the morning session including weather forecasting using ICT; wind turbine words (leading to poetry), watercolour painting or alternative activities linked to the current class topic, agreed in collaboration with the class teacher.</p> <p>Afternoon options 3a to 5 may be booked as workshops in school, see separate sheet:</p> <p>Option 3a: Investigating renewable energy using solar mini-kits to find the optimum conditions for heat or electricity generation.</p> <p>Option 3b: Investigating renewable energy using wind turbine mini-kits.</p> <p>Option 4a: Using recycled materials to investigate rotational movement and building model wind turbines to take back to school.</p> <p>Option 4b: Using the design principles involved in the construction of turbine towers for a team challenge to create a free-standing tower structure from newspaper.</p> <p>Option 5: Topical issues such climate change are explored using critical thinking techniques to develop understanding and pupils' own opinions of the issue. This can lead into persuasive writing or speaking and listening activities in the session and/or as follow up.</p> <p>NB Please indicate on your booking form your choice of afternoon option from 1 to 5.</p>	
<p>Other information See also separate guidance notes on safe and effective day courses. To comply with safety regulations on site: - Pupils must wear long sleeved tops and trousers, and sensible shoes - The coach must stay on site in case of emergency.</p>	<p>Plenary: The group will reflect on their day and consider how well the learning objectives have been met.</p>	
<p>Note: The actual programme may vary depending on number and needs of pupils, length of visit and weather conditions.</p>		
<p style="text-align: center;">Relevant extracts from CEES risk assessments See also separate guidance notes on safe and effective day courses</p>		
Hazard	Control measures	
Severe weather	<ul style="list-style-type: none"> • CEES staff are aware of daily forecast. • Access to the wind farm during electrical storms or wind speed greater than 25m/s is not permitted. • Alternative venues or activities are substituted if weather conditions are particularly unfavourable. • In extreme cases, where guidance notes on clothing (see left and separate notes) have not been complied with pupils may be excluded from activities. 	
Proximity to electrical system and apparatus	<ul style="list-style-type: none"> • Pupils will not have access to the inside of turbine tower or control room. 	
Rough ground, slopes and steps	<ul style="list-style-type: none"> • Pupils and adults are made aware of expected standards of behaviour and, for example pupils are instructed to walk, not run, to look ahead, and to stay close to supervisory adults. • Advice is given on suitable shoes prior to visit 	
Working farm: Farm roads, equipment, land working	<ul style="list-style-type: none"> • Pupils are transported around the site by coach • The Farm manager is notified of the visit and of the need to control work in proximity to pupils • Adults supervise directly, walking beside their group 	