



**CEES Day Course Information: ENERGY WORKS**

**COLDHAM WIND FARM**

**KS3 Science / Geography / PSCH**



<p><b>Learning Objectives During this Day Course students should learn:</b></p> <ul style="list-style-type: none"> <li>✓ How electricity is generated by renewable means in a real context.</li> <li>✓ To recognise dangers associated with electricity and industrial installations.</li> <li>✓ To compare power generation by renewable and conventional means.</li> <li>✓ To recognise ways in which people and communities can reduce or mitigate the effects of climate change.</li> <li>✓ To understand their responsibility to maintain a sustainable environment for future generations.</li> <li>✓ To evaluate experimental materials and processes.</li> </ul> <p>(Some objectives are dependent on choice of activities)</p>
<p><b>Students will also:</b></p> <ul style="list-style-type: none"> <li>✓ Learn safely in a new environment.</li> <li>✓ Gain an appreciation of the environment and understand their role in caring for it.</li> </ul>

<p><b>Day Course Programme</b></p>
<p><b>Introduction:</b> A CEES teacher will welcome your group to the Energy Works Education Centre at Coldham and describe the programme and the learning objectives.</p>
<p><b>Session A:</b> This session will begin with an introduction to the site and to renewable energy and wind turbine technology. Students will then view the on-line management system used to control the wind turbines. Following a briefing on safety, students 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. Activities on site include the measurement of site parameters to look at the positive aspects of wind power generation in context with its environmental impacts.</p>
<p><b>Session B:</b> After lunch at the education centre, the following options are available. Alternatively, options RB and CC can be delivered as workshops in school:</p> <p><b>Option SB:</b> 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 students per class).</p> <p><b>Option RB:</b> Investigating renewable energy using solar and/or wind turbine mini-kits to find the optimum conditions for heat or electricity generation.</p> <p><b>Option CC:</b> A workshop to develop critical thinking around the issue of Climate Change, and actions to be taken on a school community scale and beyond.</p> <p><b>NB:</b> Please indicate your choice of option on the booking form</p>
<p><b>Plenary:</b> The group will reflect on their day and consider how well the learning objectives have been met.</p>
<p><b>Note:</b> The actual programme may vary depending on number and needs of students, length of visit and weather conditions.</p>

<p><b>Adult : Pupil ratios</b> For this day course CEES' recommended ratio for safety is <b>1 : 15</b> Additional adults may be needed with classes where individual pupils need 1 : 1 support</p>
<p><b>Other information</b> See also separate guidance notes on safe and effective day courses. <b>To comply with safety regulations on site:</b> - Pupils must wear long sleeved tops and trousers, and sensible shoes - The coach must stay on site in case of emergency.</p>

<p><b>Relevant extracts from CEES risk assessments</b> See also separate guidance notes on safe and effective day courses</p>	
<p><b>Hazard</b></p>	<p><b>Control measures</b></p>
<p>Severe weather</p>	<ul style="list-style-type: none"> <li>• CEES staff are aware of daily forecast.</li> <li>• Access to the wind farm during electrical storms or wind speed greater than 25m/s is not permitted.</li> <li>• Alternative venues or activities are substituted if weather conditions are particularly unfavourable.</li> <li>• In extreme cases, where guidance notes on clothing (see left and separate notes) have not been complied with students may be excluded from activities.</li> </ul>
<p>Proximity to electrical system and apparatus</p>	<ul style="list-style-type: none"> <li>• Students will not have access to the inside of turbine tower or control room.</li> </ul>
<p>Rough ground, slopes and steps</p>	<ul style="list-style-type: none"> <li>• Students and adults are made aware of expected standards of behaviour and, for example students are instructed to walk, not run, to look ahead, and to stay close to supervisory adults.</li> <li>• Advice is given on suitable shoes prior to visit</li> </ul>
<p>Working farm: Farm roads, equipment, land working</p>	<ul style="list-style-type: none"> <li>• Students are transported around the site by coach</li> <li>• The Farm manager is notified of the visit and of the need to control work in proximity to students</li> <li>• Adults supervise directly, walking beside their group</li> </ul>

# CEES guidance notes for safe and effective Day Courses

**NB** *It is important that the information given on this sheet and in the attached literature is shared with all accompanying adults prior to the course in order to ensure that all adults are fully aware of the programme for the day and of their role and responsibilities during the course.*

After a provisional booking for a CEES Day Course has been made a package of information is sent to the named teacher who is responsible for the visit. The package will generally include:

- CEES **colour brochure** for general information
- These notes giving guidance on safe and effective **Day Courses**
- Day Course Information sheet giving **learning objectives, programme and risk assessments** for the specific course selected
- Location **map** (for bus drivers if required)
- Pupil **register** (a list printed by the school may be used as an alternative)
- Any other documents relating to the course
- **Booking form** To confirm a provisional reservation, this form should be completed, signed and returned to CEES at Stibbington as soon as possible and not less than 6 term time weeks prior to the course.

## Timing

In order to ensure best value from your CEES Day Course we recommend the following timings:

Key Stage 2 and above 5.5 hours eg 9.30 to 3

Key Stage 1 5 hours, eg 9.45 to 2.45

Foundation 4.5 hours, eg 10 to 2.30.

Timings may be reduced if necessary to suit school start and finish times and journey time, but teachers should be aware that if the above times are significantly reduced some parts of the programme may need to be curtailed.

## Lunch

**Packed lunches and drinks** should be brought. During centre-based time tea and coffee making facilities will be offered to adults. As part of our Eco-Centre policy we ask teachers to encourage pupils to bring environment-friendly packed lunches with minimal packaging.

CEES staff will take responsibility for pupils' activities during the morning and afternoon sessions. School staff will be responsible for **supervising** pupils during the lunch break, which may include a short period of free time.

## Payment

There is no charge for this course

## Health and safety:

### 1. CEES staff

CEES staff are qualified, experienced teachers who are police checked and employed by Cambridgeshire LA. All relevant CEES staff have a current first aid certificate and carry a first aid kit and other safety equipment. A CEES **teacher** will tutor your course and lead the activities with the support of visiting adults.

### 2. School staff

In addition to the class teacher you will need to have other adults. Recommended **adult : pupil ratios** for each course at each Key Stage are given on the Day Course information sheet. Please note that DfES guidance (2002) states:

- All accompanying adults should be fully aware of their role and responsibilities (see note above)
- Adults should be responsible for a pre-arranged, named group of pupils and should hold a list of their names
- Pupils should not be identifiable by a name badge
- CRB checks are **not** essential for adults accompanying day visits where the adult will not be in sole charge of one pupil

It is the **responsibility of visiting teachers** to inform CEES staff of any physical, medical or behavioural conditions which may be relevant and which may affect the safety of the individual or the group.

**Notification** to CEES two weeks prior to the course is required if pupils' pre-existing conditions may necessitate **adjustments** being made by CEES to the course programme or materials or equipment.

DfES guidance makes clear that **visiting teachers remain responsible for their pupils** at all times. Should behaviour become unacceptable on safety grounds, teachers may be asked by CEES staff to withdraw pupils from activities.

### 3. Clothing and equipment

Teachers should encourage pupils to wear **appropriate clothing and footwear** for those courses that involve working outside for part of the day. This will usually include **a waterproof jacket and trainers/outdoor shoes**, plus on cold days a warm coat, thick socks, hat and gloves, and on hot days a sun hat and sun screen. CEES holds some spare outdoor clothing which will be made available to those pupils who do not have their own. All materials and equipment needed on the day including clipboards and pencils will be supplied by CEES.

### 4. Risk assessment

All CEES activities are **risk assessed** and appropriate control measures are taken to minimise any risks identified. Relevant extracts from CEES risk assessments are given on Day Course Information sheets