

## Environmental Sciences

### Natural Energy Resources & Land Use Conflict

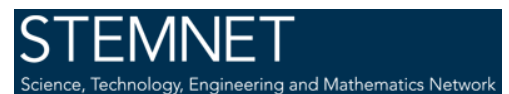
This environmental science challenge is aimed at young people who have an interest in sustainable natural resource exploitation, sustainable energy production, environmental protection and climate change, and want to gain skills and experience to progress in these areas of scientific research.

The competition is supported by:



**British  
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



## Environmental Sciences Natural Energy Resources & Land Use Conflict

### Competition brief

#### Entry requirements

It is aimed at an **advanced** level of knowledge, equivalent to a Level 3 qualification.

The competitors should have the ability to have the ability to operate a Personal Computer (PC) workstation and be familiar with Geographical Information Systems (GIS).

#### Competition structure

**Stage one:** Enter online between 5 October 09 – 19 March 2010

**Stage two:** UK final over three days that will take place early July 2010, at Pembrokeshire College

#### About the competition

Each organisation can enter three teams, with three competitors per team

Each team should draw a selection of the following skills and roles:

1. Geographers/Geologists
2. Environmental Scientists
3. Mechanical/Civil Engineers
4. Economist/Mathematician
5. IT specialist

**Over the duration of the three day UK final, competitors will:**

- Analyse scientific and technical information, using a PC and GIS software
- Identifying potential conflicts and providing mitigation measures to resolve issues between “interested parties”
- Produce a sustainable energy plan for a closed island society including a plan for CO<sub>2</sub> reduction and consideration of energy security.
- Document decision making process and produce a written report
- Present the team’s research to the judging panel
- Construct a basic appliance for energy generation using everyday materials (detailed instructions provided).

**Each teams will work with the following resources:**

- 2 PCs with GIS software
- Workstations
- Relevant scientific publications (digital and/or hard copies)

- Equipment required for practical element

## Competition timetable

Day	Activity
1 (1pm-2pm) (2pm-5pm)	<ul style="list-style-type: none"> <li>• Registration</li> <li>• GIS familiarisation and reading material</li> </ul>
2 (9am-1pm and 2pm to 5pm)	<ul style="list-style-type: none"> <li>• written report (to be handed in by 5pm)</li> </ul>
3 (9am-12pm) (1pm-3pm)  (3pm-4pm)	<ul style="list-style-type: none"> <li>• practical</li> <li>• presentation</li> <li>• Question and answers</li> <li>• Prize giving</li> </ul>

The working time allocated will be 20 hours over 3 days

## Marking and assessment

The competition is a 'mixed' competition, containing principally subjective assessment with only a minor level of objective assessment.

Subjective marking is based on the judges' individual expert opinions; this criterion is marked from 1 to 10 (as detailed overleaf).

Objective marking involves the candidate meeting strict criteria with a yes or no outcome.

To make the competition easier to judge and for the marking to be efficient, it is intended that the competition judging will be spaced out over the three days of the competition.

Teams will be assessed on the below broad allocation of marks

Aspect	Activity	Weighting
A	Ability to extract relevant information and make sound balanced judgement Capable of strategic thinking Ability to understand principles of relevant aspects of environmental science Time management	40%
B	Ability to function effectively as a team Time management	20%
C	Ability to communicate effectively Time management	40%

**Points awarded (subjective):**

Perfect = 10 points

Very good = 9 points

Good = 8 points

Fairly good = 7 points

Sufficient = 6 points

Average = 5 points  
Poor = 4 points  
Unsatisfactory = 3 points  
Very bad = 2 points  
Nothing = 1 point

**Competitors will be assessed in the following methods:**

- Observed whilst completing the competition (subjective)
- Based on their written report (objective/subjective)
- Based on their final presentation (subjective)
- Practical element (objective/subjective)

The competition will be judged by a panel of three industry experts. The judges' will be drawn from government agencies, academia and the commercial sector. The judges' decisions will be independently moderated and quality assured before being confirmed. The judges will be briefed on assessment procedures prior to the competition. The judges' individual marks will be recorded and a final mark will be awarded per criteria based on an average of the individual marks.

## Competition rules

- There will be a familiarisation period with equipment and to ask questions regarding the competition structure. No questions are allowed to be asked to judges or scrutineers once the familiarisation period is over.
- Competitors are to use ONLY the laptops and equipment provided by British Geological Survey. No personal electronics, mobile phones, laptops or any other devices are allowed to be taken in to the competition area.
- Competitors are only able to discuss research material and ideas within their own team. Competitors are not allowed to converse with other teams.
- No material is allowed to be removed from the competition area unless specified.
- All work must be completed within the allotted competition time frame. If competitors fail to do so 5 points will be deducted from their overall mark
- Competitors wishing to leave the competition during the work time must obtain the permission of the judges or nominated competition persons. The judges should make a formal note of who has left the area and the duration of their absence.
- Closed shoes to be worn throughout the competition

## Contact details

For technical advice about the competition contact:

Dick Crofts, Anna Harrison or Rhonda Newsham

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**Email:** [rgc@bgs.ac.uk](mailto:rgc@bgs.ac.uk) / [amja@bgs.ac.uk](mailto:amja@bgs.ac.uk) / [rne@bgs.ac.uk](mailto:rne@bgs.ac.uk)

For general information about competitions please contact the WorldSkills UK contact centre:

**Free phone:** 0800 612 0742

**Email:** [worldskillsuk@ukskills.org.uk](mailto:worldskillsuk@ukskills.org.uk)

**Web:** [www.worldskillsuk.org](http://www.worldskillsuk.org)