1. Overview

This module aims to provide an overview of the generation, transformation and use of energy across heating, transport and electricity. It aims to provide students with an appreciation of the UK energy mix and how this has changed in recent years, with a focus on renewable technologies. Further, it aims to communicate the political importance of energy and introduces a number of competing tensions in forming energy policy for consideration.

The first lesson focuses on an introduction to the flows of energy, from supply through transformation, to demand. The UK energy mix is presented as an example. Different types of electricity generation are identified, with a focus on the energy inputs to each, technology involved in the transformation, and energy outputs. The distinction between finite and renewable energy is introduced, before discussing the UK energy mix as an example and the change in this mix over the last few years, highlighting the significant increase in renewable generation. Students then discuss an energy diary and produce their own, before finally identifying some activities to reduce energy demand.

The second lesson focuses on renewables as a type of energy generation, highlighting the multiple different technologies that can be involved in the capture and transformation of renewable energy source. UK offshore wind is used as a case study.

The final lesson highlights three, often conflicting, areas of energy policy: (i) the green agenda; (ii) security of supply; and (iii) energy cost. This is labelled the ‘trilema’, and each aspect is discussed in turn. Some examples of energy policies that address each are provided, and the students are asked to rate a number of additional policies against each.

1. Content areas

* Energy generation, transformation and use;
* Renewables;
* Actions for reducing energy demand;
* Economics of energy generation;
* Energy policy;

1. Skills

* Analysis of data;
* Data presentation and interpretation;
* Critical consideration of policy choices;