



Lesson Eight:	Can we survive without oil?		
Aim:	To investigate different types of renewable energy sources and deduce which are most appropriate for the UK and Oman.		
NC Links:	Describe and understand the distribution of natural resources and energy; Economic diversification		
Scottish NC Es and Os:	SOC 3-08a; SOC 3-13a; LIT 3-29a		
Key Vocabulary:	oil nuclear renewable wind biomass precipitation	gas energy non-renewable tidal hydroelectric refinery	coal resources solar geothermal sources
Resources:	Learning Outcomes:		
PowerPoint: Can we survive without oil? Renewable energy fact cards Post-it notes	<ul style="list-style-type: none"> • To describe different examples of renewable energy • To explain how different renewable energy systems work • To justify the use of renewable energy • To infer, deduce and collaborate 		
Lesson Introduction:			
<p>Students will need to have some prior knowledge of renewable and non-renewable energy sources, their physical locality and the geographical location of Muscat. Throughout the lesson, students will make deductions about renewable energy and how it is used (similarly or differently) between the two countries. Students will deduce how useful each type of energy is to a specific locality by considering the economic and efficiency value, environmental considerations, the local landscape and the local climate when making their judgements.</p>			
Starter: (15 mins)			
<p>Slide 2: Renewable or Non-Renewable? By looking at each of the pictures, students need to consider whether the image shows a renewable or non-renewable energy source and record their initial ideas. Students can refer back to these and develop them throughout the lesson.</p> <p>Slide 3: True or False? Present the statement to students and allow them time to consider the follow up question. To support students with their responses there is a simplified comparison table for London and Muscat. Students can record their ideas and develop those they noted previously.</p>			
Main Activities (35 mins)			

Slide 4-5: Which renewable energy would work best?

In groups, the students will have a set of the *Renewable energy fact cards*. The students will initially be focusing on the UK and discovering which renewable energy would work best using the different criteria on the cards. They will record their answers on post-it notes and order them from the most effective to the least. Students should be advised that approximately 3kw is required to power a home and that 1kw is needed to supply electricity for 3 light bulbs for 10 hours.

After a small amount of time, a mini-plenary should be held to find out if any groups have disagreements. The groups should be allowed time to explore what each other has viewed to be the most beneficial for the UK and to question each other using the target geographical terminology.

Following this, the students will carry out the same task but for Oman. Students should be signposted to their initial ideas about the climate of Oman.

The task can be made simpler by asking students to just debate the best option, or students who would like a greater challenge can rank their choices.

Reflection: (10 mins)**Slide 6: Time for Reflection**

A whole class discussion can be created by using the prompt questions on the slide. The teacher or a nominated student can record the ideas.

Additional Lines of Enquiry:

- Hold a class debate on whether Oman should rely solely on renewable energy, with students in teams and arguments based on the 'Point-Evidence-Explain' structure.

Bibliography:

Slide 2, 4 and 5: Tidal image author's own. Solar image from Outward Bound Oman.
All other images from <https://pixabay.com/en/>