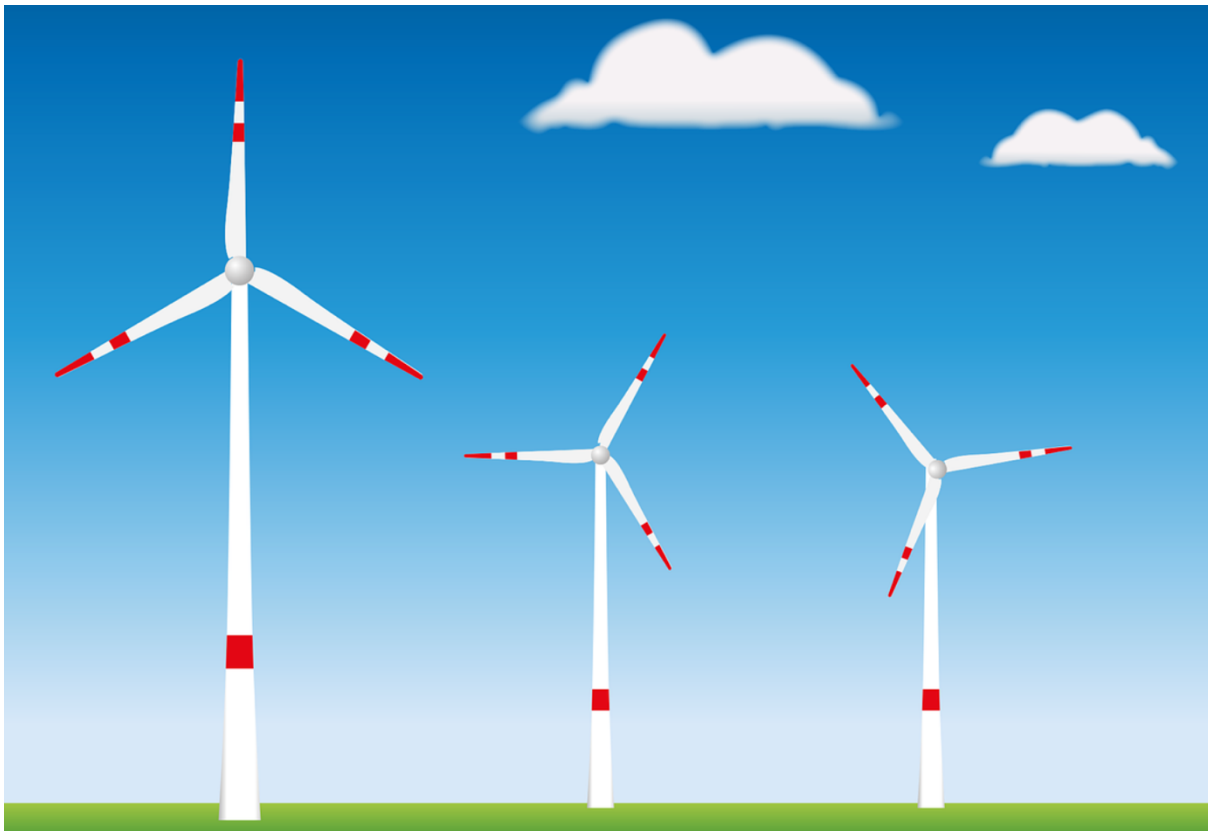


Wind Energy



SPSE Reading Lesson

Task: *Read the text on Wind Energy and fill in the outline plan. Identify the background, key problems, possible solutions and evaluation.*

Teacher's Notes

Reading Text - SPSE

Time: 1 hour

Level: *****/[B2/C1]

Lesson Plan

Aim: to develop the students' ability to read one academic text and highlight key points connected to background, problems, solutions and evaluation.

1. Lead in

- What is wind energy? Brainstorm ideas and associated vocabulary.
- Key vocab: *wind farm, on-shore / off-shore, wind turbine, blades, generate electricity, sustainable energy, renewable energy (renewables), solar power, tidal energy, biomass, biogas, fossil fuelled power plants.*

2. SPSE Revision

- Remind students about what is a SPSE essay.
- Go here: <https://www.academic-englishuk.com/spse> (Models / Language).

3. Reading

Give out blank outline and reading text. Set 45 minutes for the students to read the text and fill in the outline with the background, problems, solutions, evaluation.

4. Feedback

Feedback as a group or give out model outline answer sheet.

5. Extra

Students Internet research a sustainable energy (tidal, solar, biomass, biogas, etc..), create a SPSE plan and then write an essay.

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UK Wind energy

The UK is one of the best locations for wind power in the world, with over 458 operational onshore wind farms operating 5,215 turbines and 1,465 turbines offshore [REDACTED] [REDACTED] (Renewable UK, 2015). Wind power is the largest renewable source of energy in the UK followed closely by Solar power and the Government is investing heavily into renewables to reduce its reliance on fossil fuels and [REDACTED] [REDACTED]. This essay will discuss two main problems of associated with reliability, offer possible solutions and finally evaluate their effectiveness.

According to Wilson (2016), the main problem associated with wind power is that it cannot produce a constant supply of energy. Obviously, it is reliant on [REDACTED] [REDACTED] a fluctuated source of power. The main consequence of this, is that the imbalance fails to meet the constant electricity energy needs of UK consumers, which in turn gives rise to backing up the supply grid through the use of fossil fueled power plants. This over-reliance on back-up systems leads to a further [REDACTED] [REDACTED]. Germany is the world leader in sustainable energy development but this process has raised electricity bills for the consumer and it is arguable how eco-friendly their sustainable energy program is (Peterson, 2014).

Many critics are now warning that countries should invest more in fossil fuel and nuclear power stations to compensate this disparity. However, [REDACTED] [REDACTED]. Being overly-reliant on one or two renewable sources is a grave mistake, evidence seems to suggest that using a variety would enhance energy efficiency. The main examples given by Johnson et al (2015), [REDACTED] [REDACTED], these work on the same principle as conventional fossil fuel power stations and can activated when there is a fall in supply from wind and solar. Another possible solution, unlike Germany, [REDACTED] [REDACTED], which is a consistent source of energy.

To a certain extent these solutions seem plausible in the compensation of fluctuating energy output from wind turbines and both release a minimum amount of CO2 compared to fossil fuel. However, [REDACTED] [REDACTED] (Wilson, 2016) and this would need to be developed and accepted through public consultation and Government Policy, which could take years. [REDACTED] [REDACTED], although the initial costs to implement such projects would need significant investment (Johnson et al, 2015) and more [REDACTED] [REDACTED] (Renewable UK, 2015).

Overall, reducing CO2 and limiting the reliance on fossil fuels is the primary directive for the UK government. The solutions proposed have limitations but with investment and public backing it could be a better approach in [REDACTED] [REDACTED].

References

- Johnson et al. (2015) Biofuel is a viable alternative. [online] Available at: <http://www.renewable-energy.gov.uk> [Accessed 10 October 2015].
- Peterson, R, J. (2014) How countries are implementing eco-energy projects. *The New Scientist*. 78 (4).
- Renewable UK. (2015) Renewable Energy for future generations. *Science* 5 (3). Pp223-256
- Wilson, C. (2014) Sustainable energy is not the solution. *Nature*. 78 (2). Pp23-56

SPSE Outline

Situation	
Problems	Development
Solutions	Development
Evaluation	Positives Negatives
Conclusion	

SPSE Outline **ANSWERS**

<p>Situation</p> <p>Wind power - nearly [redacted] turbines = [redacted] energy. (Renewable UK, 2015)</p> <p>Gov. directive / EU Renewables Directive 2009.</p> <p>Essay outline.</p>	
<p>Problems</p> <p><u>Problem 1</u></p> <p>[redacted] supply of energy. (Wilson, 2016)</p> <p><u>Problem 2</u></p> <p>Sporadic use of fossil fuel power stations.</p>	<p><u>Development</u></p> <p>Weather – fluctuation – [redacted] – back up system – fossil fuel power stations.</p> <p><u>Development</u></p> <p>Inefficient & expensive [redacted] costs.</p> <p>Ex. Germany.</p> <p>Q. Is it Eco-friendly? (Peterson, 2014)</p>
<p>Solutions</p> <p><u>Solution 1</u></p> <p>A variety of [redacted] sources. (Johnson et al. 2015)</p> <p><u>Solution 2</u></p> <p>[redacted] energy. (Peterson, 2014)</p>	<p><u>Development</u></p> <p>Biofuel – [redacted]. (Johnson et al. 2015)</p> <p><u>Development</u></p> <p>Consistent source of energy. (Peterson, 2014)</p>
<p>Evaluation</p> <p style="color: green;">Positives</p> <p><u>Solution 1</u></p> <p>[redacted] & less CO2.</p> <p><u>Solution 2</u></p> <p>[redacted] & constant (Johnson et al. 2015)</p>	<p style="color: red;">Negatives</p> <p>No [redacted]. (Wilson, 2016)</p> <p>Public consultation.</p> <p>Gov. Policy.</p> <p>Years.</p> <p>Initial [redacted] costs / significant investment.</p> <p>More research. (Renewable UK, 2015)</p>
<p>Conclusion</p> <p>Solutions have limitations BUT [redacted].</p>	