

Introduction to renewable energies

Introducing renewable energy

In this first week you will look at the environmental concerns that have caused the rise in interest in renewable energy. You will also explore the wide variety of renewable energy sources, along with some energy concepts and definitions to help you understand the subject.

You will investigate the Sun, which powers most of the renewable energy sources, then move to discuss energy supply and demand, in the world and the UK, then look briefly at the problem of climate change.

Current European and UK targets for increasing the share of renewables in coming decades will also be covered. (1)

Defining sustainable and renewable energy

Concerns about the ‘sustainability’ of humanity’s use of fossil and nuclear fuels have been a major catalyst of renewed interest in the renewable energy sources in recent decades. A sustainable energy source can be defined as one that:

- is not substantially depleted by continued use
- does not produce significant pollution or other environmental problems
- does not cause health hazards or social injustices.

In practice, few energy sources come close to these ideals, but *renewable energy sources* are generally more sustainable than fossil or nuclear fuels: they are essentially inexhaustible, and their use usually involves fewer health hazards and much lower emissions of greenhouse gases and other pollutants.

So, where do renewable energies come from, and why the renewed interest? (1)



Figure 1: Renewable energy and Green planet. (2)

References

(1) Godfrey Boyle from Chapter 1 of Renewable Energy (Boyle, G. (ed) OUP, 2012)), originally authored by Godfrey Boyle, Bob Everett and Gary Alexander. The Open University, "Can renewable energy power the world?" Free course, 25th April 2016. Available at <http://www.open.edu/openlearn/science-maths-technology/can-renewable-energy-power-the-world-b/content-section-0>

(2) Olearys. Globo verde. July 30, 2007. Online image. Galerie Aproximando Ciência e Pessoas. Flickr January 31, 2018. <<https://www.flickr.com/photos/97513256@N06/9044197386/>>

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