

3 Wind is a renewable resource used to generate electricity.

- (a) (i) State **one** advantage and **one** disadvantage of producing electricity using wind turbines.

(2)

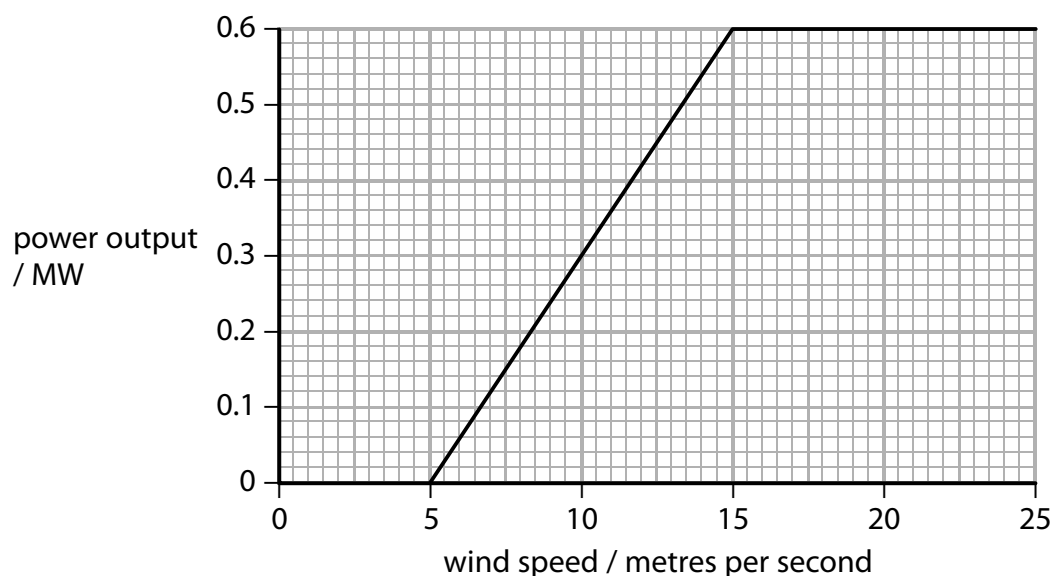
Advantage.....

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Disadvantage.....

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- (ii) The graph shows how the power output of a wind turbine varies with wind speed.



Describe how the power output of a wind turbine varies with wind speed.

You should use data points from the graph in your answer.

(3)

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(b) A wind turbine produces an alternating voltage of 600V.

The voltage needs to be increased to 132 kV before transmission to a nearby town.

The size of the voltage is changed using a transformer.

Describe the structure and operation of a suitable transformer.

You may use a diagram in your answer.

(5)

(Total for Question 3 = 10 marks)