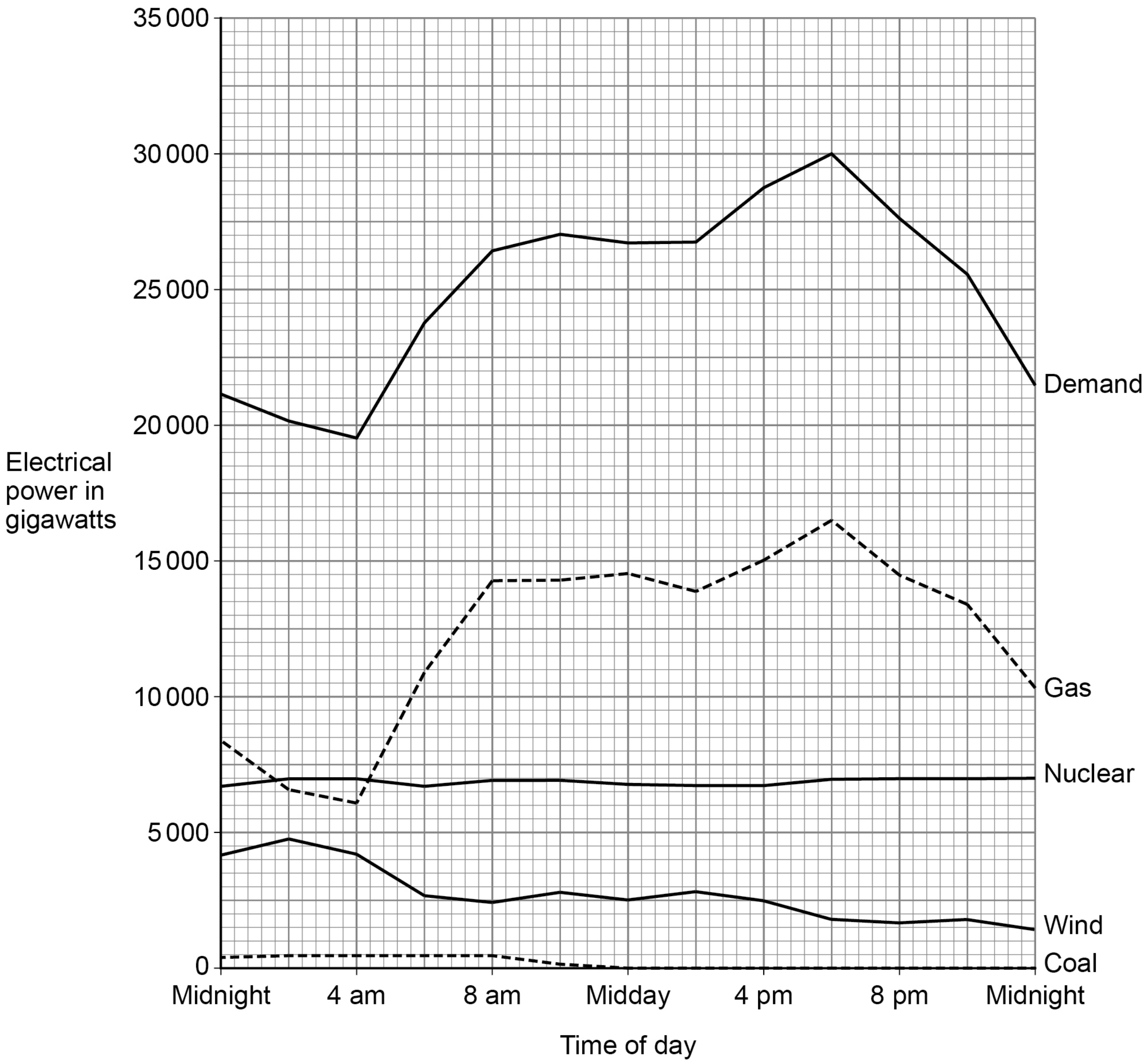
Do not write outside the box

0 1 **Figure 1** shows some of the energy resources used to meet the demand for electrical power in the UK on one day in 2020.

Figure 1



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0 1 . 1 The maximum demand for electrical power on that day was at 6 pm.

Determine the percentage of the maximum demand for electrical power that was generated using gas.

[3 marks]

Percentage = ____________ %

0 1 . 2 The UK government wants to reduce carbon emissions as much as possible.

Which energy resources need to be used less to achieve this?

[1 mark]

Tick (✓) **one** box.

Coal and gas ☐

Gas and nuclear ☐

Wind and coal ☐

Wind and nuclear ☐

Question 1 continues on the next page

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A network of transformers and transmission cables transfers electrical power from power stations to consumers.

0 1 . 3 What is this network called?

[1 mark]

____

____

0 1 . 4 Explain how using step-up transformers makes the network efficient.

[3 marks]

____

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8

Question 1

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.1	16 500(GW) **and** 30 000 (GW) read from graph		1	AO3 6.1.3
	percentage = $\frac{16500}{30000}$ (×100%)	allow a correct substitution using a value of 15300 or 18000 for gas	1	
	percentage = 55 (%)	allow an answer consistent with a value of 15300 or 18000 for gas	1	

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.2	coal and gas		1	AO1.1 6.1.3

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.3	the <u>national</u> <u>grid</u>		1	AO1 6.2.4.3

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.4	potential difference increases	allow large potential difference	1	AO1 6.2.4.3
	current is reduced	allow small current	1	
	so there is less / low energy loss (to the surroundings)	allow less / low heating in the transmission cables ignore resistance do **not** allow no energy loss	1	

Total Question 1		**8**