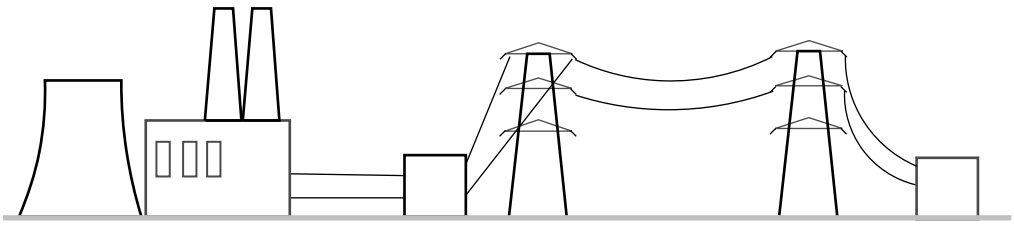
Do not write outside the box

1 Electricity is distributed around the country using the National Grid. The diagram shows part of the grid.



1 (a) (i) Transformers perform an important role in the distribution of electricity.

Explain the role of transformers in the National Grid. **[4 marks]**

Transformers (or step up transformers) can reduce the current through the cables or increases p.d. (or potential difference) across the cables. [1]

Which reduces the energy loss from the cables. [1]

Which increases the efficiency (of the National Grid). [1]

Transformers also reduce the p.d. to a safe level for consumers. [1]

1 (a) (ii) The cables shown in the diagram could be laid underground.

Give the advantages of laying the cables underground. **[2 marks]**

Any two from:

Cannot be seen.

Reduced shock hazard.

No hazard to aircraft.

Won't be affected by severe weather.

Lots of possible points here on both sides so well worth learning for a possible 6 marker.

1 (a) (iii) Give one disadvantage of laying the cables underground. **[1 mark]**

Any one from:

Repairs take longer / are more expensive.

Difficult to access cables.

Need cooling systems.

Land disruption to lay cables.

Expensive to install.

Need layers of electrical insulation.

(Total 7 marks)

End