

REVISION CARDS - LIFE CYCLE ENERGY ANALYSIS

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On behalf of The World Association of Technology Teachers

W.A.T.T.



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WHAT IS LIFE CYCLE ENERGY ANALYSIS?



This a way of analysing the way energy is used in the manufacture of a product and throughout it's useful lifetime.

It involves analysing the energy required to extract raw materials from the ground, transportation of the materials to the processing plant, processing raw materials into usable materials, manufacturing a product, the energy consumption throughout the product's useful life and eventually energy required for recycling and disposal.

SAVING ENERGY AT EACH STAGE

EXTRACTION OF RAW MATERIALS

Place processing plant close to source of raw materials

PROCESSING RAW

Use as much recycled materials as possible

MATERIALS TRANSPORT TO FACTORY

Build factory close to materials processing plant and use trains not individual lorries for transport

STAGES OF MANUFACTURE

Use green energy and save as much energy as possible

DISTRIBUTION OF PRODUCT

Use hybrid or electric vehicles

END OF LIFE RECYCLING

Design product to be easily dismantled, no need for special / power tools

CASE STUDY - VOLVO CARS



Volvo use trains to transport raw and processed materials not lorries.

Volvo uses green energy such as electricity produced through wind power and hydroelectricity.

Volvo claim that 85% of the materials they use can be recycled and used again.

Volvo have reduced their CO2 emissions through the use of green energy and recycling materials.

1. What is Life Cycle Energy Analysis? 3 marks

1. How have Volvo reduced their energy consumption? 3 marks