

Describe how one molecule of glucose is able to produce 38 ATP via aerobic respiration

In glycolysis

- are used
- For the conversion of glucose to
- And conversion of fructose-6-phosphate to
- are formed from phosphorylation
- i.e 2 ATPs from (2x) conversion of to 3-phosphoglycerate
- and 2 ATPs from (2x) conversion of to pyruvate
- net production from glycolysis

Link reaction

- conversion of pyruvate to produce

In Krebs cycle/citric acid cycle (from 2 pyruvate)

- are produced from phosphorylation
- During (2x) conversion to succinate

In electron transport chain

- ATPs are generated via each NADH
- 2 ATPs are generated via each
- 2 NADH from are transported from cytoplasm to generate
 ATPs
- NADH produced from the conversion pyruvate to acetyl CoA generate ATP
- NADH from 2x Krebs cycle generate ATP
- FADH₂ from 2x Krebs cycle generate ATP