

cyclic photophosphorylation

This produces ATP

- no photolysis of water
- no NADPH made

① light hits PS I

② e^- is excited by energy of a photon

③ Passed onto e^- carriers

④ The energy of the e^- is used to actively pump H^+ across the membrane

⑤ creating an electrochemical gradient

⑥ e^- passes back to PS I (not to e^- carrier further on)

⑦ Another photon hits etc

Why do you need this?

- Non cyclic photosynthesis produces 1 ATP per electron pair
- But for light independent stage you need 1.5 ATP
- ∴ This makes up the difference

Preview from Notesale.co.uk
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Also:

- so small amounts of ATP can be made for use in guard cells;
- so K^+ can be actively transported into the cell
- so ψ decreases
- so water moves in by osmosis
- ∴ cell swells & stomata open.