Light Dependent Reactions

Location: Thylakoid Membrane of the Chloroplast

Inputs (Reactants)

- Light Energy (Photons)
- Water (Hâ,,O)
- NADP+
- ADP + Pi

Outputs (Products)

- Oxygen (Oâ,,) - *Byproduct*
- ATP
- NADPH
- Protons (H+)

Photoexcitation	Chlorophyll in PSII absorbs light, exciting electrons.
Photolysis	Hâ,,O is split into 1/2 Oâ,,, 2H+, and 2e- to replace lost electrons.
Electron Transport Chain	Electrons move through Cytochrome b6f, pumping H+ into lumen.
Photophosphorylation	Chemiosmotic gradient drives ATP Synthase to produce ATP.
Reduction	NADP+ Reductase transfers electrons to form NADPH.

Diagram Notes