**ISS Oxygen Generation System — (partial electrolysis / integration with CO₂-reduction)**

[SpaceCraft Oxygen Recovery (SCOR) - NASA](https://www.nasa.gov/spacecraft-oxygen-recovery-scor/)  
NASA SCOR / oxygen-recovery program (recent initiatives to close O₂ loop).  
  
[Integrating hydrogen utilization in CO2 electrolysis with reduced energy loss | Nature Communications](https://www.nature.com/articles/s41467-024-45787-x)  
Integrating hydrogen utilization in CO2 electrolysis with reduced energy loss  
  
summary  
“Partial electrolysis” in ISS terms reflects that O₂ generation by electrolysis is integrated with CO₂ reduction (the Sabatier reactor). Electrolysis produces H₂; some H₂ reacts with cabin CO₂ in Sabatier to produce H₂O (recycled) and CH₄ (vented), so the oxygen/ hydrogen loop is not fully closed. Sabatier improves resource recovery but does not recover all hydrogen — additional technologies (e.g., methane-to-hydrogen recovery) are needed to fully close the loop.  
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