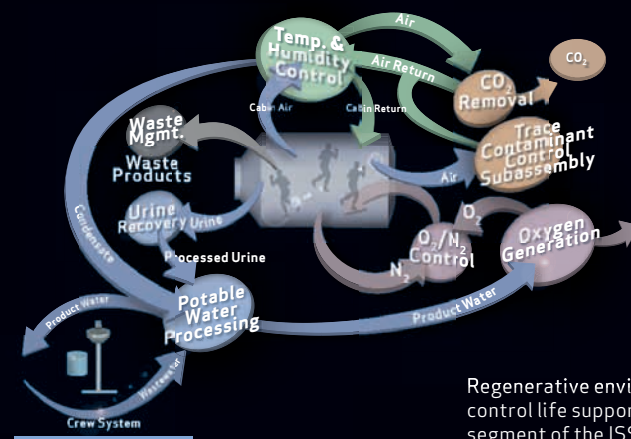


Environmental Control and Life Support System (ECLSS)

Earth's natural life-support system provides the air we breathe, the water we drink, and other conditions that support life. For people to live in space, however, these functions must be performed by artificial means. The ECLSS includes compact and powerful systems that provide the crew with a comfortable environment in which to live and work.

The on-orbit ECLSS is supplemented by an assortment of resupply vehicles provided by the international partnership. The U.S. Space Shuttle delivers water (scavenged from the water produced by the Shuttle fuel cells and transferred across to ISS in CWCs), high pressure O₂ and N₂, and atmospheric gas. The Russian Progress, Japanese H-II Transfer Vehicle (HTV), and European Automated Transfer Vehicle (ATV) deliver water and atmospheric gas.

The ISS Program is currently reviewing a high pressure gas delivery system for post Shuttle retirement. The Nitrogen/Oxygen Resupply System (NORS) would provide capability to deliver high pressure O₂ and N₂ on any vehicle with pressurized delivery capability, including U.S. Commercial Resupply System (CRS) vehicles.



Regenerative environmental control life support in the U.S. segment of the ISS.

U.S. Regenerative Environmental Control and Life Support System (ECLSS)

- | | |
|---------------------------|---|
| 1 Catalytic Reactor | 12 Reactor Health Sensor |
| 2 Deionizer Beds | 13 Storage Tanks |
| 3 Digital Controller | 14 Urine Processor Pumps |
| 4 Distillation Assembly | 15 Volume reserved for later CO ₂ Reduction System |
| 5 Electrolysis Cell Stack | 16 Water Processor Delivery Pump |
| 6 Gas Separator | 17 Water Processor Pump & Separator |
| 7 Multifiltration Beds | 18 Water Processor Wastewater Tank |
| 8 Particulate Filter | |
| 9 Power Supply | |
| 10 Product Water Tank | |
| 11 Pumps & Valves | |

- = Oxygen
- = Process Water
- = Hydrogen (vented overboard)
- = Urine
- = Brine
- = Potable Water
- = Humidity Condensate

