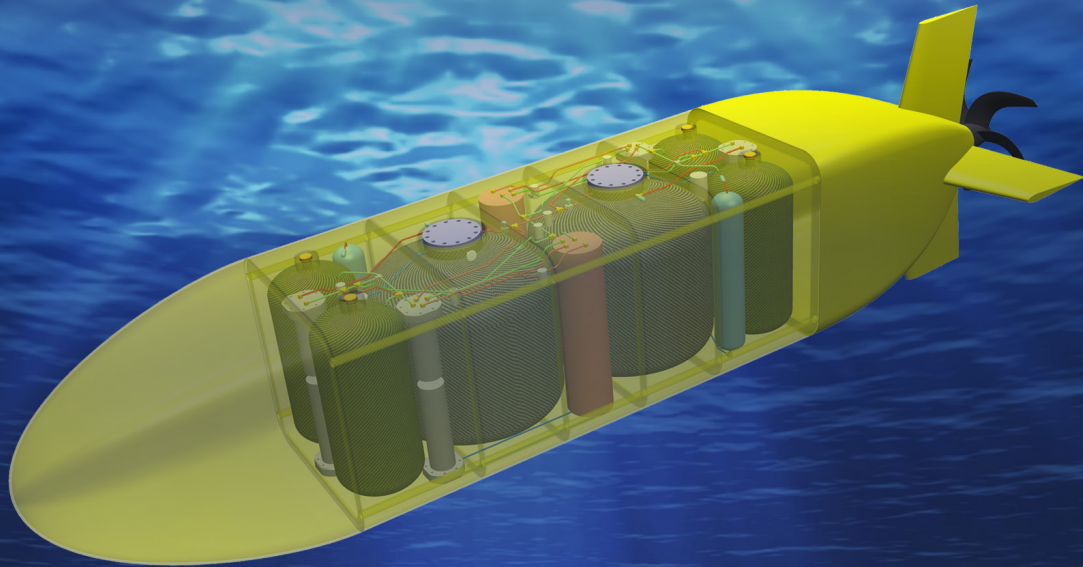


# ALPS

ALUMINUM POWER SYSTEM



- Safe, reliable operation
- Increased energy density
- Stable, long shelf life
- Simple refueling process
- Modular, scalable

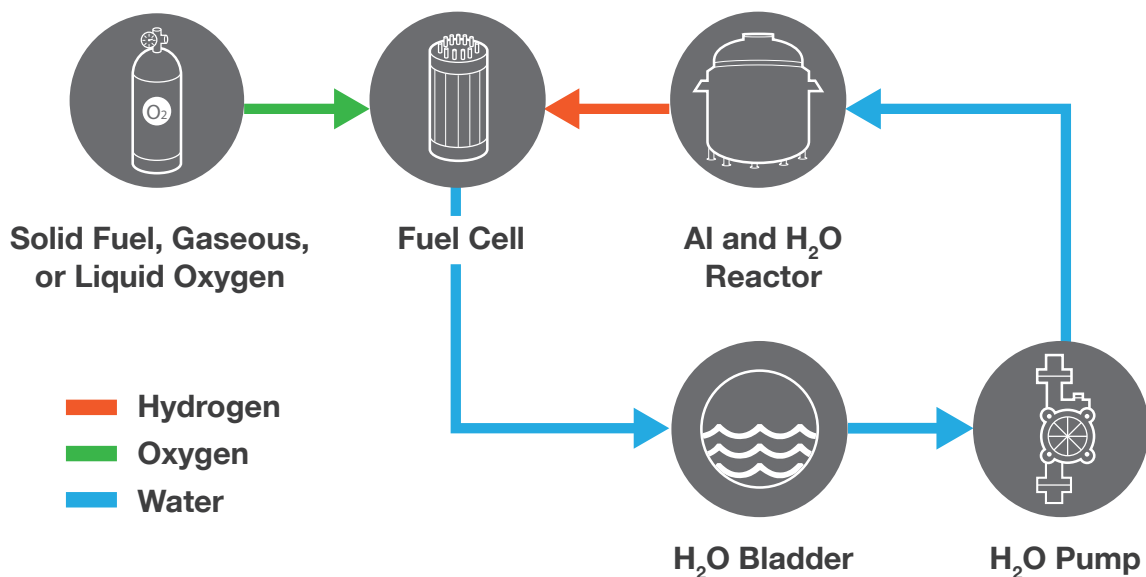


# ALPS

General Atomics Electromagnetic Systems (GA-EMS) specializes in developing safe, reliable power and energy systems for extreme environments. The Aluminum Power System (ALPS) utilizes an aluminum alloy to provide an energy dense, cost efficient power source for manned and unmanned underwater vehicles.

Aluminum stores more energy per unit volume than any other viable non-nuclear source. ALPS' simple system design and control scheme (load following) provides a clean, robust, reliable power source for underwater operations and long endurance missions. With primarily passive components and control for quiet operation, ALPS is well suited for underwater stealth applications.

GA-EMS has successfully completed multiple autonomous ALPS demonstrations over 30 days in length. ALPS has also undergone a full end-to-end underwater demonstration, with the system supplying fuel to a fuel cell to electrically power a Remotely Operated Vehicle. ALPS can be optimally configured for Unmanned Underwater Vehicle and seabed node operations. ALPS has achieved Technology Readiness Level six (TRL-6), with development underway to reach TRL-7.



**Safe, clean, non-toxic**