

# Fuel Cells for AUVs

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## ***Advantages***

- Higher specific energy/energy density than batteries
- Potential to operate directly on logistics fuels
  - Rechargeable

## ***Challenges***

- Full system integration to high energy system
- Efficient oxygen and fuel (hydrogen) storage
  - Buoyancy of stored gases
  - Maintaining center of mass

## ***Near Future Opportunities***

Proton Exchange Membrane Fuel Cells with advanced oxygen and hydrogen storage capabilities

## ***Navy-After-Next Opportunities***

Solid Oxide Fuel Cells operating on logistics fuels by direct reforming at anode (no reformer needed)