**Key Requirements**

* **Constraints:**
  + At least one (oxygen) pump prototype shall be manufactured.
  + The EFS shall use battery powered brushless DC motors.
  + The EFS will be designed in such a way as to be compatible with pump scaling (affinity) laws.
  + The EFS prototype system shall be low cost, with each pump designed to be manufactured for under $7,900 (total of up to $15,800).
  + The EFS shall deliver propellants in the liquid phase during operation.
  + Test apparatus for the pumps are compatible with the existing liquid engine test stand (LETS).
* **Success measures:**
  + The EFS pumps liquid isopropyl alcohol (IPA) at 1.3-1.4 lbm/s.
  + The EFS pumps liquid oxygen (LOX) at 1.6-1.8 lbm/s.
  + The EFS delivers a discharge pressure greater than 350 psi.
  + The EFS delivers a stable discharge pressure varying less than 10%.
  + The EFS can sustain operational requirements for 20 seconds.
  + Prototype approximates a flight ready system in terms of mass (less than 10 kg).
  + The pump can be disassembled, moved, and assembled by 3 team members in under 1 hour.
* **Stretch goals:**
  + - Manufacture IPA pump in addition to LOX pump.
    - Hot flow testing (e.g., Providing LOX to the LV4 thrust chamber during live fire)