



Power & Propulsion Element Question and Answer (Q&A)

The following are questions received and answered during an industry forum Q&A session for NASA's NextSTEP Draft Appendix C, Power and Propulsion Studies held on Aug 17, 2017.

Q: Please clarify the multiple power levels discussed. The first reference was to a 27-32 kW Power and Propulsion Element. A subsequent reference quoted extensibility from 50 kW.

A: The solicitation asks for studies of power capability in the 27-32 kW range that are extensible to 50 kW-class vehicles.

Q: Will the 27-32 kW EP system ever be running at full range while simultaneously powering the rest of the gateway?

A: That's one area we're looking at and responses to this solicitation will help us identify if that is feasible, or if there are obvious break points in the trade space.

Q: Do you prefer all propulsion to be electric? Do you expect the 15-year attitude correction RCS type propulsion to be done via SEP or is your preference chemical?

A: Our refueling requirements suggest that we will need a Reaction Control System to satisfy the propulsive requirements in terms of attitude control and orbit maintenance. Part of what we are asking through this solicitation is for break points where one vs the other vs a combination makes sense across orbital maintenance, orbital transfer, and attitude control scenarios. We're trying to assess which propellants make the most sense.

Q: If we're looking at a chemical system, is heritage going to be an evaluation criteria? Are you looking for technologies with other infusion areas, or do you want to keep the risk as low as possible?

A: We see the launch date of EM-2 as being the real driver. There are a number of study topics that could be real enablers or areas of technical risk that we need to understand. We welcome ideas during this solicitation process.

Q: Is NASA interested in early terrestrial tests – vacuum or ambient – particularly of propulsion components, to reduce risks earlier than orbital tests?

A: Our need date drives our risk posture. If we are able to take on technologies that need to be verified, then yes, we would want to see terrestrial tests before the mission.