

**Sustainable HLS Industry Forum Questions and Answers
May 3, 2021**

1) What is the starting point for Human lunar missions? NRHO Gateway, LEO, Earth or other?

NASA's operations concept for initial and subsequent sustaining human missions to the lunar surface identifies the Near Rectilinear Halo Orbit (NRHO) around the Moon as the location for human landing systems to receive the crew. Slide 10 of the briefing includes hyperlinks to additional information about HLS, including NextSTEP Appendices E and H, and the HLS operations concepts and starting points. HLS will receive the crew from Gateway for sustaining missions. Slide 10 also includes links to information about NASA capabilities, including each of the centers' expertise and main line of work. Support to contractors by NASA Centers will be managed by the HLS program.

2) Does NASA anticipate that a single contractor could win multiple risk reduction awards?

NASA will review the information that we get back from industry in response to this RFI. We are limited on funding.

3) How many Offerors could receive contract awards for the final LETS services procurement?

It is too early to determine. Development of the LETS RFP will take into consideration the information industry provides in response to this RFI, as well as anticipated budgets.

4) How many lunar landings does NASA foresee occurring before 2033?

As stated in slide 9 of the briefing, NASA anticipates at least six lunar landing service missions starting in the late 2020's. This may include up to one human lunar landing a year, but all these figures are only estimates, and the actual flight manifest will depend on the budget we receive.

5) Are all the vehicles expected to be human rated, or would some be cargo only?

NASA's focus for the LETS procurement is on carrying crew back and forth from NRHO to the Moon, which will require landers to be certified for humans. If industry has an opinion on this, please inform NASA.

6) What small business participation requirements do you anticipate for the LETS contracts?

NASA anticipates that the LETS procurement would incorporate the agency's typical small business requirements. NASA would do a procedural assessment

as required for any large-scale acquisition and communicate the small business percentages and goals in a draft RFP. Stay tuned for more information.

7) What is the flexibility of NASA to coordinate and expand these missions with commercial missions?

NASA seeks and encourages, to the maximum extent possible, the fullest commercial use of space, and welcomes suggestions for ways to work with industry to facilitate coordination of lunar lander capabilities for both NASA and commercial missions.

8) Does NASA anticipate sending crews larger than 4 to lunar orbit in the future?

The crew size of missions in the Artemis campaign will depend partly on the nature and extent of exploration assets, in addition to human landing systems, that are available on the Moon. NASA's Appendix-H includes a sustained HLS requirement for a habitable environment that supports four crewmembers assuming pre-emplaced surface infrastructure is available. NASA will keep industry informed as its sustained lunar architecture is confirmed.