



ISRU Session Findings



- It seemed that the major consensus was that ISRU was important for sustained human presence on the Moon
 - Landers & Surface System elements should be compatible with use of ISRU products
- Prospecting is desired to make ISRU better but ISRU should be location feedstock independent (at least early on)
- Lots of spin-in capability and expertise from mining industry and ‘green’ technologies for water recycling and bioprocessing of trash as well as spin-off back to mining and Earth industries
- Question of hydrogen/water at the poles seems to be very important for Outpost location and long-term sustained operation even if it is not utilized early - Also major science question. Long-term science possible if Outpost is nearby
- Significant payload mass increases to and from the Moon possible with ISRU and surface/orbital depots but may need to significantly change current Architecture concept from LAT I/II to obtain these benefits
- Space commercialization of the Moon is enabled by ISRU however lots of debate on how to commercialize ISRU and developing ‘markets’
- ISRU is not just oxygen production for ECLSS or propulsion. Need to expand to cover solar energy and power growth for Moon and Earth, construction, terrain modification, etc.
- Early demonstration of ISRU capabilities is important for sustained human operations and commercialization. Eliminate concern of putting ISRU in ‘critical path’.
 - An ISRU demonstration mission is highly desirable
 - Insertion into a highly linked deployment schedule is difficult
- **How much and when ISRU is needed is highly a function of what is the actual goal/purpose for the Lunar Outpost and NASA human exploration of the Moon**
- Group consensus was to ‘push back’ on NASA to raise importance of ISRU to the Lunar architecture objectives