

Moxie- the Mars oxygen

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In news- Recently, NASA's experiment has successfully produced oxygen on Mars(Moxie).

What is Moxie?

- **Moxie stands for Mars Oxygen In-Situ Resource Utilization Experiment (MOXIE).**
- **A lunchbox-sized gadget** has successfully generated breathable oxygen on Mars, equivalent to the effort of a tiny tree.
- The Moxie has been **successfully producing oxygen from the red planet's carbon dioxide-rich atmosphere** since February 2021.
- Researchers propose that a scaled-up version of Moxie be sent to Mars to continually create oxygen at the pace of hundreds of trees, ahead of people visiting the planet.
- **Moxie landed on the surface of Mars as part of Nasa's Perseverance rover mission.**
- Moxie was **able to manufacture oxygen on seven experimental runs by the end of 2021**, in a variety of atmospheric circumstances, notably during the day and night, and across several Martian seasons.
- It met its objective of **producing 6g of oxygen per hour in each run**, which is comparable to the rate of a small tree on Earth.
- **It is anticipated that when fully operational, the system will produce enough oxygen to support humans on Mars** and power a rocket to return them to Earth.
- This is the first demonstration of actually using resources on the surface of another planetary body, and transforming them chemically into something that would be useful for a human mission.
- The present version of the device is small enough to fit

aboard the Perseverance rover and is designed to run for brief periods of time.

- Larger units, preferably running constantly, would be included in a full-scale oxygen factory.
- So far, Moxie has demonstrated that it can produce oxygen at practically any time of day or year on Mars.