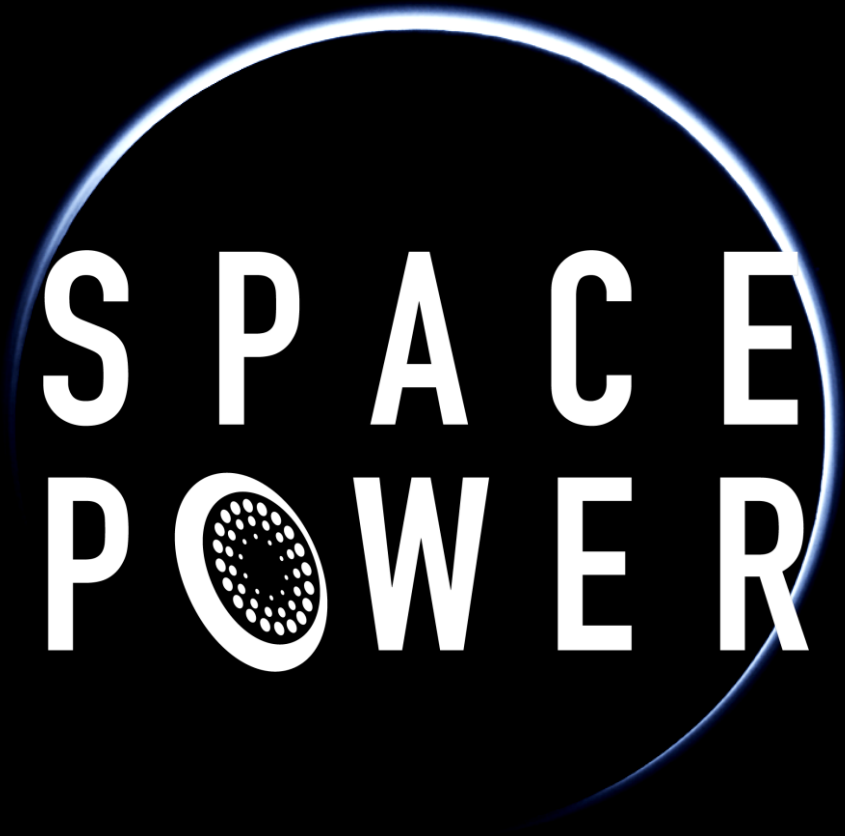


Increase
Productivity and
Sustainability in Space

EPIC2022 Noordwijk

The logo features the words "SPACE" and "POWER" stacked vertically, enclosed within a glowing blue circular arc that resembles a planet's horizon. The letter "O" in "POWER" is replaced by a circular icon containing a grid of small white dots, representing a satellite or a data array.

SPACE
POWER


Spacecraft have a limited power supply:

- The Sun is the only source of energy
- Nearly 50% of LEO mission time is spent in the eclipse
- Photovoltaics are limited in size and efficiency
- Batteries are driven to be large, hot and heavy

Power requirements in LEO are exploding:

- Growth in demand for satellite data is accelerating
- Demand for richer data requires increasingly energy intensive payloads

more data \Leftrightarrow more power



More technologies in space
need more power...

Space Power's satellites will supercharge spacecraft

Using LASER-based power beaming technologies, Space Power satellites will deliver high-speed charge, wirelessly and in the eclipse



With auxiliary power, customers can:

- **Reduce launch costs**
by minimising batteries and photovoltaics
- **Improve mission efficiency**
through increased duty cycles
- **Increase useful output**
by employing more energy intensive payloads
- **Boost operations**
by operating through the eclipse



Space Power can serve the full satellite life-cycle:

Beginning of life:


- Battery failure
- Photovoltaic release failure
- Incorrect orbits

Performance improvements:

- Battery care
- Photovoltaic supercharging
- Power in the eclipse and shadows

End of life:

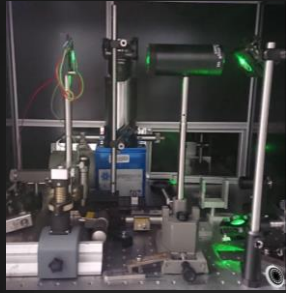
- Battery degradation
- Photovoltaic delamination and deterioration



Space Power's technology will drive sustainability benefits:

- Reduce reliance on complex and damaging multi-layered photovoltaics
- Shrink batteries and photovoltaics and decrease up-mass
- Minimise the number of satellites required for a mission

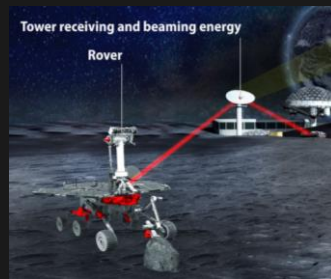
What we do:



- Tune photovoltaics in the lab

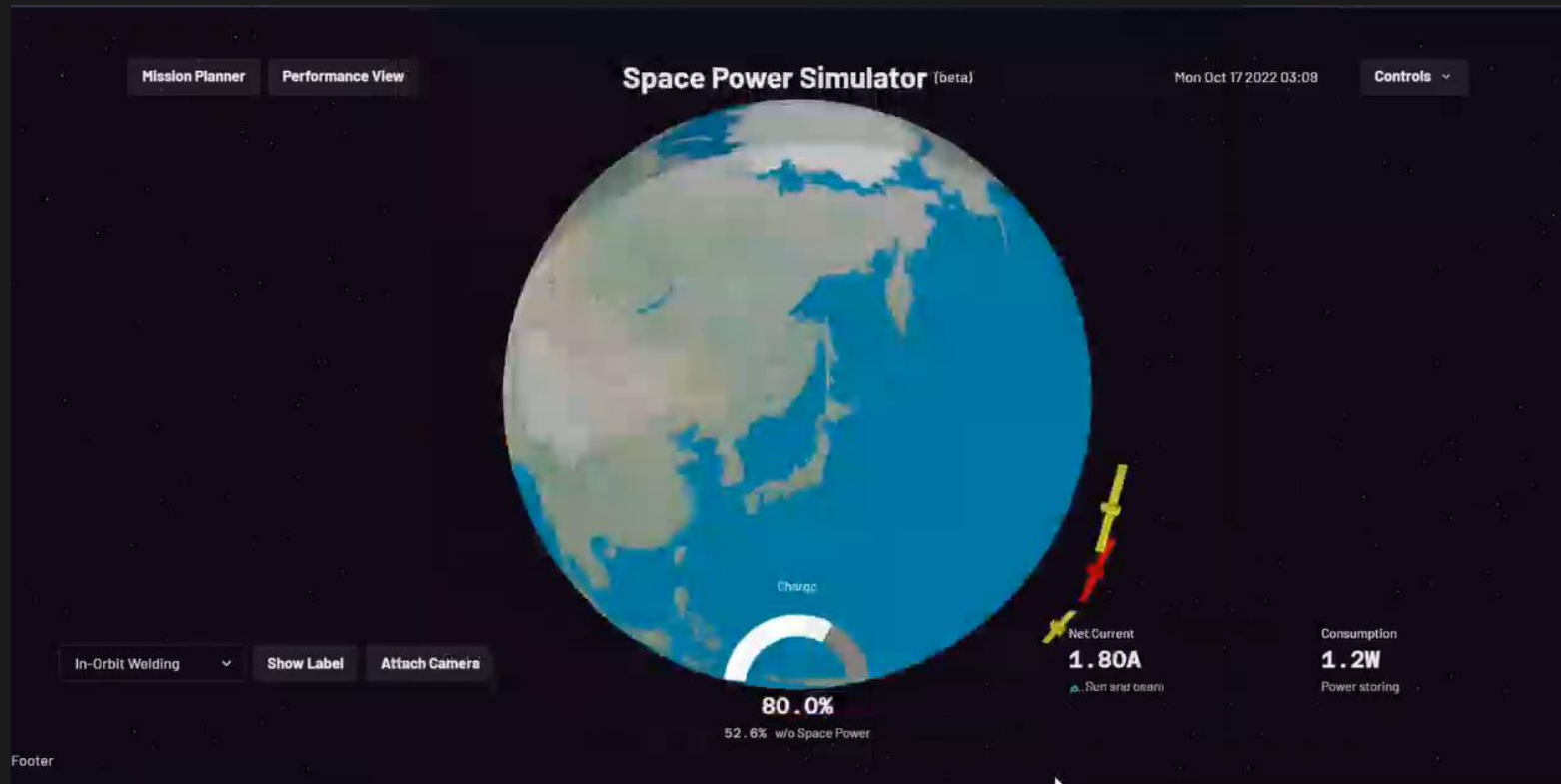


- Simulate power improvements



- Develop demonstrators and solutions

Space Power simulation model:



“If you can reduce the size of the battery on our CubeSats, we can save approximately £250k in launch costs per satellite”

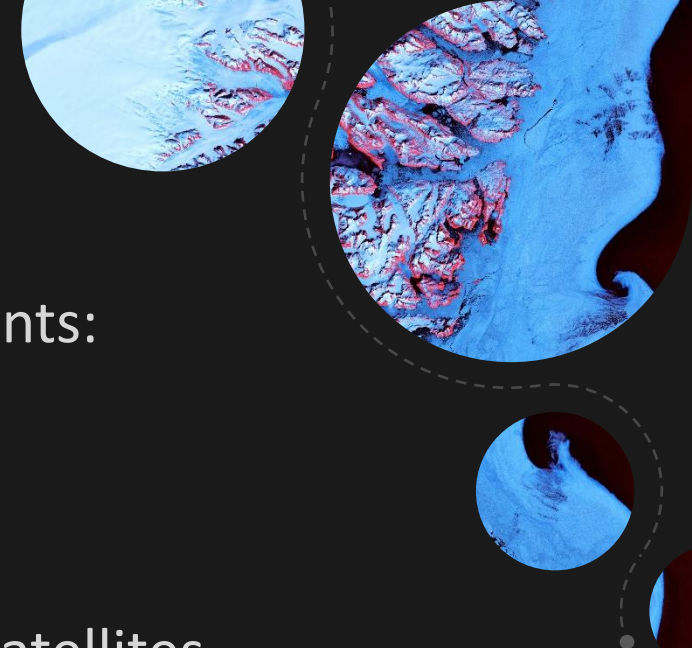
“Having auxiliary power would improve our rep-rates”

“We have to increase from 6U to 12U, just to accommodate the extra solar cells”

“Extra power is always a good thing”

“By charging in the dark, you can charge the PVs much harder as you can take advantage of the cold shadow”

“We would choose a lower efficiency PV if it meant we could get higher overall power”



Space Power's customers can be grouped by their power requirements:

Low:

- Communications
- Orbital data relay and processing
- Earth observation

Medium:

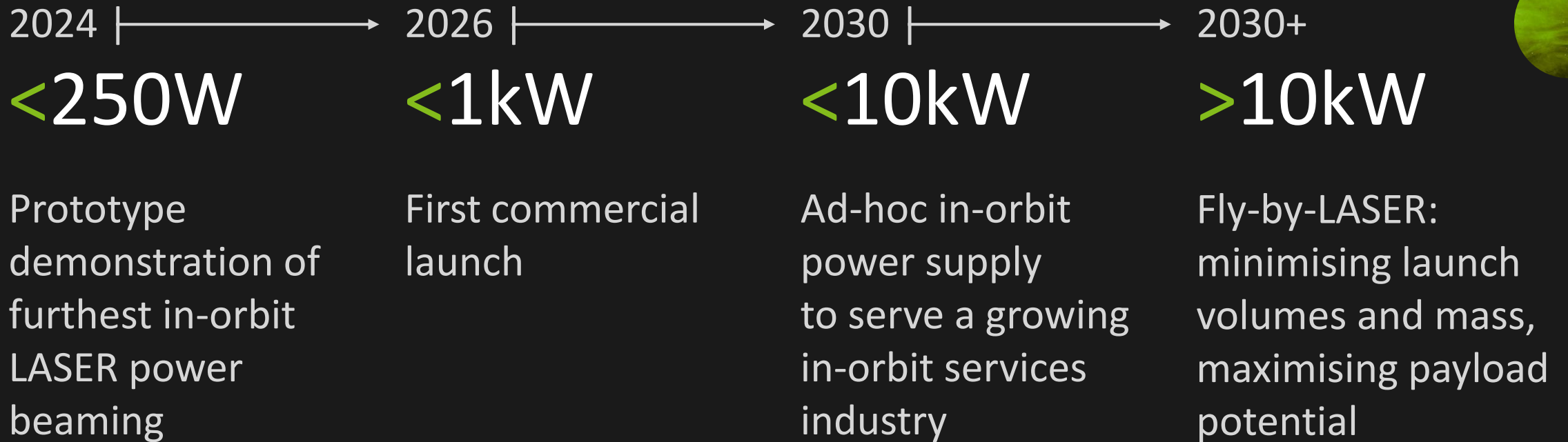
- Transportation
- In-orbit services
- In-orbit assembly and manufacturing

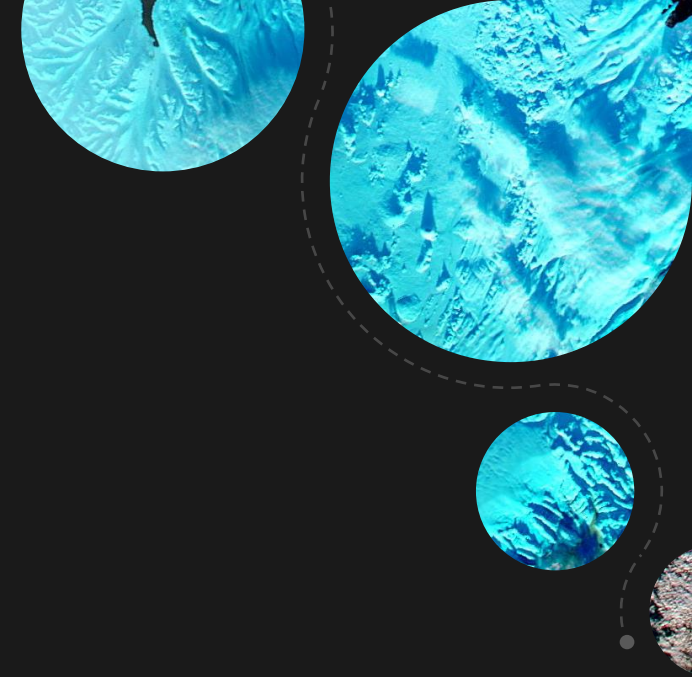
High:

- GEO satellites
- Stationary target (Lunar and Martian)
- Asteroid mining

More power \Rightarrow bigger LASERs


More power \Rightarrow bigger LASERs





The growth of the in-orbit services sector is an important next step:

- Enhance the commercial accessibility of space
- Maximise the cost-efficiency and sustainability of space missions
- Enable previously impossible missions



The commercialisation of Space is under way

but we need more power...

...talk to us to unlock your
mission's full potential



Keval Dattani
CEO



Joss Crewdson
CFO

