VIRTUS SOLIS

VIRTUS SOLIS

We provide **clean 24-7** power from space

WHO WE ARE

Founders

John Bucknell – CEO

SPACEX DIVERGENT

GM MICHIGAN

Dr. Edward Tate – CTO

DASSAULT SYSTEMES

GM MICHIGAN STANFORD

Seth Elliot – COO

NYU STERN

The Pegasus Group

Deeply Experienced Technical Team

life.augmented EDS DELPHI

RCA HUGHES ELECTRONICS IUPUI

BOEING Raytheon

Delco PURDUE Bastian SOLUTIONS a TOYOTA ADVANCED LOGISTICS company

THE PROBLEM WITH CURRENT ENERGY SOURCES

Fossil fuels & nuclear energy are:

- **Finite / Scarce** for fossil
- **Poor ROI** for nuclear

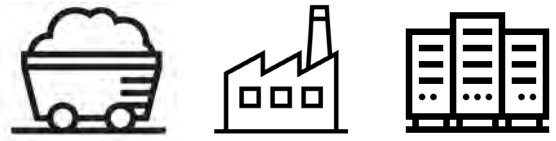
Renewable energy is:

- **Intermittent** and Non-Dispatchable
- **Expensive** to store or distribute
- Difficult to **scale** for global use

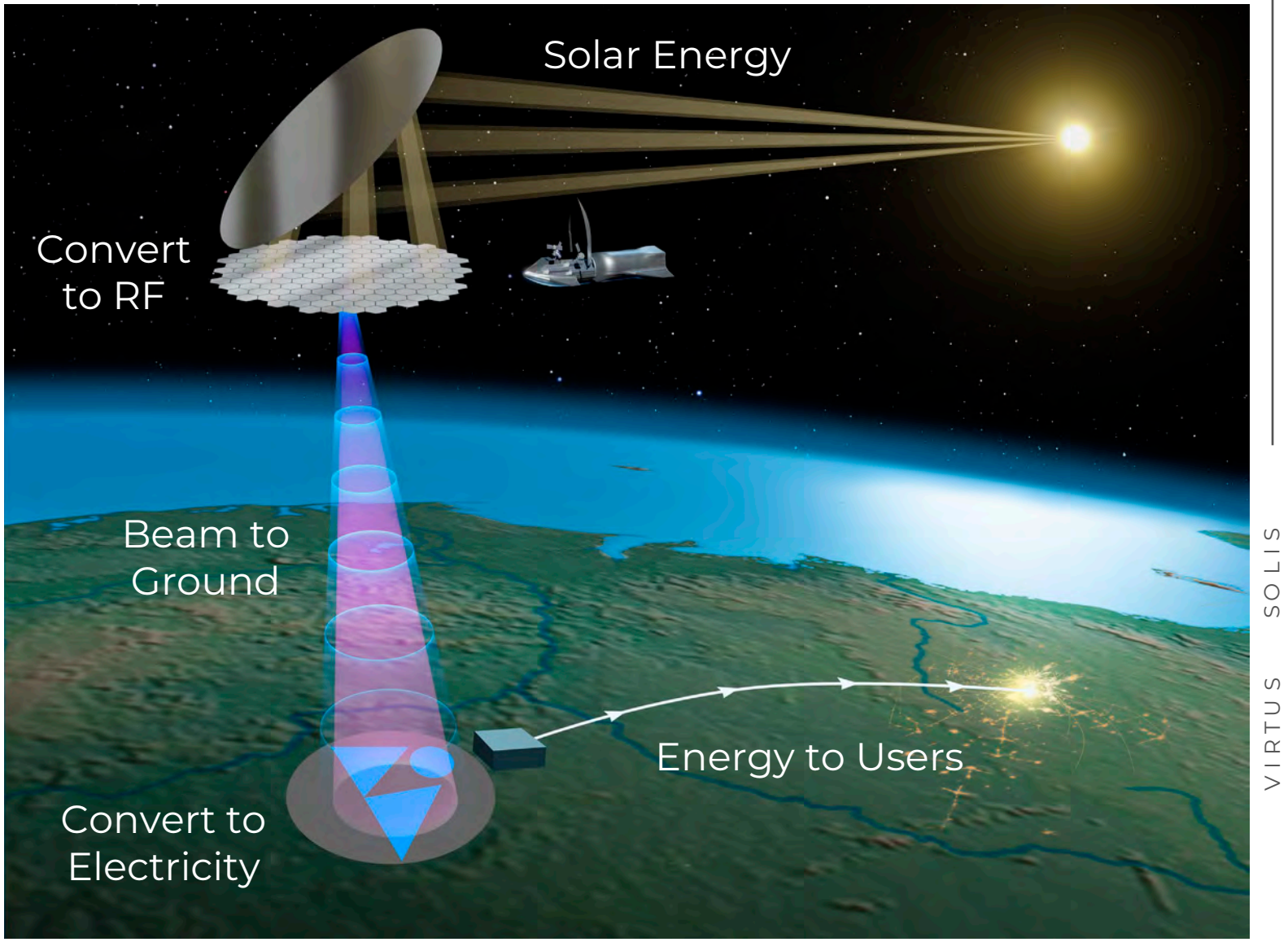
VIRTUS SOLIS

ADVANCED SOLAR SOLUTION

Our system provides **24/7 energy** by building a phased array solar satellite and **beaming energy** down to solar power plants



Mining Industrial Data Centers



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PHASED ARRAYS ARE WELL-ESTABLISHED TECHNOLOGY

Phased Arrays have been successfully used in radar for **60 years**.

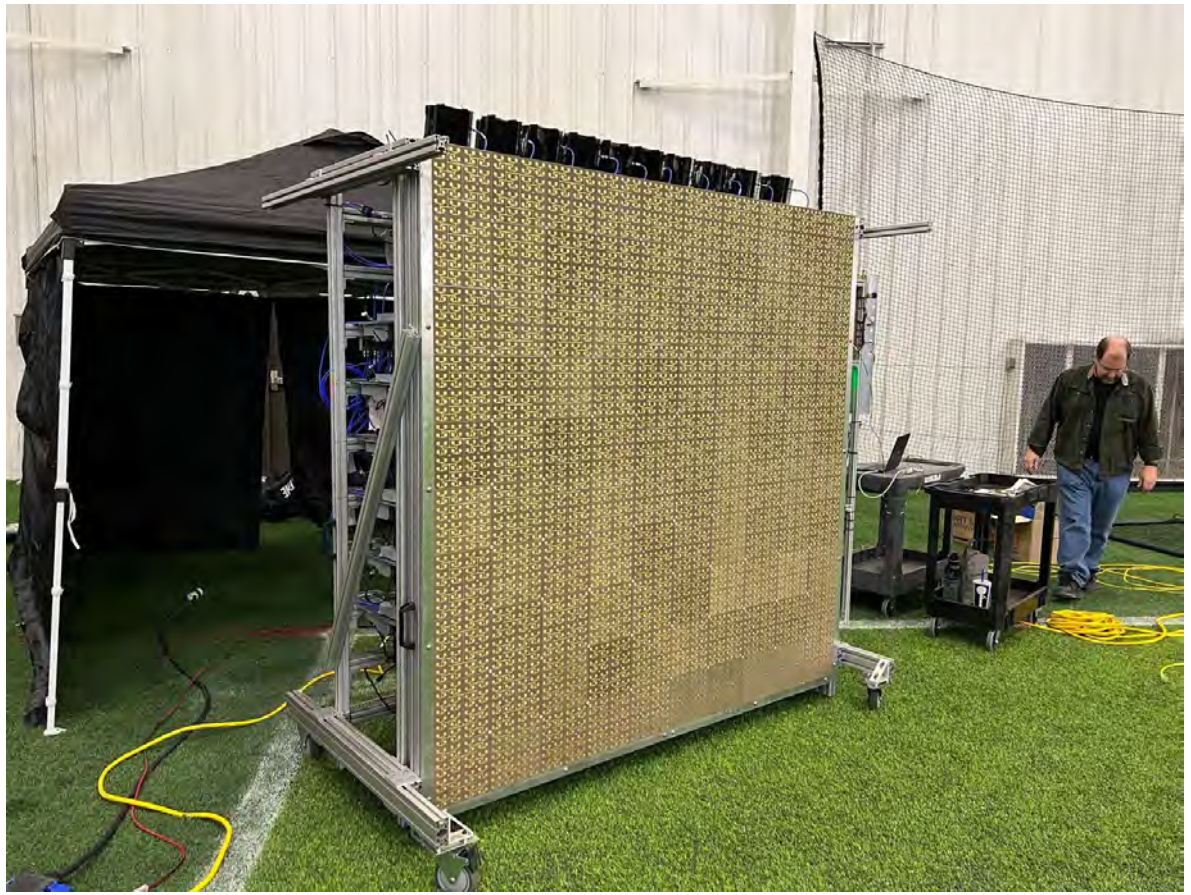
They are composed of many **individual antennas** that combine to form a **narrow beam** and reach **long ranges**.

Cobra Dane radar is 120’ high and built in the 1970s. Range is over 2,000 miles.

VIRTUS RECENTLY DEMONSTRATED POWER BEAMING TO 100M

On March 21st 2023 we demonstrated Power Beaming to a distance of **100 meters**

We combined **6400 element**s into a **steerable** phased array



AND WE CONVERT BEAM POWER BACK INTO ELECTRICITY

We've demonstrated the ability to **convert the power beam** back into electricity efficiently with **rectennas**.

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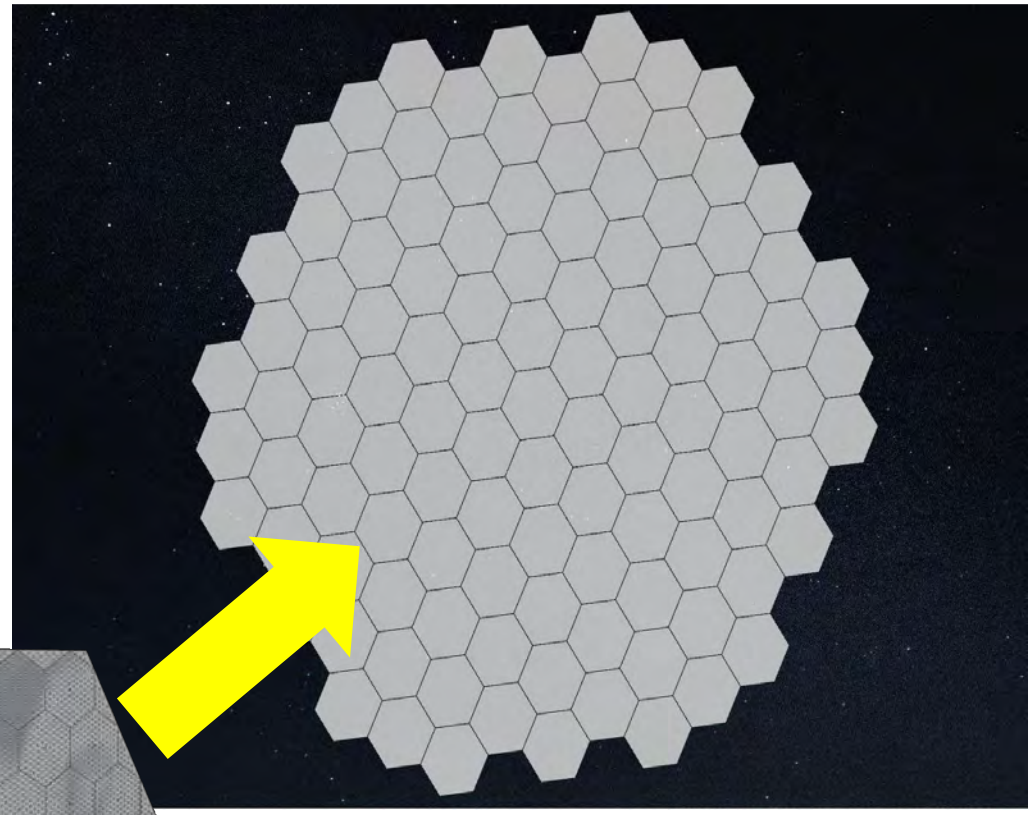
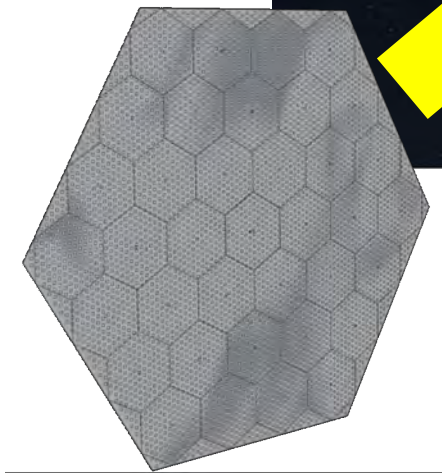
WE COMBINE THE COMPONENTS INTO A MODULAR SYSTEM

We’ve demonstrated the core abilities to **send and receive** beamed power.

Our next step is to combine these electronics into a **small satellite** - that can be combined into a **large phased array**.





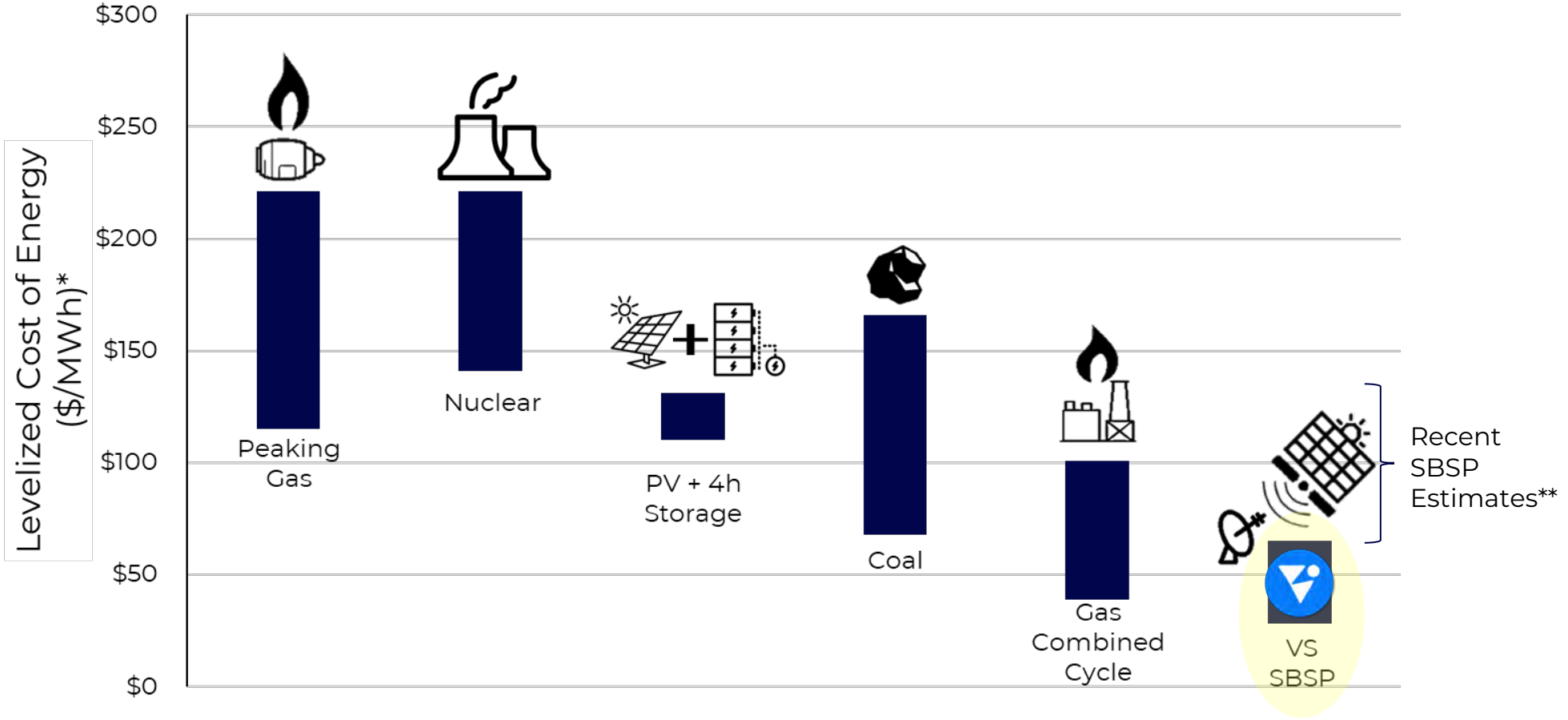
OUR MODULAR SYSTEM CAN BE BUILT INCREMENTALLY & QUICKLY

The most recent nuclear power plant built in the US (Votgle-3) took **17 years** to build

SpaceX launches rockets almost **twice a week,** allowing us build out an array in **twelve weeks**

OUR ENERGY SOLUTION IS COST COMPETITIVE

With the foundations of the technology already established, our focus over the next **18 months** is to build & test prototypes and **prepare to fly a pilot plant**.



*Technology Data from Lazard's Levelized Cost of Energy Version 16 (unsubsidized costs)
**UK Net Zero by 2050 / European Space Agency Studies 2021-2023 / NASA 2024

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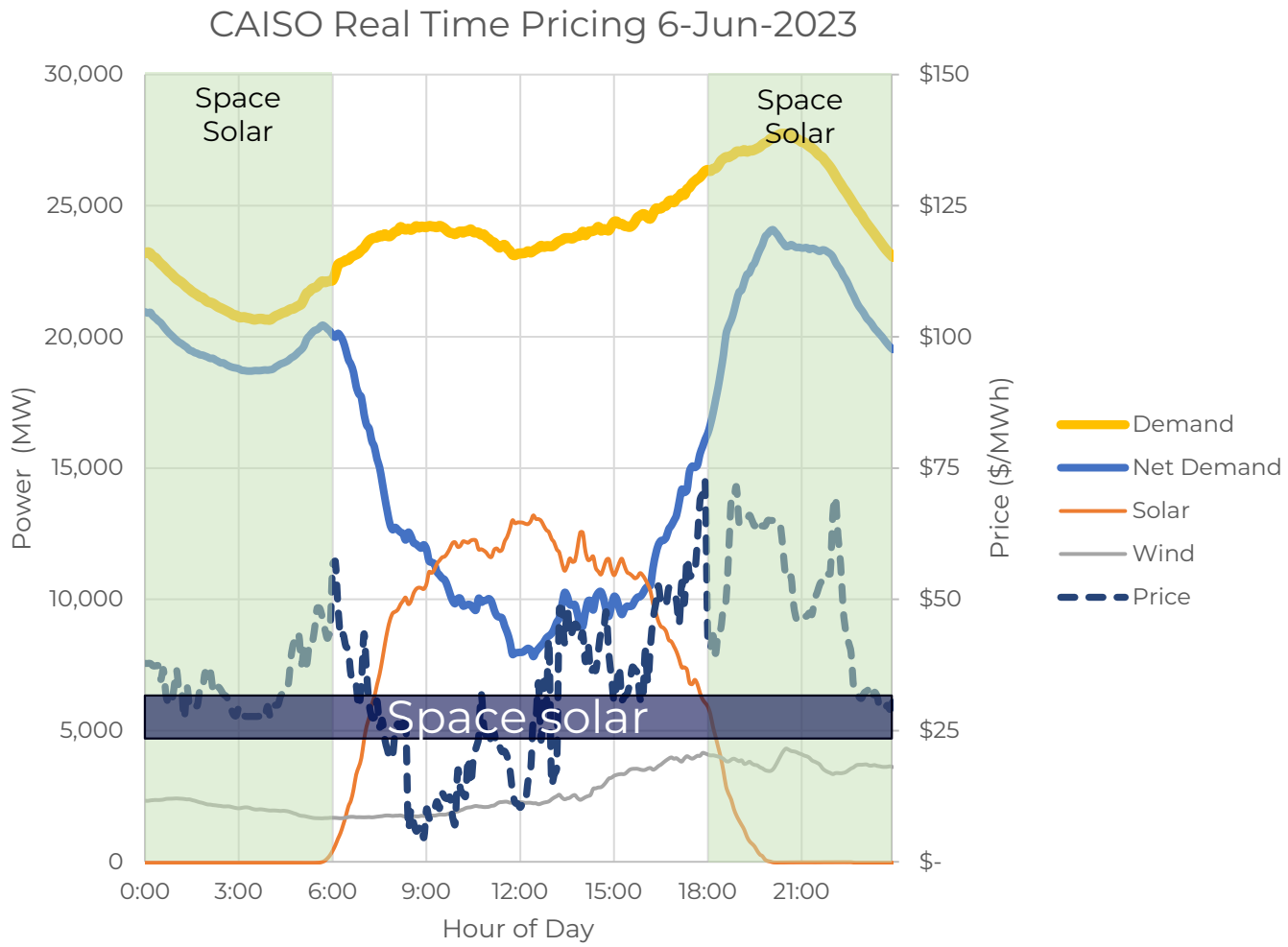
OUR SOLAR WORKS IN ALL MARKETS

Our space arrays have a **pricing advantage** in high penetration renewable markets because we can generate when **solar output is low** and electricity prices are high.

Furthermore, we can generate as much power in **winter as summer**.



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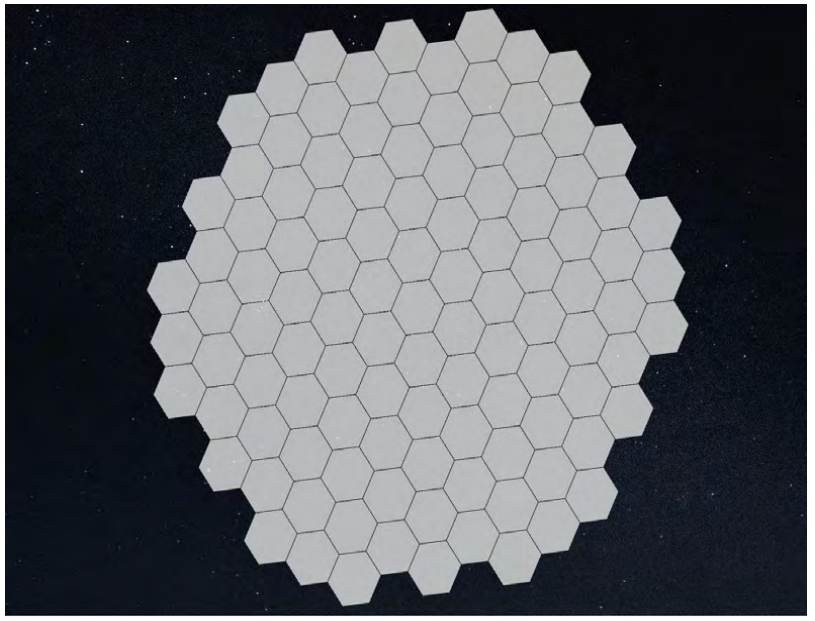
WE CAN PROVIDE CLEAN FIRM POWER AT MUCH LOWER COST

Nuclear power plants are **extremely expensive** to build, Votgle-3 costing $17B for 1.1GW of electrical capacity @ $180/MWh



We will build 1.5GW of generation for **$3.8B**, capable of $880M revenue per year @ **$35/MWh**.

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FIRST CUSTOMER = INTERSECT POWER

Intersect Power is a $12B solar power developer. Sheldon Kimber, their Founder & CEO is also our Pre-Seed **lead investor**.

Intersect has built 12 solar plants and 17 in the pipeline. They're **experts at developing renewable power projects** and solving: terms of permitting, land acquisition, and interconnection issues.

Our job is to build the space hardware and rectennas while existing developers know how to site, install and connect.

Intersect Power

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SBSP VERTICAL COMPETITION

Virtus Solis is the only organization that has **advanced hardware** and a **near-term commercialization plan** with **50x less investment** required.

VIRTUS SOLIS

No Direct Competitors
- Capitalized/Commercial
- Product Demos
- Deployment by 2030
- $200M to Self-Sustaining

SPACE SOLAR

SOLAREN

SST SOLAR SPACE TECHNOLOGIES

ASTROSTROM

ALVIOR

SPACE POWER

EMROD

OVERVIEW ENERGY

SBSP Ecosystem
- Early Stage/Concept
- Non-generation tech

Space Energy Initiative

esa

U.S. NAVAL RESEARCH LABORATORY

MITSUBISHI

NEOM نيوم

CATAPULT Satellite Applications

JAXA

Caltech

NORTHROP GRUMMAN

AIRBUS

Adjacent
- Research Focused
- National Teams
- No commercial plans

COMMERCIALIZATION PATHWAY

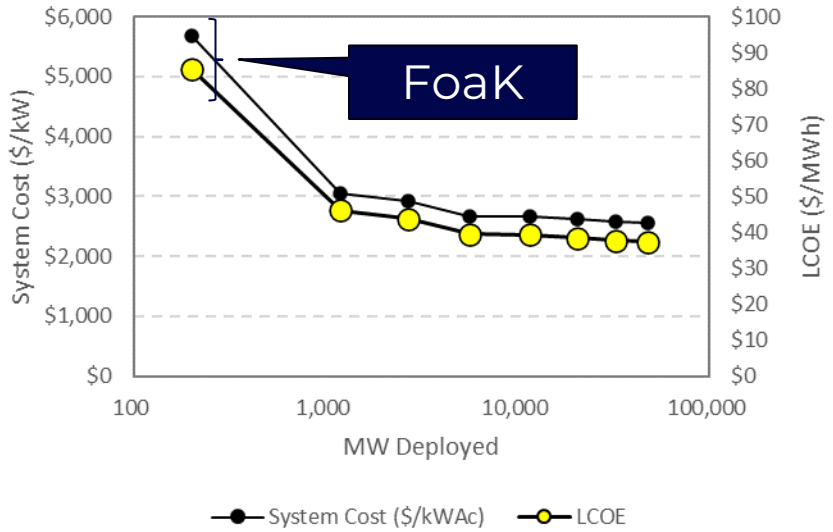
We sell our technology and power plants to **project-financed customers**, who contract construction and launch (logistics). We plan to **deploy 48,000MW** in **8 years.**

Secured 1st Customer MOUs

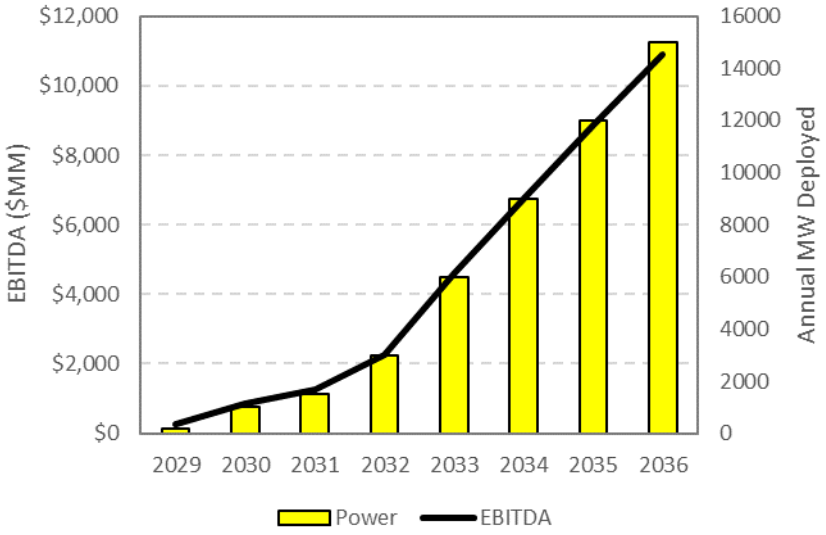
DATAVOLT

Intersect Power

Unit Economics vs MW Deployed



EBITDA vs Year



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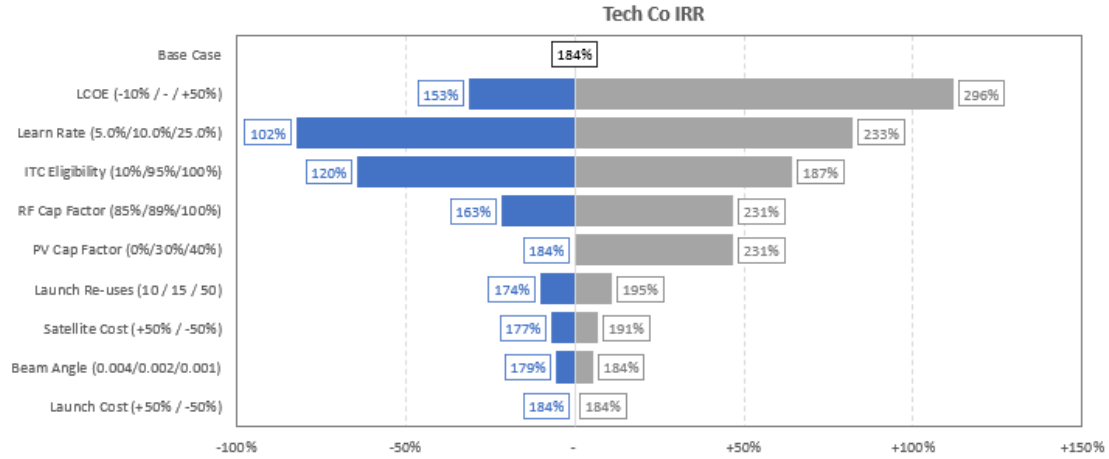
TECHNO ECONOMIC ANALYSIS

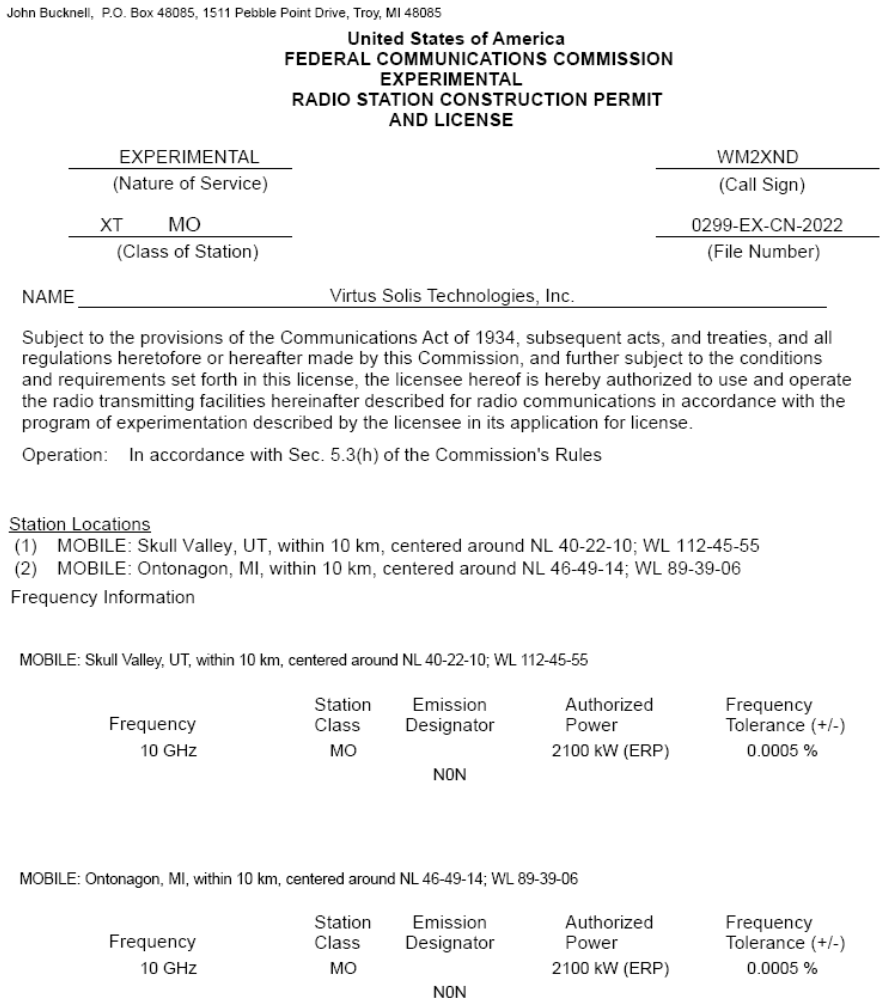
Virtus Solis' **TEM** has guided architecture development.

- **>200 inputs**
- **Physics-aware modeling**
- **Supply chain constraints**
- **Sensitivity analysis**
- **Project finance analysis**



REGULATORY

- The FCC regulates all radio frequency broadcast stations based in the USA
  - VS has an Experimental License since 2022
  - VS is in process for a Commercial License (with a waiver on Use Case)
- VS complies with all regulatory requirements
  - Spectrum Allocation & Non-Interference
  - Health & Human Safety
- The FAA regulates launch payloads
  - VS has already had a payload review and passed due to no toxic propellants
- Environmental Impact Assessments are expected for ground stations, but no obstacles anticipated



John Bucknell, P.O. Box 48085, 1511 Pebble Point Drive, Troy, MI 48085

United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
RADIO STATION CONSTRUCTION PERMIT
AND LICENSE

EXPERIMENTAL	WM2XND
(Nature of Service)	(Call Sign)
XT MO	0299-EX-CN-2022
(Class of Station)	(File Number)

NAME Virtus Solis Technologies, Inc.

Subject to the provisions of the Communications Act of 1934, subsequent acts, and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions and requirements set forth in this license, the licensee hereof is hereby authorized to use and operate the radio transmitting facilities hereinafter described for radio communications in accordance with the program of experimentation described by the licensee in its application for license.

Operation: In accordance with Sec. 5.3(h) of the Commission's Rules

Station Locations
(1) MOBILE: Skull Valley, UT, within 10 km, centered around NL 40-22-10; WL 112-45-55
(2) MOBILE: Ontonagon, MI, within 10 km, centered around NL 46-49-14; WL 89-39-06

Frequency Information

MOBILE: Skull Valley, UT, within 10 km, centered around NL 40-22-10; WL 112-45-55

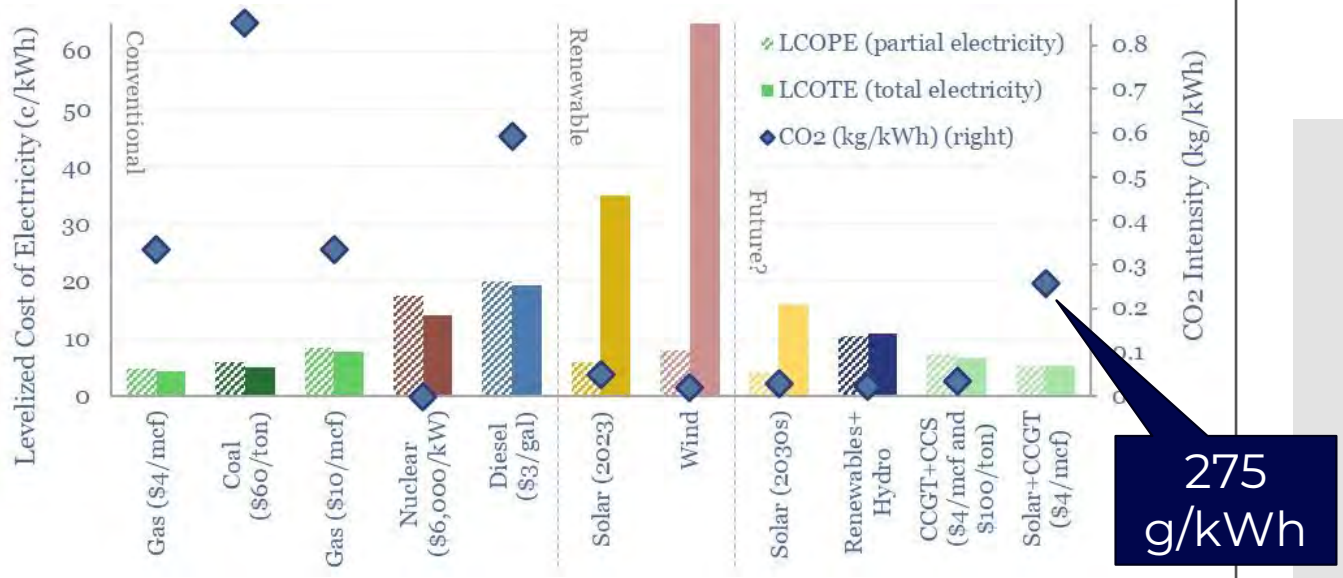
Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
10 GHz	MO	N0N	2100 kW (ERP)	0.0005 %

MOBILE: Ontonagon, MI, within 10 km, centered around NL 46-49-14; WL 89-39-06

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
10 GHz	MO	N0N	2100 kW (ERP)	0.0005 %

EMISSIONS IMPACT

- **12GW** of SBSP capacity will abate 513M tonnes CO_2 per 20 years of operation
  - Daytime solar and CCGT night-time backup with CO_2 intensity of **275 g/kWh**
  - SBSP launched with CH_4 propellant with a lifetime CO_2 intensity of **0.7 g/kWh**
- **234GW** of SBSP capacity will abate 500M tonnes of CO_2 per year
  - SBSP emissions can go to **zero**
  - Post 20y amortization period, SBSP CO_2 emissions go to **zero**
  - Synthetic CH_4 propellant also drives CO_2 intensity to **zero** when synthesized with SBSP energy



*Thunder Said Energy FCOE Analysis – November 2023

Solar + CCGT	SBSP	
12	12	GW
275	0.730134265	g/kWh
1,871,163	1,871,163	GWh
0.000001	0.000001	tonnes/g
10000000	10000000	kWh/GWh
275	0.730134265	tonnes/GWh
514,569,742	1,366,200	tonnes CO2
	513,203,542	Delta (tonnes

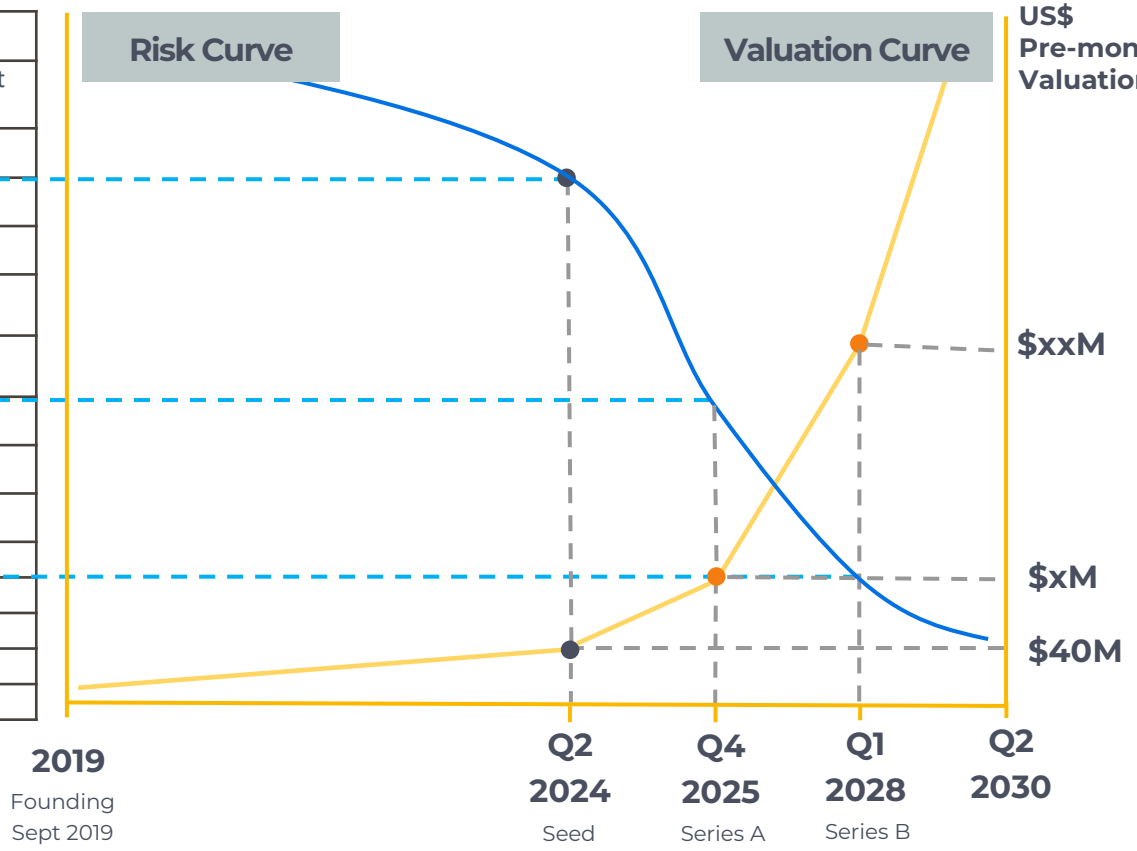
VIRTUS SOLIS

TIMELINE & MILESTONES

With the foundations of the technology already established, our focus over the next 18 months is to build & test prototypes and **prepare to fly a pilot plant**.

Milestones

✔	Set up founding team & advisor partners
✔	Design and demonstrate wireless power transfer system at significant distance and efficiency
✔	Validate business plan against techno-economic model
( )	Build 1st Generation integrated space hardware
	Demonstrate WPT at long distance on ground
	Demonstrate WPT tracking and control
	Site pilot plant ground station
	Build 2nd generation space hardware in small factory
	Assemble 100kW pilot plant in orbit using robots
	Acquire and track ground station from orbit
	Deliver power to ground station
	Close first firm orders
	Build and outfit factory to scale to 200MW capacity
	4th generation hardware
	Assemble 1st customer power plant in Molniya orbit



18mo Target

100
Satellites & Rectennas

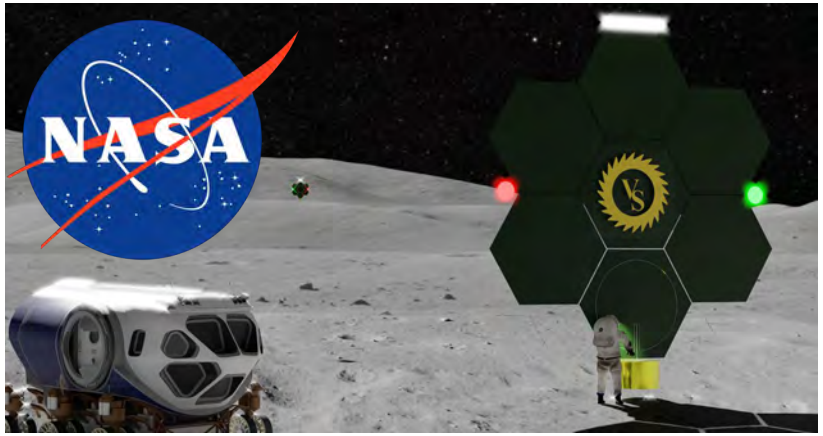
100km
Demo

$1M
Rideshare contract

VIRTUS SOLIS

TRACTION

During our $2M Pre-Seed we've achieved **significant engagement with customers** and the deep tech ecosystem.



NASA Watts on the Moon 1st prize winner

Secured 1st Customer MOUs

DATAVOLT

Intersect Power

Secured a Partner

Orbital Composites and Virtus Solis Forge Ahead with Groundbreaking Space-Based Solar Power Pilot Plant

FOR IMMEDIATE RELEASE

Campbell, California – February 1, 2024 – In a significant leap towards sustainable energy, Orbital Composites and Virtus Solis have announced their intensified collaboration to create the world's first Space-Based Solar Power (SBSP) pilot plant.

Following their Memorandum of Understanding in June 2023, the two industry leaders are now gearing up for a groundbreaking demonstration mission in 2027. This mission is expected to be a precursor to large-scale commercial megawatt-class solar installations in space by 2030, marking a new chapter in renewable energy.

SERAPHIM

Newlab

URBAN-X

MINI

Accelerators

uspto

Patent Pending:
PCT/US2023/029105

Department for Energy Security & Net Zero

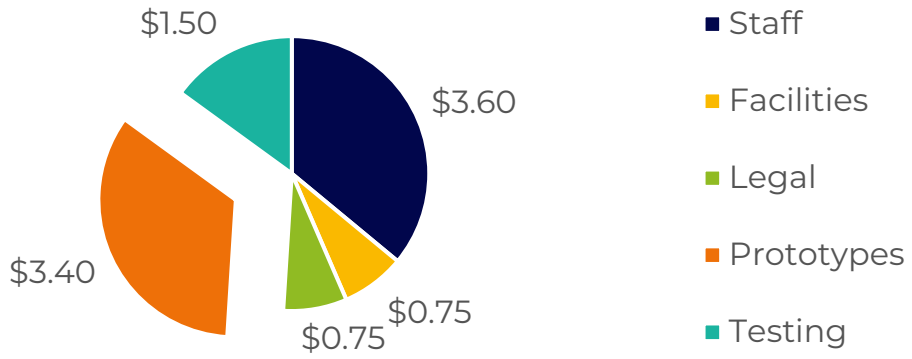
University of BRISTOL

12mo grant to co-develop SBSP WPT simulation code

VIRTUS SOLIS

SEED RAISE TO PUT TECHNOLOGY IN SPACE

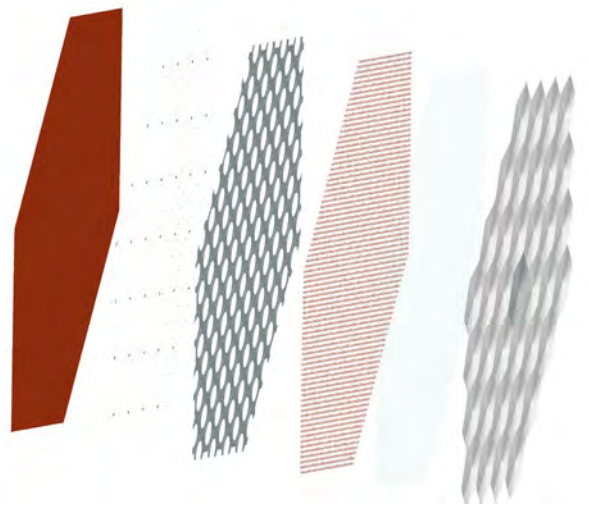
- Raising **$10M** Seed & $22M soft-circled including institutional investors and currently negotiating with **lead investors**



- Prove the satellite works on the **ground** before flying in orbit
- Add **10 FTEs** to accelerate development

Seed — Series A

Vertical	Intermediate Milestones
Satellite & Rectenna	Detail Design; Manufacturing Process Dev; Small Scale Production
Wireless Power	Improve Beam Capture; Confirm Beam Forming; Demo Beam Aiming Resolution; Improve Amplifier Efficiency; Demo Beam Steering at Distance; Demo PNC System
Assembly Robot	Architecture and End Effector Dev



Core components integrated into a **1.65m multilayer satellite**

VIRTUS SOLIS

INVESTMENT HIGHLIGHTS

LARGE MARKET SIZE	• Global energy market is potentially 10x the $15T of today. • Underlying infrastructure makes SBSP viable today.
EXPERIENCED TEAM	• Co-founders have worked together for 15y and over forty years combined startup experience. • Wider team has deep industry experience.
DEVELOPED TECHNOLOGY	• State of the art wireless power transfer demonstrated. • Industry-leading analysis codes validated. • WPT licensing opportunities for early revenue identified
TRACTION TO DATE	• Core technology de-risked, patents & trade secrets. • Two first customers signed with MOUs. • $2M close on Pre-Seed Financing Round.
CAPITAL EFFICIENT STRATEGY	• Lowest capital demand of any in our vertical by 50x. • Total system designed to cost to achieve BIC economics.
MULTIPLE EXIT STRATEGIES	• Multiple potential strategic acquirers. • Large enough opportunity for a public exit.

Scalable Platform

Positioned for Growth

Disruptive Opportunity

VIRTUS SOLIS

THANK YOU

John Bucknell

CEO | Founder

john@virtussolis.space

www.virtussolis.space