



CISLUNAR<sup>®</sup>  
INDUSTRIES

## METAL - Material Extraction, Treatment, Assembly & Logistics



### Point of Contact

Elijah Richter, CisLunar Industries

Email: [eli@cislunarindustries.com](mailto:eli@cislunarindustries.com)

Phone: +1 585 880 1778

LSIC Spring Meeting  
April 25, 2024

The views, opinions, and/or findings expressed are those of the author(s) and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.



# About CisLunar Industries

Hardware For Sustainable Manufacturing, Mobility, and Industrial Development in Space



## Space Foundry

- Electromagnetic furnace system for metal processing in space

### *Lunar Applications*

- Recycling
- Forming & Shaping
- Heat treatment
- Alloying



## Power Converter

- Modular high-power converter for in-space applications

### *Lunar Applications*

- Power distribution
- Power grid end points
- Mobile equipment
- Manufacturing



## Partners



CisLunar Industries

The views, opinions, and/or findings expressed are those of the author(s) and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.

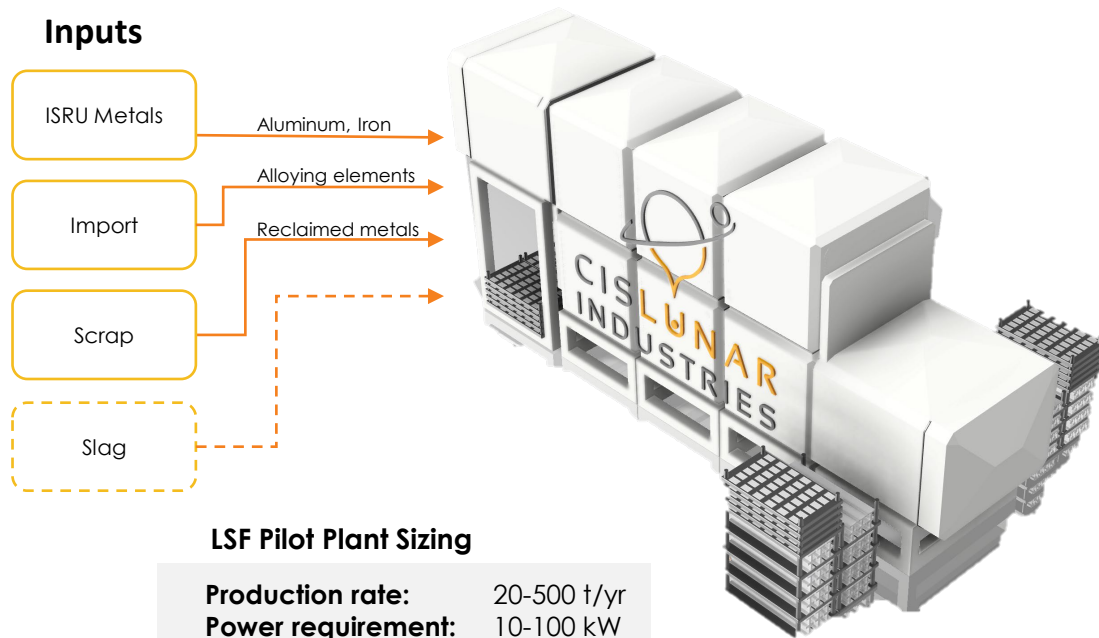


# CisLunar Industries Lunar Space Foundry (LSF)

Building infrastructure and enabling sustainable mining operations



## Inputs



## LSF Pilot Plant Sizing

<b>Production rate:</b>	20-500 t/yr
<b>Power requirement:</b>	10-100 kW
<b>Size:</b>	~10 m <sup>3</sup>
<b>Mass:</b>	~5,000 kg

## Products

Billets/Ingots



Rail



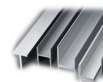
Beams



Sheet Metal



Extruded Profiles



Cables/Wire/  
Additive Mfg.



Mining  
Equipment



## 500t builds:



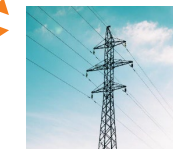
55km Railroad



33,000m<sup>2</sup>  
warehouse space



10MW Solar  
concentrator area



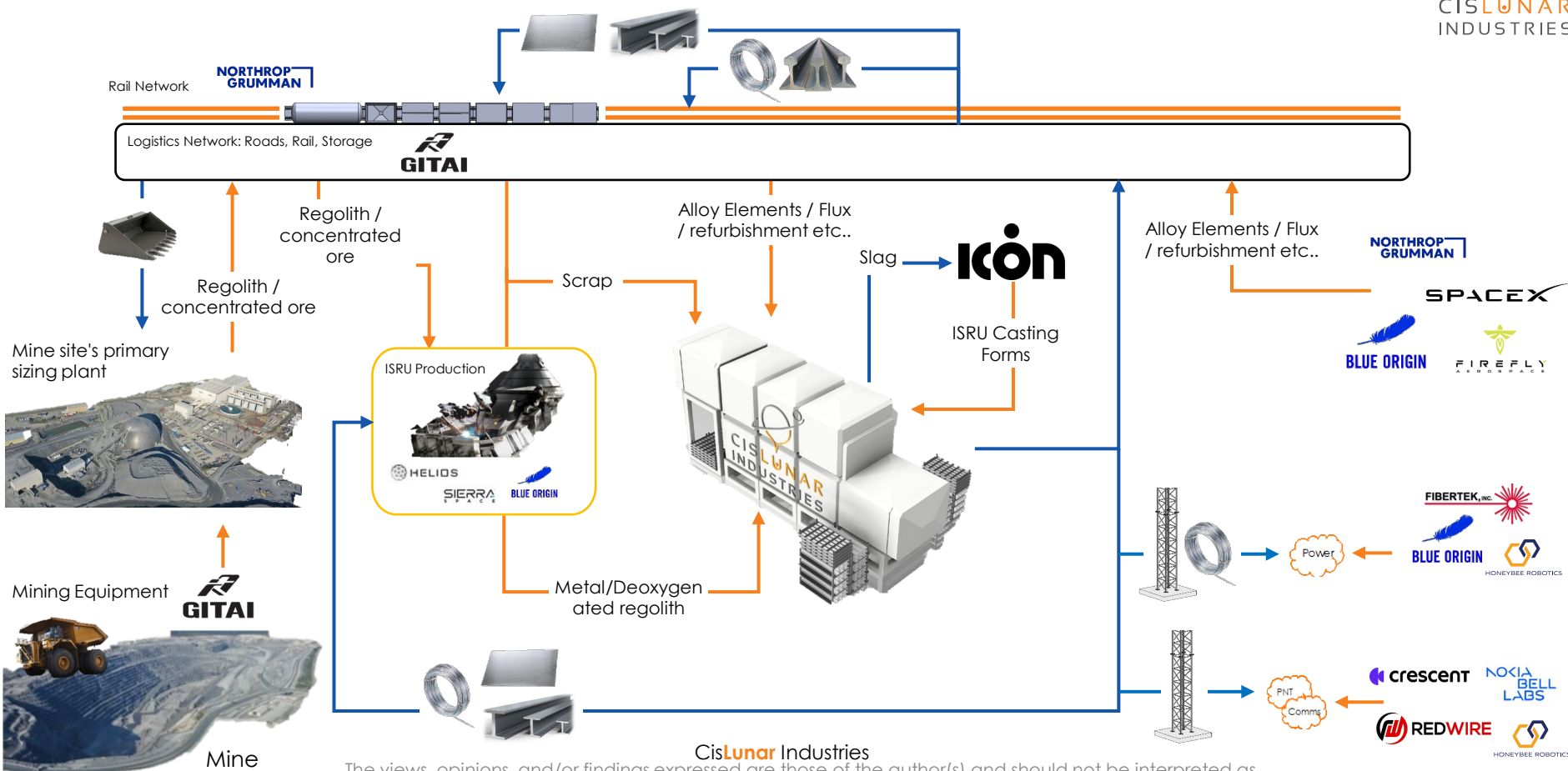
370km 1MW  
Transmission

CisLunar Industries

The views, opinions, and/or findings expressed are those of the author(s) and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.



# ISRU Value Chain Overview



CisLunar Industries  
The views, opinions, and/or findings expressed are those of the author(s) and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.



# Product Application Examples

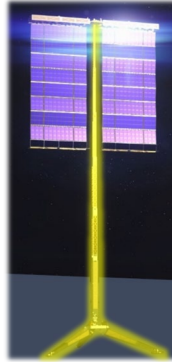
## Power & Communications Infrastructure



CISLUNAR<sup>®</sup>  
INDUSTRIES

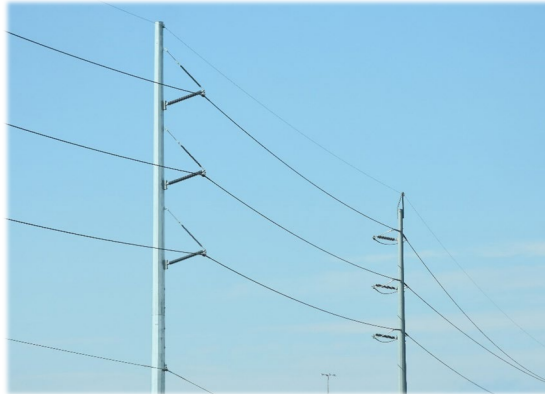
### Products

- Solar Array Structures
- Solar concentrator panels & Structures
- Transmission towers
  - Wired or Wireless
- Power lines



### Customers

- Power Producers
- ISRU Refining and Manufacturing
- Other High-Power Consumers
- Infrastructure
- Connectivity



CisLunar Industries

The views, opinions, and/or findings expressed are those of the author(s) and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.



# Product Application Examples

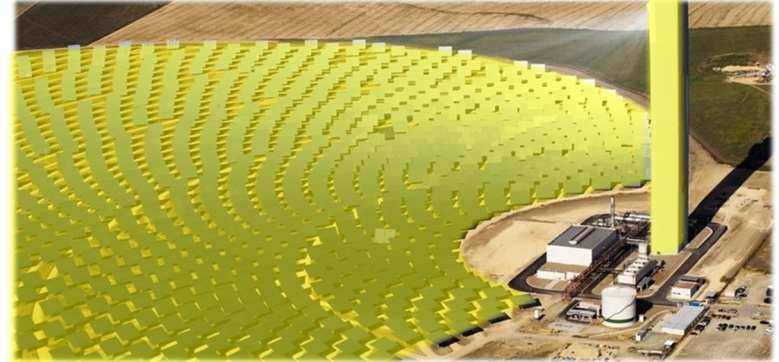
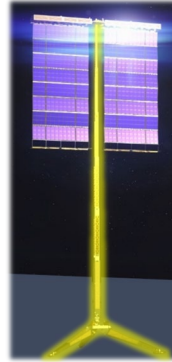
## Power & Communications Infrastructure



CISLUNAR<sup>®</sup>  
INDUSTRIES

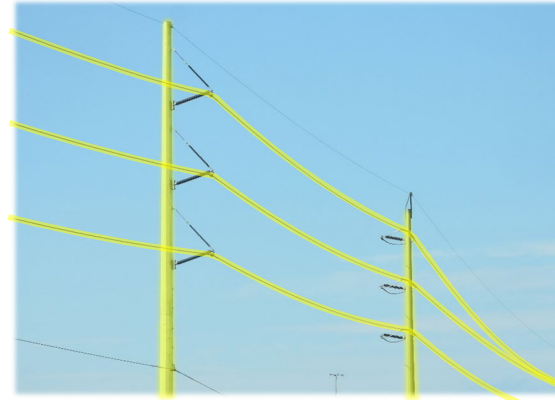
### Products

- Solar Array Structures
- Solar concentrator panels & Structures
- Transmission towers
  - Wired or Wireless
- Power lines



### Customers

- Power Producers
- ISRU Refining and Manufacturing
- Other High-Power Consumers
- Infrastructure
- Connectivity



CisLunar Industries

The views, opinions, and/or findings expressed are those of the author(s) and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.



# Product Application Examples

## Lunar Transportation Infrastructure (Railroad)

### Products

- Rails
- Fastening Hardware
- Rail Car Components
  - Wheels
  - Frames
  - Pannels
- Bridges
- Additive mfg. feedstock



### Customers

- Logistics
- Infrastructure

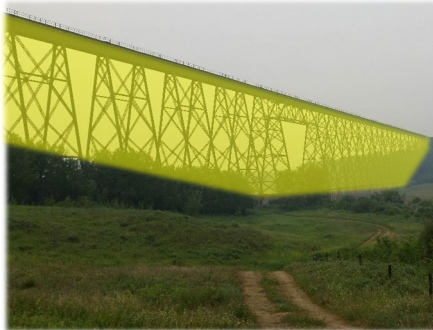


# Product Application Examples

## Lunar Transportation Infrastructure (Railroad)

### Products

- Rails
- Fastening Hardware
- Rail Car Components
  - Wheels
  - Frames
  - Pannels
- Bridges
- Additive mfg. feedstock



### Customers

- Logistics
- Infrastructure



# Product Application Examples

## Heavy Equipment & Tooling

### Products

- Wheels/track
- Crane Structures
- Mass blocks/Counterweights
- Digging teeth
- Buckets/Blades
- Compacter rollers



### Customers

- Construction
- Mining
- Logistics

CisLunar Industries

The views, opinions, and/or findings expressed are those of the author(s) and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.



# Product Application Examples

## Heavy Equipment & Tooling

### Products

- Wheels/track
- Crane Structures
- Mass blocks/Counterweights
- Digging teeth
- Buckets/Blades
- Compacter rollers



### Customers

- Construction
- Mining
- Logistics

CisLunar Industries

The views, opinions, and/or findings expressed are those of the author(s) and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.



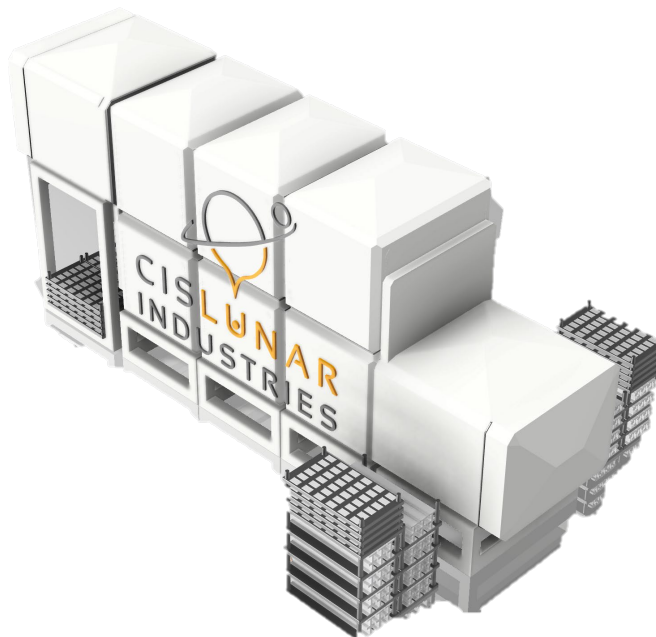
# Commercialization

## Key Cost Assumptions

- Transport cost: \$50k/kg
- Energy cost: \$36.26/kWh
- Deoxygenated Regolith: \$2k/kg

## Product Pricing

- Baseline at 1/2 of Earth-Moon transportation costs
- Average Product price: \$25,000 /kg



## Value proposition

- Large-Scale projects at reduced cost
- Sustainable & scalable economy
- On Demand Delivery
- De-risk transportation

## Market

- \$5B annual operating margin potential at 500t max capacity
- 5-year recap. at 18t/yr avg. sales







# Thank you!

## Contact

**Eli Richter, CisLunar Industries**

M: eli@cislunarindustries.com

T: +1 585 880 1778

W: www.cislunarindustries.com



## CisLunar Industries LunA-10 Team



**Gary Calnan**  
CEO  
Co-Founder



**Joe Pawelski**  
CTO  
Co-Founder



**Eli Richter**  
Project Lead



**Dr. Jan Walter  
Schroeder**  
CIO, Co-Founder



**Toby Mould**  
Head Space Engineer  
Co-Founder

## Industry Experts



**Aiden O'Leary**  
Analysis Expert



**Salar Javid**  
Mining Expert



**Dr. Laeeque  
Daneshmend**  
Mining Expert



**Andy Young**  
Electrocatalytic  
Processing Expert



**Dr. Andrew Petruska**  
Lunar Infrastructure  
Expert

CisLunar Industries

The views, opinions, and/or findings expressed are those of the author(s) and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.



# Appendix

Scaling at reduced transportation costs