



**REVOLUTIONIZING SILICON PRODUCTION
IN SPACE AND ON EARTH**

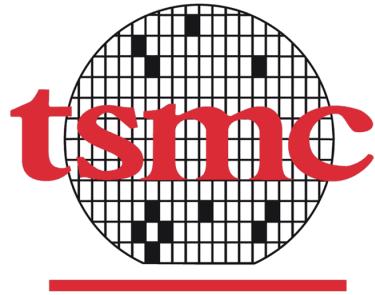
SPACE FOR INSPIRATION – NOVEMBER 2024

GREEN SILICON

Maana Electric is producing low-emission, energy-efficient and high-quality silicon



SILICON IS THE BACKBONE OF OUR ECONOMY



NONE OF THESE COMPANIES WOULD EXIST WITHOUT SILICON

EARTH HAS A PROBLEM

Metallurgical Grade silicon is exclusively produced using the carbothermal reduction process

1. HUGE EMISSIONS

1 TON OF SILICON = 12-16 TONS OF CO₂ EQUIVALENT EMISSIONS

2. HIGH PRODUCTION COSTS

IT REQUIRES **HIGH-PURITY QUARTZ AND CARBON** AS FEEDSTOCKS

3. INCREASING REGULATION

PRESSURE TO REDUCE EMISSIONS WILL **INCREASE COSTS BY 30%**

MAANA ELECTRIC HAS THE SOLUTION FOR PRODUCTION AND APPLICATIONS ON EARTH AND IN SPACE



1. 10x REDUCTION IN EMISSIONS

WITH ABILITY TO RUN AT NEGATIVE EMISSIONS

2. LOWER PRODUCTION COSTS

IT CAN USE LOW-PURITY QUARTZ AND DOES NOT USE CARBON

3. FUTURE PROOF

COMPLIANT WITH NET-ZERO EMISSIONS AND MEETS CUSTOMER REQUIREMENTS

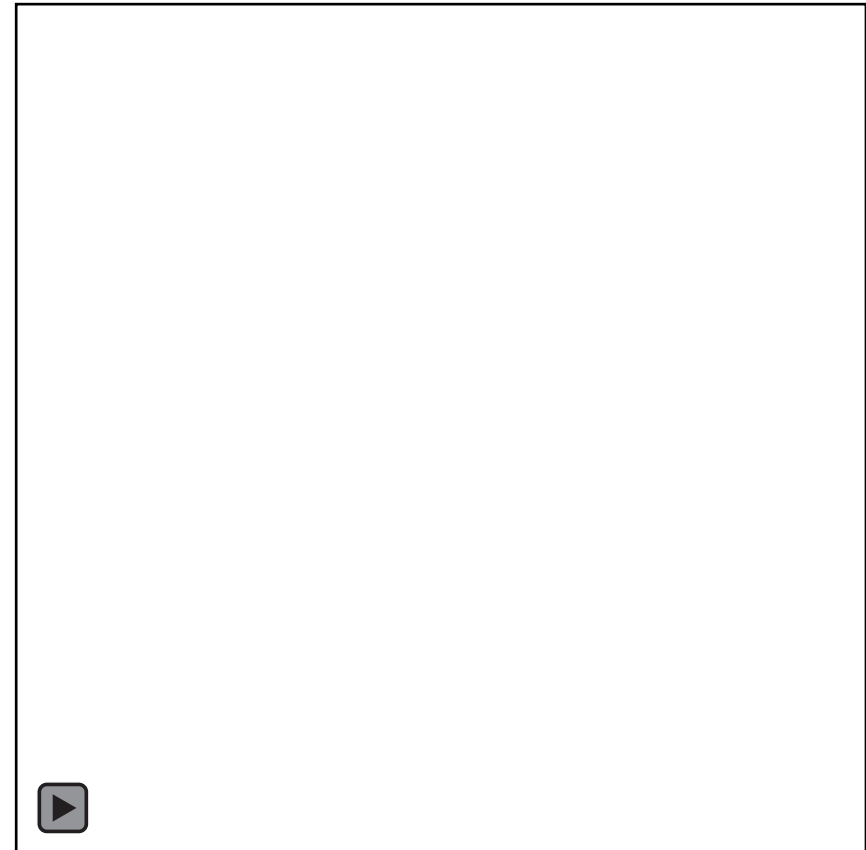
THE MAANA ELECTRIC SOLUTION: MOLTEN SALT ELECTROLYSIS

Maana's ISRU technology for extraction of resource on the Moon

IT ENABLES:

- EXTRACTION OF METALS FROM LUNAR REGOLITH
- PRODUCTION OF OXYGEN FOR LIFE SUPPORT AND PROPELLANTS

OUR TECHNOLOGY INTRODUCES GAME CHANGING IMPROVEMENTS IN HOW SILICON IS PRODUCED.



PATENT PENDING

SILICON MARKET

Silicon is used in high-tech growth markets and considered a Critical Raw Material for Europe



SEMICONDUCTORS

ELECTRONIC GRADE SILICON WAFERS

€12B Market size
~4% CAGR



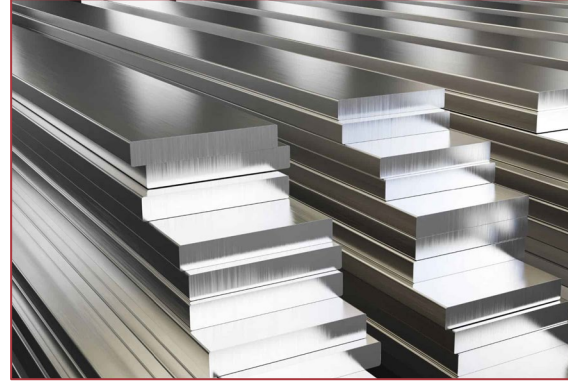
ENERGY

SOLAR GRADE SILICON WAFERS

€8B Market size
~10% CAGR

SILICON ANODE BATTERIES

€100M Market size
~ 35% CAGR



ENGINEERING METALS

ALUMINUM ALLOYS

€8B Market size
~5% CAGR

SPECIALTY STEELS

€180B Market size
~3.5% CAGR



POLYMERS

SILICONES

€18B Market size
~7% CAGR

METALLURGICAL GRADE SILICON (MG-Si) MARKET SIZE:

€10B IN 2024

€14B IN 2030

COMPETITION

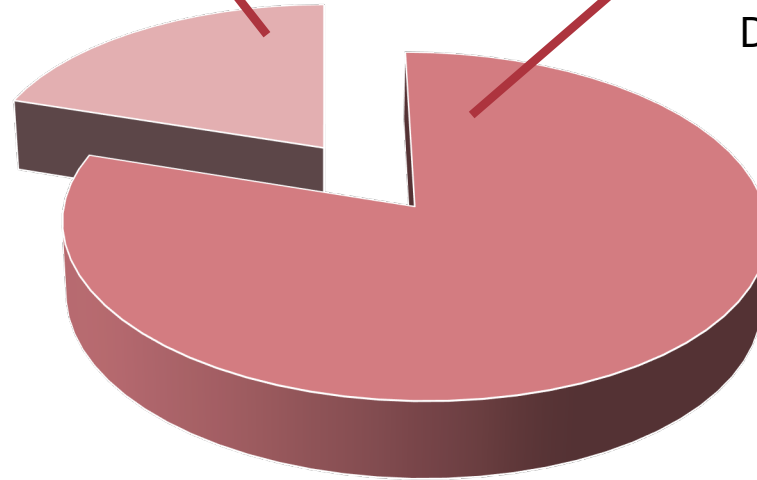
All silicon today is produced through carbo-thermal reduction



Top producers
20% of global production

Chinese producers

USED ENTIRELY TO SATISFY
DOMESTIC NEEDS



HOW IT IS MADE TODAY

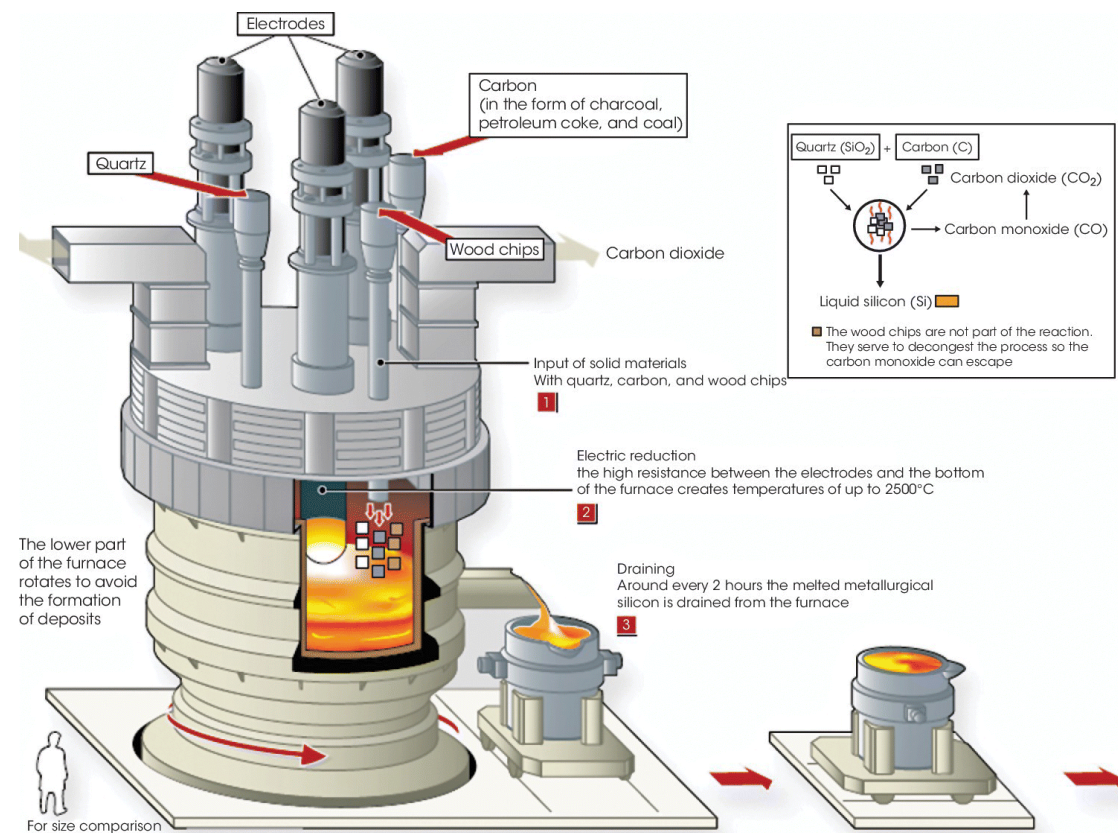
Metallurgical grade silicon is produced through carbo-thermal reduction

- High purity quartz (SiO_2) is fed (charged) into an Electric Arc furnace together with coke, charcoal or woodchips (carbon)
- The quartz and coke react as follows:



at $\sim 1800 - 1900^\circ$ Celsius.

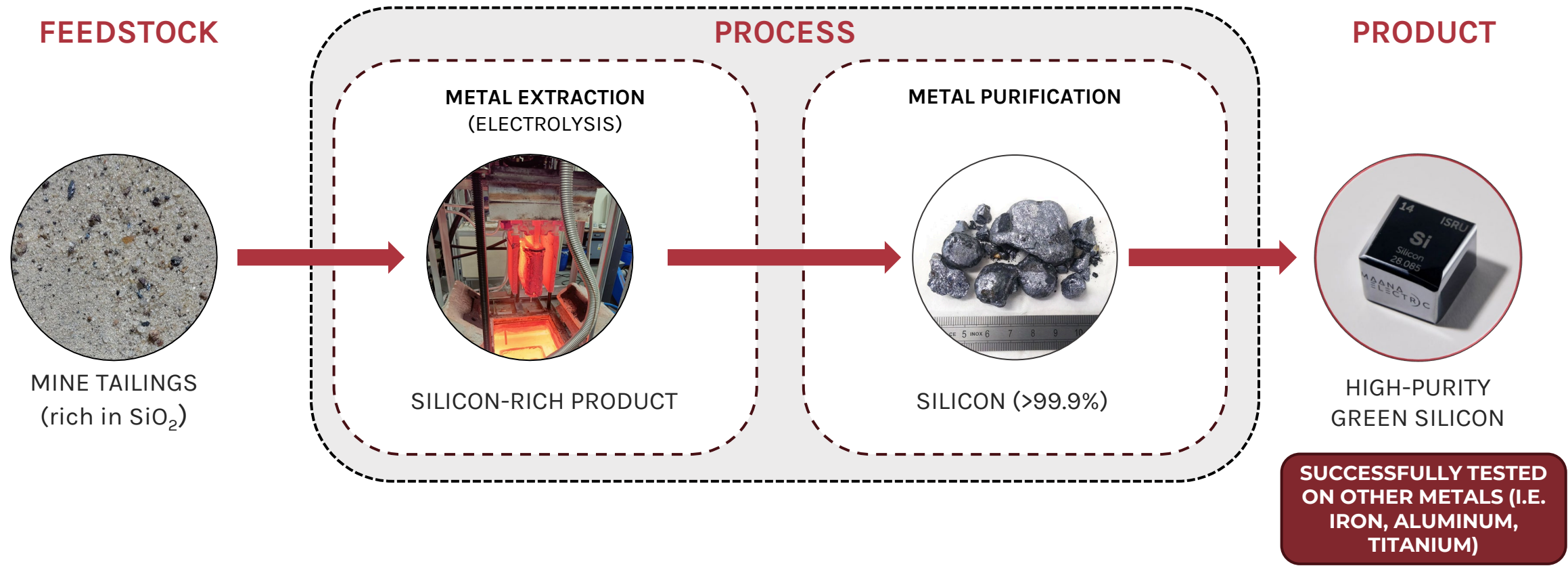
- Byproducts of the reaction are CO , CO_2 , SiO and ash.



CARBON, ENERGY AND COST INTENSIVE

HOW THE MAANA ELECTRIC SOLUTION WORKS

Molten Salt Electrolysis process produces high-purity silicon from low purity mine tailings



LOW CARBON, LOW ENERGY AND LOW-COST

MAANA ELECTRIC'S GREEN SILICON IS A GREAT BUSINESS

Selling green silicon at commodity market prices^(*)

SELLING PRICE:

€ 2400-3100 per ton

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PRODUCTION COSTS:

€ 1300-1700 per ton

Competitors' avg. cost of production:
~2300 Euro

30 – 52% GROSS MARGIN

FINANCIALS

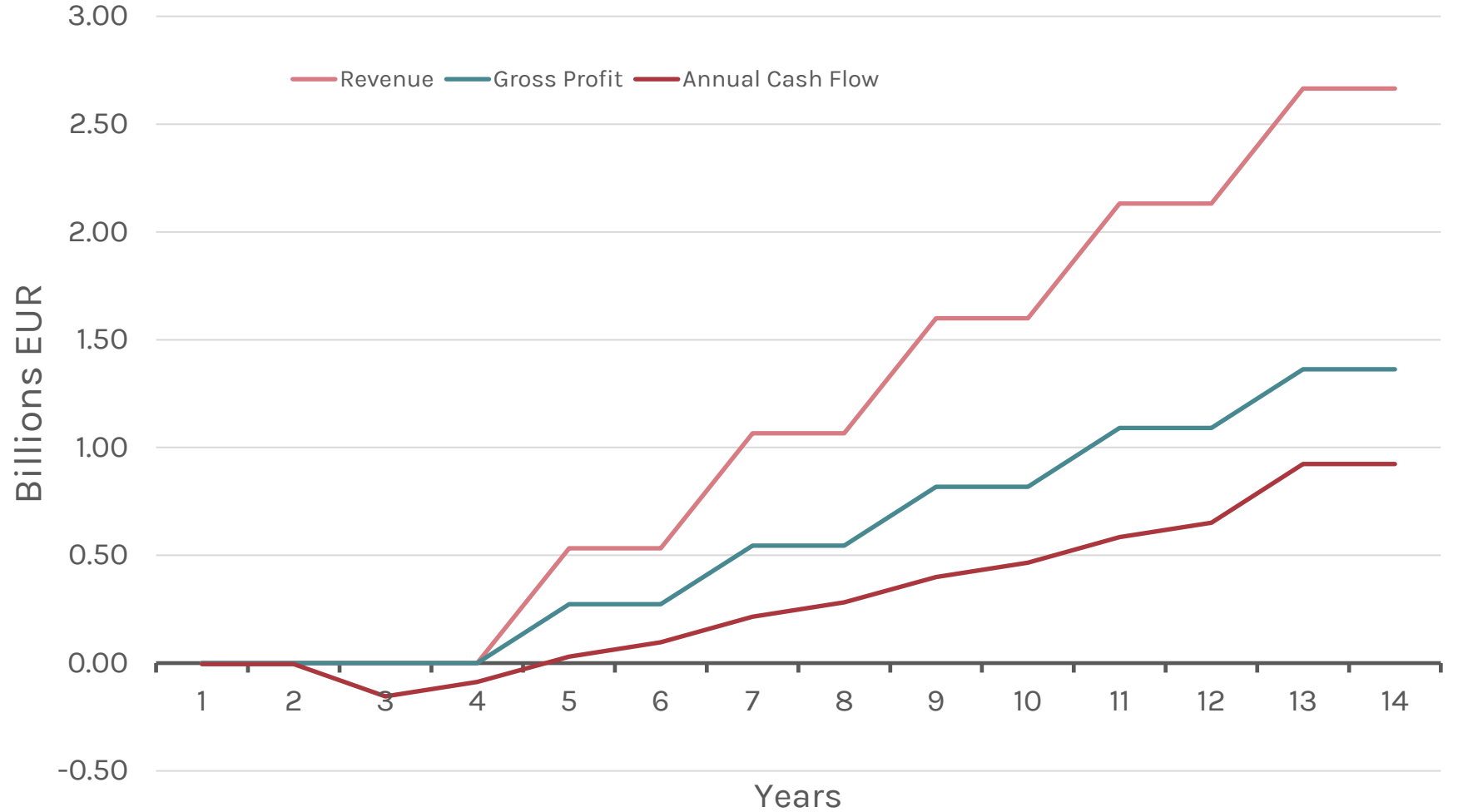
FUNDRAISING €2.5M SEED

USE OF FUNDS

MILESTONES:

- Produce 30 kg per day by Q3 2025
- Deliver to first customer
- Expand IP portfolio
- Expand order book

FINANCIAL FORECAST



An aerial photograph of a solar farm in a desert landscape. The ground is covered with white sand. In the center, there is a tall, cylindrical tower with a spherical receiver at the top, surrounded by several horizontal cylindrical collectors. To the left and right of the tower, there are several rows of solar panels. The sky is dark, suggesting a night or dusk setting.

THANK YOU

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MAANA IN A NUTSHELL

Experts in In Situ Resource Utilization and Power Generation Technologies

>€100M

ORDER BOOK

>€18M

CUMULATED
R&D REVENUES

25

EMPLOYEES

2018

FOUNDING
YEAR



PARTICIPATED IN 15+ SPACE R&D PROJECTS

COMPANY PHILOSOPHY

“2 birds, 1 stone” approach

