



## Introducing Mat4Green Tech Reinventing Indium Tin Oxide Production

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# ITO is used as a thin-film in everyday electronics

Unlike most transparent materials, indium tin oxide (ITO) makes glass and plastic conductive while preserving transparency



Solar Cells

CAGR to 2030

16.4% ('24-'30)

Ref: <https://www.grandviewresearch.com/industry-analysis/solar-cell-market>



Flat Screens

CAGR to 2030

7.26% ('25-'30)

Ref: <https://www.mordorintelligence.com/industry-reports/display-market>



Touch Screens

CAGR to 2030

8.1% ('24-'30)

Ref: <https://www.maximizemarketresearch.com/market-report/global-touch-screen-display-market/33463/>



Smart Glass

CAGR to 2030

13.84% ('24-'30)

Ref: <https://www.marketresearchfuture.com/reports/smart-glass-market-1830>

ITO consumption is increasing in each segment linearly to segment market growth.

# The Problem: No Current Sustainable ITO Alternative

High costs, inefficiency and fragile supply chains block sustainable growth



## Costly ITO Production

Current ITO production processes are **expensive**, with **high material and utility costs**.



## Inefficient Production

Existing ITO manufacturing methods are inefficient, with **significant losses in both production and recycling**.



## High Carbon and Chemical Footprint

Conventional ITO production is energy intensive, and ammonia based, **causing high CO<sub>2</sub> footprint**

Current ITO production is dominated by costly, inefficient, and high-emission processes, creating a clear need for a scalable, low-carbon, and circular technology to secure sustainable global supply.

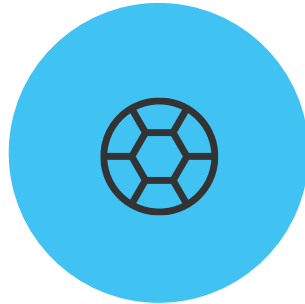
# The Solution: Mat4Green Tech's ITO production process

Founded in decades of research, M4GT's innovative technology is paving the way for sustainable, cost-efficient ITO production



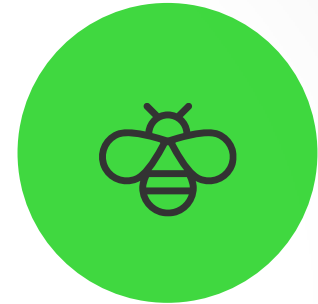
## Cost-Efficient and Sustainable Production

M4GT's innovative ITO process lowers material and energy use, enabling cost-efficient production with minimal new investment.



## High Yield and Minimal Waste

M4GT's technology maximizes yield and minimizes waste through a closed-loop process **that recycles indium and optimizes every production step.**



## Low-Carbon, Ammonia-Free Production

M4GT's proprietary process eliminates ammonia use and cuts energy demand, **enabling low-CO<sub>2</sub>, sustainable ITO manufacturing with superior efficiency.**

M4GT's innovative technology enables efficient, sustainable, and regionally independent ITO production for the next generation of transparent electronics.

# Positioned to capture \$300M+ market post-financing

Driving growth through immediate market access and strong partnerships

- The global ITO market reached \$2B in 2024

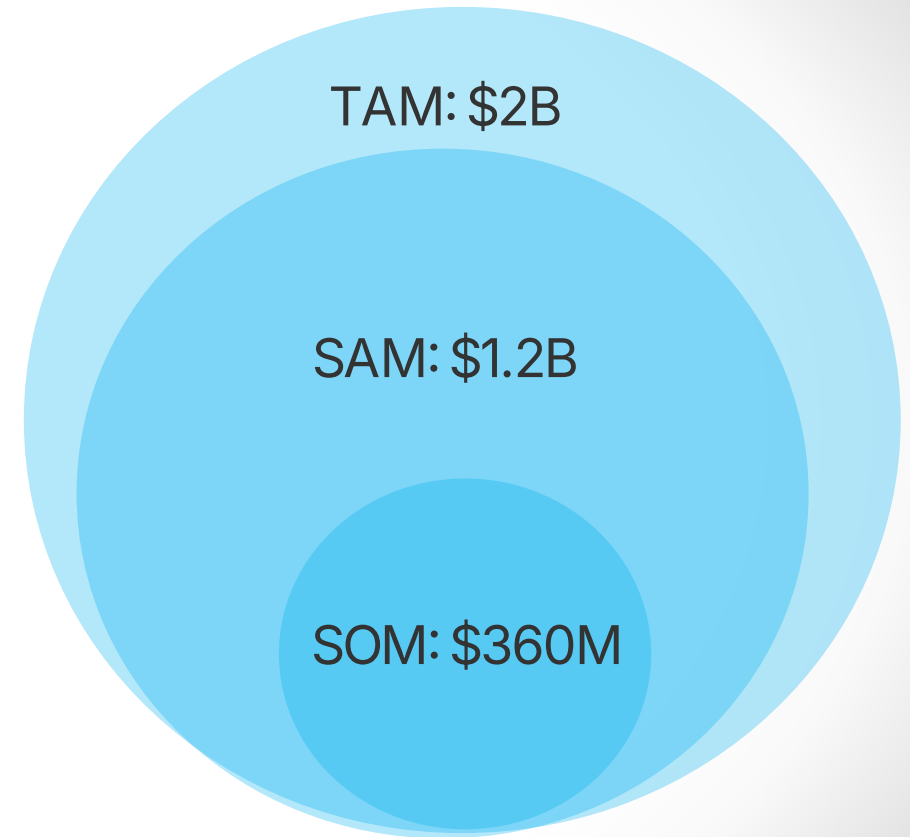
Through our partnership with LT Metal, the world's second-largest ITO producer, M4GT's licensable technology is positioned within the largest ITO manufacturing region, validating our relevance across the entire market.

- The ITO market outside mainland China represents \$1.2B

By licensing our process to regional producers, M4GT can expand rapidly without capital constraints. As new licensees adopt the technology, we can capture a larger share of the SAM, reaching multiple geographies and customer segments through local partners.

- The immediate obtainable market is valued at \$360M

With existing LOIs, sales, and a strategic licensing partnership with LT Metal, the world's second-largest ITO producer, M4GT is ready to scale its licensing model and begin capturing global market share immediately after this funding round.



After meeting the milestones of this financing round, we can immediately deploy our technology with LT Metal and begin selling to our serviceable obtainable market without additional CAPEX.

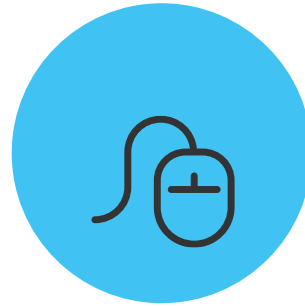
# Fast-tracking market entry through strategic partnership

Accelerating global adoption through proven industry collaboration



## Industrial Validation with LT Metal

LT Metal, the world's #2 ITO producer, has validated M4GT's product performance and market potential. After this round, they will implement our proprietary technology, creating the first large-scale reference site and unlocking recurring licensing revenue.



## Proven Low Cost, Low Carbon Technology

In partnership with LT Metal, M4GT's process demonstrates how circular, low-energy ITO production can deliver premium quality at lower cost, validating both the technology and its global scalability.



## Scalable Path to Global Impact

M4GT is developing a replicable licensing model that enables regional producers to adopt circular, low-carbon ITO manufacturing. This accelerates market entry and builds a resilient global supply chain.

**Our partnership with LT Metal provides immediate market access, industrial validation, and a launch platform for scaling M4GT's low-cost, circular ITO technology worldwide.**

# M4GT's strong competitive edge in ITO production

Outperforming competition on cost and quality...

- **Competitive pricing with strong partner margins**

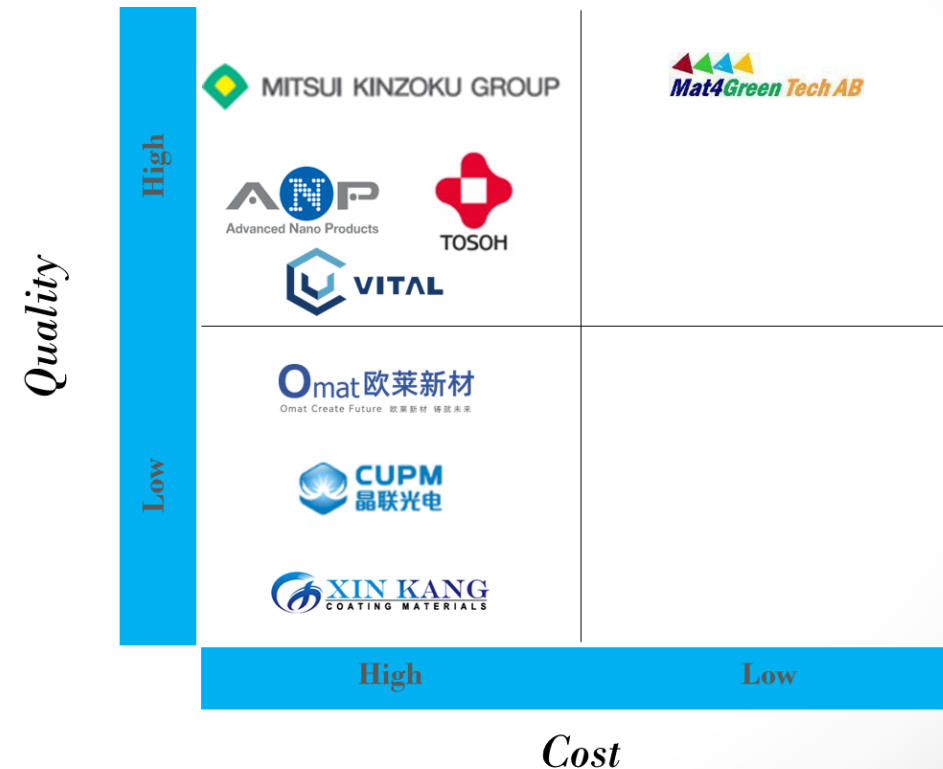
Through licensing, M4GT enables partners to produce high-quality ITO at lower cost thanks to reduced labor and utility needs compared to current methods, maintaining strong margins while staying price-competitive.

- **Advantageous position in Chinese market dynamics**

With LT Metal operating in China, M4GT's technology benefits from local scale while avoiding export restrictions on indium and spent ITO that raise recycling costs for others, ensuring supply security and cost efficiency.

- **Limited global competition on quality and scalability**

Most Chinese producers cannot meet quality standards for advanced solar and display applications, leaving M4GT's licensed partners uniquely positioned to serve high-performance markets with reliable, scalable production.



# M4GT's strong competitive edge in ITO production

...while delivering the most sustainable product

- Lower production costs
  - ✓ Innovative process eliminates intermediary steps
  - ✓ Integrates raw and recycled materials
  - ✓ Achieves over 30% lower production costs vs. traditional ITO manufacturing
- Closed-loop circular model
  - ✓ M4GT's licensed process enables partners to recycle spent ITO directly in their own production, minimizing indium losses, waste, and CO<sub>2</sub> emissions while lowering overall production costs.
  - ✓ Reduces both waste and costs
- 80% lower carbon emissions
  - ✓ Sustainable production process compared to conventional ITO manufacturing



# Customer Value Proposition

Enabling partners to double profitability through efficient, circular, and low-carbon ITO production.

- **Integrated Recycling and Production**
  - ✓ M4GT combines recycled and virgin materials in one closed-loop process, current methods treat recycling and production separately, causing material loss and inefficiency.
- **Low-Temperature, Energy-Efficient Process**
  - ✓ Our proprietary process operates at significantly lower temperatures, cutting energy use and CO<sub>2</sub> emissions compared to conventional high-heat processes.
- **High Material Yield and Recovery**
  - ✓ M4GT achieves near complete utilization of indium and tin, minimizing waste. traditional routes lose up to 30–40% of valuable material.
- **Simplified Process Flow**
  - ✓ Fewer production steps and optimized powder handling reduce labor and utility needs, enabling lower production costs and higher margins.
- **Scalable and Factory-Ready Design**
  - ✓ The modular machine design allows seamless integration into existing facilities, enabling rapid global rollout through licensing.



# Building a Strong and Strategic IPR Foundation

M4GT owns its proprietary ITO process, backed by FTO validation. Upcoming patents will secure key innovations while keeping the full process confidential

- M4GT exclusively owns all intellectual property and full rights to its developed production process.
- A comprehensive Freedom-to-Operate (FTO) analysis by [Rouse](#) confirmed approval and a unique protected market position.
- The process and associated expertise are currently safeguarded through NDAs and strict confidentiality measures.
- As part of this investment round, M4GT will initiate patent filings for its process and know-how.
- Patent applications will cover key innovations, including the atomization chamber design, dual-zone powder collection system, and leaching process.
- This strategic IP approach protects the technology while keeping the complete process undisclosed to competitors.

# Traction and validation

Proven customer demand, strategic partnerships, and early revenues



10+ Letters of Intent signed

Demonstrating strong customer interest and demand for M4GT's products across Europe and globally.



Term Sheet Agreement with LT Metal

*(2<sup>nd</sup> largest ITO producer in the world)*

Strategic partnership for collaboration and licensing of M4GT's ITO process.



Sample deliveries and testing with OEMs

Successful product validations with leading solar, ITO and display manufacturers like Midsummer, LT, Reliance.



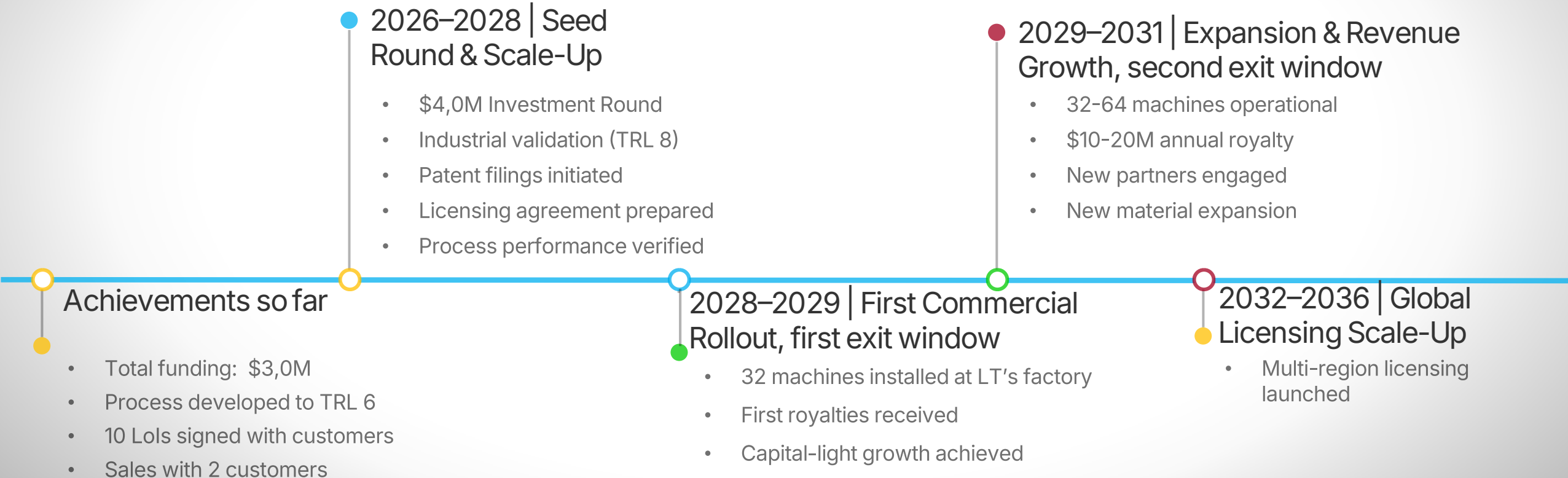
\$90k sales achieved 2025; \$1.5M short-term pipeline

Early traction demonstrating commercial viability and growing customer demand.

M4GT's traction and validation showcase strong customer interest, strategic partnerships, successful product testing, and a growing sales pipeline.

# Achievements and milestones ahead

From validation to global licensing success - a clear, capital-efficient growth trajectory.



Rapid, capital-light scaling through proven tech and licensing.

# Clear path to scale after industrial validation

M4GT is transitioning from production to a high-margin, recurring-revenue model, benchmarked against LT Metal's ITO factory using validated operational data

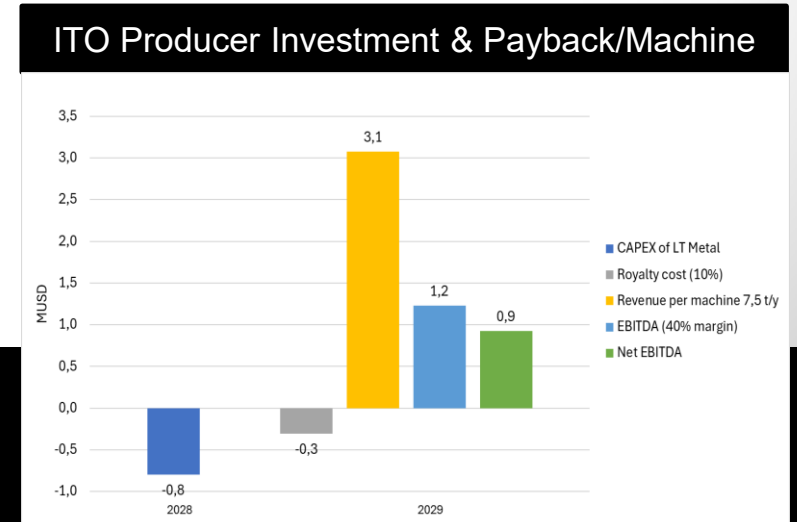
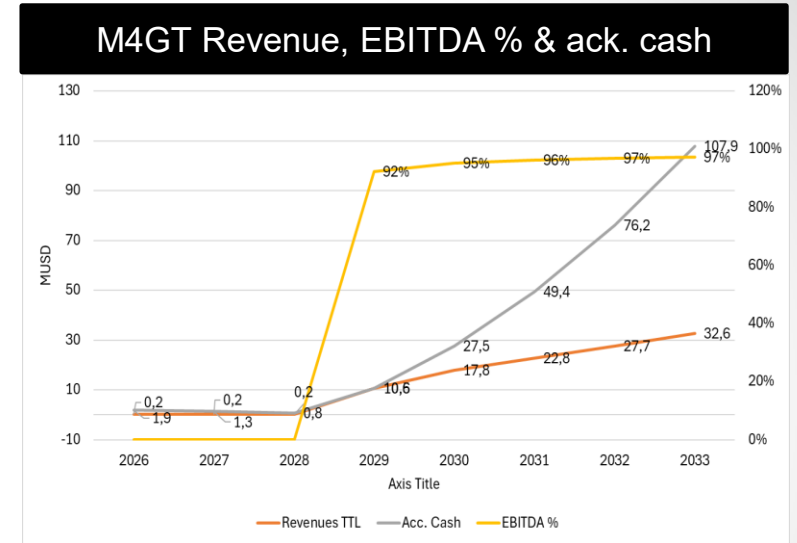
## Financial potential for M4GT, Licensing Business Case

- The business case to the right is showing the financial potential for the licensing deal with LT Metal and is based on the following key assumptions:
  - M4GT to raise 4 MUSD by end 2025
  - Industrial validation (TRL 8) ready in 2028
  - LT Metal produce 60 tons ITO per month by 2033 (one existing factory and one new factory, LT metal projections)
  - Royalty structure: 10% on LT Metal ITO revenue

## Investment Rationale for the ITO Producer

- ITO producer CAPEX of 800 kUSD/machine (volume: 7,5 t/y)
- The investment will break even during the first year of production as the potential revenues from one machine is 3,1 MUSD (ROI 1.6x)
- LT Metal will improve EBITDA margins from 20% to 30% (including cost for the license of 10%)

M4GT's licensing model is applicable to the world's top ITO producers beyond LT Metal.



# Funding plan

Currently raising \$4M to take our technology to TRL 8, production capacity to 7.5 t/y, fully prepared to be setup for licensing in new and existing ITO factories

## 1. Funding so far..

- \$3M raised so far (equity and grants)

### **Achieved milestones:**

- Technology developed to TRL 6
- Prototype equipment up and running
- 10+ LoIs signed with potential customers
- Product verified by third party
- USD 90k in recurring sales
- Term Sheet with LT Metal in place

## 2. Current Seed Round

- Raising \$4,0M

### **Key milestones:**

- Develop the technology to TRL 8
- Licensing agreement completed
- Key patent filings
- Runway 24-30m

## 3. Beyond 2028

- Evaluation of new funding need
- License technology to existing producers
- Expanding to new materials

This funding round will enable M4GT to complete industrial validation, secure key patent filings, and expand engineering capacity - driving the global rollout of our licensed sustainable ITO production technology.

An aerial, black and white photograph of a rowing team in a scull on the water. The team consists of five rowers, each with their own oar, and a coxswain at the stern. They are moving away from the viewer, leaving a wake behind them. The water is dark and textured with small waves.

# Cap Table

All current shareholders want to defend their shares or increase their holdings in the current round.

## Current shareholders

Ebinholm Holding AB*	72.58%
Chalmers Ventures AB	17.74%
Jovitech Invest AB	9.68%

## Warrant holders (KPO)

Henrik Thorén (COO)	5.0%
Carl Axell (Board)	1.0%
Chatarina Schneider (Chair)	0,5%

## Grants awarded:

**\$2.3 m**

EIT Raw material (EU)  
Energy agency (Swe)  
Vinnova (Swe)

\*) Founders

# Team

Our team blends science, industry, and execution, the right mix to scale and succeed!



**Chatarina Schneider**  
Chairman

Former Marketing Director at AkzoNobel and now working at her family office Jovitech Invest.



**Dr. David Storek**  
Board member

Business coach at Chalmers Ventures.



**Carl Axell**  
Board Member

Experienced in strategic financial planning and management.



**Håkan Krook**  
Board Member

Investment Director at Chalmers Ventures.



**Dr. Burcak Ebin, CTO**

Assoc. Prof. in Chemistry at Chalmers University of Technology.



**Henrik Thorén, COO**

25 years of experienced in managing global supply chains from Ericsson, Vestas and Beijer Ref.



**Nils Bågenholm, CEO**

Experience in international leadership, sales and marketing and innovation management within B2B.

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# Appendix

# The output: sustainable ITO powders and targets

Our innovative ITO process output is a high-quality, sustainable ITO powder used in targets for solar, display, and smart glass applications

- ITO Powders (top-left)

The core of our innovation is our high quality, sustainable and low-cost ITO powders. From this powder our customers make highest-quality targets.

- Planar Targets (top-right)

Used for old and current-gen display and touch screen applications

- Cylinder Targets (bottom)

Used for solar cells, smart glass and next gen-displays and touch screen applications.



# New material expansion for future growth

Our proprietary process can be adapted to produce a wide range of next-generation materials for clean energy and electronics

Focused on proven performance -  
built for flexibility

- Licensing Platform for Advanced Materials

M4GT's scalable process can be adapted for other high-value oxides such as AZO and IGZO, enabling entry into EV, semiconductor, and 6G markets through new licensing agreements

- Diversified Global Partner Network

By extending licensing beyond LT Metal, M4GT can collaborate with regional industry leaders, expanding revenue streams and reducing dependency on a single market segment

	Material Type	Possible Taker	Application	Reasoning
Cathod active materials	Material	<ul style="list-style-type: none"><li>• POSCO Future</li><li>• BASF</li><li>• Umicore</li></ul>	Battery materials for electrical vehicle industry	Global leaders in cathode materials seeking circular, low-cost, and energy-efficient production solutions.
Aluminium-Zinc Oxide (AZO)	Material	<ul style="list-style-type: none"><li>• JX Nippon Mining &amp; Metals</li><li>• Umicore</li><li>• 3M</li></ul>	High Temperature TCO material	Major advanced materials producers pursuing sustainable, high-performance alternatives to traditional transparent conductors.
Indium-gallium-zinc-oxide	Material	<ul style="list-style-type: none"><li>• Huawei Technologies</li><li>• Samsung Electronics</li><li>• Murata Manufacturing</li></ul>	Material for 6G	Key 6G technology developers seeking advanced oxide semiconductors for faster, energy-efficient, and transparent electronic components.

In addition to new materials, M4GT can licence the ITO technology to additional ITO makers beyond LT Metal