



**Lithium Universe**  
LIMITED

# PV SOLAR CELL RECYCLING TECHNOLOGY

Utilising Microwave Joule Heating Delamination





## EXCITING OPPORTUNITY WHILE WE WAIT FOR LI MARKET TO RECOVER

- Completed Bécancour Lithium Refinery DFS
- Secured Bécancour land, supply partnerships etc.
- Finalizing spodumene offtake, then OEM Li Carbonate offtake
- Ready for a lithium price recovery - Counter-cyclical strategy
- Presented with exciting PV recycling opportunity
- Can add value while we wait for the lithium market to recover
- Partnership with Macquarie University - Opportunity to accelerate the development





## • PV SOLAR PANELS

- PV solar panels key to energy transition
- Global PV market - US\$39.8 billion by 2037
- Growing at a CAGR of around 8.2%
- 37% of Australian households - installed PV panels
- 4 million homes and small businesses
- In 2024, 12.4% of Aust electricity came from rooftop solar



## THE PROBLEM TODAY

- Globally 60-78mt accumulated waste PV by 2050
- Australia 1mt end-of-life PV worth \$1B by 2045
- Only 15% of PV cells today are recycled
- Rest ends up in LAND FILL
- Valuable silicon, silver, gallium & indium
- Ends up in land fill



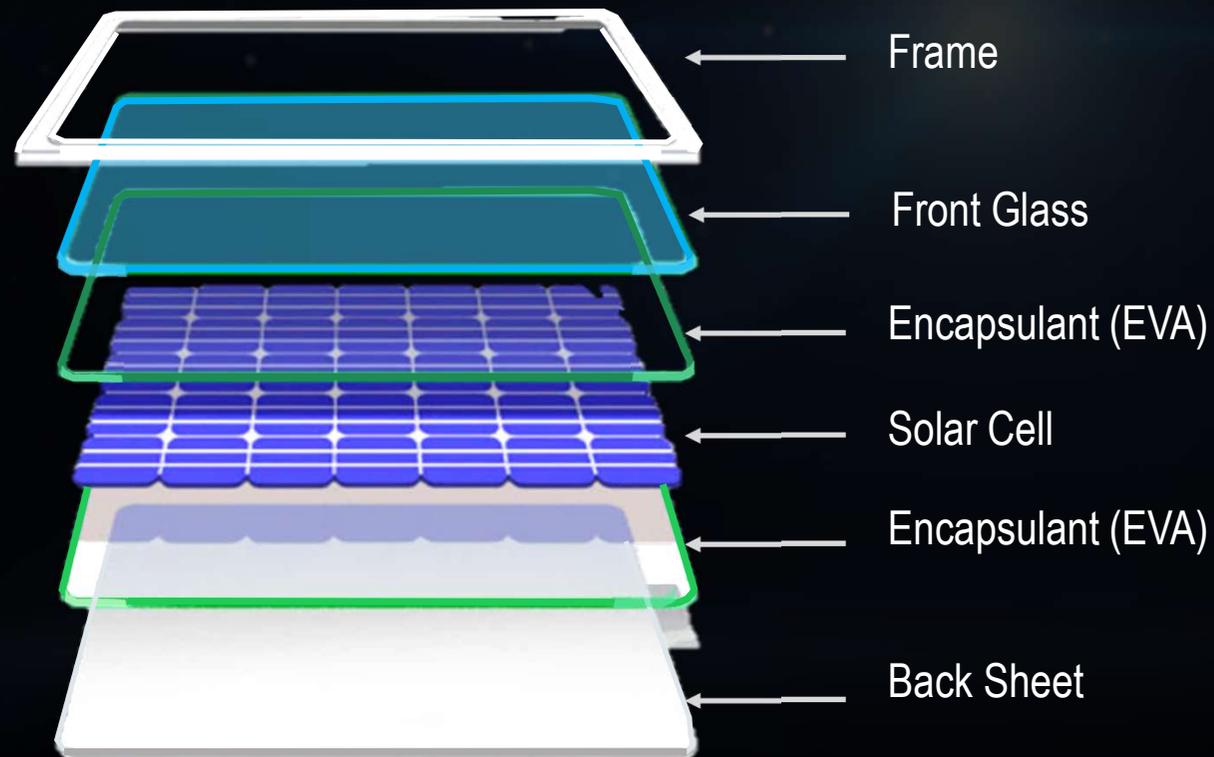
**15%**

A large array of solar panels is shown from a low angle, looking up at the sky. The panels are dark blue with a grid pattern of silver lines. The sky is a vibrant blue with scattered white clouds. The panels are arranged in rows, receding into the distance.

**“Australia is about to be hit by a Tsunami of  
Solar Waste”**

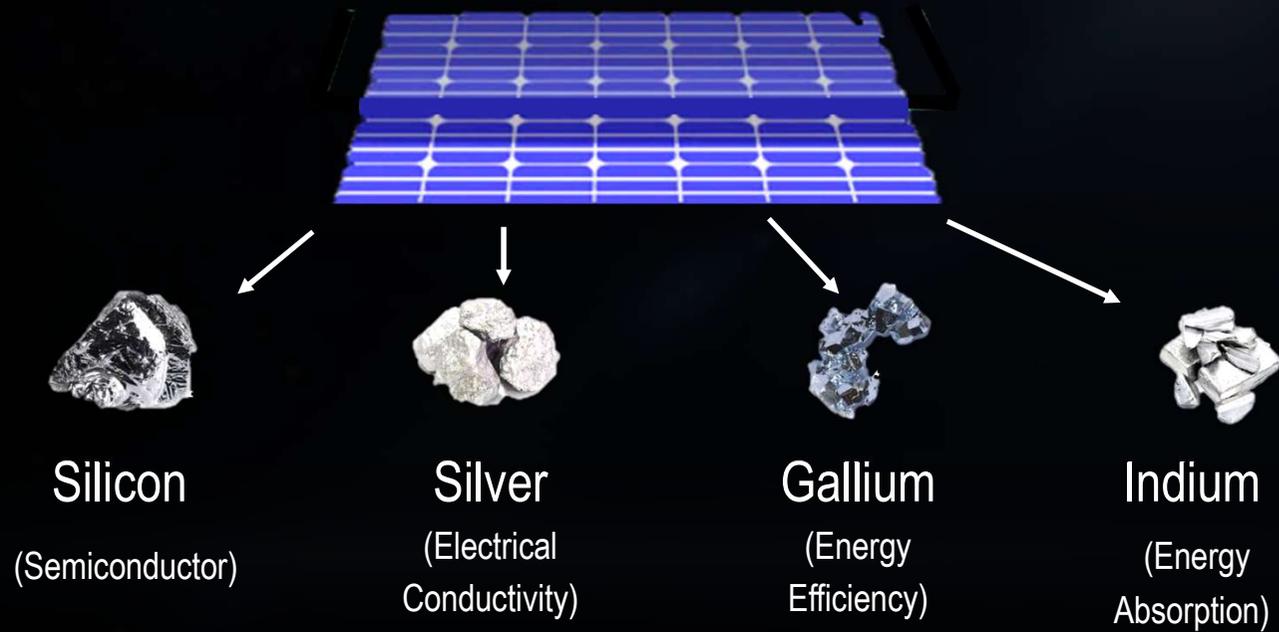
(International Energy Agency)

# PV SOLAR CELL





# CRITICAL METALS LOST FROM INEFFICIENT RECYCLING



A large array of solar panels is shown from a low angle, looking up at the sky. The panels are dark blue with a grid of silver lines. The sky is bright blue with scattered white clouds. The text is overlaid on a semi-transparent dark blue rectangle in the center of the image.

**In Fact, the Silver that's contained inside Solar  
Modules equates to in its totality, Australia's Biggest  
Silver Mine"**

(Australia Smart Energy Council)



## TRADITIONAL PV RECYCLING

- Shredding and grinding PV cells
- EVA (binder) is removed by high temperatures
- EVA removed by toxic acid chemicals
- Glass and low **silicon and silver recovery**
- Only 15% of PV cells are recovered
- Due to complexity, high cost, poor yields



Initial  
Dismantling



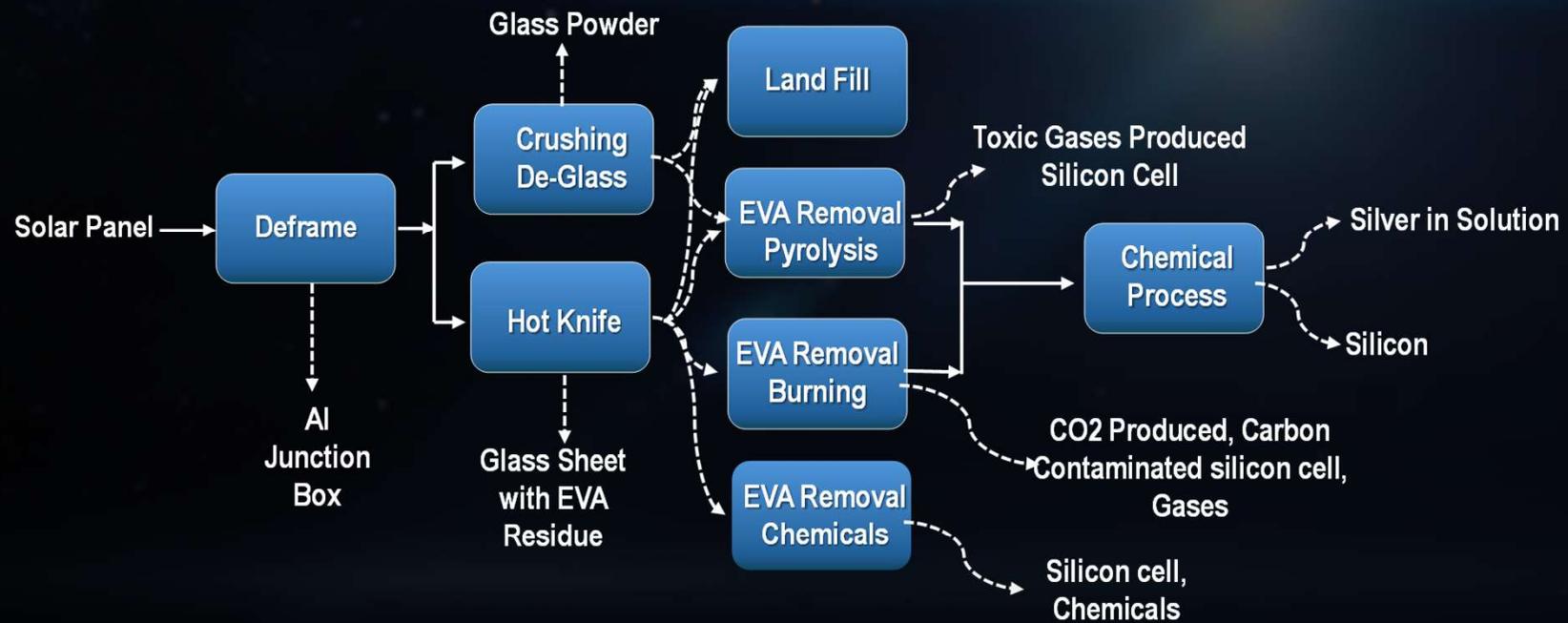
Mechanical  
Breakdown



Material  
Extraction



# TRADITIONAL PV RECYCLING





## ACQUISITION PV RECYCLING TECHNOLOGY

- Agreement to acquire global rights
- Photovoltaic (PV) solar panel recycling technology
- Microwave Joule Heating Technology (MJHT)
- Utilizes microwave technology
- Selectively heat and delaminate PV cells
- Exclusive licensing agreement

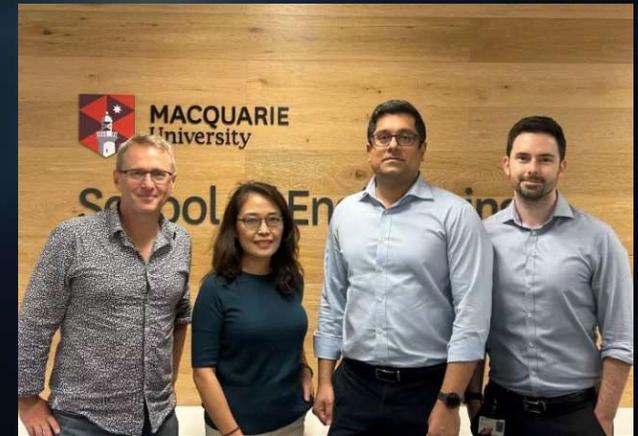


**MACQUARIE**  
University  
SYDNEY · AUSTRALIA



## AUSTRALIAN TECHNOLOGY

- Led by Dr. Binesh Puthen Veettil (School of Engineering)
- Developed a new microwave technology (MJHT)
- School of Photovoltaics at UNSW and the Australian Centre for Advanced Photovoltaics
- Breakthrough technology
- New way to recover silver and silicon



**MACQUARIE**  
University  
SYDNEY · AUSTRALIA



## ADVANTAGES OF TECHNOLOGY

- Instantly targeted heating of silicon
- At room temperature (microwave) rather than 1,400°C
- Potential extraction and purification of high-grade silicon
- Preservation of glass, silicon, copper, indium, and gallium
- Possibility of higher recovery rates
- Reduced contamination

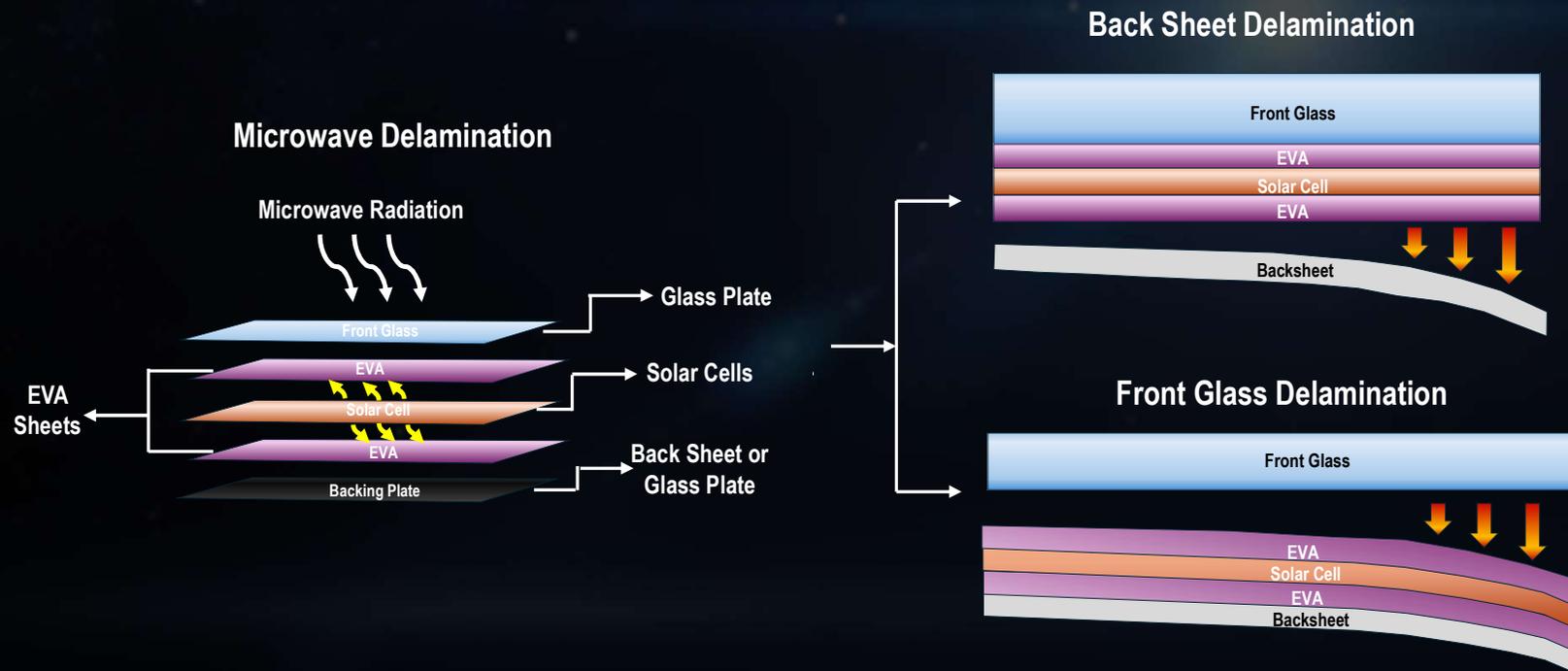


## ADVANTAGES OF TECHNOLOGY

- Softens the ethylene vinyl acetate (EVA) encapsulant
- Enabling easy mechanical separation
- Without the need for aggressive chemical treatments
- No toxic chemicals or byproducts
- Reducing the need for complex waste management

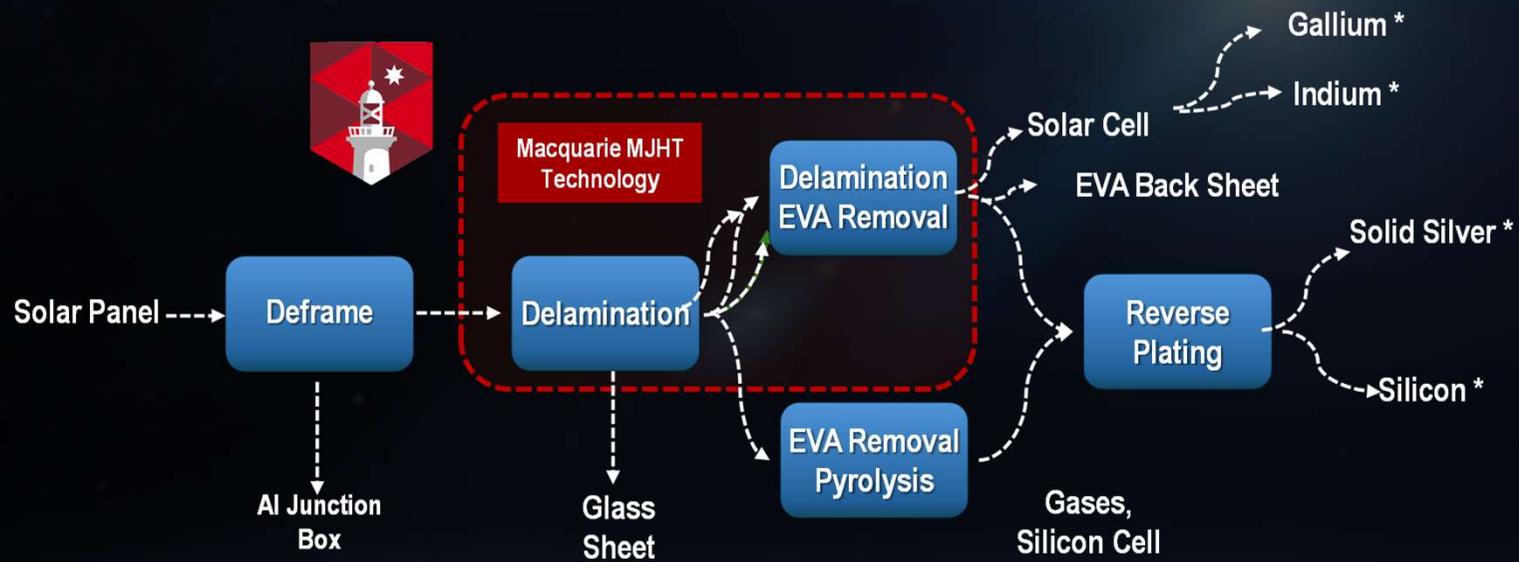


# MJHT SELECTIVE DELAMINATION





# MJHT PV RECYCLING





# CRUSHING VS DELAMINATION

Method	Crushing	MJHT Delamination
Process	Mechanical shredding & crushing of full panel	Layer-by-layer separation (thermal, chemical or mechanical)
Material Integrity	High contamination mixed fragments	Preserves materials in cleaner separable form
Silver Recovery	<5% (often lost in residue)	Up to 95-100% recovery possible
Economic Value	Approx 35% of panel value recovered	Potential for 3-4x higher value recovery compared to crushing
Environmental Impact	Higher waste, more landfill	Enables circular economy, reduces environmental burden



# ACQUISITION MILESTONE PAYMENTS

## ACQUISITION DETAILS

- Binding agreement to acquire 100% of the issued share capital of New Age Minerals Pty Ltd (NAM) for nominal consideration entered.
- Completion conditional on completion of due diligence on NAM and variation of licensing agreement to incorporate amendments necessary or desirable to align its terms with the change in ownership of NAM.



# ACQUISITION MILESTONE PAYMENTS

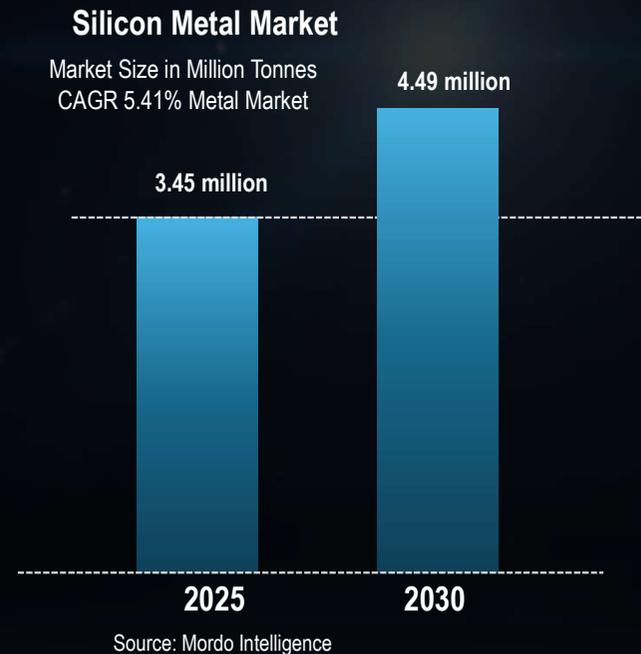
## LICENSING AGREEMENT PAYMENTS

- Reimbursement of registration cost of A\$33,900.
- Annual payment of \$20,000 commencing from 2027 and continuing until 2042.
- 3% royalty on annual gross sales of products derived from MJHT, if commercialized.
- \$100,000 payment upon the successful commissioning and initial testing of the pilot plant, as reasonably determined by NAM (payable in cash or shares on Macquarie University's election).
- \$100,000 payment upon the commencement of production leading to the first commercial sale of the licensed product or process (payable in cash or shares on Macquarie University's election).
- Share payments based on 15-day volume-weighted average price (VWAP) preceding the date of issuance and subject to Shareholder approval.



# SILICON MARKET

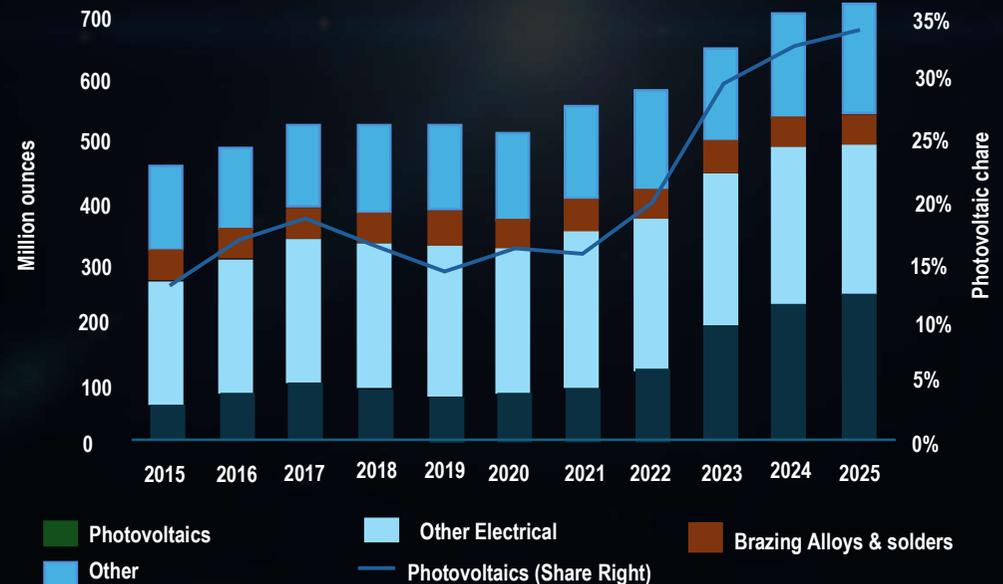
- 3.45 million tonnes in 2025
- 4.49 million tonnes by 2030 growing at CAGR 5.41% pa
- Solar panels projected highest growth rate of 7% til 2029
- Silicon dominance in semi-conductor material in solar cells





# SILVER MARKET

- Record demand 680 million ounces in 2024
- Industrial demand surged by 7%
- Growth is expected to carry beyond 2025
- Photovoltaics and AI as the fastest-growing drivers



Source: Metals Focus, Wisdom Tree, January 2025 Electrical



# SILVER MARKET

- Demand has started to outstrip supply
- Significant price increase in face of Silver shortfall
- Silver recovery from recycling will become increasingly important





## PV RECYCLING GROWTH FUTURE

The need for PV recycling is Compelling

## TECHNOLOGY IS KEY

Macquarie Microwave Heating Delamination Technology

## CHEMICAL EXPERTISE

LU7 Team has Chemical Experience to develop Technology



INVESTOR HIGHLIGHTS



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