



# Unearthing Critical Minerals In Western Australia

May 2024

ASX:**IND**  
[industmin.com](http://industmin.com)

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This presentation contains images of historical drill core obtained from publicly available WAMEX reports. IND has not carried out sufficient exploration on the tenure to verify the minerals represented in the images.

## COMPETENT PERSON STATEMENT

The information in this announcement that relates to Mineral Resources is based on information compiled and fairly represented by Mr Richard Stockwell, who is a Fellow of the Australasian Institute of Geologists (FAIG). Richard Stockwell is a Founding Director and Principal Geologist of Placer Consulting PL, who was engaged by Industrial Minerals Ltd. Mr Stockwell has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity which he has undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Stockwell consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.



# Developing Critical Minerals in Western Australia

High Purity Quartz (**HPQ**) and High Purity Silica Sand (**HPSS**)



Defining high quality resources proximal to key infrastructure



Product demand leveraged to growing solar PV and high-technology sectors



Advanced projects located on granted mining leases, to fast-track production pathway



# Corporate Snapshot



**Ashley Pattison**  
Non-Executive Chair

+20 years experience in the resource sector across establishing mining operations, finance, strategy and corporate finance.



**Alex Neuling**  
Non-Executive Director

Chartered accountant and chartered company secretary with +20 years corporate and financial experience.



**Melanie Leighton**  
Non-Executive Director

Geologist with +20 years experience in the mining industry, spanning multiple commodities and deposit types.



**Jeff Sweet**  
Managing Director & CEO

Experienced in the quarry, mining and logistics industries of +24 years, primarily in operations management roles.



**Eileen Hao**  
GM - Sales, Marketing and Business Development

+30 years experience as an independent technical and business development consultant within the industrial minerals space.

**68.8M**

Total Shares on Issue

**8.9M**

Options on Issue

**\$0.76M**

Cash (31/03/24)

**\$10.3M**

Market Cap (\$0.15c 30/04/24)

**71%**

Top 20 Shareholders

**25%**

Board & Management

**\$9.6M**

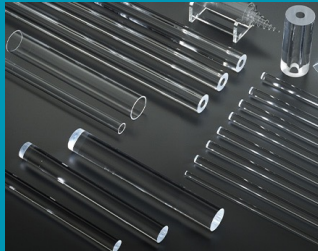
Enterprise Value



# HPQ & HPSS: High Value, High-Tech Applications

## Quartz Glass

Optics, fibre optics, lamp, semiconductor manufacturing, liquid crystal manufacturing,



## Solar

HPSS & HPQ are critical minerals in the solar PV growth industry



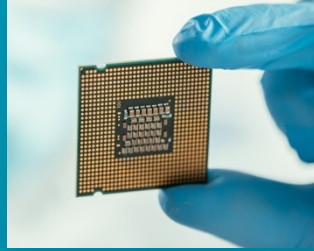
## Silica Fibre

Ensures minimal impurities that degrade signal quality in fibre optic communication



## Semiconductors

HPQ is an essential material for manufacturing equipment and consumables including crucibles



## Electronics

HPQ remains crystalline in extreme heat, maintaining accurate frequencies



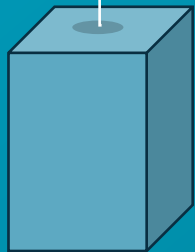
## Battery Technology

Silicon carbon anode can hold 10 times as many lithium ions by weight as graphite

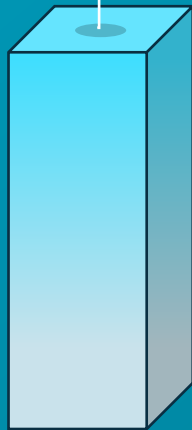
# HPSS & HPQ: Market Dynamics

## Size of HPSS market and projected growth

US\$16.42bn  
in 2024



US\$25.99bn  
2034

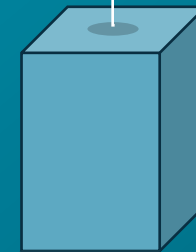


### Demand Drivers HPSS:

Global shortage of low iron content feedstock and increasing scrutiny of supply chain environmental concerns.

## Size of HPQ market and projected growth

US \$703.6m  
in 2019



US \$1.95bn  
in 2034



### Demand Drivers HPQ:

Increasing sales of consumer electronics, adoption of digital transformation initiatives and the rising popularity of solar energy.

# End Markets By The Numbers

## AUSTRALIA

**82%**

**Target for renewable power by 2030** (from around 40% now)

**A\$7.8bn**

**Support proposed for 10 years via production subsidies and concessional finance to develop the supply chain**

**A\$1bn**

**State-backed fund to expand solar panel manufacturing**



Source: Australian Government, Australian Renewable Energy Agency - ARENA

## CHINA

**50%**

**Global Supply of Sand consumed by China,** driven by industrialisation

**US\$428m**

**China is leading importer of HPQ,** with market value projected to grow from US\$247 -> US\$428 by 2034

**US\$40bn**

**State-backed investment fund launched in Sept 2023,** to fund the local semiconductor industry and boost its output



Source: Fact.MR  
Research: Reuters

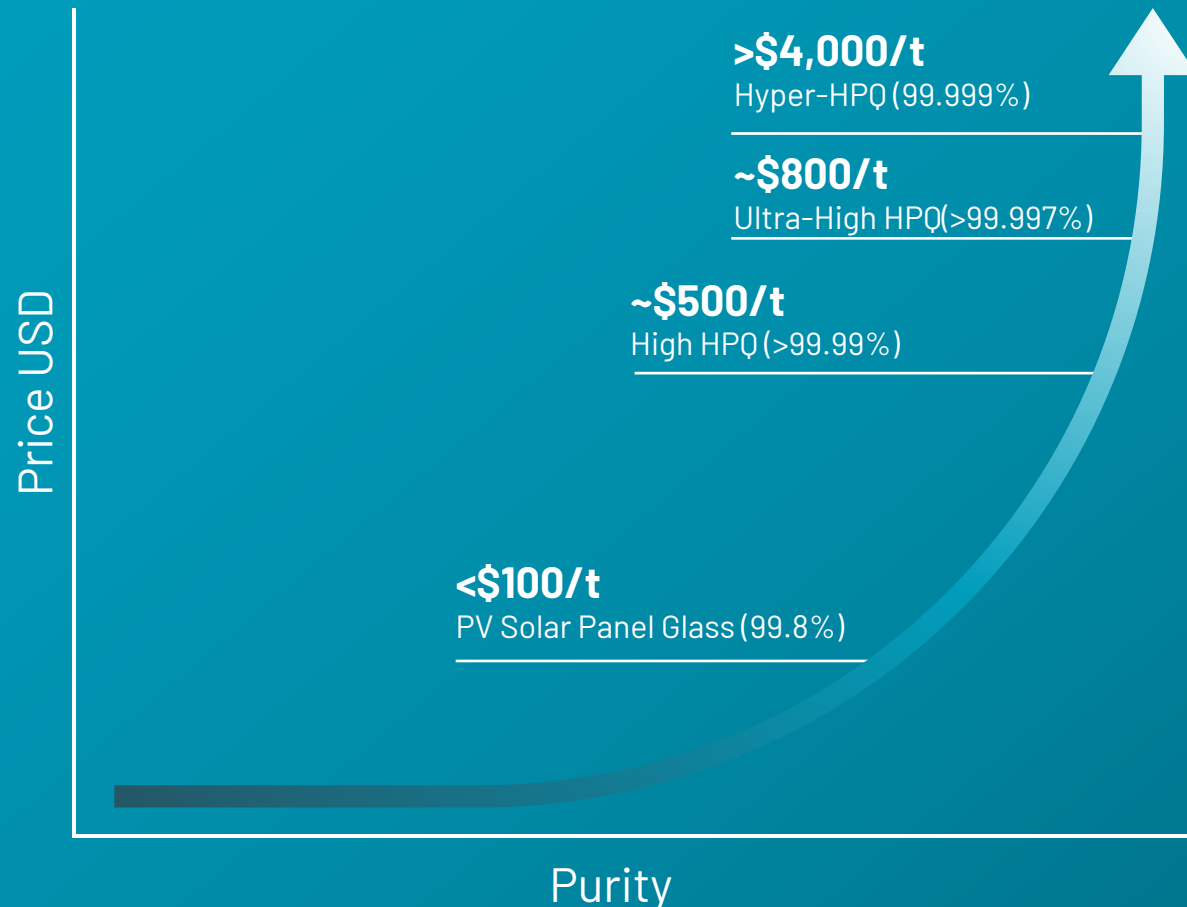


# Global Investment in HPQ Industry

- ▶ Installed capacity of solar power generation in China increased by 55.2% to ~610 GW within a year (National Energy Administration, PRC)
- ▶ +60 new quartz material projects and expansions signed and completed in China across 2023
- ▶ Ojing Technology signed US\$350 million offtake agreement with Sibelco North America for HPQ long term supply (Ojing, 26 February 2024)
- ▶ Sibelco announced investment of ~USD\$200m to double HPQ installed capacity at its Spruce Pine Facility in the USA – USD\$500m investment to be executed over 2024–2027 (Sibelco, 21 April 2023)
- ▶ Indian Government set up target of 500GW of installed renewable energy by 2030, including installation of 280GW solar power (Government of India Ministry of Power, November 2021)
- ▶ Semiconductor market in India expected to value US\$64bn by 2026 (IESA, May 2023)
- ▶ Micron Technology announced investment of USD\$825m to set up new chip assembly and test facility in India (Micron, 22 June 2023)

# HPSS - HPQ Value Opportunity

## QUARTZ ORE - CIF CHINA



## IND Product Feedback

Industry feedback on pricing for HPQ ore delivered into China

**~US\$500 per tonne**

Electronic grade quartz powder ore product.

**~US\$800 per tonne**

Middle-layer crucible ore specification.

**No firm price data**

Inner-layer quartz ore, due to the tight contractual arrangements/ few suppliers.

**Buyers are willing to engage on consistent quality and long mining life.**

# Broad Portfolio of HPQ Projects

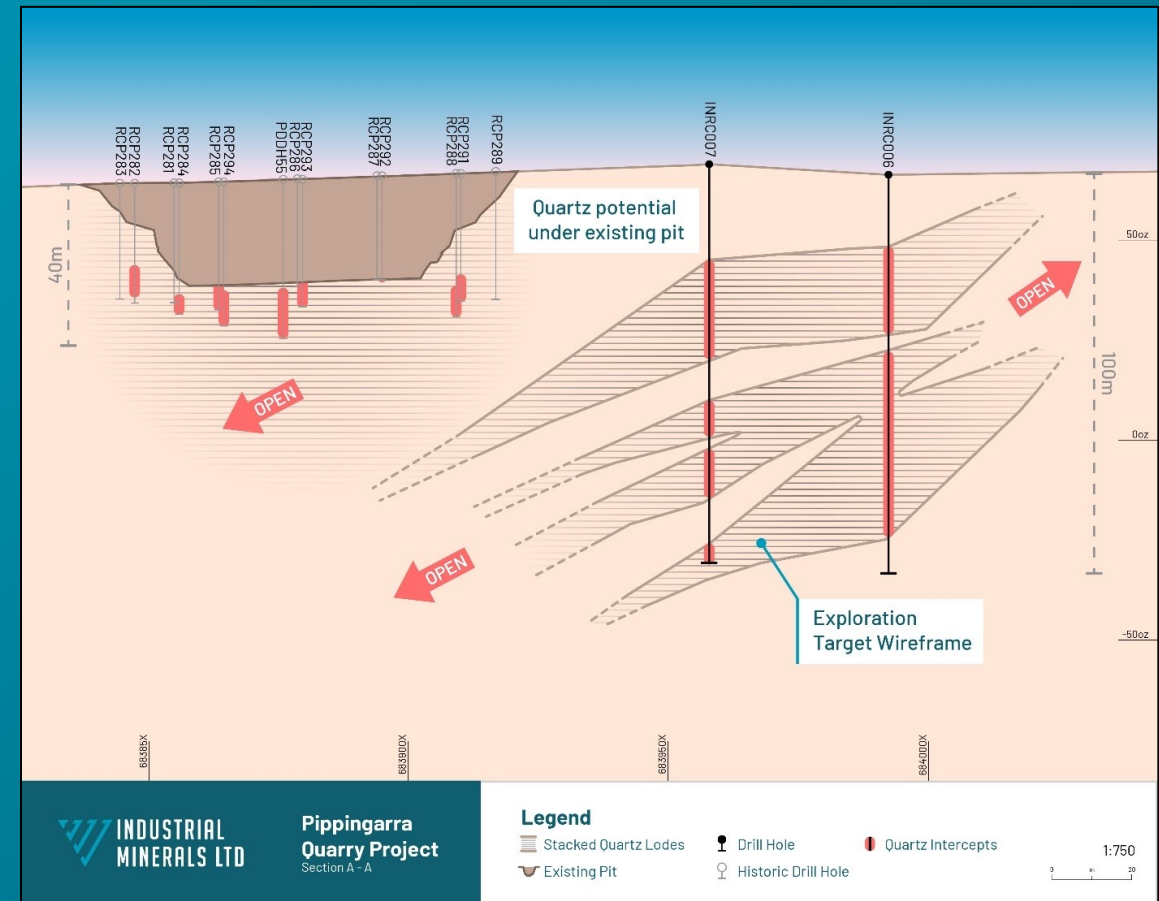
- ▶ Growing portfolio of HPQ Projects in Western Australia.
- ▶ Pegmatite and hydrothermal quartz rock sources proven suitable for HPQ applications.
- ▶ IND has 12+ months investment in identifying end markets and building a network of potential HPQ offtake partners.





# HPQ Potential in the Pilbara Region, WA

- ▶ IND holds exclusive option to acquire 80% mineral rights at Pippingarra Quarry.
- ▶ Pippingarra Quarry is an active mining operation with fixed and mobile plant, site infrastructure and camp facilities.
- ▶ Located <40km from Port Hedland with public road access to the port.
- ▶ RC drill program completed late 2023 identified extensive quartz mineralized zones.



# Pippingarra HPQ Targets

- ▶ Exploration Target of **1.5-3Mt @ 97-99% SiO<sub>2</sub>** adjacent to existing pit.
- ▶ Initial testwork has returned low impurity results from standard HPQ flowsheet **>99.994% SiO<sub>2</sub>**.
- ▶ Further HPQ targets identified from surface mapping and historical drilling across Mining Lease.
- ▶ HPQ ore samples have been crushed, screened and sent to several potential offtake parties for assessment.



ASX Announcement 27 October 2023 - Option to Acquire Pippingarra Lithium Project, Pilbara WA  
ASX Announcement 28 March 2024 - IND to Progress High Purity Quartz Exploration at Pippingarra  
ASX Announcement 24 April 2024 - HPQ Exploration Target Established at Pippingarra



# Mukinbudin Quartz/Feldspar Project

Historic production of HPQ from 1970s with sales to Japan.

WAMEX records report quartz mineralisation up to 37m from 1m

Quartz hosted in feldspar-quartz-mica pegmatite, similar to IND's Pippingarra Quarry Project.

Quartz rock chip samples grading **99.97% SiO<sub>2</sub>**

Advanced testwork (METS) on the high purity quartz, alumina and potash shows excellent baseline purity levels



# HPQ Beneficiation Process

## Ore Processing

Crush, Screen, Ore Sorting at Mine –  
>99.95% SiO<sub>2</sub> Purity HPQ Feedstock

## Physical Processing

Grind, Attrition, Classification, Magnetic  
and Electrostatic Separation, Flotation  
– Size and remove macro-mineral  
impurities

## Thermal, Chemical

Flotation, Leaching, Hot Chlorination,  
Calcination – Removal micro-mineral  
impurities and fluid inclusions

DSO  
Option

Process  
at Mine  
Site  
Option

Off-site  
Processing  
Option



# HPSS & HPQ Strategy

## Matching High Quality Resources with Minimal Transport Costs



### Quality

Targeting Tier 1 quality  
HPSS & HPQ product



### Location

All tenure close to  
infrastructure and port



### Profitability

Evaluate early stage Low  
Capex DSO options to generate  
early revenue

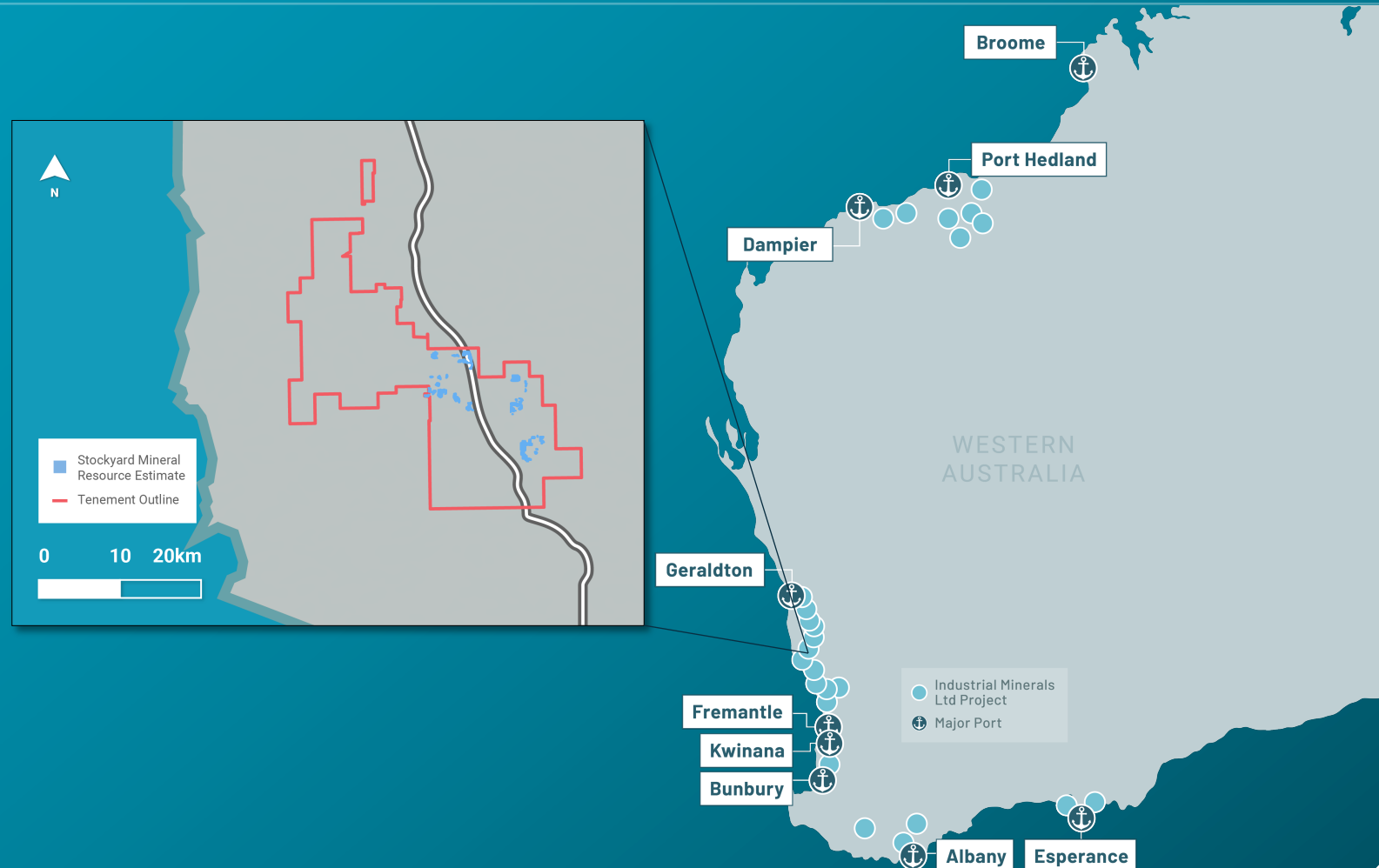


### Offtake

Continue to pursue existing offtake  
discussions and expand

# Diverse Portfolio of High Purity Silica Sand Projects

- ▶ Portfolio of +20 HPSS projects covers over 3,600km<sup>2</sup> all proximal to port.
- ▶ Unique strategy – focus on private cleared land versus crown land.
- ▶ Exploration and evaluation of portfolio is ongoing.
- ▶ Projects on mining leases enable fast track to production.
- ▶ Stockyard Project – Indicated and Inferred Mineral Resource of **9.6 million tonnes at 98.9% SiO<sub>2</sub>** (Insitu).





# Premium Low Impurity Silica Sand Specification Achieved

**Processing testwork conducted in China** at plant designed for beneficiating high purity sand and quartz to supply the PV solar panel glass market

Samples from Stockyard and Esperance East achieved **low Fe<sub>2</sub>O<sub>3</sub> specifications with simple physical and magnetic separation.**

Demonstrates potential for IND to meet high specifications with simple flowsheet, **potential to reduce initial project capital costs and attract higher pricing.**

Attrition + Permanent Magnet + WHIMS	SiO <sub>2</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> ppm	Al <sub>2</sub> O <sub>3</sub> ppm	TiO <sub>2</sub> ppm	LOI %
Stockyard (MET0016)	99.7	100	100	1,000	0.11
Esperance East (MET0017)	99.8	68	500	600	<0.05

# IND's Commercial Competitive Advantage

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**IND has spent 2+ years building a broad network** of potential customers in China, South Korea and Vietnam.

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**Advanced testwork and large portfolio of projects** gives IND a strong position to present product specifications to customers.

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**IND has relationships with the largest PV glass manufacturing plants** in Anhui Province China.

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**Ongoing discussions show interest from wide industry base** including PV, LED screen and flat glass and high end foundry sand market.

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# Critical Minerals Explorer & Developer

## Key Takeaways



Proven mine development and operating team



Granted Mining Leases enable fast track to production



HPQ in high demand - right product achieves premium pricing



Very supportive shareholder base and tight capital structure



Near-term offtake opportunities to create further shareholder value





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