VYTAS RESOURCES

# Ultra High Purity Quartz Update Stakeholder Update

**JULY 2023**

## VYTAS ACHIEVES ULTRA HIGH PURITY QUARTZ BELOW DETECTION LIMITS

- Vytas' in-house process to produce Ultra High Purity Quartz may significantly improve environmental standards for the solar industry
- Vytas produced Ultra High Purity Quartz below detection limits in Australia, without the need of toxic chemicals commonly used in the solar industry
- The material has been sent to United States and Northern Asia for detailed testing for off-take parties
- Vytas' target product specifications include 99.999% $SiO_2$, suitable for microchips, the solar industry and high end applications
- Bulk sample will be sent to off-take parties for testing and the manufacture of crucibles
- Discussions regarding off-take and off-take funding support are advanced
- Vytas has engage with industry experts for the purpose of commercialisation

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## ULTRA HIGH PURITY QUARTZ STRATEGY

Vytas' Ultra High Purity Quartz (UHPQ) Strategy has been demand-driven for the supply of high purity, ethically sourced and environmentally sustainable product. The significant growth in the solar industry and other high end applications for UHPQ has resulted in Vytas receiving over 150ktpa in off-take interest for its product.

Vytas seeks to capitalise on this opportunity in the market by producing 99.999% SiO2 (5N), 99.998% SiO2 (4N8), 99.997% SiO2 (4N7) and 99.99% SiO2 (4N) products. A process has commenced for optimisation and to investigate the proposed annual production rate, with the likely range being 12ktpa to 25ktpa.

## THE ENVIRONMENT

Vytas will differentiate itself from the market, as it seeks to be a leader in ethically sourced (no forced/ slave labour) & environmentally sustainable (improved processing flowsheets and acid recovery) Ultra High Purity Quartz.

Traditional market supply sources have challenges with acid management, including allegations of forced labour and the dumping of toxic chemicals into the ocean (including western sourced material).

## OFF-TAKE SUPPORT

Vytas is working through a process with a number of different off-take parties for off-take and project funding. "Invitations to treat" include an offer from off-takers, to provide Vytas with funding support sufficient to meet Vytas' anticipated CAPEX through non-dilutionary prepayments.

The next steps include the detailed analysis in the United States and Northern Asia, the production of a small scale bulk sample and a larger bulk sample for the production of crucibles.

Vytas will then run a process to achieve the optimal outcome for both Vytas and the off-take parties. In the case Vytas commissions a 12k-25ktpa production facility, with over 150ktpa of off-take interest, we will need to carefully manage relationships and expectations.

## ANNUAL GENERAL MEETINGS AND ANNUAL REPORT

Vytas is commencing the audit of the Financial Statements for the year ended 30 June 2023 and the AGM will be convened once completed.

Regards,

**David Cornell**
Managing Director

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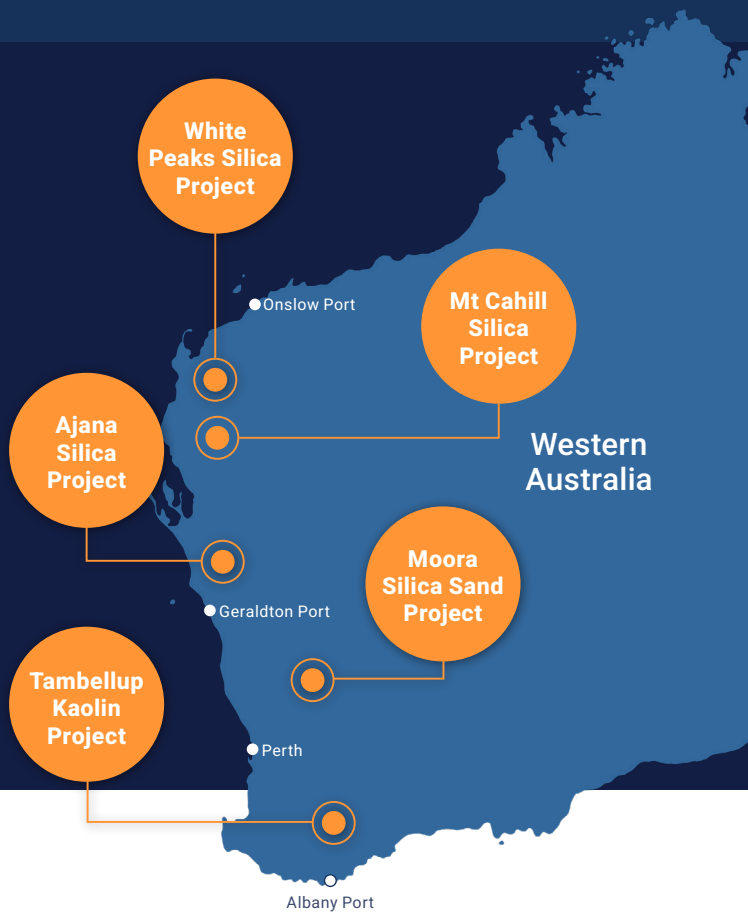
## ABOUT VYTAS RESOURCES

Vytas is an emerging producer and supplier of "On Demand" Hydrogen and Ultra High Purity Quartz (UHPQ) and Technology Materials to provide solutions to global challenges to transition to a renewable economy.

Vytas' flagship projects consist of the Moora Silica Sand Project, the Tambellup Kaolin Project, White Peaks, Mt Cahill and Ajana Projects.

Test work at Lincoln Laboratories (Boston) confirms "On Demand" hydrogen can be produced close to theoretical limits which may be a game changer for the sector.

Metallurgical test work confirms Ultra High Purity Quartz (HPQ) can be cost effectively produced using sustainable and ethical processes.




## HYDROGEN

If Australia gets it right, we could produce 15.94 Mt of renewable hydrogen each year, with exports worth A$47.3bn pa. Crucially, the decline of our fossil fuel industries would be matched by the growth of new clean industries, minimising transition challenges for regional Australia (Deloitte Access Economics, 2023)

> "This new technology material venture will place Vytas at the forefront of the renewable technology industry."

## VYTAS HIGH PURITY ALUMINIUM (HPA) AND HIGH PURITY QUARTZ (HPQ)

**CSIRO's (2021) Critical Energy Minerals Roadmap includes both aluminium (HPA) and silicon (HPS & HPQ) as critical minerals** needed to transition to a renewable economy. Both materials are in high demand due to their manufacturing benefits and use in Solar PV, Wind Turbines, Concentrated Solar Power (CSP), Hydrogen Production and Batteries. This new technology material venture will place Vytas at the forefront of the renewable technology industry.

The Global HPA market was valued at US$1.3 billion in 2019 and is projected to reach US$4.8 billion by 2026, growing at a CAGR of 20.7 % from 2020 to 2026 (Allied Market Research, 2020). Similarly, the Global HPQ market had a value of US$672 million in 2019 and is expected to reach US$1,234 million by 2027 growing at a CAGR of 7.9 per cent during the forecast period (Research and Markets, 2021).

## Appendix - JORC 2012 Exploration Targets and Mineral Resource

### Moora Silica Project - Exploration Target*

| Tonnes (Mt) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | $TiO_2$ (%) | LOI (%) |
|---|---|---|---|---|---|
| 272 - 408 | 97.1 – 99.8 | 0.01 – 1.4 | 0.02 – 0.5 | 0.1 – 0.2 | 0.01 – 0.7 |

### Tambellup Kaolin Project - JORC-2012 Mineral Resources (Inferred)

| Tonnes (Mt) | ISO Brightness (%) | $Al_2O_3$ (%) | $SiO_2$ (%) | $Fe_2O_3$ (%) | LOI (%) |
|---|---|---|---|---|---|
| 12.48 | > 80 | 36.64 | 48.42 | 0.37 | 12.19 |

### Tambellup Kaolin Project - Exploration Target*

| Tonnes (Mt) | ISO Brightness (%) | $Al_2O_3$ (%) | $SiO_2$ (%) | $Fe_2O_3$ (%) | LOI (%) |
|---|---|---|---|---|---|
| 54 – 108 | 79 - 87 | 34.2 – 38.1 | 46.9 – 50.5 | 0.1 – 0.8 | 10.9 – 13.4 |

### White Peaks Silica Project - Exploration target*

| Tonnes (Mt) | $SiO_2$ (%) | $Al_2O_3$ (%) | $Fe_2O_3$ (%) | $CaO_2$ (%) | Porosity (%) | LOI (%) |
|---|---|---|---|---|---|---|
| 230 - 375 | 73 – 88 | 6 – 9 | 0.2 – 7 | 0.1 – 5 | 58 - 69 | 0.01 – 0.7 |

* The potential quantity and grade of the Exploration Target is conceptual in nature and therefore is an approximation. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource. The Exploration Target has been prepared in accordance with the 2012 edition of the JORC Code.