Poised to become the lowest-cost High Purity Alumina producer

Metals & Mining

Impact Minerals Limited (ASX: IPT) is an exploration company holding an extensive portfolio of tenements spanning 5,500km² in mineral-rich regions across Australia, including Western Australia and the Broken Hill region. The company's flagship project, the Lake Hope High Purity Alumina (HPA) project, is situated in the Tier-1 jurisdiction of Western Australia. IPT aims to position itself as one of the lowest-cost producers of HPA, a critical mineral for the ongoing energy transition. IPT was listed on the ASX in November 2006.

Lake Hope to emerge as one of the most cost-effective producers of HPA

Lake Hope High Purity Alumina (HPA) Project is the centrepiece of IPT's endeavours. The unique nature of the Lake Hope deposit allows for cost-effective and environmentally friendly quarrying rather than traditional mining. Combined with straightforward metallurgical processing, this provides a clear path to producing HPA products that can command high margins in a market forecasted to expand dramatically over the next decade. A scoping study on the project, released in November 2023, indicates that Lake Hope has the potential to become one of the lowest-cost producers of HPA globally, possibly by a margin of up to 50%. The company recently announced achieving the 99.99% HPA purity milestone using its proprietary Playa One sulphate process, reinforcing the results of its scoping study.

Presence across several high-grade mineral deposits

IPT is also actively exploring for precious and battery metals and has witnessed good progress in recent years. Exciting exploration results, especially in the Arkun-Beau-Jumbo project area, showcase the potential for Rare Earth Elements, Ni-Cu-PGM, and lithium pegmatites with drilling of some of the priority targets to begin in Q2 this year. Recent participation in the BHP Xplor program and a US$500k grant received under the programme support the company's bona fides as an exploration company.

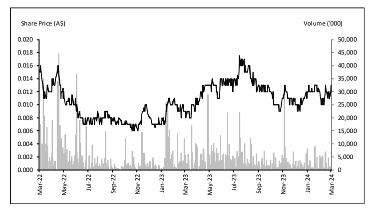
Valuation range of A$0.021–0.027 per share

We value IPT currently at A$0.021 per share in a base-case scenario and A$0.027 per share in a bull-case scenario using NPV-based valuation methodology. Our mid-point target price of A$0.024 represents a Price/NAV of 0.54x, offering substantial upside. Our calculation considers full share dilution, including the recently issued performance rights and unlisted options. Our target price range is solely based on the Lake Hope HPA project and does not include the value of the company's other assets. We anticipate further significant additional value unlocking as the company is working on a Preliminary Feasibility Study (PFS) on the Lake Hope Project, expected to be completed by end-2024. A scoping study on the project demonstrated a potential NPV8 of A$1.3bn. Exploration is also in progress at its other projects. Key risks include commodity price fluctuations, funding challenges and potential project delays.

Impact Minerals Valuation	Base Case	Bull Case
Lake Hope Alumina project NPV (post-tax)	1,334	1,334
Average peer multiple (EV as % of NPV)	4.0%	5.0%
Premium (Discount)	50%	50%
Total Value	**73.66**	**93.67**
Implied Price (A$)	**0.021**	**0.027**

Date	6 Mar 2024
Share Price (A$)	0.013
Target Price (A$)	0.021-0.027
Price / NAV (x)	0.54x
Market Cap (A$m)	37.2
52-week L/H (A$)	0.018/0.008
Free Float (%)	64.7%
Bloomberg	IPT AU
Reuters	IPT.AX

Price Performance (in A$)



Business description

Impact Minerals Limited (ASX: IPT) is an Australian mineral exploration company listed on the ASX since November 2006. The company's flagship asset, the Lake Hope Project, is located 500km east of Perth in Western Australia. It contains a significant alumina resource. The company is also managing tenement holdings with significant potential for high-grade mineral deposits of gold, silver, lead, zinc, copper, nickel, and PGMs.

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Investment Rationale

Impact Minerals Limited (ASX: IPT) is an Australian mineral exploration company that was listed on the ASX in November 2006. The company's flagship project, the Lake Hope Project (80% interest), is situated in Western Australia (WA), 500km east of Perth. It boasts a significant alumina (Al_2O_3) resource and has the potential to become a major global supplier of HPA due to the unique nature of its deposit, allowing for cost-effective mining and processing. Other projects of the company, including the Arkun-Beau-Jumbo projects and the Broken Hill project, hold promising potential for high-grade mineral deposits across a range of critical minerals, battery metals and precious metals such as rare earth elements, copper, nickel, lithium, gold and platinum group metals (PGMs).

The Lake Hope Project presents a substantial and unique resource base

The Lake Hope Project, an advanced HPA project, stands as the focal point of IPT's initiatives. This unique project unfolds on a dry playa salt lake situated in the Tier-1 jurisdiction of WA. The project boasts a maiden mineral resource estimate of 3.5 million tonnes (MT), with an alumina content of 25.1%, translating to a contained 880,000 tonnes of alumina. This resource is deemed sufficient to sustain a multi-decade operation, assuming a benchmark production rate of 10,000 tonnes per year.

The Lake Hope area exhibits distinctive climatic and geological characteristics, leading to the formation of a superlative deposit of aluminium-rich material within the top few meters of the lake bed. This unique deposit offers inherent advantages for both mining and processing. The deposit's soft and shallow nature allows for cost-effective free digging, requiring minimal infrastructure and eliminating the need for pre-stripping and selective mining. Consequently, it leads to a minimal environmental footprint and limited rehabilitation requirements. Moreover, the deposit's natural fine-grained composition removes the need for crushing and grinding, distinguishing it from conventional open pit hard rock mining operations. The material can be conveniently transported offsite to an existing industrial yard for processing. This will streamline and speed up the approval process for the development of both the mine and process plant.

IPT is diligently conducting a Pre-Feasibility Study (PFS) for the Lake Hope Project, with the objective of commencing production in the next few years. Notably, the company has already secured heritage clearance from the Ngadju First Nations group and successfully completed the first phase of metallurgical test work.

We believe that the Lake Hope Project has the potential to position IPT as a dominant player in the HPA market.

Lake Hope: IPT's low-cost entry into high-margin HPA business

Lake Hope provides IPT with the opportunity to enter the high-margin HPA market at a low cost

The Lake Hope HPA Project marks a transformative milestone for IPT as it seeks to revolutionise HPA production through cost-efficient mining and innovative acid-leaching technology. A scoping study on the project indicates that Lake Hope could be one of the lowest-cost producers of HPA globally, possibly by a margin of up to 50%. According to the scoping study, the company can offer HPA at less than US$4,000 (less than A$5,000) per tonne, net of by-products, which is significantly lower than the operating costs of its peers. For instance, in 2020 Alpha HPA Limted (ASX:A4N) reported US$5,940 per tonne, net of by-products, where HPA is produced from a chemical feedstock.

In addition to competitive operational costs, the capital investment required for Lake Hope is estimated at A$253m, showcasing a significant advantage over peers like Cadoux Resources Limited (A$324m) and even against bigger industry players like Alpha HPA Ltd (A$500m). The lower capital cost is attributed to key advantages associated with the Lake Hope deposit and Playa One's patented sulphate process using leaching by sulphuric acid. Furthermore, the plant's exposure to sulphuric acid minimises the requirement for higher-specification materials in larger equipment items.

With a focus on bringing Lake Hope into production in the next few years, IPT aims to deliver high-margin end-products. Current prices for benchmark 4N HPA (>99.99% purity) stand at approximately US$20,000 per tonne, underlining the lucrative potential of the venture.

Potential for the discovery of other metals

IPT is also actively engaged in the exploration for several other mineral resources, focusing on a diverse portfolio that holds promise for various precious metals, as well as battery and strategic metals, including gold, silver, copper, nickel, PGMs, lithium and rare earth elements. The company has demonstrated notable progress in recent years and has been rewarded with promising early-stage exploration results across several projects, particularly in the greater Arkun-Beau-Jumbo project area, centred approximately 150km east of Perth. The company has identified targets for Ni-Cu-PGM, lithium pegmatites, and rare earths, unveiling exciting prospects for future development. The company anticipates extensive drill programmes in 2024 to explore these targets further.

Notably, in 2023, the company was selected as one of the inaugural participants in the BHP Xplor programme, primarily aimed at funding exploration for copper at the Broken Hill Project.

The global HPA market has solid growth potential over the next decade

The HPA market is projected to experience robust growth over the next decade, driven by demand from LED and lithium-ion battery sectors

The global market size for HPA is projected to experience a compound annual growth rate (CAGR) of c.22%, growing from US$3.8bn in 2023 to US$15.2bn in 2030, according to a report by Strategic Market Research. This growth is anticipated to stem from various factors, including the accelerating demand for HPA in the electronics industry, particularly for the production of sapphire substrates utilised in light-emitting diodes (LEDs) and semiconductors. Additionally, the surging adoption of electric vehicles, which necessitate HPA for manufacturing lithium-ion batteries, is expected to contribute to this upward trajectory.

Moreover, the increasing emphasis on renewable energy sources is poised to bolster the demand for HPA in the energy sector. This is especially true for the production of HPA-coated separators used in lithium-ion batteries. In essence, the driving forces propelling the heightened demand for HPA are aligned with global trends focusing on energy efficiency, reducing carbon emissions, and enhancing productivity and connectivity in contemporary society.

Impact Minerals is currently undervalued

Volatility in alumina prices and funding requirements are the key risks to our investment thesis

We value IPT currently at A$0.021 per share in a base-case scenario and A$0.027 per share in a bull-case scenario using NPV-based comparable valuation methodology. Given the lucrative market for HPA, we think the large and high-quality resources of Lake Hope offer substantial value. In addition, our bullish demand outlook for nickel and copper adds significant attractiveness to investment in IPT due to its multiple exploration projects with significant potential for the discovery of a major deposit, in our view.

We think the general bearish sentiment on junior explorers coupled with the recent drop in alumina prices have led to the undervaluation of the stock currently. However, with an upcoming PFS study to potentially delineate the lucrativeness of the project, the ongoing recovery in capital markets and a possible improvement in the alumina prices, this massive gap to the stock's intrinsic value is set to get narrower in the long-term, in our view.

The key risks to our investment thesis include volatility in commodity prices due to the current uncertain economic conditions and funding risks as IPT does not currently generate any cash flows and relies on capital raisings to fund its operations.

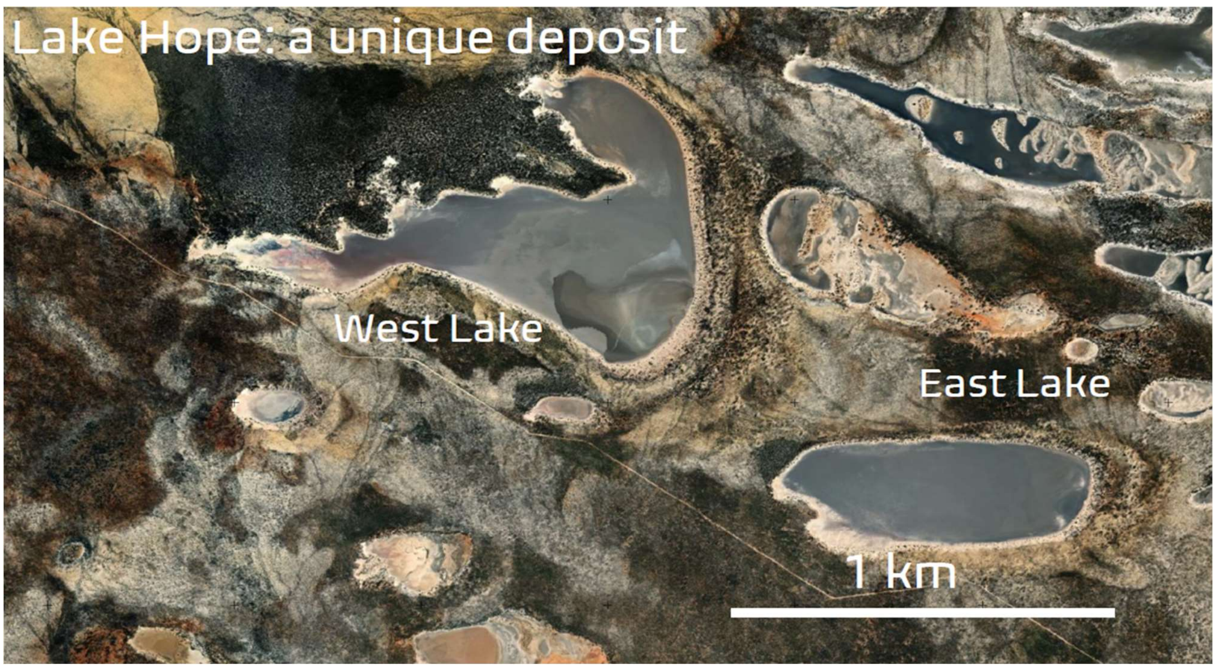
Lake Hope HPA Project— IPT's flagship asset

Lake Hope has a high value, easily mineable and processible mineral deposit, with minimal environmental impact

In March 2023, IPT signed a binding term sheet with Playa One Pty Ltd to acquire an 80% interest in the Lake Hope Project, an advanced HPA project located 500km east of Perth in WA's Tier-1 jurisdiction. The project allows IPT to enter the high-margin HPA chemical business at a very low cost.

Lake Hope features a dry playa lake (Figure 1) with unique deposits of fine-grained, high-grade aluminous clays within the lakebed's top few metres, providing huge mining and processing advantages. The deposit enables a shallow, cost-effective, free-digging mining operation with minimal environmental impact. The tenements cover about 238 km^2 and are all 100% owned by Playa One. The projected production capacity of the operation will be 10,000 tonnes per annum of HPA, with a minimum purity of 99.99% Al_2O_3. The project has a production target of 250,000 tonnes of HPA over 25 years.

Figure 1: Lake Hope Project



Source: Company

Impact Minerals commenced a PFS on the project in April 2023, which is expected to be completed by end-2024. IPT has completed a maiden resource estimate, obtained consent from Ngadju First Nations heritage, and completed most of the first phase of metallurgical test work using the unique Playa One sulphate process. A scoping study has also been completed which indicates that Lake Hope has the potential to produce HPA at a significantly lower cost than other global miners. *The company recently announced that it has achieved the key milestone of 99.99% HPA purity using its proprietary Playa One sulphate process. This underpins the results of its scoping study, which showed an* ***NPV of A$1.3bn for the project*** *and, at less than US$4,000 per tonne,* ***potentially the lowest production cost of HPA in the world by a significant margin of up to 50%.*** IPT further optimised the Playa One sulphate process and has already commenced batch production of HPA. In addition, the company also discovered two other possible process routes for the production of HPA, which could offer further reductions in operating costs and capital expenditure if initial test work is positive.

In 2024, the company will focus on completing the PFS, which involves setting up a mini-pilot plant and producing HPA in bulk for potential customers and off-take partners. As part of this plan, the company has already begun reaching out to key LED and battery end customers.

Overview of the Lake Hope Project

The Lake Hope HPA Project is an integrated mine and metallurgical processing operation proposed to be developed over the next few years in the Tier-1 jurisdiction of WA. The mine will be located on E63/2086, about 500km east of Perth. The project aims to extract alumina from Lake Hope's lake clays and transport them to Kalgoorlie, where it will be processed in a purpose-built facility via the patented and proprietary “sulphate process” developed by Playa One. This hydrometallurgical process has been shown to have the technical capacity to produce 4N HPA (short form for four nines, i.e. 99.99% Al_2O_3).

The project covers numerous prospective salt lakes between Hyden and Norseman in southern WA and comprises eight granted exploration licences that are relatively unexplored (E63/2086, EL63/2317-19, EL63/2730, EL74/673, EL74/764, and EL74/779). The total land area of the tenements is approximately 238km^2, and all are fully owned by Playa One.

A look at project ownership

Impact Minerals holds the option to acquire an interest in Playa One Pty Ltd as follows:

1. Following the completion of PFS, IPT can choose to participate in an incorporated joint venture with Playa One shareholders (represented by Playa Two Pty Ltd). If this option is exercised, IPT will secure an immediate 80% interest in Playa One by issuing a maximum of 120m fully paid ordinary shares, capped to a value of no more than A$8m.

2. After the completion of a Definitive Feasibility Study (DFS), solely funded by IPT, up to 100m fully paid ordinary shares will be issued. The value will be capped at a maximum of A$10m, determined by the 5-day VWAP before the ASX announcement of the DFS completion, and will be allocated to the Playa One shareholders.

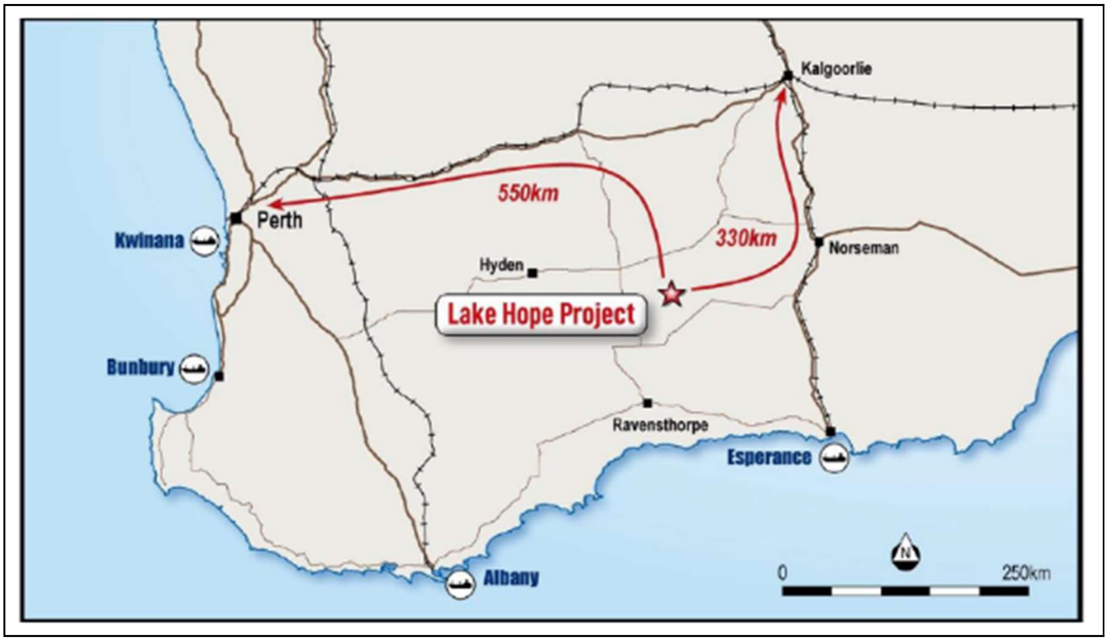
3. Playa One shareholders will be carried to a Decision-to-Mine, with IPT maintaining all Playa One tenements in good standing during this period.

4. Upon a Decision-to-Mine, Playa One shareholders can choose to contribute to mine development costs or face dilution. If their interest drops below 7.5%, it will convert to a 2% net smelter royalty.

Location of Lake Hope

The Lake Hope Project is hosted in the Lake Hope palaeo-valley system within the Yilgarn Craton of WA. The area lies within a flat terrain with broad watercourses and dry bed lakes. It is about 135km east of Hyden and about 500km east of Perth in WA and is centred on two small salt lakes about 25km south of the Norseman-Hyden road. A track goes from the road directly to the lakes (Figure 2). The company plans to transport the ore from Lake Hope via the Norseman-Hyden road to Kalgoorlie for processing.

Figure 2: Project location



Source: Company

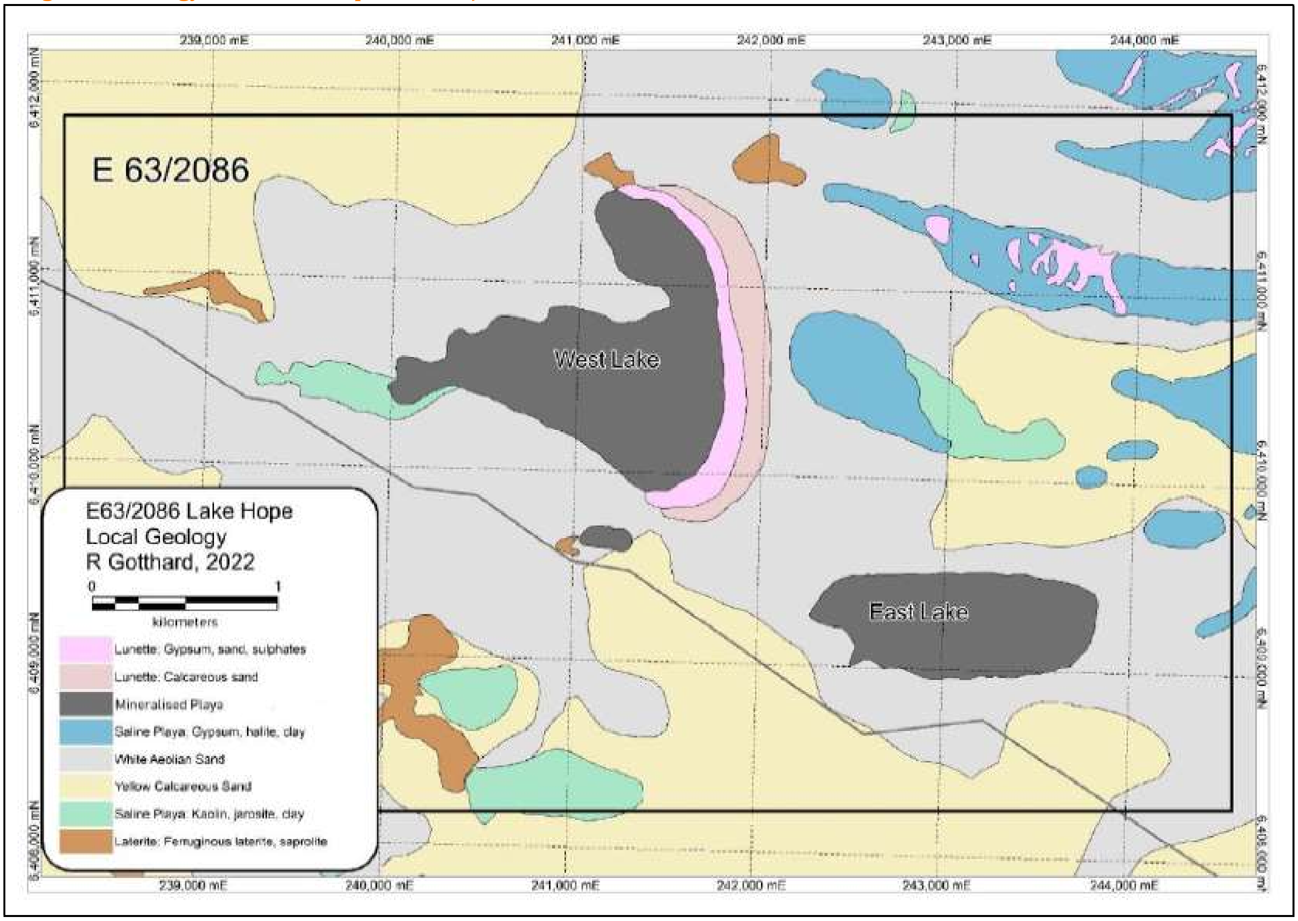
A look at the geology

The Lake Hope area has unique climatic and geological characteristics that have formed aluminium-rich material within the surficial clay layers of two small salt lakes, or "pans", in the Lake Hope playa system. These pans are referred to as West Lake and East Lake and are surrounded by various sand dunes and weathered granite outcrops (Figure 3).

Clays at Lake Hope are formed from plasticine-like aluminum-bearing minerals

The lake clays, which are only up to a few metres thick, consist almost entirely of aluminium-bearing minerals with a consistency like plasticine. The minerals can be easily sampled using hand-held augers and push tubes. Since the ore is soft and shallow, it would allow for cost-effective free digging with minimal infrastructure requirements, thereby eliminating the need for pre-stripping and selective mining.

Figure 3: Geology of the Lake Hope HPA Project

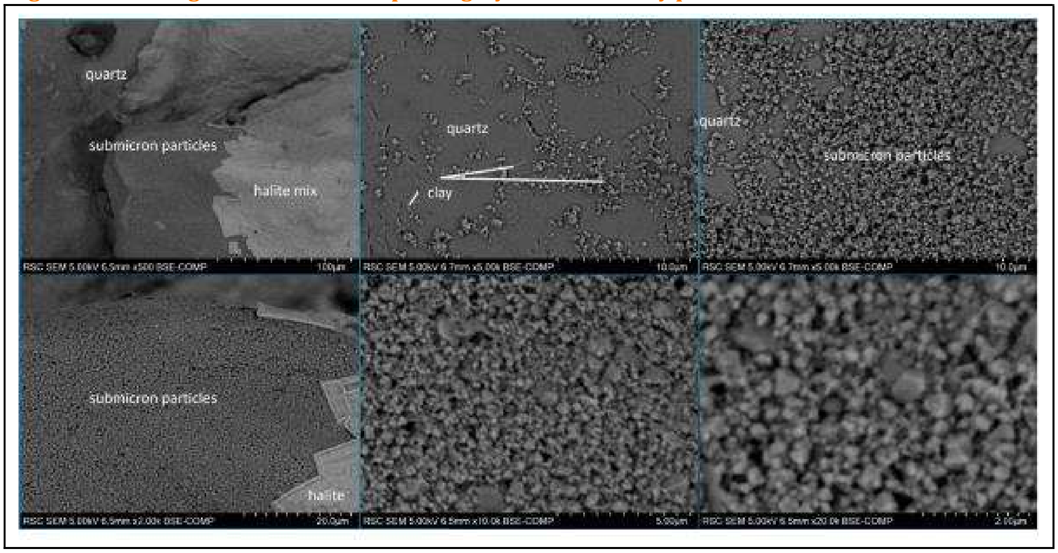


Source: Company

The particle size distribution analysis indicates that nearly all the minerals are smaller than 16 microns, with 60–80% occurring at grain sizes less than 50 nanometres (Figure 4). No on-site beneficiation will be required because of the clay's very fine-grained nature. The mine will be a free-digging operation with the transport of ore offsite for processing at a permitted industrial site.

Drilling results reveal high-grade aluminum-bearing clay with low contaminants

Figure 4: Scanning electron microscope imagery of <300nm clay particles



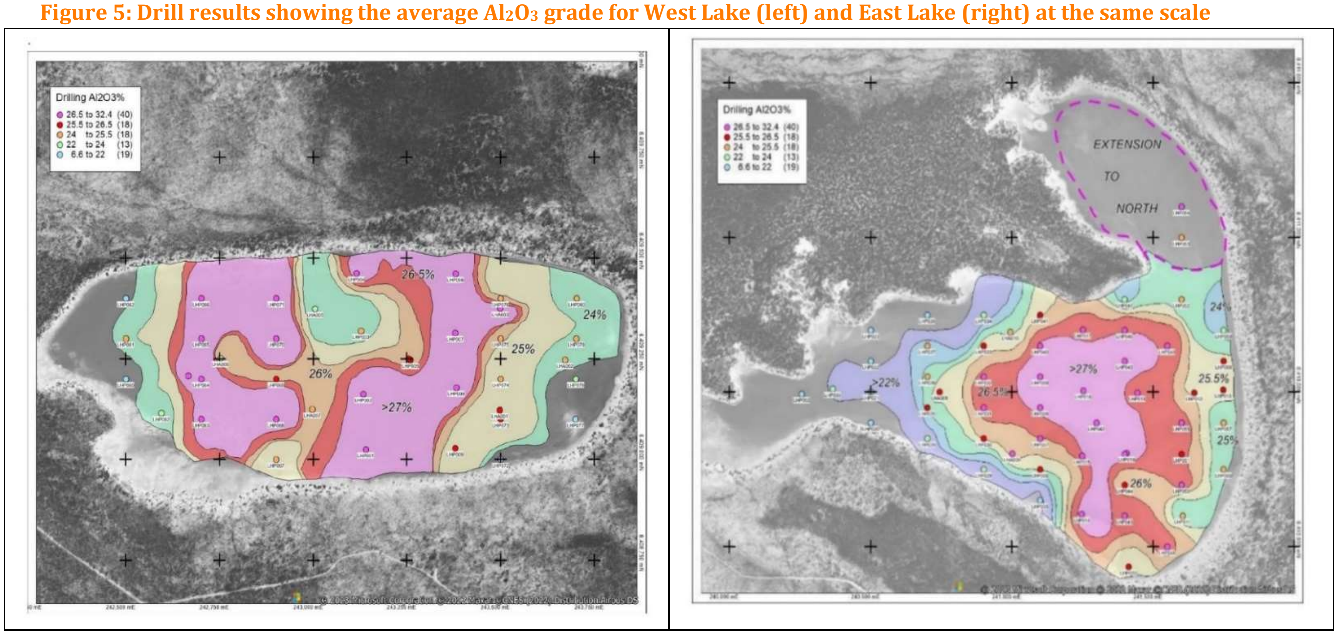
Source: Company

Drilling and assay results

A total of 251 holes were drilled across the two lakes using hand-held auger and push tube methods (Figure 5). The drilling delineated a consistent and cohesive layer of aluminium-bearing clay in both lakes, measuring up to 1.65 meters in thickness.

The assays primarily yielded remarkably high grades of aluminium oxide, ranging between 24.5% and 27.8% Al_2O_3. Importantly, the results indicated low concentrations of potential contaminants such as CaO (0.05-0.08%), Fe_2O_3 (2.4-3.2%), Na_2O (2-4%), and P_2O_5 (0.05-0.07%).

Figure 5: Drill results showing the average Al_2O_3 grade for West Lake (left) and East Lake (right) at the same scale



Source: Company

Mineral resource estimate

The Lake Hope deposit has a mineral resource that comprises 880,000 tonnes of contained alumina at a grade of 25.1% Al_2O_3, with 88% of the resource in the higher confidence category of Indicated Resources. The resource occurs in two small lakes with dimensions as follows (Figures 2 and 5): West Lake has an aerial extent of 1.6km by 1.6km, an average thickness from sampling of 0.95m, a maximum depth of 1.6m, and a surface area of 1.33km^2. East Lake has an aerial extent of 1.6km by 0.6km, an average thickness from sampling of 0.98m, a maximum depth of 2.0m, and a surface area of 0.76km^2. The mineralisation style and orebody type suggest a strong horizontal control on alumina grade and geological continuity, indicating flat-lying mineralisation exposed at the surface.

The Lake Hope resource has been classified predominantly in the Indicated category with only ~11% in the Inferred category and has been reported in accordance with the guidelines of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code 2012). Resource consultants H and S Consultants (H&SC) of Brisbane, Queensland prepared the mineral resource estimate.

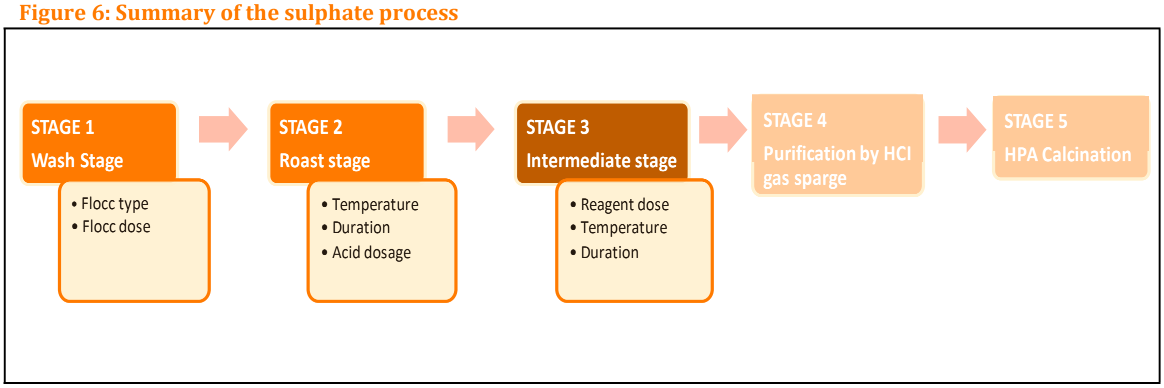
Metallurgical processing

The unique nature of the mineralogy and the extremely fine-grained nature of the clays at Lake Hope provide significant cost advantages in both the mining and the processing of the ore. The unique clay mineralogy allows for leaching by a sulphuric acid (H_2SO_4) dominated process, patented by Playa One as the "sulphate process".

The Playa One sulphate process is straightforward and comprises five key stages (Figure 6), including clay washing and filtration, low-temperature acid sulphate roasting, crystallisation of an intermediate aluminium salt, and purification of the salt by hydrochloric acid gas sparging purification, followed by calcination.

The metallurgical process has successfully generated >99.99% Al_2O_3, with purities ranging from 99.994% to 99.996% in initial assays. In addition to the Al_2O_3 assay, total contaminants amounted to about 41ppm, indicating 99.996% alumina purity, with the primary contaminants being Fe (2.08ppm), K (7.94ppm), Mg (7.23ppm), and Na (6.61ppm). This compares favourably with the purity of other publicly disclosed HPA products.

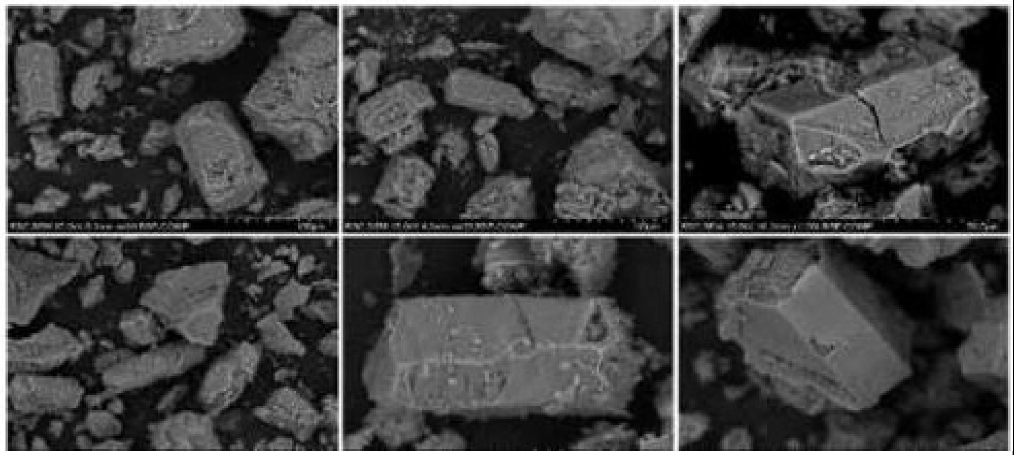
Figure 6: Summary of the sulphate process



Source: Company

Samples of the precursor and final calcined HPA, produced through the process, underwent SEM and EDS microscopy analysis. Precursor salts appeared as alumina particles, while the final calcined HPA showed corundum crystals and fused aggregates up to 200 microns in size (Figure 7). X-ray diffraction confirmed the final product as alpha-HPA, the desired crystal form.

Figure 7: Backscattered scanning electron micrographs of final calcined alumina



Source: Company

Scoping study results

In November 2023, IPT completed a scoping study for the Lake Hope Project, significantly enhancing confidence in the project's economics. *The study underlined that the Lake Hope Project could be one of the lowest-cost producers of HPA globally, by a substantial margin of up to 50%*. The other highlights of the study are mentioned below:

- Steady-state production of 10,000 tonnes p.a. of HPA after a two-year ramp-up period.
- Low capital and operating costs compared to peers, mainly due to the deposit size, zero strip ratio, high-grade mineralisation at the surface, and no requirement of on-site beneficiation.
- Indicated resources as per the study are sufficient to allow a long-life mining operation of more than 25 years.
- HPA can be offered at approximately US$3,300 (A$4,714) per tonne, net of by-products, with a post-tax Net Present Value (NPV_8) of A$1,334m (US$933m) for a capital investment of A$253m (US$177m) — refer to page 14 for details.

The scoping study provides a production target of 250,000 tonnes of HPA production over 25 years. The results from the study have confirmed the sound project economics and offer a framework for an in-depth assessment of the metallurgical, engineering, logistical, heritage, and environmental factors in the work programme for the PFS.

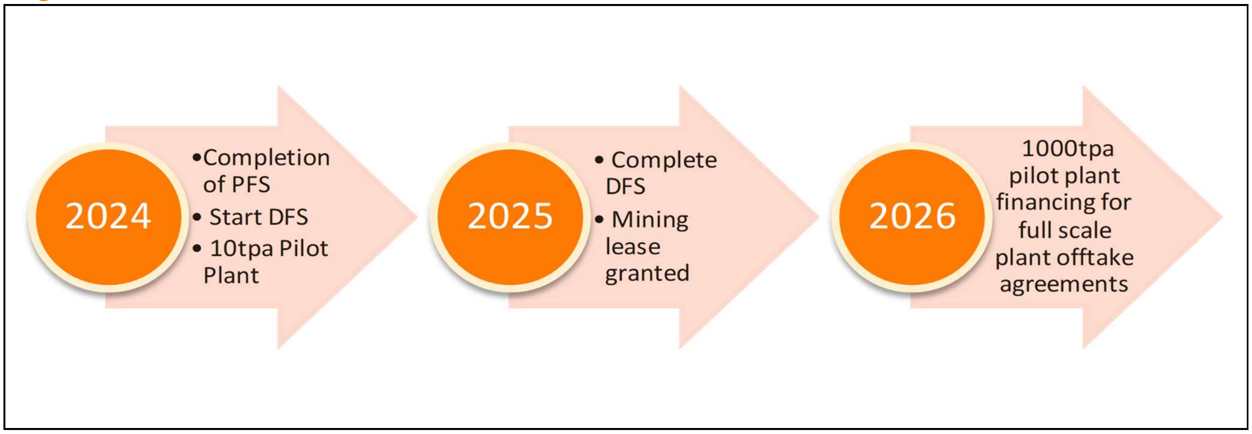
As part of the ongoing PFS, the company recently announced achieving the 99.99% HPA purity milestone using its proprietary Playa One sulphate process, reinforcing the results of its scoping study.

Update on PFS

IPT has recently completed a bulk sampling and test pitting programme, a critical component of the PFS. The baseline flora and fauna survey data collection process has also been completed, and a final report is expected shortly. Once received, the results will be used to finalise the location of the mining lease boundaries and infrastructure corridors. A mineralisation report, another critical requirement for a mining lease application, has been completed, and the application will be submitted as soon as practicable.

The metallurgical test work has now advanced to batch production. In parallel, the by-product circuit design and re-evaluation of the acid and reagent handling strategy are underway to explore options to reduce capital and energy costs. A comprehensive test work programme is being designed to guide the configuration of a mini-pilot plant (Figure 8).

Figure 8: Plan forward



Source: Company

Strategic advantages of the Lake Hope Project

I. **Robust resource base** – Lake Hope is a multi-decade HPA mine, containing 880,000 tonnes (Figure 9) of alumina at an average grade of 25.1% Al_2O_3, with 88% of the resource in the higher confidence category of Indicated Resources. It has the potential to become a significant producer of HPA with a steady-state production rate of 10,000 tonnes per annum following a two-year ramp-up period. The indicated resource is sufficient to support a mining operation of more than 25 years.

Figure 9: Lake Hope alumina mineral resources

Category	Million tonnes	Alumina %	Al_2O_3 Tonnes
West Lake			
Indicated	2.09	25.50%	534,600
Inferred	0.23	23.20%	52,300
Total	**2.32**	**25.30%**	**586,900**
East Lake			
Indicated	1.1	24.80%	273,400
Inferred	0.08	24.10%	19,400
Total	**1.18**	**24.80%**	**292,800**
Combined			
Indicated	3.19	25.30%	808,000
Inferred	0.31	23.40%	71,700
Total	**3.5**	**25.10%**	**879,700**

Source: Company

II. **Exceptional geology** – The salt lakes of WA are well known for their unique and complex hydrogeochemistry, which has led to the formation of a wide variety of economic minerals and brines within the Playa systems. The Lake Hope area also boasts of these characteristics that have led to the formation of a unique deposit of alumina-rich material within the surficial clay of two small salt lakes. The lake clays, which are only up to a few metres thick, consist almost entirely of alumina-bearing minerals that are plasticine-like in consistency and can be sampled with hand-held augers and push tubes. This will allow for extremely cheap quarrying with limited infrastructure requirements, no pre-stripping, no selective mining, a tiny environmental footprint, and limited rehabilitation requirements.

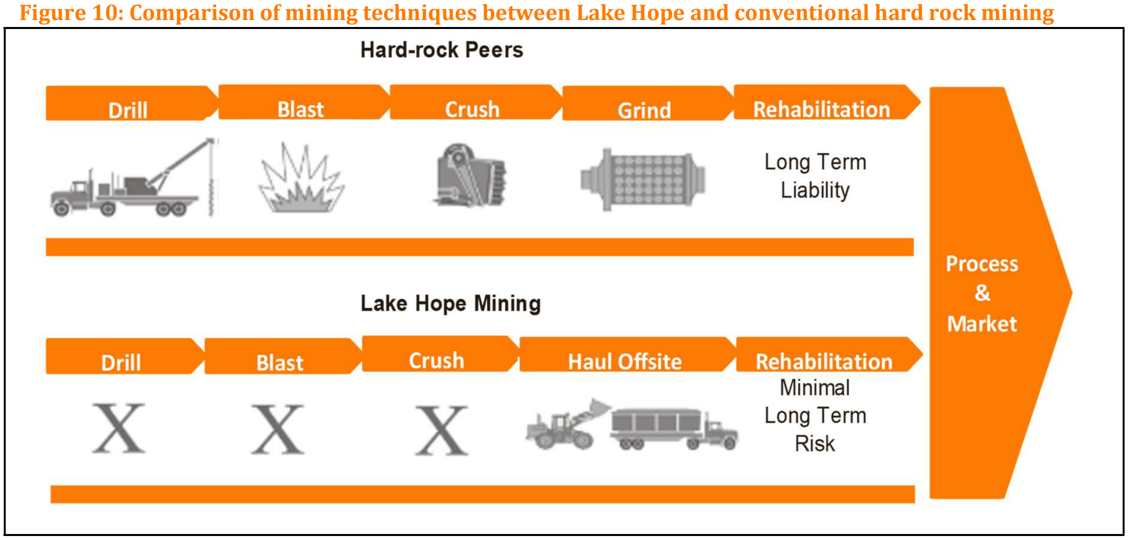
Furthermore, the naturally fine-grained nature of the ore places it in the category of 'direct shipping ore' that does not require crushing and grinding and can be transported to an off-site processing facility that can be built on existing industrial sites. This contrasts dramatically with a conventional open pit hard rock mining operation (Figure 10). In addition, because the clay requires only simple washing prior to acid leaching, this allows for low-cost, straightforward metallurgical processing.

III. Favourable location with options for trucking and off-site processing

The Lake Hope Project is located between Hyden and Norseman in southern WA, classified as a Tier-1 mining jurisdiction. It is centred on two small salt lakes, about 25km south of the Norseman-Hyden Road. A track goes from the road directly to the lakes. The company plans to transport the ore via the Norseman-Hyden Road to an offsite plant in Kalgoorlie for processing.

The decision to establish an offsite plant would avoid costs associated with on-site infrastructure, such as a permanent camp and the provision of potable water and electricity. It would also substantially reduce risks to the local environment. In addition, the plant would capitalise on the advantages of being in an established industrial region, benefiting from existing mineral processing facilities and advanced high-purity mineral beneficiation plants in the vicinity. The area would also provide access to a skilled workforce and existing acid-handling facilities.

Figure 10: Comparison of mining techniques between Lake Hope and conventional hard rock mining



Source: Company

IV. Straightforward and cost-effective metallurgical processing

The distinctive mineralogy and extremely fine-grained nature of the clays at Lake Hope allow for low-cost and straightforward metallurgical processing. IPT plans to use the 'sulphate process', which has been developed by Playa One and has successfully yielded >99.99% Al_2O_3, with purities ranging from 99.994% to 99.996% in initial assays.

The sulphate process offers several advantages over alternative methods being explored for HPA production, particularly hydrochloric acid leaching of kaolin. The latter requires conventional mining techniques, including mining, crushing, and screening of kaolin, followed by leaching with hydrochloric acid and high-temperature calcination in the initial stages of the process. On the other hand, the Playa One sulphate process allows direct leaching of the raw lake clays using a more cost-effective, readily available, and environmentally friendly acid, eliminating the need for upfront calcining. This results in significant cost savings in energy and acid consumption, as well as reduced capital expenditure requirements for the processing plant's steel and other materials.

IPT is currently in the process of developing a new alternative process — low-temperature leach (LTL) process — to produce high purity alumina. This involves a direct leach at temperatures below 90°C, eliminating the need for sulphuric acid roasting and reducing the

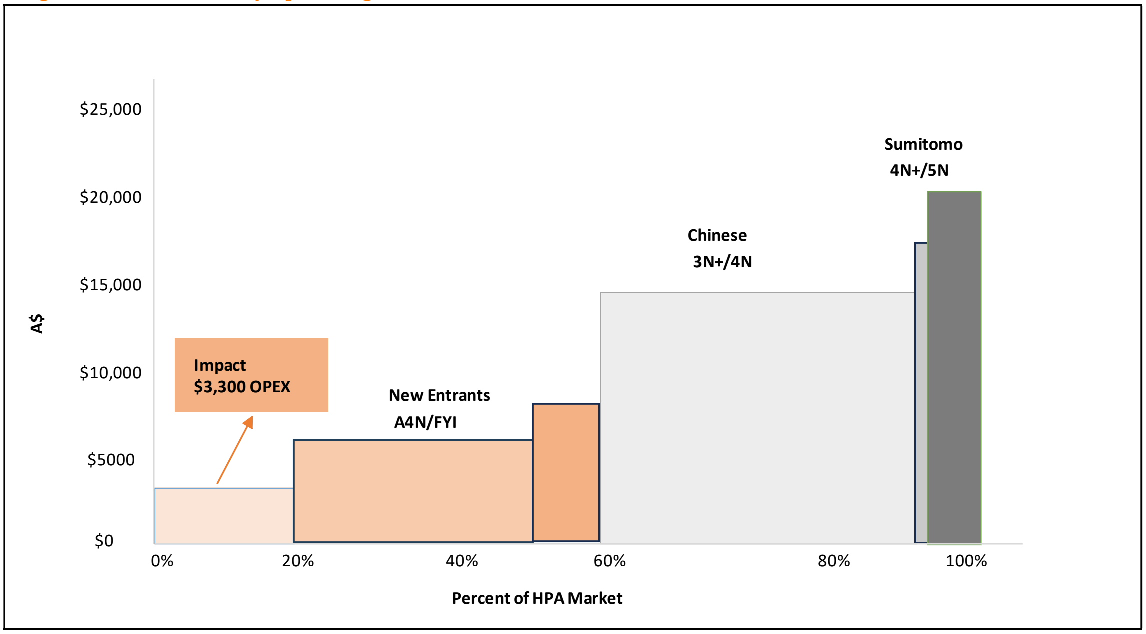
total steps involved to four. The LTL process not only simplifies the existing Playa One sulphate process but is also anticipated to further reduce the operating costs associated with high purity alumina production.

Currently, IPT is actively testing this innovative process. If the test results align with the initial findings, it could significantly enhance the economic viability of the Lake Hope project. The management is strategically running the LTL process concurrently with the existing sulphate process in its PFS study, aiming to determine the most suitable processing route.

V. Low operating and capital costs of the project

IPT believes it can become one of the lowest-cost producers of HPA globally. As per the scoping study, based on the sulphate process, released in November 2023, the Lake Hope Project can generate attractive financial returns due to its unique properties, offering 4N HPA at less than US$4,000 (less than A$5,000) per tonne net of by-products. This operating cost estimate includes the ore's transportation cost from Lake Hope to Kalgoorlie. In comparison, established producers in the industry are positioned within a cost range of US$11,000 to US$15,000 per tonne (Figure 11). Meanwhile, new entrants have reported lower costs. For instance, in 2020, Alpha HPA reported US$5,940 net of by-products from a chemical feedstock, while in 2021 Cadoux Resources reported US$6,217 for HPA produced by hydrochloric acid leaching of kaolin.

Figure 11: HPA industry operating cost curve



Source: Company

Lake Hope Project's capital costs, estimated at A$253m (US$172m), are also expected to be significantly lower than that of peers such as Cadoux Resources (A$324m in 2023) and Alpha HPA Ltd (A$500m). The low capital cost is driven by the key advantages of the Lake Hope deposit and the Playa One sulphate process, which eliminate the need for a crushing and screening plant at the mine site (estimated US$10-20m) and a front-end calciner in the processing plant (estimated between US$40-80m). In addition, most of the plant is only exposed to sulphuric acid, removing the need for higher-specification materials in larger equipment items.

VI. Impressive project economics

The outcomes of the scoping study of Lake Hope demonstrate excellent project economics supported by the assumptions of superior HPA pricing, mining and processing cost advantages of the project, and lower capital requirements. Consequently, as per the scoping study (Figure 12), the project will command an NPV of more than A$1bn, a post-tax internal rate of return (IRR) of

55%, large operating margins, and significant after-tax earnings of A$174m per year. In addition, the payback period from the first production will be just two years. In our view, the ability to deliver sub-US$4,000 per tonne HPA is a solid competitive advantage that will benefit IPT's future growth and market share.

Figure 12: Scoping study outcomes

Outcome	Unit	Lake Hope	Unit	Lake Hope
NPV8 (real post-tax)	US$	$934M	A$	$1,334M
NPV10 (real post-tax)	US$	$742M	A$	$1,060M
IRR (post-tax)		55%		
Capital Costs (10Ktpa)	US$	$177M	A$	$252M
Sustaining Capital (25-year LOM)	US$	$142M	A$	$1,334M
Capital Costs (per tonne capacity)	US$	$17,700	A$	$25,285
Operating Costs (AISC)	US$/t HPA	$7,023	A$	$10,032
Operating Costs (nett by product)	US$/t HPA	$3,264	A$	$4,662
Throughput Per Annum (Clay)	Tonnes	46,300		
Throughput (Life Of Mine)	Tonnes	1,157,000		
Life Of Mine (Initial)	Years	25		
Annual Production (HPA)	Tonnes	10,000		
Annual Production (all by products)	Tonnes	74,000		
Revenue (Life Of Mine)	US$	$6,286M	A$	$8,980M
Annual Revenue (Average LOM)	US$	$258M	A$	$368M
Annual EBITDA (Average LOM)	US$	$175M	A$	$250M
Construction period		2 years from FID		
Production (Year 1)	Tonnes	5,000		
Production (Year 2)	Tonnes	8,000		
Production (Steady State)	Tonnes	10,000		
Payback period (from FID)		4.5 years		
Payback period from first production		2 years		

Source: Company

IPT's other Australian assets

In addition to its flagship Lake Hope project, IPT holds several other Australian exploration projects that are prospective for a range of precious metals and battery metals, including gold, silver, rare earth elements, lithium, copper, nickel, and PGM (Figure 13). The greater Arkun-Beau-Jumbo project is the key focus and drilling will commence in Q2 2024. The company also has other projects in WA including Dinninup (E70/5842, E70/6111, E70/6112, E70/6113, and E7016178), Martup (E70/5761) and Mineral Hill (E70/5780)as well as a large ground holding around the world class Broken Hill silver-lead-zinc mine. Limited work has been undertaken on these other projects, and the company anticipates progressing towards monetising these in 2024.

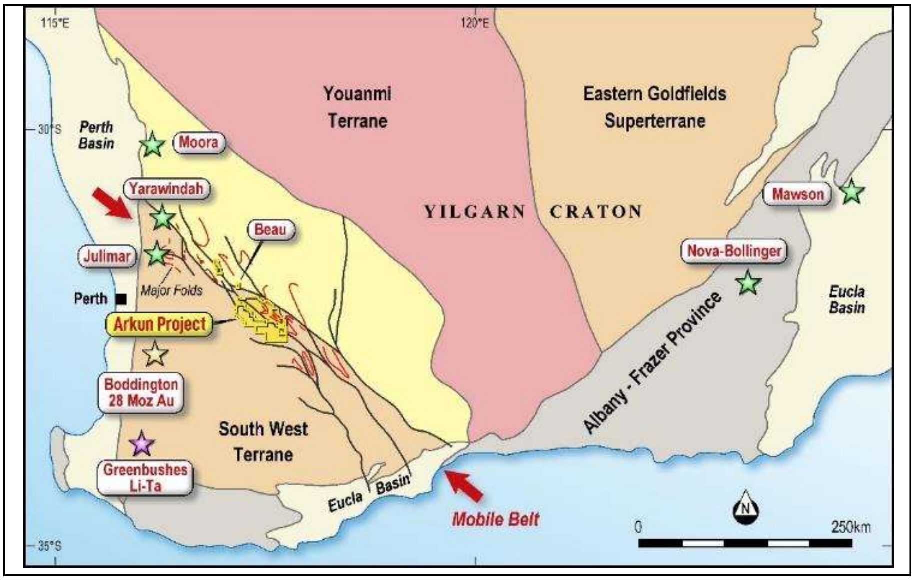
Figure 13: Location of IPT's other projects

Source: Company

1. Arkun Project – A high potential asset

The Arkun Project is located about 130km east of Perth covering a total area of 1,900km^2 between the towns of Quairaiding, Corrigin, and Brookton (Figure 14). The project is 100% owned by IPT, making the company one of the larger ground holders in the region. The area remains relatively unexplored with no prior drilling and exploration activity.

Figure 14: Location of Arkun Project

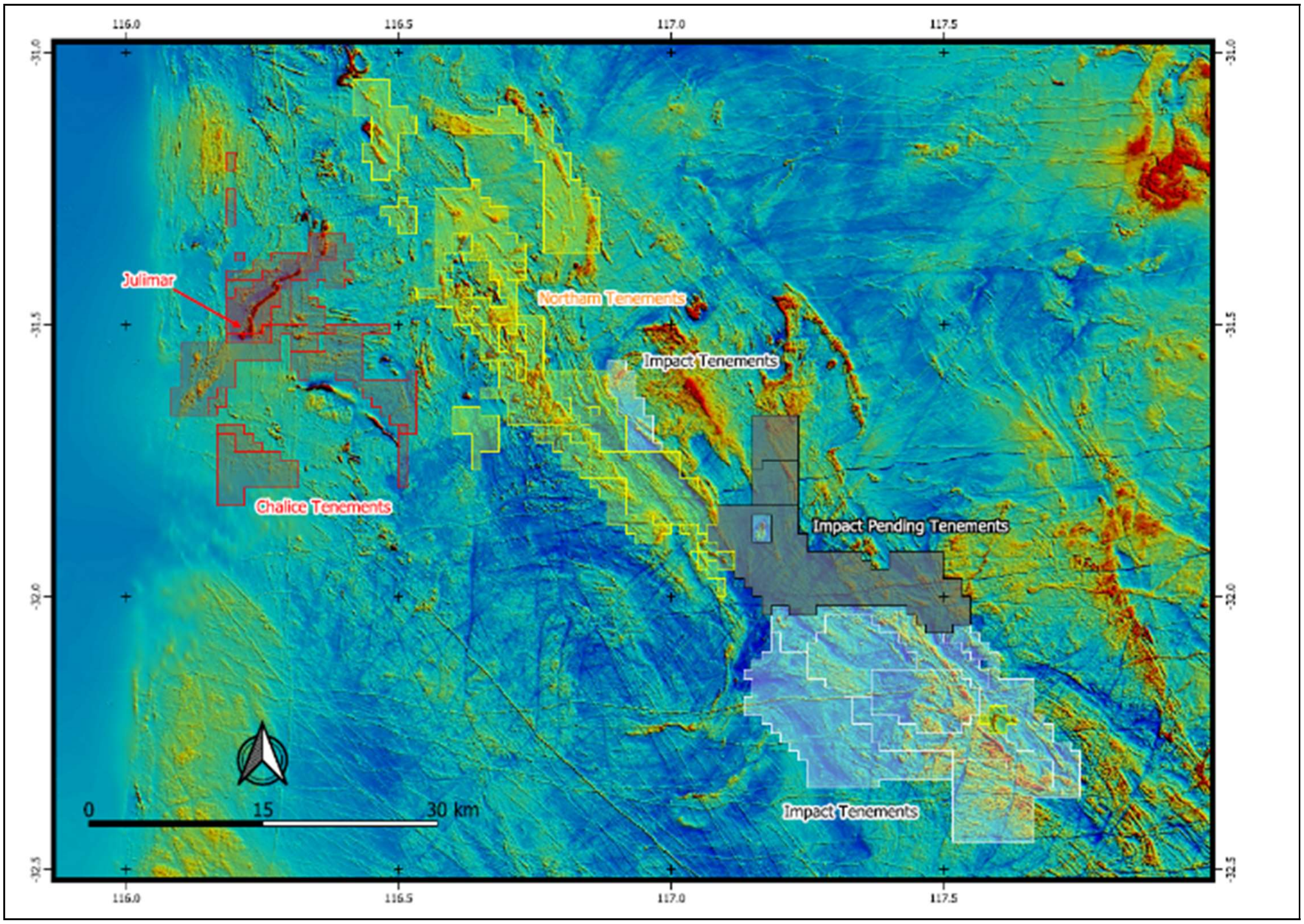


Source: Company

A quick look at the project's geology

The Arkun Project covers a significant portion of the Corrigin Tectonic Zone, a prominent crustal-scale feature interpreted as an exhumed granulite-metamorphosed granite-greenstone terrane intruded by several younger mid-crustal granites. The Corrigin Tectonic Zone is a tectonic assemblage of different geological domains associated with significant mineral deposits such as the Julimar PGE-Ni-Cu deposit (>10Moz of palladium plus nickel and copper), the Katanning gold deposit (>3Moz gold), and the Greenbushes lithium-tantalum deposit. Arkun was initially staked within the zone as it was interpreted to contain strong nickel, copper, and PGM prospectivity associated with a suite of mafic and ultramafic intrusions like the host rocks at Julimar and Yarawindah Brook.

Figure 15: Regional magnetic image showing exploration licence applications at Arkun for Impact Minerals and Anglo American Plc



Source: Company

Regional geochemical anomalies

IPT has identified several high priority Ni-Cu-PGM and LCT targets in the Arkun area

The Arkun project was first staked in 2020, following the discovery of the Julimar PGM-Ni-Cu deposit in the region. First pass reconnaissance soil geochemistry surveys at Arkun-Beau returned a significant number of anomalies for a range of deposit styles, including mafic hosted Ni-Cu-PGM, lithium pegmatites, and REE and rubidium.

During 2021, IPT identified numerous high-priority targets for Nickel-Copper-Platinum Group Mineralisation (Ni-Cu-PGM) and Lithium-Caesium-Tantalum (LCT) from its initial soil sampling in the area. The results included 11 Ni-Cu-PGM targets and 11 LCT targets. Overall, soil results were presented as additive Z-scores (**Figure 16**).

Z-scores are a standard statistical calculation of the number of standard deviations a raw data (assay) value is from the mean of the data. For example, a Z-score of 2 indicates a value of 2 standard deviations above the mean. The higher the Z-score, the more anomalous the data point is with respect to the dataset. In this case, the Z-scores for individual metals that occur within assemblages specific to the alteration zones around a Ni-Cu-PGM deposit are simply added together in order to amplify the association.

Ni-Cu-PGM results

The additive Z-scores for Ni-Cu-PGM and gold were encouraging and supported IPT's contention that the Arkun project is highly prospective for Ni-Cu-PGM mineralisation. The central part of the project area was identified as being strongly anomalous in all five metals of the Ni-Cu-PGM group. Six high priority targets and five medium priority targets were identified for further follow-up work. The soil anomalies coincided with either gravity highs or magnetic lows that, together, represent mafic-ultramafic intrusions that are potential hosts for nickel-copper-PGM sulphide mineralisation.

Figure 16: Additive Z scores for Ni-Cu-Pd-Pt-Au

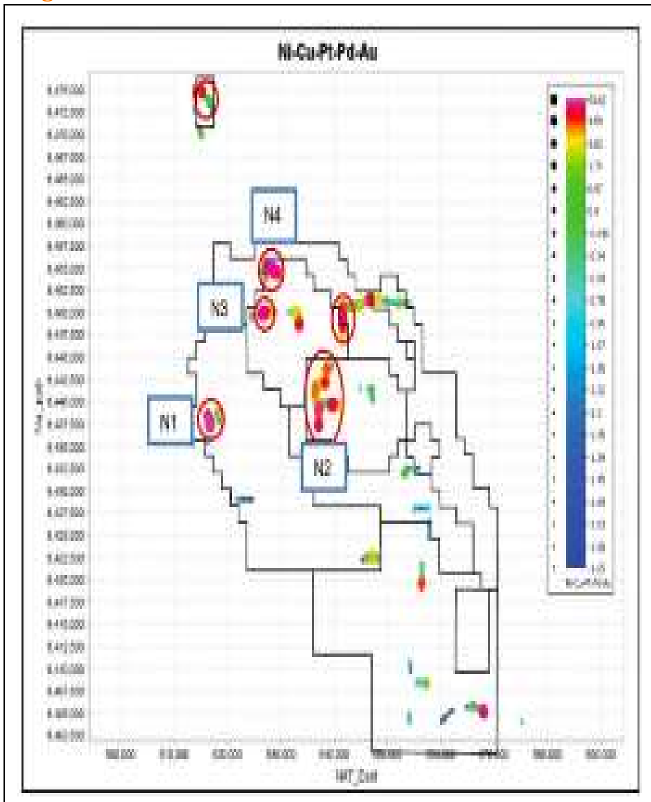
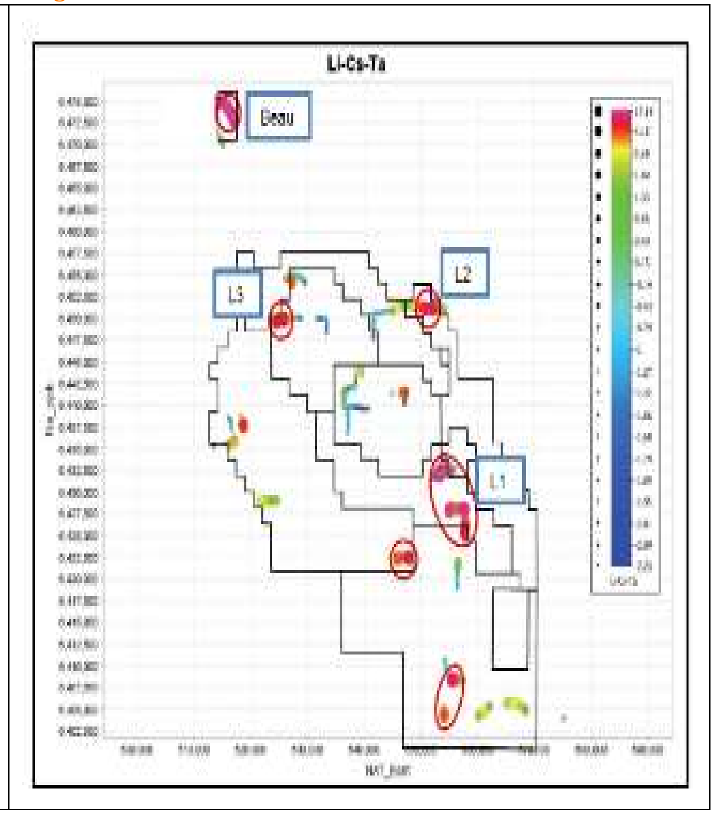


Figure 17: Additive Z scores for Li-Cs-Ta



Source: Company

LCT results

The results for LCT were also encouraging. There were numerous areas that stood out as being strongly anomalous in all three metals of LCT and six high priority targets and at least five medium priority targets were identified for follow-up work. Another standout area was the Beau target, the northern most priority area identified.

Discovery of the Horseshoe REE anomaly

IPT identified a significant and large soil geochemistry anomaly for REE, also called the Horseshoe Prospect, at Arkun in October 2021. The anomaly is about 10km long, up to 2,000 meters wide, and comprises both the more valuable Heavy Rare Earth Elements (HREE) and the Light Rare Earth Elements (LREE). It is arcuate and centred around a prominent magnetic low adjacent to a major regional fault. In addition, it coincides with an elevated potassium response in regional radiometric data.

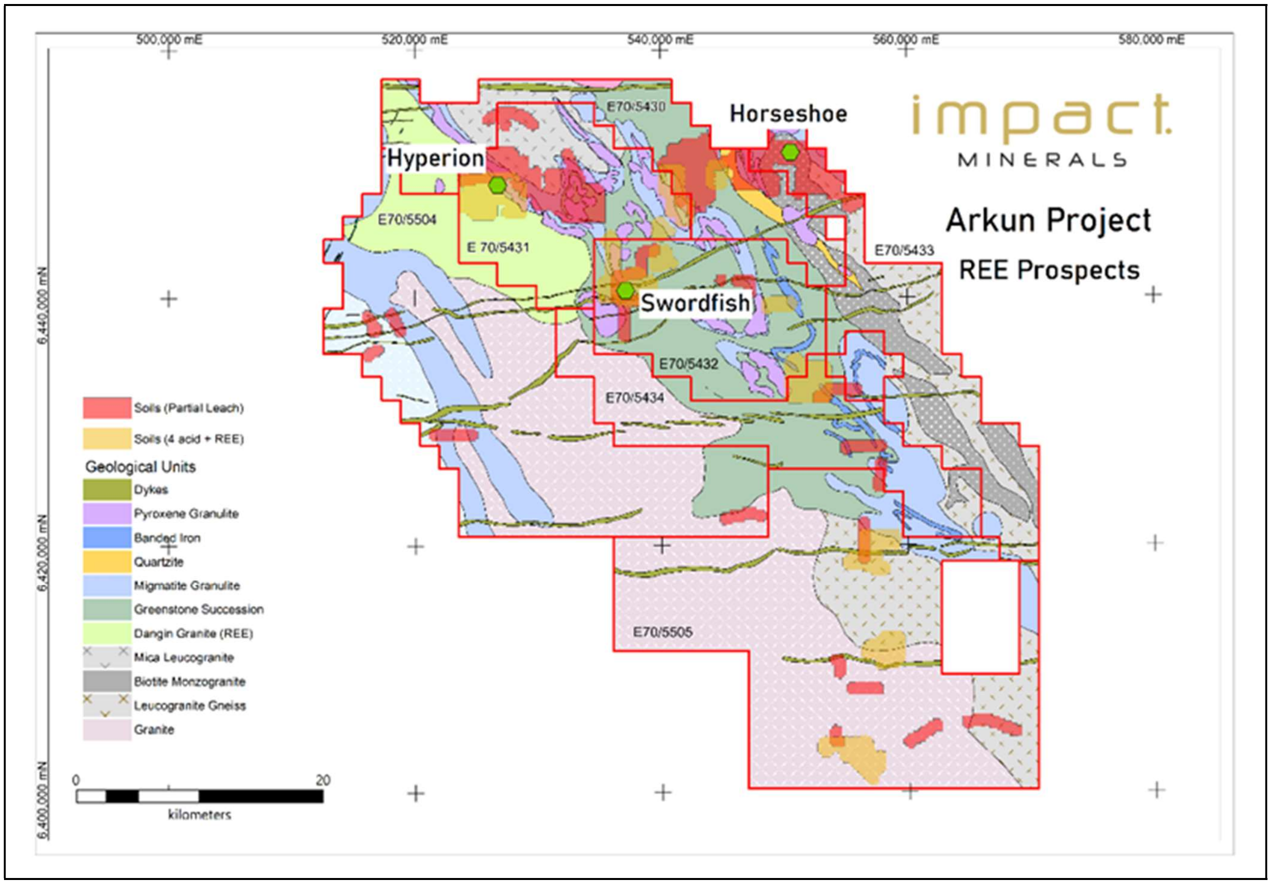
Recent developments in the Arkun Project

During 2023, IPT continued to advance the Arkun Project by completing an airborne EM survey and soil geochemistry. Field checking and rock chip sampling were also completed on priority targets for Ni-Cu-PGE mineralisation. In addition, the company spent considerable time completing land access negotiations over the entire project area.

Arkun soil surveys reveal significant rare earths anomaly at Hyperion and Swordfish prospects

In January 2024, IPT discovered significant high tenor REE soil geochemistry anomalies at the Hyperion and Swordfish prospects (Figure 18). Soil surveys at the Hyperion prospect revealed anomalies up to 5,880ppm total rare earth oxides plus yttrium (TREO+Y), with neodymium and praseodymium results peaking at 21%. These are some of the highest TREO-in-soil results recently reported in WA, with the new anomaly covering at least 3km^2 at greater than 1,000ppm TREO. Meanwhile, at Swordfish, soil results showed REE enrichment in soils with a peak grade of 1,783ppm TREO. However, the nature, depth, and thickness of the REE mineralisation at both deposits are still unknown. The company is preparing to commence drilling at these sites, subject to regulatory and landowner approvals. IPT expects to commence work in the second quarter of 2024.

Figure 18: Location and interpreted bedrock geology of the Hyperion, Swordfish, and Horseshoe REE Prospects



Source: Company

IPT's management believes that the discovery is a significant breakthrough for the Arkun Project, which has been explored primarily for nickel, platinum, and copper. These new anomalies add to the previously reported 10km long REE anomaly at the Horseshoe prospect, located 25km east of Hyperion, highlighting the significant exploration potential for REE at the Arkun Project.

Four significant soil geochemistry anomalies have been identified at Beau

2. The Beau Project – an emerging area

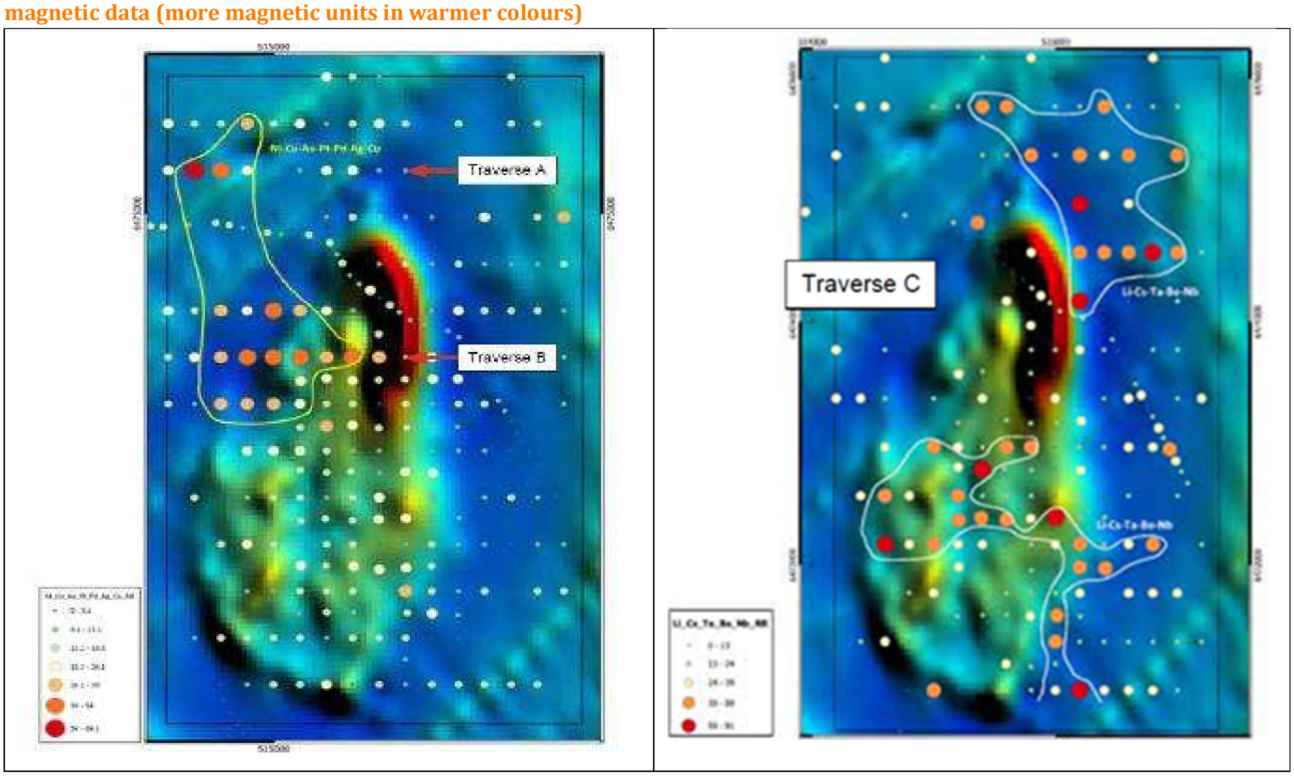
The Beau Project is located within the larger Arkun-Beau-Jumbo project area in southwest WA. It is entirely owned by IPT and remains largely unexplored. In 2022, the company identified four significant soil geochemical anomalies at Beau: one for Ni-Cu-PGM, one for gold-palladium, and two for LCT (Figure 19).

Nickel-Copper-Palladium-Platinum-Gold results

A large coherent anomaly up to 2.5km long and 1km wide with combined responses up to 88 times background was identified to the northwest of the Beau tenement. Particularly strong responses occurred along two traverses – Traverse A and B.

On Traverse A, strong responses, particularly for copper-nickel-palladium-cobalt, occurred at the western end of the traverse in an area where there are numerous loose boulders of layered gabbro. Layered gabbro rocks are commonly found as part of large mafic intrusions that host massive nickel-copper sulphide deposits. IPT is the first company to record such rocks in the area. Moderate responses occurred on Traverse B over a wide area of approximately 1km. This area has not been field tested and is also a priority area for follow-up work.

Figure 19: Combined response ratios in the Beau area for nickel-copper-cobalt-platinum-palladium-silver-gold-cobalt left-hand image) and lithium-caesium-tantalum-niobium-beryllium (right hand image) plotted on an image of the regional magnetic data (more magnetic units in warmer colours)



Source: Company

Gold anomaly results

A discrete gold-palladium-in-soil anomaly, about 500 metres in diameter, was identified in the central part of the Beau project. Both metals' responses were moderate and associated with strong magnesium responses. The area has not been field-checked yet.

LCT anomaly results

Two large irregularly shaped soil anomalies, each approximately 1km in size, with moderate to strong LCT anomalies, were identified in the north-eastern and central parts of the Beau project. In addition to the three metals, there were variable responses for the associated metals – beryllium and niobium. Particularly strong responses occurred on Traverse C. It should be noted that these five metals together form a part of a zoned system of pegmatites in a widely used model for the exploration of lithium-dominant pegmatites. The responses for the individual metals vary considerably within the two areas identified, but together, the responses are permissive of a large, zoned pegmatite system. The southern anomaly also partially encircles the gold-palladium anomaly, suggesting a possible genetic relationship.

3. The Broken Hill Project

The Broken Hill Ni-Cu-PGE Project, 100% owned by IPT, is located 20km east of the Broken Hill silver-lead-zinc mine in New South Wales. It consists of nine exploration licences covering 1,000km^2 in the southeast part of the richly mineralised Curnamona Province (Figure 20). The project area contains several kilometres of mafic-ultramafic sills, dykes, and stocks that contain gossans, fresh outcrops with very high-grade PGEs, nickel, copper, gold, and silver mineralisation.

IPT has completed a significant amount of in-house research on these rocks which has led to a new geodynamic framework for the area. It has discovered all six PGM grades in this area.

Figure 20: Location of Broken Hill Project

Source: Company

BHP Xplor programme

In 2023, IPT was one of the first companies to participate in the prestigious BHP Xplor programme, primarily to fund exploration at the Broken Hill Project. BHP Xplor is a global accelerator programme for innovative, early-stage mineral exploration companies and helps the companies in finding the critical resources required to drive the energy transition. IPT received US$500,000 from BHP and used it to identify new target areas for copper and other energy metals around Broken Hill. The funding was primarily used to develop a new detailed three-dimensional model of the region's geology – the model was developed based on the knowledge gained from IPT's work over the past decade and the interpretation of magnetic and gravity data.

As a part of the Xplor programme, IPT conducted extensive field checking and rock chip sampling of mafic intrusions throughout the Broken Hill stratigraphy. About 600 rock chip samples were submitted for comprehensive major and trace element whole-rock geochemistry to help establish the provenance and metal-carrying potential of the mafic rocks.

In addition, two geophysical surveys were completed as case studies over the zinc-lead-silver-copper mineralisation at IPT's Dora East prospect: a ground sub-audio magnetics (SAM) survey and a ground audio-frequency magnetotellurics (AMT) survey. Furthermore, and for the first time in the Broken Hill region, a regional magneto-telluric survey designed to elucidate the deep structure under Broken Hill was completed. IPT is in discussions with a number of companies with a view to partnering in further exploration at Broken Hill.

An optimistic outlook for HPA bodes well for IPT

High Purity Alumina, also referred to as aluminium oxide with a minimum purity of 99.99% (4N), is a highly valued specialty product renowned for its exceptional purity and versatile applications. HPA stands out as the premium option in the non-metallurgical alumina market due to its unparalleled purity level. Depending on the level of purity, this premium product can be classified as 4N, 5N, and 6N. It is highly sought after for its chemical stability, corrosion and scratch resistance, very high melting point, and good thermal conductivity but high electrical insulation.

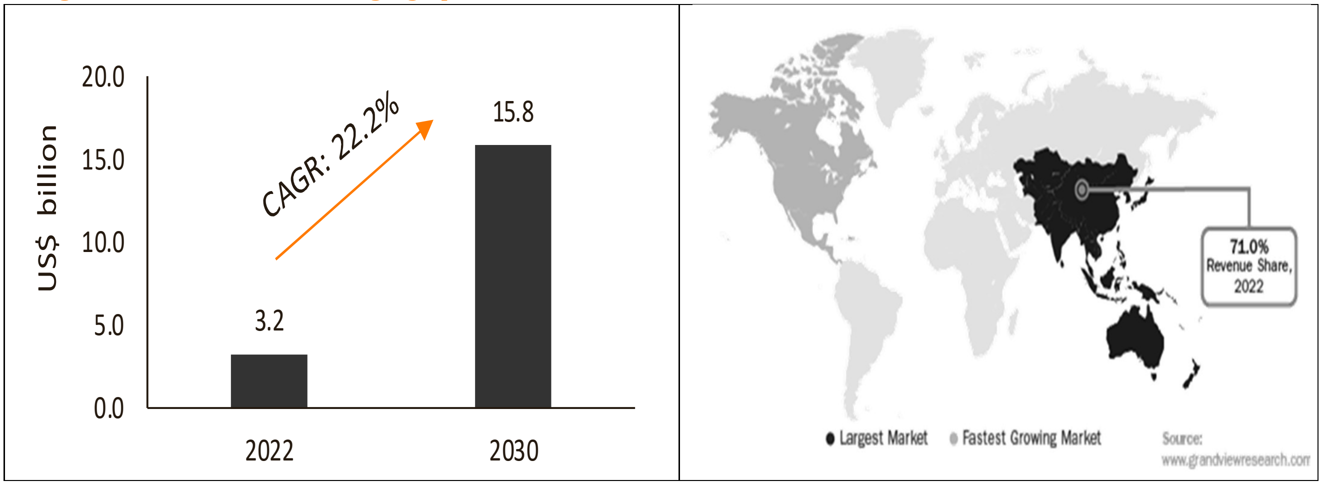
The market for this high-value, high-margin product is anticipated to grow at a CAGR of c.22% during 2023-2030 (Figure 21). The growth is primarily driven by the rising need for HPA in the electronics industry to produce sapphire substrates used in LEDs, which accounts for the largest share in the HPA market, and semiconductors, as well as the growing adoption of electric vehicles, which require HPA as a separator in lithium-ion batteries.

While alumina (with 99% purity) typically contains small amounts of impurities, such as silica, iron oxide, and other minor elements, which can limit its use in certain high-performance applications, alumina with 99.99% purity (HPA) surpasses the threshold required for applications in industries such as advanced electronics, aerospace, and medical devices.

The Asia Pacific region dominates the global market for HPA, with China emerging as one of the foremost producers of HPA. Countries such as China, Japan, India, and Australia boast the highest number of end-user companies. Due to its technology-driven industrial landscape, Japan exhibits a substantial demand for HPA annually. These nations also serve as vital hubs for LED and lithium-ion battery industries, both of which consistently require large quantities of 4N HPA. In addition, the governments of these countries actively promote and raise awareness among consumers regarding the benefits of this eco-friendly option. The widespread utilisation of HPA across various verticals advocates for environmentally sustainable practices and ensures cost-effectiveness, rendering it a pragmatic choice for end-users within the region.

In a nutshell, the HPA industry, driven by its purity, versatility, and increasing demand across various industries, exhibits promising growth prospects and represents a substantial opportunity for IPT.

Figure 21: HPA market size and geographical mix



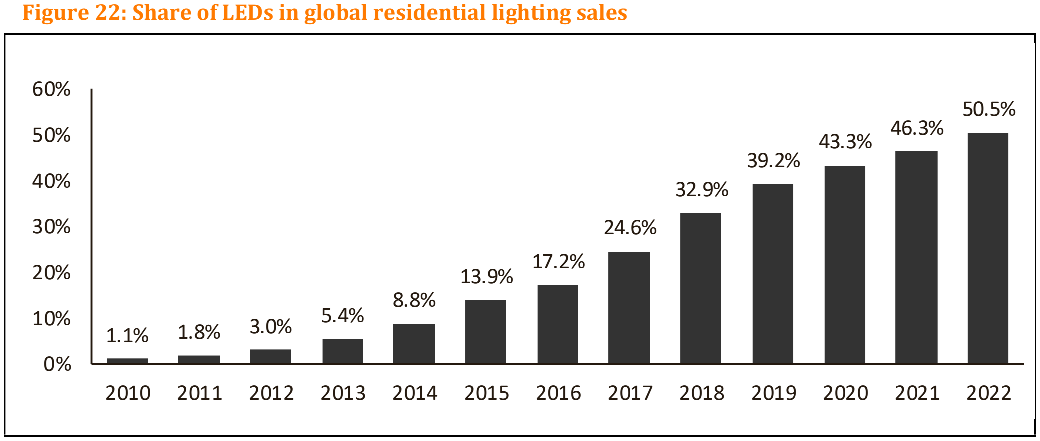
Source: Grand View Research, East Coast Research

Transitioning to energy-efficient LEDs will continue to drive substantial growth

The growing push for environmental consciousness and tightening of regulatory standards have caused a noticeable shift towards increasing the adoption of LED-based equipment. This transition has, in turn, amplified the demand for HPA, a critical ingredient in the production of LED lights. Over half of the global HPA production is allocated to LED manufacturing. Leveraging its thermal conductivity properties, HPA plays a pivotal role in crafting LED sapphire substrates and aluminate phosphors (which are essential for converting blue light to white light). HPA enables enhanced light output and prolongs the lifespan of LEDs. As a result, HPA becomes indispensable to the fabrication of high-quality LED lighting systems. The purity of HPA serves as the bedrock of successful LED production. Even the slightest impurity can introduce defects in the final product, compromising the performance and efficiency of the LEDs.

With lighting accounting for nearly 15% of electricity usage in households and 25% in commercial buildings, the demand for energy-efficient lighting solutions is growing. It is anticipated that the widespread adoption of sustainable, energy-efficient lighting alternatives can potentially reduce global electricity demand for lighting by an estimated 30-40% by 2030. Consequently, LED technology has garnered significant popularity over the past decade. According to the International Energy Agency, the global share of LED lights has surged from a mere 1% in 2010 to over 50% in 2022 (Figure 22), with integrated LED luminaires (incorporating one or more lamps within a unit) constituting an increasing proportion.

Figure 22: Share of LEDs in global residential lighting sales



Source: International Energy Agency

Increased construction activities in both developing and developed nations, and government regulations mandating the phase-out of inefficient lighting systems are poised to preserve the growth of the LED industry. In addition, the increasing trend of smart lighting systems, which can be controlled via smartphones and other smart devices, has further contributed to the rising demand. The LED lighting market is estimated to grow at a CAGR of c.11% during 2024-2029, reaching a projected value of US$191bn by 2029. This upward trajectory is expected to bolster the demand for HPA and bodes well for IPT.

Lithium-ion batteries to further boost demand

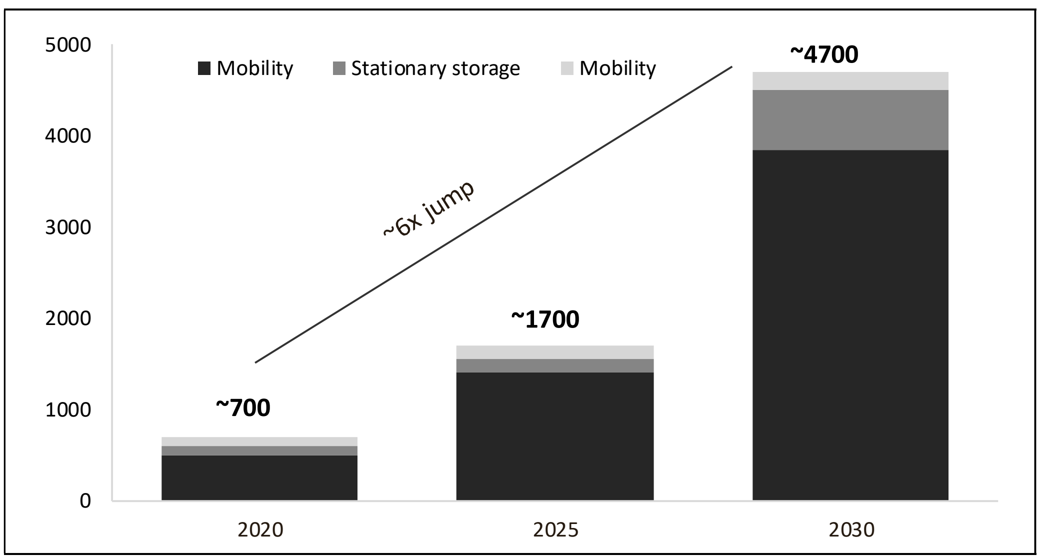
Lithium-ion batteries also represent a fast-growing market for HPA. These batteries consist of four key components: cathode, anode, electrolyte, and separator. HPA finds its primary use as the separator between or as coatings on, the anode and cathode. The separator's main function is to ensure cell safety by preventing contact between the anode and cathode while allowing lithium ions to pass through. To prevent thermal runaway, a high-quality battery separator should exhibit chemical and thermal stability, strength, and shutdown capabilities.

As a critical component of lithium-ion batteries, HPA-coated separators play a crucial role in enhancing battery stability, safety, and performance durability. Compared to traditional batteries, HPA-coated lithium-ion batteries offer superior safety features, as they can withstand high-temperature incursions and are less flammable during thermal runaways. In addition, they boast a low self-discharge rate, high battery discharge rate, and extended life cycle.

It is projected that between 2022 and 2030, the global demand for lithium-ion batteries will surge nearly seven-fold, reaching 4.7 terawatt-hours in 2030 (Figure 23). The bulk of this demand will stem from batteries for mobility applications, particularly electric vehicles, which are expected to account for approximately 4,300 gigawatt-hours by 2030. This trend is driven by regulatory initiatives promoting sustainability, such as Europe's "Fit for 55" programme, the US Inflation Reduction Act, the EU's planned ban on internal combustion engine vehicles by 2035, and India's Faster Adoption and Manufacture of Hybrid and Electric Vehicles Scheme. Furthermore, increasing consumer awareness and demand for greener technologies are contributing to the rapid growth of electric vehicles, with projections indicating that up to 90% of total passenger car sales in selected countries will involve electric vehicles by 2030.

The overall cost of lithium-ion batteries has been decreasing due to the rising manufacturing volume. Consequently, the consumption of HPA has been increasing simultaneously.

Figure 23: Global Lithium-ion battery cell demand, Gwh



Source: McKinsey Battery Insights Demand model

Copper and nickel mining hold attractive prospects

Nickel, renowned for its silvery-white lustre, corrosion resistance, and capacity to form alloys with a variety of metals, holds substantial importance across diverse industries. Its primary role in stainless steel production is indispensable, as it significantly enhances the strength and durability of the alloy. In addition, nickel is a critical component in specialised alloys such as Inconel and Monel, tailored for use in demanding environments such as aerospace and chemical processing. Its electroplating properties make it a popular choice for providing a corrosion-resistant layer on items ranging from jewellery to automotive parts. Furthermore, nickel finds widespread application in batteries, catalytic processes, and electronic devices, showcasing its adaptability and versatility across sectors.

According to a research report by Wood Mackenzie in April 2022[1], while stainless steel will continue to be the primary application for nickel, the major driver of demand growth over the next two decades will be batteries. Wood Mackenzie forecasts that battery use, accounting for only 7% of the total market in 2021, will surge to 40% of nickel consumption by 2040. This substantial increase is expected to double nickel demand to 6MT per year.

The growing significance of nickel in the context of the decarbonisation megatrend has led to the metal's inclusion in the US critical minerals list in February 2022. This list, subject to triennial updates, comprises 50 mineral commodities deemed critical to the US economy and national security following a comprehensive multi-agency assessment.

Overall, the global nickel market size is projected to grow from c.US$42bn[2] in 2023 to c.US$73bn by 2031, at a CAGR of c.7%, largely driven by growing demand for electric vehicles and increasing demand for stainless steel from the automotive, consumer goods, and construction industries.

Coming to copper, its variety of usage in different industries has turned it into the third most widely used metal in the world, and its applications in energy transition technologies are set to catapult demand for the base metal in the following decade as the decarbonisation trend accelerates.

The metal has the highest conductivity of any non-precious metal and plays an important role in energy production, but it is also particularly important for future sustainable technology applications such as electric vehicles and solar photovoltaic surfaces and is itself a sustainable material as it is 100% recyclable without loss of properties.

Electric vehicles, in particular, use large amounts of copper alongside nickel, and the surge in demand for these vehicles will provide demand support for these two metals. *In our view, IPT stands to gain a significant market opportunity with its exposure to copper and nickel.*

Exposure to REEs is value-additive

REEs encompass a group of 17 chemical elements, consisting of 15 lanthanides[3], scandium, and yttrium[4]. They are typically categorised into two primary groups: light REE or oxides such as lanthanum (La), cerium (Ce), praseodymium (Pr), and neodymium (Nd), which commonly constitute over 80% of TREO content in REE deposits; and heavy REE or oxides such as europium (Eu), terbium (Tb), and dysprosium (Dy), which are more challenging to locate. Furthermore, within these classifications, a subset known as the magnetic REE (MREE) or oxides comprises

[1] https://www.woodmac.com/news/opinion/nickel-and-copper-building-blocks-for-a-greener-future/

[2] https://www.fortunebusinessinsights.com/nickel-market-106576

[3] Samarium (Sm), terbium (Tb), thulium (Tm), ytterbium (Yb), cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), and promethium (Pm).

[4] Scandium and yttrium are also included in REEs because they are found in the same ore deposits as the lanthanides and show similar chemical properties.

approximately 90% of the market value of rare earths. These MREEs are essential for producing high-performance permanent magnets utilised in electric vehicles, wind turbines, and everyday electronics, such as hard drives and smartphones.

The global rare earth elements market is poised to grow at a CAGR of 10%, from US$5.6bn in 2023 to US$14.6bn by 2033. This growth is largely attributed to the increasing utilisation of REEs in consumer electronics, renewable energy, aerospace, and, notably, in electric vehicles for manufacturing high-strength permanent magnets used in the engines of electric vehicles.

Valuation: NPV-based valuation indicates IPT has significant upside potential

IPT has recently initiated the PFS for its Lake Hope project. Its completion is expected to occur sometime within the next 9-12 months. However, it has released a precursor to the PFS, a Scoping Study that has a +/-30% accuracy level deviation. PFS and a subsequent Definitive Feasibility Study (DFS) are logical approaches to ascertaining the long-term value of the stock. In their absence, we have decided to employ the available Scoping Study results to ascertain IPT's long-term value. Given the absence of substantial cash flows, it is advisable to utilise a multiple-driven Net Present Value (NPV) based valuation methodology for the integrated project.

In our valuation of IPT, we have relied on a percentage of NPV approach. We have additionally deployed a premium to the calculation for the significant cost efficiencies that the Lake Hope project brings in. With a 50% cost advantage it is imperative that IPT deserve a premium.

We have valued Impact Minerals based on a percentage of NPV

Figure 24: Basis for using NAV-based valuation

Stage of Development	EV as % of NAV
Scoping Study	**0-5%**
Pre-Feasibility Study (PFS)	5-10%
Definitive Feasibility Study (DFS)	10-30%
Fully Funded DFS	30-50%

Source: East Coast Research

IPT is amongst a handful of ASX-listed miners having alumina mining assets for HPA production, which are of comparable market cap and have published project NPVs (Figure 25), i.e., Queensland Pacific Metals (ASX:QPM), Cadoux Limited (ASX:CCM) and Corella Resources Ltd (ASX:CR9). However, *given that most of these companies are relatively smaller in size and have a lower cash cost efficiency, we have decided to refrain from using the comparable peer multiple*.

Figure 25: IPT's cost efficiency elevates investor confidence in comparison to smaller junior HPA resource companies

S. No	Company	Ticker	Projected NPV^ (A$m)	Average cash cost of production* (A$/t)	IRR	Market Cap* (A$m)	EV* (A$m)	M-Cap as % of Project NPV	EV as % of Project NPV
1	Queensland Pacific Metals	ASX:QPM	1,551.4	10,191.3	55.0%	74.46	59.28	4.8%	3.8%
2	Cadoux Limited	ASX:CCM	4,622.0	9,512.0	53.8%	21.26	12.77	0.5%	0.3%
3	Corella Resources Ltd	ASX:CR9	1,470.0	15,970	30.7%	10.23	7.78	0.7%	0.5%
	Peer Median		**1,551.4**			**21.3**	**12.8**	**0.7%**	**0.5%**
	Peer Average		**2,547.8**			**35.3**	**26.6**	**2.0%**	**1.5%**
	Impact Minerals Limited	ASX:IPT	1,334.0	4,993.9	55.0%	37.24	32.97	2.8%	2.5%

*Note: ^ NPV8/NPV10 as per latest respective DFS, PFS or Scoping Study; *As of 5 March 2024*

Source: S&P Capital IQ and East Coast Research

The current value of IPT stands at 2.5% of the NPV of the integrated project, offering significant upside potential

While IPT is still in the process of advancing towards completing the PFS, it has already successfully concluded the Scoping Study. This achievement is significant, particularly considering the project's ongoing expansion of resources and its integrated nature. As a result, our approach to reaching our target valuation involves utilising 4% of the NPV as the target Enterprise Value for our base case scenario and 5% for our more optimistic projection (Figure 26). *Given the lowest-cost advantage of the project, we have applied an additional 50% premium to the valuation*. This methodology yields a valuation range of $0.021 to $0.027 per share.

We have not included any value from the Arkun-Beau-Jumbo projects and the Broken Hill project in our valuation of IPT. These remain as significant upside potential to the company's valuation as exploration progresses.

We think the discount to IPT's current market valuation compared to our target range can be partially explained by the sudden drop in alumina prices globally due to the global economic meltdown from high inflation. In addition, the decline in IPT's share prices is also due to the lack of a more comprehensive economic study for Lake Hope and environmental clearances. The process of completing mineralogy studies and attaining environmental clearances is often time-consuming, but the company is undertaking this in parallel with the ongoing PFS study. The company management has also recently concluded significant bulk sampling and test pit programs along with a positive Scoping Study on the project which have so far yielded exceptional results. This adequately provides early indications of the deposits' potential for commercialisation along with an indication that the project may have a significant margin of safety regarding the cost of production.

We are of the view that IPT offers a unique opportunity to invest in the highly lucrative High Purity Alumina business, which is already tightened up on the supply side. HPA, due to its usability in defence, aeronautics, medical devices and modern-day (Li-ion) batteries, has become a highly sought-after mineral. We believe that capital markets will recognise the dearth of independent companies with excellent alumina projects, thereby supporting IPT's long-term outlook. In addition, the upcoming PFS is expected to highlight the project's ongoing expansion of resources, depicting a systematic assessment of all critical elements, i.e., technologies and costs to environmental and social impacts. This is expected to add additional upside potential to our valuation.

Our mid-point target price of A$0.024 represents a Price/NAV of 0.54x, indicating a valuation headroom of nearly 90%.

Figure 26: NPV-based valuation calculation for Impact Minerals (post equity dilution)

IPT Valuation (A$ m)	Current Valuation	Base Case	Bull Case	Remarks
Lake Hope Project – scoping study value (post-tax)	1,334.0	1,334.0	1,334.0	
Average % of NAV	2.5%	4.0%	5.0%	
Premium/ (Discount)	-	50.0%	50.0%	Higher cost efficiencies
Firm Value	**33.35**	**80.04**	**100.05**	
Cash & Financial Investment*	2.2	2.22	2.2	
Provisions and Liabilities^	-0.6	-0.60	-0.6	
Minority Interest	-	-8.0	-8.0	Playa One's 20% stake in Lake Hope
Total value	**34.97**	**73.66**	**93.67**	
Number of shares (m)^^	2,864.70	3,484.96	3,484.96	Post dilution ^^
Implied price (A$)	**0.012**	**0.021**	**0.027**	
Current price (A$)	0.013	0.013	0.013	
Upside (%)	-6.1%	62.6%	106.8%	
Mid-point Target Price (A$)		**0.024**		
Price / NAV (X)		**0.54x**		

*Notes: * as of 31 Dec 2023; ^ as of 30 June 2023; ^^ includes 2,864.7m of paid-up shares, 500.2m of options (both listed and unlisted) and 120m of shares that Playa One will be issued (post PFS)*

Source: East Coast Research

Additional shares on issue

It is important to note that we have assumed a higher number of shares than are currently on issue. The company currently has 2,864.7m issued shares, 158.3m of listed options (IPTOB), although these expire in May this year, and 205m of unlisted options. We have included 137m of unlisted options recently issued as performance bonus rights to all employees (as per ASX announcement dated 19 January 2024). In addition, we have also included the 120m shares to be issued to Playa One for IPT's 80% stake in the project. We have included all of these in our calculation of the fully diluted shares.

Re-rating of Impact Minerals

IPT is currently trading well below our mid-point target valuation. Meeting the following milestones can enable a re-rating on the stock, thereby narrowing the gap to our target range:

- **Completion of the PFS study for the Lake Hope Project,** will demonstrate the economic viability of the project and improve investor confidence.
- Any announcement on **an off-take agreement** will increase confidence in the project.
- Any **increase in the base commodity price** will directly impact the project's expected cash flows and expected return profile. **A jump in HPA prices** will support the attractiveness of the Lake Hope deposit, thereby supporting an increase in IPT's valuation.
- An **increase in the indicated and inferred reserves** in further studies will expand the commercial viability of the company's various projects, thereby enhancing its valuation.
- **An improvement of the macroeconomic picture** and the subsequent relaxation of financial markets will have a positive impact on the company's ability to raise funds at more attractive prices to continue its value-accretive operations and thereby increase the company's valuation.
- **Successful drilling results** from the Broken Hill project, the Arkun project or the Beau project could be transformational for the company. We have not assigned any value to these projects in our valuation of IPT, but positive exploration results at these projects can leave significant impacts on the company's share price.

Case Study: Matching Alpha HPA's success — A potential path to exponential returns for IPT shareholders

We believe that IPT holds the potential to emulate the success achieved by Alpha HPA (ASX: A4N) if the management demonstrates comparable proficiency in project execution.

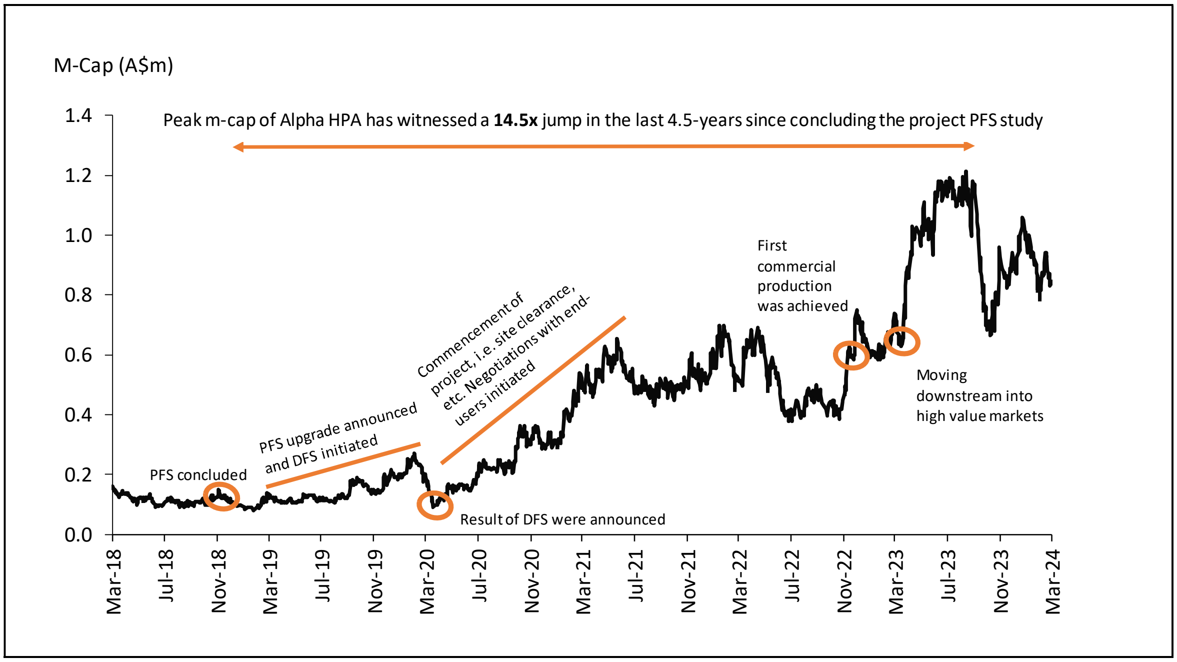
IPT currently finds itself at a stage where the prominent player in the industry, Alpha HPA, stood ~4.5 years ago. As a junior explorer entering the HPA sector, IPT is on the verge of completing its project PFS study, similar to Alpha HPA, in November 2018. Following the PFS study, Alpha HPA's execution timeline proceeded methodically, concluding the DFS study in early 2020, project initiation in early 2021, the establishment of a precursor production facility in mid-2021 and ultimately, the commencement of commercial small scale HPA production by the end of 2022.

The substantial shareholder value created by Alpha HPA during its journey has been remarkable, registering a 14.5x jump in peak market cap in less than half a decade since concluding its PFS study (Figure 27).

Comparing the growth trajectory of the Lake Hope project with that of Alpha HPA, IPT's declared NPV is close to what Alpha had at that time, but with a significantly improved cost dynamic.

If IPT's management follows A4N's successful footsteps in project execution, we believe that IPT's market capitalisation can also follow a similar path.

Figure 27: Alpha HPA's market cap has increased exponentially in the last 4.5 years



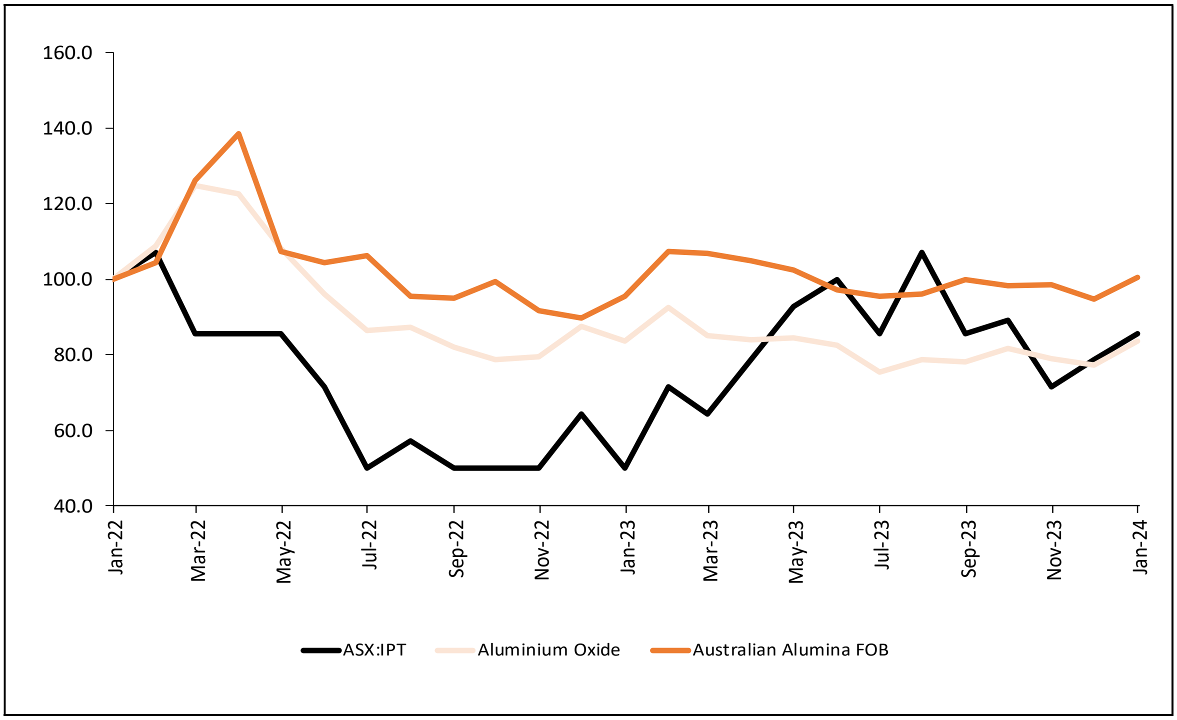
Source: Argus Metals, S&P Capital IQ, East Coast Research

Risks

Although we believe that IPT makes up an attractive investment case, especially due to the potential of its attractive Lake Hope Project to become the lowest-cost producer of HPA globally, we foresee the following key risks to our investment thesis:

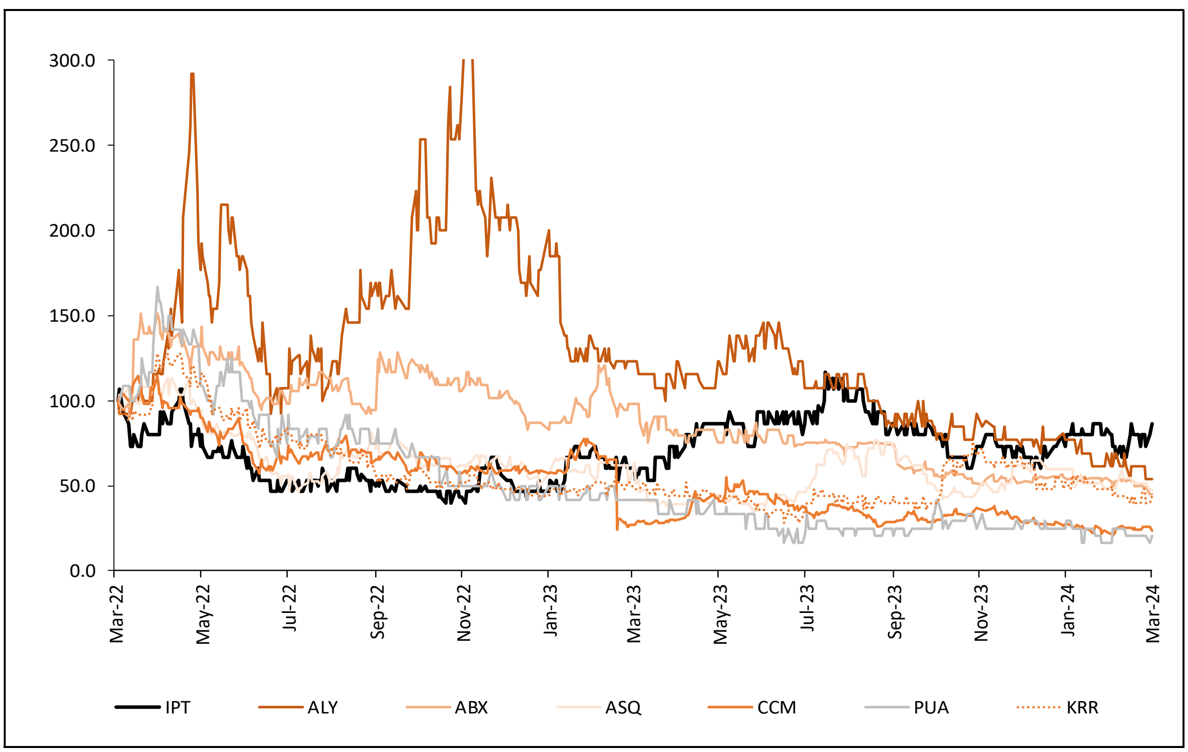
- **Underlying commodity price risk**: IPT's investment attractiveness is very sensitive to HPA's price fluctuations, which depend on macroeconomic factors, i.e., global demand and supply dynamics of the underlying commodities. Any prolonged drop in the base commodity price will be detrimental to our investment thesis.
- **Funding risk**: IPT presently does not generate any cash flows and is reliant on capital raisings to fund its operations. Timely raising of funds on favourable terms will likely be a challenge for the company's management, given the currently high interest rate cycle and tight financial markets.
- **Execution delays**: IPT management is working on a PFS for the Lake Hope project. Any potential delay (beyond the management's indicated timeframe of the end of 2024) in the finalisation of the feasibility study or receiving adequate environmental clearance will jeopardise investor sentiment. Most of the future growth for IPT is expected to come from potential Alumina and REE resource discoveries and improvements at the various project sites. Any prolonged period until the announcement of exploration results and possible poor results are likely to jeopardise investor sentiment.
- **Geological risk**: For an exploration company such as IPT, there exists a perennial risk of downward estimates of reserve figures. There also exists a risk of re-categorisation of the indicated reserves to inferred reserves in further studies. Any such incident will negatively impact the stock's valuation.

Figure 28: IPT's share price moves in tandem with global alumina prices



Source: Argus Metals, S&P Capital IQ, East Coast Research

Figure 29: Share prices of all the players in the industry have remained subdued over the last 12 months



Source: S&P Capital IQ, East Coast Research

Appendix I: IPT's SWOT analysis

Figure 30: SWOT analysis

Strengths	Weaknesses
(1) IPT boasts a diversified mineral portfolio, which includes HPA, precious metals, as well as battery and strategic metals, including gold, silver, lead, zinc, copper, nickel, and PGM. (2) The Lake Hope HPA Project possesses an abundant resource base. The initial mineral resource estimate, indicating 3.5MT at 25.1% alumina, signifies a substantial deposit. With 880k tonnes of contained alumina, it is poised to sustain a multi-decade operation. (3) The Lake Hope deposit's soft and shallow nature allows for cost-effective free digging, reducing infrastructure needs and eliminating pre-stripping and selective mining. (4) There is no requirement for on-site beneficiation at Lake Hope because of the very fine-grained nature of the clay. The mine will be a free-digging operation with the transport of the ore offsite for processing at a permitted industrial site, in contrast with a conventional open pit hard rock mining operation. (5) The Lake Hope Project has strong ESG credentials. IPT has already secured consent from Ngadju First Nations heritage for this project, showcasing positive community relations.	(1) Besides the Lake Hope Project, the company has not made significant progress in any of its other projects. (2) The company does not generate cash flows and is dependent on capital raisings to fund its future operations.
Opportunities	**Threats**
(1) The company has demonstrated notable progress in recent years, showcasing promising early-stage exploration results across multiple projects. It has identified targets for Ni-Cu-PGM, lithium, and rare earths in the Arkun-Beau area that need follow-up work and has great potential. (2) The increasing emphasis on renewable energy sources and the rising demand for electric vehicles present opportunities for the company as HPA, Cu, Ni, as well as RREs form an integral part of the energy transition. (3) The Lake Hope project has favourable market fundamentals with HPA deemed a critical mineral in Australia and many other countries. The HPA market is expected to grow significantly over the next decade.	(1) Global slowdown leading to high interest rates and low capital markets activity will be a deterrent for financing exploration and mine development activities. (2) Inflationary pressures increasing the cost of operations and Capex estimates.

Source: East Coast Research

Appendix II: Highly experienced leadership with a strong track record

IPT has a robust leadership team with diversified experience and skills. The current board and management members of IPT possess rich experience across the resources industry, in exploration and mining, as well as in strategic management and finance (Figure 31).

Figure 31: IPT's management and board members

Name and Designation	Profile
Mr. Peter Unsworth **Non-Executive Chairman**	• Mr. Unsworth has more than 35 years of experience in the corporate finance, investment, and securities industries. • He has been a director of several public exploration and mining companies and was an executive director at a Western Australian stockbroking company. • He recently completed a long period serving as Chairman of the Western Australian government owned Gold Corporation (operator of The Perth Mint). • Mr. Unsworth holds a Bachelor of Commerce (B. Com) and was also formerly a Chartered Accountant.
Dr. Mike Jones **Managing Director**	• Dr. Jones has worked on over 80 projects both in greenfield and near mine exploration in a wide variety of mineralised terrains and was the founding director of Lithofire Consulting Geologists in Perth, Australia. • He was also the team leader during the discovery of a significant gold deposit at the Higginsville Mining Centre, near Kalgoorlie and an iron ore deposit near Newman, both in WA. • Dr. Jones holds a bachelor's and master's in mining and exploration geology at Imperial College, London. He has also completed his PhD in gold mineralisation.
Mr. Paul Ingram **Non-Executive Director**	• Mr. Ingram has more than 30 years of experience in the mining sector and in managing major mining exploration programmes for several public-listed companies. • He is a geologist who has designed and implemented innovative techniques for exploration in remote areas and has managed projects in countries throughout Australia and east Asia. • He has worked in various listed companies over the past years such as Polo Resources Limited, A-Cap Resources Limited, Consolidated Global Investments Limited, Caledon Resources Limited, and Australian Pacific Coal Limited.
Dr. Frank Bierlein **Non-Executive Director**	• With a master's degree (Heidelberg University) and a PhD in geology (University of Melbourne), Dr. Bierlein has >30 years of experience as a consultant, researcher, and industry professional. • He has held exploration and generative geology management positions with QMSD Mining Co. Ltd., Qatar Mining, Afmeco Australia and Areva NC, and consulted for, among others, Newmont Gold, Resolute Mining, Goldfields International, Freeport McMoRan, and the International Atomic Energy Agency.

Source: East Coast Research

Appendix III: Analyst's Qualifications

Behzad Golmohammadi, the lead analyst on this report, is an equity research analyst at Shares in Value (East Coast Research).

- Behzad has a bachelor's degree in Engineering (Industrial) and a master's degree in Applied Finance (Investing) from Sydney Business School, where he was the top performer in his cohort. He has also passed the first two levels of the CFA Program.
- Behzad has several years of experience working as an Equity Research Analyst and Technical Analyst in Australia and overseas and has a broad knowledge of ASX-listed companies. He has been a speaker at the Australian Technical Analysts Association (ATAA).

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