IPERIONX SUCCESSFULLY DEVELOPS LOW CARBON TITANIUM ENRICHMENT PROCESS

- IperionX has successfully developed an innovative low carbon titanium mineral enrichment technology that upgrades lower content titanium dioxide ilmenite minerals into a high titanium synthetic rutile product.
- The Company's synthetic rutile product has been tested and evaluated by customers, which has confirmed the potential for a high-quality, high grade titanium feedstock with scope to be a superior and more sustainable product than other upgraded titanium feedstocks, including titanium slag.
- IperionX's low carbon process eliminates the use of carbon reductants, including coal, which are typically used to upgrade low grade titanium feedstocks into high value, high grade titanium feedstocks.
- The low carbon synthetic rutile production process is the result of exhaustive R&D by Dr. Zak Fang and his team at the University of Utah on upgrading and purification methods for titanium feedstocks to produce titanium metal.
- Patent applications have been filed for this innovative synthetic rutile process technology, adding to IperionX's valuable patent portfolio.
- Co-products of IperionX's synthetic rutile process include a purified iron powder for potential sales into lithium iron phosphate (LFP) battery applications.
- IperionX intends to commercialize this low carbon, high grade titanium synthetic rutile product and has commenced feasibility studies for a synthetic rutile production pilot plant at the Titan Project in Tennessee.

IperionX Limited ("IperionX" or "Company") (NASDAQ: IPX, ASX: IPX) is pleased to announce that it has successfully developed high quality, low carbon titanium mineral enrichment technologies, having upgraded ilmenite titanium minerals from the Titan Project in Tennessee into a high-grade titanium synthetic rutile product.

Figure 1: IperionX Titan Project ilmenite (LHS) prior to conversion to low carbon, high grade synthetic rutile (RHS).

High grade titanium dioxide (+80% TiO_2) feedstocks include natural rutile, synthetic rutile and titanium slag, and are primarily used in creating inputs for titanium metal in the form of titanium tetrachloride and paint and pigments in the form of purified TiO_2.

Natural rutile is a mineral with TiO_2 content of 92%-95%, while synthetic rutile and titanium slag are upgraded high grade TiO_2 feedstocks produced from ilmenite, with a TiO_2 content of 88%-95% and ~80% respectively. Given their relative scarcity and value in use, high grade TiO_2 feedstocks are higher priced products than the more commonly found lower grade ilmenite.

Importantly, the global supply of natural rutile is in significant decline, with other high grade titanium feedstocks including synthetic rutile and titanium slag expected to replace fill the widening supply gap. Synthetic rutile commands a price 4-5x that of ilmenite, which has a typical TiO_2 content of 45%-65%. Long term price forecasts for synthetic rutile are ~$1,000-$1,200 per ton, compared to ilmenite with a long-term price forecast of ~$200-$300 per ton. This price multiple allows for the potential to significantly increase the value of the Titan Project resource base through upgrading of ilmenite to low carbon synthetic rutile.

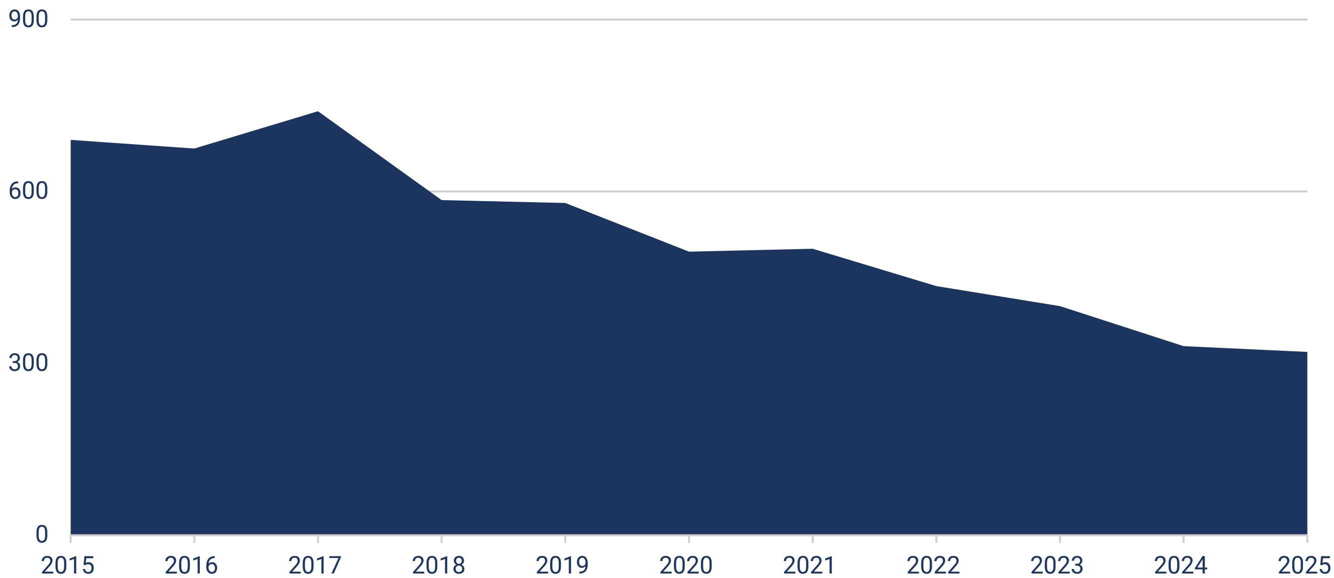

***Figure 2*: *Global natural rutile supply outlook (kt)*[1].**

The majority of global synthetic rutile production occurs in Western Australia by the world's largest titanium mineral companies, Iluka and Tronox, via processes based upon the Becher Process. The Becher Process consists of roasting low-grade ilmenite using coal in a rotary kiln at temperatures of more than 1,100°C to convert the iron oxide in the ilmenite to metallic iron, and then 'rusting' the kiln product in an aerated salt solution to remove most of the metallic iron.

Titanium slag is a widely adopted method to produce high grade titanium feedstocks, which occurs via open arc AC or DC smelting of ilmenite with electricity, using a carbon reactant in the form of coal, to produce titanium slag and pig iron products.

Scope 1 & 2 emissions associated with current production of synthetic rutile and titanium slag are significant, estimated at approximately 3.3 tons and 2.0 tons of CO_2 equivalent per ton of product[2]. In contrast, IperionX's synthetic rutile process does not use coal as a reductant, and when combined with renewably sourced electricity has the potential to result in very low to net-zero carbon emissions.

IperionX's synthetic rutile product has been evaluated by customers in the paint and pigment industry and confirmed as a potential high-quality feedstock likely to attract a significant price premium to ilmenite, with the potential to also be a superior and more sustainable product to other titanium feedstocks, including titanium slag.

[1] Source: Iluka Resources, February 24, 2022 (link)

[2] Source: Sovereign Metals, July 7, 2022 (link)

The development of IperionX's low carbon synthetic rutile is the product of exhaustive R&D by Dr. Zak Fang and his team at the University of Utah, which originated around development of purification methods for titanium feedstocks for use in HAMR titanium metal production. Over the last 12 months, Dr. Fang, his team, and IperionX's R&D division have worked closely together to adapt the titanium purification methods to produce a low carbon, stand-alone synthetic rutile product.

Provisional patent applications have been filed for this low carbon synthetic rutile process technology, adding to IperionX's valuable intellectual property portfolio. IperionX is also progressing R&D on its patented low carbon upgrading and enrichment technologies for very high-grade products with >99% TiO_2. The global TiO_2 market is over US$18 billion per annum, with chemical properties that allow for a wide range of applications from paint and pigments, to photocatalysts, pharmaceuticals and lithium anode materials for batteries.

IperionX intends to commercialize this low carbon synthetic rutile product and has commenced feasibility studies for a synthetic rutile production pilot plant at the Titan Project in Tennessee.

Anastasios (Taso) Arima, IperionX's Managing Director and CEO said: *"We are delighted that Dr. Fang's research and development, in collaboration with IperionX's engineers, has successfully delivered an innovative process technology to produce a high quality, low carbon synthetic rutile product. This patented technology has the potential to significantly enhance the value of the Titan project by manufacturing a low carbon, high grade titanium feedstock for a market that is increasingly demanding a low carbon supply chain."*

Commenting on the development of synthetic rutile, Dr. Zak Fang said: *"It is exciting to see titanium feedstock purification methods developed at the University of Utah for use in HAMR titanium metal production have the potential to be adapted to produce a low carbon synthetic rutile product. We look forward to the commercialization of this technology as well as continued work on further titanium mineral purification technologies for high value products containing >99%* TiO_2.

This announcement has been authorized for release by the CEO and Managing Director.

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About IperionX

IperionX's mission is to be the leading developer of low carbon, sustainable, critical material supply chains focused on advanced industries including space, aerospace, electric vehicles and 3D printing. IperionX's breakthrough titanium technologies have the potential to produce titanium products which are sustainable, 100% recyclable, low carbon intensity and at product qualities which exceed current industry standards. The Company also holds a 100% interest in the Titan Project, located in Tennessee, U.S., a very large titanium resource in North America which is also rich in rare earth minerals.

APPENDIX - IPERIONX SYNTHETIC RUTILE PRODUCTION

The majority of global synthetic rutile production occurs in Western Australia by the world's largest titanium mineral companies, Iluka and Tronox, via processes based upon the Becher Process. The Becher Process consists of roasting low-grade ilmenite using coal in a rotary kiln at temperatures of more than 1,100°C to convert the iron oxide in the ilmenite to metallic iron, and then 'rusting' the kiln product in an aerated salt solution to remove most of the metallic iron[3].

Titanium slag is a widely adopted method to produce high grade titanium feedstocks, which occurs via the open arc AC or DC smelting of ilmenite with electricity using a carbon reactant in the form of coal, and produces titanium slag and pig iron products.

IperionX's synthetic rutile process starts with the milling of ilmenite, including ilmenite sourced from the Company's Titan Project. The milled ilmenite is agglomerated with a binding agent into ilmenite spheres, which are sintered and reduced with hydrogen in an electric furnace. The sintered and reduced hydrogen spheres are crushed and leached in the presence of hydrochloric acid to produce a synthetic rutile product plus an iron oxide co-product for potential sales into lithium iron phosphate battery applications.

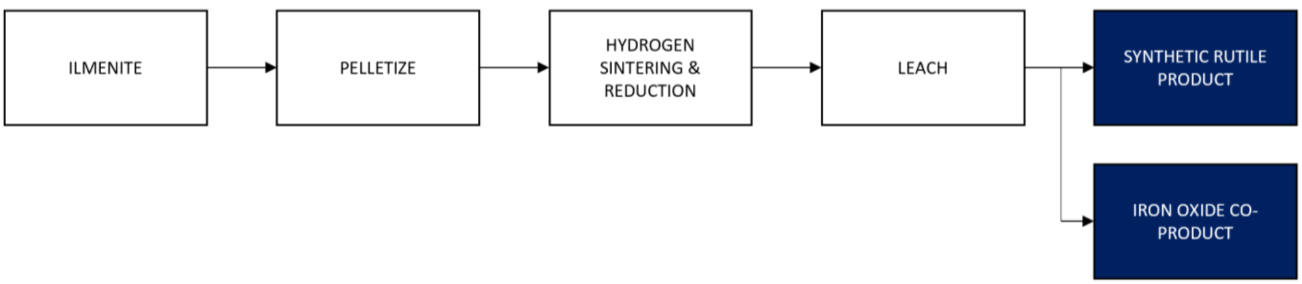

Figure 3: Block flow diagram of IperionX's synthetic rutile production process.

As part of the production process, IperionX has developed a titanium recovery method with the addition of a primary reagent recovery process, including the generation of the purified iron powder co-product. This recovery process provides the potential for a substantial operating cost reduction over what would normally be realized.

IperionX's synthetic rutile product has been evaluated by customers in the paint and pigment industry and confirmed as a potential high-quality feedstock likely to attract a significant price premium to ilmenite. There is significant potential for this synthetic rutile to be a superior and more sustainable product to other higher carbon, upgraded titanium feedstocks, including titanium slag.

Co-products of IperionX's synthetic rutile process include a purified iron powder for potential sales into lithium iron phosphate battery applications.

IperionX holds an exclusive option to acquire Blacksand Technology, LLC ("Blacksand"), which holds the rights to commercialize a series of patented titanium manufacturing technologies, including this new innovative synthetic rutile process technology.

[3] Government of Western Australia, 2013. (Link)

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Forward Looking Statements

Information included in this release constitutes forward-looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward-looking words such as “may”, “will”, “expect”, “intend”, “plan”, “estimate”, “anticipate”, “continue”, and “guidance”, or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs.

Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the Company’s actual results, performance, and achievements to differ materially from any future results, performance, or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licenses and permits and diminishing quantities or grades of reserves, the Company’s ability to comply with the relevant contractual terms to access the technologies, commercially scale its closed-loop titanium production processes, or protect its intellectual property rights, political and social risks, changes to the regulatory framework within which the Company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation.

Forward looking statements are based on the Company and its management’s good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the Company’s business and operations in the future. The Company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the Company’s business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the Company or management or beyond the Company’s control.

Although the Company attempts and has attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements, or events not to be as anticipated, estimated or intended, and many events are beyond the reasonable control of the Company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements. Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the Company does not undertake any obligation to publicly update or revise any of the forward-looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.