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ASX RELEASE

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CHPP Infrastructure FEED Study Complete

Aspire Mining Limited (ASX: **AKM**, the **Company** or **Aspire**) is focused on developing metallurgical coal assets in Mongolia, principally its wholly owned Ovoot Coking Coal Project (**OCCP**).

The Company is pleased to advise that Sedgman Pty Ltd (**Sedgman**) has completed Stage 2 of the Front-End Engineering and Design (**FEED**) Study for the Coal Handling and Preparation Plant (**CHPP**) infrastructure to be constructed at the OCCP and issued its final report outlining the design and cost estimate (**FEED Study**).

In response to feedback gathered during community consultation, the elimination of potential dust emissions was an express objective of the design and engineering. Result of this is evident in the planned coal handling, stockpiling and truck loading infrastructure. The concept presented in this FEED Study represents a significantly more sophisticated processing and materials handling solution than that contemplated in the March 2019 Pre-Feasibility Study[1]. Leading technologies are also incorporated to minimise power and water consumption.

This is an important step in the development of the OCCP, as establishment of a CHPP at the Ovoot site is an important factor to enable consistent delivery of high-quality coking coal to market. Currently, only one other Mongolian coking coal producer beneficiates its coal on site to a globally recognised product specification (Mongolian Mining Corporation, HKG: 0975).

Key outcomes from Stage 2 of the FEED Study include:

- Preparation of concept design with nameplate capacity of 350 tonnes per hour (**tph**) feed, based on a simple, robust process flowsheet comprising proven technologies.
- Incorporation of reliable equipment capable of operating more than 7,200 hours per annum and 20 years life with appropriate training and maintenance regimes in place.
- Meeting design objectives to maximise water and power efficiency, containment of potential dust emissions, and avoidance of requirement for tailings storage facility.
- Optimisation of layout conducive to future phased expansion, including product handling system capable of supporting doubling of initial throughput.

[1] Refer to ASX Announcements 28 February 2019 and 11 November 2019 in respect to the OEDP Pre-Feasibility Study and update (PFS). This announcement contains new data that may affect some of the information in the PFS. The Company confirms that it is undertaking a Definitive Feasibility Study that will identify and confirm any new information, data or change to material assumptions used in the PFS.

- Engineering conducted in sufficient detail to underpin ±15 per cent capital and operating cost estimates.
- Forecast construction schedule of 15 months on the ground.
- Total capital cost for construction of the described CHPP infrastructure herein this announcement is estimated at US$77.0 million, including assumed EPC contract margin but excluding project and owner contingency allowances.
- Increase in estimated capital cost is primarily attributable to modified scope of facilities incorporated within design, intended to support achieving and maintaining a social license to operate, application of more stringent design standards and a backdrop of stretched supply chains and higher capital cost environment leading to conservative and short duration price estimates.

FEED Study Overview

Aspire is pleased to advise that Sedgman has completed Stage 2 of the FEED Study on the CHPP infrastructure intended for construction at the OCCP. The final report has been issued outlining its proposed design, and the estimated capital cost, construction schedule and operating costs.

Stage 1 of the FEED Study was previously completed in July 2021, comprising an initial Concept Study, considering, and evaluating potentially applicable process technologies and infrastructure layouts to achieve the design objectives.

After completion of Stage 1, an additional Stage 1b program was completed in November 2021, to optimise and validate costs for the chosen combination of equipment and infrastructure layout, which allowed for further refinement before embarking on the more detailed Stage 2 work.

Stage 2 has drawn from conclusions reached in Stages 1 and 1b and refined and optimised the plant layout and design drawings to support estimation of capital and operating costs to an accuracy of ±15 per cent. These deliverables provide sufficient detail to enable future tenderers to provide binding bids.

The resulting CHPP design can wash 2.1 million tonnes per annum (**Mtpa**) of ROM coal feed at a baseline forecast of 6,000 operating hours per annum. Sedgman note that good maintenance and operating practices could see the plant operate at more than 7,200 hours per annum treating 2.5 Mtpa of raw coal with a minimum 20-year lifespan.

It is relevant to note that Sedgman has previously delivered three 5 Mtpa coal processing modules to Mongolian Mining Corporation at the Ukhaa Khudag coal deposit in the South Gobi region of Mongolia. Mongolian Mining Corporation remains the only other coking coal miner in Mongolia capable of exporting a washed coking coal product that consistently meets international product specifications.

Process Flowsheet Selection and Outline

Sedgman prepared Limn simulations to evaluate potential combinations of processing equipment. These considered use of dense media cyclones to treat the coarse fraction, spirals and reflux classifiers for fine fraction, and reflux classifiers and froth flotation for the ultrafine fraction.

The simulations were performed on a weighted average feed blend derived from all working sections available from six large diameter core samples. Results indicated that the best overall yield would be achieved from a process comprising dense media cyclones for coarse fraction treatment, and reflux classifiers for both fine and ultrafine fraction treatment.

Whilst incorporation of reflux classifiers requires slightly higher initial capital cost, payback was achieved quickly in discounted cashflow analysis on account of the increased yield achievable. It also reduces the operational complexity, allowing simpler monitoring and control, whilst avoiding use of chemical reagents to separate ash from the product coal. The process flowsheet is displayed in Figure 1.

Whilst the flowsheet design is innovative, it is based upon well-known and established technology, as per a direct quote from the FEED Study report:

> *"The CHPP flowsheet and plant selection used in this facility is based on design arrangements and components which have been proven in many applications designed, constructed and in some cases operated by Sedgman."*

According to the simulation results, the chosen process flowsheet can produce a 10.5 per cent ash (air dried) product, at greater than 80 per cent yield (air dried), whilst achieving total product moisture of less than 11 per cent (as received). Such performance is of course subject to the actual quality of the ROM coal feed, which will vary.

The high yield is possible because of the soft nature of Ovoot coal (Hargrove Grind Index of 100) and the distinctive difference between the specific gravity of the coal versus inherent ash. The energy content within the separated ash is very low, and hence the proposed plant design does not include middling circuits for production of a thermal coal by-product.

By incorporating belt press filters into the flowsheet for dewatering of fine and ultrafine tailings, the requirement for raw water to the Coal Processing Plant (CPP) is reduced. Importantly, this enables the dewatered fine and ultrafine tailings to be combined with coarse tailings for co-disposal in the mine overburden dumps, negating the requirement for a wet tailings storage facility (dam).

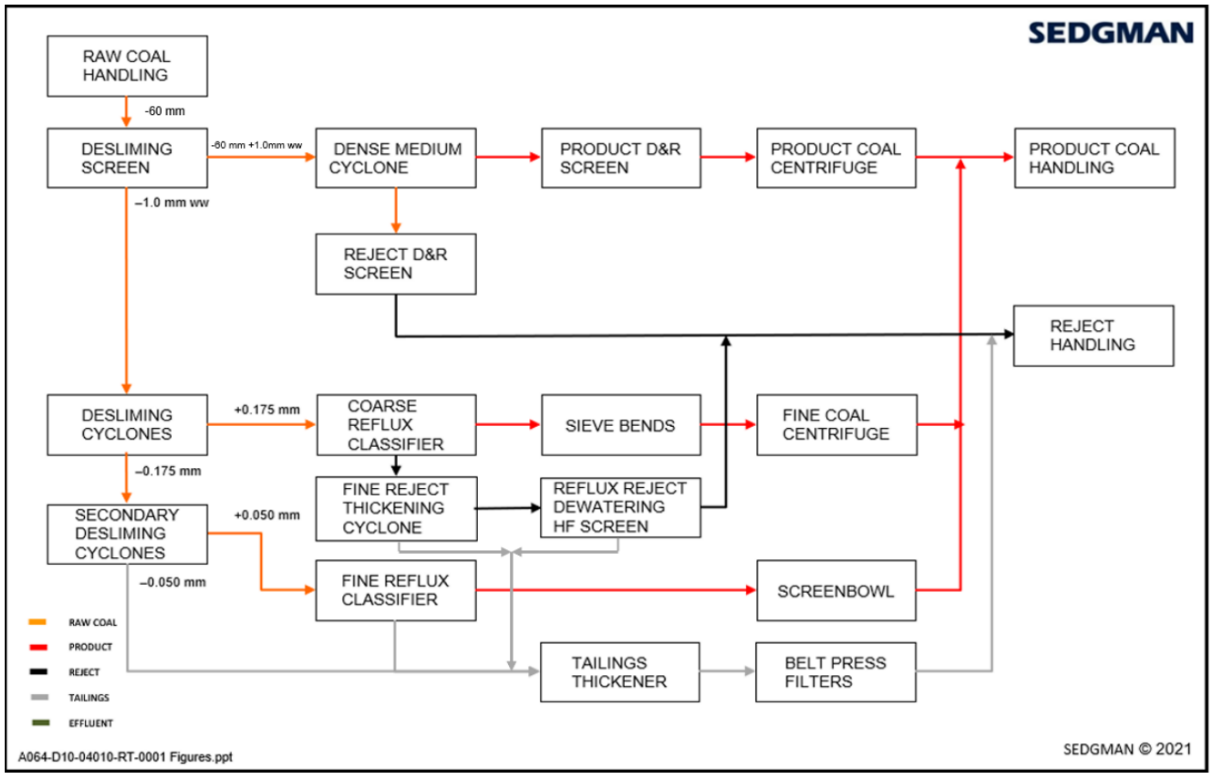

Figure 1. Process Flow Diagram

Materials Handling Overview

The design brief focused strongly upon reducing dependence on mobile equipment and preventing and/or containing potential dust generation as result of coal handling. The result of this is a mechanised and contained process from delivery of ROM coal by mine trucks through to deposition of product coal into road haulage trucks for transportation to Erdenet or reject material into mine trucks for co-disposal in mine overburden dumps. Overview of this is shown in Figure 2, which includes for ROM receival, sizing, processing, stockpiling and reject and product truck loadout.

ROM coal is to be delivered into a drive-over ROM coal receival hopper, designed within a drive-through building. The mine trucks intended for use are of smaller cross-sectional profile in comparison to standard off-highway trucks and eject their payload rather than tip it. Additional to being cost effective in comparison to off-highway trucks of similar capacity, this functionality reduces dust generated when discharging payload and allows for containment.

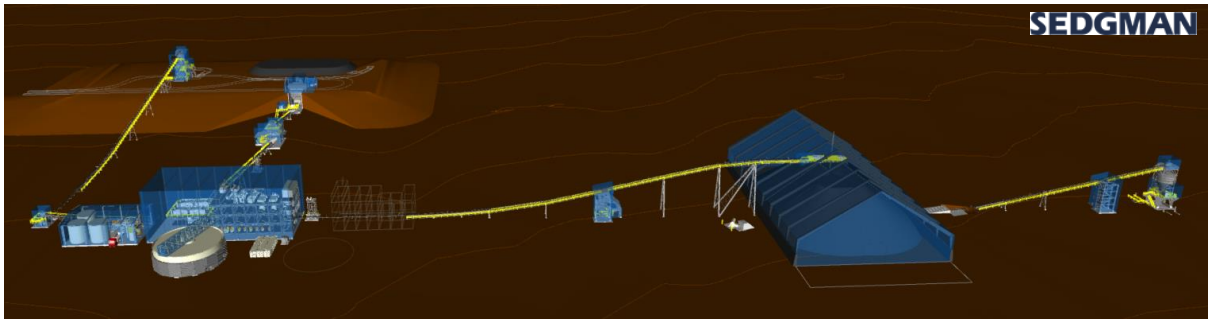

Figure 2. Materials Handling Layout

The CPP has been located to allow future duplication without major changes to either the product coal or reject material conveyor systems. These would only need to be extended slightly, and for motors and gearing to be upgraded in support the higher belt speeds necessary to handle the increased tonnage.

Product coal is conveyed from the CPP into a large Product Coal Storage (**PCS**) building, with maximum stockpile capacity of more than 55,000 tonnes. This building is of a clear span design, approximately 92 m long and 60 m wide, mounted upon a 5 m high concrete retaining wall, as shown in Figure 3. Importantly, this building will enable a significant amount of product inventory to be maintained at site, sheltered from inclement weather, and thus preventing dust emissions from being generated.

Coal will be reclaimed inside the PCS building through vibrating feeders to conveyor inside tunnel beneath the stockpile, which will deliver it to a truck loadout bin for semi-automated loading of road haulage trucks for delivery to Erdenet. If required, road haulage trucks will also be able to be directly loaded by front end loader within the PCS building.

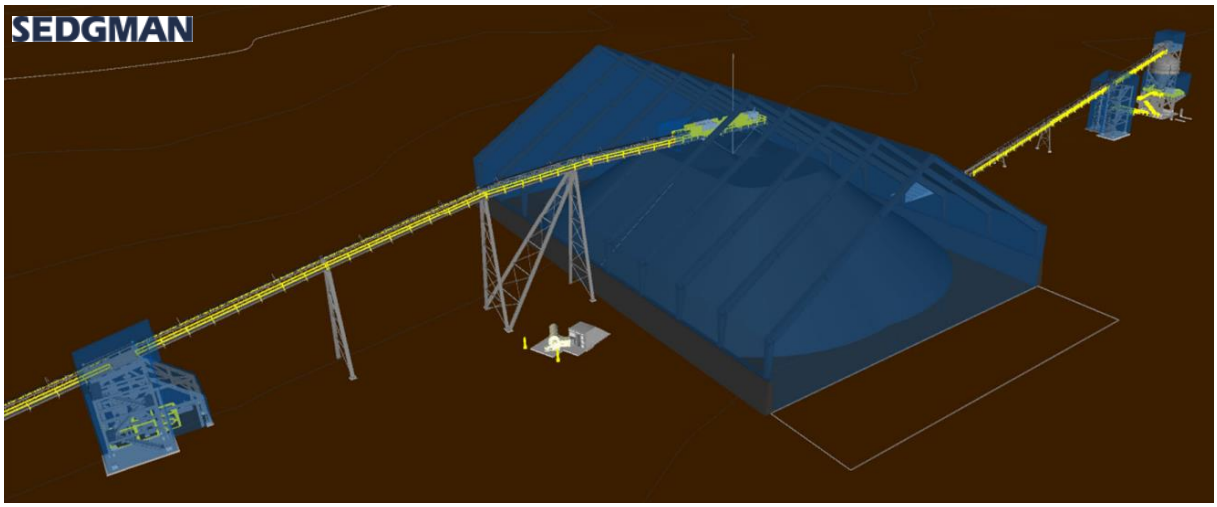

Figure 3. Product Coal Storage Building and Automated Truck Loadout

Estimated Capital Cost and Construction Schedule

Total capital cost for construction of the described CHPP infrastructure herein this announcement is estimated at US$77.0 million, including assumed EPC contract margin but excluding project and owner contingency allowances. This includes a Provisional Sum of US$5.2m for direct supply of the coal storage building by Aspire. Construction timeline of 15 months has been estimated, following allowance of 6 months for detailed engineering. Up to 260 workers are estimated to be required during the peak construction period.

This is materially more than the prior estimated capital cost of US$36.8 million presented in the 2019 Pre-Feasibility Study. However, there are fundamental differences in the scope of the designs estimated and changes in macroeconomic influences between the times when these estimations were prepared.

The previous estimate included in the 2019 Pre-Feasibility Study was prepared in late 2018 to a notional accuracy of ±25 per cent. It was produced compliant with Chinese (GB/T) standards. The latest estimate has been prepared with a materially improved level of detail, underpinned by design drawings and bills of materials to facilitate cost estimation to an accuracy of ±15 per cent. Designs were prepared and estimated cognisant of expected frost penetration depths, wind loads, snow loads and the seismic zoning.

Designs and cost estimate prepared by Sedgman are based upon development of CHPP infrastructure compliant with Australian Standards, National Fire Protection Association code and Factory Mutual Global standards, which all typically meet or exceed requirements of the Construction Code of Mongolia. This will underpin the safety of personnel the infrastructure, provide for increased reliability, and support cost competitive insurance premiums for property damage and business interruption policies.

In contrast to the previously estimated CHPP infrastructure cost, the latest estimate includes more extensive coal handling infrastructure either side of the Coal Preparation Plant not previously considered. This has been incorporated to:

- Significantly reduce and tightly contain potential adverse environmental impacts, primarily related to dust emissions and water requirements; and
- Lower operating costs, with particular focus on underpinning highly efficient road truck loading activities to ensure that truck transportation operating unit costs can be minimised.

Since the previous estimate was made, some important macroeconomic influences have changed significantly which have resulted in price creepage. These include for example, steel prices increasing approximately 20 per cent, the Chinese Renminbi appreciating by approximately 7 per cent against the United States Dollar, and inflation in Mongolia at an average of more than 7 per cent per annum across the period between when the estimates were made.

This latest estimate has also been prepared subject to uncertainty and afflictions impacting upon potential vendors and subcontractors to provide realistic budget pricing as result of the lingering effects of the COVID-19 pandemic. Aside from the current significant delays afflicting importation of goods into Mongolia, while preparing the estimate many local vendors and subcontractors were unable to provide timely, detailed and reasonably accurate input on account of suspended or reduced operations and supply chain uncertainty going forward.

In lieu of this, Aspire management is of the view that some labour and material rates included for within the latest estimate are conservative and that competitive tendering could result in reductions to the total capital cost estimated. As examples:

- The quantity of labour hours estimated required to construct were more than 360 per cent of what would be estimated if construction were to occur in Australia. Reducing this to 200 per cent would reduce the total capital cost estimated by US$6.0 million, and to parity would reduce the total capital cost estimated by US$8.3 million.
- The average cost to supply and install concrete has been estimated at US$661 and US$1,861 per cubic metre respectively. This contrasts sharply with a combined supply and install rate of

US$447 per cubic metre, estimated transparently in detail by an experienced local consultant for similar application within the ERT Infrastructure FEED Study. Whilst there are slight differences in scope, application, and requirements, these do not explain the significant difference in magnitude. With 3,294 cubic metres of concrete included for in the latest CHPP infrastructure cost estimate, this represents a potential total capital cost saving of US$6.8 million, of which there is some overlap regarding the impact of estimated labour hours.

Capital expenditure estimates will need to be verified via a full tender closer to the investment decision timeframe, by which time the substantial volatility impacting global supply chains may have subsided. The capital estimate prepared within the FEED study was based on an EPC delivery model. Depending on financing possibilities the Company may choose to follow a full or partial EPC delivery model.

Estimated Operating Cost

The unit operating cash cost for the CHPP infrastructure is estimated to be US$2.39 per ROM tonne, when at 2.5 Mtpa throughput rate. This includes for operations, maintenance and supervisory labour, maintenance parts and materials, process consumables, general and administrative expenses and sustaining capital provisions. This does not include for the CHPP mobile plant, delivery of raw coal, and collection of product coal and reject material (which are to be completed as part of mining and transportation activities).

Aspire provided input regarding locally sourced labour and consumables and Sedgman provided input regarding parts, materials, and capital provisions. Costs for electricity and heating are not included, pending further investigation and analysis of plausible sources, though the respective average peak and seasonal loads have been determined for this purpose.

The Company is continuing to liaise with the Ministry of Nature, Environment and Tourism in relation to the review and approval of the Company's Detailed Environmental Impact Assessment to underpin completion of the OCCP Definitive Feasibility Study.

This announcement is authorised for release by the Chairman.

- Ends -

Forward Looking Statements

This report contains forward-looking information which is based on the assumptions, estimates, analysis and opinions of management and engaged consultants made in light of experience and perception of trends, current conditions and expected developments, as well as other factors believed to be relevant and reasonable in the circumstances at the date that such statements are made, but which may prove to be incorrect.

Assumptions have been made by the Company regarding, among other things: the price of coking coal, the timely receipt of required governmental approvals, the accuracy of capital and operating cost estimates, the completion of a feasibility studies on its exploration and development activities, the ability of the Company to operate in a safe, efficient and effective manner and the ability of the Company to obtain financing as and when required and on reasonable terms. Readers are cautioned that the foregoing list is not exhaustive of all factors and assumptions which may have been used by the Company.

Although management believes that the assumptions made and the expectations represented by such information are reasonable, there can be no assurance that the forward-looking information will prove to be accurate.

Forward-looking information involves known and unknown risks, uncertainties, and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any anticipated future results, performance or achievements expressed or implied by such forward-looking information. Such factors include, among others, the actual market price of coking coal, the actual results of current and future exploration, changes in project parameters as plans continue to be evaluated, as well as those factors disclosed in the Company's publicly filed documents. Readers should not place undue reliance on forward-looking information.

About Aspire Mining Limited

Aspire Mining Limited is 100% owner of the world-class Ovoot Coking Coal Project, and 90% owner of the Nuurstei Coking Coal Project, both located in Khuvsgul aimag (province) of north western Mongolia.

The Company is focused upon permitting, engineering, and financing the Ovoot Coking Coal Project with the intention to open pit mine coking coal, wash the coal on site and truck the washed coking coal to a Company owned terminal facility in Erdenet for delivery to customers in China and Russia via the existing Mongolian rail network.

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