

Dissemination of a Regulatory Announcement that contains inside information according to REGULATION (EU) No 596/2014 (MAR).

Ferro-Alloy Resources Limited / Index: LSE / Epic: FAR / Sector: Natural Resources

13 December 2019

Ferro-Alloy Resources Limited
(“Ferro-Alloy” or “the Company”)

Operational, Trading and Financing Update

Ferro-Alloy Resources Limited, the vanadium mining and processing company with operations based in Southern Kazakhstan, is pleased to announce an update on operations at its existing vanadium concentrate processing operation (the “Existing Operation”), trading and financing developments.

Overview:

- **Building expansion at the Existing Operation completed and first phase of new equipment being commissioned**
- **Work on connection to high voltage electricity line commenced and equipment ready for installation**
- **Appointment of SRK Consulting (“SRK”) and Coffey International, a Tetra Tech company, for upgrade to Western bankable standards of the Feasibility Study for the development of the large Balasausqandiq Vanadium Project**
- **Sharp fall in vanadium pricing has impacted short term profitability and cash flow, but long-term financial projections still robust at today’s low, and even at significantly lower, vanadium prices**
- **Advanced negotiations in progress for near term funding requirements**
- **Positive decision from the Development Bank of Kazakhstan after initial screening for funding of Phase 1 of Balasausqandiq project**

Nick Bridgen, CEO, commented, “The expansion of the existing operation, the first phase of which will be operational by the end of December, and the advances we have made with our main project, give reasons for an optimistic outlook for 2020. The recent fall of the vanadium price from the frothy levels of last year can be viewed as a positive for the industry as it will allow demand to continue growing, particularly in the nascent flow battery industry, and will lead to the shut-down of high cost opportunist production. Furthermore, it highlights the clear advantage of the Balasausqandiq Project, which is expected to become the world’s lowest cost primary supplier.”

The Existing Operation

The extension of the plant building has been completed and the main equipment for the initial stage of the expansion of the existing processing plant has now been installed and is being commissioned. The Company has succeeded in keeping the plant in production throughout the installation period although the need to move and replace existing equipment meant that not all equipment was working at all times. As a result, there has been no production from the new high-grade concentrate line since July 2019 but this is now about to restart. Notwithstanding these interruptions, production in October was a record 18.2 tonnes (vanadium pentoxide basis) and although November was lower, the

new equipment is expected to be fully operational from the middle of December resulting in a significant increase in monthly production.

The new equipment includes a second roaster oven for the treatment of high-grade concentrates, with the feed from this and the former oven feeding by conveyor into a new larger capacity leaching line. Commissioning of two of the three new press filters was delayed by the manufacturer's delivery of incorrect parts but all are expected to be in operation by the middle of December. The first press filter is essential to allow the restart of production from high grade concentrates and the second will have a positive impact on product quality, potentially allowing the production of higher purity premium products. Greater and more effective filtration capacity will also increase the recovery of vanadium from each tonne treated.

The contract for the construction and equipment for the connection to the adjacent high voltage powerline has been signed and work has begun. The Company has been notified that the main transformers and control equipment are now ready. Normal winter conditions are likely to delay the actual line construction but completion is expected around the end of the first quarter of 2020.

Although the new equipment brings the plant's production capacity to over 50 tonnes of vanadium pentoxide per month, the main infrastructure items are currently unable to support this level of production. In particular, we expect continuing interruptions from the existing unreliable power-supply until the connection to the high-voltage power supply is completed and the Company is negotiating to procure railway sidings which will greatly improve the logistics of inward supply of raw materials and shipment of products. Both of these infrastructure projects are also essential for and form part of the development plan for Phase 1 of the Balasausqandiq project so they represent the first steps towards the realisation of this major project. In spite of the infrastructure shortcomings, a significant uplift in production is expected from the second half of December onwards.

The second major phase of the expansion of the existing processing operation has already begun with the completion of detailed engineering, the award of the contract, and initial payments made to the manufacturers for the construction of an electric arc furnace which will take production capacity up to the targeted 1,500 tonnes per year of V2O5 and beyond.

Vanadium prices

The price of vanadium pentoxide has fallen from around \$16/lb at the start of 2019 to around \$5/lb today. Although the fall was widely forecast, it has fallen further and faster than expected and has impacted the profitability and cash flows of the Company during the year to date, particularly during the period when production has been limited by the implementation of the expansion.

The precipitate fall has been attributed to the initial lack of enforcement by China of their new higher standards for construction steel and by a rapid increase in Chinese vanadium production, stimulated by the exceptionally high prices of 2018 which reached nearly \$30/lb. There has also been some substitution of vanadium by niobium. Chinese enforcement is now thought to be much stronger and much of this increase in production and substitution is likely to reverse as prices stabilise at more normal levels. In the longer term the outlook for vanadium demand growth is very strong from its traditional market to steel-makers, putting upwards pressure on prices and necessitating the building of new supply which, other than by Ferro Alloy, is unlikely to happen until prices rise to considerably higher levels than

today's. The advent of vanadium redox flow batteries remains a tantalising opportunity for the industry, the roll-out of which was delayed by the unusually high vanadium price in 2018.

The Company continues to use a long-term forecast price of \$7.50/lb which is around the historic average and conservatively reflects the cost required to incentivise new production capacity.

That said, the current low prices are not a threat to the Balasausqandiq project which is expected to have the world's lowest cost of production but there has been an impact on the Company's recent cash flows from the existing operation. Raw materials are typically acquired at prices determined as a percentage of the value of the vanadium content at the time of ordering but product sales are priced at the time of delivery to the customer. Owing to long lead times for the delivery of raw materials and the several months it takes for shipments to reach customers, a prolonged period of falling prices means that the prices received are much lower than those used in the raw-material pricing, greatly affecting the Company's operating margin. In the long run, periods of rising and falling prices are likely to even out, but when prices are consistently falling as they have been in 2019, the effect is wholly negative. For these reasons trading so far in 2019 has been disproportionately affected and the Company is not expected to return to profitability until the planned production increases in 2020 have been realised.

The Company's previous forecasts, based on a slower fall in vanadium prices over 2019 and 2020, would have been sufficient to meet the capital expenditure requirements for the completion of the expansion of the existing operation out of operating cash flows but the reduction in vanadium prices, compounded by the timing differences described above, have reduced the cash flows available to the Group in the short term.

Balասausqandiq project

Ferro-Alloy has appointed SRK to work with the Company to carry out the upgrade of the feasibility study to Western bankable standards. The existing study was carried out according to Kazakhstan standards, supplemented by a full Western resource estimate according to JORC 2012 guidelines and the construction and operation of the pilot plant. As previously announced, the Company carried out a "gap analysis" to determine areas where the standards differ and has identified several areas where supplementary work is required including some limited drilling for geotechnical (pit wall stability) and hydrogeological purposes (water supply). In both of these instances former Soviet work has already provided satisfactory conclusions but a lack of retained records and auditability means that the work has to be repeated. In addition, Coffey International (Tetra Tech group) have been appointed to carry out some further testing of the autoclave leach process to confirm and potentially improve the pilot plant operation. It is expected that this upgrade of the study will be completed around the end of the third quarter of 2020.

Financing

The Company is currently debt free and has no significant options or warrants outstanding. As part of its near-term funding requirements for the expansion of existing operations and working capital needs, the Company is in advanced discussions regarding a loan of up to \$1.3m and the Board is considering other sources of capital including the issue of equity.

The Company expects to raise a significant part of the finance required for the implementation of Phase 1 of the Balասausqandiq project from project finance, supplemented by royalty sales or streaming (a means of raising initial finance in return for discounted future sales). Royalty sales and streaming can involve initial payments prior to full

project initiation which would, combined with other project finance, reduce or eliminate the need for further equity issues, thus minimising or eliminating shareholder dilution. As part of this Phase 1 project funding, the Company has held discussions with a number of organisations including banks, sovereign wealth funds, export credit guarantee departments and other specialist providers. In particular, application has been made to the Development Bank of Kazakhstan who have taken a positive decision after initial screening to advance to the next stage of analysis of the project.

For further information, visit www.ferro-alloy.com or contact:

Ferro-Alloy Resources Limited	Nick Bridgen (CEO)	info@ferro-alloy.com
Shore Capital Stockbrokers Limited Corporate (Broker)	Jerry Keen / Toby Gibbs	+44 207 408 4050
St Brides Partners Limited (Financial PR & IR Adviser)	Priit Piip	+44 207 236 1177

Further information about Ferro-Alloy Resources Limited

The Company's operations are all located at the Balasausqandiq deposit in Kyzylordinskaya Oblast in the South of Kazakhstan. Currently the Company has two main business activities:

- (a) the Balasausqandiq Vanadium Project (the "Project"); and
- (b) a vanadium concentrate processing operation (the "Existing Operation")

Balasausqandiq is a very large deposit, situated in Kyzylordinskaya Oblast in Southern Kazakhstan. The ore contains vanadium as the principal product, together with by-products of carbon, molybdenum, uranium, rare earth metals, potassium, and aluminium.

A reserve on the JORC 2012 basis has been estimated only the first ore-body number which amounts to 23 million tonnes, not including the small amounts of near-surface oxidised material which is in the Inferred resource category. On the locally required basis, the reserves have been estimated to be over 70m tonnes in ore-bodies 1 to 5 but this does not include the full depth of ore-bodies 2-5.

Development of the Project is planned in two phases. Phase 1 will produce 5,600 tonnes per year of vanadium pentoxide, and Phase 2 will bring the total to 22,400 tonnes per year plus approximately one third of revenue from by products. Owing to the particular characteristics of the ore which enables a much lower cost process to be used, the Company expects to be the world's lowest cost producer.

The vanadium concentrate processing operation is situated at the site of the Balasausqandiq deposit. The production facilities were originally created from a 15,000 tonnes per year pilot plant which was then adapted to treat low-grade

concentrates and is now in the process of being expanded and further adapted to treat a wider variety of vanadium-containing raw-materials. The Company has already completed the first steps of a development plan which is expected to result in annualised production capacity increasing gradually to around 1,500 tonnes of contained vanadium pentoxide. The development plan includes upgrades to infrastructure, an extension to the existing factory and the installation of equipment to increase the throughput and to add the facilities to convert AMV into vanadium pentoxide.

The strategy of the Company is to develop both the Existing Operation and the Project in parallel. Although they are located on the same site and use some of the same infrastructure, they are separate operations.