

2 September 2020

Ferro-Alloy Resources Limited
("Ferro-Alloy" or "the Company")

Electrolyte for Vanadium Flow Batteries

Bond Issue on AIX

Ferro-Alloy Resources Limited (LSE:FAR), the vanadium mining and processing company with operations based in Southern Kazakhstan, announces that the Company has developed technology for the production of electrolyte for vanadium flow batteries ("VFBs").

Ferro-Alloy has developed the technology and applied for a patent for the production of vanadium electrolyte directly from ammonium metavanadate ("AMV"). Vanadium electrolyte is used in the operation of VFBs.

The ability to make electrolyte directly from AMV cuts out the cost of conversion of AMV to vanadium pentoxide from which electrolyte is usually made, giving the Company not only the required know-how to enter this market, but also a cost advantage over traditional processes.

Vanadium is considered to be a battery metal as a result of its use in VFBs which are used for the storage of energy from intermittent green sources such as solar or wind.

VFBs have several advantages over the more familiar lithium-ion battery technologies, including:

- they can be fully charged and discharged repeatedly without damage
- the electrolyte does not degrade over time
- energy storage capacity can be scaled independently of power by adding larger electrolyte tanks
- they are not susceptible to thermal runaway
- the electrolyte can be easily reused or recycled at the end of the battery life; and
- suitable for long discharge periods

The market for VFBs is expected to grow rapidly as the world moves towards increased use of renewables with forecasts of almost 60% annual growth to 2025¹. This largely new demand for vanadium, combined with strong growth expected from vanadium's traditional markets, is expected to lead to exceptionally strong growth in vanadium consumption. Ferro-Alloy aims to become a regional supplier of electrolyte and is currently in early discussions with battery producers.

1 Source: Adroit Market Research 2019

The Company has issued five bonds with a nominal value of US\$2,052.78 on the Astana Stock Exchange in Kazakhstan totaling US\$10,263.90. The bonds are unsecured, have a term of three years and carry an interest rate of 5.8% per annum, payable twice yearly. The bonds have a term of three years from the date of the subscription and the investor has the right to ask for early repayment after a minimum period of 12 months.

Nick Bridgen, CEO, commented: *“Developing this electrolyte technology demonstrates the capability of our technical team and will allow us to take part in the growing clean energy revolution. We are already perhaps the only significant new producer that can provide the huge quantities of vanadium that will be needed without driving the price up to levels which are uneconomic for the VFB industry.”*

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

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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 high grade Balasausqandiq Vanadium Project (the "Project"); and
- b) an existing vanadium concentrate processing operation (the "Existing Operation")

Balasausqandiq is a very large deposit, with vanadium as the principal product, together with by-products of carbon, molybdenum, uranium, rare earth metals, potassium, and aluminium. Owing to the nature of the ore, the capital and operating costs of development are very much lower than for other vanadium projects.

A reserve on the JORC 2012 basis has been estimated only for the first ore-body (of five) which amounts to 23 million tonnes, not including the small amounts of near-surface oxidised material

which is in the Inferred resource category. In the system of reserve estimation used in Kazakhstan the reserves are 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.

The existing 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 raw materials.

The Company has already completed the first steps of a development plan for the existing operation 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 and then to ferro-vanadium.

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