



# RIMC

Resource Mining Corporation Limited



## JUNE 2019 QUARTERLY REPORT

For the period ended  
30 June 2019

### Resource Mining Corporation Limited ("RMC" or "Company")

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ASX Code: RMI

Contact:

Warwick Davies – *Managing Director*

Project:

Papua New Guinea  
Wowo Gap: Nickel-Cobalt

Resource Mining Corporation Limited ("RMC") is a Perth-based specialist mineral exploration company aiming to create wealth from mineral commodities using innovative technical, marketing and financial skills as it explores for economic metal deposits in Papua New Guinea ("PNG").

# QUARTERLY REPORT

## SUMMARY

### Corporate Update

The Company continued to focus activities on cost control and the main asset of the Wowo Gap Nickel/Cobalt Project (“The Project”). The key objective continues to be the preservation and maintenance of its interest in the wholly owned Wowo Gap Nickel/Cobalt Project.

### Financial

Funding for the Company’s ongoing operations continues to be provided from RMC’s largest shareholder, Sinom (Hong Kong) Limited. Funds are being provided interest free and are not repayable before 31 March 2020.

### Operational Activities

General care and maintenance activities continued on site with review of equipment, track and area maintenance and training activities all conducted. Water supply issues required attention following heavy rainfall experienced on site during the reporting period.

Discussions with various local community groups regarding potential enhancement to food sourcing to support community development programs were successfully conducted.

As previously reported, considerable off-site activity was spent on understanding the battery minerals business and the roles nickel and cobalt play in the various lithium ion battery types. In addition, activity has been spent in seeking to understand the relationships of current and long-term nickel and cobalt pricing in the growing lithium ion and alternate battery business.

### Industry Background – Nickel Outlook

While primary nickel consumption remains in stainless steel production, increasing amounts of nickel are being used to produce more effective powered lithium ion batteries. As advised last quarter, Investment bank UBS estimated growth in the market for Electric Vehicles (EV’s) would create an additional 10 to 40% for nickel over the next 7 years.

Recent reports suggest that the uptake of electric vehicles is slowing in Europe with a lack of charging infrastructure, higher prices for electric vehicles and limited range of models being reasons for the stated uptake. However, information from Europe suggests that the number of electric car models available to consumers in Europe is expected to triple by 2021.

Latest data shows carmakers will offer 214 electric car models in 2021, up from 60 models at the end of 2018. It is anticipated that more affordable options could see consumers switch from petrol and diesel cars sooner than anticipated. In 2021, carmakers are forecast to bring over 90 fully electric models and approximately 120 plug-in hybrid models to market. If vehicle manufacturers stick to these plans, 22% of vehicles produced could have a plug by 2025. One of the key driving forces regarding the introduction of EV’s is the EU’s car CO2 emissions target of 95g/km by 2025.

The biggest electric car production plants will be in Germany, France, Spain and Italy, the data shows. Some 16 large-scale lithium-ion battery cell plants are confirmed or due to begin operations in Europe by 2023. The world's number one carmaker, Volkswagen, is spending more than \$50 billion on batteries to start mass producing EVs by mid-2023, and the company announced earlier this month that from 2021 it would use the NCM811 composition.

## **Nickel Use in EV Batteries**

First generation NCM111 batteries used in EV's had a chemical composition of 1 part nickel, 1 part cobalt and 1 part manganese, but NCM batteries with higher nickel content are quickly becoming the standard in China, which is responsible for half the world's electric car sales, and a much greater proportion of EV battery manufacture.

With worries about the security of supply of cobalt persisting, the industry is now fast moving towards even higher nickel content with the market share of NCM811 increasing to 2% worldwide and 4% in China in May, a doubling of market share in just one month.

A Toronto-based research company, (Adamas Intelligence), tracks EV registrations and battery chemistries in more than 80 countries and says the nickel metal equivalent used in lithium-ion batteries (primarily in the form of nickel sulphate) increased by 69% whereas the amount used in nickel metal hydride (NiMH) batteries (primarily in the form of nickel hydroxide) increased by 26%. It is apparent that nickel in the form of nickel sulphate is increasing in importance. In May automakers released new EV models using NCM811 batteries from battery maker CATL.

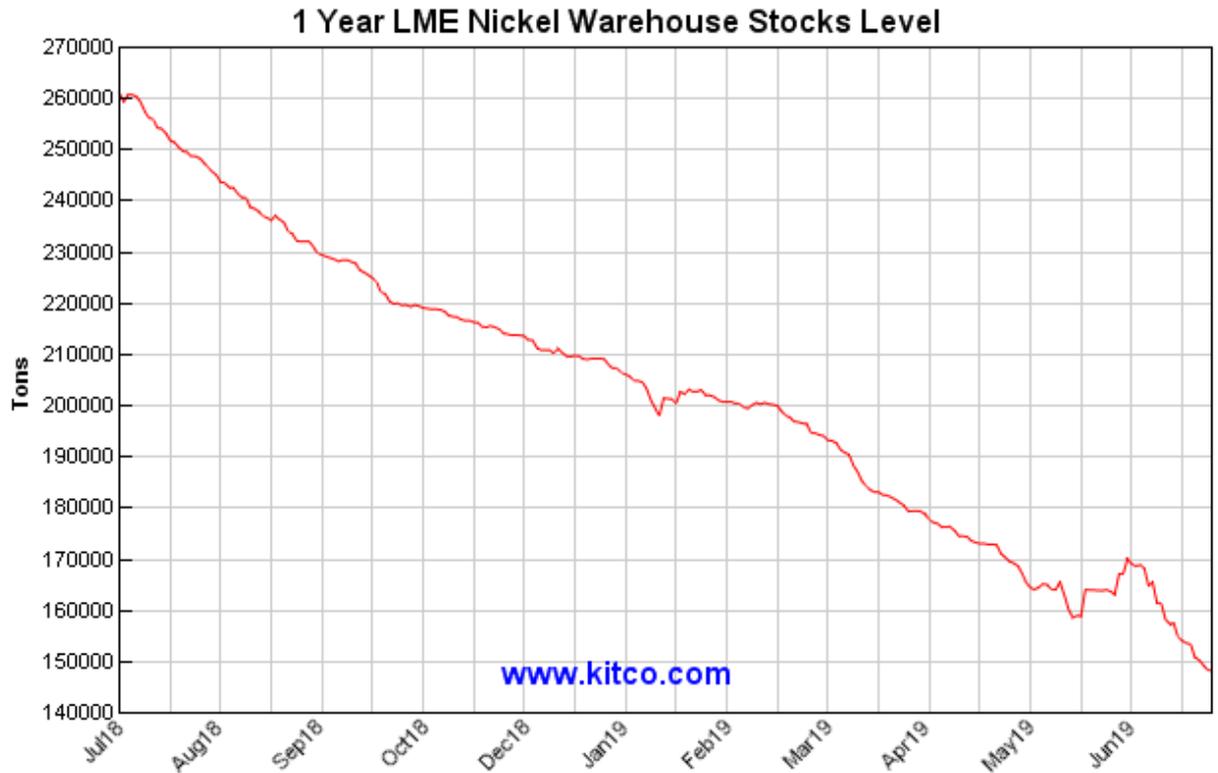
In March, the Chinese Government released details of its long-awaited subsidy policy for NEVs (new energy vehicles, a term which includes both fully-electric and hybrid vehicles). According to the government, the new policy aims to raise the standards of subsidy-eligible vehicles and encourage the production of vehicles with a longer driving range.

To be eligible, NEVs must now have a driving range of at least 250km, compared with 150km in 2018. National subsidies have declined by more than 50%, whereas local subsidies will be eliminated completely after a three-month transition period which ends on 25 June 2019.

Nickel's inroads into the EV battery market is driven mainly due to shifting chemistries of nickel-cobalt-manganese (NCM) battery cathodes. As stainless steel production world wide continues to grow the net result is a continued decrease in LME nickel stocks. Nickel stocks continue to decline rapidly where LME stock levels at end of March quarter at 196,542t less than 150,000t at the end of June 2019 a decrease of 23.7% in 3 months.

Over the past 10 years, the Chinese NEV industry has been heavily subsidised by the county's government, which has provided manufacturing incentives to NEV producers and subsidies to consumers. The new policies have switched the focus from simply encouraging higher energy densities to encouraging improved cycle life, safety, and performance. They could also move the industry away from one driven by policy to one which sees market-driven improvements. Subsidy reductions will be followed and by the complete abolition of subsidies by 2020 which will create further pressure within the NEV industry and, it is hoped, will boost competitiveness and encourage technological development. In the long-term, this is likely to result in the elimination of producers with inferior products.

Table 1 demonstrates the continued destocking of LME warehouse nickel stocks as the supply deficit widens.



*Table 1: 1 Year LME Nickel Stock Levels*

The price of nickel is up more than 35% since the beginning of January 2019 as stocks held in warehouses around the world registered with the London Metal Exchange fall to multi-year lows.



*Table 2: 1 Year Nickel Spot Price*

The production of nickel sulphate is technically simpler from nickel sulphide sources as opposed to nickel laterite ore bodies. Technical challenges remain regarding the extraction of nickel chemicals from the relatively abundant nickel laterite ore bodies. However, as demand for nickel increases and sulphide orebodies deplete, development of alternative processing technologies will by necessity be undertaken.

Alex Laugharne, Principal Consultant, CRU Group made the point in May that unless technological development of nickel laterites is successful then price of nickel sulphide concentrates and nickel metal prices could “go through the roof” demand being driven by EV battery requirements.

During June nickel prices climbed to a six-month peak with subsequent price increases into July. Reasons for the price increase are viewed by industry commentators as varied including the continued decline in the LM stock levels, strong demand from the traditional stainless steel sector as well as the possible effects arising from an indicated ban on non processed nickel ore by Indonesia beginning in 2022.



W J Davies  
Managing Director  
Dated: 29<sup>th</sup> July 2019

#### **SCHEDULE OF TENEMENTS AS AT 30 JUNE 2019**

<b>Tenement</b>	<b>Tenement No.</b>	<b>RMC Interest</b>
Wowo Gap	EL1165	100%