Fortune examines higher production rate in NICO feasibility

09.11.2017 | CNW

Accelerating cobalt demand in lithium-ion batteries for electric vehicles is driving decision to examine the feasibility of expanding production by 20 to 30% to produce more cobalt units

Issued Capital: 302,085,257

LONDON, ON, Nov. 9, 2017 /CNW/ - Fortune Minerals Ltd. (TSX: FT) (OTCQX: FTMDF) ("Fortune" or the "Company") (www.fortuneminerals.com) is pleased to announce a change in scope for the updated Feasibility Study in progress for its 100% owned NICO Cobalt-Gold-Bismuth-Copper Project in Canada ("NICO Project"). Responding to positive feedback from potential strategic partners, Fortune is examining the feasibility of a 20 to 30% increase in the planned NICO production rate over the 4,650 metric tonnes ("t") of ore per day used in the previous 2014 Feasibility Study and produce between 1,700 and 2,000 t of cobalt units per year in a battery grade cobalt sulphate heptahydrate.

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Robin Goad, President and CEO of Fortune commented, "Transformative electrification of the automotive industry is accelerating as cost parity with internal combustion engines is being reached and as more governments announce future bans on gasoline and diesel-powered vehicles. Forecasts of electric vehicle adoption are increasing with estimates of up to 25% penetration of global vehicle sales by the mid 2020's. Fortune is increasing its planned cobalt production to in response to the growing cobalt supply chain bottleneck".

The NICO Project consists of a planned mine, mill and concentrator in the Northwest Territories and refinery near Saskatoon where concentrates will be processed to cobalt sulphate, gold, bismuth, and copper. NICO has already been assessed in a positive Feasibility Study in 2014, which is being updated by Hatch Ltd. ("Hatch"), P&E Mining Consultants Inc. ("P&E") and Micon International Limited ("Micon") using updated costs, commodity price and exchange rate estimates, and recent project improvements, including the examination of the proposed expanded production rate. NICO has received environmental assessment ("EA") approval and the major mine permits for the facilities in the Northwest Territories and EA approval for the refinery in Saskatchewan. NICO is attracting attention from potential partners that need reliable supplies of ethically procured cobalt with preference for a Canadian primary producer with supply chain transparency and custody control of metal from a vertically integrated project. Fortune has engaged PricewaterhouseCoopers Corporate Finance Inc. ("PwC") to arrange the project financing for the construction and operation of the project through a combination of strategic partnerships, debt and equity.

Highlights of Items Being Examined in the Updated Feasibility Study:

- Accelerating demand for lithium-ion batteries in electric vehicles and stationary storage;
- Examining a response to market demand with a 20 to 30% increase in the planned production rate and annual cobalt production of between 1,700 and 2,000 t per annum;
- Mineral Reserves being updated using higher cobalt prices and greater economies of scale from a higher production rate;
- Mine plan and schedule optimization to increase cobalt and gold production in early years of the mine life;
- Grade control and stockpiling strategy to better align bismuth output with market conditions as they evolve within a growing green economy;
- Additional metallurgical testwork completed to improve process for manganese removal from cobalt sulphate and indicating a potential cobalt recovery improvement;
- Improved copper cementation process;
- Design engineering and cost estimation proceeding for expanded production rate;

- Project Execution Plan being refined to construct the Northwest Territories facilities using existing winter roads and align mine operations with the timeline for availability of the government road to Whati;

Cobalt Market
Cobalt is an essential commodity used in the manufacturing of cathodes in lithium-ion batteries to store energy in portable electronic devices, electric vehicles ("EV's") and stationary cells for the electrical grid. Battery demand has driven cumulative annual growth in the market of approximately 6% over the last 20 years and production of refined cobalt is now approximately 110,000 t per year. Adoption rate forecasts for EV's are accelerating and between 12 and 25% of all vehicles sold by 2025 are projected to be electric according to analysts, major automotive manufacturers and parts suppliers. Exane BNP Paribas has indicated that it anticipates cobalt demand to triple during this period to 300,000 t as the world moves to a less carbon intensive green economy. Current worldwide government policy shifts aimed at reducing greenhouse gas emissions are being imposed to mitigate the impacts of climate change with intensifying policies to increase EV's and renewable energy from wind and solar generation and off-peak charging of the electrical grid. Cobalt is also used in superalloys for aerospace applications, high strength alloys for cutting tools and cemented carbides, permanent magnets, surgical implants, pigments, catalysts, and additives in food and agricultural products.

As the demand for cobalt grows there are also concerns about limitations on current supply due to geographic concentration of mine and refinery production in countries with political instability and/or policy risks. Ethical sourcing of raw materials has also become an issue that can damage the brands of major automotive, electronics and technology companies from suppliers with poor labour and environmental practices. With 98% of non-artisanal cobalt supply currently produced as a by-product of copper and nickel mining there are concerns about producers being able to respond to demand growth when production criteria are focused on the primary metals. The cobalt market has transitioned into deficit and shortages of supply are expected to persist for the foreseeable future with few new deposits in the development stream. The current price of cobalt metal is approximately US$30 per pound, well above the US$16 per pound used in Fortune's 2014 Feasibility Study and more in line with the US$25 per pound, 20-year inflation adjusted average price reported by Commodities Research Unit ("CRU"). New cobalt deposits are required as the market enters its most significant demand pull in history.

The existing NICO Mineral Reserves also contain 1.1 million ounces of gold and approximately 12% of global bismuth reserves. Bismuth is an Eco-metal used in the automotive and pharmaceutical industries and as a non-toxic environmentally safe replacement for lead in solder, steel, brass and aluminum alloys needed in a growing green economy.

Mineral Reserves
The Proven and Probable Mineral Reserves for the NICO deposit were determined for the Company's 2014 Feasibility Study and are 33.1 million t containing 82.3 million pounds of cobalt (37k t), 1.11 million ounces of gold, 102.1 million pounds of bismuth (46k t) and 27.2 million pounds of copper (12k t) (see Fortune's news release dated April 2, 2014 for details). The Mineral Reserves were sufficient to support a 21-year mine life at the 4,650 t of ore processed per day in the 2014 Feasibility Study. Several million tonnes of marginally sub-economic mineralized material were also identified in 2014 that would be stockpiled for processing during periods of higher metal prices. Mineralized material was also identified beneath the open pit design, but was insufficient to warrant a push back of the pit high wall and deepening of the pit or the additional development work required to mine it from underground at that time. At today's higher cobalt prices and greater economies of scale through an increased production rate, Fortune expects to be able to apply a mine cut-off net smelter return ("NSR") value that may make some of this higher grade mineralized material economic to process. Accordingly, the Mineral Reserves are being updated by P&E for the updated Feasibility Study.

Mine Plan and Schedule
The Mine Plan and Schedule for the updated Feasibility Study will examine the feasibility of a 20 to 30% increase in production rate and economies of scale from a larger mining and processing rate. The Mine Schedule is also being optimized to target cobalt-rich parts of the deposit in earlier years of the mine life to increase revenues, accelerate payback, and maximize cobalt production to address market demand and the needs of potential strategic partners. The pit design is not expected to change significantly because any additional mill feed will likely be generated from lower grade mineralized material within the pit shell that may become economic in the updated Mineral Reserve statement.

A grade control and stockpiling strategy will also be pursued to schedule ores through the process plant that

are better aligned with metal market conditions. Specifically, lower grade ores will be stockpiled to defer processing until later in the mine life and align processing of bismuth-rich ores with market demand as it evolves in a growing green economy focused on environmentally safe metals and its unique physical properties.

Metallurgical Testwork
The processing of NICO ores has already been verified by pilot plant tests validating the flowsheet, metal recoveries and producing a high quality cobalt sulphate heptahydrate meeting the specifications of lithium ion battery manufacturers. Two metallurgical testwork programs were recently conducted at SGS Lakefield Research Limited to address gaps identified in the previous 2014 Feasibility Study. This testing indicates that the sequencing for manganese removal prior to cobalt sulphate heptahydrate crystallization can be changed without impacting cobalt recovery, and there is potential for a cobalt recovery improvement, subject to confirmation from METSIM modelling now in progress by Hatch. The results are also providing the information needed for equipment sizing, detailed engineering, and costing. An improved copper cementation flowsheet was also tested and confirmed for the updated Feasibility Study.

All-Season Road
Earlier this year, the Canadian, Northwest Territories and Tlicho governments announced conditional approval of federal funding for 25% of the construction costs for an all-weather road to the community of Whati through the P3 Canada Fund (See Fortune's January 12, 2017 News Release). In September, the Government of the Northwest Territories announced that it had completed the Request for Qualification phase for Private-Public-Partnership ("P3") funding for the remaining 75% cost of the road. Three consortiums of Canadian and International firms were short-listed to participate in the Request for Proposal stage commencing in December and submit bids to design, build, finance, operate and maintain this road and be repaid over time with interest by the Northwest Territories Government (see Fortune's September 19, 2017 News Release). Fortune has already received EA approval to build a 50km spur road from Whati to the mine site and the cost for the construction of this spur was included in the 2014 Feasibility Study. Fortune is now planning to construct the NICO mine, mill and concentrator from the existing winter ice road in order to align mine operations with the timeline for availability of the government road and mitigate schedule uncertainty.

Feasibility Study Update
The scope of the updated Feasibility Study was initially based on a simple re-statement of economics of the 2014 Feasibility Study based on current costs and updated commodity price and exchange rate estimates. No significant new engineering was required for this scope because the requisite engineering had already been largely completed in the Company's 2012 Front-End Engineering and Design ("FEED") and 2014 Feasibility studies. With the new plan to examine increasing production by 20 to 30% over the previously contemplated 4,650 t of ore processed per day, additional engineering will now be required to support the economic analysis and produce engineered designs to support project financing efforts and strategic partner due-diligence. Although it is expected that the higher production rate will increase capital costs for the development of the NICO Project, sensitivities prepared for the Company to assess the impact of such costs against the economies of scale of a larger project and an optimized mine plan schedule, indicate that this change may be warranted. The higher cobalt production target is also responding to the feedback received from a number of potential strategic partners interested in participating in the development. While these scope changes will delay completion of the updated Feasibility Study, they are not anticipated to impact the construction timeline for the project, which will be primarily subject to receipt of Project Financing.

About NICO
NICO is a planned Canadian, vertically integrated, primary producer of cobalt with supply chain transparency and uninterrupted custody of metal from ore through to the production of battery chemicals, gold, bismuth and copper. The existing 2014 feasibility study proposes that the NICO deposit will be mined primarily by conventional truck and shovel open pit methods. In the 2014 Feasibility Study, approximately one eighth of the process feed during the first two years of operations was planned to be mined using underground blast hole open stoping to process higher margin ores from deeper in the deposit in early years of the mine life. Most of the pre-production development for the underground portion of the mine has already been established from previous test mining operations.

Processing of ores in the proposed NICO mill and concentrator will be by simple flotation to produce a bulk concentrate containing the recoverable metals. The concentrate will be filtered, bagged and trucked to the rail head at Hay River for delivery by train to the Company's planned refinery straddling the Canadian National Railway near Saskatoon. The refinery will recover metals from the concentrate using a combination of secondary flotation, followed by pressure and atmospheric acid leaching, electro-winning and precipitation

of value-add metals and chemicals. Should the proposed 20 to 30% increase in production rate prove feasible, cobalt production would target 1,700 to 2,000 t of units per year in a cobalt sulphate heptahydrate.

The disclosure of scientific and technical information contained in this news release has been approved by Robin Goad, M.Sc., P.Geo., President and Chief Executive Officer of Fortune, who is a "Qualified Person" under National Instrument 43-101. The Technical Report on the Feasibility Study referred to above, entitled "Technical Report on the Feasibility Study for the NICO-Gold-Cobalt-Bismuth-Copper Project, Northwest Territories, Canada", dated April 2, 2014 and prepared by Micon, from which certain information in this press release has been extracted, has been filed on SEDAR and is available under the Company's profile at www.sedar.com.

About Hatch
Hatch has over six decades of business and technical experience in the mining, energy, and infrastructure sectors. The firm has 9,000 staff with experience in over 150 countries and is well known for the design and construction of mineral beneficiation process plants and supporting infrastructure, including projects in remote and cold climate regions and Arctic regions of Canada.

About P&E
P&E provides geological and mine engineering consulting, Mineral Resource Estimate Technical Reports, Preliminary Economic Assessments and Pre-Feasibility Studies and is affiliated with major Toronto based consulting firms for the purposes of joint venturing on Feasibility Studies. P&E's team has experience in geological interpretation, 3D geologic modeling, Technical Report writing, Mineral Resource and Mineral Reserve Estimates, property evaluations, mine design, production scheduling, operating and capital cost estimates and metallurgical engineering.

About Micon
Micon is a mining consultancy providing independent professional advice to mining companies and their providers of capital, law firms and government agencies worldwide. Micon is staffed by senior mineral industry consultants with extensive international experience in the fields of geology, mining engineering, metallurgy, processing, environmental management, market analysis and mineral economics.

About Fortune Minerals
Fortune is a Canadian mining company focused on developing the vertically integrated NICO cobalt-gold-bismuth-copper project in the Northwest Territories and a related refinery the Company plans to construct in Saskatchewan. Fortune also owns the Sue-Dianne copper-silver-gold deposit located 25 km north of NICO and a potential future source of incremental mill feed to potentially extend the life of the NICO mill.

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This press release contains forward-looking information and forward-looking statements within the meaning of applicable securities legislation. This forward-looking information includes statements with respect to, among other things, the Company's plans to develop the NICO Project (including the Company's plans to secure project financing to start construction), the updated feasibility study for the NICO Project, the estimated capital costs for the construction of the NICO Project, estimated future production, anticipated growth in the demand for cobalt, anticipated constraints on the supply of cobalt and plans for the construction of an all-season road needed for operations at the NICO Project. Forward-looking information is based on the opinions and estimates of management as well as certain assumptions at the date the information is given (including, in respect of the forward-looking information contained in this press release, assumptions regarding the Company's ability to arrange the necessary financing to continue operations and develop the NICO Project, assumptions regarding the results of the updated Feasibility Study, growth in the demand for cobalt, restrictions on the supply of cobalt and the proposed construction of the all-season road, the economic environment in which the Company will operate in the future, including the price of gold, cobalt and other by-product metals, anticipated costs and the volumes of metals to be produced at the NICO Project). However, such forward-looking information is subject to a variety of risks and uncertainties and

other factors that could cause actual events or results to differ materially from those projected in the forward-looking information. These factors include the risks that the Company may not be able to finance and develop NICO on favourable terms or at all, the updated Feasibility Study may take longer than anticipated, the results of the updated feasibility study may not be as anticipated, the all-season road may not be built within the anticipated time frame, the market for rechargeable batteries and the use of stationary storage cells may not grow to the extent anticipated, the future supply of cobalt may not be as limited as anticipated, the Company's production of cobalt and other metals may be less than anticipated and other operational and development risks, market risks and regulatory risks. Readers are cautioned to not place undue reliance on forward-looking information because it is possible that predictions, forecasts, projections and other forms of forward-looking information will not be achieved by the Company. The forward-looking information contained herein is made as of the date hereof and the Company assumes no responsibility to update or revise it to reflect new events or circumstances, except as required by law.

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