



# COMPANY BUSINESS PLAN

**UPDATED: August 28, 2019**

**Address:**

#2 – 17942 55th Ave., Surrey, BC  
V3S 6C8 Canada

**Website:** [www.AmericanManganeseInc.com](http://www.AmericanManganeseInc.com)

**Call:** 778.574.4444

**Ticker:**

TSX-V : AMY


OTC US : AMYZF

FSE : 2AM

Follow us on social:

 @AmerManganese

 /AmerManganese

 American Manganese Inc.

***A Critical Metals Company Focused on  
Recycling Electric Vehicle Lithium-ion Batteries***

## DISCLAIMER

---

This business plan contains “forward-looking information” which may include, but is not limited to, statements with respect to the future financial or operating performance of American Manganese Inc. (the “Company”), its subsidiaries and its projects; the timing, costs and anticipated results of tests carried out on the Company’s proprietary process; assumptions, estimates or projections of future potential income; assumptions, estimates or projections of the state of markets and industries relevant to the Company’s products and services; and assumptions, estimates or projections of government regulation of the Company’s industry and markets. Often, but not always, forward-looking statements can be identified by the use of words such as “plans”, “expects”, “is expected”, “budget”, “scheduled”, “estimates”, “forecasts”, “intends”, “anticipates”, or “believes” or variations (including negative variations) of such words and phrases, or state that certain actions, events or results “may”, “could”, “would”, “might” or “will” be taken, occur or be achieved. Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of American Manganese Inc., and/or its subsidiaries to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Such factors include, among others, general business, economic, competitive, political and social uncertainties; the actual results of testing activities; actual results of production activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; failure of plant, equipment or processes to operate as anticipated; accident, labor disputes and other risks; and delays in obtaining governmental approvals or financing or in the completion of development or construction activities. Although American Manganese Inc. has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that could cause actions, events or results to differ from those anticipated, estimated or intended. Forward-looking statements contained herein are made as of the date of this presentation and American Manganese Inc. disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. American Manganese Inc. undertakes no obligation to update forward-looking statements if circumstances or management’s estimates or opinions should change. Accordingly, the reader is cautioned not to place undue reliance on forward-looking statements.

## EXECUTIVE SUMMARY

---

American Manganese Inc. is a critical metals and technology driven company creating a sustainable circular economy solution in the lithium-ion battery supply chain for critical materials such as cobalt, lithium, nickel, and manganese. This is made possible with the Company's environmentally benign and patented RecycLiCo™ process that recycles near 100% of lithium-ion battery cathode materials, at battery-grade purity, from electric vehicles and portable electronics, without the carbon-emitting, high-heat smelters used today.

There is an expected 2 million tons of spent lithium-ion batteries available for recycling per year by 2030, but with the inefficient recycling methods used today, the value from the materials in these batteries will be lost in a black slag, pollute the environment, and will not be cycled back into the manufacturing of new lithium-ion batteries. In contrast, Using the RecycLiCo™ patented process, American Manganese estimates annual revenues of US\$238 million - from the recovery of lithium, cobalt, nickel, and manganese - with a commercial recycling operation processing 50 tonnes of lithium-ion battery cathode material each day.

American Manganese Inc. began bench-scale research on the now patented lithium-ion battery recycling process in 2016 and has scaled up research to a five-stage pilot plant project. The project is designed to replicate real world closed-circuit conditions in a continuous operation to simulate and de-risk production of a planned 3-5 tonne per day (TPD) commercial demonstration plant in North America. The engineering and cost estimation for the 3-5 TPD commercial demonstration is planned to start Q4 2019 and be operational by late 2020. American Manganese expects an initial capital investment of US\$10 million for a 3-5 TPD commercial demonstration plant, which would have a projected payback period of less than 1.5 year.

Once constructed, the commercial demonstration plant will provide a stepping stone towards the Company's goal of a 30-50 TPD recycling plant producing cathode precursor material that could be sold for use in the manufacturing of new lithium-ion batteries.

American Manganese's patented and sustainable RecycLiCo™ process could eliminate waste by diverting end-of-life lithium-ion batteries from landfills; reduce mined raw materials by providing recycled materials for the lithium-ion battery supply chain; improve manufacturing cost by recycling cathode scrap for use in future lithium-ion cathode manufacturing, and eliminate carbon emissions with its closed-loop hydrometallurgical process.

Lithium-ion battery recycling is a certainty and with the growing demand in electric vehicles and portable electronics, American Manganese plans to be a global leader in sustainable and environmentally benign lithium-ion battery recycling.

## Table of Contents

DISCLAIMER .....	i
EXECUTIVE SUMMARY .....	ii
COMPANY OVERVIEW .....	4
BUSINESS MODEL .....	5
CATHODE SCRAP .....	5
SPENT LITHIUM-ION BATTERIES.....	6
RECYCLED PRODUCT .....	7
BLOCKCHAIN INITIATIVE.....	7
COMPANY TIMELINE.....	8
FINANCIAL PLAN .....	9
OPERATING EXPENSES .....	10
Reagents.....	10
Labour .....	10
General and Administrative .....	10
Utilities .....	10
Cost of Product.....	10
SALE OF PRODUCT .....	11
CUMULATIVE REVENUE .....	11
MARKET ANALYSIS .....	12
COMPETITORS .....	13
SECOND LIFE BATTERIES .....	14
OWNERSHIP AND MANAGEMENT .....	15
APPENDIX A – FINANCIAL STATEMENTS .....	19
WORKS CITED.....	23

## Table of Figures

Figure 1 - RecycLiCo Pilot Plant (left-to-right - Joey Jung, Zarko Meseldzija, Larry Reaugh, and Norman Chow) .....	4
Figure 2 - American Manganese Recycling Business Strategy.....	6
Figure 3 - Recycled NCA Cathode Precursor Material (99.94% Purity) .....	7
Figure 4 - Recycled NMC Cathode Precursor Material (99.93% Purity) .....	7
Figure 5 - Projected Company Timeline.....	8
Figure 6 - Pro-Forma Commercial Demonstration Plant .....	9
Figure 7 - Cumulative Revenue from a 3 TPD Pro-Forma Commercial Demonstration Plant.....	11
Figure 8 - Global EV and ICE share of long-term passenger vehicles (BloombergNEF, 2019).....	12
Figure 9 - Popular Cathode Chemistry Material Composition (Bloomberg, 2017) .....	13



## COMPANY OVERVIEW

American Manganese Inc. (“AMY” or the “Company”) is a critical metals and technology driven company focused on the recycling of lithium-ion battery cathode materials using its environmentally benign RecycLiCo™ Patented Process. The process provides near 100% extraction and battery grade purity of cathode materials, such as lithium, cobalt, nickel, and manganese, with minimal processing steps.

Headquartered in Vancouver, Canada, American Manganese Inc. is led by President and CEO, Larry Reaugh. The Company is incorporated under the laws of British Columbia on July 8, 1987 and is a publicly traded with its shares listed on the TSX Venture Exchange. The RecycLiCo™ Patented Process originated from the Company’s existing patent developed for processing low-grade manganese ore at its Artillery Peak manganese property in Arizona.

The Company’s contract research lab, Kemetco Research Inc., recognized the manganese processing patents potential to recycle lithium-ion batteries, therefore leading to the development of the RecycLiCo™ patented process and pilot plant project to test recovery of cathode materials from cathode manufacturing scrap and spent lithium-ion batteries. Following the completion of Pilot Plant testing, American Manganese Inc. aims to commercialize its breakthrough RecycLiCo™ patented process in 2020.

The company was granted U.S. Patent No. 10,246,343 and 10,308,523 for the process used in recycling lithium-ion cathode materials. In addition to U.S. Patent No. 10,246,343, American Manganese has selected China, Japan, South Korea, Europe, Australia, India, and Canada for National Phase Applications.



*Figure 1 - RecycLiCo Pilot Plant (left-to-right - Joey Jung, Zarko Meseldzija, Larry Reaugh, and Norman Chow)*

## BUSINESS MODEL

---

The RecycLiCo<sup>TM</sup> Patented Process offers a hydrometallurgical solution for the recycling of cathode materials from spent lithium-ion batteries and battery manufacturing scrap. The process achieves near 100% recovery and battery grade purity of materials such as lithium, cobalt, nickel, and manganese from cathode chemistries such as NCA (lithium nickel cobalt aluminum oxide), NMC (lithium nickel manganese cobalt oxide), LCO (lithium cobalt oxide). The RecycLiCo<sup>TM</sup> patented process produces a cathode precursor that is planned to be sold for the manufacturing of battery cathodes in lithium-ion batteries.

**With growing demand of electric vehicles and portable electronics**, lithium-ion battery recycling will be a certainty. Fortunately, the RecycLiCo<sup>TM</sup> process could eliminate waste by diverting end-of-life lithium-ion batteries from landfills; reduce mined raw materials by providing recycled materials for the lithium-ion battery supply chain; improve manufacturing cost by recycling cathode scrap for use in future lithium-ion cathode manufacturing, and eliminate carbon emissions with its closed-loop hydrometallurgical process.

### CATHODE SCRAP



**Considered as the low-hanging fruit**, American Manganese has identified large quantities of potential cathode scrap sources from battery manufacturers and waste collectors. The cathode scrap material has been successfully tested in the lab and scaled up to current RecycLiCo<sup>TM</sup> Pilot Plant testing. Following the completion of the RecycLiCo<sup>TM</sup> Pilot Plant project, American Manganese will begin engineering design and cost estimation for a 3-5 TPD commercial demonstration plant to process cathode scrap material and provide a stepping stone towards a 30-50 TPD recycling plant.

The Company is considering potential joint venture agreements with battery manufacturers and waste collectors, in addition to licensing agreements for the patented process. Completion of a 3-5 TPD commercial demonstration plant, for the processing of cathode scrap, is projected for 2020. The location of the first plant is planned within North America that will favor a location with proximity to cathode scrap and a consistent supply.

While the demonstration plant in itself could be a profit-making option, American Manganese foresees a significant upside for strategic partners to join hands now, where the Company has achieved several significant milestones in the last several years to offer an opportunity that is perfect balance between risk and reward.

## SPENT LITHIUM-ION BATTERIES



American Manganese has developed the RecycLiCo™ Patented Process to recover the cathode materials used in lithium-ion batteries, which is estimated to be 50% of the lithium-ion battery material cost. However, the valuable cathode material in a spent lithium-ion battery is enclosed by bolts, wires, and casing that needs to be disassembled and separated.

To provide a complete solution that compliments the RecycLiCo™ Patented Process, American Manganese has signed a Memorandum of Understanding with Battery Safety Solutions (BSS) from the Netherlands. The BSS process quickly discharges lithium-ion batteries and efficiently disassembles them into various material streams. The cathode stream is packaged by BSS and shipped to AMY for recovery and purification of cathode materials. Testing of the complete solution is ongoing, but the companies aim to finalize their partnership and commercial proposal as a complete EV battery recycling solution by the end of Q4 2019.

American Manganese has also partnered with a U.S. Department of Energy project, as the first private sector company, to advance the economic recovery of lithium-ion battery materials from electric vehicles and other consumer electronics. The project is formally titled, “Lithium Ion Battery Disassembly, Remanufacturing, and Lithium & Cobalt Recovery Project” and consists of two U.S. National Labs and leading Universities that are developing leading innovations that address the recovery of critical metals in lithium-ion batteries.

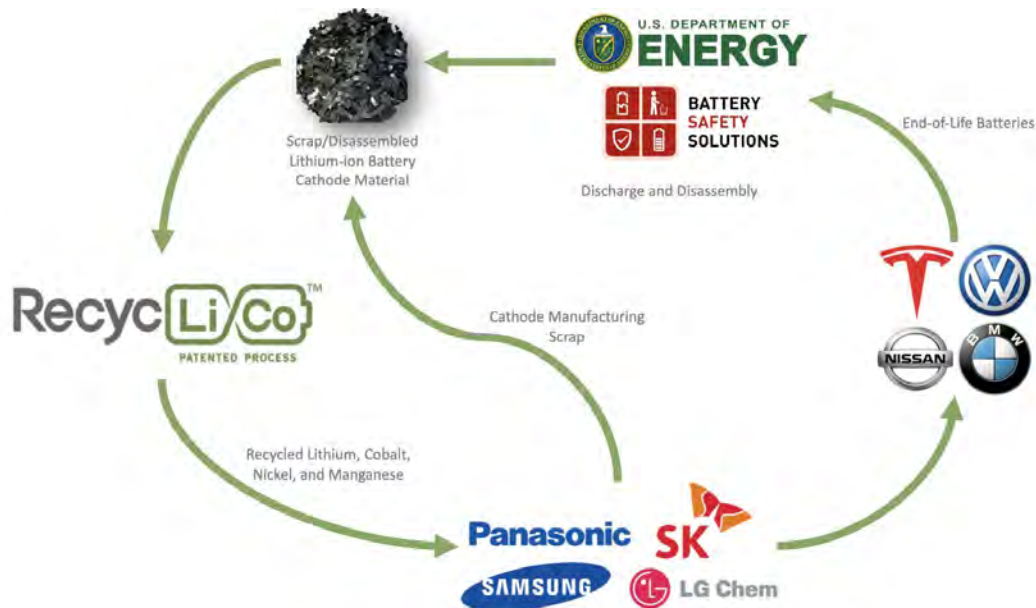


Figure 2 - American Manganese Recycling Business Strategy

## RECYCLED PRODUCT

The RecycLiCo<sup>TM</sup> process treats cathode material containing a combination of lithium, cobalt, nickel, and manganese. The cathode materials are treated in the five-stage process that consists of a novel combination of reagents and unit operations to provide near 100% extraction, battery grade purity, and minimum use of water. A base metal hydroxide is recovered separately from lithium carbonate. The recovered material is a cathode precursor that the Company plans to sell for the manufacturing of battery cathodes in lithium-ion batteries. Figure 3 and Figure 4 below show a high purity NCA (99.94% purity) and NMC (99.93% purity) cathode precursor that was produced with the RecycLiCo<sup>TM</sup> pilot plant and patented process.



*Figure 3 - Recycled NCA Cathode Precursor Material  
(99.94% Purity)*



*Figure 4 - Recycled NMC Cathode Precursor Material  
(99.93% Purity)*

## BLOCKCHAIN INITIATIVE

**Mapping the lithium-ion battery supply chain.** The Company has entered into a collaborative agreement with Circular Ltd, out of London, to develop a blockchain technology that can track battery metals to help ensure ethical and sustainable sourcing. AMY and Circular will be mapping the lifecycle of an EV battery to better understand the value flow through the production process and lifecycle, and to provide a road map for AMY to source spent lithium-ion batteries.

OEMs could secure a sustainable supply chain and identify to their customers the provenance of materials used in their EVs. Blockchain technology can validate that materials have been recovered and recycled as efficiently as possible, and to exclude materials that are not ethically or sustainably sourced.

AMY plans to create a circular economy solution for the lithium-ion battery supply chain and to create collaborative efforts with like-minded EV and LIB manufacturers.



## COMPANY TIMELINE

**Patented cathode-to-cathode recovery process.** Kemetco Research Inc. has developed AMY's hydrometallurgical process in their well-equipped extractive metallurgy laboratory. With their experienced staff, Kemetco has contributed their expertise on scientific aspects, engineering aspects, and plant design. Kemetco is capable of carrying out testing, plant design and construction of both the pilot plant and commercial demonstration plant. Kemetco's labs are in close proximity to AMY's office and a strong communications line is maintained between the two companies.

The five-stage pilot plant was designed by Kemetco to replicate real world closed-circuit conditions in a continuous operation to simulate and de-risk production of the commercial demonstration plant. Engineering design and cost estimation of a 3-5 TPD commercial demonstration plant will start once the final stage (Stage 5) of the pilot plant project has concluded. Once constructed, the commercial demonstration plant will provide a stepping stone towards the Company's goal of a 30-50 TPD recycling plant.

The pilot plant will continue operation for feasibility testing on third party cathode material to demonstrate the quality of the recycled material for manufacturing of lithium-ion battery cathodes. The projected Company timeline can be seen in Figure 5.

### Projected Company Timeline

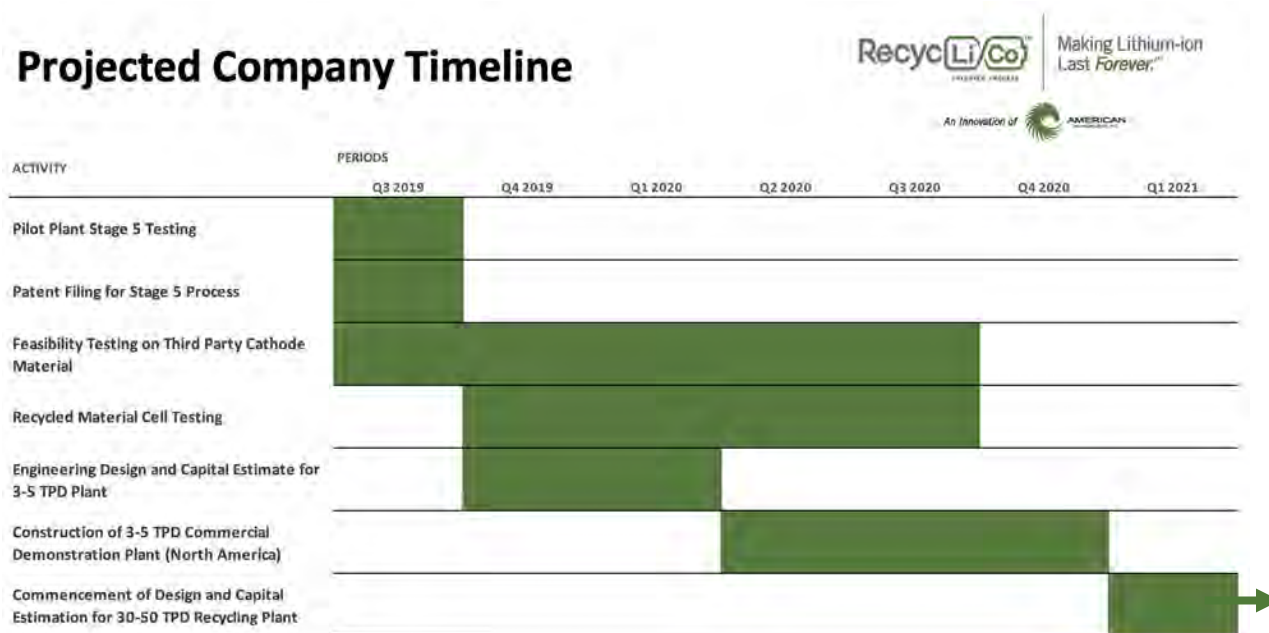


Figure 5 - Projected Company Timeline

## FINANCIAL PLAN

**Creating value from pre-production cathode scrap.** Following the completion of the RecycLiCo™ Pilot Plant project, American Manganese will begin engineering design and cost estimation for a commercial demonstration plant to process 3-5 tonnes of cathode scrap material per day in North America. The commercial demonstration plant's capital investment is estimated to be US\$10 million with a pay back of less than 1.5 years. Estimates have been reviewed by Kemetco who has extensive experience designing and building similar sized plants.

The revenue estimates seen in Figure 6, refer to the recycling of NMC-622 cathode scrap in a 3 TPD pro-forma commercial demonstration plant.

### Pro-Forma Commercial Demonstration Plant

Cathode Material	NMC622	
Processing Rate (Tonnes/Day)	3	
Recovery Rate	95%	
Operating Days	350	
	<i>Daily</i>	<i>Annual</i>
<b>Estimated Revenue (USD)</b>	<b>\$ 40,855</b>	<b>\$ 14.3 M</b>
Li2CO3 Price at \$12/kg	\$ 13,036	\$ 4.6 M
Co Price at \$31.5/kg	\$ 10,917	\$ 3.8 M
Ni Price at \$15.7/kg	\$ 16,256	\$ 5.7 M
Mn Price at \$2/kg	\$ 646	\$ 0.2 M
<b>Estimated Operating Expense (USD)</b>	<b>\$ 22,489</b>	<b>\$ 7.9 M</b>
Reagents	\$ 2,945	\$ 1.0 M
Labour	\$ 5,400	\$ 1.9 M
General and Administrative	\$ 2,970	\$ 1.0 M
Utilities	\$ 422	\$ 0.1 M
Cost of Product	\$ 10,751	\$ 3.8 M
<b>Operating Profit (USD)</b>	<b>\$ 18,366</b>	<b>\$ 6.4 M</b>

Figure 6 - Pro-Forma Commercial Demonstration Plant

## OPERATING EXPENSES

The following is the data and assumptions used for the financial modelling of operating expenses for the commercial demonstration plant.

### Reagents

Reagents are the primary direct cost in the RecycLiCo™ process. The cost was derived from the quantity and cost of each reagent required to treat scrap cathode material. The similar combination of reagents is used for all battery chemistries and recent patentable developments to the finalized flowsheet have resulted in less reagent consumption, which is not expressed in the current operating expense calculations.

### Labour

The Commercial Plant will operate 24 hours/day and will require three shifts of four plant operators working 8-hour shifts at a rate of US\$ 45/hour. Additional staff -- such as shipping and receiving, an assistant manager, and manager -- have each been accounted for in an 8-hour shift at the same rate of US\$ 45/hour. The total labour cost per day is estimated to be US\$ 5,400.

### General and Administrative

General and Administrative expense is calculated as 55% of the total labour cost. Therefore, the General and Administrative cost is an additional US\$ 2,970 per day.

### Utilities

Utility costs are scaled up from current rates used in lab testing. Estimates may change slightly as more data is collected from Pilot Plant testing but overall the process does not have high energy demands, relative to recycling via high-heat smelters.

### Cost of Product

The cost and delivery of cathode scrap feedstock is assumed to be 25% of the total intrinsic value of the cathode material.

## SALE OF PRODUCT

American Manganese is in discussion with several end users, from cathode producers to precursor manufacturers, to discuss the sale of the Company's recycled output material. Due to high demand for AMY's end product, The Company does not foresee a challenge in selling recycled precursor cathode material to market. American Manganese will negotiate with strategic players, who understand the value of the Company's cathode precursor output, in order to avoid going through several additional processes before looping back into the supply chain.

## CUMULATIVE REVENUE

The calculated revenue in Figure 6, is in reference to the recycling of NMC-622 cathode. However, the remaining cathode chemistries such as NCA, NMC-811, and NMC-111 have similar revenue profiles to NMC-622 as seen in Figure 7.

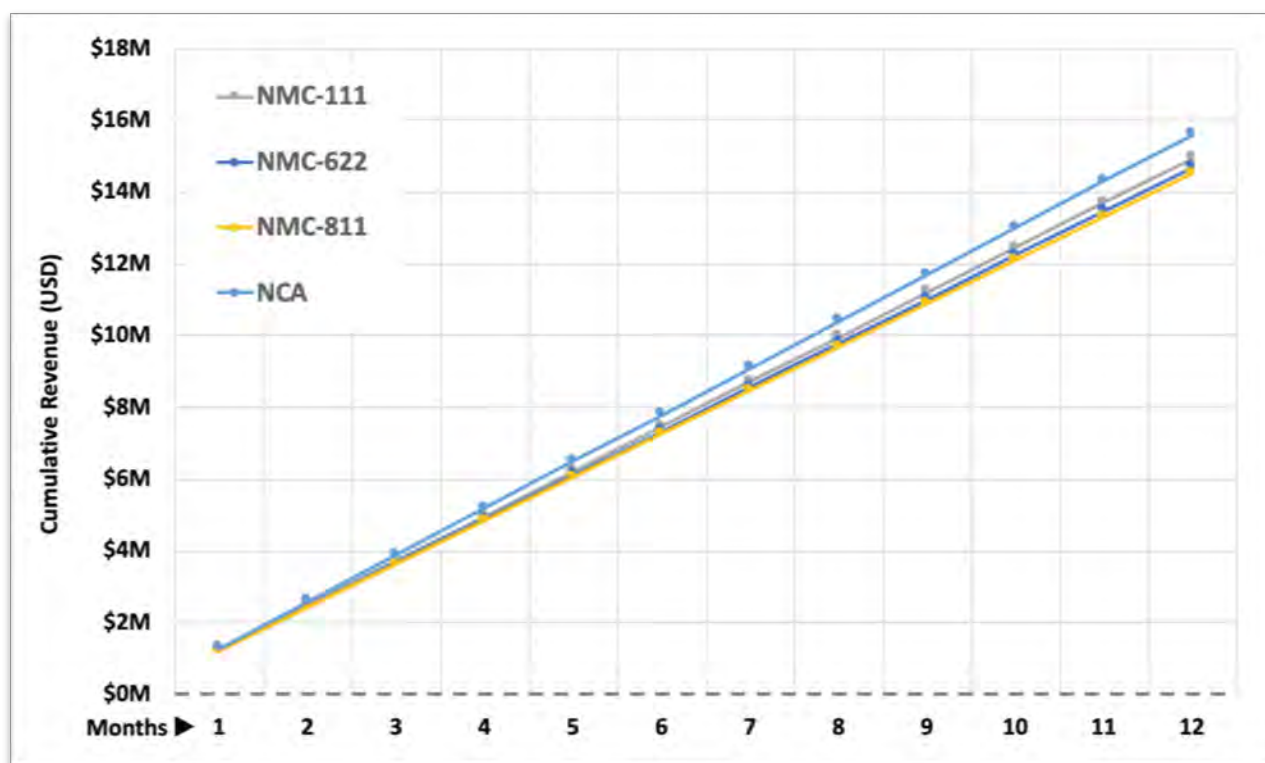


Figure 7 - Cumulative Revenue from a 3 TPD Pro-Forma Commercial Demonstration Plant



## MARKET ANALYSIS

Demand for electric vehicles (EV) is projected, by Bloomberg New Energy Finance (BNEF), to surpass internal combustion engine (ICE) vehicle sales before 2040, and the large format batteries used in EVs is expected to account for 90% of the recycled battery market by 2030, up from 3% today. This increased electrification of passenger vehicles is projected to create 2 million tons of spent lithium-ion batteries available for recycling per year by 2030 (BloombergNEF, 2019).

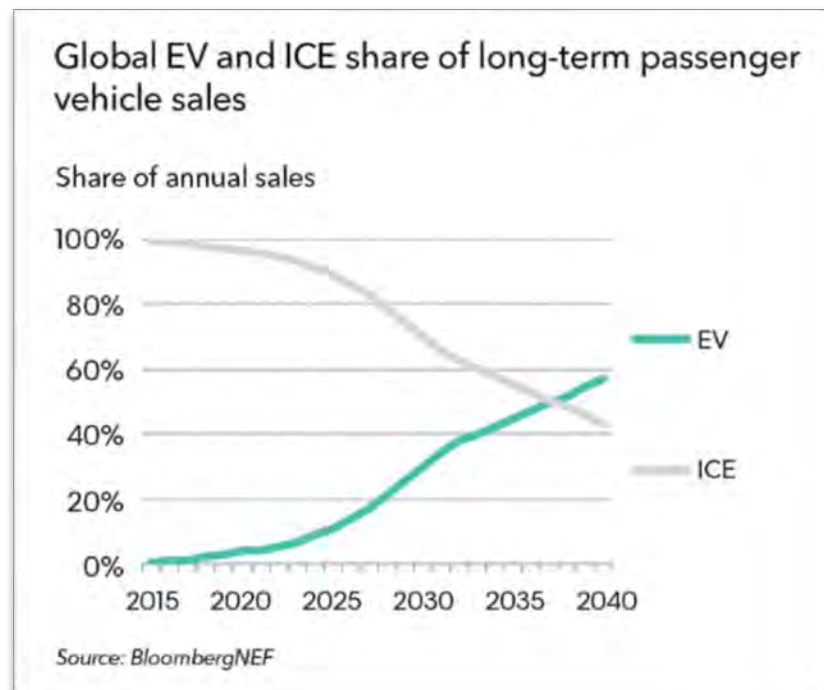


Figure 8 - Global EV and ICE share of long-term passenger vehicles (BloombergNEF, 2019)

Likewise, the Battery Manufacturing Megafactory tracker by Benchmark Minerals Intelligence is currently tracking 84 Megafactories with a projected 1,860 GWh of battery manufacturing capacity by 2028 (Benchmark Minerals Intelligence, 2019). Keep in mind, and estimated 10% of the materials produced in the battery manufacturing process fails quality specifications and is disposed of as cathode scrap material, which could be recycled back into manufacturing.

Fortunately, the recycling of spent lithium-ion batteries is a certainty as new legislation is enforced to combat the environmental threat of disposing spent lithium-ion batteries in landfills or high-heat smelting operations. Although legislation is currently limited, policy makers around the world are racing to catch up to the growing supply of waste batteries (BloombergNEF, 2019).

While lithium is the common denominator used in lithium-ion batteries, there is no standard cathode chemistry composition in lithium-ion batteries because they each come with a trade-off in specific energy, specific power, safety, cost and performance. For instance, the NCA chemistry

can be found in Tesla vehicles, while a range of NMC chemistries are used by other EV manufacturers, and the high cobalt containing LCO chemistry is commonly found in smaller portable electronics. The RecycLiCo<sup>TM</sup> Patented Process has successfully processed all of the mentioned chemistries, during bench scale testing.

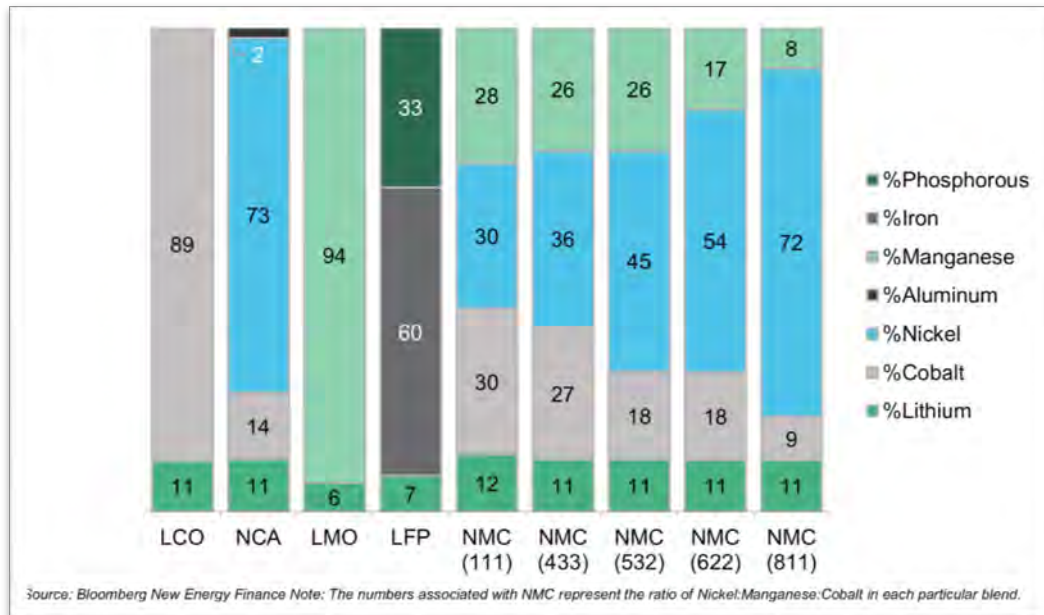


Figure 9 - Popular Cathode Chemistry Material Composition (Bloomberg, 2017)

## COMPETITORS

The current method for recycling waste lithium-ion batteries is high-heat smelting, which not only generate a lot of CO<sub>2</sub>, but produces a black slag that doesn't recover all cathode materials and the purity and recovery rates, from what is recovered, is low. The Belgian company Umicore, is an example of a high-heat smelting operation for waste lithium-ion batteries. In the Umicore Integrated Annual Report 2018, battery recycling operations contributed to nearly 700,000 tonnes of CO<sub>2</sub> (Umicore, 2018), which is equivalent to 152,000 vehicles on the road each year.

The RecycLiCo<sup>TM</sup> Patented Process uses a hydrometallurgical process and although other competitors, such as Li-Cycle, Neometals, and Retrie Technologies have claimed to use hydrometallurgical processes – there has not been enough publicly available information or third-party validation for the Company to evaluate and compare their results. However, American Manganese's two granted patents indicate that no other hydrometallurgical processes conflict with the Company's process. To the best of AMY's knowledge, the RecycLiCo<sup>TM</sup> process is the only unique offering in the market where limited to no waste is generated at the end of the process; a true recycling gift to mother nature, while all shareholders can build profitable business out of it.

## SECOND LIFE BATTERIES

Second life batteries are the repurposing of EV batteries that may no longer be effective in an EV, but may have purpose for another application. The most likely use of EV second life batteries at the moment is in home energy storage. The second-life business model is that the used batteries are less energy dense and cannot hold as much energy as they used to. You would need more batteries to store as much energy, taking up more physical space and raising costs. Manufacturers are also unable to guarantee their performance as easily as with a new battery (chinadialogue, 2018).

A representative of Mercedes-Benz Energy said there is no benefit to basing home energy storage systems on automotive batteries, in the medium or long term. It was also added that the highly complex automotive battery system far exceeds the value required for the home storage market (Energy Storage, 2018). Second life batteries are not eliminating the need for battery recycling. Instead it is tying up the supply of critical metals needed for new EV batteries.

## OWNERSHIP AND MANAGEMENT

American Manganese Inc. is listed on the TSX Venture Exchange in Canada under the ticker symbol “AMY”; on the Frankfurt Stock Exchange under “2AM”; and on the OTC US under “AMYZF”. Regulatory filings for the Company can be found under its profile at [www.sedar.com](http://www.sedar.com). The Company’s shares are widely held. The Company’s board of directors and officers are:



### **Larry W. Reaugh - President & CEO, Director**

Larry Reaugh has 55+ years’ experience in the mining industry and for the past forty years he has been the CEO and President of several exploration, development and production companies including 12 years in internet and technology breakthroughs listed on the TSX, TSX Venture and NASDAQ exchanges. Several of his companies have made significant discoveries, three of which (gold/silver) went on to be producing mines. Mr. Reaugh founded American Manganese Inc. in 1998 and has served as its President and CEO since that time. Through his career, Mr. Reaugh has raised in excess of \$300 million.



### **Zarko Meseldzija – Chief Technical Officer**

Zarko brings a range of industry experience, acquired by working with one of Canada’s largest energy companies and an innovation driven process systems company. Zarko has deep insight into project management of multi-million-dollar projects as well as technical knowledge of hydrometallurgical process development projects, particularly in the field of e-waste and lithium-ion battery recycling. Zarko Meseldzija’s early introduction into the Urban Mining sector inspired him to build his career on emerging technologies and open an independent consulting firm focused on lithium ion battery supply chain management and the recycling of battery metals such as cobalt, lithium, nickel and manganese. He holds a Bachelor’s in Mining Engineering from the University of Alberta and is a registered engineer with the Engineers and Geoscientists of British Columbia.



### **Shaheem Ali - BBA, Chief Financial Officer**

Shaheem Ali is a finance and business management professional with 10 years’ experience in operations management, full cycle accounting, systems development and people management. Proven record of implementing financial and operational processes reducing operations costs and improved internal controls with Alderwoods Group Inc. where his experience includes governance and regulatory fund compliance with various states.





**Teresa Piorun - Senior Corporate Officer**

Teresa Piorun has been with the Reaugh group of companies for thirty-three years. Ms. Piorun is a senior corporate officer with wide-ranging responsibilities, serving as a focal point for communication with the board of directors, senior management and the company's shareholders, and occupies a key role in the administration of critical corporate matters. She is the confidant and advisor to the CEO and other members of senior management, particularly on corporate governance affairs



**Norman L. Tribe - B.A.Sc., P.Eng., Director**

Norman Tribe is the president and principal of N. Tribe & Associates Ltd a geological contractor serving the mining industry for fifty-eight years. Mr. Tribe has a total of 58 years' experience in most phases of mining and reporting to the various government entities and stock exchanges.



**Andris Kikauka - P.Geo, Director**

Andris Kikauka is a graduate of Brock University, St. Catharines, Ont., with an Honours Bachelor of Science Degree in Geological Sciences, 1980. He is a member of the Geological Association of Canada. He is registered in the Province of British Columbia as a Professional Geoscientist.



**Ed Skoda - Director**

Edward Skoda obtained a Diploma in Mining Engineering Technology from the Haileybury School of Mines in Ontario in 1971 and a Diploma in Business Management from the British Columbia Institute of Technology in 1979. Mr. Skoda has over 30 years of experience in the mining industry in which time he has worked on many national and international projects.



**Kurt Lageschulte - Director**

Kurt Lageschulte is a Partner and Senior Analyst at Broadbill Investment Partners, LLC in New York. Broadbill Partners is an investment firm with offices in New York, Florida and California and currently has \$130 million of assets under management across four managed funds. Kurt is a founding partner at Broadbill, and was previously employed as a Senior Analyst with Aspen Advisors from 2002 to 2010. Kurt has worked as an advisor and active member of a number of committees. Most recently, he has advised the Special Committee of the Penn Treaty American Company board in a complex negotiation with industry regulators. Kurt's experience in the energy, renewable and mining industries, coupled with significant expertise in the capital markets will enable Kurt and the Broadbill team to help American Manganese in the reaching of its goals in the coming years.



**Shailesh Upreti - Advisory Board**

Shailesh Upreti is a well-respected lithium-ion technology expert and inventor of multiple breakthrough technologies. An IIT Delhi graduate, Mr. Upreti has worked closely with Professor Stan Whittingham in the past and holds multiple US patents and their foreign equivalents in more than 30 countries. In addition to his technical degree he has a second masters in international business management in combination with extensive experience as an entrepreneur. Shailesh has successfully brought more than 5 different technologies to market including one in the material recycling space. His 18 years of extensive experience includes bringing new products to market, business development, lithium-ion supply chain & industry networking, downstream processing and investigating organizational performance gaps. He is well integrated into the global battery industry and serves on various advisory boards. Shailesh is particularly adept in defining corporate commercial objectives, business support programs and achieving organizational goals while bringing new technology to market.



**David Langtry - Technical Advisor**

David Langtry has been a businessman since 1964 when he joined Langtry Agencies, a company which expanded nationally to become Langtry Industries and was sold in 2011 to ITOCHU, a Japanese conglomerate specializing in commodities. Mr. Langtry currently owns and operates Raider Hansen Inc., an industrial supplies company having 10 locations throughout British Columbia, as well as GRE Manufacturing, a glass recycling company. He also holds 10 worldwide patents. Mr. Langtry has a life time of experience in technology and financial markets.



**Daniel McGroarty - Strategic Advisor**

Daniel McGroarty has consulted for nearly two decades to firms in the resource sector, with a focus on strategic and critical metals. He is principal of the non-profit American Resource Policy Network, a resource development think tank. He has served as a critical materials subject-matter expert for the U.S. GAO; testified before the energy and natural resource committees of the U.S. House and Senate; consulted to the Institutes for Defense Analyses, which provides research and analytical work to the U.S. Department of Defense for its National Defense Stockpile reports; and currently serves as Adjunct Professor at The George Washington University Graduate School of Political Management. Prior to establishing his consultancy, Dan served as Special Assistant to the President in the White House and as presidential appointee to two Secretaries of Defense.



**James J. (Jim) Hahn - Advisory Board**

Jim comes from a career of 40+ years in the Specialty Tool and Fastener Industry. He has held management positions in patented product development to include Powder Actuated Fasteners, Adhesives, and Coatings. Additionally, he has worked domestically and internationally in the development of Concrete Anchoring Systems leading to successful market introductions. These introductions were attained through independent product testing to meet strict industry codes and final evaluation agency approvals. At Hilti, Inc. Jim achieved the highest level of sales locally, regionally and

nationally. He was awarded multi-million-dollar sales club recognition for his work with a previously poor-performing territory and was recognized multiple times as a President Club's winner at national conventions, having set regional and national sales records annually. Jim received a special award from ITW Corporation for the development of a national training program for certain industrial products. He was a founding member of the Concrete Anchoring Manufacturing Association in 1996. Last but not least, Jim was a PGA professional golfer after he graduated from college where he earned an AA degree in Applied Marketing and a BA in Business Administration.

## APPENDIX A – FINANCIAL STATEMENTS

### AMERICAN MANGANESE INC.

Consolidated Statements of Financial Position

As at July 31, 2018 and July 31, 2017

(Expressed in Canadian dollars, unless specifically indicated otherwise)

	July 31, 2018	July 31, 2017
<b>Assets</b>		
<b>Current</b>		
Cash and cash equivalents	\$ 1,166,786	\$ 486,088
Amounts receivable (Note 6)	42,243	66,087
Marketable securities	2,500	-
Prepaid expenses and advances	292,344	233,541
	1,503,873	785,716
<b>Non-current</b>		
Reclamation deposits	39,842	38,772
Exploration and evaluation assets (Note 8)	5,213,065	5,021,687
<b>Total assets</b>	<b>\$ 6,756,780</b>	<b>\$ 5,846,175</b>
<b>Liabilities</b>		
<b>Current</b>		
Accounts payable and accrued liabilities (Note 6)	\$ 209,170	\$ 374,952
Payable to related parties (Note 7b)	13,423	7,093
<b>Total liabilities</b>	<b>222,593</b>	<b>382,045</b>
<b>Equity</b>		
Share capital (Note 9)	27,549,194	25,772,440
Share subscriptions receivable	(24,500)	-
Prepaid share subscriptions (Note 17)	-	5,500
Share-based payments reserve (Note 9)	4,772,270	4,102,225
Warrants reserve (Note 9)	5,004,947	4,126,613
Accumulated other comprehensive income	2,368,057	2,166,639
Deficit	(33,135,781)	(30,709,287)
<b>Total equity</b>	<b>6,534,187</b>	<b>5,464,130</b>
<b>Total liabilities and equity</b>	<b>\$ 6,756,780</b>	<b>\$ 5,846,175</b>

Nature and Continuance of Operations (Note 1)

Subsequent events (Note 15)

The accompanying notes are an integral part of these consolidated financial statements

Approved on behalf of the Board of Directors and authorized for issue on November 28, 2018

<u>Larry W Reaugh</u>	Director	<u>Norm Tribe</u>	Director
-----------------------	----------	-------------------	----------



## AMERICAN MANGANESE INC.

Consolidated Statements of Comprehensive Loss

For the years ended July 31, 2018 and 2017

(Expressed in Canadian dollars, unless specifically indicated otherwise)

	2018	2017
<b>Expenses</b>		
Administration (Note 10)	\$ 2,424,562	\$ 2,003,919
Loss from operations	2,424,562	2,003,919
Finance income	(135)	(86)
Foreign exchange loss	67	3,101
Unrealized loss on marketable securities	2,000	-
<b>Net loss for the year</b>	<b>2,426,494</b>	<b>2,006,934</b>
<b>Other comprehensive loss</b>		
Foreign currency gain (loss) on translation of subsidiary	201,418	(217,358)
<b>Other comprehensive gain (loss) for the year</b>	<b>201,418</b>	<b>(217,358)</b>
<b>Total comprehensive loss for the year</b>	<b>2,225,076</b>	<b>2,224,292</b>
<b>Basic and diluted loss per share</b>	<b>\$ (0.02)</b>	<b>\$ (0.01)</b>
<b>Weighted average shares outstanding (basic and diluted)</b>	<b>155,647,553</b>	<b>138,141,848</b>

## AMERICAN MANGANESE INC.

Consolidated Statements of Changes in Equity

For the years ended July 31, 2018 and 2017

(Expressed in Canadian dollars, unless specifically indicated otherwise)

	Number of shares	Share capital	Share subscriptions receivable	Prepaid share subscriptions	Share-based payments reserve	Warrants reserve	Deficit	Accumulated other comprehensive income (loss)	Total equity
	(Note 9)	(Note 9)			(Note 9)	(Note 9)	(Note 9)	(Note 9)	
<b>Balance, July 31, 2016</b>	<b>124,550,880</b>	<b>\$ 23,933,531</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 3,627,551</b>	<b>\$ 3,182,502</b>	<b>\$ (28,702,353)</b>	<b>\$ 2,383,997</b>	<b>\$ 4,425,228</b>
Share-based payments	-	-	-	-	582,032	-	-	-	582,032
Issued pursuant to private placements	15,290,316	2,349,505	-	-	-	-	-	-	2,349,505
Cost of share issuance	-	(156,843)	-	-	-	-	-	-	(156,843)
Warrants issued with private placement	-	(1,048,943)	-	-	-	1,048,943	-	-	-
Issued pursuant to options exercise	2,450,000	284,858	-	-	(107,358)	-	-	-	177,500
Issued pursuant to warrants exercise	5,509,999	410,332	-	-	-	(104,832)	-	-	305,500
Prepaid share subscriptions	-	-	-	5,500	-	-	-	-	5,500
Loss for the year	-	-	-	-	-	-	(2,006,934)	-	(2,006,934)
Other comprehensive loss for the year	-	-	-	-	-	-	-	(217,358)	(217,358)
<b>Balance, July 31, 2017</b>	<b>147,801,195</b>	<b>\$ 25,772,440</b>	<b>\$ -</b>	<b>\$ 5,500</b>	<b>\$ 4,102,225</b>	<b>\$ 4,126,613</b>	<b>\$ (30,709,287)</b>	<b>\$ 2,166,639</b>	<b>\$ 5,464,130</b>
Share-based payments	-	-	-	-	692,665	-	-	-	692,665
Issued pursuant to private placements	9,945,708	2,302,417	-	(5,500)	-	-	-	-	2,296,917
Cost of share issuance	-	(67,438)	-	-	-	4,864	-	-	(62,574)
Warrants issued with private placement	-	(996,743)	-	-	-	996,743	-	-	-
Issued pursuant to options exercise	1,160,000	80,620	-	-	(22,620)	-	-	-	58,000
Issued pursuant to warrants exercise	6,142,500	457,898	-	-	-	(123,273)	-	-	334,625
Share subscriptions receivable	-	-	(24,500)	-	-	-	-	-	(24,500)
Loss for the year	-	-	-	-	-	-	(2,426,494)	-	(2,426,494)
Other comprehensive income for the year	-	-	-	-	-	-	-	201,418	201,418
<b>Balance July 31, 2018</b>	<b>165,049,403</b>	<b>\$ 27,549,194</b>	<b>\$ (24,500)</b>	<b>\$ -</b>	<b>\$ 4,772,270</b>	<b>\$ 5,004,947</b>	<b>\$ (33,135,781)</b>	<b>\$ 2,368,057</b>	<b>\$ 6,534,187</b>

## AMERICAN MANGANESE INC.

Consolidated Statements of Cash Flows

For the years ended July 31, 2018 and 2017

(Expressed in Canadian dollars, unless specifically indicated otherwise)

	2018	2017
<b>Cash flows from (used in) operating activities</b>		
Net loss for the year	\$ (2,426,494)	\$ (2,006,934)
Add items not affecting cash		
Share-based payments	692,665	582,032
Unrealized loss on marketable securities	2,000	-
Net changes in non-cash working capital items related to operations:		
Amounts receivable	23,844	(31,101)
Prepaid expenses	(58,803)	(199,493)
Accounts payable and accrued liabilities	(165,782)	(445,789)
Payable to related parties	6,330	(145,289)
<b>Net cash used in operating activities</b>	<b>(1,926,240)</b>	<b>(2,246,574)</b>
<b>Cash flows from (used in) investing activities</b>		
Exploration and evaluation expenditures	(20,329)	(24,030)
Property cost recoveries	24,139	-
<b>Net cash from (used in) investing activities</b>	<b>3,810</b>	<b>(24,030)</b>
<b>Cash flows from financing activities</b>		
Net proceeds from issuance of shares	2,602,468	2,675,662
Prepaid share subscriptions	-	5,500
<b>Net cash from financing activities</b>	<b>2,602,468</b>	<b>2,681,162</b>
<b>Effect of foreign exchange rates on cash and cash equivalents</b>	<b>660</b>	<b>(2,904)</b>
<b>Increase in cash and cash equivalents</b>	<b>680,698</b>	<b>407,654</b>
<b>Cash and cash equivalents, beginning of year</b>	<b>486,088</b>	<b>78,434</b>
<b>Cash and cash equivalents, end of year</b>	<b>\$ 1,166,786</b>	<b>\$ 486,088</b>

## WORKS CITED

- Benchmark Minerals Intelligence. (2019). *Megafactories*. Retrieved from Benchmark Minerals Intelligence: <https://www.benchmarkminerals.com/megafactories/>
- Bloomberg. (2017, September 6). *EV market trends and outlook*. Retrieved from Bloomberg New Energy and Finance: <https://www.transportenvironment.org/sites/te/files/EV%20market%20trends%20and%20outlook%20%28by%20Colin%20McKerracher%29.pdf>
- BloombergNEF. (2019). *Bloomberg New Energy Finance*. Retrieved from Electric Vehicle Outlook 2019: <https://about.bnef.com/electric-vehicle-outlook/#toc-viewreport>
- BloombergNEF. (2019). *Lithium-Ion Battery Recycling: 2 Million Tons by 2030*.
- chinadialogue. (2018, July 4). *Are recyclers ready for the coming glut of lithium-ion batteries?* Retrieved from chinadialogue: <https://www.chinadialogue.net/article/show/single/en/10709-Are-recyclers-ready-for-the-coming-glut-of-lithium-ion-batteries->
- Energy Storage. (2018, May 2). *Mercedes-Benz Energy: No economic benefit to basing home storage on EV batteries*. Retrieved from Energy Storage: <https://www.energy-storage.news/news/mercedes-benz-energy-no-economic-benefit-to-basing-home-storage-on-ev-batte>
- Umicore. (2018). *Integrated Annual Report*. Retrieved from Umicore: [https://annualreport.umicore.com/storage/annualreport\\_2018/en-umicore-ar18-final-interactive-complete.pdf](https://annualreport.umicore.com/storage/annualreport_2018/en-umicore-ar18-final-interactive-complete.pdf)