



Rockstone Research

November 15, 2018

Report #83

Lithium, Wastewater, Oil & Gas, Petcoke,
Energy Storage, Silicon, Magnesium



MGX Starts Petrolithium Revenue And Growth Cycle Next Week

While [yesterday's patent filing](#) for a new technology feature demonstrates the potential of adding a new, third income stream and is important for the long-term direction a company is taking, today MGX Minerals Inc. is getting to the bottom-line.

According to [today's news](#), the cleantech company and its engineering partner PurLucid Treatment Solutions Inc. will start generating revenue next week from environmental processing of evaporator blowdown wastewater ("EBD") with its first deployed petrolithium plant (NFLi-5) in Alberta, Canada. Lithium extraction of post-processed clean water to follow shortly thereafter.

Installation and testing of this commercial-scale 5m³ per hour (750 barrel per day) system is now complete.

According to a recent [interview](#) (see next page), Jared Lazerson (CEO of MGX) projected that this system is capable of generating up to \$1.7 million in revenue under full use on an annualized basis from wastewater treatment. Any revenue from mineral extraction, such as lithium, to be added on top.

Three additional (2 x 10m³ per hour and 1 x 20m³ per hour) systems will be deployed, approximately every other month, during the first half of 2019. The second system has twice the capacity of the first system and thus may generate up to \$3.4 million annually. The third system is said to have the same capacity as the second one. The fourth system, already in fabrication, has twice the capacity of the second and third system, thus possibly generating close to \$7 million per year.

Company Details

MGX Minerals Inc.

#303 – 1080 Howe Street

Vancouver, BC, Canada V6C 2T1

Phone: +1 604 681 7735

Email: jared@mgxminerals.com

www.mgxminerals.com

Shares Issued & Outstanding: 125,324,075



▲ Chart Canada ([CSE](#))

Canadian Symbol (CSE): XMG

Current Price: \$0.63 CAD (11/14/2018)

Market Capitalization: \$79 Million CAD



▲ Chart Germany ([Frankfurt](#))

German Symbol / WKN: 1MG / A12E3P

Current Price: €0.435 EUR (11/14/2018)

Market Capitalization: €55 Million EUR



In total, these 4 systems have the potential to generate up to \$15 million in revenue annually, that is to say without any by-product credits from the extraction of lithium and other minerals, which can only be disclosed once a system is up and running.

Additional systems may be added to this schedule as additional wastewater treatment, petrolithium, geothermal and natural mineral brine projects and customers come online.

As per today's news, MGX has increased its ownership stake in engineering partner PurLucid Treatment Solutions Inc. to 60%. This ownership increase was recently approved by PurLucid shareholders under Phase V of the investment agreement through the issuance of 1,001,000 common shares of the Company ([see press release dated January 25, 2018](#)).

In mid-October, Jared Lazerson [commented](#):

"With the determined backing of our shareholders, investment funds, oilsands operators, associated engineering companies, the Province of Alberta, and the Government of Canada, it has been shown, once again, that a small determined group of scientists and engineers can provide solutions to the most important of global problems.

The combination of cleaning wastewater and extracting minerals sets the stage for a bright future for MGX as we move into the revenue phase of our growth cycle with this globally applicable, low capital intensive, and most importantly, scalable technology.

We are accustomed to the idea that new technology inherently costs more, by changing this relationship, and providing lower cost environmental solutions the stage is now set for rapid adoption of our technologies that provide a solution to the most difficult of global wastewater problems and a revenue stream, as applicable,



Click on above image or [here](#) to watch the interview with Jared Lazerson, CEO of MGX.

from mineral extraction to further offset these costs or as a standalone technology, essentially creating an entirely new industry of recycling of commodities from wastewater."

Yesterday, MGX [disclosed](#) that possibly something big is brewing in the background to not only make the Canadian heavy oil and oilsands industry more environmentally friendly but more competitive on a global scale.

The cleantech company reported to have received notice of publication of a patent ([see schematic diagram here](#)) for low-cost combined heat and power cogeneration for heavy oil and oilsands producers.

The new technology feature combines steam and electricity production with the existing wastewater treatment and mineral extraction technologies.

In other words: MGX has patented a new method to generate electricity while producing pure water and minerals, such as lithium and vanadium, from contaminated oil and gas production wastewaters.

According to the news:

"The new design, utilizing highly charged Replaceable Skin Layer (RSL™) membranes as a replacement for softening and ultrafiltration,

substantively reduced cost and energy requirements while providing electricity for sale or internal use.

When applied to heavy oil production in Alberta, the system can reduce the greenhouse gas emissions from 2.45 tpd/bbl capacity (0.48 tonnes / m³ of produced oil) to 1.19 tpd/bbl capacity (0.11 to 0.15 tonnes / m³ of produced oil). This reduces the energy requirement and associated GHG intensity by over 70%, making it similar to conventional oil recovery in other areas.

In addition, because the capital used has revenue from both electricity and oil production, the cost of electricity production is comparable to the lower 25% of the market cost in North America and the cost of heavy oil production becomes similar to costs to produce light crude oil in the middle east."

The advanced system was designed within a consortium, including MGX, PurLucid and David Bromley Engineering for the generation of electricity and excess steam for thermal oil recovery and extraction of minerals.

This MGX-led consortium also includes power production, engineering and high-power demand clients evaluating opportunities for large-scale, low-cost power production.



Previous Coverage

[Report #82](#) "New MGX Patent To Make Heavy Oil And Oilsands Producers Much More Competitive"

[Report #81](#) "Belmont reports final lithium assays from first hole of 2018 and gets ready for continued drilling at Kibby Basin in Nevada"

[Report #80](#) "MGX-Belmont Announce Next Round of Encouraging Lithium Drill Results from Nevada"

[Report #79](#) "MGX-Belmont sample up to 580 ppm lithium in sediments at Kibby Basin Nevada Joint Venture"

[Report #78](#) "MGX Identifies Large Geophysical Anomaly at Salinitas Lithium Project, Salinas Grandes, Argentina"

[Report #77](#) "MGX-PurLucid Achieve 99.7% Lithium Recovery Along With Breakthrough in Component Costs"

[Report #76](#) "MGX-Belmont Drilling Finds Multiple Brine Prospective Zones at Kibby Basin Lithium Joint Venture in Nevada"

[Report #75](#) "MGX engages one of the world's most respected lithium upgrading and commercial scale-up experts"

[Report #74](#) "MGX-ZincNyx start product certification for the mass market"

[Report #73](#) "MGX-ZincNyx Announce Mass Production of Zinc-Air Battery Fuel Cell and Charging Components"

[Report #72](#) "MGX Moves to the Big Time, Acquires Chilean Lithium Brine Projects"

[Report #71](#) "MGX provides Update on Deployment of Several Plants for Rapid Lithium Extraction and Wastewater Treatment in Alberta"

[Report #70](#) "The Drills are Turning at MGX-Belmont's Kibby Basin Lithium Joint Venture in Nevada"

[Report #69](#) "MGX Engages Hatch Engineering for Scale-Up of its Rapid Lithium Extraction Plant in the Western United States"

[Report #68](#) "MGX and Belmont to Start Drilling at Kibby Basin Lithium Project in Nevada on Saturday"

[Report #67](#) "MGX Expands to Argentina, Home to One of the Largest and Richest Lithium Resources in the World"

[Report #66](#) "MGX and Belmont Form Nevada Lithium Joint Venture at Kibby"

[Report #65](#) "MGX-Highbury Expand Work to Gasify Petcoke into a Synthetic Crude Oil Equivalent"

[Report #64](#) "MGX Delivers Update on Commercial Deployment of its Wastewater Treatment and Lithium Extraction Systems"

[Report #63](#) "MGX is Drilling for Solar Grade Silicon Metal in British Columbia"

[Report #62](#) "MGX-ZincNyx Now Ready To Start Commercialization Of Battery Systems For Mass Storage Of Energy"

[Report #61](#) "MGX Minerals Raises \$15.5 Million in an Oversubscribed Financing to Speed Up Lithium and Advanced Material Projects"

[Report #60](#) "Sneak Preview of Big Oil Entering the Business of Big Batteries"

[Report #59](#) "MGX Wins Industry Leadership Award from S&P Global Platts"

[Report #58](#) "MGX Nears Commercial Deployment of 4 Petrolithium and Water Treatment Systems in Alberta"

[Report #57](#) "MGX Announces Quadrupling of Power Output of Zinc-Air Fuel Cell Battery"

[Report #56](#) "MGX Sets The Record Date For Its First Dividend"



[Report #55](#) "The First ZincNyx Energy Storage Plant to be Deployed in New York City"

[Report #54](#) "MGX in Final Stages of Commercial Deployment, Second Petrolithium Contract Already in the Making"

[Report #53](#) "MGX-Highbury Accomplish Almost Complete Gasification of Petcoke, Produce High-Grade Vanadium Concentrate"

[Report #52](#) "MGX Set to Alter Lithium Landscape, Partners with Investment Bank Heavyweight Capstone"

[Report #51](#) "Congratulations! MGX Nominated in 2 Categories as a Finalist for the S&P Global Platts Metals Awards"

[Report #50](#) "MGX Gets Serious About Magnesium, Engages Hatch for Magnesium Metal Scoping Study"

[Report #49](#) "MGX to Acquire and Commercialize Clean Technology for Extraction of Lithium and Aluminum from Spodumene"

[Report #48](#) "MGX Minerals Issues PEA for a World-Class Magnesium Project in British Columbia"

[Report #47](#) "High-Grade Battery Metals From Dirty Petcoke"

[Report #46](#) "Big Times Ahead For Several Joint Ventures from MGX Minerals"

[Report #45](#) "MGX Partner Broadcasting on US Television"



[Report #44](#) "The Big Rethinking Begins: Multiple Lithium Projects in Chile Test the Rapid Lithium Extraction Technology from MGX"

[Report #43](#) "Global Lithium Dominance? MGX Doubles Performance of Lithium Extraction Filters"

[Report #42](#) "Scores of Tail Winds for MGX becoming a Leader in the New Energy Economy"

[Report #41](#) "MGX Goes Big, Develops Utility-Scale Battery Storage System"

[Report #40](#) "Positioned to Profit from Transition to New Energy Economy"

[Report #39](#) "MGX Assembles Dream Team For California Lithium Strategy"

[Report #38](#) "MGX: The Next GreenTech Energy Giant"

[Report #37](#) "MGX Partners with Highbury Energy to make Petroleum Coke more Clean"

[Report #36](#) "Technological Breakthrough in the Mass Energy Storage Industry"

[Report #35](#) "Eureka! MGX Starts Developing Silica Projects after Acquisition of Mass Storage Battery Technology"

[Report #34](#) "MGX Going Big on Petrolithium: The first large-scale integrated petroleum and lithium project ever developed"

[Report #33](#) "Driving into the Realms of Tesla & Co: MGX Acquires Mass Storage Battery Technology from Teck Resources"

[Report #32](#) "Backed by Private and Institutional Heavyweights: MGX cashes up"

[Report #31](#) "MGX Revolutionizes the Lithium World - Commissions First Rapid Lithium Extraction System"

[Report #30](#) "Full Steam Ahead: MGX Engages Senator Polanco (Ret.) to Head California Lithium Brine Strategy"

[Report #29](#) "MGX to Target Geothermal Market for Extraction of Lithium and Gold"

[Report #28](#) "MGX Minerals Commences Development of the World's First Petrolithium Field"

[Report #27](#) "Canadian Government Backs MGX' Petrolithium Cleantech"

[Report #25](#) "Hard-Rock Lithium Exposure for MGX"

[Report #24](#) "One of the Largest Initial Oil Estimates in US History"

[Report #23](#) "MGX starts Petrolithium pilot plant to deliver hard facts for strategic partners"

[Report #22](#) "Time to bet: Sprott takes a position in MGX"

[Report #21](#) "Petrolithium: First Come First Served"

[Report #20](#) "Successful Independent Verification of the MGX Lithium Extraction Technology"

[Report #19](#) "MGX to Drill the World's First PetroLithium Well in Utah"

[Report #18](#) "MGX Reports Upgrading of Lithium Brine from 67 to 1600 ppm"

[Report #17](#) "MGX technology nominated for prestigious Katerva Award, the Nobel Prize of Sustainability"

[Report #16](#) "N/A"

[Report #15](#) "Total Conviction: MGX forms PetroLithium Corp. to expand into the US oilfield brine markets"

[Report #14](#) "MGX Extracts Lithium from Oil Wastewater - Begins Monumental Integration with Big Oil"

[Report #13](#) "MGX Partners with Oil Major on Lithium Brine, New Energy Industry Facing Fundamental Shift"

[Report #12](#) "Game Changing Potential: MGX Minerals' Pilot Plant for Rapid Production of Lithium Nears Completion"

[Report #11](#) "MGX assays 34 g/t gold from surface sampling in BC"

[Report #10](#) "Official: MGX owns magnesium worth multi-billions of dollars"

[Report #9](#) "One of the world's largest lithium resources on the horizon?"

[Report #8](#) "Ready for significant lithium brine work in Alberta"

[Report #7](#) "At the forefront of Alberta's lithium brine riches"

[Report #6](#) "Pioneering Lithium in Alberta: MGX Minerals Teams Up"

[Report #5](#) "Time to Put a Lithium Production Process in Place"

[Report #4](#) "MGX Minerals Taps Into Canada's Potentially Largest High-Grade Lithium Resources"

[Report #3](#) "MGX Minerals Receives Mining Lease for 20 years (in BC!)"

[Report #2](#) "MGX Minerals Accelerates Towards Production"

[Report #1](#) "MGX Minerals Plans To Enter The Magnesium Market"



Disclaimer and Information on Forward Looking Statements

Cautionary Statement: MGX Minerals Inc. ("MGX") may decide to advance its petrolithium projects into production without first establishing mineral resources supported by an independent technical report or completing a feasibility study. A production decision without the benefit of a technical report independently establishing mineral resources or reserves and any feasibility study demonstrating economic and technical viability creates increased uncertainty and heightens economic and technical risks of failure. Historically, such projects have a much higher risk of economic or technical failure. This report contains forward-looking information or forward-looking statements (collectively "forward-looking information") within the meaning of applicable securities laws. Forward-looking information is typically identified by words such as: "believe", "expect", "anticipate", "intend", "estimate", "potentially" and similar expressions, or are those, which, by their nature, refer to future events. Rockstone Research and MGX Minerals Inc. cautions investors that any forward-looking information provided herein is not a guarantee of future results or performance, and that actual results may differ materially from those in forward-looking information as a result of various factors. The reader is referred to the MGX's public filings for a more complete discussion of such risk factors and their potential effects which may be accessed through the MGX's profile on SEDAR at www.sedar.com. All statements in this report, other than statements of historical fact, should be considered forward-looking statements. Much of this report is comprised of statements of projection. Statements in this report that are forward looking include that MGX starts petrolithium revenue and growth cycle next week or at all; that the patent filing for a new technology feature demonstrates the potential of adding a new, third income stream and is important for the long-term direction a company is taking; that MGX is getting to the bottom-line; that MGX and its engineering partner PurLucid Treatment Solutions Inc. will start generating revenue next week, or at all, from environmental processing of evaporator blowdown wastewater ("EBD") with its first deployed petrolithium plant (NFLI-5) in Alberta, Canada; that lithium extraction of post-processed clean water to follow shortly thereafter, or at all; that MGX projected that the first system is capable of generating up to \$1.7 million in revenue under full use on an annualized basis from wastewater treatment, or any revenue at all; that any revenue from mineral extraction, such as lithium, to be added on top, if any at all; that three additional (2 x 10m3 per hour and 1 x 20m3 per hour) systems will be deployed, approximately every other month, during the first half of 2019, or at all; that the second system has twice the capacity of the first system and thus may generate up to \$3.4 million annually, or anything at all; that the third system is said to have the same capacity as the second one, or any at all; that the fourth system, already in fabrication, has twice the capacity of the second and third system, thus possibly generating close to \$7 million per year, or anything at all; that in total, these 4 systems have the potential to generate up to \$15 million in revenue annually, that is to say without any by-product credits from the extraction of lithium and other minerals, which can only be disclosed once a system is up and running; that additional systems may be added to this schedule as additional wastewater treatment, petrolithium, geothermal and natural mineral brine projects and customers come online; that the patent filed by MGX can or will make heavy oil and oilsands producers much more competitive, if at all; that MGX's new patent aims to change the fundamentals of the Canadian oil industry; that possibly something big is brewing in the background to not only make the Canadian heavy oil and oilsands industry more environmentally friendly but more competitive on a global scale; that the new technology feature is for low-cost combined heat and power cogeneration for heavy oil and oilsands producers; that the new technology feature combines steam and electricity production with

the existing wastewater treatment and mineral extraction technologies; that the patent pending will be granted; that MGX has patented a new method to generate electricity while producing pure water and minerals, such as lithium and vanadium, from contaminated oil and gas production wastewaters; that the MGX-led consortium also includes power production, engineering and high-power demand clients evaluating opportunities for large-scale, low-cost power production. Readers should not rely on these statements without independent verification. These forward-looking statements are 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. Risks that could change or prevent these statements from coming to fruition include that aspects or all of the process development may not be successful; the process/technology may not be cost effective; MGX may not raise sufficient funds to carry out its plans; changing costs for processing; increased capital costs; interpretations based on current data that may change with more detailed information; potential process methods and mineral recoveries assumption based on limited test work and by comparison to what are considered analogous deposits may prove with further test work not to be comparable; the availability of labour, equipment and markets for the products produced; and despite the current expected viability of the project, that the wastewater and/or minerals cannot be economically processed, or that the required permits to build and operate the envisaged plant cannot be obtained. The writer assumes no responsibility to update or revise such information to reflect new events or circumstances, except as required by law.

Disclosure of Interest and Advisory Cautions

Nothing in this report should be construed as a solicitation to buy or sell any securities mentioned. Rockstone, its owners and the author of this report are not registered broker-dealers or financial advisors. Before investing in any securities, you should consult with your financial advisor and a registered broker-dealer. Never make an investment based solely on what you read in an online or printed report, including Rockstone's report, especially if the investment involves a small, thinly-traded company that isn't well known. The author of this report, Stephan Bogner, is paid by Zimtu Capital Corp., a TSX Venture Exchange listed investment company. Part of the author's responsibilities at Zimtu is to research and report on companies in which Zimtu has an investment. So while the author of this report may not be paid directly by MGX Minerals Inc., the author's employer Zimtu will benefit from appreciation of MGX Minerals Inc.'s stock price. In addition, the author also holds equity of MGX Minerals Inc. and Zimtu, and thus would also benefit from volume and price appreciation of these stocks. MGX Minerals Inc. may have one or more common directors with Zimtu Capital Corp. Thus, multiple conflicts of interests exist. Therefore, the information provided herewithin should not be construed as a financial analysis but rather as advertisement. The author's views and opinions regarding the companies featured in reports are his own views and are based on information that he has researched independently and has received, which the author assumes to be reliable. Rockstone and the author of this report do not guarantee the accuracy, completeness, or usefulness of any content of this report, nor its fitness for any particular purpose. Lastly, the author does not guarantee that any of the companies mentioned will perform as expected, and any comparisons made to other companies may not be valid or come into effect. Please read the [entire Disclaimer](#) carefully. If you do not agree to all of the Disclaimer, do not access this website or any of its pages including this report in form of a PDF. By using this website and/or report, and whether or not you actually read the Disclaimer, you are deemed to have accepted it. Information provided is educational and general in nature. Pictures, if not labeled or hyperlinked otherwise, have been obtained from Shutterstock.com.

Author Profile & Contact

Stephan Bogner (Dipl. Kfm., FH)
Rockstone Research
8050 Zurich, Switzerland
Phone: +41-44-5862323
Email: sb@rockstone-research.com

Stephan Bogner studied at the



International School of Management (Dortmund, Germany), the European Business School (London, UK) and the University of Queensland

(Brisbane, Australia). Under supervision of [Prof. Dr. Hans J. Bocker](#), Stephan completed his diploma thesis ("Gold In A Macroeconomic Context With Special Consideration Of The Price Formation Process") in 2002. A year later, he marketed and translated into German Ferdinand Lips' bestseller ("Gold Wars"). After working in Dubai for 5 years, he now lives in Switzerland and is the CEO of [Elementum International AG](#) specialized in duty-free storage of gold and silver bullion in a high-security vaulting facility within the St. Gotthard Mountain Massif in central Switzerland.

Rockstone is specialized in capital markets and publicly listed companies. The focus is set on exploration, development, and production of resource deposits. Through the publication of general geological basic knowledge, the individual reports receive a background in order for the reader to be inspired to conduct further due diligence.

All reports from us are being made accessible free of charge, whereas it is always to be construed as non-binding educational research and is addressed solely to a readership that is knowledgeable about the risks, experienced with stock markets, and acting on one's own responsibility.

For more information and sign-up for free newsletter, please visit:

www.rockstone-research.com