



ASX Announcement

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CORPORATE UPDATE – AUGUST 2020

Parkway Minerals NL (ASX: **PWN**) (“**Parkway Minerals**” or the “**Company**”) is pleased to provide the following update.

Further to recent announcements, Parkway Minerals remains focused on commercialising a world-class technology portfolio to provide long-term sustainable solutions for processing complex brines, in the energy, mining and wastewater industries. The Company is collaborating with strategic partners and prospective clients, to deliver BPaaS – *Brine Processing as a Solution*[™].

Technology

iBC[™] Update

The recently acquired iBC[™] technology, provides the opportunity to pre-treat complex brines, particularly from the coal-seam gas (CSG) industry, in order to enable further downstream processing, to reduce wastewater volumes and recover valuable chemical products. Whilst previous testwork, performed prior to acquisition of the technology, confirmed the iBC[™] technology was effective in pre-treating CSG brines, most of this testwork was performed at relatively high temperatures on reasonably concentrated brines. Comprehensive testwork performed in recent weeks, has now confirmed the iBC[™] technology is also capable of achieving high rates of causticization efficiency at both low (ambient) temperatures, as well as low brine concentrations, significantly increasing the range of potentially economic application opportunities.

These highly encouraging findings will enable the development of innovative brine processing flowsheets and support ongoing exploratory discussions with several CSG market participants, facing significant brine waste related challenges.

In order to build further capability in wastewater treatment, Parkway Minerals has recently recruited a senior engineer who was previously design manager for several significant water treatment plants, including one of the largest wastewater treatment plants installed at an Australian CSG project. The Parkway Minerals engineering team continues to grow beyond core process engineering expertise and now incorporates direct experience in the design, construction and commissioning of wastewater treatment plants operating in the CSG sector. These practical capabilities provide Parkway Minerals with a strong foundation from which to develop effective *Brine Processing as a Solution*[™] offerings for the CSG sector.

aMES™ Update

New Testwork

Parkway Minerals recently commenced an aMES™ based testing program on a waste stream from a major base metal mine. The complex waste stream is of high impact to the global mining company which operates the mine and represents a significant opportunity for substantial value creation through the reduction of wastewater volumes (and associated costs) and the recovery of substantial mineral products (potentially exceeding >\$50 million/yr¹).

Technoeconomic Review

Parkway Minerals has recently completed a preliminary internal evaluation of a mining waste stream from an established European mining project which has previously undergone extensive aMES™ based testwork. Preliminary results suggest the potentially recoverable value from the waste stream, through the production of a saleable product, is of a similar magnitude to the above project.

In addition to the significant potentially recoverable value, both the project undergoing New Testwork and the project that has recently undergone a Technoeconomic Review (as outlined above), currently have significant annual cost burdens (>\$10 million/yr) associated with storing the waste streams, providing strong impetus for adopting viable long-term solutions. Parkway Minerals remains confident the technology portfolio the Company is currently commercialising, will form the basis of a solution for these types of large high-value waste streams, through the adoption of *Brine Processing as a Solution™*.

aMES™ Pilot Plant

The procurement process for the new state-of-the-art aMES™ pilot plant is nearing completion. Onsite preparations commenced last week, with plant assembly currently expected to commence around mid-Sep 2020, with commissioning anticipated approximately 2 - 4 weeks thereafter. Whilst the project has a well-defined schedule and execution plan, in light of third-party dependencies and potential COVID-19 related impacts (see below), there is a risk that pilot plant commissioning may not be completed by the time the KLPP-PFS is due for completion. Further details are provided below.

Victoria COVID-19 Lockdown

Earlier this year, Parkway Minerals established an Engineering & Technical Office co-located at Victoria University's Werribee Campus, the site where the majority of the laboratories and piloting facilities associated with the Company's various technology programs are located.

On Sunday 2 August 2020, Melbourne (where the Werribee Campus is located) moved to Stage 4 Restrictions associated with the COVID-19 outbreak. Victoria is currently in a State of Emergency, which is scheduled to end on 13 September 2020. During the Stage 4 Restrictions and the State of Emergency, access to the Werribee Campus has been reduced significantly, and has been limited to essential activities. Key personnel supporting the Company's activities have been granted certain exemptions, allowing key activities to proceed with the adoption of relevant safety protocols, albeit on reduced schedules to minimise risks.

Strategic Alignment

Parkway Minerals continues to attract interest from a number of major companies operating in the energy, mining and wastewater industries, including unsolicited interest in potentially establishing strategic partnerships to target substantial global opportunities, in a range of target markets/industries. Several discussions about potential collaboration remain ongoing.

¹ This number represents the estimated insitu value of potentially recoverable mineral products based on 100% recovery and payability. This is not a production or revenue forecast, but provided for general information purposes only, in order to illustrate the potential scale of the opportunity.

Projects

Karinga Lakes Potash Project – Pre-Feasibility Study (KLPP-PFS)

The KLPP-PFS being jointly delivered by Parkway Minerals and Worley is progressing well. The project team continues to make significant progress and has identified several process optimisation opportunities which are likely to be applicable to more advanced (brownfield) project opportunities, such as those outlined above in the aMES™ Update section. The aMES™ based process plant design is substantially complete, with the current focus on non-process infrastructure. The KLPP-PFS is currently scheduled for completion in mid-Oct 2020.

Parkway Minerals has received interest from a potash company to potentially utilise the aMES™ process plant design being developed for the KLPP, to develop a significant potash resource in North America.

New Mexico Lithium Project (NMLP)

The NMLP represents an attractive exploration opportunity for the discovery of mineral rich brines. Due to the anticipated temperature and composition of the interpreted in-situ brines, the project was considered to be potentially suitable for development with the aMES™ technology, upon discovery of a suitable brine hosted mineral resource.

Despite the prospectivity of the project, in light of i) recently identified project access related challenges, ii) COVID-19 related operational difficulties in the United States, iii) the continued collapse in lithium prices throughout 2020, and iv) the relatively high holding costs (significant claim renewal costs were payable at the end of August 2020), the Company has made the strategic decision to relinquish its interest in the NMLP.

Given Parkway Minerals has the opportunity to share in project development related benefits through the strategic adoption of the aMES™ technology, without necessarily needing to contribute to project development related costs, participation in the earlier resource exploration phase is a substantial risk that cannot be justified at this time. Given the challenges outlined above, ongoing exploration at the NMLP would have required considerable additional investment and focus, which can now be applied to the advancing the technology portfolio related priorities outlined above.

Commentary

Parkway Minerals – Managing Director, Bahay Ozcakmak commented:

“The progress we are making across our technology portfolio continues to provide us with encouragement that we are developing solutions that industry desperately requires. We have deliberately made the decision to tackle large complex brine-based problems, which have proven to be difficult to process with conventional wastewater treatment products and/or technologies. In this light, our go-to-market strategy is necessarily more complex than that of more conventional approaches, however, also provides the opportunity to generate correspondingly lucrative returns, in the event of success. The scale of the opportunities we are seeking to address, including those outlined in this announcement, highlight the opportunity for Parkway Minerals to build a significant business, through the successful commercialisation of our technology portfolio.

The decision to relinquish our interest in the NMLP was strategic, as this will ensure we continue to focus our limited resources on more strategic opportunities, such as the commercialisation of our BPaaS™ technology platform.”

On behalf of Parkway Minerals NL.



Bahay Ozcakmak

Managing Director

Additional Information

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aMES™ Technology

The *activated Mineral Extraction System*, or **aMES™** is an innovative process technology that enables the treatment of concentrated brine solutions to recover a range of valuable compounds, reagents and fresh water. The technology utilises a proprietary multi-staged process incorporating novel membrane technology and is based on proprietary IP, incorporating patents, expertise and know-how acquired over more than a decade of intense process development.

Advantages of the aMES™ technology include:

- improvements in mineral recovery and product quality,
- opportunity for substantial project capex & opex savings,
- efficient use of energy and produces pure water as a by-product, and
- improved project footprint and environmental sustainability.

Ongoing collaboration with a number of brine project developers and operators has confirmed there are many applications where the aMES™ technology has the potential to deliver substantial value by enhancing existing flowsheets, in order to improve overall project performance.

Additional Information

www.parkwayminerals.com.au/ames-technology

iBC™ Technology

The *integrated Brine Causticization*, or **iBC™** is a patented process technology that simultaneously removes common impurities from waste brine streams and converts sodium carbonates and bicarbonates commonly found in coal seam gas (CSG) brines, into more soluble sodium hydroxide.

As a result of the causticization step, the iBC™ technology produces a purified brine suitable for downstream processing, including with the aMES™ technology, for the production of various salt products and industrial-grade sodium hydroxide.

Additional Information

<https://www.parkwayminerals.com.au/ibc-technology>

aMES™ Brine Processing Technology

Key Industries (Applications)

- Mining natural brine (salt lakes)
- Solution mining brine (potash)
- Refinery & industrial waste brine
- Wastewater treatment brine

Target Products (Produced)

- Potash (MOP/SOP/KMS)
- Lithium (brine derived)
- Range of byproducts (B, Br, Ca, Co, Cu, I, Mg, Na, Ni, Si, Sr, REE, Si)
- Reagents
- Water

iBC™ Brine Pre-Treatment Technology

Key Industries (Applications)

- Industrial waste brine (CSG)
- Wastewater treatment brine

Target Products (Produced)

- Sodium hydroxide concentrate
- Sodium chloride
- Byproducts (Ca, Mg, Si)

About Parkway Minerals

In October 2019, Parkway Minerals (ASX: PWN) completed a transformational transaction by acquiring an Australian unlisted public company, Consolidated Potash Corporation (CPC). Through CPC, Parkway Minerals acquired a minority interest in the Karinga Lakes Potash Project (KLPP) in NT Australia. The CPC transaction, also resulted in Parkway Minerals acquiring the innovative aMES™ technology, which has been developed to process a range of challenging brine streams from the mining industry, in order to recover valuable minerals, reagents as well as produce fresh water.

Given the significant market opportunities, Parkway Minerals is focused on commercialising a world-class technology portfolio to provide long-term sustainable solutions for processing complex brines, in the energy, mining and wastewater industries. In order to achieve this objective, Parkway Minerals is partnering with leading industry participants to provide, BPaaS – Brine Processing as a Solution™.

Strategic Investment

Parkway Minerals holds a strategic investment in Davenport Resources (ASX: DAV), which has successfully delineated a globally significant in-situ potash resource (in excess of 550 million tonnes of contained potash), at its South Harz project in Central Germany. Recently completed scoping studies have delivered excellent technical and economic results and provide Davenport Resources with an attractive opportunity to create and unlock substantial value.

Parkway Minerals is commercialising a world-class technology portfolio to provide long-term sustainable solutions for processing complex brines, in the energy, mining and wastewater industries.

Our mission is to collaborate with leading strategic partners and prospective clients to deliver

BPaaS – Brine Processing as a Solution™.

Forward-Looking Statements

This ASX Release may contain certain “forward-looking statements” which may be based on forward-looking information that are subject to a number of known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from those presented here. Where the Company expresses or implies an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and believed to have a reasonable basis. Forward-looking information includes exchange rates; proposed or projected project or transaction timelines; uncertainties and risks associated with the advantages and/or performance of the Company’s projects and/or technologies; uncertainties and risks regarding the estimated capital and operating costs; uncertainties and risks regarding any envisaged timelines in relations to any results, milestones, partnerships, including but not limited to any milestones which may require obtaining approvals from third parties.

For a more detailed discussion of such risks and other factors, see the Company’s other ASX Releases. Readers should not place undue reliance on forward-looking information. The Company does not undertake any obligation to release publicly any revisions to any forward-looking statement to reflect events or circumstances after the date of this ASX Release, or to reflect the occurrence of unanticipated events, except as may be required under applicable securities laws.