

# MILO BSM IBHOSIBO

# ASX Announcement

22 May 2020

ASX: **PWN** FSE: 4IP

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# PARKWAY MINERALS RELEASES NON-DEAL ROADSHOW PRESENTATION

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

# The Company has recently made several important announcements including:

- Signing a Global Strategic Cooperation Agreement with Worley (8 May 2020)
- Commencing the Karinga Lakes Potash Project Pre-Feasibility Study (11 May 2020)
- Acquisition of the iBC<sup>™</sup> Brine Technology (15 May 2020)

In order to provide further details about these announcements and how they strengthen the corporate strategy moving forward, the Company has today released a Non-Deal Roadshow Corporate Presentation (22 May 2020), attached to this announcement.

The presentation will be shared with prospective partners, investors and investor relations service providers next week, as part of a virtual roadshow to promote the Company.

As Parkway Minerals remains well funded (\$2.19 million in cash at 31 March 2020 and \$1.74 million in marketable securities), the presentation will be released as part of a non-deal roadshow during which time the Company will not be seeking to raise additional funds.

Approved for release on behalf of Parkway Minerals NL, by Bahay Ozcakmak.

### Additional Information

For further information contact:

### **Bahay Ozcakmak**

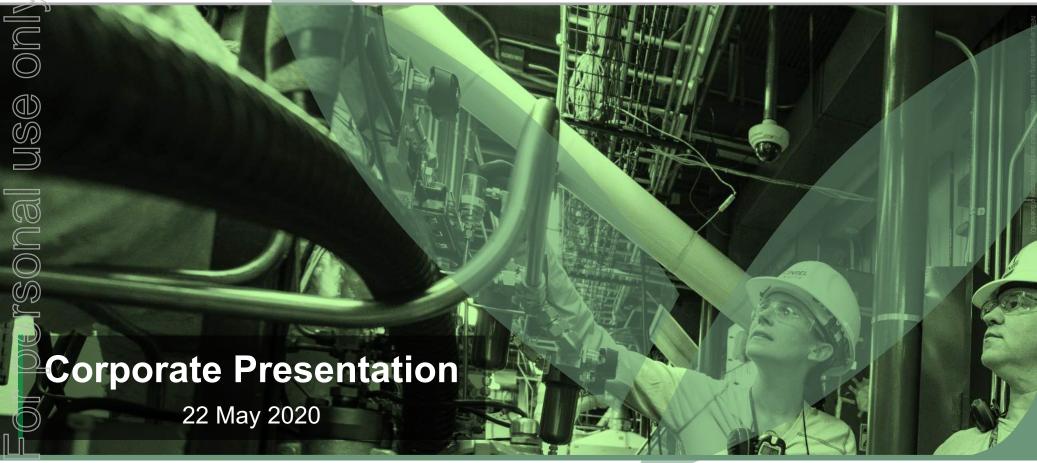
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NON-DEAL ROADSHOW PRESENTATION



ASX:

**PWN** 

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### KARINGA LAKES POTASH PROJECT (KLPP) – RESOURCE DESCRIPTION

### RESOURCE STATUS

On 20 February 2014, Verdant Minerals reported an in-situ SOP resource (in accordance with the 2012 JORC Code) for the Karinga Lakes Potash Project (KLPP). The 2014 resource is calculated using total porosity (total brine content) of the host rock. Subsequent to this resource estimate, in April 2019, the reporting requirements for brine resources under JORC have been updated, with a new set of requirements, which have been outlined in an AMEC (Association of Mining and Exploration Companies) publication titled, *Guidelines for Resource and Reservice Estimation of Brines*.

The updated brine reporting guidelines can be downloaded from the AMEC website: http://www.amec.org.au

The guidelines recommend the use of drainable porosity of the host rock (brine content that can be drained by gravity). The 2014 resource is not consistent with the new guidelines in this regard. Revision of the resource estimate to globe consistent with the guidelines will result in a reduction of the total reported resource. The 2014 resource estimate is comparable to other brine potash resources reported in accordance with the JORC Code 2012, that are calculated based on total porosity. During the transition to the new guidelines it has been common for companies to report both estimates calculated on total porosity and calculated on Drainable Porosity.

### ADDITIONAL INFORMATION

Detailed hydrogeological studies at the KLPP have been based on significant datasets including drill hole, trench, production tests and monitoring data over several years provide confidence in the project. In collaboration with CPC's joint venture partner Verdant Minerals, the KLPP joint venture will determine an appropriate work program, (as part of a feasibility study) to to revise the resource estimate for the KLPP. As a result, investors are cautioned not to make investment decisions based on the presently reported and publicly available mineral resource for the KLPP.

# **Overview**



Access to Freshwater – A Rapidly Growing Challenge
Our Mission
Processing Brine with Proprietary Technology
Building Sustained Competitive Advantage
Advantages of Brine Processing as a Solution – in simple terms
Advantages of Brine Processing as a Solution – in more detail
Innovative Business Model – Leveraging Technology
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# Access to Freshwater – A Rapidly Growing Challenge



### Overview

Increasing demand for freshwater, and reduced tolerance for wastewater generation and storage, is creating opportunities for new wastewater processing technologies.

# i) Water Crisis

Global population growth and rapid economic development is putting pressure on limited freshwater resources with:

- ~1.1 billion people worldwide lacking access to water.
- ~2.7 billion find water scarce for at least one month of the year.

# ii) Competing Uses for Water

- The agriculture, energy and mining sectors are amongst the largest consumers of water, globally.
- Access to freshwater is becoming increasingly challenging.

# iii) Need for Improved Sustainability

- It is estimated that, less than 5% of liquid wastes from the mining industry undergo any form of processing to recover freshwater.
- Permitting new mines (and operation of existing mines) that require freshwater is increasingly complex and challenged.

# iv) Desalination Plants

- Rapidly growing market to meet major global water challenges.
- The ~16,000 operating desalination plants produce more than **140 million cubic metres (m³) of waste brine, daily**.





Desalination Is Booming. But What About All That Toxic Brine?

Desalination generally be a beginning to be a beginning t

f y 🖂



# The Basis of Water Sustainability

- Reduce use of water efficiency technologies
- Reuse requires capturing waste streams
- Recycle requires processing of wastewater

# **Recycling Water**

- Water recycling provides the greatest opportunity to concurrently:
  - Reduce wastewater storage, and;
  - Recover freshwater
  - Converting a liability into an asset

# Total Dissolved Solids (TDS, salts) in Feedwater & Wastewaters

- Low TDS feedstocks are readily recycled with conventional desalination technologies, primarily reverse osmosis (RO).
- High TDS feedstocks, from industrial operations, including in the energy, mining and fast-growing desalination sector produce over 250,000,000m³ of concentrated brine, daily.
  - Conventional technologies for processing these high-TDS brine streams are inefficient and costly.

# **Innovative Processing Technology**

Opportunity to process high TDS brine streams.

# **Our Mission**



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.

PROPRIETARY TECHNOLOGY PORTFOLIO

**iBC** TM

Brine Pre-Treatment Technology

**aMES**<sup>TM</sup>
Brine Processing Technology

+ knowhow
For Processing Complex Brine

BPaaS

Brine Processing as a Solution™

# **Processing Brine with Proprietary Technology**



# **Processing Range of Brines and Salts**

- Globally, more than 250,000,000m³ of concentrated brine is produced daily, more than half of the brine is produced by desalination plants.
- Large amounts of primary and waste brines are also produced from mining (potash, lithium), energy (oil, gas, power generation) and other major industries.
- Processing and disposal of these brines is often complex, problematic and expensive. Processing **costs can exceed \$10/m³**, providing an attractive opportunity.



# **Economic Brine Processing**

As a **mining technology company**, Parkway Minerals is focused on recovering valuable minerals from these brines, whilst reducing waste volumes.

# In simple terms, we:

- 1) Take waste brine streams (feedstock).
- 2) Process the brine with our aMES™ technology. ···
- 3) Recover very pure fresh water, and
- 4) Produce range of **high-purity minerals** including potash (MOP, KMS, SOP), Mg/Li & other salts. :

# aMES™ – Proprietary Brine Processing Technology



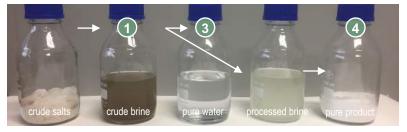




# Production of High-Purity Salts ◀



# **Processing Range of Brines and Salts**



# **Building Sustained Competitive Advantage**



# **Creating Value Through Technology**

- Building and leveraging highly proprietary intellectual property (IP) portfolio based on world-class R&D.
- Extensive IP portfolio derived from more than \$20 million of R&D performed over the last decade.
- Portfolio of proprietary process technologies include:
  - aMES<sup>™</sup> activated Mineral Extraction System
  - iBC<sup>™</sup> integrated Brine Causticization process
  - knowhow for processing complex brines, with additional IP generation/protection underway.
- These technologies provide a clear value proposition, where mature low-cost alternatives do not exist.
- Parkway Minerals is building a proprietary (i) Technology Platform and adopting an (ii) Innovative Business Model, as a source of Sustained Competitive Advantage.
- Parkway Minerals is well placed to be part of the long-term solution for processing complex brines.

# i) Building the Technology Platform

- Core Process Technologies
- Technical Capability
  - R&D With Victoria University
  - Engineering:
    - Process engineering (internal)
    - Full solution (with EPC partner)
- State-of-the-art Pilot Plant facilities
- Key OEM qualification & relationships
- Modular processing plant design for roll-out
- The KLPP-PFS assists with all the above and thereby assists in building the platform.

# ii) Innovative Business Model

- Building the Technology Platform, enables Parkway Minerals to provide
   Brine Processing as a Solution (BPaaS).
- Delivery of an Integrated Solution to clients involves:
  - Parkway Minerals providing a highly proprietary Process Technology Package.
  - Alignment with leading EPC and OEM partners enables delivery of an Integrated Solution.

# **Delivering Value to Clients**

- i) Build proprietary technology portfolio,
- ii) to develop technology solution,
- iii) and deliver value to clients.

Client – Major project/asset owner Needs to improve project performance

**PWN Provides**Process Technology
Package

Partners Deliver Integrated Process Technology Solution

**BPaaS** 

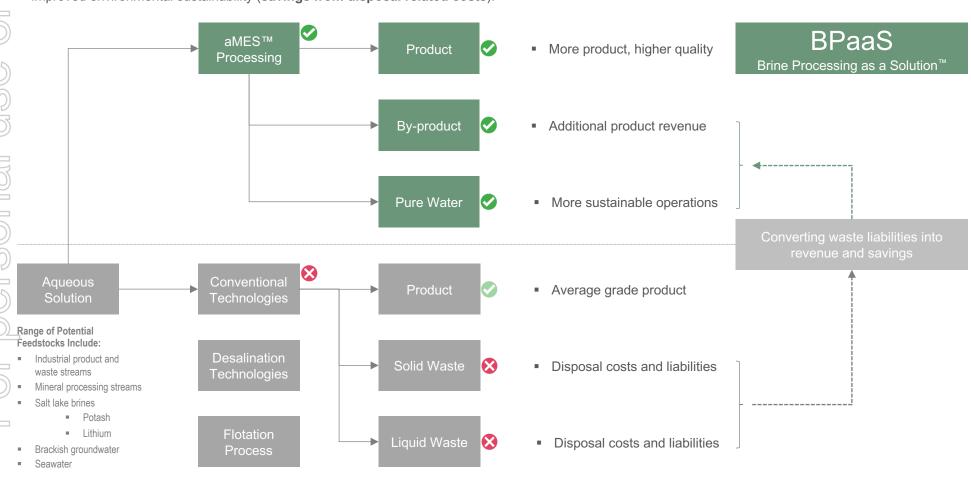
Brine Processing as a Solution<sup>™</sup>

# Advantages of Brine Processing as a Solution



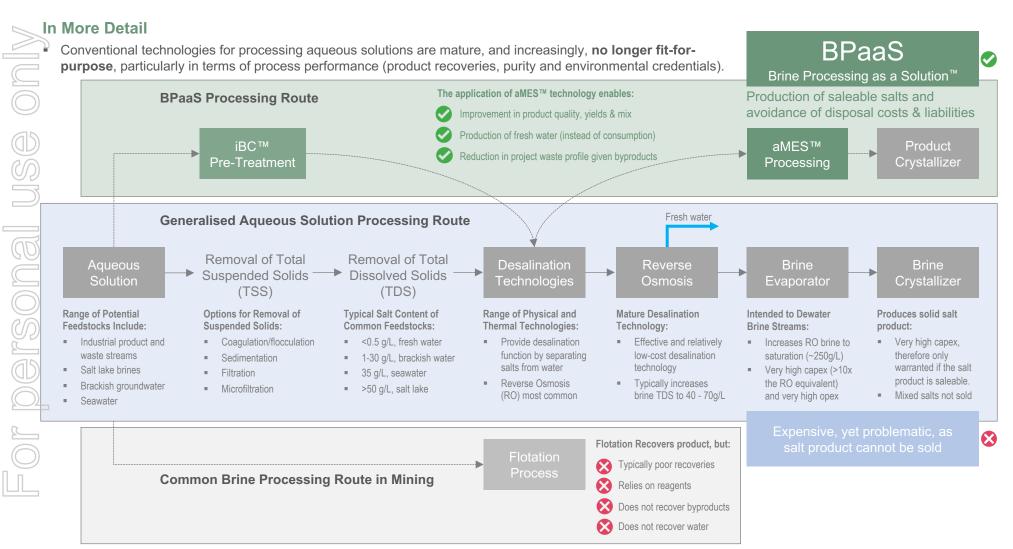
# **In Simple Terms**

The BPaaS technology offering, enables the conversion of otherwise waste brine and salt streams, into additional product (**by-product revenue**) and improved environmental sustainability (**savings from disposal related costs**).



# Advantages of Brine Processing as a Solution





# Innovative Business Model – Leveraging Technology

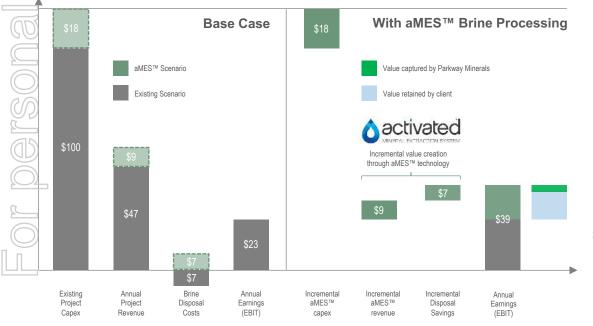


# **Leveraging Technology**

- Through the proprietary Technology Platform, Parkway Minerals is in the process of establishing itself as a leading brine technology solution provider.
- Enabling Parkway Minerals, together with its strategic partners, to offer:
  - BPaaS Brine Processing as a Solution™.

# Creating Sustainable Value

- Focus on large, high-value, brownfield opportunities, requiring process improvement.
- Clear value proposition based on processing complex waste brine streams.
- Processing reduces waste disposal costs, generates revenue and improves ESG.

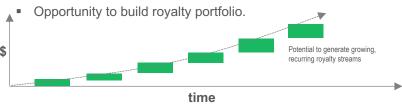


# BPaaS

Brine Processing as a Solution™

# Illustrative Case-Study – Conceptual

- Incremental capex for aMES<sup>™</sup> plant has short payback (<3yr).</li>
- Significant return on invested capital (ROIC), particularly for incremental capex, enables a modest royalty (5-20%) to be justified, given the client is sharing incremental value creation.
- Feasibility study related costs and project capex to be incurred by the client, with the aim of Parkway Minerals recovering all business development and evaluation related costs.
- Upfront and recurring royalties are highly value accretive to Parkway Minerals, given significant investment is not required.



IMPORTANT NOTE: The descriptions, graphics and numbers outlined on this slide are conceptual in nature and do not relate to specific projects and/or opportunities, do not represent any form of financial forecast by the Company whatsoever, and should not be relied on for any purpose. Refer to the Disclaimer slide (page 2) for further information.

# **Global Strategic Cooperation Agreement – Worley**



### Overview

- Alignment with an experienced **global engineering company** has been a key priority for building the next stage of the aMES™ Technology Platform.
- On <u>8 May 2020</u>, Parkway Minerals entered into a Global Strategic Cooperation Agreement to enable provision of engineering, procurement and construction (EPC) support to contracts executed under the agreement.
- The Global Strategic Cooperation Agreement provides Parkway Minerals with EPC support, underpinning ongoing efforts to commercialise the aMES™ technology platform.
- The agreement incorporates an innovative revenue sharing model and mutual exclusivities, ensuring **strong alignment between both parties**.

# **Key Terms of Agreement**

- The other party to the agreement is with a subsidiary of the **Worley Group**.
- Joint Projects The parties will nominate joint projects envisaging use of the aMES™ technology (including projects the parties are already involved with) to each other, and once declared a joint project, will pursue such project exclusively with each other.
- **Exclusivities** In addition to joint projects, the parties have agreed to certain exclusivities, non-compete and first right of refusal arrangements.
- **Revenue Sharing Model** The parties have agreed to an innovative revenue sharing model, where Parkway Minerals retains all preliminary evaluation and upfront licensing fees, with recurring licensing fees, and other revenues/margins, shared by the parties on a predetermined formula.
- Intellectual Property All intellectual property relating to the aMES™ technology platform, including any improvements, will remain the exclusive property of Parkway Minerals.
- Term Initial term of 3 years.

# aMES™ Project Opportunities

### **Parkway Minerals Project Portfolio**

- Parkway Minerals has identified several potential aMES™ opportunities in its existing business development portfolio, that are likely to be assessed for suitability under this agreement.
- Parkway Minerals intends to put forward several advanced-stage thirdparty projects for evaluation. Several of these projects have undergone substantial process evaluation (including successful aMES™ based piloting) and are operated by globally significant mining companies.
- On 11 May 2020, Parkway Minerals announced it had commenced the Karinga Lakes Potash Project – Pre-Feasibility Study (KLPP-PFS). The KLPP-PFS is being delivered under the Global Strategic Cooperation Agreement (Worley acting as study manager) and is intended to form the basis for joint capability development.

### **Worley Project Portfolio**

 Significant depth of opportunities within Worley's global network, with several potential aMES™ opportunities identified.

# **Global Opportunities**

■ Given the significant scale of addressable markets for the aMES<sup>TM</sup> technology, particularly in the energy and mining sectors, the parties have identified potential opportunities to deploy core capabilities.

### **Additional Details**

The parties are evaluating various options for joint marketing including potential press release, to provide further details about the collaboration and efforts in advancing the aMES™ technology platform.

# Karinga Lakes Pre-Feasibility Study (KLPP-PFS)



### Overview

- On 11 May 2020, Parkway Minerals announced commencement of KLPP-PFS.
- An overview of the Karinga Lakes Potash Project is outlined in Appendix 1B.

# The Karinga Lakes Potash Project – Pre-Feasibility Study (KLPP-PFS) will:

- Evaluate the merits of developing the KLPP based on an innovative development concept incorporating the aMES<sup>™</sup> technology.
- Assist in establishing the broader aMES™ technology platform through:
  - Construction and commissioning of a state-of-the-art aMES™ pilot plant.
  - Flowsheet optimization, validation and key equipment/vendor qualification.
  - Providing a practical demonstration of the advantages of the aMES™ technology over conventional brine project development concepts.
- The KLPP-PFS will be delivered under the recently announced Global Strategic Cooperation Agreement and will be supported by a range of specialist consultants.

# **Indicative Budget**

### \$2,000,000 Total project budget (increase WI\* from 15 to 40%), consists of:

- \$626,000 Accumulated gross expenditures already incurred (at 30 Mar 2020).
- \$536,000 Estimated grant leveraged funds will fund pilot plant (see next slide).
- \$191,000 Estimated partner, third-party and in-kind contributions.
- \$134,000 Contingency for PFS, payment required to meet earn-in spend.
- \$590,000 Estimated net external costs payable by Parkway Minerals to complete KLPP-PFS (Apr Nov 2020), inclusive of all pilot plant costs.
- All payments are subject to review, however, highlight extent of cost subsidization achieved through successful ARC grant awards and collaboration with R&D partner.
  - \* WI refers to the working interest, in the form of equity interest acquired in the project, by Parkway Minerals. Refer to Appendix 1B for further details.
  - \* ARC refers to Australian Research Council







# Building the Technology Platform

# OBJECTIVE 1 Process Optimisation

Optimise aMES™ flowsheet and validate major equipment (and key vendor) performance

# OBJECTIVE 2 KLPP PFS Validation

Generate plant performance data to support PFS related engineering and technoeconomic studies

# OBJECTIVE 3 Support Technology Scale-Up

Enable the evaluation of plant modularisation approaches to support rapid technology scale-up

# aMES™ Pilot Plant – Overview



# **Design Approach**

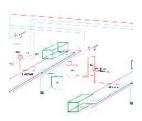
- **Plant Design** based on scaled-up version of proven proprietary aMES™ process plant designs, tested extensively at smaller scale in recent years.
- Process Engineering designed internally and incorporates increased sophistication including important instrumentation and controls.
- Process Simulation detailed process simulations performed in "digital pilot plant" to identify bottlenecks and performance optimisation opportunities.
- Procurement following vendor qualification, major long-lead items including pumps, vessels and heat-exchangers recently commenced.

# **Installation & Testing**

- The aMES<sup>™</sup> pilot plant will be installed and operated at Victoria University.
- Extensive onsite equipment including, installation container, crushing and grinding equipment and key infrastructure already installed at site, will reduce costs and project delivery timelines.
- Indicative commissioning date, September 2020.

# **Indicative Budget**

- \$500,000 Estimate to engineer and procure pilot plant and related equipment.
  - \$190,000 Estimate to build, commission and operate (for KLPP-PFS).
- \$690,000 Indicative total gross cost, inclusive of in-kind contributions.
- \$77,000 Estimated net costs (being the remainder payable by Parkway Minerals, after 30 March 2020) to procure and operate pilot plant.
  - All amounts are **included in KLPP-PFS budget** on previous slide.
- After allowing for undrawn grant funds, third-party funds, and payments made prior to 30 March 2020, remaining cash cost to Parkway Minerals is modest.







# Building the **Technology Platform**

# OBJECTIVE 1 Process Optimisation

Optimise aMES™ flowsheet and validate major equipment (and key vendor) performance

# OBJECTIVE 2 KLPP PFS Validation

Generate plant performance data to support PFS related engineering and technoeconomic studies

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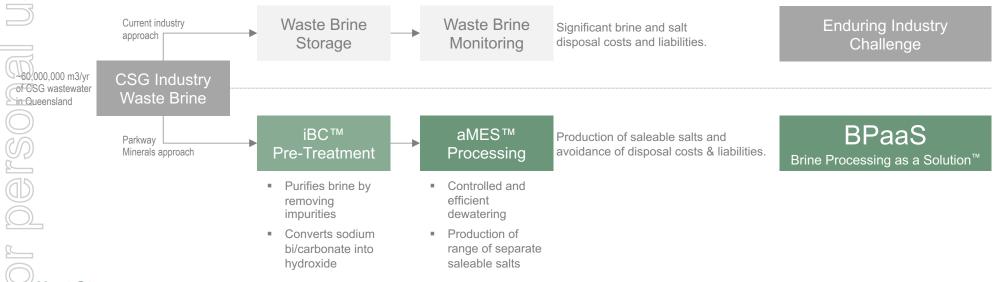
Enable the evaluation of plant modularisation approaches to support rapid technology scale-up

# iBC Technology™ – The CSG Opportunity



### Overview

- Significant associated water is produced by the Coal Seam Gas (CSG) industry in Australia. It's estimated 60 GL of associated water containing almost 200,000 tonnes of salts is produced in Queensland, annually. With the recent news (April 2020), that Arrow Energy was proceeding with the development of a \$10 billion CSG project in the Surat Basin in Queensland, the scale of the problem in processing waste brines, is anticipated to increase further.
- On 15 May 2020, Parkway Minerals announced it had acquired the integrated Brine Causticization (iBC™) technology.
- The acquisition includes the process patent, associated knowhow and a pilot plant based on the iBC™ technology.
- The iBC<sup>™</sup> technology purifies typical CSG industry brines and effectively integrates with the aMES<sup>™</sup> technology, enabling the subsequent production of saleable products from these pre-treated waste brine streams, which would otherwise require storage and disposal.



# Next Steps

- Parkway has been approached by several CSG industry participants, including operators, to explore options, as conventional approaches are inadequate.
- As part of the acquisition of the iBC™ technology, a pilot plant will be relocated to Victoria University, where a detailed technology optimisation and integration program will be undertaken to support ongoing business development activities in the CSG industry and assist in the commercialisation of the technology.

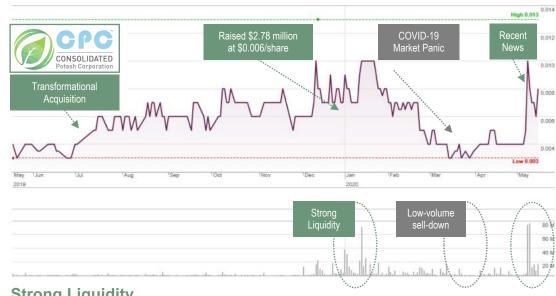
# **Corporate Snapshot**



	May	

Capital Structure	Current
Ordinary Shares (PWN) on issue	1,716,514,776
12-month Trading Range	\$0.003 - \$0.013
Market Capitalisation (at \$0.008)	\$13.7 million
Partly Paid Shares (PWNCA, \$0.019 unpaid)	246,600,643
Unlisted Options (\$0.02, 17 Aug 2020)	55,126,000
Unlisted Options (\$0.02, 16 Dec 2022)	303,166,664
Major Shareholders	%
Lions Bay Capital (LIC)	13.0%
Holdings associated with Managing Director	12.5%
Other T20 Shareholders	~34%
Top 20	~60%
Funding	\$
Debt	nil
Cash (at 31 March 2020)	\$2.19 million
Marketable Securities	Value (\$A)
34,267,700 units ASX: DAV @ \$0.050	\$1.71 million
7,142,850 units ASX: DAVO \$0.004	\$0.03 million
Total	~\$1.74 million

# Parkway Minerals (PWN) – 12 Month Share Price Chart



# **Strong Liquidity**

Strong liquidity, with several days of ~\$1 million/day in traded volumes (including Chi-X).

# **Directors & Management**

Adrian Griffin - Non-Executive Chairman Bahay Ozcakmak - Managing Director Richard Beresford - Non-Executive Director Patrick Power – Non-Executive Director

Robert van der Laan - Chief Financial Officer **Amanda Wilton-Heald** – Company Secretary

# **Stock Symbols**







Frankfurt: 4IP

# **Corporate Transformation Well Underway**



# **New Leadership**

- Since being appointed Managing Director at the 2019 AGM (<u>28 November 2019</u>), Bahay Ozcakmak has led the systematic transformation of the Company to better align with near-term growth opportunities associated with the aMES™ technology.
- Experienced executive Richard Beresford joined the board on <u>12 March 2020</u> as a nonexecutive director and is also providing technology commercialisation support.

# **Recent Developments**

### **Corporate Developments**

- Successfully recapitalised the Company by raising \$2.78 million in <u>December 2019</u>, with Parkway Minerals well capitalised to execute CY2020 business plan.
- Implemented significant cost rationalization plan to reduce costs and better align the business with required capabilities. Process involved substantial reduction in corporate costs (rent, admin, IT, consultants ...), relinquishment of Dandaragan Trough project, as well as the board and CFO recently electing to participate in the SSSP to reduce costs.
- Acquired iBC<sup>™</sup> technology, strengthening proprietary technology portfolio.
- Continued to build business development pipeline, including significant project piloting.
- Advanced relationships with key partners including R&D, OEM and EPC.

### **Capability Development**

- Established Engineering & Technical Office at Victoria University.
- Recruited experienced process engineering team.
- On 5 May 2020, Bahay Ozcakmak appointed Adjunct Associate Professor at Victoria University, in recognition of leading collaborative R&D initiatives since 2015.
- Established a Strategic Global Cooperation Agreement with Worley on <u>8 May 2020</u> to provide Parkway Minerals with EPC support, underpinning efforts to commercialise the aMES™ technology platform.

### **Current Focus**

- Building the Technology Platform:
  - Execution of aMES<sup>™</sup> pilot plant strategy
  - Commenced KLPP-PFS (potash pre-feasibility)
  - Alignment with leading EPC and OEM partners
  - Development of modular aMES<sup>™</sup> processing plant design to enable accelerated project evaluation and eventual roll-out.
- Implementing Innovative Business Model:
  - Executing the core foundations of the Technology Platform, to enable Parkway Mineral to provide Brine Processing as a Solution - BPaaS.
- Advancing Business Development Opportunities
  - Business development project pipeline includes:
    - Potash (MOP/SOP/KMS), both greenfield and operational projects.
    - Lithium, several greenfield projects.
    - Hydrometallurgical refineries, producing range of products including cobalt & nickel.
    - Industrial waste streams including brines.
    - Oil and gas projects including in the CSG industry producing brines.
    - Desalination plant brine from industrial operations (excluding SWRO).
    - Several other potential opportunities.

# **Investment Case**



### **BUILDING AN ATTRACTIVE BUSINESS**

# 1) Unique Technology

- Proprietary aMES™ technology platform patented IP & knowhow
- Acquisition of patented iBC™ technology
- Building world-class brine processing IP portfolio

# 2) Very Large Addressable Markets

- Global Mining, Energy, Desalination & Industrial waste brine streams
- All represent multi-billion dollar opportunities for the right technologies
- Strong economic, regulatory and ESG drivers supporting change

# 3) Focus on High Value Applications

High margin opportunities where a mature low-cost alternative doesn't exist

# 4) Working with Leading Strategic Partners

Partnering with tier-1 EPC (engineering) and OEM (equipment) partners

# 5) Highly Attractive Business Model

- Capital-light business model enables rapid roll-out and FCF generation
- Recurring revenues based on technology licensing related fees
- High barriers to entry enable significant value capture without ownership

# 6) Attracting Interest of Major Industry Players

Performing pilot studies and in discussions with prospective tier-1 clients

### WITH AN EXPERIENCED AND MOTIVATED TEAM

# 1) Experienced Team

- Strong industry and technology commercialisation experience
- Track-record of licensing technologies to majors and accretive transactions

# 2) Strong Alignment

- Board, management and engineering team are aligned with shareholders, given share/option ownership
- Insiders and associates control significant proportion of share register
- All directors and CFO currently participating in salary sacrifice share plan
- Company now run with "owner mindset" with tight cost control and reluctance to dilute shareholders unless linked to significant value accretive initiative/s.

# 3) Generating Corporate Traction

 Increasingly being approached by credible sophisticated and institutional investors that have experienced success in the innovation, junior tech, water-tech space, interested in exploring strategic opportunities.

Join us on our journey, by following us on LinkedIn.

BPaaS

Brine Processing as a Solution™

# **Appendices**



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**Appendix 1A -** aMES™ Case Study: SOP Production

**Appendix 1B -** Karinga Lakes Potash Project (KLPP) – Overview

Appendix 1C - New Mexico Lithium Project (NMLP) - Overview

**Appendix 1D -** Davenport Resources (ASX: DAV)

# aMES™ Case Study: SOP Production



### Overview

There is growing demand for sulphate of potash (SOP), however, bringing new production online through conventional means, faces significant challenges.

# 1) Process Water

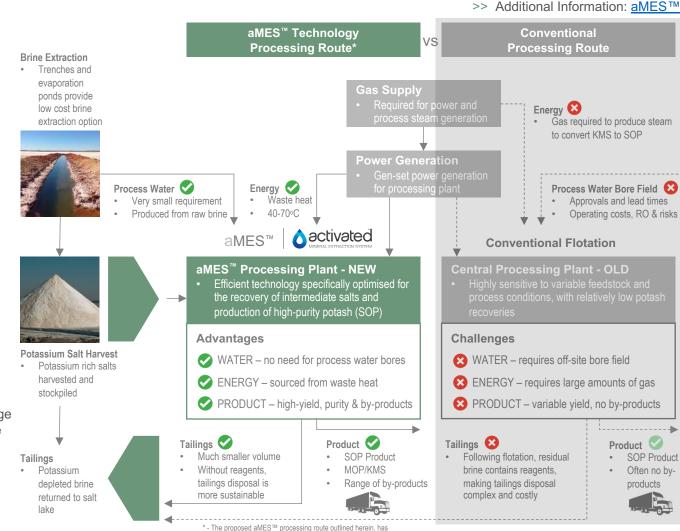
- Depending on the specific flowsheet, the production of 1 tonne of SOP can require in excess of 10m<sup>3</sup> of fresh process water.
- The aMES™ technology recovers and recycles high-quality process water.

# 2) Mineral Processing

- Mineral recoveries associated with flotation and other conventional processes are sensitive to feedstock composition.
- The aMES™ technology achieves high recoveries including of by-products.

# 3) Waste Brine Disposal

- Various mineral processing stages associated with flotation, leaching and purge solutions, generate substantial waste brine streams.
- Disposal of these waste brine streams is often both complicated and costly.
- The aMES™ technology can process & recover products from these streams.



potential applications for the Karinga Lakes Potash Project (KLPP)

# Karinga Lakes Potash Project (KLPP) – Overview



>> Additional Information: KLPP

### Introduction

- Parkway Minerals (CPC) has earned initial 15% interest in the KLPP and has the right to acquire up to 40% through staged investment.
- CPC holds a conditional option to acquire additional 10.1%.
- In February 2019, CPC delivered a Scoping Study to the project operator, Verdant Minerals, investigating a potential development scenario for the KLPP based on the aMES™ technology.
- CPC has established a JV with Verdant Minerals to pursue feasibility studies regarding potential project appraisal and development.

# **Geology & Infrastructure**

- The project consists of a chain of dry salt lakes and is located within the Central Australian Groundwater Discharge Zone.
- Brine lake system located in prime geological setting on pastoral land in Central Australia (Northern Territory).
- Ideally located, with major road and rail infrastructure located in proximity to the project, with regional gas options also available.

### **Extensive Resource Evaluation Studies**

- Extensive resource appraisal studies have been performed by Verdant Minerals since 2010.
- If reviewing historically reported resource evaluation, this information should only be considered in conjunction with the clarifications outlined in the *Resource Status* section of the Disclaimer (page 2).

### **Forward Plan**

- Recently announced <u>Commencement of a Pre-Feasibility Study</u> for the KLPP, based on an aMES<sup>™</sup> development concept (KLPP-PFS).
- A tenure consolidation process is currently underway by the operator.









PP Regional Infrastructure (Northern Territory). (B.II) Lake Miningere Trial Trench, (B.II) Lake Miningere Brine & Solt Samples, (B.III) SOP produced from Lake Miningere salts. (3) KLPP Exploration Licence Management of Maps and associated details are illustrative only and not to scale

# aMES™ Application Rationale

- Potential to rapidly develop a more capital efficient and sustainable potash production operation compared to conventional development pathways.
- The aMES<sup>TM</sup> pathway potentially eliminates the requirement for flotation, process steam, gas pipeline and a freshwater bore field, which collectively represent major costs in the traditional SOP production flowsheet previously evaluated.
- Potential to recover magnesium salts as a by-product.
- >> Refer to Appendix 1A, for SOP aMES<sup>™</sup> Case-Study.



KLPP - potash brine preparation & extraction for aMES™ processing

Parkway Minerals (ASX: PWN)

**Corporate Presentation** 

22 May 2019

# New Mexico Lithium Project (NMLP) - Overview



>> Additional Information: NMLP

# Introduction

- Parkway has acquired an initial 70% interest in the NMLP and has the right to acquire up to 100% through staged investment.
- Project covers ~40km² of federal BLM claims no royalties payable.
- Project ideally located, with major road, rail, gas and power infrastructure passing through or adjacent to the project area.

# Lordsburg Playa

- The project displays important geological components including:
  - i) "source" lithium bearing volcanic rocks.
  - ii) "scale" large catchment area to accumulate lithium.
  - iii) "concentration" located in a geothermally active region.
  - iv) "trap" closed central playa in an arid environment.

# **Right Geology for Lithium Brine**

- Basin and Range extensional faulting actively defines subsiding closed basin.
- Volcanic source rock include lithium bearing rhyolites.
- Region of high heat flow including hot springs to leach lithium from
   rhyolites into brines in the closed Lordsburg basin.
- Basin morphology provides large catchment area for groundwater and brine recharge. Long lived basin for enrichment of lithium brines.

### **Forward Plan**

- Farm-out discussions slowed-down due to COVID19 related impacts.
- Evaluating prospect of exploration hole in July 2020 (<\$100k).</li>







[A] Map of the United States of America. (B) Map of New Maxio IN.M.I, (C) NMLP Claim Map
Maps and associated details are illustrative only and not to scale. Map does not reflect recent claim consolidation.



Lithium brines processed with aMES™ technology, as a pretreatment.

# aMES™ Application Rationale

- Potential to direct process the brine with aMES<sup>™</sup> technology, therefore eliminating or reducing the need for evaporation ponds.
- Potential to rapidly develop a more capital efficient and sustainable lithium production operation compared to conventional development pathways.
- Potential to process and recover range of additional compounds including potash as a by-product.
- Third-party interest in the NMLP, with potential synergies with adjacent & regional resource projects.

# **Davenport Resources (ASX: DAV)**



>> Additional Information: DAV

### Overview

 Davenport Resources is a pure-play potash company with a globally significant potash resource inventory, in an established potash mining district of South Harz in Central Germany.

# **PWN Shareholding**

### PWN is the largest shareholder in Davenport Resources holding:

- 34,300,000 shares (~20% issued capital) and 7.1 million options (DAVO)
- Value of shareholding \$1.76 million (based on recent price of \$0.05/share)

### **Potash Resource**

- Davenport controls over 5.27 Billion tonnes (average grading 10.8% K<sub>2</sub>O) of JORC Inferred Resource from its portfolio of mining and exploration licences, including significant sylvinite and carnallitite resources.
- Davenport's portfolio of resources represents Western Europe's largest potash inventory and contains several stand-alone projects.

# **Corporate Opportunities**

- Parkway Minerals has previously performed testwork to demonstrate the suitability of the aMES™ technology to process primary and waste brine streams from similar potash projects.
- Parkway Minerals and Davenport Resources have explored potential pathways for adding value to the Davenport Resources project portfolio, and/or unlock value in a corporate transaction, which may involve:
  - Introduction of JV partner/s and/or strategic investors, or
  - Sale of non-core project to raise funds for core projects, or
  - Dual-listing of the company on a major European exchange.

