



23 DECEMBER 2020

# Annual General Meeting Presentation

ASX: PWN

[parkwayminerals.com.au](http://parkwayminerals.com.au)

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## **KARINGA LAKES POTASH PROJECT (KLPP) – MINERAL RESOURCES**

### COMPETENT PERSONS STATEMENT

The information in this announcement that relates to Exploration Results and Mineral Resources for the Karinga Lakes Potash Project is based on, and fairly represents, information compiled by Mr Ben Jeuken, who is a member of the Australian Institute of Mining and Metallurgy and a member of the International Association of Hydrogeologists. Mr Jeuken is employed by Groundwater Science Pty Ltd, an independent consulting company. Mr Jeuken has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity, which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Jeuken consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Parkway Minerals confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement dated [5 November 2020](#). Parkway Minerals confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

# Presentation Outline

## Overview

This presentation is intended to provide a brief overview of some of the major developments throughout the year, and provide an overview of key priorities for Parkway Minerals.

## Key Topics

- About Us
- Building Strong Foundations for Growth
- Corporate Snapshot
- Water Related Challenges
- Opportunities in the Mining Sector
- Next-Generation Technologies
- Process Technology Delivery Platform
- Karinga Lakes Pre-Feasibility Study
- State-of-the-art aMES™ Pilot Plant
- Business Development Overview

## Additional Information

- More specific details regarding Parkway Minerals, can be found in the 1 December 2020 Corporate Presentation, or at the Parkway Minerals website:
- [www.parkwayminerals.com.au](http://www.parkwayminerals.com.au)

## Detailed Corporate Presentation

- Released on the ASX platform on [1 Dec 2020](#).



## Corporate Presentation provides more detailed information about:

- Our Process Technologies
- Environmental, Social, Governance (ESG) related trends
- Our investment in Davenport Resources

# About Us

## About us

- We are an experienced industrial process technology team, focused on addressing **high concentration** process streams and **wastewater related challenges**, in the energy, mining and wastewater industries.



*Industrial process technology team*

## What problems are we solving?

- Recovery of minerals and reagents from concentrated process and wastewater streams, to achieve **improved financial & sustainability outcomes**.



*Economic processing of wastewater*

## What we do?

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



*Commercialising world-class technology*

## What are our technologies?

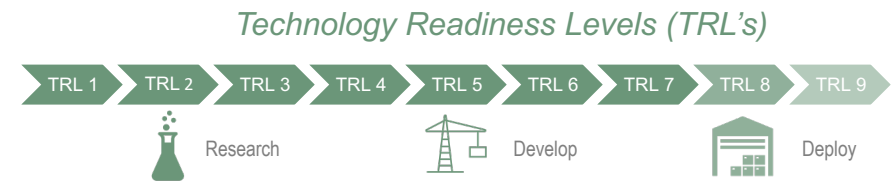
- aMES™ - brine processing technology
- iBC™ - brine pre-treatment technology
- undisclosed – synergistic technologies (developed and acquired)
- undisclosed – synergistic technologies (various, under evaluation)



*Portfolio of valuable proprietary technologies*

## Where are we on the commercialisation journey?

- At the advanced commercialisation stage, approaching key early deployment phases, refer to Technology Readiness Level graphic.



## How do we make money?

- Short-term – cost-recovery from piloting, engineering and feasibility studies.
- Medium-longer term – upfront licensing fees, ongoing royalties & services.



*Capture material share of value creation*

# CY2020 – Building Strong Foundations For Growth

## Strategic Foundations

- **Recent Achievements - Technology**
  - Established high-calibre process engineering team.
  - Broadened and deepened technology portfolio:
    - Advanced aMES™ technology
    - Acquired iBC™ technology
    - Developing/acquiring synergistic technology
  - Advanced technology portfolio:
    - Completed KLPP-PFS
    - Commissioned aMES™ pilot plant
  - Performed several third-party project evaluations.
- **Recent Achievements – Project Delivery Capability**
  - Global Strategic Cooperation Agreement with Worley
  - Other strategic relationships/partners/OEM's

## Well Funded

- Strong balance sheet, with near-term funding of >\$5 million consisting of \$2.7M cash, \$2.4m marketable securities as well as additional funding from R&D refund and grant funds.
- Access to additional “growth-capital”, for accretive initiative/s.

## Legacy Assets

- Strategically important assets in the near-term, however, likely to be divested in the medium-term:
  - Karinga Lakes Potash Project (equity interest)
  - Davenport Resources (strategic investment)



## Our Mission

- To be recognised as a **technology solution provider of choice**, in relation to addressing high concentration process and wastewater related challenges, in the energy, mining and wastewater industries.

## Near-Term Goals

- Advancing Brine Processing as a Solution (BPaaS™) platform:
  - Ongoing pilot plant studies and techno-economic evaluations are supporting active business development.
  - Presenting initial proposals for concept and/or feasibility studies and advancing commercial discussions.
- **Establish conventional product and services capability:**
  - Acquire or build small-scale product & services capability (conventional processes) to generate near-term revenue.

## Medium-Term Goals

- Generate revenue from:
  - Feasibility & piloting studies, licensing & royalty fees from technology portfolio.
  - Conventional solutions and professional services.
- Divest legacy assets and redeploy capital for growth.

## Long-Term Goals

- To provide technology & support for a portfolio of (non-owned) next-generation wastewater processing plants.
- Generate free cash flow (FCF) to enable payment of dividends.

# Corporate Snapshot

As of 21 December 2020

Capital Structure	Current
Ordinary Shares (PWN) on issue	1,900,753,983
12-month Trading Range	\$0.003 - \$0.015
<b>Market Capitalisation (at \$0.011)</b>	<b>\$21 million</b>
Partly Paid Shares (PWNCA, \$0.019 unpaid)	246,600,643
Unlisted Options (\$0.02, 16 Dec 2022)	303,166,664

Major Shareholders	%
Lions Bay Capital (LIC)	11.7%
Holdings associated with MD	11.5%
Other T20 Shareholders	~28%
<b>Top 20</b>	<b>~51%</b>

Funding	\$
Debt	nil
Cash (at 30 Sep 2020)	\$1.5 million
<b>Unaudited – Cash (at 21 Dec 2020)</b>	<b>\$2.7 million</b>

Excludes, i) ~\$0.1m in remaining and ~\$0.2m of recently awarded grant funds, ii) ~\$0.2m R&D rebate.

Strategic Investment	Value (\$A)
34,267,700 units ASX: DAV @ \$0.068	\$2.330 million
7,142,850 units ASX: DAVO \$0.013	\$0.093 million
<b>Marketable Securities - Total</b>	<b>~\$2.42 million</b>

## EXPERIENCED TEAM DELIVERING CORPORATE TRANSFORMATION

### 1) Experienced Team

- Strong corporate, M&A, industry and **technology commercialisation experience**.

### 2) Strong Alignment

- Board, management and employees **are aligned with shareholders**, given ownership.
- Insiders and associates control significant proportion of share register.
- Company is operated with an “owner’s mindset”, with tight cost control.

### 3) Corporate Transformation Well Underway

- Divested non-core projects, established engineering & tech commercialisation capability.
- Building a products and services capability to **support technology commercialisation**.

### 4) Generating Corporate & Strategic Traction

- Strong relationships with prospective partners and clients, as well as credible sophisticated and **institutional investors** that have experienced success in the technology sector.

### Directors & Management

<b>Adrian Griffin</b>	<i>NEC</i>
<b>Bahay Ozcakmak</b>	<i>MD</i>
<b>Richard Beresford</b>	<i>NED</i>
<b>Patrick Power</b>	<i>NED</i>
<b>Robert van der Laan</b>	<i>CFO</i>
<b>Amanda Wilton-Heald</b>	<i>CoSec.</i>

### Stock Symbols



ASX:  
**PWN**

**BÖRSE**  
**FRANKFURT**

Frankfurt:  
**4IP**

Join us on our journey, by following us on [LinkedIn](#).

# Water – A Growing ESG 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 (m<sup>3</sup>) of waste brine, daily**.



## The Basis of Water Sustainability

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

## Recycling Water

- Wastewater recycling provides the greatest opportunity to concurrently:
  - Reduce wastewater storage, and;
  - Recover freshwater
  - Converting a liability into revenue**

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

- Low TDS - feedstocks are generally 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 **250,000,000m<sup>3</sup> 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.

# Processing Brine with Proprietary Technology

## Processing Range of Brines and Salts

- Globally, more than **250,000,000m<sup>3</sup> of concentrated brine is produced daily**, more than half the brine is produced by **desalination plants**.
- Large amounts of waste brines are also produced by the **energy** (oil, gas, power generation) and other major industries.
- Large amounts of primary brines are also produced by **mining** (potash, lithium) as well as concentrated process waste streams “brine” from downstream refining.
- Processing and disposal of these brines is often complex, problematic and expensive. Processing **costs can exceed \$10/m<sup>3</sup>**, representing a major cost burden.

Net benefit of processing can exceed **\$100/m<sup>3</sup>**

## Brine Processing Technology Platform



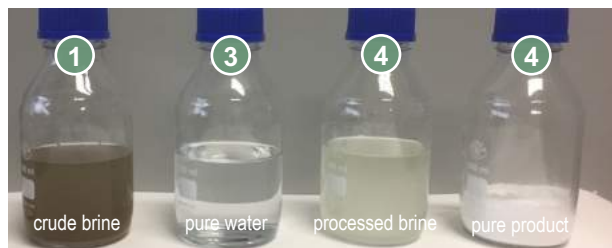
### BPaaS™ - Brine Processing as a Solution

As a brine processing technology company, Parkway Minerals is focused on recovering valuable minerals from complex brines, whilst reducing waste volumes.

### Our Goal

To be recognised as a **technology solution provider of choice**, in relation to addressing high concentration process and wastewater related challenges, in the energy, mining and wastewater industries.

## Processing Range of Brines



### Simplified Brine Processing Process:

- 1) Take waste (crude) brine streams (feedstock).
- 2) Process the brine with proprietary brine processing technology including [aMES™](#) and/or [iBC™](#).
- 3) Recover very pure fresh water, thereby reducing waste volumes, and
- 4) Produce range of **high-purity products** including potash, lithium, nickel, cobalt, copper & other salts.



# Mining Sector Wastewater Treatment Opportunities



Seawater Desal (SWRO)



Desalination Plant

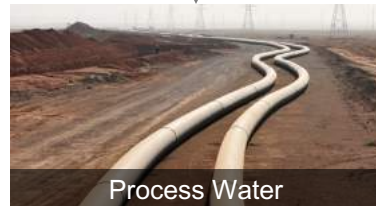
1

**Waste Brine**  
- chemicals  
- salt  
- water

1

## Desalination Waste Brine\*

- For every litre of freshwater output, desalination plants produce on average 1.5 litres of brine.
- World's ~16,000 desalination plants discharge **142 million m<sup>3</sup>/day of brine daily**.
- Brine management can represent up to 33% of a desalination plant's cost and ranks among the biggest constraints to more widespread development.
- Almost 22 million m<sup>3</sup>/day of brine is produced at a distance of greater than 50km from the nearest coastline. Despite the large volume of brine produced in these areas, **very few economically viable and environmentally sound brine management options exist**.



Process Water



Brine/Solution Mining

2



Mining Operations

**Brine Feedstock**  
- minerals  
- salt  
- water

2

## Brine Mining Feedstock

- Primary brine projects include playa hosted brines to produce predominantly potash and lithium.
- Solution mining (ISL/ISR) techniques are also utilised to produce potash and other valuable mineral products.



Tailings Storage (TSF)

3

**Waste Stream**  
- minerals  
- reagents  
- water

3

## Tailings Waste Streams

- Typically have a large footprint and represent substantial environmental risks including community concerns.
- Tailings storage facility (TSF) construction, operation and maintenance represent significant costs and risks.
- Treatment of tailings solutions is a high growth sector.

\* Adapted from: "UN Warns of Rising Levels of Toxic Brine as Desalination Plants Meet Growing Water Needs", UNU-INWEH Study (14 Jan 2019).

# The Mining Industry & Water Challenges

## Fitch Ratings

NON-RATING ACTION COMMENTARY

### Water Scarcity Is Greatest Risk to Metals and Mining

Wed 08 Jul, 2020 - 5:21 am ET

**Related Fitch Ratings Content:** [Increasing Water Risks in Metals and Mining - Low-Carbon Technology Supply Chains Face Growing Constraints](#)

Fitch Ratings-London-08 July 2020: The 2020 metals and mining survey, 'Emerging ESG Risks in the Metals and Mining Value Chain' - a collaboration between Fitch Ratings and CRU - highlighted water scarcity as the greatest emerging risk to the metals and mining sector, according to investors. Pressures such as localised water shortages and competition for water are likely to increase in the coming decades, causing increasing challenges for battery and low-carbon technology production.

Mining often faces operational risks with regard to water supply, and is one of the most water-intensive industries. Although efforts have been made to increase the efficiency with which the industry uses water, more and worse droughts and greater competition for water resources are posing growing challenges. The industrial utilisation of water is often constrained before the water demands of other sectors, such as agriculture.

Overall demand is forecast to rise by as much as fivefold for some metals by 2025, according to CRU, driven by increased applications in batteries, renewable energy and other green technologies. However, there are growing social and environmental constraints on production that threaten to make many projects unviable in the coming years. These may begin to disrupt dependent supply chains and products - a particular concern given the time and costs required to develop large-scale solutions such as desalination and wastewater recycling.

A major emerging concern for the sector is the management of mine tailings and its storage in tailings dams. A number of high-profile mine disasters from tailings dams highlight the need for the

### Key Points

- Overall **water demand is forecast to rise by as much as 500%** for some metals by 2025, driven by increased applications in batteries, renewable energy and other green technologies.
- However **growing environmental, social & governance (ESG) constraints** on production that threaten to make many projects unviable in coming years.
- Water scarcity is the **greatest emerging risk** to the metals and mining sector.
- Compounding water challenges, **wastewater storage** in tailings dams is accounting for a **growing portion of total operating costs**.

When a major credit ratings agency outlines material risks to a sector, it's worth paying attention.



Failure to act, will increase funding costs and eventually render certain assets/companies un-investable, particularly for institutional investors.

### The Only Viable Solution



Is to ensure the more efficient use of water, which requires the development and adoption of **fit-for-purpose technologies** which:

- Enable more water efficient mining and refining operations, and
- Recycling of wastewater from mining and downstream operations.

OUR

parkway  
MINERALS

FOCUS

For more information:

<https://www.fitchratings.com/research/infrastructure-project-finance/water-scarcity-is-greatest-risk-to-metals-mining-08-07-2020>

# The Mining Industry at a Crossroads

## Exclusive: Germany's Volkswagen and Daimler push for more 'sustainable' Chile lithium

Dave Sherwood



SANTIAGO (Reuters) - German automakers Volkswagen (VOWG\_p.DE) and Daimler (DAIGn.DE) have launched a study to push for more "sustainable" lithium mining in Chile, according to lobbyist filings reviewed by Reuters, a sign of growing supply chain concerns ahead of an expected electric vehicle boom.



miningnews.net

## Friedland says ESG will change the way metals are priced

"Tesla will give you a giant contract for a long period of time if you mine nickel efficiently and in an environmentally sensitive way."  
Elon Musk, 22<sup>nd</sup> July 2020



**Minjing Journal**  
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### Friedland: Carbon footprint will be priced into copper

Robert Friedland, executive co-chair of Ivanhoe Mines, says the carbon footprint of copper production will eventually be priced into copper, enabling buyers to better evaluate how much the metal contributes to the environmental impact of



**The Extractive Industries and Society**  
Volume 7, Issue 2, April 2020, Pages 263-266

Viewpoint  
**Mining needs new business models**  
W. Scott Dunbar <sup>a</sup>, Jocelyn Fraser <sup>a, b</sup>, Andy Reynolds <sup>c</sup>, Nadja C. Kunz <sup>a, b</sup>  
[Show more ▾](#)  
<https://doi.org/10.1016/j.exis.2019.07.007> [Get rights and content](#)

### Highlights

- A growing population and a desire for decarbonisation is driving mineral demand.
- At the same time, mining is confronted with technical and social challenges.
- Current business models are not suited to this social and technical complexity.
- New business models are needed to deliver value to mining and society.

## Emerging Challenges

- Mining operations are increasingly accountable for their "externalities" such as:
  - Depletion and/or contamination of **water resources**, and
  - Carbon footprint and even downstream implications, of mineral utilisation.
- Mining activities, subject to adopting **sustainable resource exploitation strategies**.

## Implications

- Above UBC Journal publication can be accessed [here](#).
- Mining companies will have to share benefits and **pay the "true cost" of their operations, including for water**.
- Emerging blockchain technologies to **embed ESG credentials** and provenance into a commodity specification.

# 2020 The World Has Changed

## We Are Living at a time of Major Global Upheaval

- Globalisation, has underpinned economic growth, but is now being challenged.
- Technological disruption, is providing **unprecedented economic opportunities**.
- The world has changed - The pandemic is also creating opportunities & challenges.
- Changes leading to increased inequality, with impacts accelerated by the Covid-19.



## Implications

- Whilst there are various interpretations (even conspiracies) on what “build back better” means, regardless, there is an increased focus on ESG principles.
- Parkway Minerals is well placed to respond to some of the environmental sustainability related challenges, through **next-generation technologies**.

## Impact on Investment Allocations

- The majority of post-pandemic initiatives to support economic development, are focused on ESG-centric themes in order to “build back better”.
- Professional investments are also increasingly ESG focused, as non-compliance is seen as a major risk.

### ESG-mandated assets could make up half of all managed assets in the United States by 2025



Source: US SIF Foundation data through 2018; Deloitte Center for Financial Services analysis through 2025.  
Deloitte Insights | deloitte.com/insights

# Developing Next-Generation Technologies

## Overview

- Whilst mining is essential for economic growth and the clean-energy transition, **society is demanding more sustainable sources of mined materials.**
- Leading supply chain participants are demanding increasing transparency including through industry stewardship schemes such as IRMA.
- As miners seek to improve the sustainability of water use across operations, **Parkway Minerals is well placed to be part of the solution.**
- The Parkway Minerals technology portfolio builds on more than a decade of cutting-edge research & development.



ARC RESEARCH HUB  
ENERGY-EFFICIENT SEPARATION



## ARC-EESep – Energy Efficient Separation (ARC Hub)

- Activated Water Technologies (AWT), a wholly-owned subsidiary of Parkway Minerals, is a founding member of the ARC-EESep hub.
- The aim of the ARC hub is to develop more energy-efficient, cost-competitive and environmentally sustainable separation technologies.
- MD of Parkway Minerals, serves on the industry advisory panel.
- The hub consists of a world-class team incorporating 8 leading Australian universities, 3 international universities, and 20 industry partners including:



## IRMA – Initiative for Responsible Mining Assurance

- Parkway Minerals is a member of IRMA, the Initiative for Responsible Mining Assurance. We support the vision of a world where the mining industry respects the human rights and aspirations of affected communities, provides safe, healthy and supportive workplaces, minimizes harm to the environment, and leaves positive legacies.
- Parkway Minerals is featured on IRMA Responsible Mining Map.
- IRMA has developed a comprehensive global standard, supported by major mining industry stakeholders.
- Consumer demand and expectations are improving industry standards.



# Innovative Process Technology Delivery Platform

High Value – Brine/Feedstock Processing Opportunities

## High Value Applications

- Very large addressable markets
- Well placed to be part of the **long-term solution** for processing **complex brines**
- Existing industry relationships
- Ongoing business development – both in-house and through partners

## Unique Technology Portfolio

- Portfolio of proprietary process technologies include:
  - iBC<sup>TM</sup>
  - aMES<sup>TM</sup>
  - ongoing R&D
- Technologies provide a **clear value proposition**, where mature low-cost alternatives do not exist

## Proprietary Process Solutions

- In-house process engineering team
- State-of-the-art process design and simulation capabilities
- Technoeconomic models to support **business-case development**
- In-house scoping studies support project evaluation

## Technology Solution Validation

- Capacity to rapidly **validate process performance** at a range of scales from benchtop through to larger **pilot plants**
- Process piloting supports feasibility studies
- Pilot plants installed at Victoria University

## Project Feasibility & Delivery

- Strong EPC support from **global engineering company**, underpins commercialisation of aMES<sup>TM</sup> technology
- Capacity to deliver tier-1 feasibility studies & EPC/M
- innovative revenue sharing model

### STRATEGIC PARTNERSHIPS



Strategic Collaboration Agreement to develop, optimise and commercialise brine technology

### Technology Optimisation

### Established Relationships

Strong relationships with key equipment (OEM) vendors and other partners important in successful project development and technology delivery

### Technology Commercialisation



Global Strategic Cooperation Agreement to commercialise aMES<sup>TM</sup> technology

## BPaaS - Brine Processing as a Solution<sup>TM</sup>

Parkway Provides  
Process Technology Package

Partners Deliver  
Integrated Process Technology Solution

Innovative Business Model

# 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 [8 May 2020](#), 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 disclosed several aMES™ opportunities in its existing business development portfolio, that are being evaluated under this agreement.
- Most of these projects have undergone substantial process evaluation (including **successful aMES™ based piloting**) and are operated by **globally significant mining companies.**
- On [5 Nov 2020](#), Parkway Minerals announced the successful completion of the Karinga Lakes Potash Project – Pre-Feasibility Study (KLPP-PFS), performed under the Global Strategic Cooperation Agreement (Worley acting as study manager) and forms the basis for **joint capability development.**

### Worley Project Portfolio

- Significant depth of opportunities within Worley's global network, with several potential aMES™ opportunities identified.
- Given the significant scale of addressable markets for the aMES™ technology, particularly in the energy and mining sectors, the parties have identified potential opportunities to deploy core capabilities.



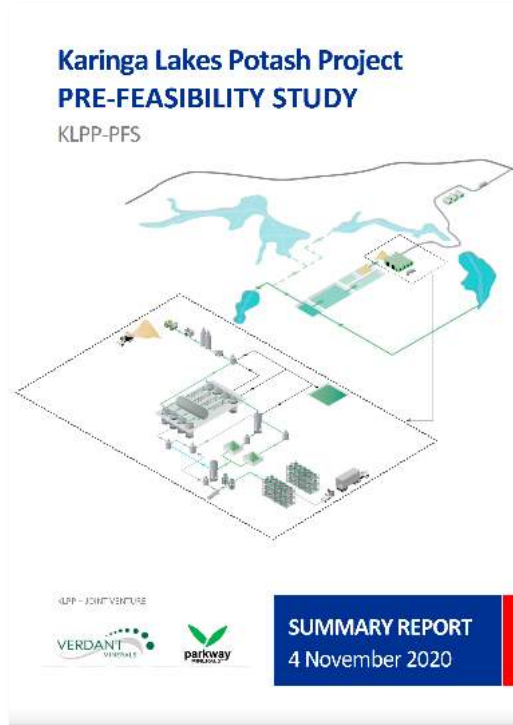
## Corporate Mission – To Deliver a more sustainable world

- “We work with our customers to design and deliver projects that incorporate the **latest technological innovations** and contribute to sustainable outcomes. We operate in an environmentally responsible manner. In all aspects of our work we consider **resource, water** and energy efficiency, circular economy principles and environmental impacts.”

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

## Introduction

- Parkway Minerals owns 15% (acquiring 40%) of the Karinga Lakes Potash Project (KLPP) in the Northern Territory, Australia.
- A recent Pre-Feasibility Study (KLPP-PFS) demonstrated the significant advantages of developing the sulphate of potash (SOP) brine project, with the aMES™ technology.



KLPP-PFS Project supported by:



## Completion of KLPP-PFS - announced on 5 Nov 2020

- Innovative aMES™ based flow sheet demonstrates the **significant advantages of the aMES™ technology**, over conventional technologies.

## Key Advantages

- LESS WATER requires half as much as peer group (potentially, as low as quarter)
- LOWER CAPEX significantly lower compared to prior scoping study
- LOWER OPEX lower than scoping study; scope to improve further
- VERSATILE flexible flow sheet capable of producing range of by-products
- NO REAGENTS does not require reagents – thereby improving sustainability
- HIGHER PURITY higher purity products and recoveries generates more revenue

## Implications

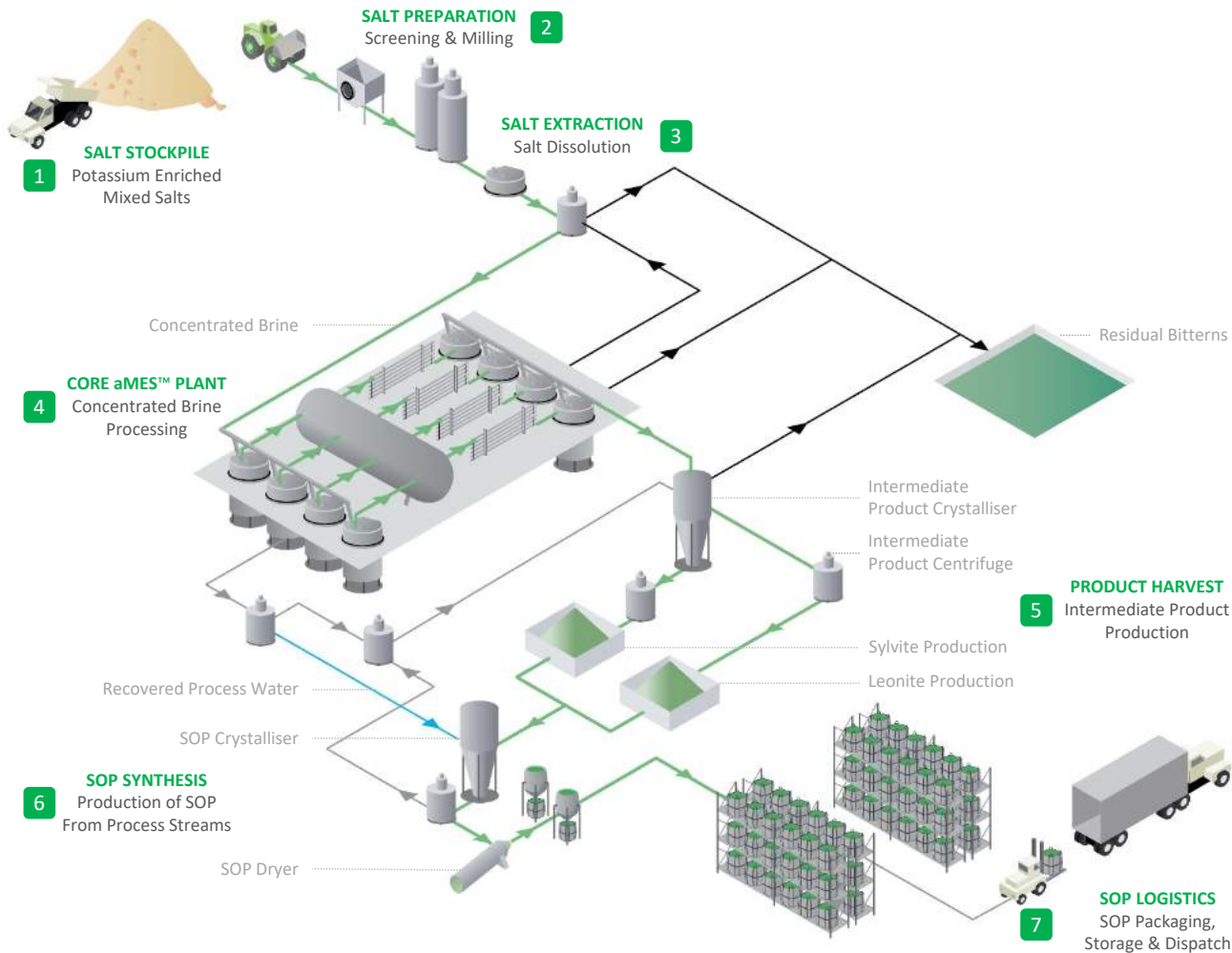
- Successful demonstration of **technoeconomic advantages of aMES™**
- Forms basis for evaluating larger & more advanced projects
- Very strong capability development through KLPP-PFS
- Key milestone in commercialising the aMES™ technology

## Additional Information

- For more details about the [KLPP](#) (at Parkway Minerals website)
- For more details about the [KLPP-PFS](#) (to download summary report)



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



## Pre-Feasibility Study

- The KLPP-PFS confirms the KLPP as a potentially attractive producer of high-quality, soluble grade, sulphate of potash (SOP).
- Innovative aMES™ based flow sheet demonstrates potential (major improvement over scoping study), even for a relatively small-scale operation targeting annual SOP production of 40,000 tonnes, over an initial mine life of 20 years.
- aMES™ based development concept demonstrates highly efficient use of water.

## KEY FINANCIAL METRICS

- Initial capital cost (CAPEX) of \$80.0 million, inclusive of all non-process infrastructure and indirect costs (which includes a contingency of \$6.7 million).
- Production cost (OPEX) of \$293/tonne of SOP, ex-mine gate.
- Strong cash generation potential, with estimated EBITDA margin of 54.4%, resulting in annual EBITDA of \$18.6 million.
- Ungearing development of the KLPP would result in:
  - Project payback in approximately 5.5 years from first SOP production.
  - Post-Tax NPV<sub>8%</sub> of \$80.15 million with an IRR of 20.4%.

# State-of-the-Art aMES™ Pilot Plant

## Overview

- The new, large-scale aMES™ pilot provides important process validation, demonstration and optimisation capabilities.

## Status

- Mechanical installation of the new aMES™ pilot plant was recently completed, with pre-commissioning related activities commencing in mid-November 2020.
- Initial commissioning of the aMES™ pilot plant commenced in mid-December 2020, and was recently completed, successfully.

## Forward Plan

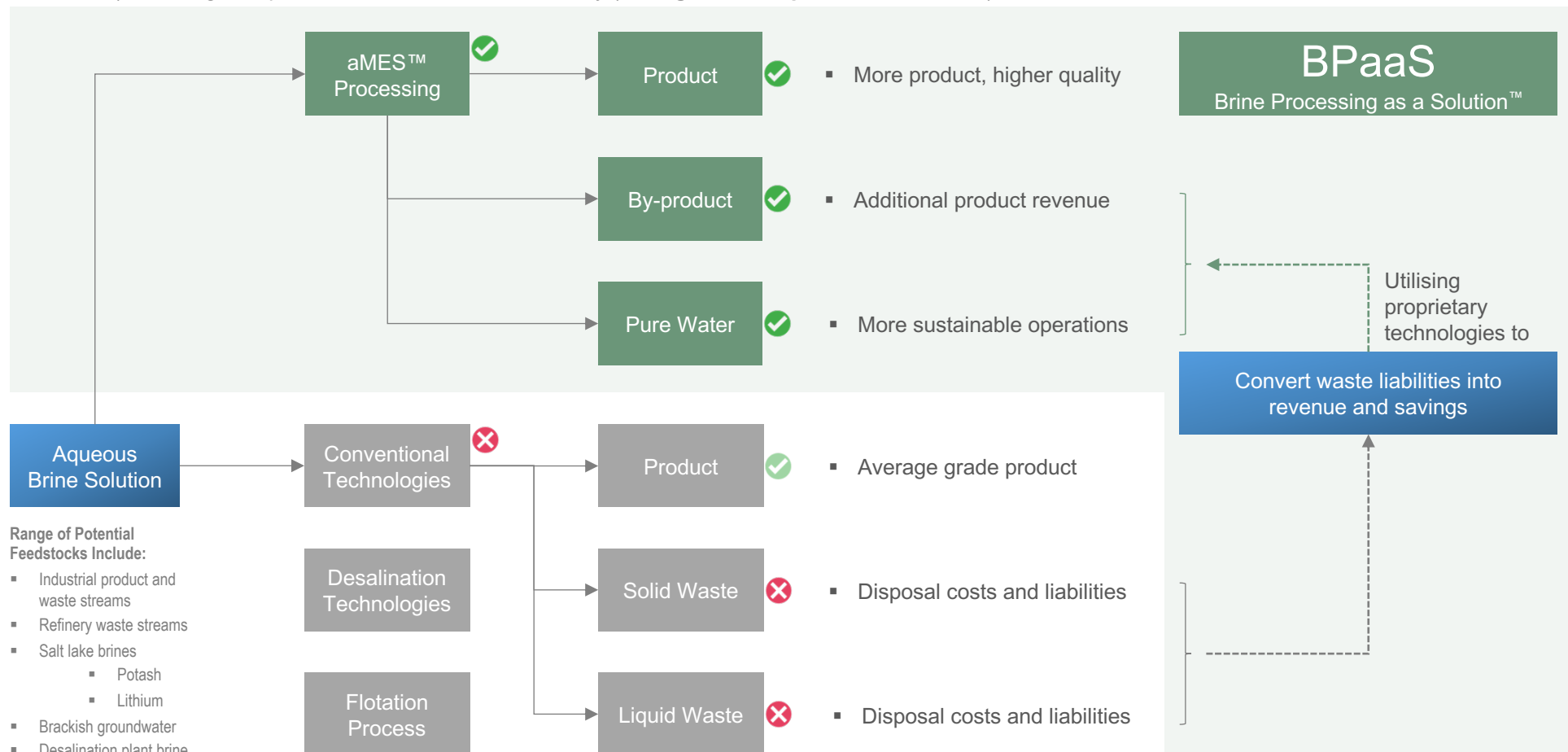
- Additional commissioning related activities will resume early in the new year, as part of a broader process piloting campaign.
- Commissioning program will incorporate potassium enriched mixed salts from the Karinga Lakes Potash Project (KLPP).
- Subsequent testwork involving the aMES™ pilot plant, will include feedstock from third-party projects, providing Parkway Minerals with an important process demonstration, optimisation and validation capability, **an essential requirement for successful commercialisation.**



# Advantages of Brine Processing as a Solution

## In Simple Terms

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



# Indicative Profile of Potential Project Solutions

## Overview

- Targeting large projects with highly problematic liquid waste streams. A representative selection of projects currently under evaluation, are outlined below.

### Project A

- Owner:** major global mining company
- Asset:** mine and refinery
- Region:** APAC
- Problems:** large wastewater footprint
  - limits project expansion
  - long-term liabilities
- Piloting:** yes, initially small-scale
- Tech:** aMES<sup>TM</sup>

### Indicative Findings

- Indicative flow sheet developed
- Volume reduction of >90% anticipated
- Recovery of target components from waste
- Indicative annual net benefit of ~\$100 million
- Indicative project payback, ~2 years

### Next Steps

- Perform concept study (proposal issued)

## Summary

- These are long-term problems, facing very large operations. Any viable solution, will take considerable time to evaluate, before commitment to ultimate solution.
- The “annual net benefit” described above is based on internal preliminary technoeconomic assessments (revenues + savings – costs), is indicative only, will change materially as subsequent evaluations are progressed and should not be relied upon for any purpose. These amounts do not reflect any form of guidance.

### Project B

- Owner:** major mining company
- Asset:** mine and refinery
- Region:** EU
- Problems:** large wastewater footprint
  - limits project operations
  - long-term liabilities
- Piloting:** yes, initially small-scale
- Tech:** aMES<sup>TM</sup>

### Indicative Findings

- Indicative flow sheet developed
- Volume reduction of ~90% anticipated
- Recovery of target components from waste
- Indicative annual net benefit of \$35 million
- Indicative project payback, ~3.5 years

### Next Steps

- Perform concept study (proposal issued)

### Project C

- Owner:** major energy company
- Asset:** upstream production
- Region:** APAC
- Problems:** large wastewater footprint
  - limits project expansion
  - long-term liabilities
- Piloting:** yes, iBC<sup>TM</sup> only
- Tech:** iBC<sup>TM</sup> & aMES<sup>TM</sup> (ZLD solution)

### Indicative Findings

- Indicative flow sheet developed
- Volume reduction of >90% anticipated
- Recovery of target components from waste
- Indicative annual net benefit of >\$5 million
- Indicative project payback, ~3 years

### Next Steps

- Perform concept study (proposal issued)

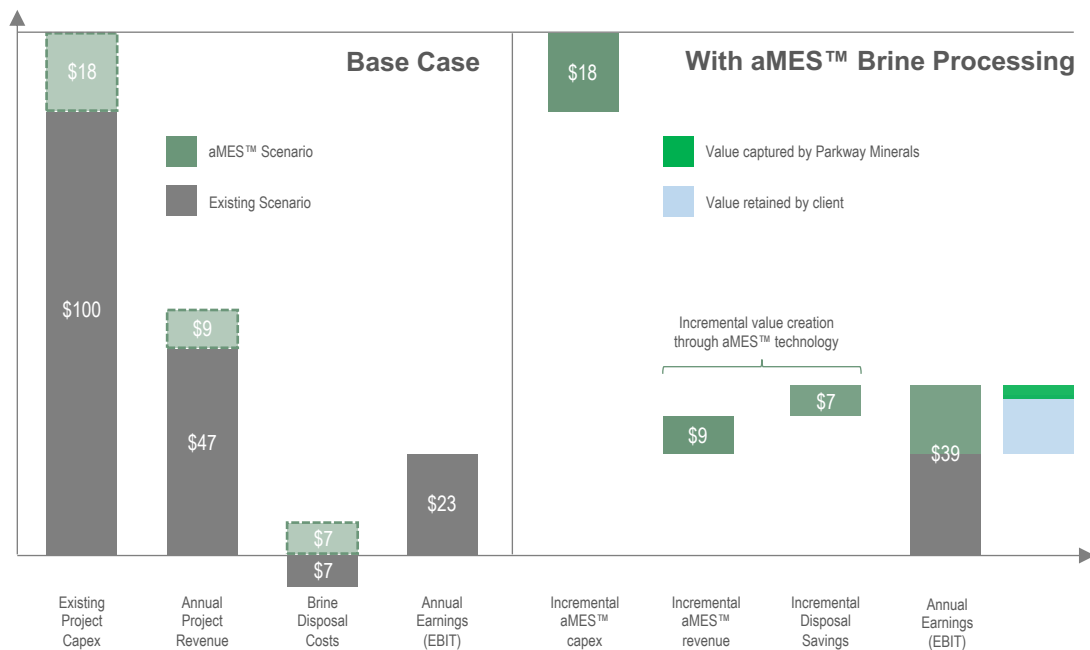
# Innovative Business Model – Leveraging Technology

## Leveraging Technology

- Through the innovative process technology delivery 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<sup>TM</sup>.

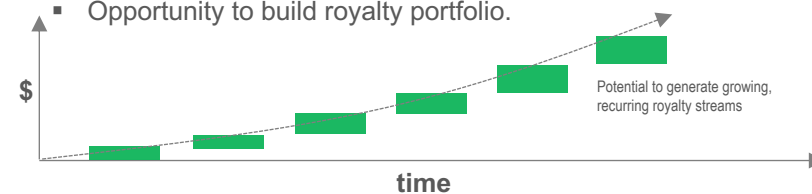
## Creating Sustainable Value

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



## Illustrative Case-Study – Conceptual

- Incremental capex for aMES<sup>TM</sup> plant has short payback (<3yr).
- 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.
- Opportunity to build royalty portfolio.

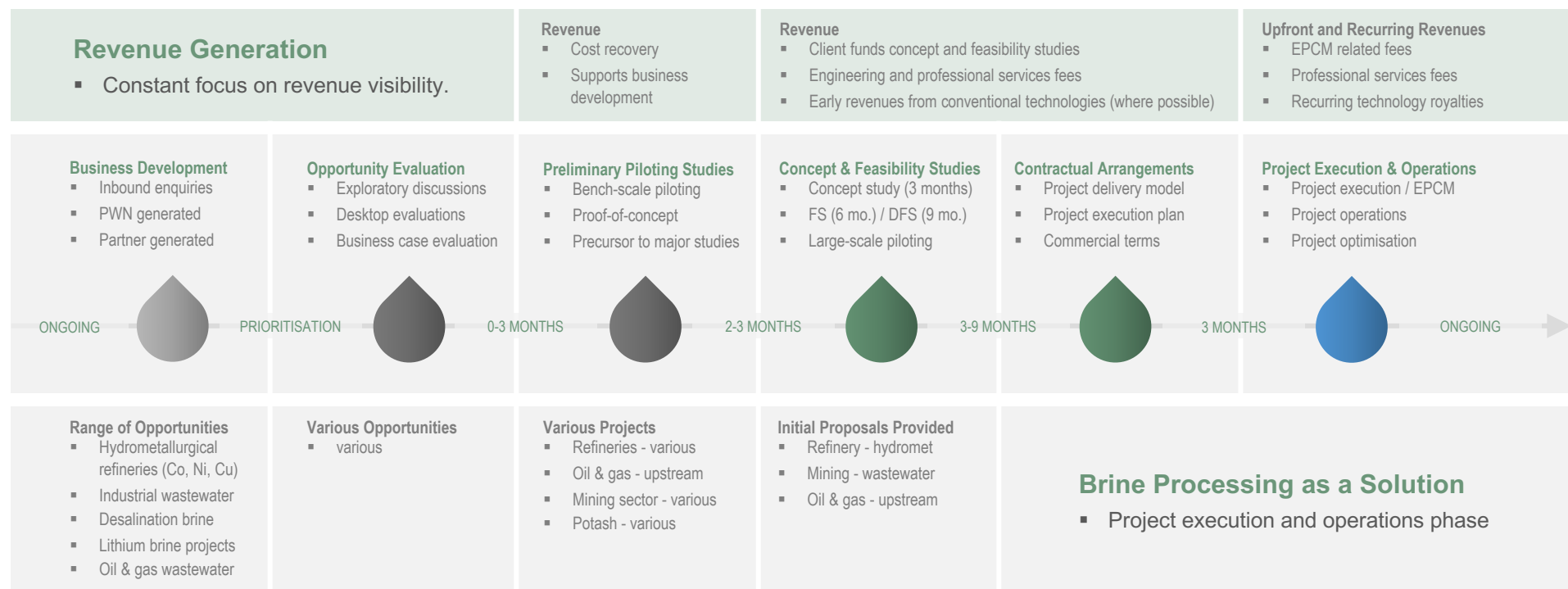


IMPORTANT NOTE: The descriptions, graphics and numbers outlined on this slide are conceptual in nature and do not relate to specific projects and/or opportunities, do not represent any form of financial forecast by the Company whatsoever, and should not be relied on for any purpose. Refer to the Disclaimer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

# Indicative Business Development Cycle

## Overview

- Given the nature of target projects (large, complex and long-life operations), the business development cycle is similarly sophisticated with many stakeholders.
- Currently advancing pipeline of projects through key business development stages, with a specific focus on high value applications.
- Indicative timelines associated with the business development cycle are outlined below. The trajectory of each project will vary depending on specific factors.



## Strategic Opportunities

- In parallel to new technologies, seek to opportunistically identify and capture opportunities for near-term revenue generation through conventional technologies.

# Investment Case

## BUILDING AN ATTRACTIVE BUSINESS

### 1) Unique Technology Portfolio

- Proprietary aMES<sup>TM</sup> technology platform – patented IP & knowhow
- Acquisition of patented iBC<sup>TM</sup> technology – undergoing optimisation studies
- Building **world-class brine processing technology 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**

## WATER TECHNOLOGIES TO ADDRESS ESG CHALLENGES



# BPaaS

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

# Virtual Water

“Although virtual water goes unseen by the end-user of a product or service; that water has been consumed throughout the value chain, which makes creation of that product possible.”

With technology, the virtual water, or embedded water of a raw material can now be both measured and traced, a process which will invariably create ESG winners and losers.

# Thank You

Thank you to all our stakeholders, including our shareholders, partners, collaborators, suppliers and employees.

**We appreciate your support throughout 2020 and look forward to achieving great things together, in 2021.**



Follow us on LinkedIn, to stay in touch regarding the latest sustainability related news.