



**Parkway**  
CORPORATE LIMITED



 Parkway  
Process Solutions

2022

# Annual General Meeting

29 November 2022

ASX: PWN | [pwnps.com](http://pwnps.com)

Bahay Ozcakmak

Group Managing Director & CEO

## Forward-Looking Statements

This presentation may contain forward-looking statements. The words “continue”, “expect”, “forecast”, “potential” and other similar expressions are intended to identify forward-looking statements. Indications of, and guidance on, future earnings, financial position, capex requirements and performance are also forward-looking statements, as are statements regarding internal management estimates and assessments of market outlook.

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## Additional Information

This presentation has been prepared by Parkway Corporate Limited (“Parkway” or the “Company”)(ASX: PWN) and has been released on the ASX announcement platform and is also available at the Company website:

[www.pwnps.com](http://www.pwnps.com)

Additional information regarding the Company can also be found at the Company’s website, or by contacting the Company at:

[ir@pwnps.com](mailto:ir@pwnps.com)

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Building an advanced  
**industrial water treatment  
technology company.**

# Presentation Outline

## Key Topics

- Corporate Overview
- Key Addressable Markets
- CY2022 – A Year of Growth & Transformation
- Parkway Group Structure
- PPS – Integrated Solution Provider
- Building Capabilities – Generating Traction

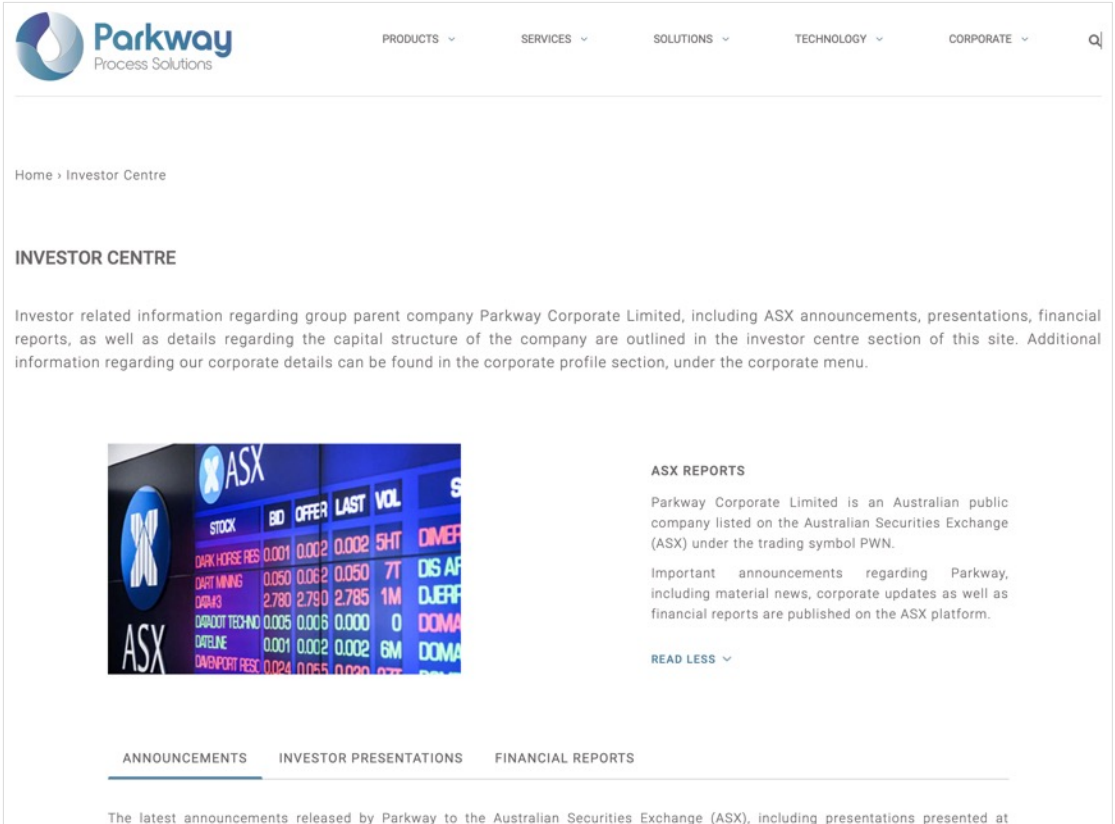
- The Problem – Legacy of Extractive Industries

- PPT – Proprietary Technologies from Parkway
- PPT – Industrial Technology Commercialisation
- PPT – Developing Process Technology Solutions

- CSG Case Study – Technology Application
- CSG Case Study – QGC Feasibility Study Update

- PPT – Typical Business Development Cycle
- Investment Case

## Company Website



The screenshot shows the Parkway Corporate Limited Investor Centre website. At the top, there is a navigation bar with the Parkway logo and menu items: PRODUCTS, SERVICES, SOLUTIONS, TECHNOLOGY, and CORPORATE. Below the navigation bar, the page title is "Home > Investor Centre". The main heading is "INVESTOR CENTRE". A paragraph of text describes the investor-related information available, including ASX announcements, presentations, financial reports, and details regarding the capital structure. Below this text is a section titled "ASX REPORTS" which states that Parkway Corporate Limited is an Australian public company listed on the ASX under the trading symbol PWN. It also mentions that important announcements, including material news and financial reports, are published on the ASX platform. A "READ LESS" link is provided. At the bottom of the page, there are three tabs: "ANNOUNCEMENTS", "INVESTOR PRESENTATIONS", and "FINANCIAL REPORTS". Below the tabs, a line of text reads: "The latest announcements released by Parkway to the Australian Securities Exchange (ASX), including presentations presented at".

Additional information about Parkway, is available from the Investor Centre:

[www.pwnps.com/collections/investor-centre](http://www.pwnps.com/collections/investor-centre)

Capital Structure	Current
Ordinary Shares (PWN) on issue	2,213,280,446
12-month Trading Range	\$0.007 - \$0.014
<b>Market Capitalisation (at \$0.008)</b>	<b>\$18 million</b>
Unlisted Options (\$0.020, 16 Dec 2022)	310,166,664
Unlisted Options (\$0.030, 02 Feb 2023)	177,277,773
Unlisted Options (\$0.019, Jul/Dec 2024)	260,931,548

Major Shareholders	%
Holdings associated with Group MD	9.9%
BNP Paribas Nominees / Deutsche Börse	7.9%
Lions Bay Capital (Canadian LIC)	7.6%
BNP Paribas Noms / EU & Institutional	4.3%
<b>Top 20</b>	<b>46.6%</b>

Funding	\$
Debt	nil
Cash (at 30 Sep 2022, excl. grants)	\$3.35 million
<b>Cash (at 30 Sep 2022)</b>	<b>\$3.35 million</b>

All amounts refer to Australian dollars

## Experienced Team

- Strong corporate, strategic, M&A, industrial and technology experience.
- Highly focused team **methodically executing corporate strategy**.
- Board, KMP and employees are strongly aligned with shareholders.
- Details about rejuvenated board outlined in [Corporate Profile](#).

## Defined Strategy

- To build an **advanced industrial water treatment technology company**.
- Staged approach to **generating revenue** and **commercialising technology**.
- Commercially pragmatic to ensure optimal **value creation & capture**.

## Well Resourced

- Access to capital markets underpinned by **robust financial discipline**.
- Accumulation of inventory (PPS) and R&D funds (PPT, grants & rebates).
- Established operations in Melbourne, Perth & Darwin, Australia.

## Building Momentum

- Internal technical capabilities delivering **exceptional results for PPT** (tech).
- Established partnerships with key industry players to align interests.
- **Strong relationships with existing clients** and future prospects.

# Key Addressable Markets

## Key Markets

- Wastewater treatment opportunities
- < 10% of wastewater currently recycled
- Large and growing global markets

### Mining & Energy



- Limited access to freshwater is driving need to recycle wastewater
- Wastewater storage is problematic
- Processing of waste is complex

- Projects require range of products and **conventional** solutions
- Solid-liquid separation options including chemistry as well as membrane based approaches

- Projects require range of products and **next-generation** solutions
- Opportunity to recover economic quantities of products & reagents
- Product recovery funds treatment

> \$25 Billion / yr

### Industrial Wastewater



- Access to freshwater is becoming more difficult, costly and uncertain
- Wastewater discharge is difficult
- Processing of waste is expensive

- Projects require range of products and **conventional** solutions
- Removal of contaminants and organics to meet wastewater discharge requirements

- Projects require range of products and **next-generation** solutions
- Opportunity to recover (and sell) and/or destroy contaminants, allowing subsequent discharge

> \$100 Billion / yr

### Municipal & Desalination



- Wastewater storage and discharge is increasingly being scrutinised
- Conventional treatment can be complex due to salts and organics

- Projects require range of products and **conventional** solutions
- Removal of salts, nutrients and organics to meet wastewater discharge requirements

- Projects require range of products and **next-generation** solutions
- The requirement for zero liquid discharge (ZLD) is increasing with the objective of reducing volumes

> \$25 Billion / yr

Market size estimates, in Australian dollars

## Challenges

- Major challenges impacting industry

## PPS Opportunity

- Parkway Process Solutions (PPS)

## PPT Opportunity

- Parkway Process Technologies (PPT)

## Global Market Size

# CY2022 – A Year of Growth & Transformation

## Overview

- CY2022 has been a transformational year for Parkway.

## Capability Development

- Achieved triple ISO accreditation (ISO9001, 14001 & 45001).
- Achieved approved vendor status with **several major energy and mining companies**, underpinning future strategic growth opportunities.

## Technology Development

- Advanced technology portfolio including with **multiple new pilot plants**.

## Technology Commercialisation

- Landmark **feasibility study with QGC Shell, is progressing positively**.

## Capital Discipline

- In the last year (Sep 21 – Sep 22), net cash drawdown of ~\$2.5 million.
- Funded operations and acquired significant plant, equipment & inventory.

## Refreshed Board

- Bolstered board with **significant domain expertise** in industrial, energy and mining sectors, including in sanctioning major capex projects.

<b>3</b> Business Divisions <small>PPS, PPT, PV</small>	<b>200+</b> Commercial Customers <small>Inc global mining &amp; energy companies</small>
<b>3</b> Geographic Operations <small>Perth, Darwin, Melbourne</small>	<b>\$1.2 m</b> Quarterly Cash Receipts <small>Cash receipts in Sep 22 quarter</small>
<b>20+</b> Professional Employees <small>Experienced team supporting growth</small>	<b>\$1.6 m</b> Saleable Inventory <small>Acquired at attractive prices</small>
<b>4,000+</b> Water Related Products <small>In stock from 150+ leading suppliers</small>	<b>\$3.35 m</b> Cash in Hand <small>At 30 September 2022 – exc. grants</small>

Indicative estimates, provided for illustrative purposes only.

# Parkway Group Structure

## Parkway Process Solutions (PPS)

- PPS –provides water treatment products, services, and when combined, **water treatment solutions**.
- The establishment of PPS is supporting the growth of PPT and is integral to building Parkway into an advanced **industrial water treatment technology company**.

## Parkway Process Technologies (PPT)

- PPT – is our innovative technology development and commercialisation division, capable of delivering **next-generation solutions**.

Conventional Solutions: PPS



Next-Generation Solutions: PPS + PPT

## Parkway Corporate Limited (PCL) – Group Overview





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We are developing a range of **integrated water treatment solutions**, as a platform for our **innovative technologies**.

# PPS – Building an Integrated Solution Provider

## Complex Wastewater Challenges

- Traditionally seen to be “too difficult” because:
  - Water prices were cheap, if not free, why recycle?
  - Disposal requirements were modest, if not non-existent.
  - Stakeholder concerns were rarely relevant, before ESG awareness.
- Post-COVID, the world has changed:
  - Sustainable use and recycling of water matters.
  - The rate of change towards adopting sustainability will accelerate.
- Traditional business models need to adapt to ESG metrics – now.

## Solving Complex Wastewater

- By definition, processing of complex wastewater often faces several challenges regarding the composition of the wastewater.
- Treatment often **requires multiple processing steps** to deal with issues relating to biological, chemical and physical treatment constraints.
- Some wastewater issues can be resolved with integration of various conventional water treatment processes into the the processing train:
  - Most service providers are focused on resolving part of the issue.
  - Significant **requirement for integrated solution** providers.
- More challenging wastewaters often **require new technological approaches.**

## Building Parkway Process Solutions (PPS)



Conventional Solutions



Next-Generation Solutions

# PPS – Delivering Integrated Solutions

## PPS Delivering Solutions

- PPS is successfully delivering a range of integrated solutions.

## PPS Rapidly Building Capabilities & Offering

- PPS is building additional technical and commercial capabilities to support successful project delivery.
- Developing range of **modular systems for rapid deployment**.



## PPS Corporate Profile

- Additional information about PPS, including:
  - Corporate profile
  - Products & services
  - Integrated solutions
  - Project references
- Is outlined in the PPS Corporate Profile brochure available at:
  - [PPS Corporate Brochure](#)

## Recent Case-Study

- Client:** Major global mining company.
- Project:** Large operating mine, is a **key global producer** of a commodity categorised as critical mineral.
- Date:** April - July 2022.
- Task:** Supply a water treatment plant to meet specific project requirements, within 3 – 4 months.
- Scope:** Turnkey, design, fabrication, supply, installation and commissioning of **mine pit water treatment plant**.
- Result:** Project successfully delivered on time and budget.



## Inhouse Design & Fabrication

- Inhouse water treatment plant engineering design to suit specific project requirements.
- Inhouse fabrication & assembly.

## Installation & Commissioning

- PPS staff performed onsite installation & commissioning.
- PPS staff collaborated with onsite staff to ensure **successful project execution**.

# Building Capabilities – Generating Traction

## Generating Traction

- Parkway has developed capabilities to successfully deliver a range of innovative solutions for tier-1 global companies.
- Parkway has **rapidly established a reputable client base.**

## ISO Accreditations

- In February 2022, Parkway achieved triple ISO accreditation.



## Memberships

- Parkway is a member of the Initiative for Responsible Mining Assurance (IRMA), and has provided early engagement.



## Approved Vendor

- Parkway is now an **approved vendor** for major companies.

## Energy Clients:

- Leading global energy companies.



## Mining Clients:

- Leading global mining companies.



## Academic Clients:

- Leading Australian research organisations and universities.



## Major Clients

- Additional clients include a range of industrial companies.

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Globally significant  
**wastewater challenges,**  
particularly impacting  
**extractive industries.**



## Bloomberg

Green|Hyperdrive

### Saving the Planet With Electric Cars Means Strangling This Desert

Mining lithium and copper to supply the battery boom and fight climate change is wrecking a fragile ecosystem in Chile.

*Degraded environment including acid & metalliferous drainage (AMD).*



# Legacy of Extractive Industries – Energy



*Degraded environment from oil production in Northern Alberta, Canada.*

<https://www.nationalobserver.com/2021/10/18/news/enviro-groups-want-feds-step-after-report-reveals-albertas-tailings-ponds>

*Waste brine ponds from coal seam gas production in Queensland, Australia.*



<https://www.abc.net.au/news/rural/2022-04-26/queensland-coal-seam-gas-industry-big-salt-problem/100990978>

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True sustainability is not possible, without **sustainable water and wastewater management.**



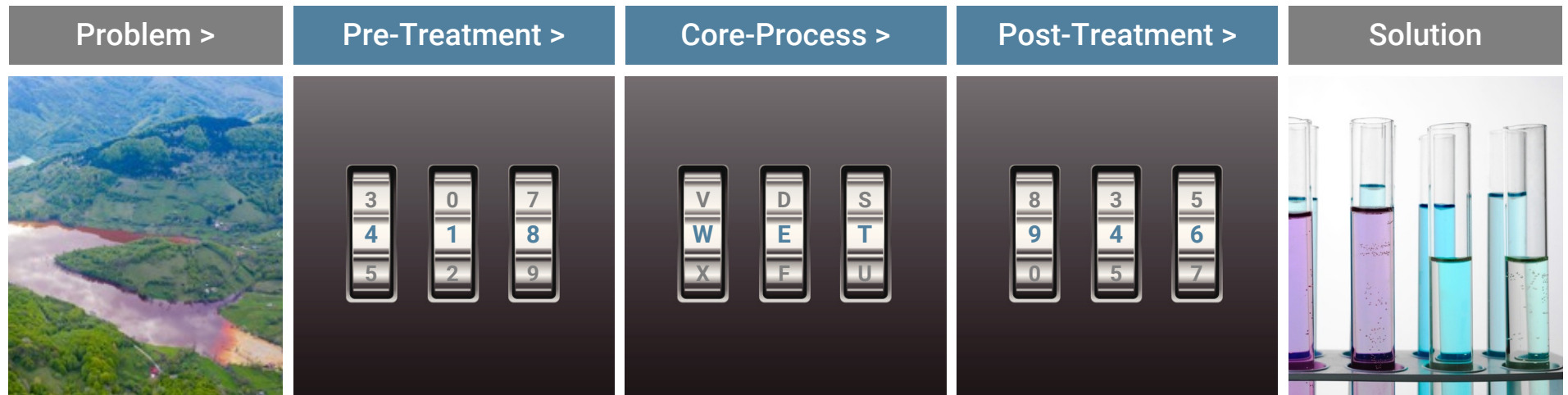
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**Next-Generation Technologies**  
provide an opportunity to  
**solve these problems,**  
sustainably.

# PPT – Developing Process Technology Solutions

## Cracking the Process Technology Code

- We are focused on **developing industry-wide solutions** (large markets) for some of the most difficult (complex and expensive) wastewater related problems facing extractive industries, such as oil & gas, and mining, globally.
- We are developing **proprietary process flowsheets** that are highly effective, in recovering both water as well as saleable products.



- Large scale issues as a result of legacy impacts from extractive industries.
- Large companies have often **exhausted conventional options**.
- Highly complex technical problems, **requiring an innovative approach**.



*"There's a way to do it better – find it."* Thomas A. Edison

- Parkway performs detailed **process simulation & piloting studies** in order to "crack the code".
- **Several conventional and proprietary technologies are integrated to develop an optimal solution.**
- As the technology solution provider, Parkway is strongly positioned to **capture share of value** creation.

## Parkway Process Technologies – Proprietary Technology Portfolio

- Solution often involves the recovery of high-purity water.
- Production of reagents and/or industrial chemical products.
- Substantial reduction and/or **elimination of waste volumes**.
- **Attractive financials.**

## Overview

- Parkway owns a portfolio of **proprietary** (including patented) **wastewater treatment related technologies**.

## aMES® Technology

- Innovative process technology that enables the treatment of concentrated aqueous solutions to **recover a range of valuable minerals, reagents and fresh water**.
- Significant progress in developing modularisation approaches to support technology commercialisation.
- PFS study findings supported by state-of-the-art pilot plant.

## iBC® Technology

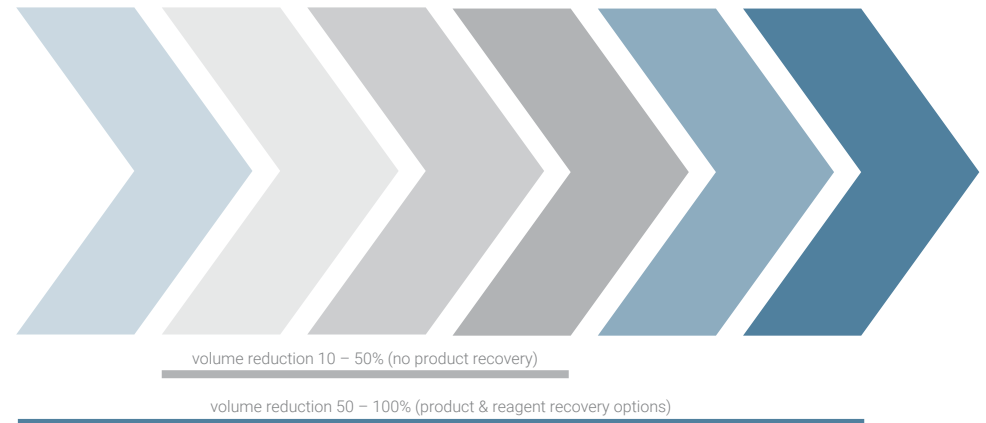
- Innovative process technology that **removes range of impurities from brine streams** enabling further processing.
- Core technology in landmark feasibility study with QGC Shell.
- New pilot plant achieved wet commissioning in late Nov 2022 and is supporting larger-scale process evaluations.

## Strategic, Research & Development Pipeline

- Secured **additional rights to synergistic technologies**.
- Significant ongoing investment in R&D and commercialisation to advance range of technologies.

## Integrated Solutions

- Parkway offers both industry standard (conventional) and next-generation (PPT) technologies including **integrated offerings**.
- Integration of both conventional (grey) and proprietary (blue) technologies, deliver the most **comprehensive process or wastewater treatment solution** for the client.



## Integration of Process Technologies

- Portfolio of both conventional and proprietary technologies, suitable for delivering integrated wastewater treatment solutions.
- Commitment to adopting **best available technology** or best available techniques (BAT) to meet project objectives and satisfy regulatory obligations (as required).

# PPT – Industrial Technology Commercialisation

## State-of-the-Art Technology Platform

- Technology platform **specifically developed for commercialising** innovative wastewater related **process technologies**, globally.
- Established strategic partnerships with **world-class partners**, underpin the strength of the **innovative technology platform**.

### aMES® Pilot Plant



### iBC® Pilot Plant



### Laboratory Facilities



### Creating, Protecting & Extracting Value

Additional information on Parkway website:

- [Innovative Business Model](#)
- [Multi-layered IP Strategy](#)
- [iWPaaS™ Technology Platform](#)

#### Challenging Wastewater Streams

- Very large addressable markets
- Limited conventional wastewater treatment options available
- Projects require innovative approach
- Clients amenable to new technologies

INDUSTRIAL CLIENTS

#### Innovative Technology Portfolio

- Portfolio of industrial process technologies includes:
  - aMES®
  - iBC®
  - tech pipeline
- Deep technologies provide clear value proposition



#### Proprietary Process Solution

- State-of-the-art process simulation and engineering and capabilities
- Process integration to develop flowsheet
- Technoeconomic models support early business case development



#### Technology Solution Validation

- Large inventory of conventional and next-generation process pilot plants
- Integrated process piloting capability
- Process piloting supports feasibility study development



#### Project Feasibility & Execution

- Internal project development and execution capabilities
- Strong support from Worley, a leading global engineering company
- Global partnership
- Capacity to deliver large tier-1 projects



# Coal Seam Gas (CSG) Brine Challenges in QLD

## CSG Related Wastewater Challenges

- Coal seam gas (CSG) operations in Queensland currently produce **55,000,000 litres of associated water, annually**.
- Concentrated brines derived from the treatment of associated water, contain **194,000 tonnes of dissolved salts annually**, rising to 5,500,000 tonnes over the life of existing CSG projects.
- The recovery and disposal of these mixed salts represent a **substantial risk and liability (cost)** to CSG project operations.

\$307 million / year  
\$9.2 billion total  
Addressable market



### Existing CSG Operations

- Waste brine from current operations
- No viable alternative identified to date
- Existing waste brine inventory in QLD

## Additional Opportunities

- In addition to the ongoing (annual) brine volumes, there is also a **significant volume of legacy brine** volumes requiring a permanent treatment solution.
- As brownfield projects are expanded, and/or have their field life extended, additional volumes of brines will require treatment.
- Several greenfield projects are also emerging, which would benefit significantly from a sustainable integrated brine treatment solution.



QGC Shell - Kenya Water Treatment Plant, in Queensland, Australia.

## Market Opportunity

- Strong regulatory environment relating to environmental authority (EA) to develop and operate CSG projects in Queensland, **requires brine or salt residues to be treated** to create useable products, wherever feasible.
- In excess of \$100 million invested by CSG industry over a decade to identify a long-term solution to treating brine and salts, **no viable pathway has been identified** to date.
- In addition to brine processing costs, CSG operators are required to pay **significant salt disposal costs**, including a regulated **waste levy** in the order of \$125 - \$175\* per tonne.
- Additional information about the CSG related market opportunity is outlined in [07 April 2022](#) ASX announcement.

\* Increasing \$10/t annually, until 2027-28 when the levy will reach \$175 - \$225/t, and commence at CPI thereafter.

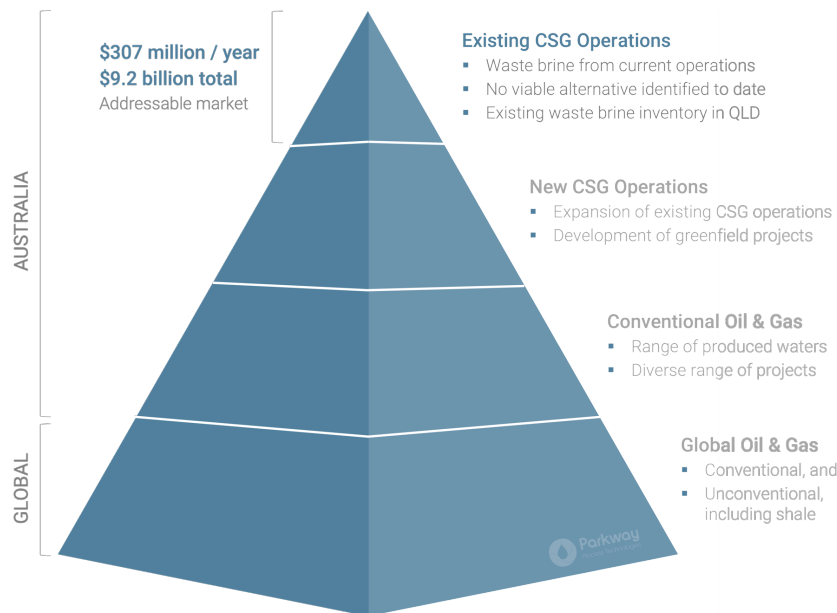
# Additional Oil & Gas Related Opportunities

## Additional Australian Gas Field Wastewater Challenges

- Outside the portfolio of existing CSG operations in Queensland, there a number of both conventional and unconventional oil and gas projects across Australia facing similarly significant wastewater related challenges.
- In September 2022, Origin Energy withdrew from the **Beetaloo Shale Gas Project**, due to range of challenges, including long-term wastewater treatment related challenges.



Santos – Narrabri CSG Project, in New South Wales, Australia.



## Significant Industry Challenges

- The pre-development stage \$3.6 billion **Narrabri CSG Project** in Northern NSW being proposed by Santos, is facing significant challenges associated with lack of acceptable brine and salt disposal strategy. Significant community opposition.

## Catalyst to Sustainable Development

- The absence of a suitable brine and salt disposal strategy is increasingly a major challenge to receiving project approvals.








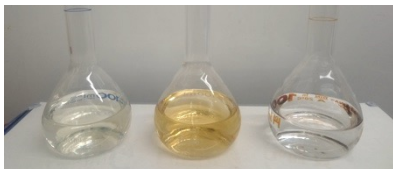
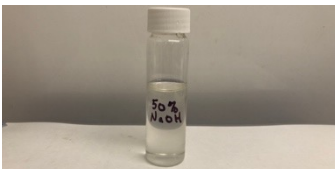
## Additional Opportunities

- There are **substantial international opportunities** to treat oil and gas derived produced formation waters, sustainably.

# PPT has Successfully Cracked the CSG Brine Code

## Parkway has Achieved a Major Industry Breakthrough

- Despite significant investment (>\$100 million) by the CSG industry over many years, supported by leading advanced wastewater solution providers, to identify a long-term solution to treating waste brine and salts, **no viable pathway has been identified to date.**
- As of late Nov 2022, Parkway is pleased to advise it is **technically viable to treat concentrated CSG brines with iBC® tech platform.**

Problem >	Pre-Treatment >	Core-Process >	Post-Treatment >	Solution
				 <ul style="list-style-type: none"> <li>High-purity water</li> <li>Industrial salt</li> <li>Agricultural lime</li> <li>Caustic soda</li> <li>Residual brine</li> </ul>
<p><b>CSG Wastewater - Annual</b></p> <ul style="list-style-type: none"> <li>55,000,000,000 litres of associated water produced by QLD CSG industry.</li> <li>4,800,000,000 litres of brine produced.</li> <li>If concentrated would produce <b>750,000,000 litres of highly concentrated brine.</b></li> </ul>	<p><b>iBC® Brine Pre-Treatment</b></p> <ul style="list-style-type: none"> <li>Range of proprietary iBC® mediated brine <b>pre-treatment and conditioning</b> related processes.</li> </ul> 	<p><b>iBC® Primary Processing</b></p> <ul style="list-style-type: none"> <li>Core iBC® mediated brine processing, involving <b>range of technology capabilities</b> including aMES® related.</li> </ul> 	<p><b>iBC® Brine Post-Treatment</b></p> <ul style="list-style-type: none"> <li>Range of proprietary iBC® mediated brine <b>post-treatment and conditioning</b> related processes.</li> </ul> 	<p><b>Chemical Products</b></p> <ul style="list-style-type: none"> <li>&gt;98% product recovery.</li> <li>Primary product is an industrial caustic product.</li> <li><b>Product spec confirmed.</b></li> </ul> 

# PPT has Successfully Cracked the CSG Brine Code

## Parkway has Achieved a Major Industry Breakthrough

- **Sample 1** Super concentrated (>200g/L TDS) CSG Brine (from WWTP-01), requiring treatment, but no viable treatment identified.
- **Sample 2** Super concentrated (>200g/L TDS) CSG Brine (from WWTP-02), requiring treatment, but no viable treatment identified.

By processing CSG brines (Samples 1 & 2) with a **proprietary iBC<sup>®</sup> based flowsheet**, Parkway has been able to successfully produce:

- **Sample 3** High-purity (deionised) water, recovered from the dewatering process.
- **Sample 4** Industrial salt product (NaCl).
- **Sample 5** Agricultural lime product (CaCO<sub>3</sub>).
- **Sample 6** Caustic soda product (NaOH).

## Highly Transformational Results

- Exceptional product recovery (>98%) exceeds all prior approaches.
- Very high-value product mix, as products are within industrial specifications.
- Extremely low waste generation.

## Implications

- Provides robust basis for delivering:
  - a technically feasible, and
  - commercially viable,
  - process solution.
- Immediate industry-wide implications.

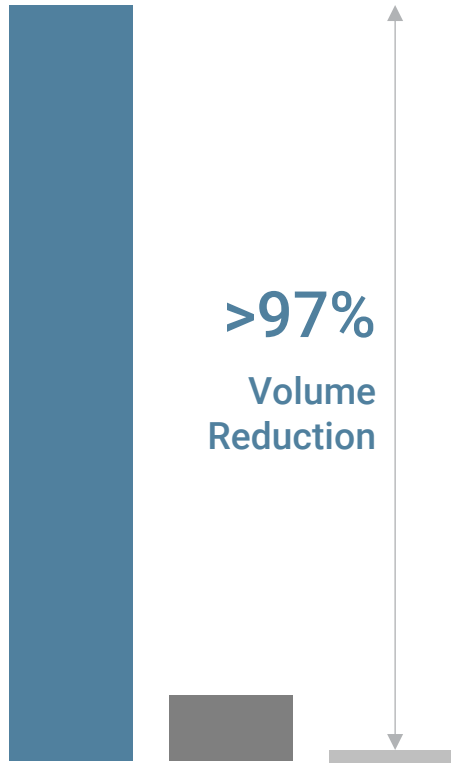


**>98%**  
**Product  
Recovery**



# Transforming CSG Brine Processing – with iBC®

## QLD CSG Wastewater Profile

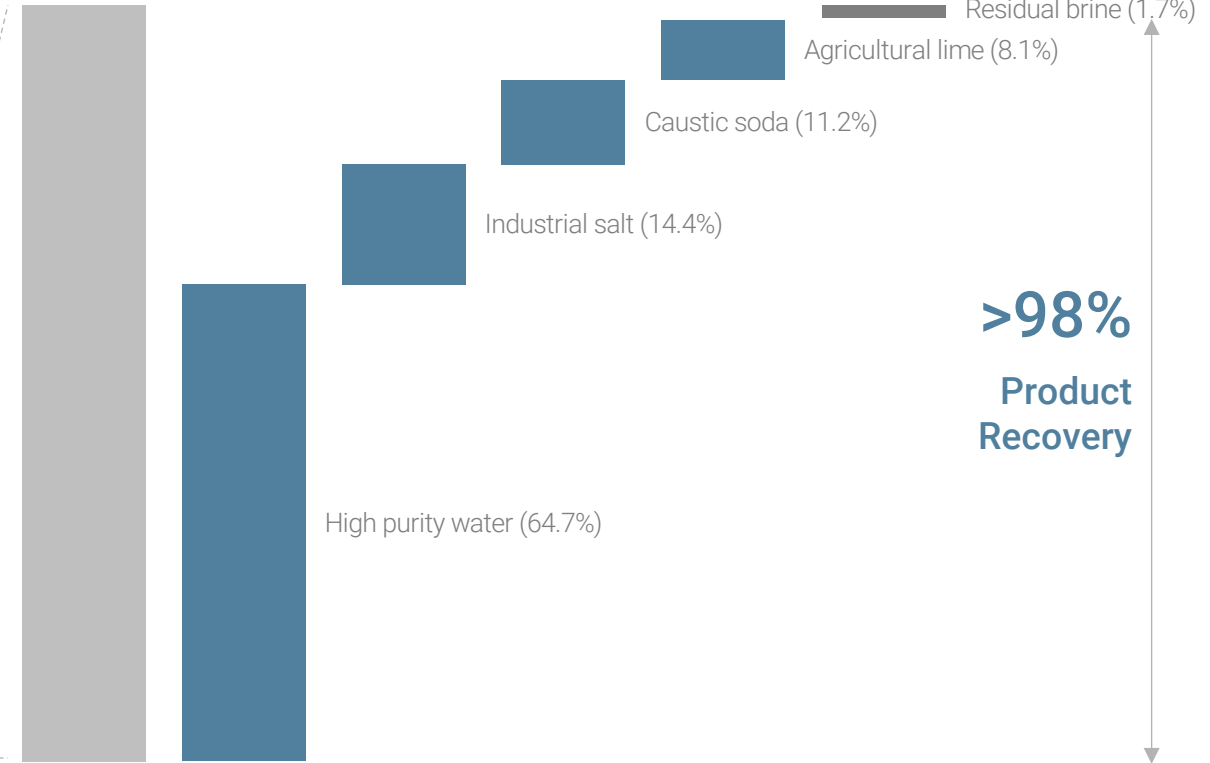


**>97%**  
Volume  
Reduction

### Annual Brine Production (L/yr)

- 55,000,000,000 litres of associated water.
- 4,800,000,000 litres of brine produced.
- When concentrated the volume is reduced to **750,000,000 litres of concentrated brine**, containing 194,000,000 kg of salt, annually.

## iBC® Brine Processing – Potential Product Profile\* (approx. w/w% basis)



**>98%**  
Product  
Recovery

### Product Recovery – Indicative Yield (w/w% basis)

- Concentrated brine volume (indexed to 100%, to allow for comparison).
- Greater than **98% of concentrated brine (waste) converted to water and products.**
- Less than 2% of brine reports to a residual waste brine stream, with options for further processing, to recover additional valuable chemical products, and reduce volumes to less than 0.5%.

\* Indicative estimates, based on a specific scenario involving internal water consumption, not-to-scale, subject to change and provided for illustrative purposes only.

# CSG Brine Options – Comparative Analysis

	Alternate Salt Recovery Processes	Salt Encapsulation Approaches	Parkway – iBC <sup>®</sup> Mediated Processing Route
<b>Overview</b>	Range of historical "selective salt recovery (SSR)" approaches considered, mostly a decade ago	Involves crystallising brine into solid salt form and encapsulating it for long-term storage in purpose built cells	Highly innovative proprietary flowsheet that transforms majority of brine and salt into saleable industrial products
<b>Environmental Metrics</b>		  	  
<b>Solid Waste Profile</b>	Only a fraction of salts are recovered	All of the salts are disposed	>95% of salts are recovered
<b>Liquid Waste Profile</b>	No liquid products are recovered	No liquid products are recovered	>95% of liquid recovered as product
<b>Ongoing Monitoring</b>	Residual waste streams are significant and require monitoring	Waste salt cells require >150 yr design life & require ongoing management	As vast majority of wastes are recovered - residual waste is minimal
<b>Social Metrics</b>		  	  
<b>Social License</b>	Infrastructure investment delivering partial solution is a poor outcome	Creates range of social-license related challenges impacting project viability	The sale of products eliminates the vast majority of long-term liabilities
<b>Freedom to Operate</b>	Sets poor precedent about resource custodianship and utilisation	Long term management & monitoring of waste facilities is highly undesirable	Provides freedom-to-operate by adopting best-available technology
<b>Financial Metrics</b>	  	  	  
<b>Project Revenues</b>	Generates limited revenues from single low-value product – must pay levies	Does not generate any revenues and instead must pay waste levies	Substantial revenues from sale of industrial-grade solid & liquid products
<b>Project Capex</b>	Very high costs	Very high sustaining capex	Capex is productive capital
<b>Life of Project</b>	Prohibitive capex to produce limited revenue is poor investment option	Substantial ongoing disposal and levy costs are highly problematic	Revenues fund waste treatment – thereby saving waste disposal costs

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The **QGC Shell feasibility study** is a **landmark milestone**, highlighting the transformative potential of our technology.

# Feasibility Study for QGC Shell

## Overview

- QGC (a Shell Group company) is one of Australia's leading gas producers and has invested **>\$2 billion on water infrastructure**.
- Parkway has been collaborating with QGC for several years.
- On 7 April 2022, **QGC awarded Parkway a material contract** (~\$0.62 million), to perform a landmark feasibility study.

## Technology

- The feasibility study involves Parkway performing a range of evaluations and assessing the feasibility of treating waste brine derived from QGC's CSG wastewater treatment plants, using **Parkway's patented iBC® technology platform**.

## Feasibility Study

- The feasibility study incorporates iBC® based, i) process simulation & modelling, ii) process piloting, iii) process engineering, and iv) techno-economic analysis, related activities.
- Feasibility study related activities are **supported by strategic partners**, Worley (ASX: WOR) and Victoria University (VU), with whom Parkway has long-standing relationships.
- Additional information about the feasibility study contract awarded by QGC (a Shell Group company), is outlined in [07 April 2022](#) ASX announcement.



QGC Shell - Northern Water Treatment Plant, in Queensland, Australia.

## Client

- QGC Pty Limited, a Shell Group company.



## Master Contractor

- Parkway Process Solutions Pty Ltd.



## Parkway – R&D Partner

- Victoria University.



## Parkway – Global Strategic Partner

- Worley.



# QGC Shell Feasibility Study Progress

## Overview

- Collaborative project team, led by Parkway engineering team.

## iBC® Piloting Activities – Bench Scale

- Extensive evaluations performed to date, have now confirmed:
  - key process conditions to operate iBC® process plant.
  - production of key products, including an industrial grade caustic soda product with a specification comparable to other industrial (diaphragm) grade caustic products.

## iBC® Piloting Activities – Pilot Scale

- Mechanical installation of New iBC® pilot plant completed in August, with additional process equipment procured.
- **Hot commissioning activities completed in late-November.**
- Piloting will replicate bench scale performance at larger scale.

## Feasibility Study

- Preparation of **key engineering deliverables is nearing completion**, underpinned by **successful piloting results**.
- In addition to finalising piloting, the project is transitioning to the techno-economic evaluation phase, to underpin FS report.
- Extensive client engagement supporting development of feasibility study, to ensure **alignment with Shell requirements**.



New iBC® Pilot Plant, installed at Victoria University, in Victoria, Australia.

## Commercial

- Preliminary discussions with industrial customer/s capable of off-taking caustic soda production, are very encouraging.
- Existing QGC site for commercial-scale iBC® plant identified, and has been incorporated into project engineering design.
  - Proposed iBC® plant layout has been reconfigured at request of client, to allow for potential second train.
- Range of **commercial options to deliver** project being explored, pending finalisation of feasibility study.
- Genuine **opportunity for iBC® technology platform** to become best available technology (BAT) and for the QGC project to potentially provide **industry-wide solution**.
- Feasibility study is an important step in technology validation.

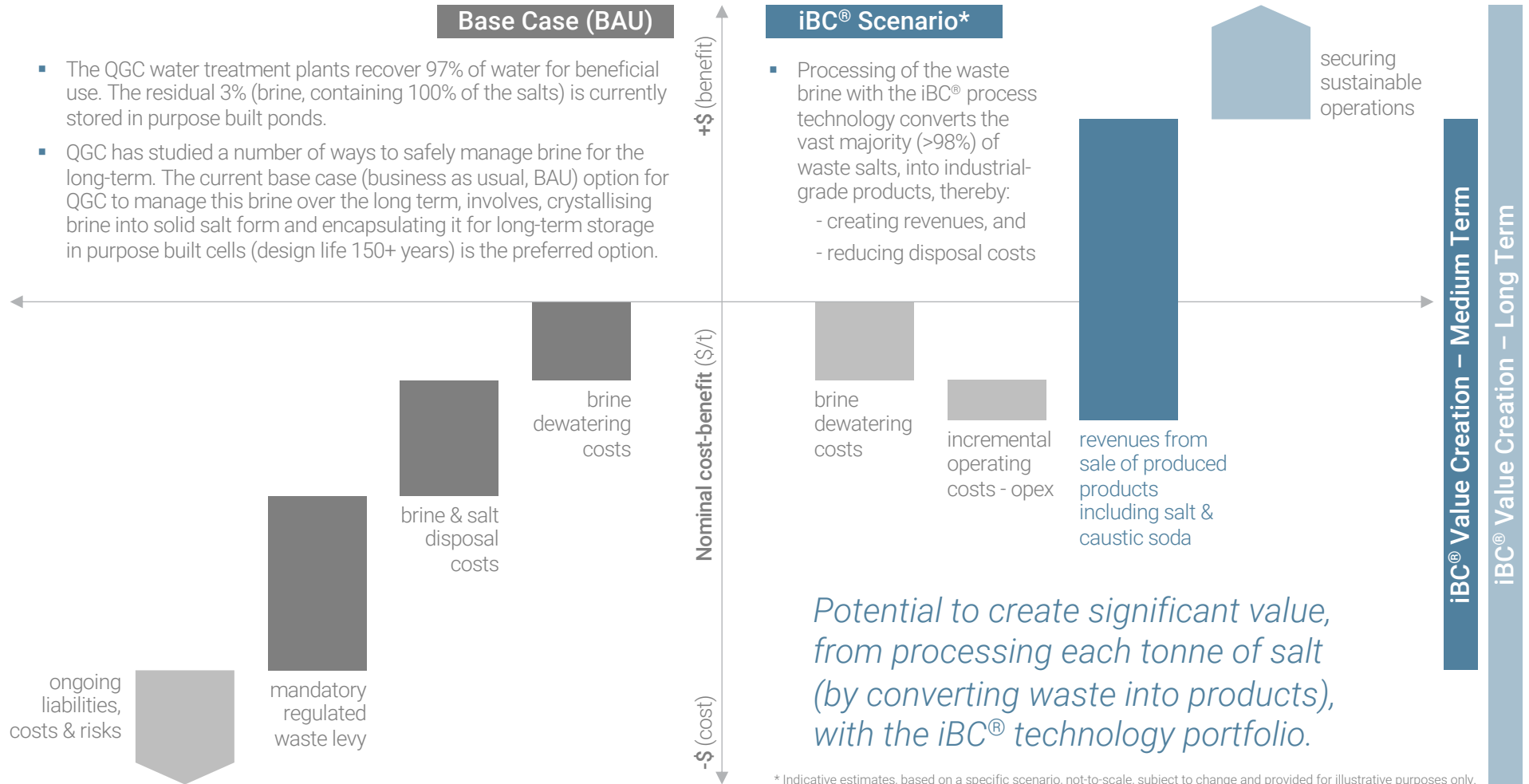
# Substantial Value Creation Opportunity

## Base Case (BAU)

- The QGC water treatment plants recover 97% of water for beneficial use. The residual 3% (brine, containing 100% of the salts) is currently stored in purpose built ponds.
- QGC has studied a number of ways to safely manage brine for the long-term. The current base case (business as usual, BAU) option for QGC to manage this brine over the long term, involves, crystallising brine into solid salt form and encapsulating it for long-term storage in purpose built cells (design life 150+ years) is the preferred option.

## iBC® Scenario\*

- Processing of the waste brine with the iBC® process technology converts the vast majority (>98%) of waste salts, into industrial-grade products, thereby:
  - creating revenues, and
  - reducing disposal costs



\* Indicative estimates, based on a specific scenario, not-to-scale, subject to change and provided for illustrative purposes only.

# PPT – Typical 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.
- Parkway is currently advancing a pipeline of projects through key business development stages, with a specific **focus on high value and strategic applications**.
- Indicative timelines associated with the business development cycle are outlined below. The trajectory of each project varies depending on specific factors.



## Additional Strategic Opportunities

- Shortlisted by state-owned enterprise, in relation to potentially performing feasibility study, to evaluate downstream processing options for major salt works project.
- Several other strategic opportunities being advanced with emphasis on applications that have the potential for large-scale / industry-wide adoption.

## Very Large Addressable Markets

- The water and wastewater treatment opportunities in the global energy & mining, municipal & desalination and industrial applications, all represent **multi billion dollar opportunities**.

## Strong Industry Drivers

- Strong economic, regulatory and **ESG drivers supporting change**.

## Market Requires Integrated Solutions

- Parkway Process Solutions is capable of delivering increasingly complex **integrated wastewater treatment solutions**.

## Purpose Built Platform to Address Growing Thematic

- Attractive business model to create and **capture share of value creation**.
- Partnering with major industry players to deliver fit-for-purpose solutions.
- Highly motivated team making progress in **building client & revenue base**.

## New Technologies for Next-Generation Solutions

- Parkway is commercialising a portfolio of highly **innovative and patented technologies** (aMES<sup>®</sup>, iBC<sup>®</sup> and others) to address particularly complex process and wastewater related challenges.
- New technologies will enable delivery of **highly differentiated solutions**.

