



# PharmAust

L I M I T E D

*PharmAust Limited is a clinical-stage company developing therapeutics for the treatment of different types of cancers, viral and neurological diseases, as well as providing highly specialised medicinal and synthetic chemistry services on a contract basis to clients*

**ASX: PAA**

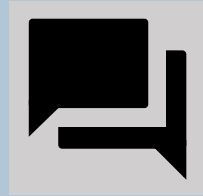
ACN 094 006 023

AGM Presentation October 2021

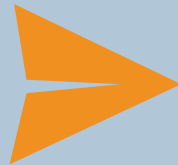
# ONLINE ATTENDEES – TEXT QUESTION PROCESS



When the question function is available, the messaging tab will appear at the top of the screen



To submit a question, type your question in the “Ask a question” box and press the send arrow



Your question will be sent immediately for review

✓ Received

123-456-789

HOME

MESSAGING

VOTING

Messaging

Ask a question



**Moderator**

Type your question in the box above and then press the send arrow. Please include the number of the resolution at the beginning of your question. Questions may be moderated or amalgamated if there are multiple questions on the same topic

# ONLINE ATTENDEES – AUDIO QUESTION PROCESS



When the audio questions line is available, a link will appear on the home tab titled **Asking Audio Questions**

If you would like to ask an audio question, **pause the meeting broadcast** and click on the link

You will be prompted to enter your name and the topic of your question before being placed in the audio questions queue

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MESSAGING

VOTING

## Instructions

### Watching the Webcast

Press **play** to begin the broadcast. Ensure your device isn't muted and the volume is turned up. On mobile devices, the broadcast can be minimised and audio will continue to play.

### Asking Text Questions

Select the **MESSAGING** tab at the top of this page, then type your question in the box provided and press the send arrow.

### Asking Audio Questions

If you would like to ask a question verbally, **pause the broadcast** and then click **HERE**. You will be connected to the audio questions line where you can listen to the meeting while waiting to ask your question. Please return to this page if you have any issues.

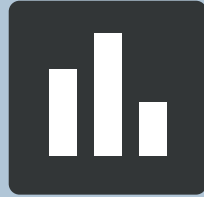
### Voting

When voting opens, a **VOTING** tab will appear at the top of the screen. Selecting this tab will open a list of resolutions, select **For**, **Against** or **Abstain** to cast your vote. There is no enter or send button. You may however cancel your vote and enter a new selection while voting is open.

# ONLINE ATTENDEES – VOTING



When open, the vote will be accessible by selecting the voting tab at the top of the screen



To vote simply select the direction in which you would like to cast your vote. The selected option will change colour

For



Against



Abstain



There is no submit or send button, your selection is automatically recorded. You can change your mind or cancel your vote any time before the poll is closed

123-456-789

HOME

MESSAGING

VOTING

Poll Open

You have voted on 0 of 2 items

Resolution 1

Select a choice.

For



Against



Abstain



CANCEL

Question 2

Select a choice.

Yes



No



Unsure



# Board and Management



Dr Roger Aston – Executive Chairman



Robert Bishop – Executive Director



Sam Wright – Finance Director



Dr Richard Mollard – Chief Scientific Officer



Neville Bassett AM – Non-Executive Director



Colin La Galia – Epichem CEO

# Proxy votes received

Resolution	Vote type	Voted	%	% of all securities
1, ADOPT REMUNERATION REPORT	For	42,525,123	76.01	13.42
	Against	8,477,927	15.16	2.68
	Open-Usable	4,937,253	8.83	1.56
	Board	4,921,253	8.80	1.55
	Non-Board	16,000	0.03	0.01
	Open-Cond	0	0.00	0.00
	Open Unusable	0	N/A	0.00
	Abstain	160,008	N/A	0.05
	Excluded	33,357,675	N/A	10.53
	2, RE-ELECT DIR S WRIGHT	For	70,586,356	81.86
Against		4,664,789	5.41	1.47
Open-Usable		10,977,253	12.73	3.46
Board		10,961,253	12.71	3.46
Non-Board		16,000	0.02	0.01
Open-Cond		0	0.00	0.00
Open Unusable		0	N/A	0.00
Abstain		3,229,588	N/A	1.02
Excluded		0	N/A	0.00
3, RE-ELECT DIR N BASSETT		For	70,437,948	84.21
	Against	2,227,789	2.66	0.70
	Open-Usable	10,980,661	13.13	3.46
	Board	10,964,661	13.11	3.46
	Non-Board	16,000	0.02	0.01
	Open-Cond	0	0.00	0.00
	Open Unusable	0	N/A	0.00
	Abstain	5,811,588	N/A	1.83
	Excluded	0	N/A	0.00
	4, APRV ADD 10% CAPACITY	For	64,210,408	71.96
Against		14,032,075	15.73	4.43
Open-Usable		10,977,253	12.31	3.46
Board		10,961,253	12.29	3.46
Non-Board		16,000	0.02	0.01
Open-Cond		0	0.00	0.00
Open Unusable		0	N/A	0.00
Abstain		238,250	N/A	0.08
Excluded		0	N/A	0.00
5, APRV ISS SECURITIES EIS		For	41,143,268	74.53
	Against	9,156,574	16.59	2.89
	Open-Usable	4,901,676	8.88	1.55
	Board	4,885,676	8.85	1.54
	Non-Board	16,000	0.03	0.01
	Open-Cond	0	0.00	0.00
	Open Unusable	0	N/A	0.00
	Abstain	12,809,390	N/A	4.04
	Excluded	21,447,078	N/A	6.77



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# MONEPANTEL

## “REPURPOSING MONEPANTEL”

- REGISTERED IN 38 COUNTRIES AS A VETERINARY ANTIPARASITIC
- PHASE 3 IN CANINE CANCER START APR 2022 FOR REGISTRATION
- RE-FORMULATED MONEPANTEL AS TABLET FOR CANINE AND HUMAN CANCER
- DISCUSSIONS RECENTLY INITIATED WITH MAJOR PHARMACEUTICAL COMPANY
- EXCELLENT SPRINGBOARD FOR TREATMENT OF OTHER HUMAN DISEASES
- THREE HUMAN TRIALS TO BE INITIATED 2022 (Q2-Q4)
- MND TRIAL FUNDED (\$880,000) BY FIGHTMND

# MONEPANTEL

## VALUE PROPOSITION

### SAFETY

- Good safety profile no chemotherapy-like side effects
- No weight loss
- No inappetence
- Good Quality of Life
- Home administration by owner
- No ethical issues on use of chemotherapy
- Patient can go home immediately
- No risk of chemo toxicity to owner's family

### ECONOMICS

- Considerably more cost effective than chemotherapy

### COMMERCIAL

- Open dialogue with Vet Major
- Patents granted

### EFFICACY

- Extends survival x 4 cf untreated  
(at least stable disease induced)
- Extends survival x 2 cf steroid standard of care  
(at least stable disease induced)

### MANUFACTURE

- GMP drug and GMP tablet manufacture in place
- Scored tablet for small dogs
- Different tablet configurations for different diseases

### REGISTRATION

- Relatively short pathway to registration
- Contact process with FDA initiated



# PHARMAUST: CANINE CANCER PROGRAMME

## UPDATE: OPTIMAL DOSE

- Fine tuning of Dose Optimization in Phase 2 Leading to Phase 3
- 100% of canines treated showing at least stable disease
- Quadrupling mean-survival time over untreated
- Doubling mean-survival time over prednisolone alone
- Dogs remain active and in good spirits (QOL)
- Discussions beginning for FDA registration and GCP implementation
- Discussions with major Pharma for Sale or License of MPL for Veterinary



# MONEPANTEL – COMPARATIVE SAFETY

## PRODUCT PLACEMENT

### Chemotherapy (CHOP) Works Well But:

1. Poor quality of Life
2. Diarrhea
3. Vomiting
4. Bladder irritation
5. Weight loss/ inappetence
6. Immunosuppression
7. Due to above, questionable ethics of using chemotherapy
8. Price tag: typical for B-Cell Lymphoma \$5,000 -\$10,000
9. Target 15-20% of Canines with cancer
10. Survival 6-12 months

### Monepantel (Median survival 4 months)

1. Excellent quality of life
2. Commercial positioning targeting 60-80% of canines
3. Doubles life expectancy over prednisolone alone
4. No risk of contamination from chemotherapy of patient
5. None of the ethical issues associated with chemo

### Prednisolone:

#### Short Term Side Effects

Increased thirst and appetite

Frequent urination

Panting

Lethargy

Development or worsening of infections (especially bacterial skin infections)

Vomiting or nausea

Cost: \$40/month

Survival: 1-2 months

# MONEPANTEL

## PRODUCT PLACEMENT



CHEMOTHERAPY  
WHICH IS IN EFFECT PALLIATIVE CARE  
15% - 20%

PALLIATIVE CARE  
WITHOUT CHEMOTHERAPY

- 4-6 MONTHS
- NO PAIN
- GOOD QOL
- NO TOX ISSUES
- HOME MEDICATED

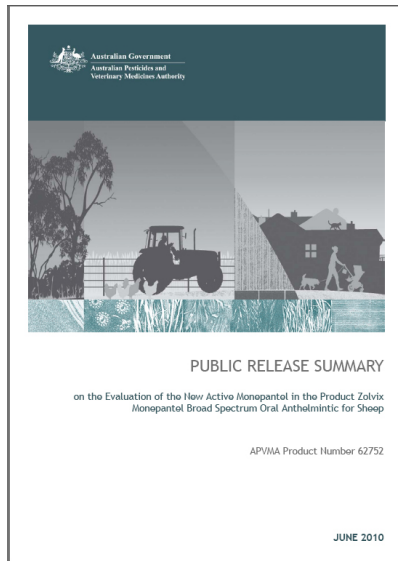
EUTHANASIA  
60%-80% DOGS WITH CANCER

# MONEPANTEL



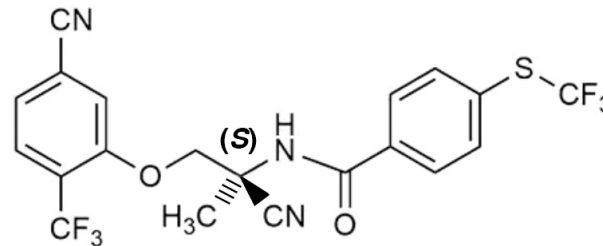
PARALYSIS OF PARASITES

TARGETING **ACETYLCHOLINE RECEPTORS**



<https://apvma.gov.au/sites/default/files/publication/14141-prs-monepantel.pdf>

## HOW IT WORKS



MONEPANTEL

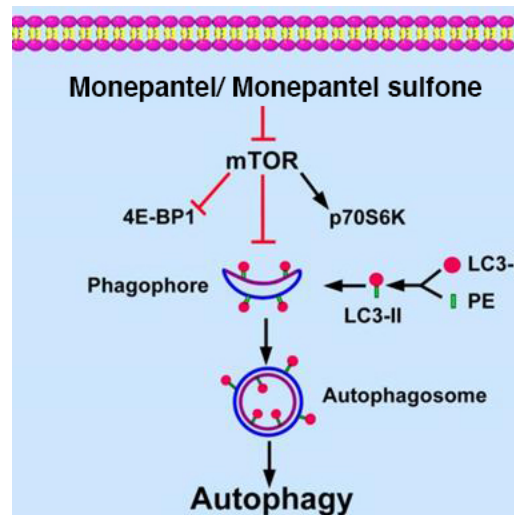


**mTOR** ANTAGONIST →  
CURRENT SALES OF mTOR  
DRUGS: \$2.5Bln

mTOR plays a pivotal role  
governing cell growth and  
proliferation

Therapeutic Targets:

- Cancer (Vet and Human)
- Motor Neurone Disease
- COVID-19



AGM Presentation October 2021

# MONEPANTEL

## TABLET STABILITY AND IMPURITY ANALYSIS

MPL ACTIVE INGREDIENT  
SOURCED FROM SYNGENE INDIA  
(2 X 10 KG SCALE)



TABLET SOURCING CAPABILITIES:  
CATALENT = PHASE 1 & 2  
SYNGENE = PHASE 3

**Syngene**  
Putting Science to Work



- At least 24 month shelf life
- Impurity profile 15 x within limits

**Catalent**<sup>®</sup>

# MONEPANTEL

## PHARMAUST: HUMAN TRIAL PROGRAM



HUMAN  
CANCERS

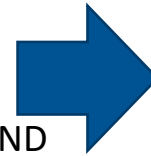
- CLINICAL INTEREST TO FOCUS ON: GI, GLIOBLASTOMA, ESOPHAGEAL AND PANCREATIC



Principal Investigators in UK and Italy  
Identified for phase I/II trial

MOTOR  
NEURONE  
DISEASE

- HUMAN TRIAL IN MELBOURNE AND SYDNEY 2022
- FUNDED BY FIGHT MND CHARITY (\$880,000)



FightMND Charity has awarded PharmAust \$880,000  
To evaluate MPL for Motor Neurone Disease  
Dr Susan Mathers, Calvary Health Care Bethlehem  
And Prof. Dominic Rowe Macquarie University

COVID-19

- PREPARATIONS FOR EUROPEAN TRIAL UNDERWAY



INHIBITION OF SARS-CoV-2

# MONEPANTEL STRATEGY

## MOVING FORWARD

### Strategy

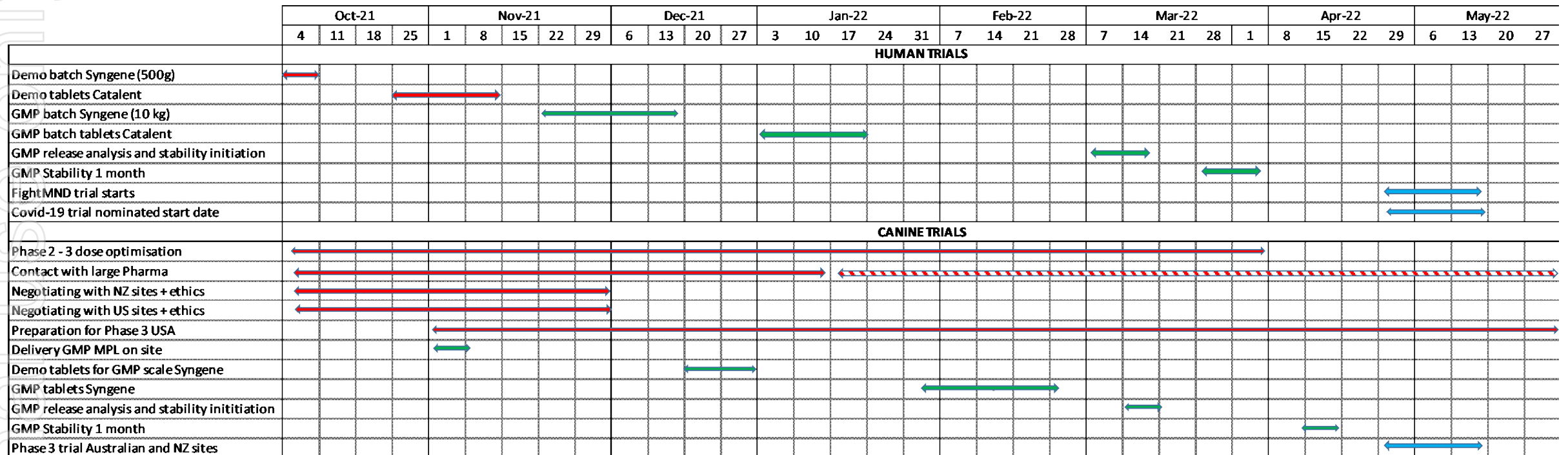
- With indicative commercially valuable phase 2 outcomes in canine cancer -> Complete phase 3 trial and License or sell Vet Cancer application
- With good data in dogs showing significant periods of stable disease and progression-free survival we will start targeting human cancer
- Clinical outcomes with canines often facilitates rapid translation to humans
- Expand into other mTOR indications (COVID-19 and MND)

### Factors supporting strategy:

- Canine B-Cell Lymphoma very aggressive
- MPL is a very safe drug with a high quality of life
- MPL will be tested in a Phase 3 trial in combination with prednisolone

# CLINICAL TIMELINES

## MOVING FORWARD: CRITICAL TIMELINES





# Epichem

## Epichem Pty Ltd

*Australia's premier provider  
of synthetic and organic chemistry services*

### Who are we

- Wholly owned subsidiary of PharmAust Limited
- Australian-based Contract Research Organisation
- Based in Perth
- Top Australian SME employer of PhD graduates
- 18 years success helping clients worldwide
- National and State export award winner

### Experts in

- Synthetic, organic & medicinal chemistry
- Pharmaceutical Reference Standards
- Custom Synthesis
- Analytical chemistry
- Material science
- IP generation & protection



*Our Formula. Your Success.*



Our Formula. Your Success.

## EPICHEM PTY LTD: Medicinal & Synthetic Chemistry Expertise

Worldwide customer base in Pharmaceutical, Biotech, Start Ups, Mining, Agriculture and Animal Health sectors  
State of the art, Purpose-Built facilities

### Medicinal Chemistry & Drug Discovery

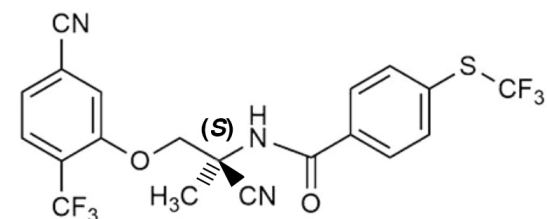
- Hit-to-Lead projects
- Lead optimisation towards candidate selection
- Synthesis of analogue libraries and scale up
- IP Generation
- Drug conjugates, fluorescent tags & metabolites
- Cost effective, flexible FTE contract options
- Pharmaceutical Reference Standards
- Custom Synthesis
- Analytical Chemistry & Problem Solving Capability

### Supporting PharmAust Drug Development Pipeline

- Lead drug development & validation
- Drug candidate pipeline manufacture & analysis
- Drug reformulation, GMP synthesis & stability support
- Drug inventory dispensing to clinical trial centres

### Proven Track Record of Success

- SFC chromatography, computational chemistry, X-ray, ADMET, HPLC, LC-MS, GC-MS, NMR, Karl Fischer, melting point apparatuses
- ISO 9001 Certified; NATA 17025 & 17034 Accredited
- 2021, 2019, 2017 WA Exporter of the Year Award for International Health
- GHP Biotechnology 2020 Awards Most Innovative Chemistry Service Provider - Australia
- GHP Biotechnology 2020 Awards Best in Organic Chemistry Solutions
- Partnership Success: DNDi, PYC Therapeutics, Forever&More



# OHD Waste Conversion & Re-purposing Technology

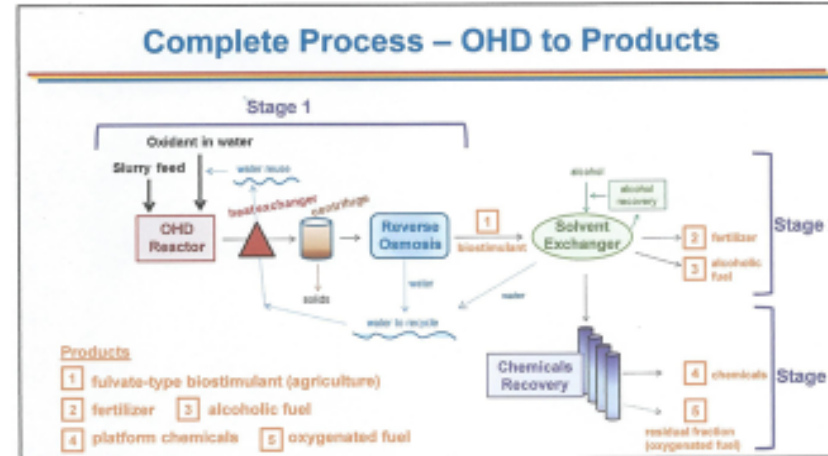
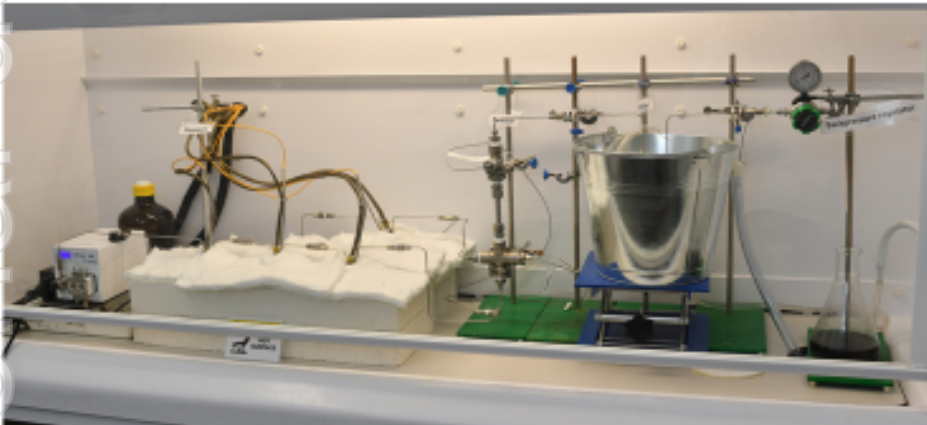
## Biomass waste to fuel technology – “OHD”

### Oxidative Hydrothermal Dissolution

Integrated non-catalytic process

For the production of high value chemicals and fuel

From macromolecular organic solids including biomass such as municipal waste, straw, plastic, tyres, oil shale and coal



- Novel, continuous, hydrothermal process to convert macromolecular organic solids into low molecular weight organic chemicals only

- Elevated temperature [ $\pm 270$  °C]
- High pressure [ $\pm 200$  bar (2900 psi)]
  - Liquid water
  - Molecular oxygen
- Minimal gaseous products [ $<1$  %]

1



*Our Formula. Your Success.*

# Policy Alignment & Government Incentives

## 2020 federal budget

- \$250m injection over 4 years into waste & recycling initiatives

## 2019 national waste policy

- 10% reduction in waste generation per capita by 2030
- 80% average resource recovery rate from all waste streams
- Phase out problematic, unnecessary plastics by 2025

## West Australia's waste avoidance & resource recovery strategy for 2030

- Avoid, recover, protect
- 10% reduction in waste generation per capita by 2025
- 70% recovery of material by 2025

## Australia's biofuel production 30-year growth target

- Currently lagging biofuel production relative to global average, working to achieve 30-year target
- Launched new bioenergy road map for greener future

## Australian Government incentives for renewable energy

- Carbon credits, grants, financial assistance (ARENA<sup>1</sup>) (CEFC<sup>2</sup>)

## Corporate social responsibility goals

- Australia's big 4 banks have joined RE100 & announced commitment to 100% clean energy by 2025



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# OHD Benefits



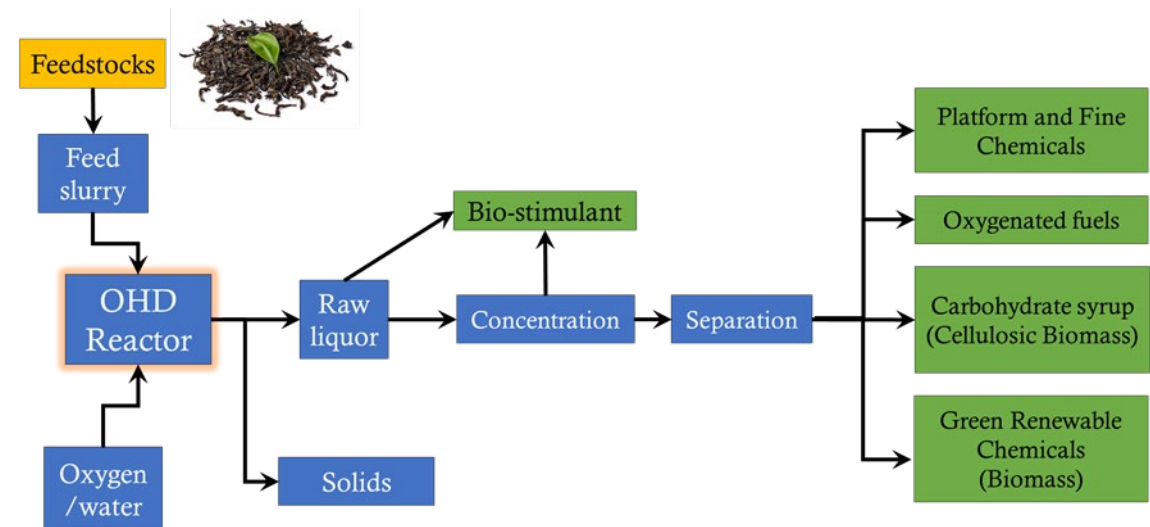
Our Formula. Your Success.

OHD has many unique benefits including;

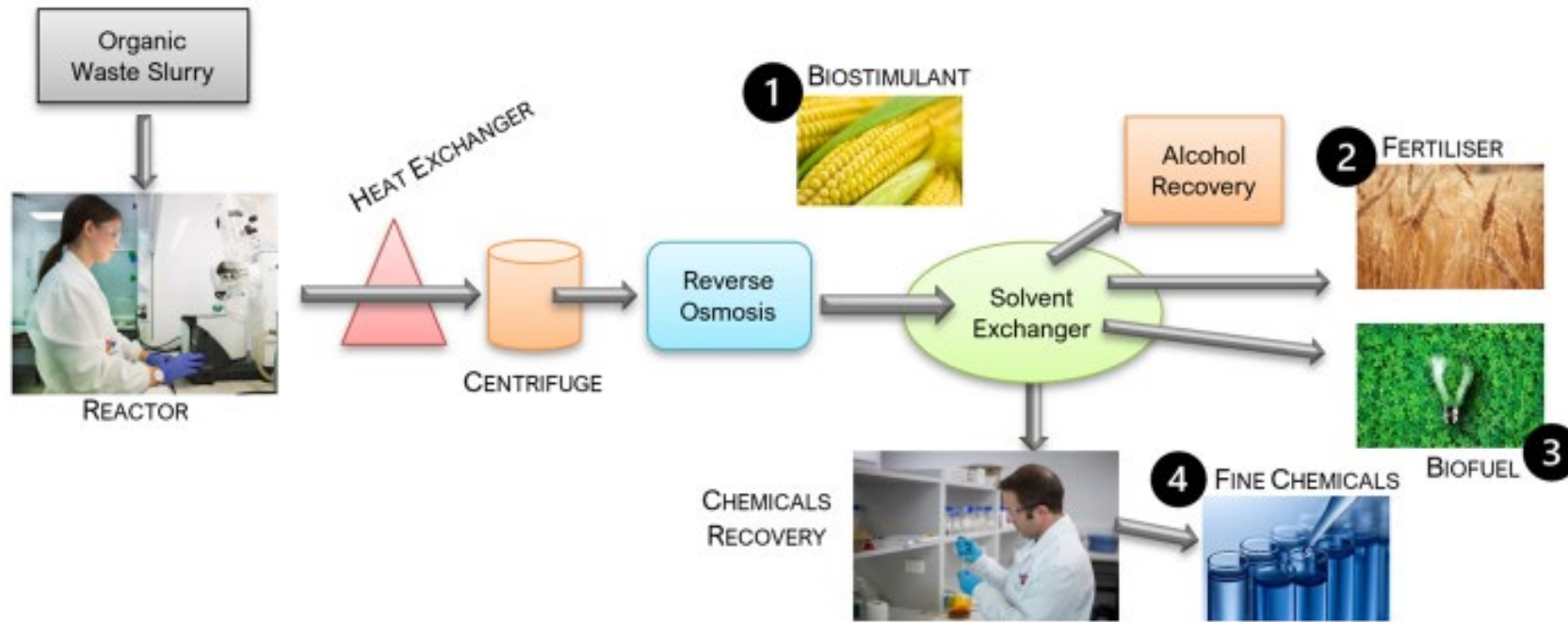
- Is technically straightforward and operates at industrially feasible conditions and rates
- Uses only water and oxygen. Requires no exotic solvents or catalysts
- Readily achieves high to complete conversion of the starting solid with high recovery (typically 70-90+% C) of the products as solubilized low molecular weight materials
- Is environmentally friendly
- Produces little CO<sub>2</sub>
- Minor gaseous product is mainly CO
- No Nitric Oxide (NOx) or Sulfur Oxide (SOx) or other problematic emissions

This technology will allow for ;

- The conversion of and removal of waste
- The conversion of waste into valuable end user products
- Conversion of potential liabilities into assets
- Reduce the impact of waste storage in landfill
- Potential use in mineral extraction capability
- Positive impact on the Circular Economy
- Multi sector applications including Mining, Oil & Gas, Energy, Recycling, Resources and Agriculture



## How Does Waste Generate Money?



≥ 4 revenue streams identified to-date including biostimulants production, fertiliser, biofuels, fine chemicals

# OHD Highlights



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## Oxidative Hydrothermal Dissolution (OHD) Technology

- Benchtop Flow Reactor Built and Commissioned for Operation
- Proof of Concept for;
  - Coal –
    - Victorian Brown Coal → Biostimulants, high value fine chemical products, precursors to “green” biodegradable plastics
    - Collie Coal → Fine chemicals
    - Biomass (ligno-cellulosic)
      - Agricultural and other wastes, including saw dust, Bagasse (sugar cane waste) and more Bioethanol / cellulosic ethanol (via subsequent fermentation), high value fine chemical products, precursors to “green” biodegradable plastics

## WasteSorted e-Waste Grant

- AUD\$200,000
- from the WA Government New Industries Fund
- OHD Technology Research and Development
- Conversion to metals, rare earth metals for Defence, Electronics and Electrics re-use industries
  - Expected but not yet proof of concept:
- eWaste → fine chemicals, monomers for regeneration of plastics – i.e. plastic recycling, recovery of tin, lead, copper, precious metals (gold, platinum etc.) and rare earth metals for use in Defence and re-use of electronics and electrics
- eWaste processing likely to destroy environmentally problematic flame retardants and convert plastic waste to reduce land fill

## Australian Government Department of Industry Science, Energy & Resources

- Curtin University/WA School of Mines Partnership – Curtin Innovation connections
- Mineral Extraction
- Investigate the potential of OHD liquors for hydrometallurgy and mineral processing applications.
- Potential for mining waste removal and/or conversion to valuable chemical resources (e.g. mining waste, polyurethane, rubber tyres)



# OHD Video

- <https://epichem.com.au/wp-content/uploads/2021/08/OHD-video-2021-08.mp4>



# Epichem 2021 Highlights



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## DNDi Contract Extension

- Secured for 13<sup>th</sup> consecutive year
- Contract has delivered AU\$15m+ revenue
- 500 compounds delivered in 2020

## Oxidative Hydrothermal Dissolution (OHD) Technology

- Extension of material science chemistry expertise
- Conversion of biomass & feedstock into useful end products & recovering valuable & critical metals
- Direct sub licence agreement

## WasteSorted e-Waste Grant

- AU\$200,000 from WA Government New Industries Fund
- OHD technology research & development
- Benchtop flow reactor build

## Australian Export & Investment Awards 2021

- WA Exporter of the Year for International Health

## EFA Loan Repaid

- Epichem has paid off its debt liability on time for a major laboratory expansion
- Financial milestone achieved



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# Q & A SESSION

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