

The background image shows a collection of products made from circular materials. On the left is a light beige, textured rectangular tray with several compartments. In the center is a cylindrical container of the same material, sitting on a flat rectangular piece of the same material. To the left of the cylinder are some small, irregular light-colored rocks and a single green leaf. A small green plant with several leaves is positioned behind the tray. The entire scene is set against a light beige, textured background.

Building the Future of Circular Materials

Transforming biomass ash into high-value circular materials through science, innovation, and strategic partnerships.

Our Team

Hannah Nassiri

FOUNDER & CEO

Driving the vision and strategy to build a more sustainable future.

Ali Alizadeh

PROCESS ENGINEER – PROCESS
DEVELOPMENT & SCALE-UP

Expert in scalable process design and manufacturing solutions.

Luke McCaskill

RESEARCH SCIENTIST – RESEARCH &
MATERIALS DEVELOPMENT

Advancing material innovation through research and testing.

Peng-Sang Cau

STRATEGIC ADVISOR / ADVISORY BOARD MEMBER

Visionary serial entrepreneur and accomplished corporate executive

External Partners

A GROWING NETWORK OF TECHNICAL EXPERTS, INDUSTRY
PARTNERS, AND COLLABORATORS

The Problem

Underused Waste. Untapped Value.



Millions of tonnes
of biomass ash
generated annually



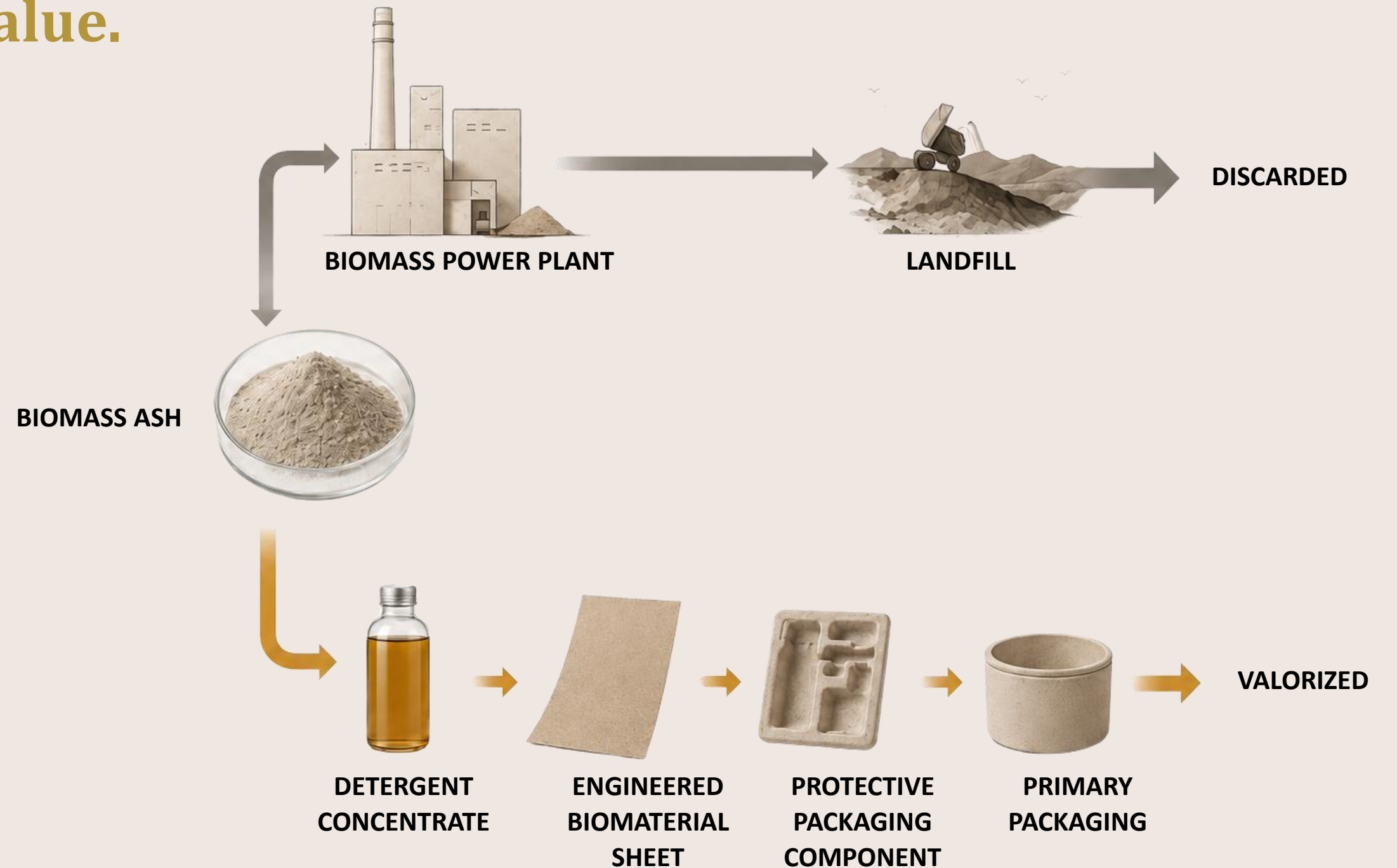
Largely discarded
or underutilized



Industries need
circular material
solutions

~1B tonnes / yr
global biomass waste
generated annually
(FAO, OECD)

\$600B+ by 2030
projected global circular
materials market
(OECD)

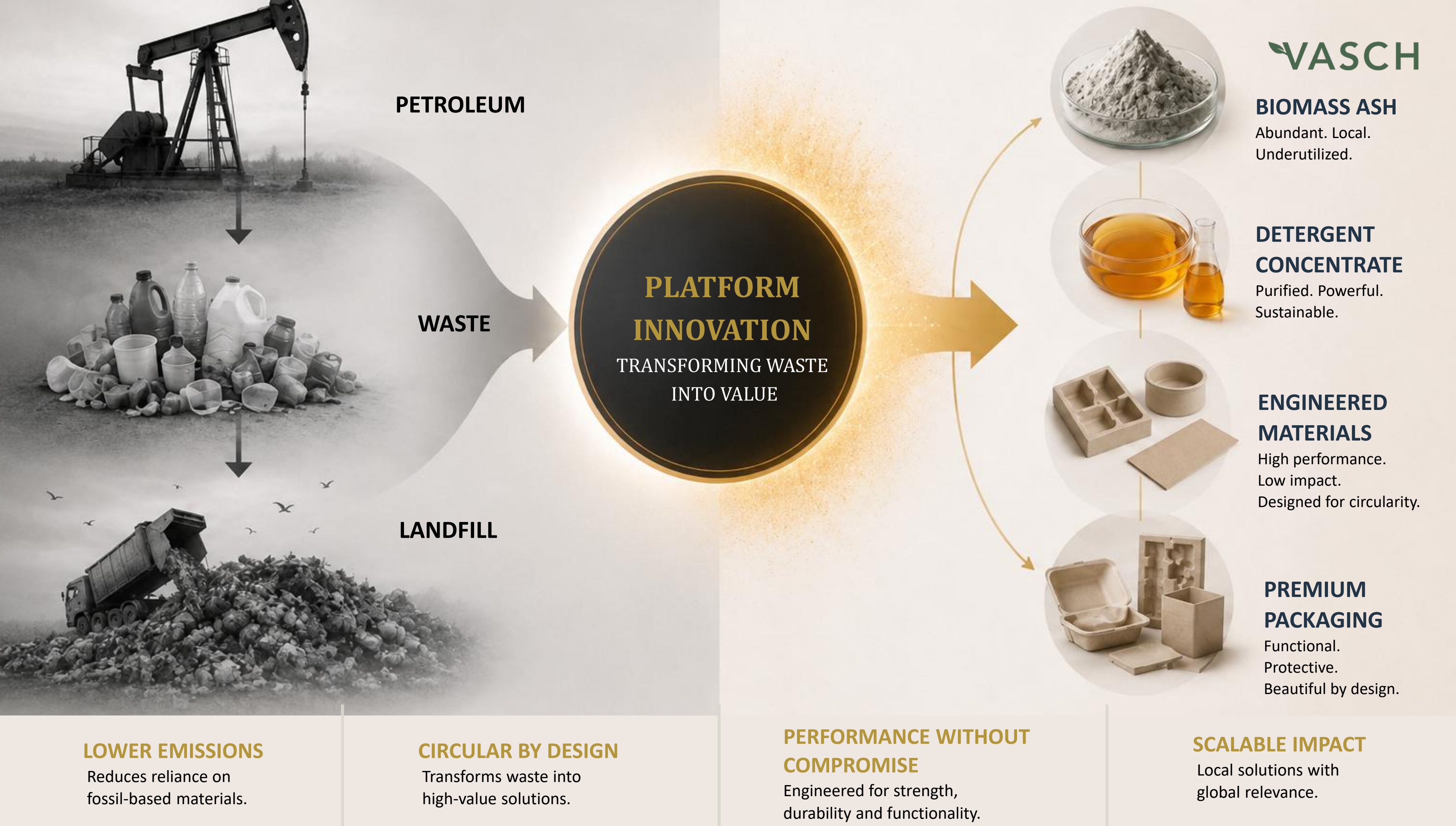


From Ash to Impact

Seeing Opportunity Where Others See Waste

A new generation of high-value materials and products for a circular future.





PETROLEUM

WASTE

LANDFILL

**PLATFORM
INNOVATION**
TRANSFORMING WASTE
INTO VALUE

VASCH

BIOMASS ASH

Abundant. Local.
Underutilized.

**DETERGENT
CONCENTRATE**

Purified. Powerful.
Sustainable.

**ENGINEERED
MATERIALS**

High performance.
Low impact.
Designed for circularity.

**PREMIUM
PACKAGING**

Functional.
Protective.
Beautiful by design.

LOWER EMISSIONS

Reduces reliance on
fossil-based materials.

CIRCULAR BY DESIGN

Transforms waste into
high-value solutions.

**PERFORMANCE WITHOUT
COMPROMISE**

Engineered for strength,
durability and functionality.

SCALABLE IMPACT

Local solutions with
global relevance.

Why Now?

Converging forces are driving unprecedented demand for circular materials.



PLASTIC REGULATIONS

Global bans, levies, and extended producer responsibility are accelerating the transition away from conventional plastics.



CIRCULAR ECONOMY

Businesses and consumers demand materials designed for circularity, driving massive market opportunities.



INDUSTRIAL DECARBONIZATION

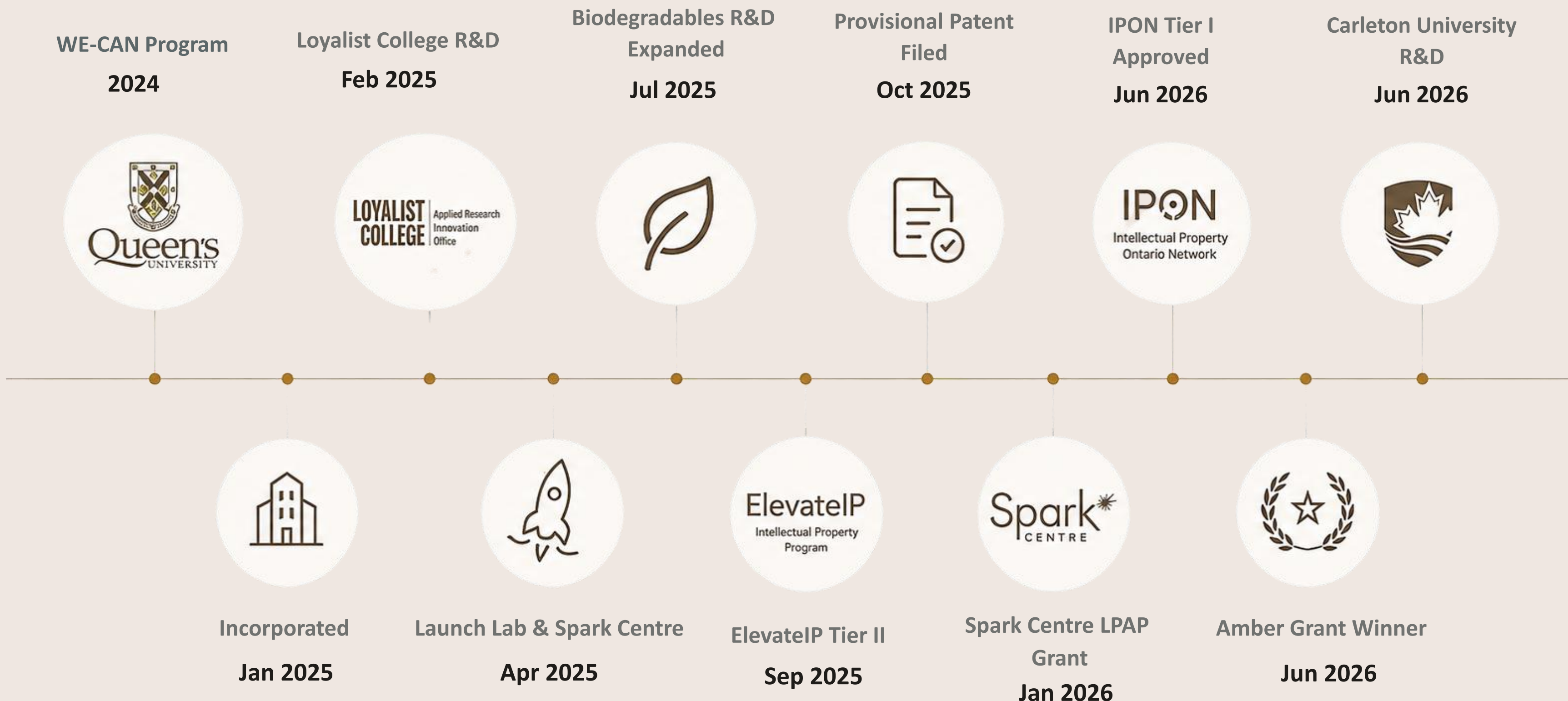
Industries are under pressure to reduce emissions and adopt low-carbon, sustainable material solutions.



BIOMASS WASTE UTILIZATION

Millions of tonnes of biomass ash remain underutilized—representing a vast, low-cost, sustainable resource.

Progress



Research Process



1

Research



2

Experimentation



3

Validation



4

Prototype
Development



5

Commercial
Readiness

How We Can Work Together

We believe meaningful innovation happens through collaboration. Whether you're advancing research, exploring sustainable materials, or scaling new technologies, there are multiple ways to engage with the VASCH platform.



Biomass Ash Supply Partnerships



Joint Research & Development



**Materials Characterization
& Testing**



Product Validation & Pilot Trials



Manufacturing & Scale-Up



**Strategic Funding &
Innovation Programs**



Advancing Innovation Through Collaboration



Universities & Research Institutions

Advancing material science through collaborative research, testing, and knowledge exchange.

Current Collaborations

- Carleton University
- Loyalist College

Government & Innovation Ecosystem

Connecting research with funding, commercialization support, and regional innovation networks.

Supported By

- Launch Lab
- Ontario Centre of Innovation (OCI)



Innovation Programs

Supporting technology development, commercialization, and entrepreneurial growth.

Innovation Network

- LPAP Program (Spark Centre)
- Invest Ottawa (Market Research)
- MaRS (Market Research)
- WE-CAN Program

Industry & Biomass Partners

Collaborating to validate technologies, evaluate feedstocks, and develop scalable circular material solutions.

Partnership Opportunities

- Biomass Facilities
- Manufacturing Partners
- Packaging Companies

Every new collaboration strengthens the platform and expands opportunities for future innovation.

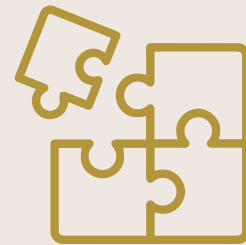
Why Partner With VASCH?

When you partner with VASCH, you gain more than access to a technology—you become part of a collaborative ecosystem driving real impact.



Early Access to Innovation

Gain early access to emerging circular material technologies before commercialization.



Co-Develop New Solutions

Work alongside our research team to develop products tailored to your industry.



Validate Real-World Applications

Pilot, test, and refine new material technologies in practical environments.



Shape the Future Platform

Help influence commercialization pathways, future applications, and licensing opportunities.

Research Excellence

Strong scientific foundations built through experimentation, validation, and applied materials research.



Research & Intellectual Property

Protecting innovations while creating opportunities for collaborative development and future applications.



Technical Know-How

Specialized expertise developed through continuous research, laboratory testing, and material optimization.



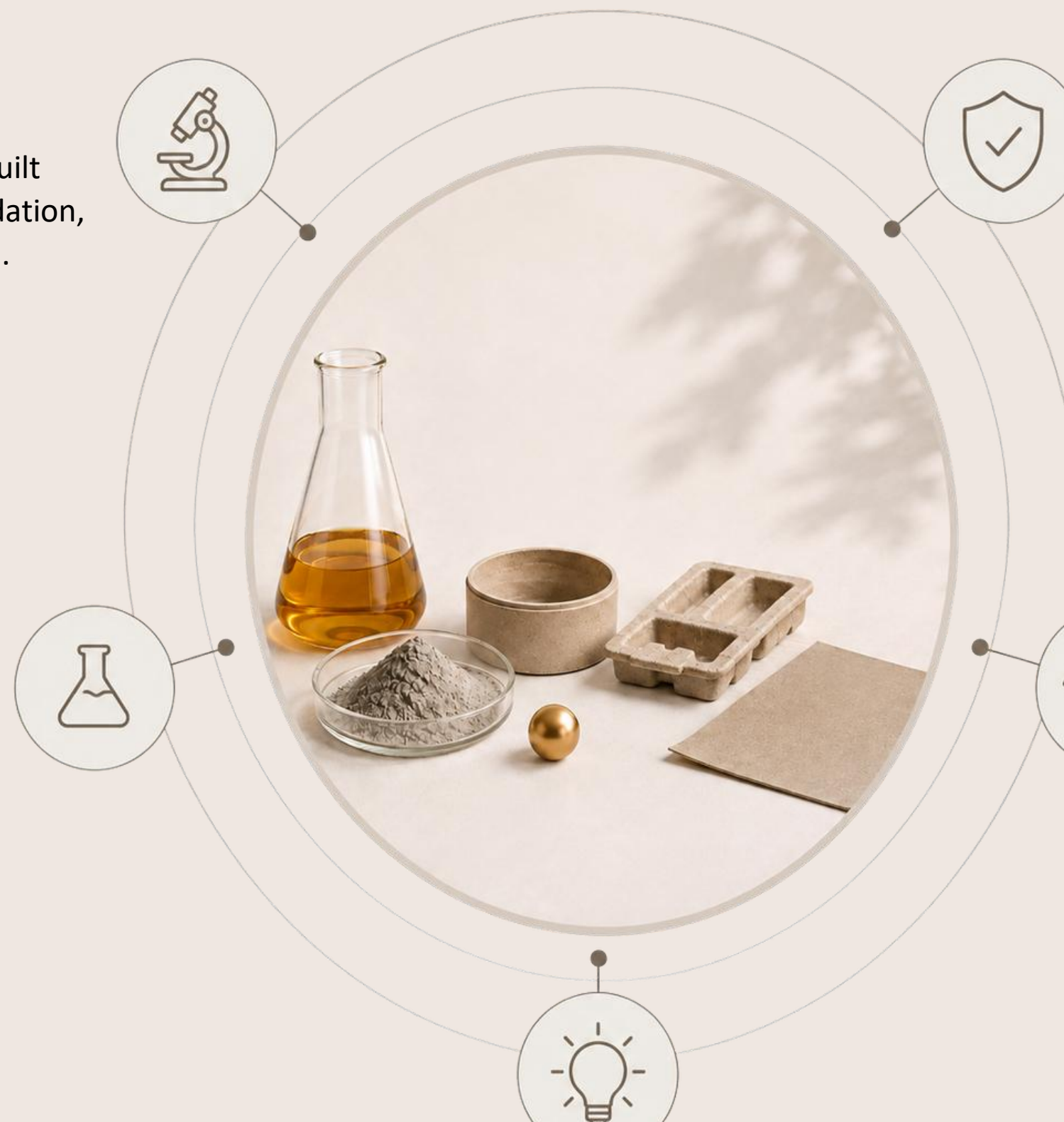
Strategic Partnerships

Working with academic institutions, industry, and innovation organizations to accelerate research and technology development.



Continuous Innovation

An expanding innovation platform creating new materials, products, and sustainable applications.



Your Partnership Journey

Discover Opportunities



Identify collaboration opportunities based on your research, industry challenges, or sustainability goals.



Research & Co-Develop



Work alongside the VASCH team to develop, refine, and optimize material technologies together.



Validate & Pilot



Evaluate performance through laboratory testing, pilot production, and application-specific validation.



Scale & Commercialize



Transition validated technologies toward manufacturing, commercialization, and long-term market adoption.



From Ash to Impact

Let's Build the Future of Circular Materials Together



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