PLASTALYST

Catalysts for

Chemical Recycling

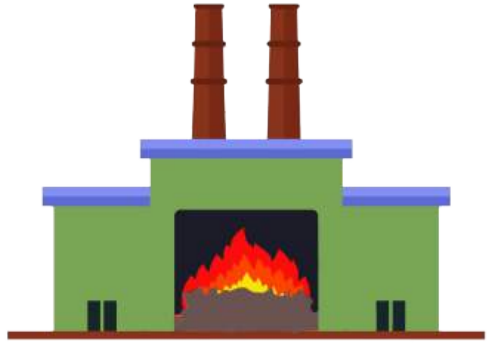
a product by

ACBIODE

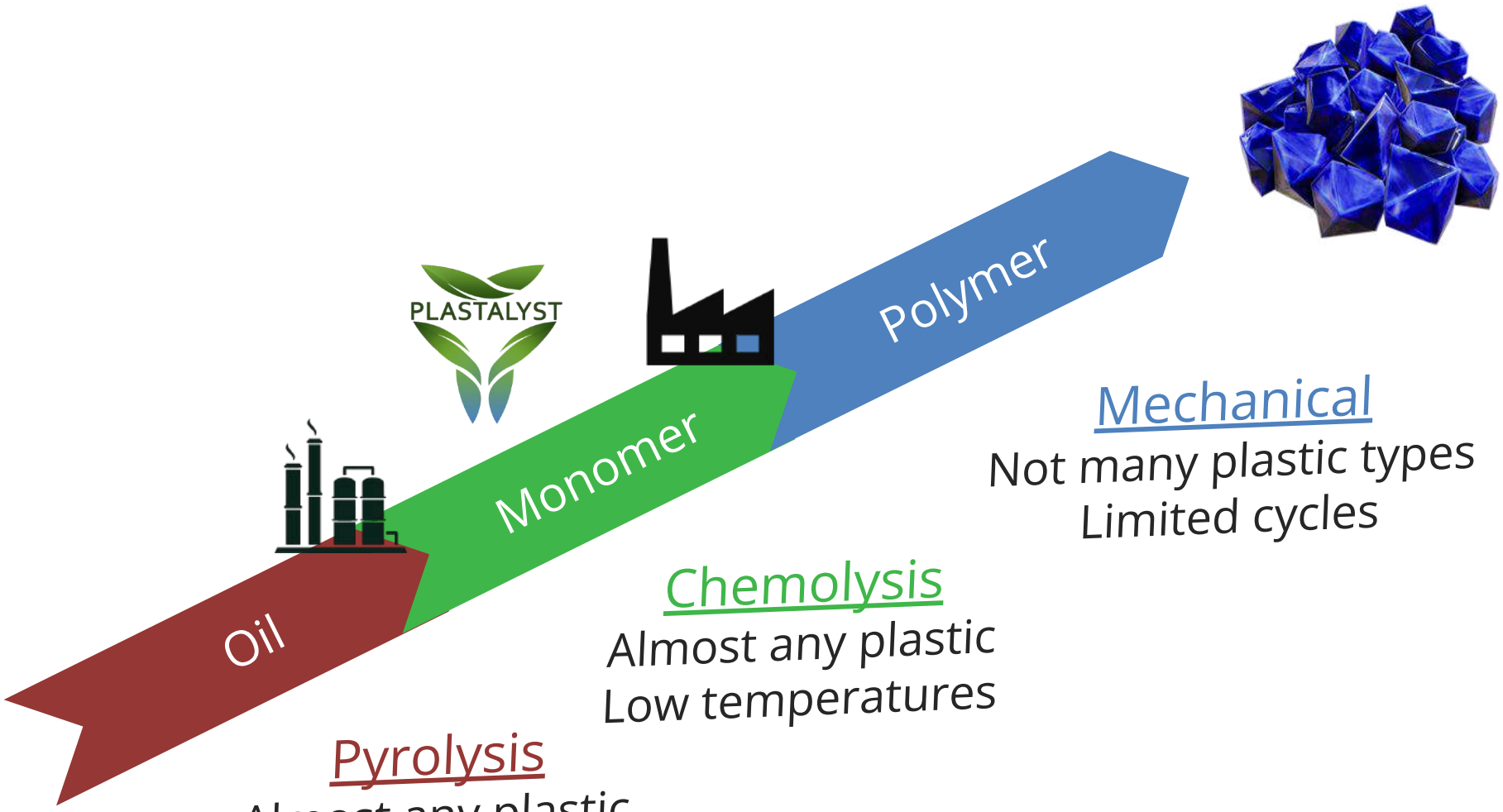
Pollution & Greenhouse Gas Emissions

16Mt

CO_2 Emissions from Plastic Incineration Globally



Plastalyst uses Chemolysis

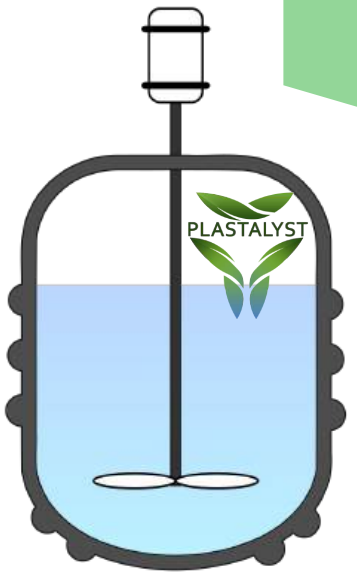


Chemical Recycling - Chemolysis

Organic Waste
Lignin, Cellulose, Sewage & Paper Sludge

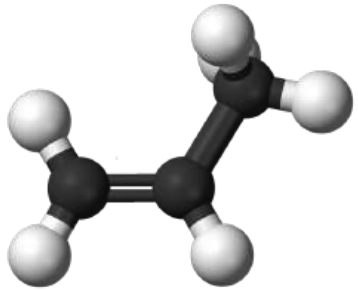
Mixed/
Multi-layered/
Deteriorated/
Plastic

Solvent Free



Catalyst+Water at 200°C

Syngas
for fuel, PET & more



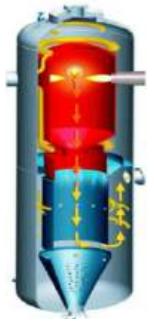
Monomers, alcohols & more

Gasification vs. Plastalyst

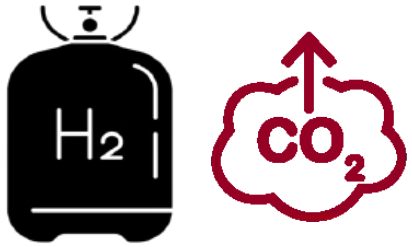
- ✔ Wood Chips
- ✔ Cellulose
- ✔ Paper Sludge
- ✔ Microplastics

Drying needed

450-
1800°C



High CAPEX and OPEX



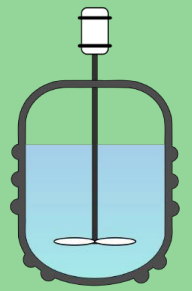
Tar, Char, Ash

PLASTALYST

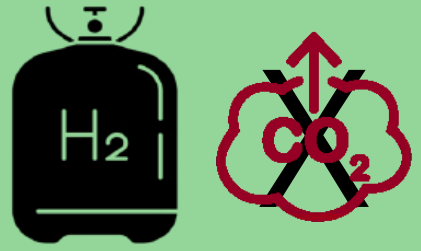
- ✔ Wood Chips
- ✔ Cellulose
- ✔ Paper Sludge
- ✔ Microplastics

No Drying

200°C



Low CAPEX and OPEX



Useful
Biochemicals

Anaerobic Digestion vs Plastalyst

- ✔ Sludge
- ✘ Cellulose
- ✘ Paper Sludge
- ✘ Microplastics

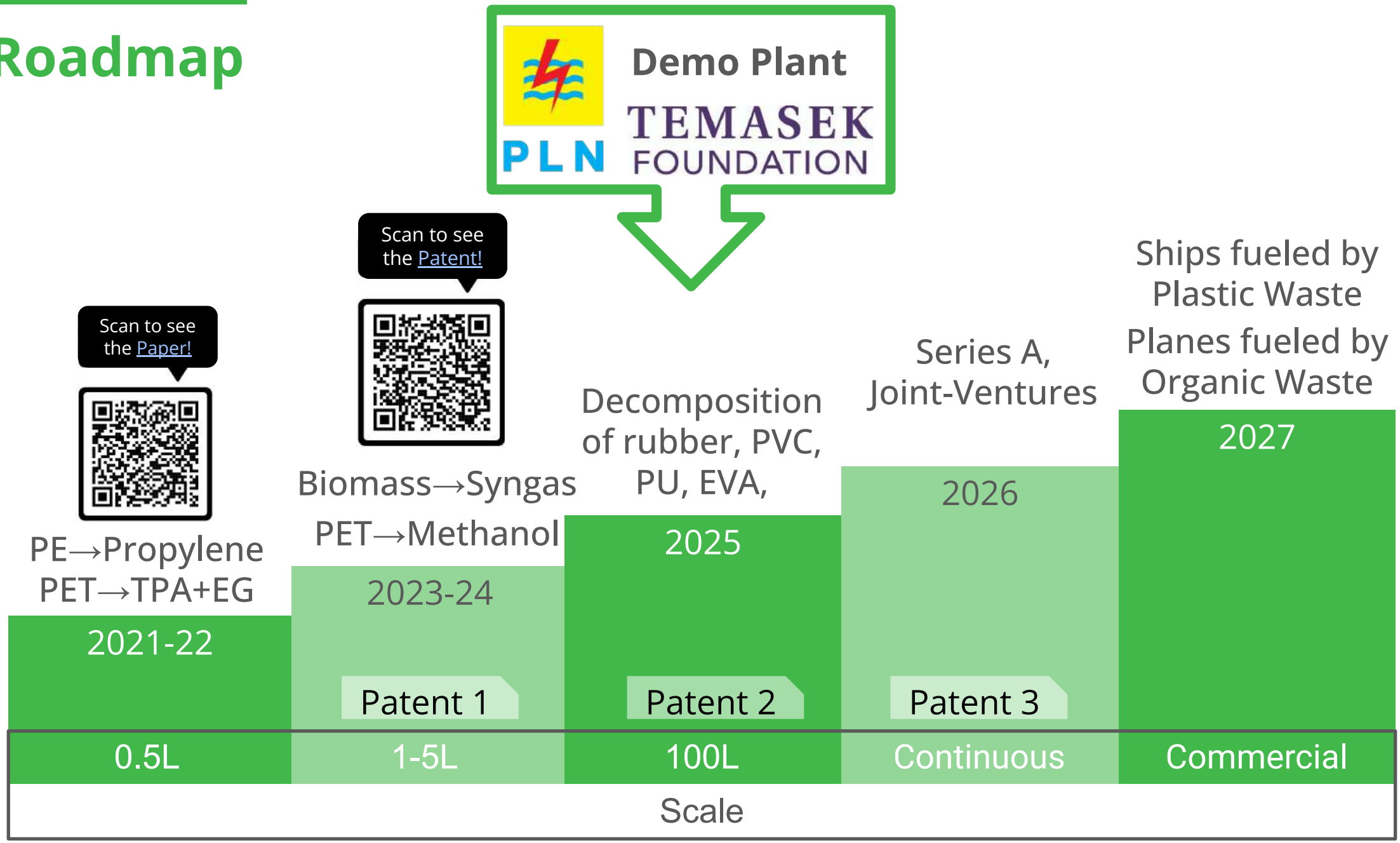
Large Area
20-30 days of retention time
Enzymes expensive and difficult to buy

PLASTALYST

- ✔ Sludge
- ✔ Cellulose
- ✔ Paper Sludge
- ✔ Microplastics

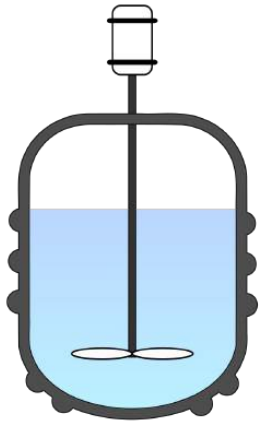
Small Area
only 2 hours reaction time
Catalysts are affordable and easy to procure

Roadmap

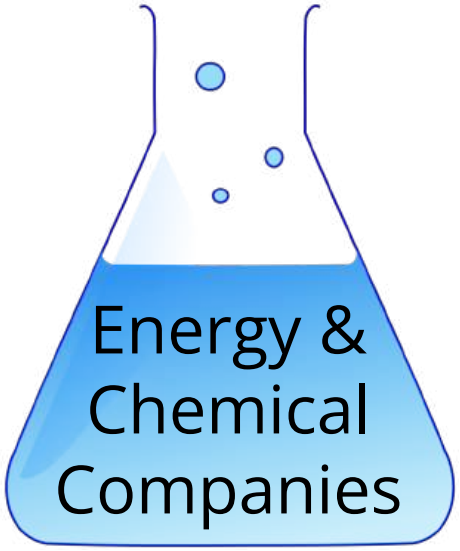


Partnerships

4



Reactor Manufacturers



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大阪大学 OSAKA UNIVERSITY

EVOLEN Energies for Today & Tomorrow

OSAKA, KANSAI, JAPAN EXPO2025

TEMASEK FOUNDATION

Think Beyond PLASTIC

eit InnoEnergy Knowledge Innovation Community

SOLAR IMPULSE EFFICIENT SOLUTION LABEL

ALLIANCE TO END PLASTIC WASTE

CAMBRIDGE CLEANTECH

J-Startup KANSAI

Cleantech Group

Business Model

now

Selling Catalyst

now

Licensing Technology

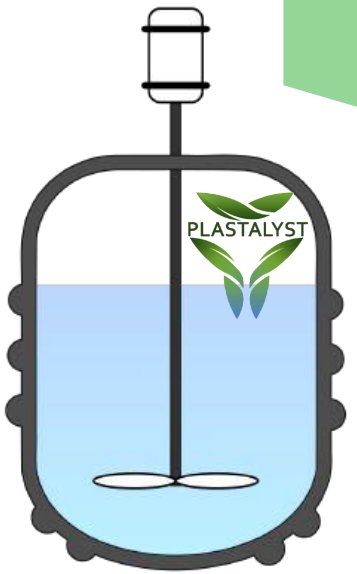
from 2028

JV for recycling facilities

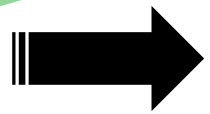
Customers

Brands, Waste & Chemical companies

USP: PET into Methanol

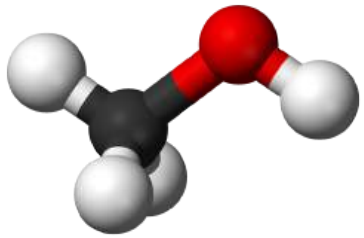


Solvent Free



Monomers (TPA + EG)

optional



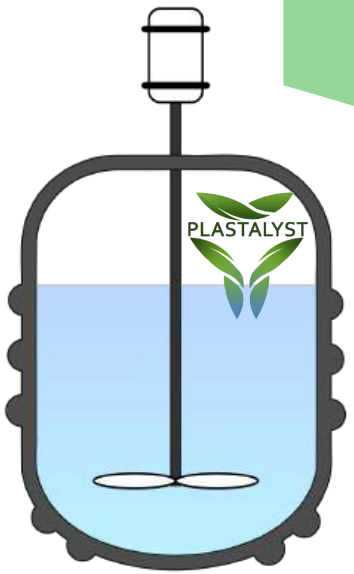
TPA + Methanol

Catalyst+Water at 200°C

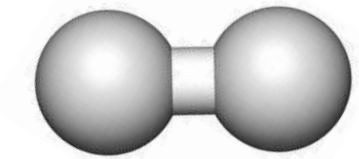
3 Paid Pilots in Japan

PP, PE, PVC
and other end of life plastics

Solvent Free

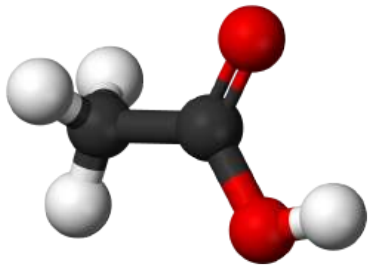


Water+Catalyst
200-300°C



Syngas
Hydrogen, Methane

Charcoal
Chlorine removal >99%



Liquids
H2O, acetic acid, formic acid, salts of chlorine

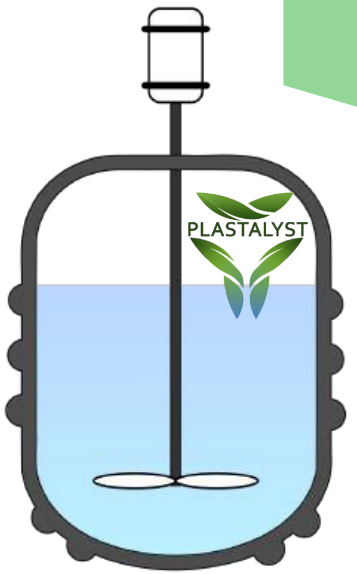
DaikyoNishikawa TOYOTA BOSCH TOYOPET

Carbonization

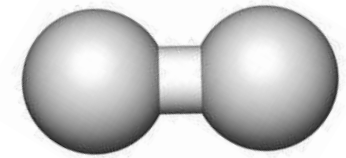
Chemical Recycling of Mixed Plastic Waste into Charcoal

Mixed/
Multi-layered/
Deteriorated/
Plastic

Solvent Free

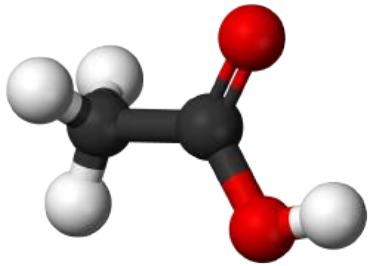


Water+Catalyst
200-300°C



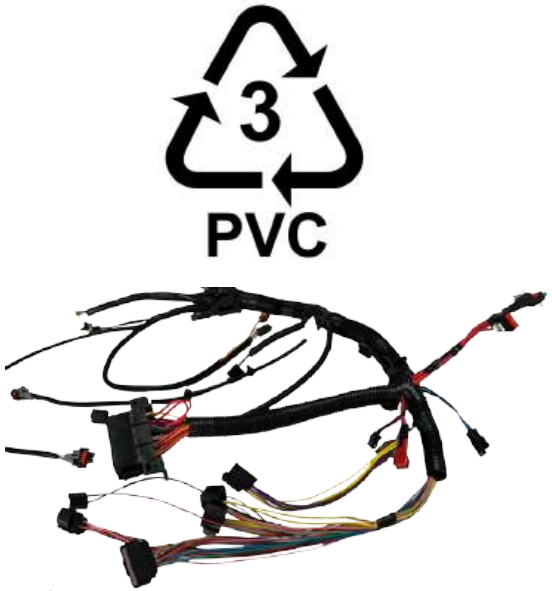
Syngas
Hydrogen, Methane

Charcoal
40-70%



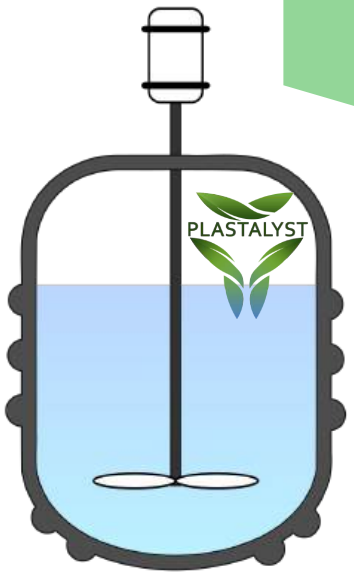
Liquids

PVC completed pilot

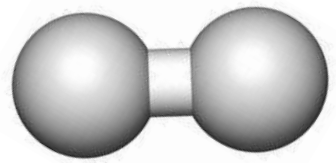


Pilot
with one of the largest wire and cable manufacturers in the world

Solvent Free

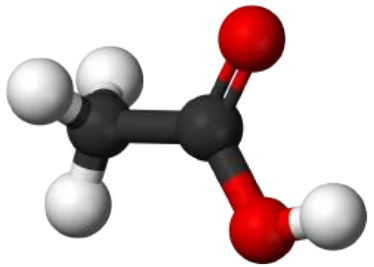


Water + Catalyst
300°C



Syngas
no CO2

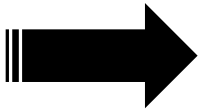
Charcoal
Chlorine removal >99%



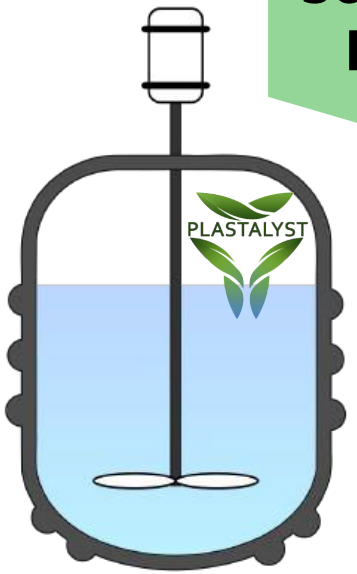
Liquids
H2O, benzene, acetic acid, formic acid, salts of chlorine

Rubber completed pilot

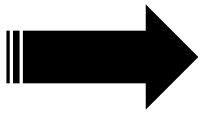
Styrene-Butadiene Rubber
with a large tire manufacturer

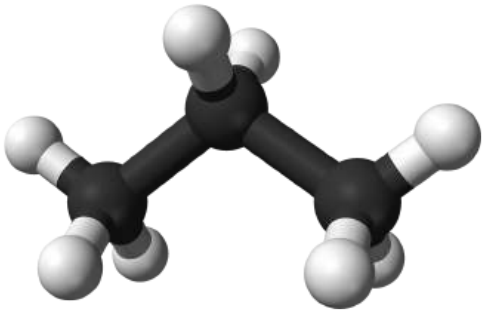


Solvent Free

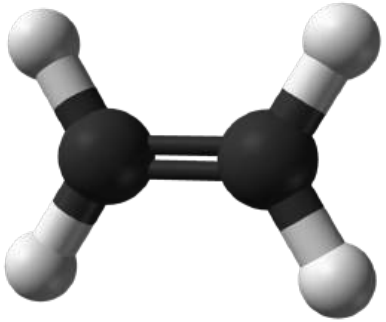


Water + Catalyst
200-300°C





Methane
Propane
Butane



Ethylene
& more

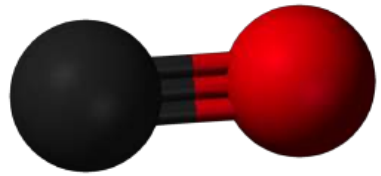
Demo Plant in Indonesia

Organic Waste
from the Palm Oil Industry

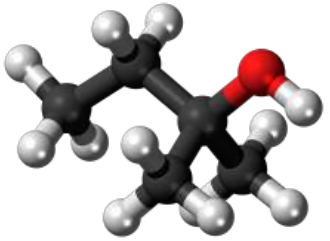
PLN

TEMASEK FOUNDATION

100L Reactor
Water + Catalyst
200°C



Syngas
50% H2
45% Methane



Useful biochemicals
Methanol
Acetone
Acetic Acid

Materials Successfully Decomposed

Cellulose

Lignin L-glutamic acid

POME (palm oil mill effluent)

Gelatin Pectin Leather

Cow manure Textiles, Jeans

Coffee beans, tea leaves, orange peel

PBT

PA PE

PU EVA

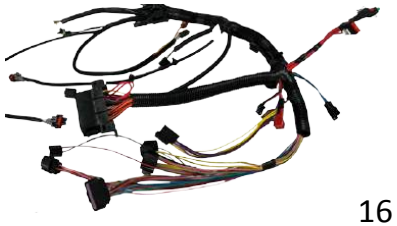
PET PP PVC

Rubbers CFRP FRP

Multi-Layered Mixed Plastic





Our Requests

Technical collaborations

All kinds of plastic waste

Demonstration Plant

Partners for Commercial Scale-up

Funding

10M€

Series A

Our Founders

CEO
Tadashi Kubo
MBA

CTO
Atsushi Mizusawa
Ph.D. Material Science

COO
Robert Kunzmann
MPhil Engineering

Our Vision

Zero Waste to Landfill & Incineration

Our Team

Engineer
Habibur Rahman
Ph.D. Material Science

Chemist
Sarah Sultan
Ph.D. Material Chemistry

Advisor
Prof. Nishiyama
Ph.D. Engineering

Chemist
Kesava Rao
Ph.D. Material Science

Material Scientist
Diaa Hamed
Ph.D. Material Chemistry

Fabrication Engineer
Jeganathan Chellamuthu
Ph.D. Material Fabrication

Apply to join the team

THANK YOU.

Questions?

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PLASTALYST

a product by

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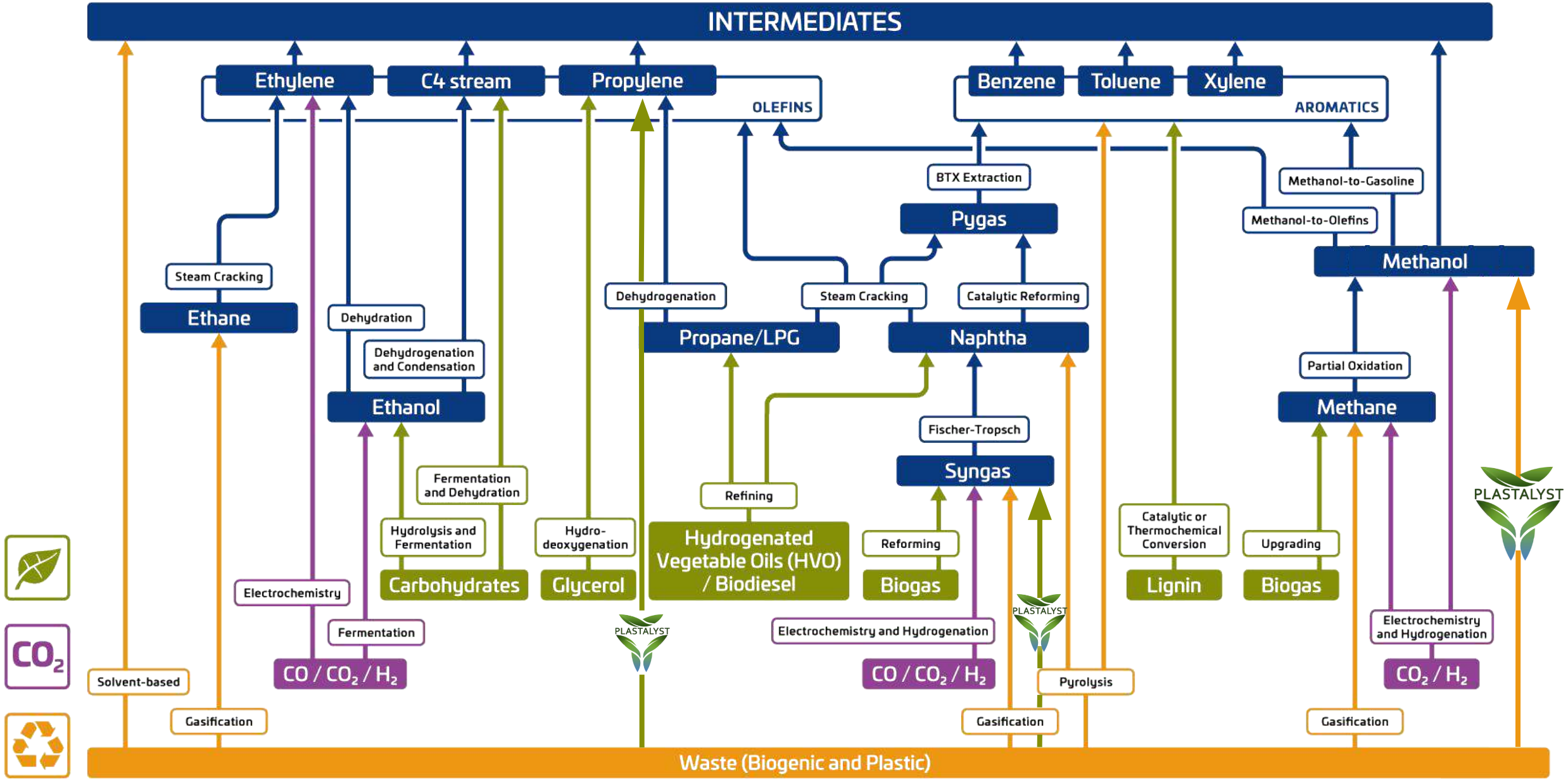
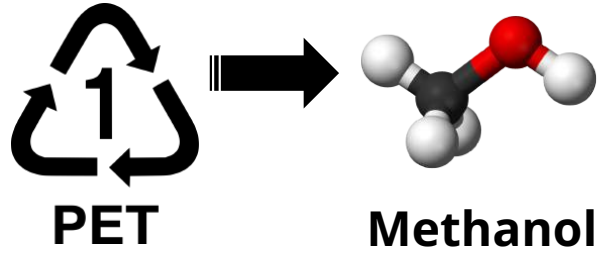
Where does Plastalyst fit into the renewable Carbon Refinery of the Future?



Why Methanol?

Rather than ethylene glycol (EG)?



Market Size	The world market size of Methanol is 1.8 times larger that of EG *
Viscosity	The viscosity of methanol is only 1/42th of that of EG. This leads to Methanol having • Lower losses in the process • Lower CAPEX and OPEX • Higher throughput
Temperature	The vaporizing temperature of methanol is 40% lower than EG, reducing the energy required.
Solvent Cost	While EG requires expensive organic solvents for the process. Plastalyst to Methanol uses only water as solvent.

* Market size in 2030: methanol: 63B USD worldwide, EG: 35B USD, according to [SDKI.jp](http://sdki.jp/) and Methanol Institute 2023)