

Mar 8 2023



Continuous effort for creating a better world

Towards carbon neutral society

Mitsui Chemicals Singapore R&D Centre

Masahito YANO

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New Business Division



Today's Agenda

1

About Mitsui Chemicals Group (MCI)



2

Our current attempt towards ESG



3

Our challenge in SEA



4

Conclusion



1

Mitsui Chemicals Group-Who we are?



Employees

18,780

Current product portfolio

110 Years

1900 — 1925

1926 — 1950



Overseas Sales

48%

We produce materials and products to help society.



))) **Mobility**

PP compounds • TAFMER™
ADMER™ • Mitsui EPT™ • MILASTOMER™

433 billion yen



**Life &
Healthcare**

Ophthalmic Lens Materials
Dental Materials • Nonwovens

225 billion yen

Global No.1



**ICT
solutions**

APEL™ • ICROS™ Tape, High-
performance food packaging materials

207 billion yen



**Basic &
Green
Materials**

Phenol • PTA/PET
Polyolefins • Polyurethane Materials

737 billion yen

Others: 11 billion yen

Sales

1,613 billion yen



Today's Agenda

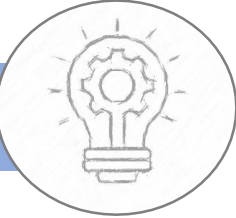
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We explore
the materials
of materials

We're reshaping the world from a material level

Carbon neutrality via biomass



Bio & Eco Solutions for PLAYERs
aiming toward Carbon Neutrality



Circular economy via recycling



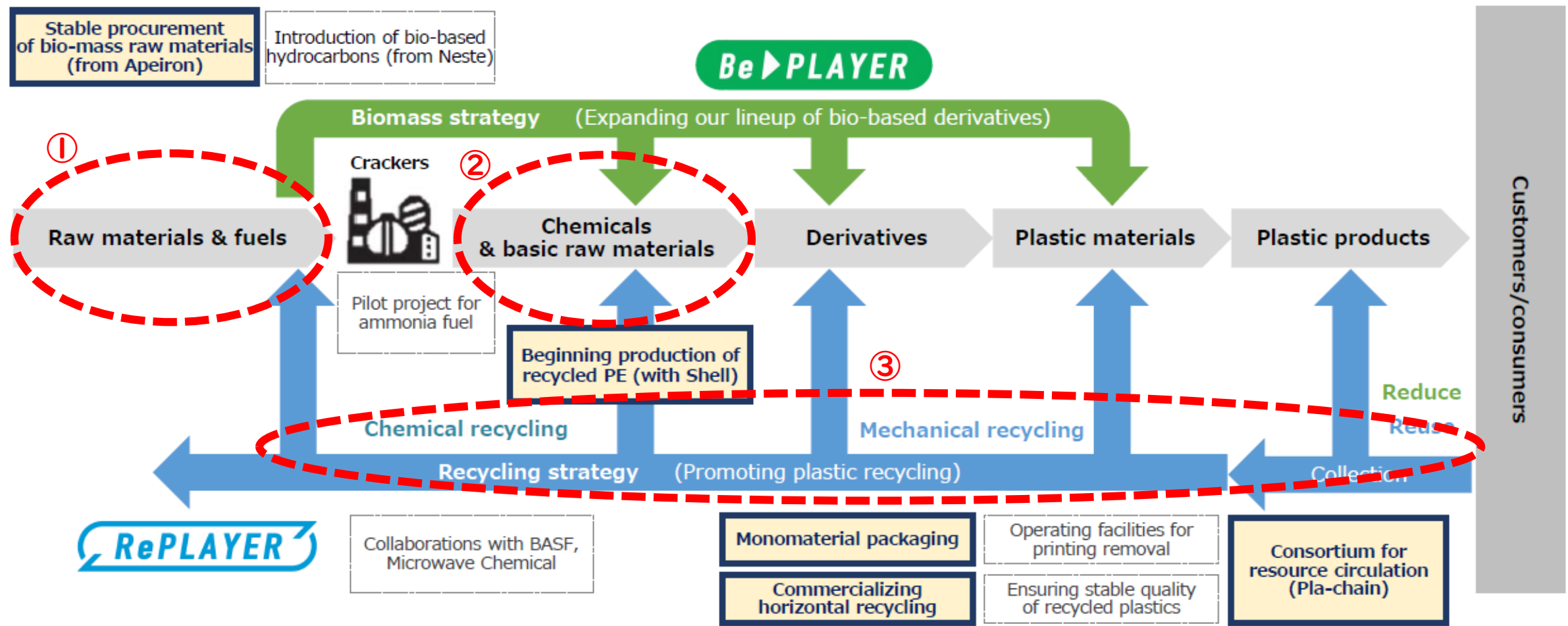
Recycling Solutions for PLAYERs
aiming toward Circular Economy



Group-wide concept brand has been created to appeal our value and to communicate with wide range of stakeholders with narrative story.

4 Carbon Neutral Strategy - Initiatives for Carbon Neutrality

- ① Reducing in-house GHG emissions (Scope 1 and 2)
Low-carbon raw materials and fuels, energy efficiency, and renewable energy
- ② Contributing to society through provision of our products (maximizing avoided GHG emissions)
Expansion of Blue Value™ products



Pursuing a biomass strategy & recycling strategy to help bring about carbon neutrality and a circular economy



Making both upstream and downstream improvements
to naphtha crackers as further efforts toward carbon neutrality



Waste cooking oil,
residue oil, etc.

Biomass-based
hydrocarbons

Petroleum-based
hydrocarbons

Cracker

C₂, C₃, BZ, renewable hydrogen, etc.

PE, PP, PH, ammonia, etc.

Cars, home appliances,
packaging materials, detergents, etc.

Stable procurement of bio-based raw materials

Invested in **Apeiron Bioenergy**, one of the largest
collectors of used cooking oil in the Southeast Asia
and China region

Expanding and providing our lineup of biomass-based hydrocarbon derivatives

Number of products able to use ISCC certification

At time of previous presentation:

Domestic: Osaka Works 13 products
Ichihara Works



Added Iwakuni-Ohtake
Works and increased the
number of registered
products to 27

Supplying biomass-based BPA to Teijin and pursuing efforts
for the production of biomass-based PC

Mitsui Chemicals

Biomass-based phenol

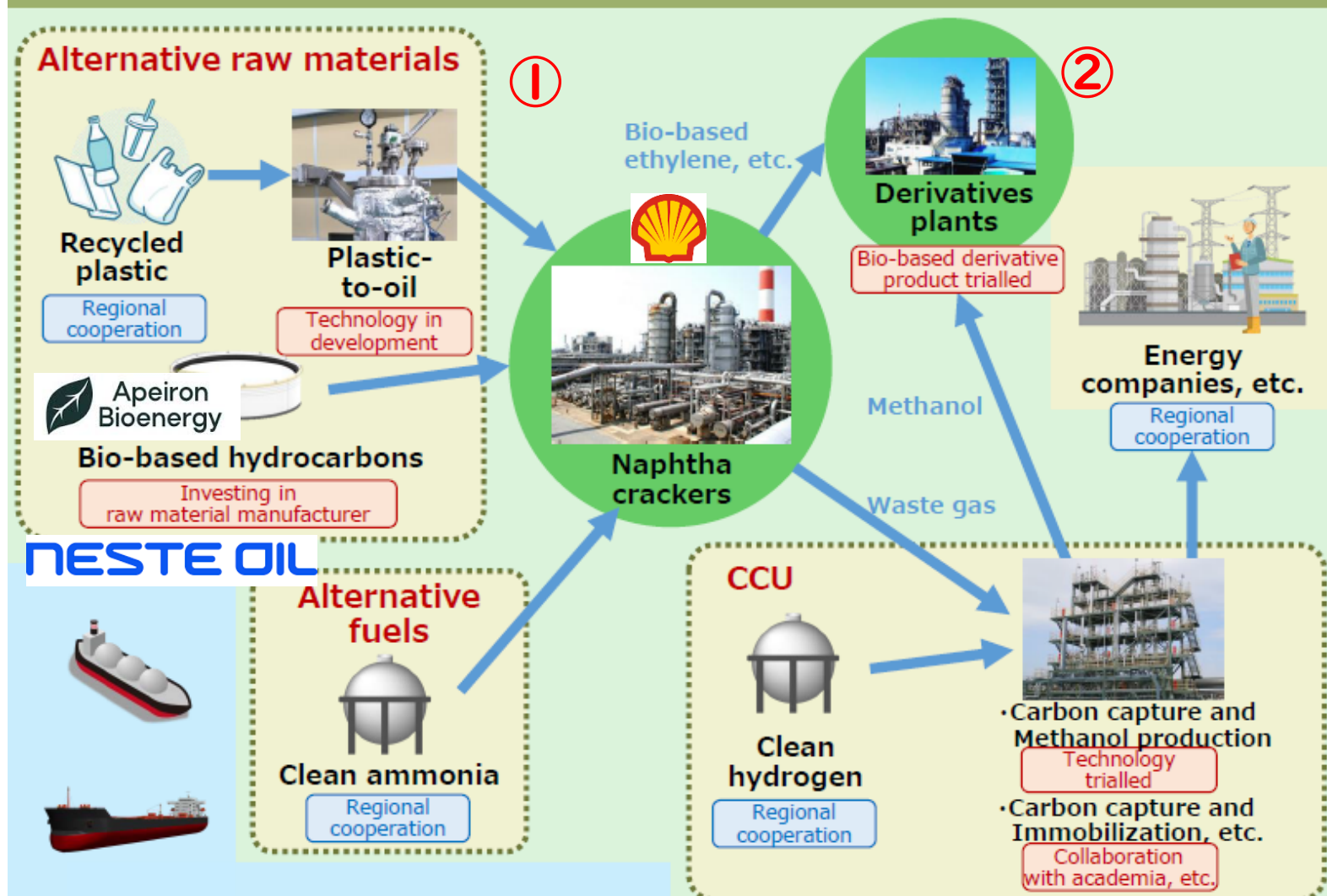
Biomass-based acetone

Biomass-based BPA

Teijin

Biomass-based PC

Transitioning to next-gen naphtha crackers and carbon-neutral petrochemical complexes



- ✓ Innovating in the upstream parts of the carbon cycle to facilitate green derivatives
- ✓ Making use of regional cooperation to reach an ideal mix of technologies, including a switch to alternative raw materials and fuels, the reuse of plastic waste, and carbon capture and utilization
- ✓ Working toward optimization throughout the entire region (network) by leaning on digital transformation
- ✓ Pursuing cracker optimization in response to decreasing demand

Pursuing a sustainable competitive edge

③

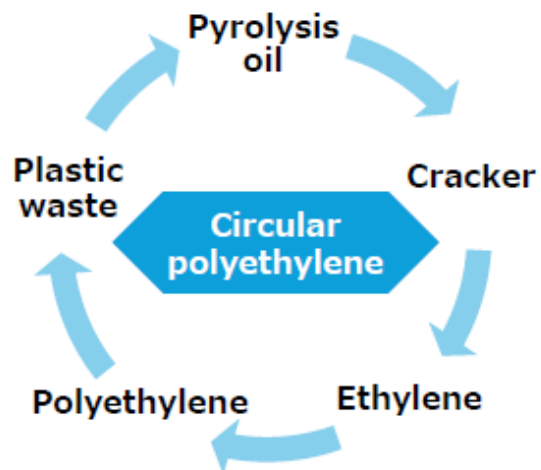
Branding x Recycling = New Values



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③

Launching production of chemically recycled polyethylene derived from plastic waste

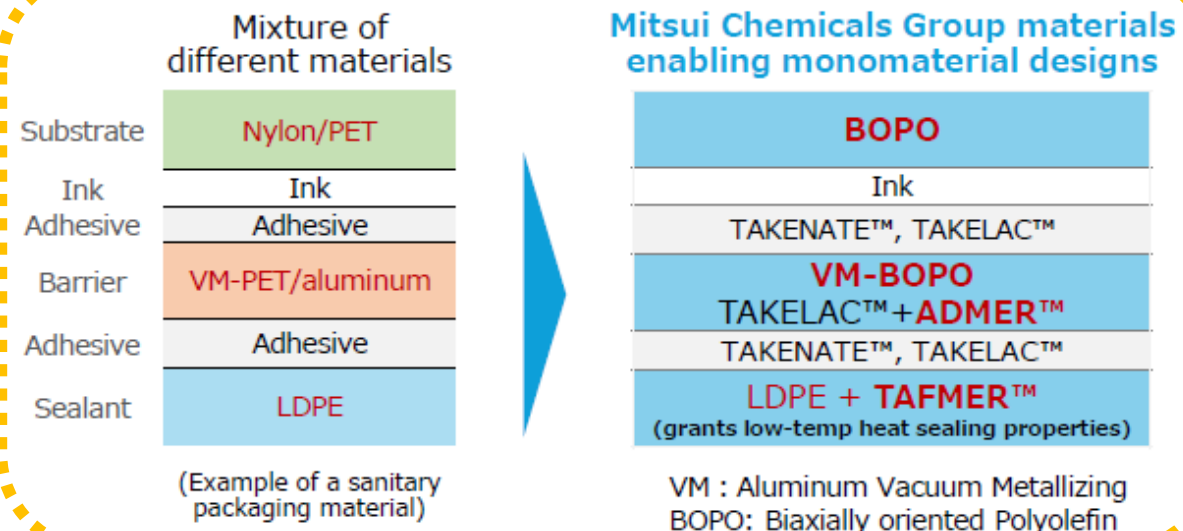


Signed an agreement with **Shell** for a supply of **ISCC PLUS-certified ethylene derived from plastic waste**

Production launch for **Evolve™**
(in Singapore)

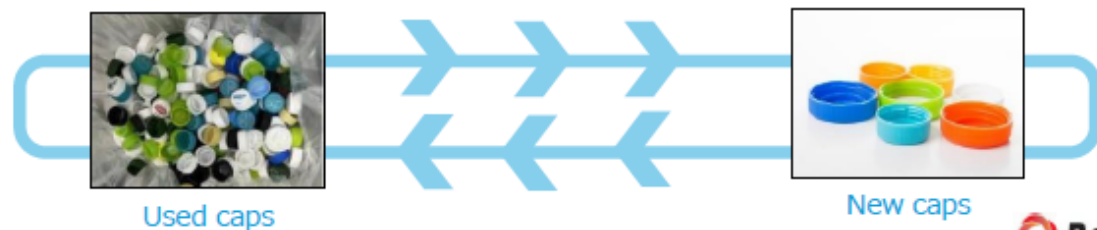
Polyolefin monomaterial packaging

Multi-materials to Mono-material



Implementing horizontal recycling for plastic caps

Pursuing high-grade mechanical recycling



Used caps

New caps

NIHON YAMAMURA GLASS CO.,LTD.

- Building a setup for collection and sorting
- Producing caps



PRIME POLYMER

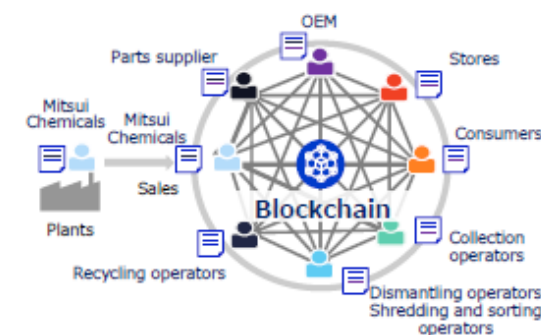
- Providing development, production and QA for compound formulations



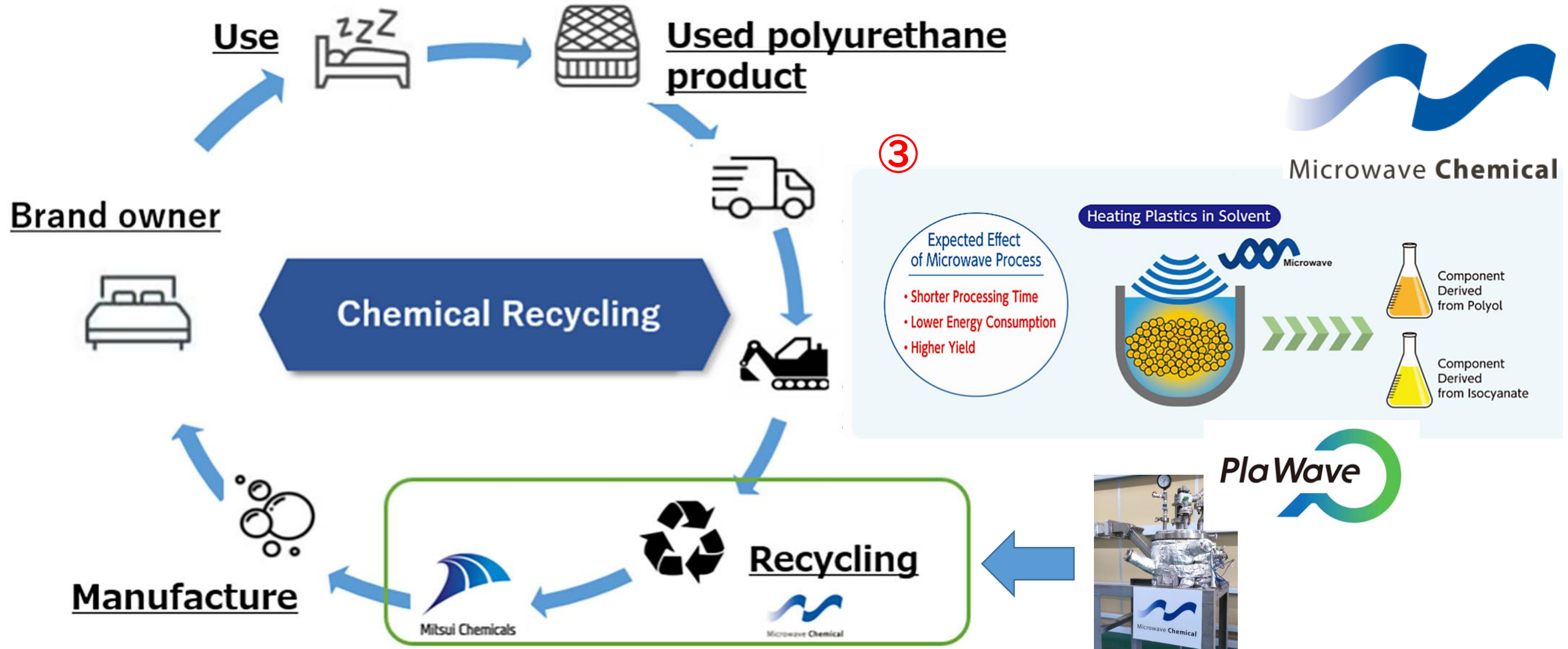
Establishing Pla-chain, a consortium for resource circulation

DX for plastic waste control

Working to implement a **blockchain-based traceability system for plastic recycling**



Managing companies:
IBM Japan, Ltd. Nomura Research Institute, Ltd. and Mitsui Chemicals, Inc.



The technology will be able to recycle of flexible polyurethane foam and other polyurethanes



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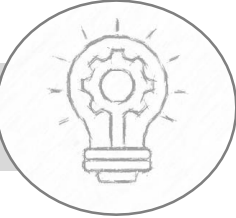
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MCI group Business activity in Singapore



Mitsui Elastomers Singapore, Pte. Ltd.



*Jurong
Island*

- Manufacturing and sales of **TAFMER®** (200 kta)

Mitsui Chemicals Singapore R&D Centre, Pte. Ltd.



Science Park II

- New Business
- Research
- Sustainable Solution
- Tech Support
- Established in 2011
- Reinforce Mitsui Chemical's overseas R&D capabilities

SDC Technologies Asia Pacific Pte. Ltd.



Tuas

- Manufacturing, sales, distribution and technical support of abrasion resistant coatings

Prime Evolve Singapore Pte. Ltd.



*Jurong
Island*

- Manufacturing and sales of **LLDPE, Evolve®** (300 kta)

Mitsui Chemicals Asia Pacific, Ltd.



*HarbourFront
Tower*

- Regional Headquarters in SEA
- Sales, marketing and technical support on Mitsui Chemicals' products

11 Pursuing new way with local start-ups for local issues

□ UNEP program for scouting local partners (MS-R&D)



Local Plastic
Waste issues



- ✓ MoU with UNEP to support start-ups tackling plastic wastes (2020)
- ✓ Provide Mitsui Chemicals Award (USD 10,000) to 3 start-ups.
- ✓ Aim to look for sustainable business model through the collaboration



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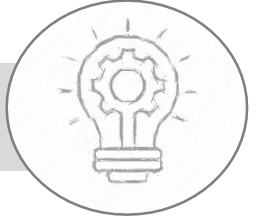
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12 > Our learning curve

❑ What we learned from UNEP program

- ✓ Collaboration with start-ups could not be build in a day (Contract, Establishment of business model, Confirmation of Issues etc.)
- ✓ Need to identify optimum localized business model for tackling plastic waste issues. It is also important how we let a variety of stakeholders (municipal government, NPO etc.) get involved in.
- ✓ It is important to consider how the collaboration create mutual benefit before actions (building hypothesis)

❑ Our continuous effort for eradication of plastic wastes

- ✓ Through the collaboration with start-ups, we construct decentralized business models and validate them.
- ✓ Continue to scout start-ups which has been working on local plastic waste issues
- ✓ Thorough the collaboration with researchers to discover new way of utilizing natural resource as biomass-derived materials
- ✓ Seek for a way to work with a variety of stakeholders such as UNEP, JICA, local governments, academia, and local research institutes

“But man is a part of nature, and his war against nature is inevitably a war against himself.”

— Rachel Carson

Thank you for your attention!

Mitsui Chemicals, Inc.
Chemicals

Industry Mover

S&P Global ESG Score 2022

74 /100

As of February 7, 2023.
Position and Score are industry specific and reflect exclusion screening criteria. Learn more at spglobal.com/esg/yearbook

S&P Global

 **Sustainable 1**