

Sustainability at Mitsubishi Chemical – reaching carbon neutrality and the implementation of a Circular Economy

Dr. Lisa Weigand – Mitsubishi Chemical Europe
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**Process⁴
Sustainability**

Cluster for climate-neutral
process industries in Hesse

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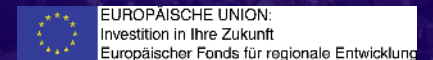


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Last review: 24th Jan. 2022

Company Overview – Mitsubishi Chemical Corporation



42,660

Number of Employees
(consolidated)



295

Group Companies



31

Countries



¥2,062.0

billion
Sales Revenue
(consolidated)

We are a global company –

with RHQ in 5 regions



Europe, Middle East, Africa



Mitsubishi Chemical
Europe GmbH

Germany

Japan



Mitsubishi Chemical
Corporation

Head Office

Americas



Mitsubishi Chemical
America, Inc.

United States of America

China



Mitsubishi Chemical
(China) Co., Ltd.

China

Asia Pacific



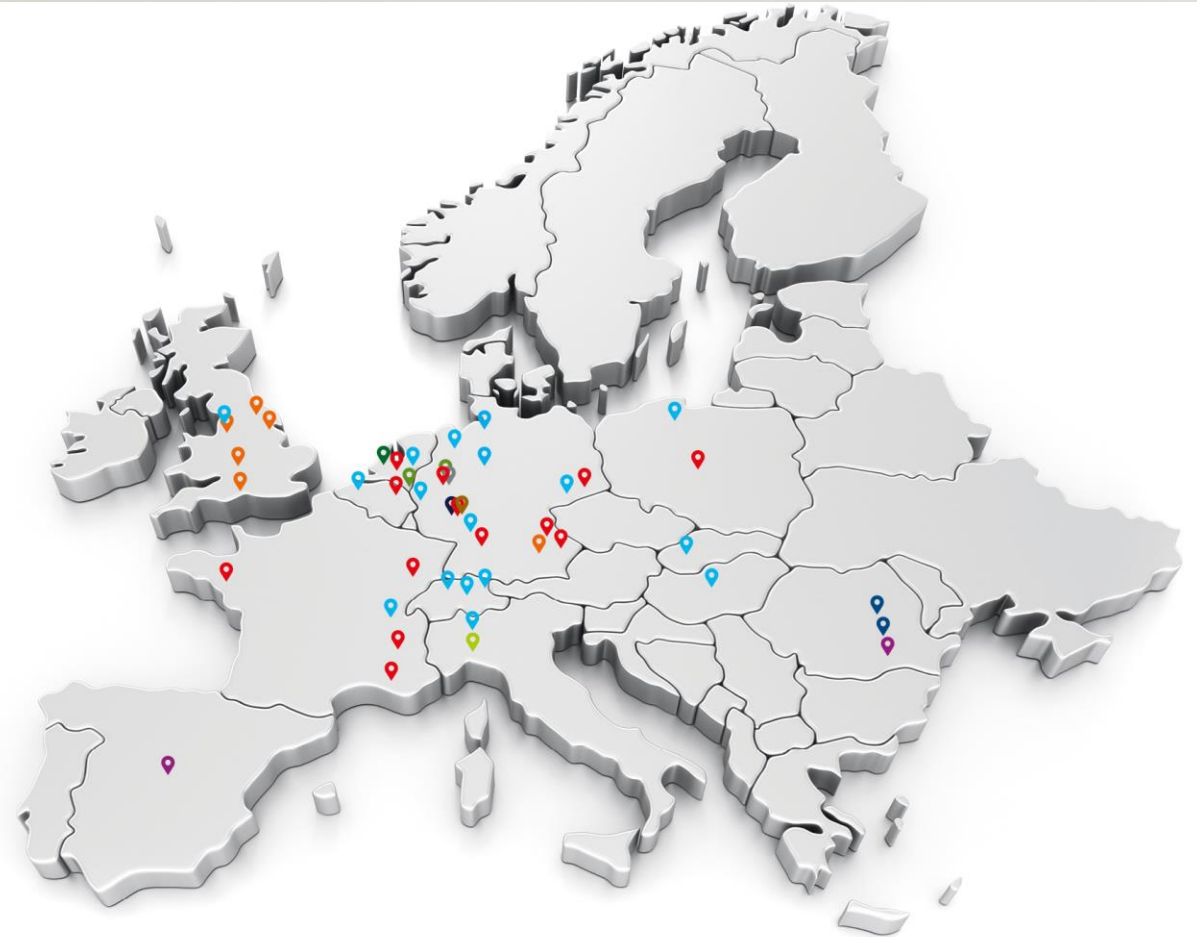
Mitsubishi Chemical
(Thailand) Co., Ltd.

Thailand

Our locations in Europe



- **Mitsubishi Chemical UK**
 - Cassel (GB)
 - Darwen (GB)
 - Hull (GB)
 - Manama (BH)
 - Newton Aycliffe (GB)
 - Wilton (GB)
- **Lucite International Holland BV**
 - Rozenburg (NL)
- **Mitsubishi Chemical Advanced Materials**
 - Almelo (NL)
 - Appenzell (CH)
 - Chemnitz (DE)
 - DagneuxCedex (FR)
 - Heinsberg (DE)
 - Lenzburg (CH)
 - Lotte (DE)
 - Milan (IT)
 - Nitra (SK)
 - Sieroslaw (PL)
 - Sinsheim (DE)
 - Szigetszentmiklos (HU)
 - Tielt (BE)
 - Todmorden (GB)
 - Vreden (DE)
 - Wischhafen (DE)
 - Zürich (CH)
- **MEP Europe**
 - Mitsubishi Engineering Plastics is a joint venture in Japan between Mitsubishi Gas Chemical (50%) and Mitsubishi Chemical (50%)
 - Düsseldorf (DE)
 - Geleen (NL)
- **Mitsubishi Chemical Europe**
 - Asperg (DE)
 - Düsseldorf (DE)
 - Frankfurt (DE)
- **BU Polymers**
 - Clerval (FR)
 - Hasselt (BE)
 - Helmond (NL)
 - Sochaczew (PL)
 - Tiffauges (FR)
- **BU Semiconductor solutions**
 - Moritzburg (DE)
 - Rousset (FR)
 - Grenoble (FR)
- **BU Carbon Fiber**
 - Hengersberg (DE)
 - Pleinting (DE)
- **Mitsubishi Polyester Film**
 - Wiesbaden (DE)
- **Qualicaps**
 - Bucharest (RO)
 - Madrid (ES)
- **Resindion**
 - Binasco (IT)
- **YUPO**
 - Düsseldorf (DE)
- **Livecam Logistics**
 - Frankfurt (DE)
- **Technophar**
 - Cornu (RO)
 - Oderheiu (RO)



Mitsubishi Chemical businesses in Europe



Advanced Solutions



- Business Units**
- Semiconductor Solution
 - Battery Materials
 - Healthcare Solutions
 - Aluminium composite panels
 - Performance Separation Solution
 - Trade Sales and Service

Polymers & Compounds



- Business Units**
- Polymers
 - Acetyl Polymers
Polycarbonate (MEP -JV)
 - Specialty Polymers & Resins
 - Trade Sales and Service

Films & Molding Materials



- Business Units**
- Carbon Fiber
 - Trade Sales and Service

Methacrylates



- Business Units**
- Methacrylates

Our global commitments to reach the Paris Climate Agreement

Scope 1 & 2

At least

32%

**Reduction of greenhouse gas
emissions**

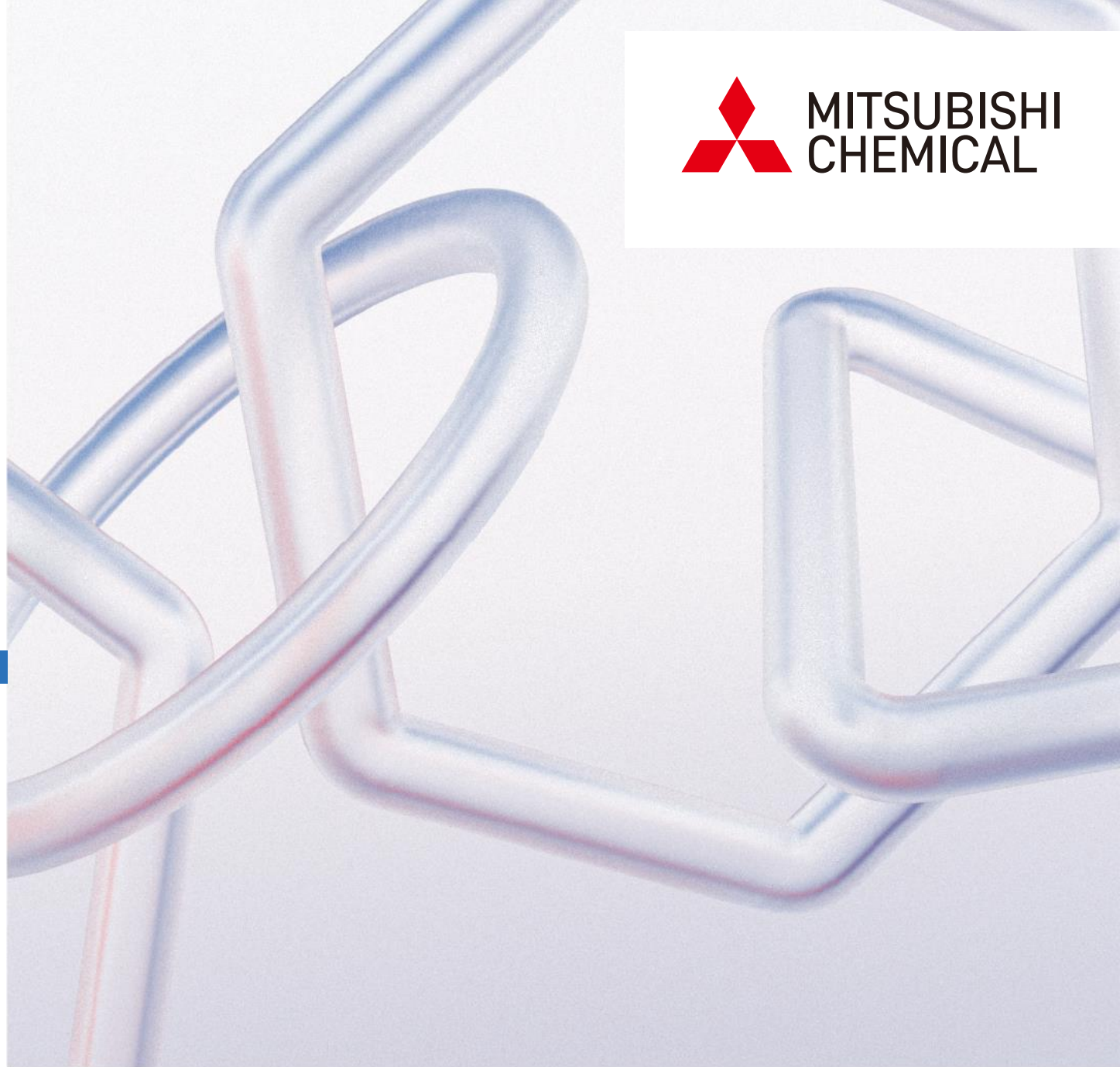
By 2030 compared to 2019

Scope 1 & 2

0%

**Net zero greenhouse gas
emissions**

By 2050



Scope 3

We are committed to comprehensively understand our upstream scope 3 footprint and cooperate with suppliers to develop strategies to reduce GHG emissions.

How do we plan to reach our Carbon Neutrality goals?

Mitsubishi Chemical is realizing KAITEKI



The sustainable well-being of people, society and our planet Earth.

KAITEKI Vision 2030

Build a sustainability management system



Measurement of financial, social and environmental impact along the life cycle



Reduce environmental impact



Promote a circular economy



Feasibility studies of KAITEKI factories



Our measures to reduce greenhouse gas emissions



Increase
of energy
efficiency

Buy green
electricity

Optimize
production
processes

Material
Innovation

Carbon
Offsetting

Material Innovation

We help our customers to reduce GHG emissions by material innovation

Production of
bio-based feedstock

Design products enabling
mechanical and chemical
recycling

Recycling of polymers by
different technologies and
use of recycled content

KAITEKI Vision 2030

Build a sustainability management system



Measurement of financial, social and environmental impact along the life cycle



Reduce environmental impact



Promote a circular economy



Feasibility studies of KAITEKI factories



Implementing a CE

We transform the products and business models of our businesses

Based on the 3 principles:

- **Eliminate waste and pollution**
- **Circulate products and materials**
- Regenerate nature

We are working on **building an ecosystem** with all the players along the value chain.

Development of circular business models – recycling, design for recycling, Product as a Service.

Implementing at Mitsubishi Chemical



The Circular Economy Department



Nicole Kambeck

Director Circular Economy



Dr. Lisa Weigand

Advisor Circular Economy



Dr. Bálint Simon

LCA Expert Circular Economy

Working across businesses on an array of topics:

- Strategy, new business models and technologies supporting the implementation of CN and CE
- External communication, representation and building a stakeholder network
- Advice on EU regulations and their impacts on our businesses
- LCA expertise

The role of the chemical industry



Examples of circular products, processes and business cases at Mitsubishi Chemical:

Use of alternative feedstock:

- Recycled content
- Biobased content
- CO₂ (artificial photosynthesis)

Extend the loop / PaaS:

Cleaning of semiconductor equipment

Chemical recycling:

- Molecular recycling of PMMA
- Pyrolysis of mixed plastic waste in cooperation with Mura Technology and Eneos
- Recycling of carbon fibres via pyrolysis

Design for circularity:

G-Polymer

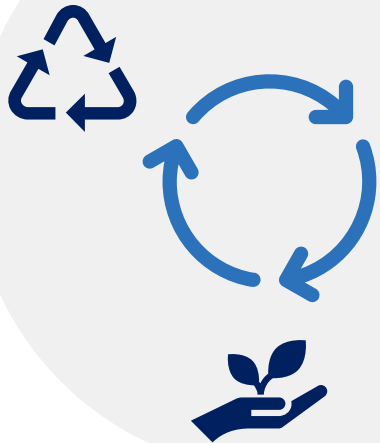
Mechanical recycling:

In-house recycling of engineering polymers

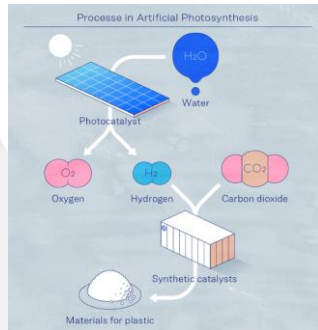
The role of the chemical industry



Examples of circular products, processes and business cases at Mitsubishi Chemical:



CO₂



Our partners:



The future of sustainability in the chemical industry?

Possible topics for the subsequent discussion:

- Clear strategies, tools and investment are needed to reach Carbon Neutrality by 2050 – can the chemical industry keep up the pace?
- Circular Economy must be a holistic approach and included in the core of the business strategy of companies
- Digitalization will play a key role in achieving Carbon Neutrality and the implementation of a Circular Economy

Questions?

Thank you

ありがとうございます!

Dr. Lisa Weigand –
Mitsubishi Chemical Europe
lisa.weigand@m-chem.com