NET-ZERO INDUSTRIES
MISSION

Efficient Use of Materials
Through Industry Symbiosis

HOW TO ...

... REDUCE EMISSIONS BY RECYCLING WASTE INTO RAW MATERIALS

DEMONSTRATION PROJECTS

DEMONSTRATION PROJECT

Polstyvert, Canada

Recycling of Polystyrene

DIVERTING POLYSTYRENE FROM LANDFILL TO RECYCLED PACKAGING

HOW TO: Create value, not waste

1. Recycle using an energy-efficient dissolution process

2. Create purified liquid from heavily contaminated polystyrene

3. Form new high-quality materials (such as insulation & packaging

*Compared to new polystyrene

TARGET SECTOR

● Chemicals & Refining

TIMELINE

2012: Technology development
2025: 1000 t of polystyrene per year

DEMONSTRATION PROJECT

Tianjin University, China

Utilising Industrial Exhaust Gas

REDUCING POLLUTION AND CREATING VALUABLE CHEMICALS

HOW TO: Turn waste gas into chemicals

1. Capture and purify exhaust gases

2. Produce valuable chemicals, such as:

- **ethylene glycol** (antifreeze & polyester)
- **dimethyl carbonate** (batteries & fuel additives)

3. Reduce CO_2 emissions by 1.5 Mt/year

TARGET SECTOR

● Cross-sector

TIMELINE

2010: Project started
2018: 250,000 t/year of chemicals produced
2020: 300,00 t/year

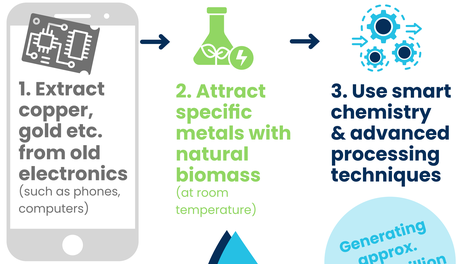
DEMONSTRATION PROJECT

Mint Innovation, New Zealand

Future of E-Waste Recycling

COST-EFFECTIVE AND SUSTAINABLE EXTRACTION OF VALUABLE METALS

HOW TO: Extract metals from old devices



1. Extract copper, gold etc. from old electronics (such as phones, computers)

2. Attract specific metals with natural biomass (at room temperature)

3. Use smart chemistry & advanced processing techniques

-95 % water*

Generating approx. US$ 30 million per year in each plant

*Compared to traditional mining

TARGET SECTOR

● Cross-sector

TIMELINE

2016: Project started in lab
2019: Demonstration facility
2022: First commercial biorefinery (Sydney)

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GET INVOLVED
& STAY IN TOUCH

NET-ZERO INDUSTRIES
MISSION

The Net-Zero Industries Mission is a collaboration across countries, government, and industry to drive and accelerate the adoption of decarbonisation technologies by hard-to-abate, energy-intensive industries. Technology demonstrations are a critical tool in sharing experience and building trust for industry investments.

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MORE INFO

Demonstration project database