



# **10 PLASTIC SORTING & RECYCLING PROJECTS 2022**

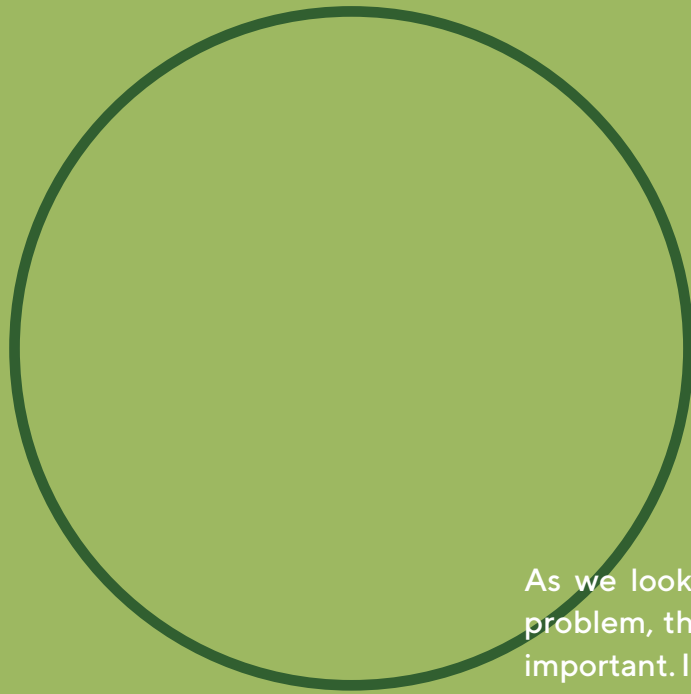
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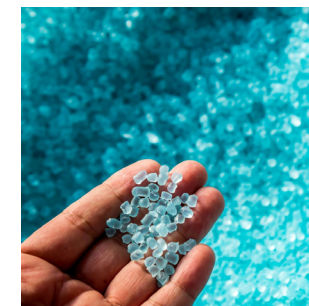


As we look towards the circular economy to solve the plastic waste problem, the need for value chain collaborations has never been more important. In this presentation, we researched and created a list of newly announced value chain collaboration projects focusing on sorting & chemical and mechanical recycling of plastic around the globe in 2022. Some projects will include vital information about the facilities like capacity, technology or amount of investments.

## 1. SEA THE FUTURE

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[Link to project source](#)



### PROJECT BRIEF:

This partnership will unlock investment to build a global network of plastic recycling plants. The first three hubs will be built in Indonesia, the Netherlands and Brazil. STF intends to begin construction of the first sorting and recycling plants within two years (2022 - 2024).

The project, which is a world-first, is backed by the government of Indonesia and the port of Rotterdam.

It is designed to close the gap between ambitions for using recycled plastics and the actual supply of high-quality recycled plastics in large volumes. STF aims to demonstrate that with the right level of investment and collaboration across the value chain, the cost of recycled plastic as a material can be reduced.

STF is currently commissioning global front-end engineering and design (FEED) studies at select locations across the globe to identify signature projects that collect, sort and manufacture recycled plastic resin from waste for use by converters.

### WHO IS INVOLVED:

Ancor & Minderoo Foundation.

### INVESTMENT:

Estimated \$300m worth of investment in new plastic recycling plants worldwide.

### CAPACITY:

Produce 150,000 tonnes of recycled plastic per year.

## 2. PLASTICS-TO-LIQUID (PTL) PROCESSING PLANT IN DUBAI

[Link to project source](#)



<b>PROJECT BRIEF:</b>	The PtL project will be a significant step towards a circular economy converting low-quality, non-recyclable plastics into valuable products and by that helping Dubai achieve its objective of zero waste going to landfill by 2030.
<b>WHO IS INVOLVED:</b>	Quantafuel, DUBAL Holding and BASF.
<b>INVESTMENT:</b>	A potential final investment decision is targeted for early 2023.
<b>CAPACITY AND TECHNOLOGY:</b>	Italian engineering and construction major Saipem has been chosen as the FEED service provider. The FEED for the development of the 80,000 tons per year plant will be done in 2022. Quantafuel technology is converting waste plastics back into low-carbon synthetic oil products, replacing virgin oil products.

### 3. ADVANCED RECYCLING FACILITY AT DOW'S SITE IN BÖHLEN, GERMANY

[Link to project source](#)



<b>PROJECT BRIEF:</b>	Mura plans to construct a new facility at Dow's Böhlen site in Germany – the latest in a series of planned facilities across the U.S. and Europe to rapidly scale advanced recycling of plastics – and the first expected to be based at a Dow site. The site is expected to be operational by 2025.
<b>WHO IS INVOLVED:</b>	Mura Technology, Dow.
<b>INVESTMENT:</b>	Final investment decision by the end of 2023.
<b>CAPACITY:</b>	Potential capacity of 120 kilo tonnes per annum (KTA).  This and the other planned units expected to be constructed across Europe and the U.S. would collectively add as much as 600KTA of advanced recycling capacity by 2030 – and position Dow to become the largest consumer of circular feedstock for polyethylene production globally.
<b>TECHNOLOGY:</b>	Mura's HydroPRS (Hydrothermal Plastic Recycling Solution) advanced recycling process uses supercritical steam to convert most forms of plastic, including flexible and multi-layer plastics, back into the original oils and chemicals from which they were made.

## 4. MOLECULAR RECYCLING FACILITY IN FRANCE

[Link to project source](#)

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### PROJECT BRIEF:

Eastman's planned molecular recycling facility in France will become the world's largest material-to-material molecular recycling plant. The project is expected to be operational in 2025.

Interzero will provide up to 20,000 metric tonnes per year of hard-to-recycle PET household packaging waste that would otherwise be incinerated.

Eastman's facility in France will process coloured and opaque PET waste that cannot be recycled mechanically to create clear and transparent rPET upon completion.

### WHO IS INVOLVED:

Eastman, Interzero.

### INVESTMENT:

Eastman's plan to invest up to \$1 billion.

### CAPACITY:

The facility will recycle approximately 160,000 tonnes of hard-to-recycle polyester waste annually.

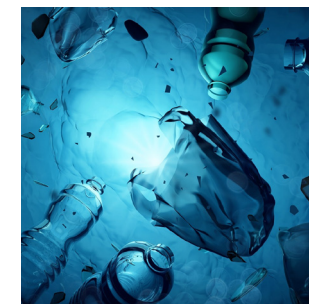
### TECHNOLOGY:

Eastman's proven polyester renewal technology provides true circularity for hard-to-recycle plastic waste that remains in a linear economy today. Eastman's chemical recycling technology allows this hard-to-recycle waste to be broken down into its molecular building blocks and then reassembled to become first-quality material without any compromise in performance.

## 5. PRODUCTION OF OLEFINS AND AROMATICS FROM PLASTIC WASTE

 [Image link](#)

 [Link to project source](#)



### PROJECT BRIEF:

SABIC has signed a Joint Development and Cooperation Agreement with Synova and Technip Energies to collaborate on the development and realisation of a commercial plant, which would produce olefins and aromatics from plastic waste. The plant will use a combined technology developed by Synova and T.EN and will be integrated with one of SABIC's steam crackers. As such, the plant will contribute to SABIC's vision of closing the loop on used plastic.

### WHO IS INVOLVED:

Sabic, Synova, Technip Energies.

### CAPACITY:

To be confirmed.

### TECHNOLOGY:

The combined technology includes Synova's proprietary solids cracking technology (MILENA) in combination with its gas conditioning and tars removal technology (OLGA) for the conversion of plastic waste into product gas, which contains high value chemicals.

The Synova technology is combined with T.EN's proprietary gas treatment technology (Pure.rGas™) to remove contaminants from the product gas and purify it to bring the final products up to a specification compatible with processing in a steam cracker downstream of the cracker furnace.

The combined technology efficiently converts plastic waste into high value chemicals, enabling an efficient plastic circularity route and significant reduction of greenhouse gas emission.

## 6. SORTING PLANT IN WALLDÜRN, GERMANY

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 [Image link](#)

 [Link to project source](#)



**PROJECT BRIEF:** This collaboration will secure the delivery of high-quality suitable feedstock for chemical recycling from ALBA Recycling to OMV to help close the loop for plastics.

**WHO IS INVOLVED:** OMV, ALBA Recycling.

**CAPACITY:** 200,000+ t/pa sorting plant.

**TECHNOLOGY:** An innovative state-of-the-art sorting plant designed by ALBA Recycling will have the capacity to process 200,000+ t per year of post-consumer mixed waste into suitable feedstock for the production of virgin polyolefins.

This innovative sorting process facilitates the further extraction of polyolefins from a waste fraction that currently requires incineration. This innovative sorting process has been tested at industrial scale and the output has been successfully processed as feedstock in OMV's ReOil® pilot plant.

## 7. U.S. ADVANCED RECYCLING PROJECT

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 [Image link](#)

 [Link to project source](#)



### PROJECT BRIEF:

An advanced recycling plant will be built in Texas to transform end-of-life plastic waste into a recycled feedstock that TotalEnergies will use. 100,000 tons of Recycled Polymer Feedstock (RPF) will be used in its Texas-based production units to manufacture high-quality polymers suitable for food-grade applications such as flexible and rigid food packaging containers. The New Hope Energy plant is expected to start production in 2025.

### WHO IS INVOLVED:

TotalEnergies, New Hope Energy.

### CAPACITY:

Process and convert more than 310,000 tons per year of mixed plastic waste.

### TECHNOLOGY:

The New Hope Energy plant will use a patented pyrolysis technology that was developed in partnership with Lummus Technology to process and convert more than 310,000 tons per year of mixed plastic waste that would otherwise be destined for landfill or incineration.

## 8. NEW CHEMICAL RECYCLING PLANT IN SPAIN

[Link to project source](#)

[Additional link to project source](#)



### PROJECT BRIEF:

Plastic Energy plans to build a second advanced recycling plant in Seville, Spain, in addition to their existing operational plant, which will transform end-of-life plastic waste into a recycled feedstock called TACOIL using Plastic Energy's patented recycling technology. TotalEnergies will convert this raw material into virgin-quality polymers, which can be used for food-grade packaging.

In line with this commitment, TotalEnergies and Plastic Energy have announced in September 2020 a joint venture to build a plastic waste conversion facility with a capacity of 15,000 tonnes per year at the TotalEnergies Grandpuits zero-crude platform in France. The project is expected to be operational in 2023.

Additionally, Plastic Energy, Freepoint Eco-Systems and TotalEnergies announced a strategic partnership in October 2021 for a similar recycling plant in Texas, U.S.A. This plant, which is a joint venture between Plastic Energy and Freepoint Eco-systems, will have the capacity to recycle 33,000 tonnes of plastic waste per year, and is expected to be operational by mid-2024. Under the agreement, TACOIL will be converted by TotalEnergies in its Texas-based production units.

### WHO IS INVOLVED:

Plastic Energy, TotalEnergies.

### CAPACITY:

The plant will process and convert 33,000 tons of post-consumer end-of-life plastic waste yearly.

### TECHNOLOGY:

TACOIL using Plastic Energy's patented recycling technology. TotalEnergies will convert this raw material into virgin-quality polymers, which can be used for food-grade packaging. Plastic Energy TAC process is designed to convert end-of-life plastic waste into a new feedstock to create clean recycled plastics. For every tonne of end-of-life plastic waste processed, 850 litres of chemical feedstock TACOIL are produced.

## 9. CHEMICAL RECYCLING FACILITY IN JAPAN

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[Link to project source](#)



### PROJECT BRIEF:

This recycling plant will convert post-use polystyrene into a styrene monomer that will be purified using Toyo Styrene's proprietary purification process. Styrene monomer produced from this process can then be converted back into high value polystyrene products which bear a significantly lower carbon footprint than similar products made with virgin monomer.

### WHO IS INVOLVED:

Toyo Styrene, Agilyx.

### CAPACITY:

This state-of-the-art advanced recycling facility is designed to convert up to 10 tons per day of post-industrial and post-consumer polystyrene into a styrene monomer that will be purified using Toyo Styrene's proprietary purification process.

### TECHNOLOGY:

The facility will focus on recycling post-use polystyrene plastic back to a styrene monomer. In April 2020, Agilyx announced the licensing of its technology to Toyo Styrene.

## 10. PLANETA RECYCLING PLANT IN THE MUNICIPALITY OF CUNDUACÁN IN THE STATE OF TABASCO

[Link to project source](#)



### PROJECT BRIEF:

In 2018, ALPLA and Coca-Cola FEMSA joined the New Plastics Economy Global Commitment launched by the Ellen MacArthur Foundation in collaboration with the United National Environment Programme.

Its goals are to make 100% of its products reusable, recyclable or compostable by 2025 and to have 25% post-consumer recycled material in total material consumption by that year.

ALPLA and Coca-Cola FEMSA are embracing their position as leading companies to promote and implement effective measures to reduce pollution, reuse plastic waste and reinforce the collection and recycling chain. PLANETA represents Coca-Cola FEMSA and ALPLA's commitment to sustainability.

### WHO IS INVOLVED:

ALPLA, Coca-Cola FEMSA.

### INVESTMENT:

More than 60 million dollars.

### CAPACITY:

It will have the capacity to process 50,000 tonnes of post-consumer PET bottles per year, which will result in 35,000 tonnes of recycled PET material ready for reuse.



# **OTHER ANNOUNCED PROJECTS**

## HERE ARE SOME OTHER ANNOUNCED PROJECTS:



According to a press release issued on behalf of Circularix, plans include building and operating five recycling facilities across the U.S. with a total annual production capacity of more than 275 million pounds of rPET/124 737 tonnes. The first facility, in Hatfield, Pennsylvania, is expected to be operational by December 2022.

[Link to project source](#)



According to Neste, Project PULSE (Pretreatment and Upgrading of Liquefied Waste Plastic to Scale Up Circular Economy) aims to implement the company's proprietary technologies that pre-treat and upgrade liquefied waste plastic. The company is looking to upgrade its capacities by 400,000 tonnes per year, contributing to its goal of processing over 1 million tonnes of plastic waste per year from 2030 onwards.

[Link to project source](#)



Fost Plus, the Belgian non-profit organisation responsible for the selective collection, sorting and recycling of household packaging waste in Belgium has awarded Dutch recycling company Morssinkhof Rymoplast Groep a 9-year contract for the recycling of PET trays and bottles in a new factory in Belgium. The new plant, to be located at Neufchâteau, in the province of Limburg, will be the organisation's fourth recycling centre in Belgium.

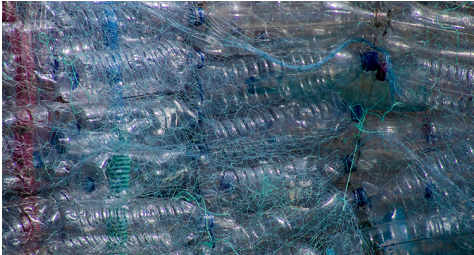
[Link to project source](#)



Plastics-to-oil firm Quantafuel has submitted a planning proposal to build a facility at the Port of Sunderland.

[Link to project source](#)

## HERE ARE SOME OTHER ANNOUNCED PROJECTS:



Brightmark, a global waste solutions provider in San Francisco, has announced plans to construct an advanced plastics renewal facility for the Parkes Special Activation Precinct in New South Wales (NSW), Australia.

[Link to project source](#)



Umincorp, the Dutch recycler of plastic waste, has raised €15M for its innovative plastic recycling plant. With Rotterdam having set an aggressive goal to become a circular economy, Umincorp (Urban Mining Corp) will play a key role in transforming all the plastic waste into raw materials. With the funding, the company is taking the next step in recycling plastics from the waste stream of households.

[Link to project source](#)

[Additional link to project source](#)



LyondellBasell and 23 Oaks Investments, Leiferde/Lower Saxony, Germany, signed an agreement to create Source One Plastics, a joint venture that will build an energy efficient, advanced plastic waste sorting and recycling facility in Germany. Using renewable energy from wind and biomass, the new unit is designed to process the amount of plastic packaging waste generated by approximately 1.3 million German citizens per year. This waste is not recycled today and is mostly incinerated.

[Link to project source](#)



South Korea-based SK Geo Centric has signed a joint venture agreement with Orlando, Florida-based PureCycle Technologies to operate a polypropylene (PP) recycling plant in Asia. SK Geo Centric plans to make a joint investment with PureCycle to build a plastic recycling plant in Ulsan, South Korea, with an annual capacity of up to 60,000 tons.

[Link to project source](#)

## HERE ARE SOME OTHER ANNOUNCED PROJECTS:



Chemicals and refining company LyondellBasell, Rotterdam, The Netherlands, and Mumbai-based plastics and polymers recycler Shakti Plastic Industries have signed a memorandum of understanding to partner on a joint venture to build and operate a fully automated mechanical recycling plant in India, which both companies say is expected to begin operation at the end of 2024.

[Link to project source](#)



Ineos Olefins & Polymers Europe, London, is investing 30 million euros (\$29 million) in the conversion of its plant at the Port of Antwerp in Lillo, Belgium, to enable its existing capacity to produce either monomodal or bimodal grades of high-density polyethylene (HDPE).

[Link to project source](#)



In Australia, bioprocess technology developer Licella Holdings Ltd (Licella) has announced that KBR Inc., a global provider of science, technology, and engineering solutions, has been selected for the design of Licella's first full-scale commercial Cat-HTR facility in Australia and New Zealand (ANZ).

[Link to project source](#)

## **CLOSING THE LOOP IN A CIRCULAR PLASTICS ECONOMY (19-20 APRIL 2023, ROTTERDAM)**

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