

# Global Co-refining Market Forecast: Growth from US\$ 39.7 Billion to US\$ 73.0 Billion by 2034 - TMR

*Co-refining Market to Reach US\$ 73.0 Bn by 2034, Growing at a 6.0% CAGR from US\$ 39.7 Bn in 2023*

WILMINGTON, DE, UNITED STATES,  
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EINPresswire.com/ -- The global [co-refining market](#), valued at US\$ 39.7 billion in 2023, is projected to grow at a CAGR of 6.0% from 2024 to 2034, reaching a valuation of US\$ 73.0 billion by the end of the forecast period. This growth is driven by the increasing shift toward a low-carbon economy and the growing adoption of biofuels as sustainable alternatives to traditional fossil fuels.



Co-refining Market

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Co-refining Market Outlook 2034: Valued at US\$ 39.7 Bn in 2023, the market is estimated to grow at a CAGR of 6.0%, reaching US\$ 73.0 Bn by 2034"

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## Analyst Viewpoint

The transition to a low-carbon economy has become a critical focus for governments, industries, and organizations worldwide. Co-refining, a process that integrates renewable feedstocks such as bio-oils, used cooking oils, and biomass into existing refinery operations, is emerging as a key strategy for reducing greenhouse gas

(GHG) emissions. With advanced biofuels gaining prominence, the co-refining market is set to experience robust growth.

Key players in the market are leveraging innovative processes, such as fluid catalytic cracking and

hydroprocessing, to optimize the production of renewable fuels while minimizing the environmental footprint. Investments in co-refining technologies and facilities, particularly for sustainable aviation fuels (SAFs), are further accelerating the market's expansion.

## Market Overview

Co-refining, also referred to as co-processing, involves the simultaneous processing of crude oil and renewable feedstocks to produce transportation fuels and petrochemical feedstocks. It utilizes established infrastructure to integrate feedstocks such as animal fats, vegetable oils, biomass, and waste plastics, providing a cost-effective pathway for reducing GHG emissions in the energy sector.

## Types of Co-Refining Processes

### 1. Hydroprocessing:

A highly efficient method for upgrading bio-crude oils into renewable transportation fuels. It facilitates hydrogenation and desulfurization, making it a preferred process in co-refining.

### 2. Catalytic Cracking:

Widely employed for producing aviation fuels and petrochemical feedstocks. Catalytic cracking of waste plastics is gaining traction due to its lower energy consumption and ability to convert plastic waste into valuable hydrocarbons.

### 3. Fluid Catalytic Cracking (FCC):

Commonly used for converting heavy crude fractions into gasoline and olefins. FCC is particularly effective for co-refining bio-oils and renewable feedstocks.

### 4. Hydrotreating:

A vital process for removing contaminants and impurities from feedstocks. Hydrotreating is especially effective for co-processing bio-based materials alongside petroleum fractions.

### 5. Hydrocracking:

A severe form of hydroprocessing, hydrocracking enhances fuel yields by breaking down complex hydrocarbons into lighter and more valuable fractions.

## Key Drivers

### 1. Transition Toward a Low-Carbon Economy

The global push to mitigate climate change has spurred investment in low-carbon technologies. With over 825 operational crude oil refineries worldwide, the integration of renewable feedstocks into existing facilities is a practical solution for decarbonizing the energy sector.

Countries such as the U.S. and those in the European Union are leading the way with substantial investments in hydrogen projects, sustainable biofuels, and carbon capture technologies. For instance:

- In May 2024, the European Commission allocated €720 million to renewable hydrogen projects.
- The U.S. Department of Energy (DOE) announced US\$ 7 billion in funding for regional hydrogen hubs in 2023.

These initiatives underline the critical role of co-refining in achieving net-zero emission targets.

## 2. Adoption of Biofuels

Biofuels, including biodiesel, bioethanol, and hydrogenated vegetable oil (HVO), are gaining momentum as alternatives to fossil fuels. Co-refining allows for the efficient production of these fuels by leveraging the existing infrastructure of petroleum refineries.

According to the International Energy Agency (IEA), biofuel investments reached a decade-high in 2022, with capacity additions exceeding 260 kb/d. This growth is expected to continue, driven by the need to decarbonize hard-to-abate sectors such as aviation and shipping.

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## Regional Analysis

### 1. Europe: The Market Leader

Europe held the largest share of the co-refining market in 2023, driven by stringent climate policies and the need to scale up biofuel production. The EU's ambitious climate goals, including achieving net-zero emissions by 2050, have led to significant investments in renewable energy and co-refining technologies.

Key developments in the region include:

- The launch of the COREu project in 2023, the largest EU-funded research initiative in carbon capture and storage (CCS).
- A growing supply of biofuels, which accounted for 6.3% of total transport fuel consumption in

the EU in 2020.

## 2. North America: A Hub for Innovation

North America is witnessing rapid advancements in co-refining technologies, driven by government support and private sector investments. The DOE's hydrogen hub initiative and the development of SAFs are key growth drivers in the region.

In 2023, Saudi Aramco and TotalEnergies successfully produced SAF using used cooking oil at their refinery complex in Saudi Arabia. Such developments highlight the region's potential to become a global leader in co-refining.

## 3. Asia Pacific: An Emerging Market

The Asia Pacific region is poised for significant growth in the co-refining market, fueled by rising energy demand and government support for renewable energy projects. Countries such as China, India, and Japan are investing in biofuel production and co-refining infrastructure to meet their energy needs sustainably.

### Competitive Landscape

The global co-refining market is characterized by intense competition, with key players focusing on innovation, strategic partnerships, and capacity expansions.

### Key Players:

- Bharat Petroleum Corporation Limited
- ExxonMobil Corporation
- Valero Energy Corporation
- Saudi Arabian Oil Co. (Aramco)
- Marathon Petroleum Corporation
- China National Petroleum Corporation (CNPC)

### Recent Developments:

- April 2024: Meridian Energy Group announced plans to co-process up to 4,000 barrels/day of vegetable oil at its refinery in North Dakota.
- 2023: Saudi Aramco and TotalEnergies completed SAF production using co-processed used cooking oil at their Jubail refinery.

### Market Segmentation

#### 1. By Feedstock Type:

- o Crude Oil Co-Refining
- o Biomass Co-Refining
- o Waste Plastic Co-Refining
- o Renewable Feedstock Co-Refining

## 2. By Process:

- o Hydroprocessing
- o Catalytic Cracking
- o Fluid Catalytic Cracking (FCC)
- o Hydrotreating
- o Hydrocracking

## 3. By Product:

- o FAME Biodiesel
- o Bioethanol
- o Hydrogenated Vegetable Oil (HVO)
- o Others

## 4. By Region:

- o North America
- o Europe
- o Asia Pacific
- o Latin America
- o Middle East & Africa

## Conclusion

The co-refining market is set to play a pivotal role in the global energy transition. By integrating renewable feedstocks into existing refinery processes, co-refining offers a practical and scalable solution for reducing GHG emissions. As governments and industries intensify their efforts to combat climate change, the demand for co-refining technologies is expected to grow exponentially.

With advancements in processes such as hydroprocessing and fluid catalytic cracking, along with increasing investments in biofuels and CCS, the co-refining market is well-positioned to achieve sustainable growth in the coming decade.

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Contact:

Transparency Market Research Inc.  
CORPORATE HEADQUARTER DOWNTOWN,  
1000 N. West Street,  
Suite 1200, Wilmington, Delaware 19801 USA  
Tel: +1-518-618-1030  
USA – Canada Toll Free: 866-552-3453  
Website: <https://www.transparencymarketresearch.com>  
Email: [sales@transparencymarketresearch.com](mailto:sales@transparencymarketresearch.com)  
Follow Us: [LinkedIn](#) | [Twitter](#) | [Blog](#) | [YouTube](#)

Atil Chaudhari

Transparency Market Research Inc.

+1 518-618-1030

[email us here](#)

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