

Globestar Energy FZE

MD - NIKHIL AGARWAL



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Introduction

Globestar FZE is oil conglomerate registered in UAE engaged in trading of Petroleum, Petrochemical products.

We are specializes in the international supply and distribution with strong sourcing capabilities and access to products in storage terminals, Globestar Energy FZE is committed to providing high-quality products at a competitive cost.

Since the start, Globe Star has made leap and bound advances in gathering a team of highly specialized personnel with the specific product and global market knowledge.

We source shipments from state-owned and private oil refineries across the globe as well as from trading companies in USA, Europe, Middle East and Asia

We are established and have a forward-looking vision of becoming the market leader in sourcing, manufacturing, and supplying Petroleum and petrochemical products globally.

Relying on the strength of our blending capability and the availability of products in storage terminals, we manufacture lubricant Oils and export finished goods worldwide.



Our Product Line

Product Line	Product Category	Range
Base Oil	Group I	SN 100, SN 150, SN 350, SN 500, BS 150
	Group II	N 70, N 150, N 500, N 600
	Group III	Cst 2, Cst 3, Cst 4, Cst 6, Cst 8
Rubber Process Oil	Paraffinic	25 – 35 VI
Bitumen	General	60/70, 80/100
	Cutback	MC 30, MC 70, MC 250
	Emulsion	85/25, 115/15
Carbon Black		N330, N550, & N660
Lubricants	PCMO	20W50 , 10W40, 5W40
	DEO	SAE 40-50, 15W40



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Carbon Black



Lubricants



Rubber Process Oil



Base Oil



Bitumen

Our Global Associations



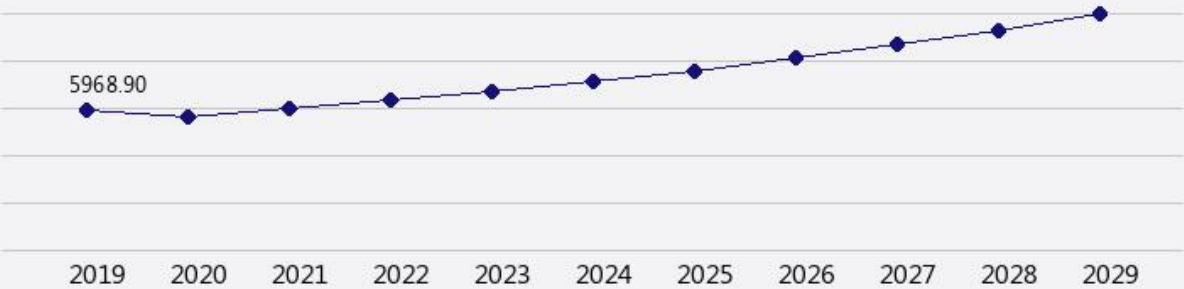
HELP YOU GROW YOUR BUSINESS

Global Recycle Base Oil Market Overview

The **Global Re-Refined Base Oil Market** is projected to be worth **USD 5.7 billion in 2025** , with expectations to reach **USD 8.9 billion by 2029** , growing at a **CAGR of 71%** over the forecast period, according to Strategic Market Research.

Re-refined base oil (RRBO) is derived from used lubricating oil that has undergone chemical and physical purification to restore its performance properties. What makes this market strategically relevant in 2025–2030 is the growing intersection of environmental policy, circular economy mandates, and cost sensitivity in industrial lubricants.

Re-Refined Base Oils Market Size 2025-2029 (US\$ Million)



6.5%
2025 Year-over-Year



ACCELERATING
Growth Momentum



7.1%
CAGR 2024-2029



US\$ 2950 Mn
Incremental Growth
between 2024-2029



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In-depth market Segmentation Re-Refine Base Oil

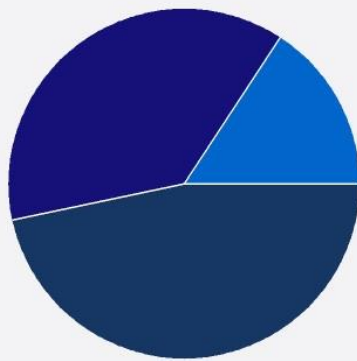
The re-refined base oils industry research report provides comprehensive data (region-wise segment analysis), with forecasts and estimates in "USD million" for the period 2025-2029, as well as historical data from 2019-2023 for the following segments.

•Type

- Group I
- Group II
- Group III

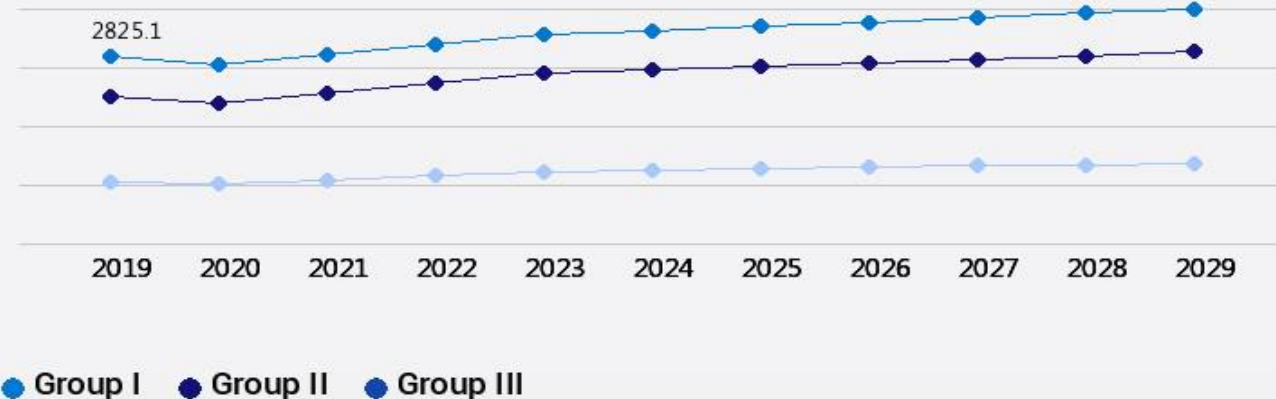
Re-Refined Base Oils Market

Share by Type (%)



- Group I
- Group II
- Group III

Re-Refined Base Oils Market Size 2025-2029 (US\$ Million)



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Re-Refined Base Oil Market Scope

1. The market also attracts interest from multiple stakeholders:

- **Re-refining companies** looking to scale up modular, decentralized facilities
- **Lubricant manufacturers** seeking ESG-compliant base stock options
- **Waste oil collectors and aggregators** aiming to integrate vertically
- **Investors** prioritizing low-carbon manufacturing and circular material chains

2. Market Segmentation and Forecast Scope

The re-refined base oil market is structured along four major axes: **by Group Type** , **by Application** , **by End User** , and **by Region** . Each of these layers reflects how refiners, blenders, and downstream users approach quality, performance, and regulatory alignment.

By Group Type.

- **Group I** Historically dominant, Group I RRBO is still widely used due to its lower processing cost and compatibility with older engine or industrial equipment.
- **Group II** Gaining fast traction, especially in automotive and industrial sectors that demand better oxidative stability and viscosity index.
- **Group III and Above** Still a minor segment, but growing due to advanced refining technologies (like hydrotreating and hydrocracking) that bring re-refined oils close to synthetic performance



Adoption of Re-Refined Base Oil

By Application

- Automotive Oils** (engine oils, transmission fluids, gear oils) Still the largest segment by volume, driven by growing demand for environmentally-friendly lubricants in fleet and commercial vehicles.
- Industrial Oils** (hydraulic, compressor, and turbine oils) Strong growth expected here, especially in heavy machinery and construction.
- Marine and Railway Lubricants** These require high TBN and resistance to breakdown – a challenging but high-margin use case for RRBO.
- Process Oils and Greases** Smaller niche, but RRBO-based greases are now entering food-grade and biodegradable applications.

By End User

- Lube Manufacturers and Blenders** The primary buyers of RRBO, especially those producing mid-range and commercial-grade lubricants.
- Automotive OEMs and Service Centers** Often use RRBO-blended oils in fleet maintenance and approved aftersales programs.
- Industrial Operators** Mines, construction firms, and manufacturing units that prioritize cost-effective lubricants with acceptable performance specs.



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RE-REFINED BASE OIL

From Used Oil



1. Collection & Filtering



2. Dehydration & Distillation



Hydrotreating & Purification



4. Blending & QC

Re-Refine Market & Innovation Landscape in India

Market Trends and Innovation Landscape

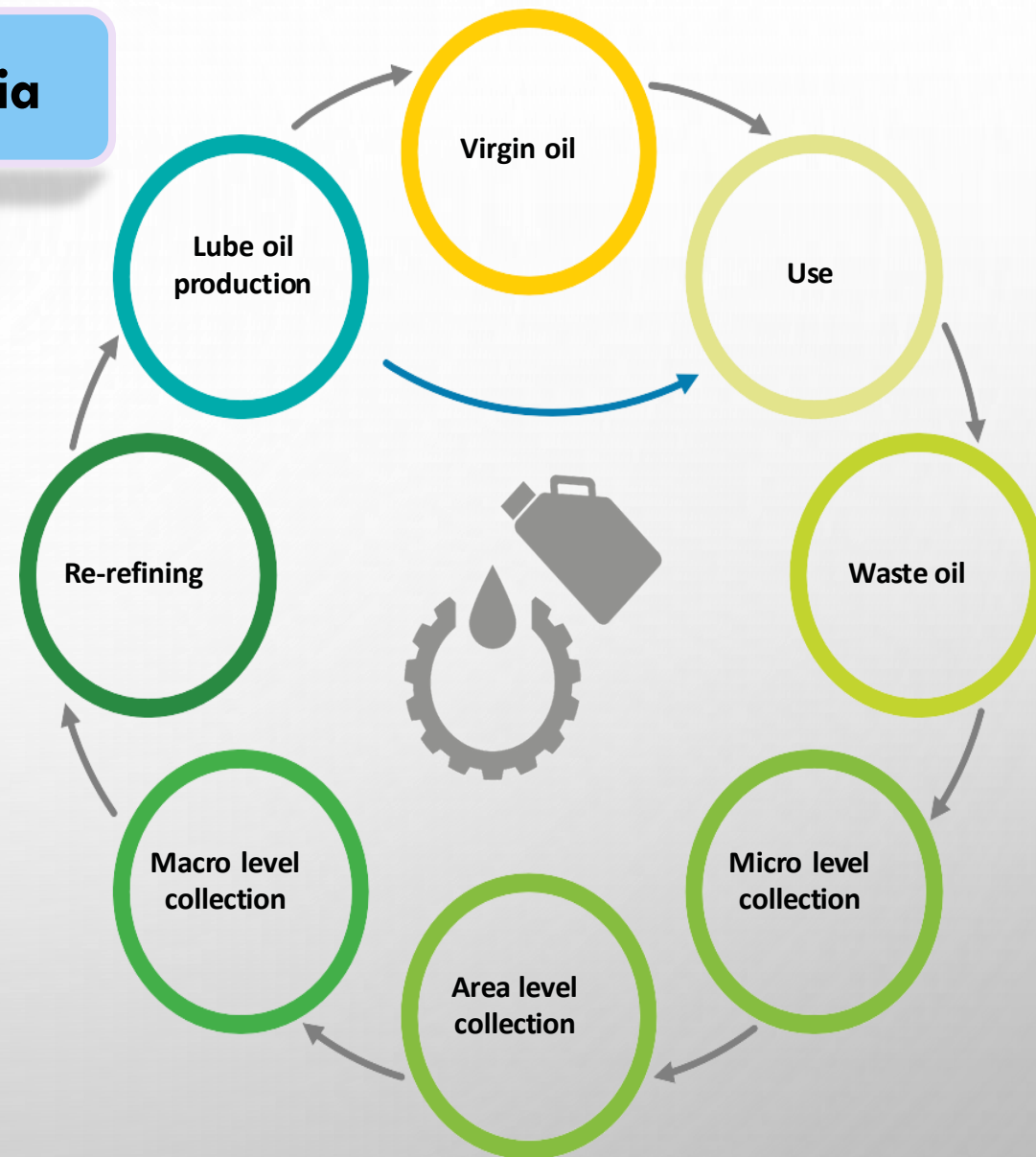
The re-refined base oil market has evolved far beyond its early roots in basic solvent extraction and clay filtration. Over the past few years, innovation across refining, additive chemistry, and closed-loop logistics has redefined what re-refined base oil can be — not just what it replaces.

Hydrotreating and Hydrocracking Are Becoming the New Standard

Traditional re-refining methods could only produce Group I oils. That's changing. New facilities now deploy **severe hydrotreating** and **catalytic**



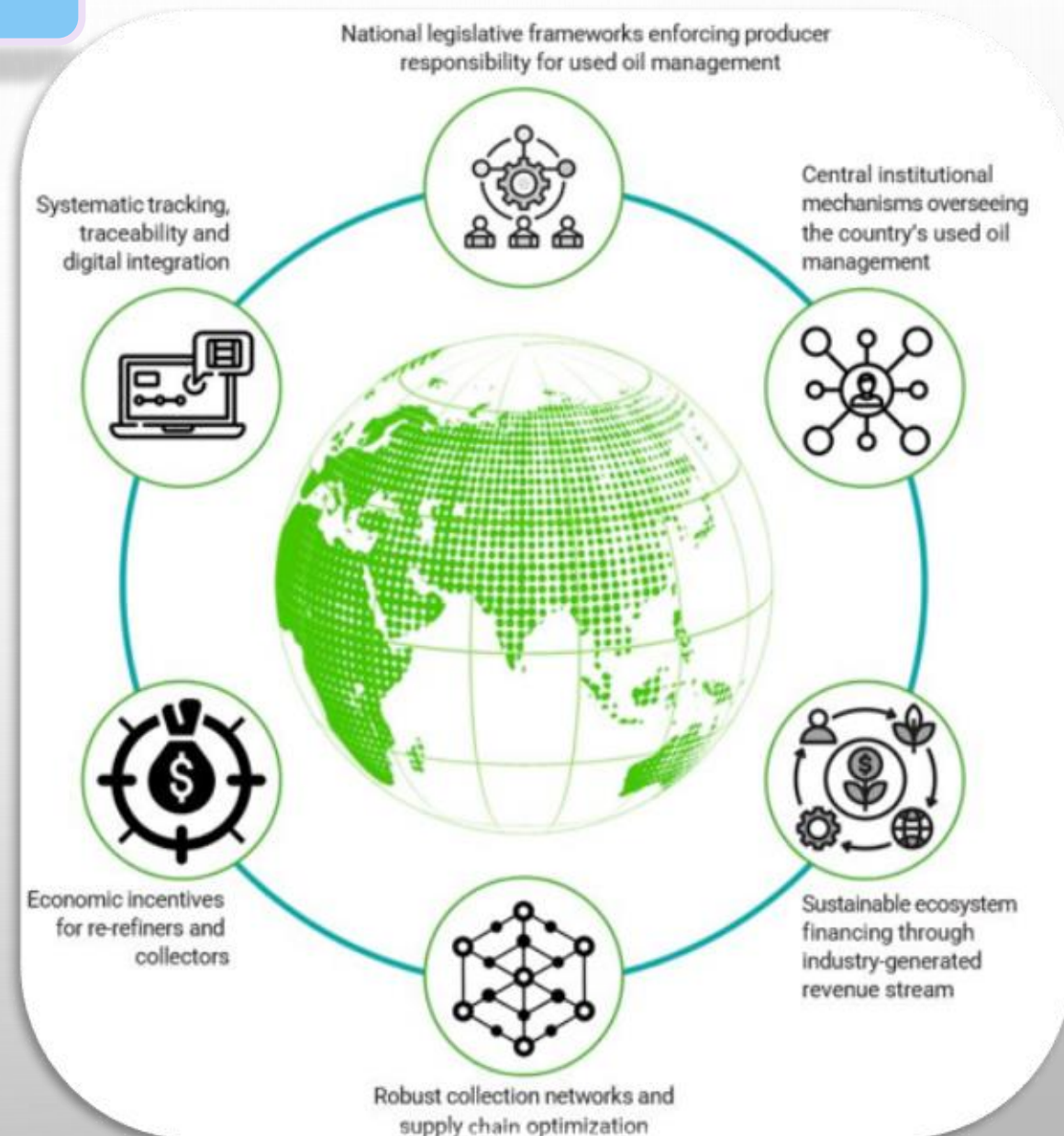
One gallon (~3.8 litres) of used oil can yield 2.5 quarts (~2.4 litres) of new lubricating oil, whereas producing the same quantity from crude oil requires 42 gallons (~159 litres) of crude oil.⁽²⁾



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Leading Practices in Used Oil Management

- Country intensify their focus on sustainability and the circular economy, used oil recycling has emerged as a critical component of environmental management.
- Global leading practices demonstrate that centralized oversight, robust collection networks, financial incentives and advanced tracking systems can drive significant improvements in recovery rates and recycling efficiency

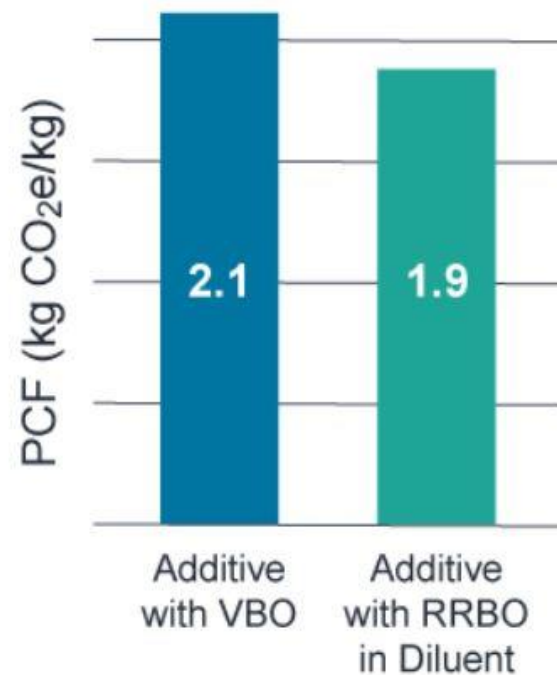


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Case Study of VBO vs RRBO

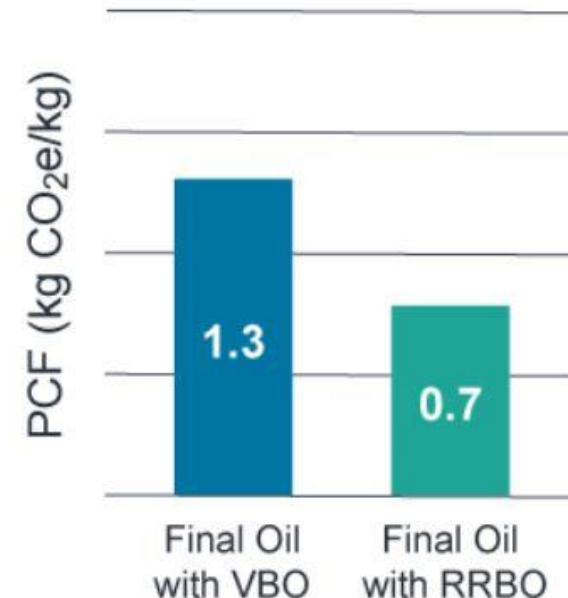
- Using **RRBO**, both as an additive diluent and as base stock in the final oil formulation, can achieve significant PCF reductions and help to reduce the emissions associated with the purchase of raw materials in our industry

Example PCF of Additives:



By replacing VBO with RRBO in additive package diluent, we can achieve on average 10% PCF reduction

Example PCF of Final Oils:



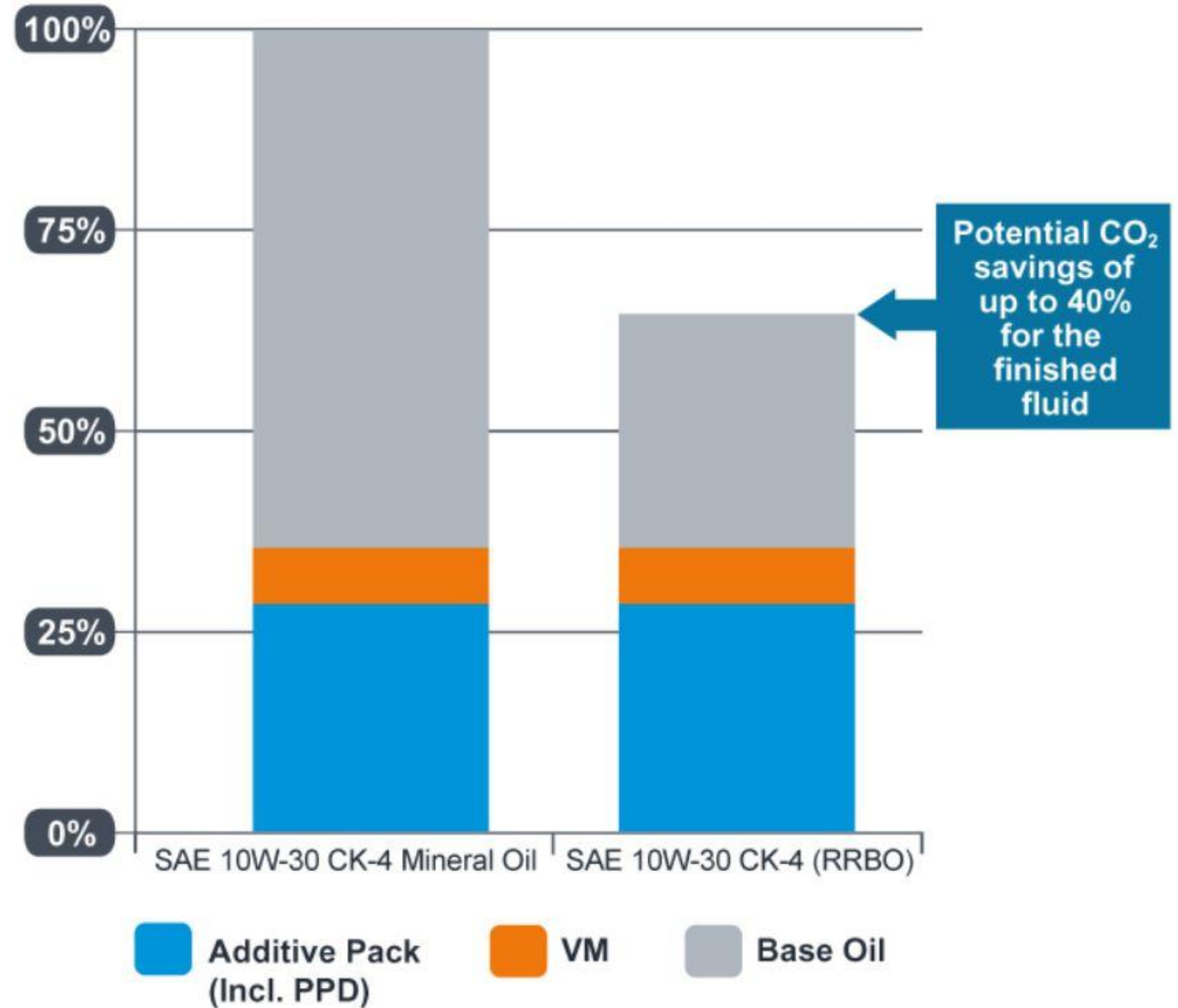
By replacing VBO with RRBO in final oil formulation, lubricant blenders could achieve 40-50% PCF reduction



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Virgin Oil vs RRBO (In kg CO₂ e/kg)

- Estimated cradle to gate Carbon footprint for Virgin Base Oil vs Recycle Base Oil Stock In Kg Co2e / KG).



The calculation assumes that all of the virgin base oil is replaced with a re-refined base oil and that the carbon footprint of the re-refined base oil is 50% lower than the virgin base oil.



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Future Lubricants Market Dynamics

Over the next five years, expect the following forces to set the tone:

- **OEM fuel-economy** targets and longer drain intervals keep demand for premium Group III/IV and fully synthetic oils rising even as overall volumes level off
- **RRBO** continues to be the mainstream as producers seek carbon-credit credibility and a securing raw-material stream
- Tightening regulations strain small blenders and collectors, prompting accelerated consolidation driven by buy-outs by larger strategics and private equity platforms.
- Companies that recycle waste oil into specification-grade products will gain a circular premium in valuations, thanks to stronger ESG appeal and steadier margins.



FUTURE LUBRICANT MARKET DYNAMICS

The Lubricant sector is pivoting from a volume-driven business to a value-chain-control play, where regulatory latitude, feedstock security, and ESG signaling determine winners.



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Assessment of Indian Use Oil Ecosystem

- The EPR regulation for used oil was released in September 2023, with mandates that come into effect from FY25.
- Under this regulation, producers of base oil or lubrication oil are required to ensure that a defined portion of the used oil generated by their products is collected and recycled.
- By FY31, the total lubricants market is projected to reach 5.0–6.0 MMT, including finished lubricating oils and process oils.
- The landscape of India’s lubricants market is projected to show a steady increase from ~4.2 MMT in FY22 to 4.8–5.6 MMT by FY29, with finished lubricants accounting for 55–60 percent of the total, while rubber process oils, transformer oils and white oils/light liquid paraffin constituting 40–45 percent.

EPR requirement 5% percent of RRBO in FY25 to 50%% by FY31.

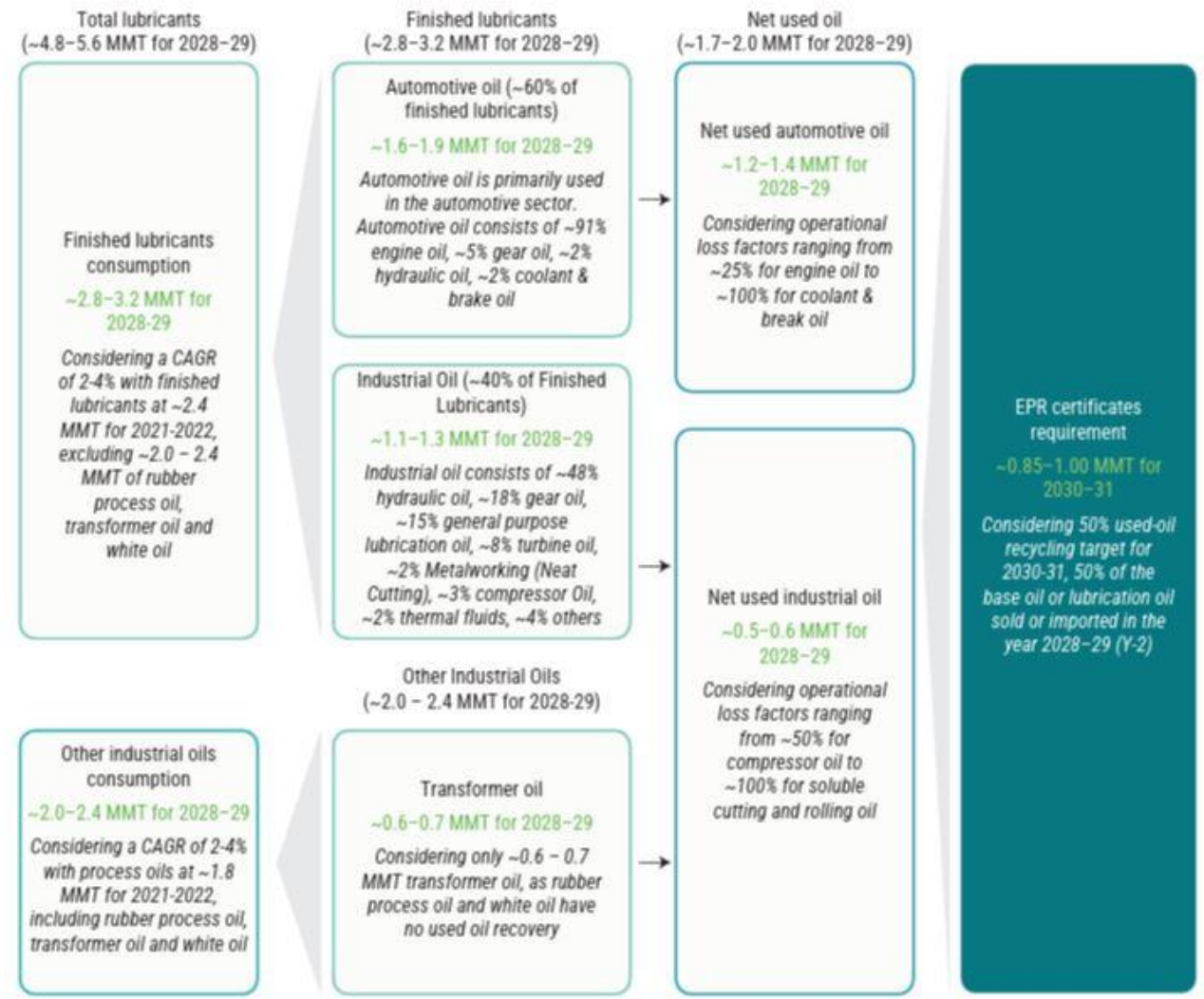


Figure 3.1: Projected EPR certificates requirement for 2030-31, MMT

Projected Year wise EPR Certificate requirement in India

EPR year (Y)	Used oil recycling target (based on Y-2)	Market of lubricants in (Y-2), MMT	Net used oil generated, MMT	EPR certificate requirement targets, MMT
2024-2025	5% of 2022-2023	4.2-4.4	1.50-1.55	0.08-0.09
2025-2026	10% of 2023-2024	4.3-4.6	1.50-1.60	0.15-0.17
2026-2027	20% of 2024-2025	4.4-4.7	1.55-1.70	0.31-0.34
2027-2028	20% of 2025-2026	4.5-4.9	1.60-1.75	0.32-0.36
2028-2029	40% of 2026-2027	4.6-5.1	1.60-1.80	0.65-0.73
2029-2030	40% of 2027-2028	4.7-5.3	1.65-1.90	0.67-0.76
2030-2031	50% of 2028-2029	4.8-5.6	1.70-2.00	0.85-1.00



KEY IMPERATIVES FOR ACHIEVING ESCALATING EPR TARGETS

- The data indicates a future in which enhancing existing G1 re-refining capacities and adding G2 capacities will be crucial for meeting burgeoning EPR targets.
- These combined measures lay the foundation for a strong and sustainable used oil recycling ecosystem, positioning India's used oil management landscape for long-term success

	FY25	FY28	FY31
Re-refining capacity required, KT	Up to 70–80	Up to 320–350	550–1,000
RRBO production, KT	Up to 50–60	Up to 230–250	400–700
G1 RRBO production, KT	Up to 50–60	Up to 230–250	390–570
G2 RRBO production, KT	–	–	Up to 100–200

Table 3.2: Projected re-refining capacity requirement from FY25 to FY31, KT



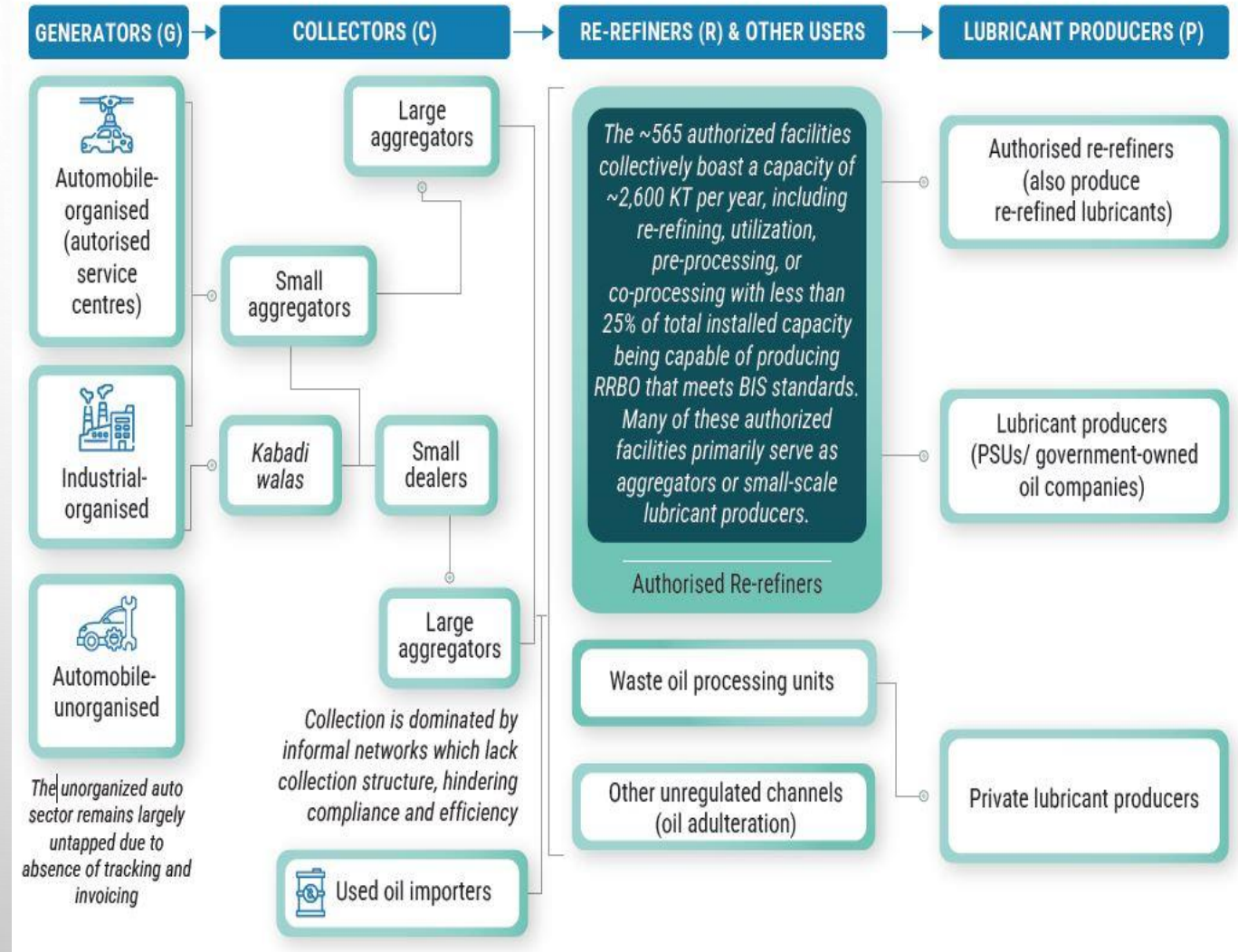
Issue & Challenges in Collecting RRBOs

	Generators (G)	Collectors (C)	Recyclers (R)	Producers (P)	EPR regulation (E)
1 Absence of a formal collection ecosystem		●●			
2 Limitations in EPR compliance				●	●
3 Inadequate tracking and accountability	●●	●	●		●
4 High used oil prices due to diversions to alternate products		●●			
5 Technology and infrastructure gaps in re-refining			●●●		
6 Degraded RRBO quality		●	●●		



Systematic Barriers in India's used oil Eco System

- The used oil supply chain comprises four key players, each performing a distinct role in the collection, processing and reuse of used oil. Generators are entities that produce.
- The used oil supply chain in India operates as a fragmented and complex system involving generators, collectors and aggregators, re-refiners and lubricant producers.



Achieving API SP/ILSAC with Re-Refined Base Oil

- Achieving **API SP/ILSAC** with Re-Refined Base Oil Advancing RRBO in the modern automotive market requires transitioning from Group I to Group II/III re-refined stocks paired with high-performance DI (Detergent-Inhibitor) packages. By leveraging API Base Oil Interchange (BOI) and Viscosity Grade Read-Across (VGRA) guidelines, blenders can achieve API SP and ILSAC GF-6 certifications while minimizing expensive engine testing, ensuring technical equivalence to virgin-based lubricants.
- **Group II/III RRBO Selection:** High-intensity hydrotreating is non-negotiable to achieve the low sulfur ($<0.03\%$) and high saturates ($>90\%$) required for modern API groups.
- **Solvency Management: High-purity RRBO** (Group II/III) has lower natural solvency than Group I. Formulators often use Group V esters or co-blends to ensure additive packages stay in solution.
- **Additive Synergy:** Modern antioxidants and friction modifiers must be tuned to the specific hydrocarbon profile of the re-refined stock to meet fuel economy retention targets.



The Architecture of Modern Lubricants

•Advanced Usage in modern lubrication is the strategic integration of high-intensity hydrotreated re-refined base oils (RRBO) with tailored chemical components to meet or exceed current API SP and ILSAC GF-6 standards. Unlike 'basic' recycling, advanced usage involves precise molecular engineering to ensure the re-refined stock acts as a high-performance carrier for modern additive packages, specifically addressing the unique solubility and oxidation challenges of circular base stocks.

From Waste to Group I /II Purity

The modern re-refining process is a multi-stage industrial engineering feat that removes contaminants, polymers, and oxidation by-products to restore the oil's molecular integrity.

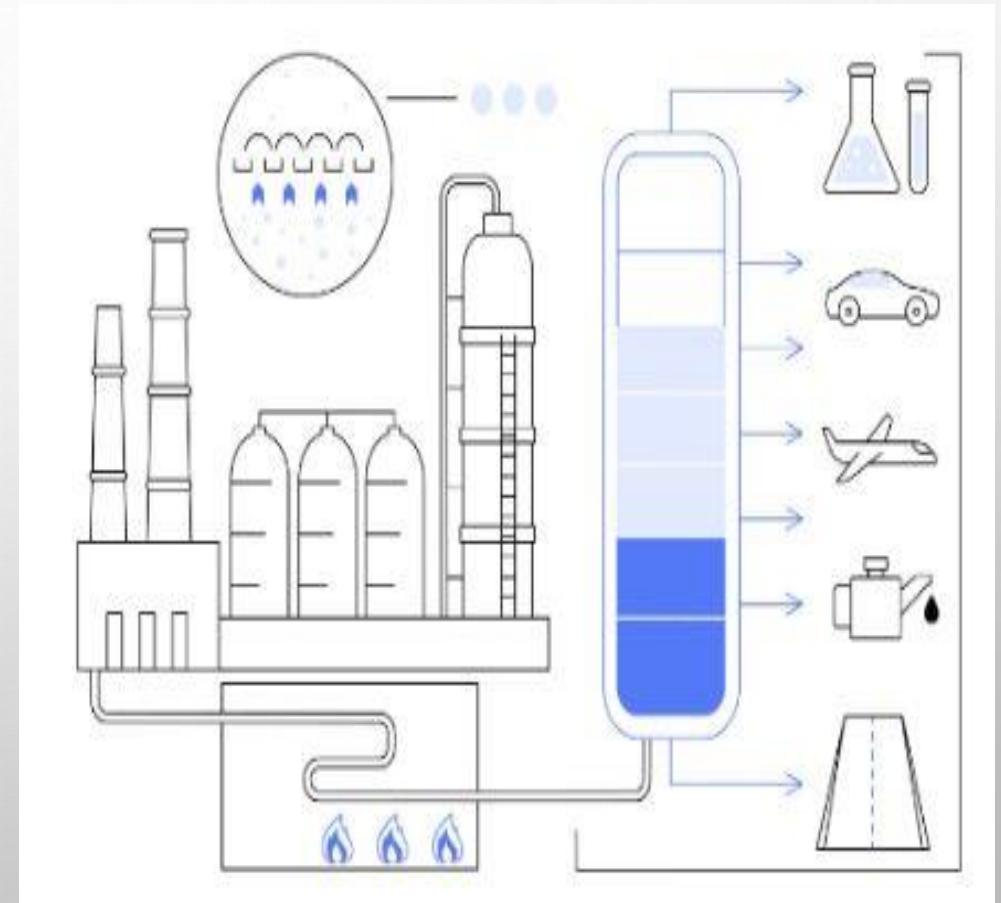
Vacuum Distillation: Separates the base oil from water, fuel, and heavy residues without thermal cracking.

•**Hydrotreating:** Involves hydrogen injection at high pressure/temperature over a catalyst to eliminate sulfur, nitrogen, and oxygen, resulting in a clear, stable base stock.

•**Fractionation:** Precision separation into specific viscosity grades (e.g., 100-Neutral or 300-Neutral).



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Performance Parity: RRBO vs. Virgin Stock

•Independent laboratory testing confirms that RRBO-based lubricants are functionally equivalent to their virgin counterparts. Below is a comparison of typical technical specifications based on ASTM standards

- Oxidation Stability (ASTM D2272):** Modern RRBOs with advanced antioxidants show $\geq 100\%$ parity with virgin Group II.
- Wear Protection:** No statistical difference in cam-plus-lifter wear (Sequence IIH engine test).
- Cold Start (MRV/CCS):** Hydro isomerized RRBOs achieve superior low-temperature pumpability.
- Carbon Footprint:**
 - Virgin Group II: ~1.85 kg CO₂e per kg.
 - Re-Refined Group II: ~0.422 kg CO₂e per kg (77% reduction).



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Reference Case Study of Italy RRBO Market Sustainability

Overview

Italy has an average lubricants market of 400 KT³, and it follows an outcome-based scheme for used oil management, ensuring high recycling rates. The country's centralised organisation, CONOU, oversees the collection, quality control and treatment of used oils.⁽¹⁰⁾

Industry structure

Italy's used oil recycling system is highly efficient due to

- **CONOU's central role** in coordinating the collection, transportation and treatment of used oil across the country.⁽¹⁰⁾ The consortium operates a comprehensive network that collects used oil from about 103,000 workshop and factory sites across Italy.⁽¹⁰⁾
- **Micro-collection efforts**, which contributed 47 percent of total used oil collected in 2022.⁽¹⁰⁾ These programmes involve collecting small quantities of used oil that are typically not profitable to gather, ensuring used oil that would otherwise go uncollected is properly recycled.
- **High recycling efficiency**, with 98 percent of collected lubricating oil being recycled in 2022.⁽⁹⁾
- A key economic incentive for recycling, where producers of re-refined oil products paid 50 percent of the excise duty applied to virgin lubricant oils as of 2020.⁽¹⁵⁾
- CONOU's activities are primarily funded by a fee of EUR90 per tonne for lubricating oil sales, which are contributed by producers and sellers. With total global revenue of ~EUR36 million, about 42 percent is allocated to support regenerating activities in Italy's lubricant market.

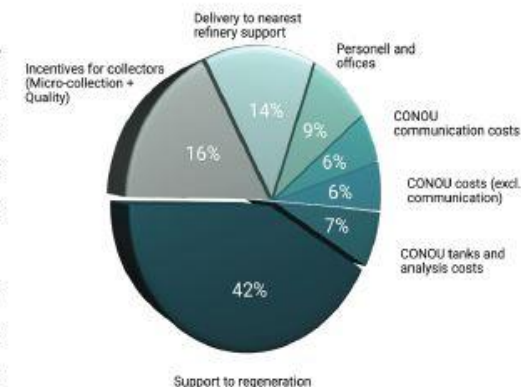


Figure 8.1: Distribution of CONOU revenue (2024)³

Key considerations

- **Optimising micro-collection** Adopting innovative solutions for cost-effective small-scale used oil collection.
- **Strengthening compliance** Ensuring all producers, especially small businesses, meet EPR requirements.

*Thank
you*



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