



Project name:

Implementation of a value chain for the exclusive recycling of waste bio-lubricants and their regeneration through the production of new bio-lubricants

Project starting date: 1 September 2022

Project Duration: 33 months

Granting authority (under the auspices of):

European Climate, Infrastructure and Environment Executive Agency (CINEA)

Project concept:

The LIFE BIO-LUBRICANT project gathers partners and stakeholders of a new European value chain for the realization and demonstration of a short and efficient separate collection on a semi-industrial scale, and subsequent regeneration of exhausted bio-lubricants, currently collected without distinction from those of mineral origin.

The project will build a new supply chain focused on the collection of used bio-lubricants in various industrial sectors (hydraulic oils in steel mills, fluids for metal quenching, dielectric fluids, fluids for metal treatment, etc.).

Reasons for setting up the project



The use of bio-lubricants as a replacement to mineral-based lubricants is constantly growing in the European market, both for reasons of sustainability and due to their lower environmental impact/higher CO₂ emissions reduction.



There is currently no separate collection of waste bio-lubricants (UVEO'S) from those of mineral origin in the European Union

This results in a potential loss of efficiency of the current lubricants regeneration processes due to the presence of the bio-lubricant fraction in the lube-waste, and leads to the lack of the possibility to obtain new bio-lubricating products with a regenerated base, with the consequent use of greater quantities of virgin raw materials for their production.



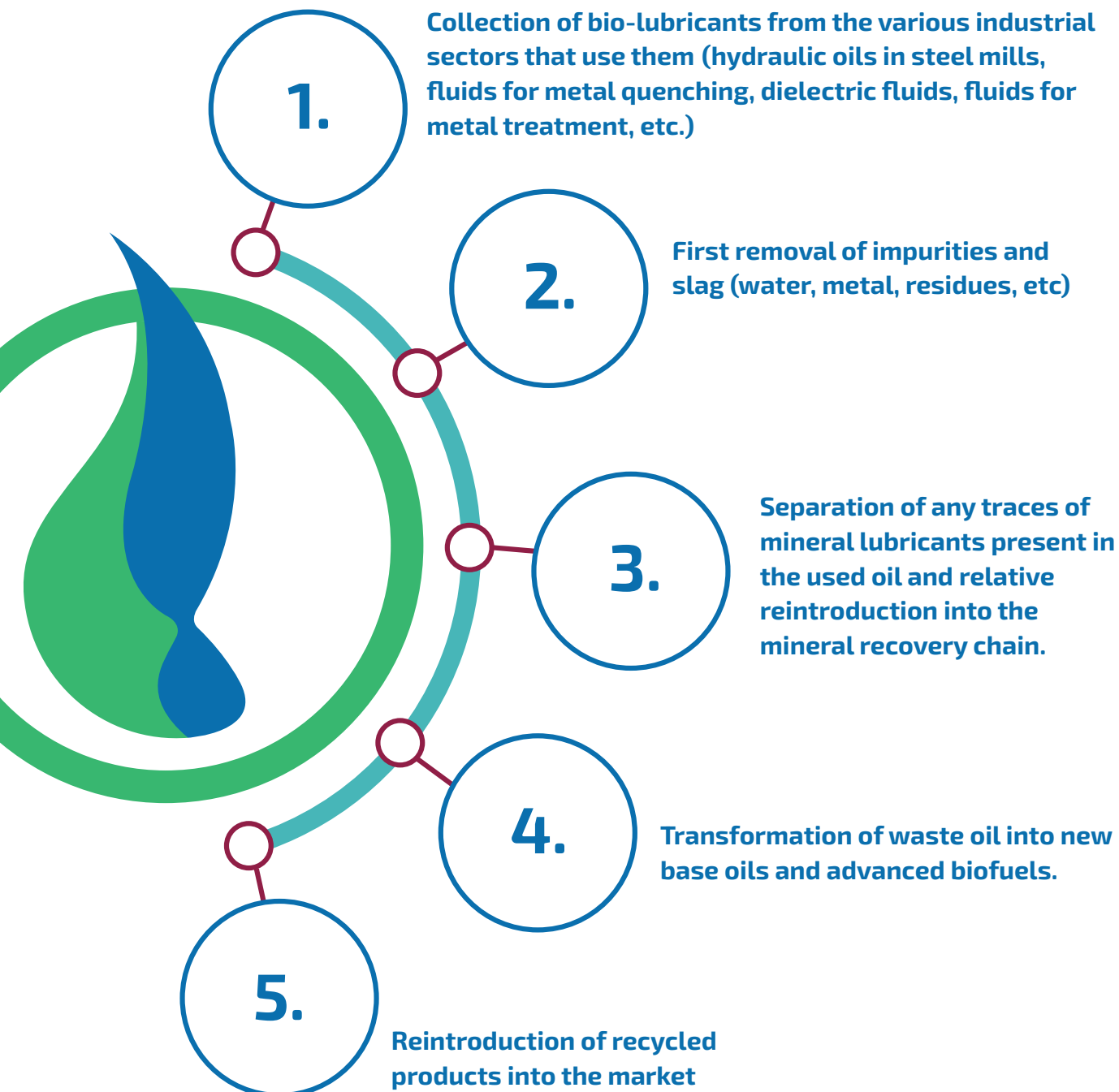
The lack of a dedicated supply chain is also reflected in the absence of industrial regeneration processes specialized exclusively in recycling.



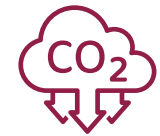


Implementation

(description of main actions to be implemented during the period)



Impact of the Project



**Emission reduction of about
1,700 tons of CO₂**

(700 tons of regenerated bio-lubricant with benefit of about 2,5 kg CO₂/kg compared to non-regenerated bio-lubricant)

**Potential emission
reduction of up to
7.000 tons of CO₂**

(for possible replacement of 700 tons of mineral based lubricant with bio-lubricant: benefit of about up to 10 kg CO₂/kg of lubricant on the entire recovery chain)

**Potential improvement of
efficiency into the lube mineral
re-refining process as a
consequence of the segregated
collection**

**Reduction of agricultural land
use for advanced biofuel
production**

**Increase in resource autonomy,
due to the availability of
secondary raw materials
otherwise lost**

Project objective

The objective of the project is the recovery and treatment of 1,000 tons of waste bio/ synthetic esters, with production of about 700 tons of regenerated bio-lubricants (70%) and 200 tons of advanced biofuels (20%).

Project aim

An innovative technology developed by project coordinator A&A Fratelli Parodi will then be demonstrated in real life environment for the removal of impurities and waste (water, metal residues, etc.), hydrolytic cleavage of the bio-lubricant part, separation of any traces of mineral contamination, with the aim to finally reintroduce the used bio-lubricant in the value-chain by transforming through esterification the obtained fatty acids into new base oils.

U.V.E.O

New sustainable
feedstock for
industrial products
and advanced
biofuels



Bio Lubricant Production

Circular Life Cycle of Waste Bio Lubricants



Q8Oils Italia S.r.l. (Q8)

Q8Oils specializes in the research, development and marketing of lubricants for the automotive and industrial sector.

Part of the Kuwait Petroleum International Group, Q8Oils Italia is a specialist manufacturer of premium lubricants and bio-lubricant. Q8Oils Italia plays a pivotal role in the LIFE Bio-Lubricant project by communicating the project's goals and to lead its customers through the process of recycling bio-lubricants, and the end of the circle as well as it's responsible to produce and market added-value bio-lubricant solutions.



Venanzieffe S.r.l.

Venanzieffe S.r.l. is nationally recognized as one of the main players in the Italian waste management industry, with its operations running for over 65 years.

With a high level of expertise in the waste management market, Venanzieffe is specialized in special-waste collection and nowadays is starting a process of horizontal integration in its work activities by installing treatment plants, in order to shorten the supply-chain. Under the LIFE Bio-Lubricant project, Venanzieffe is responsible for the waste lubricant mixture collection and the first purification process, with the aim of this treatment being to separate lubes from water and eventually solid parts.



Valore CO₂

ValoreCO2 is the climate-tech company of the APG group, with the mission to assist the customers in carbon footprint assessment, LCA study and GHG savings projects in the industrial market.

Through its team of qualified experts in the field of sustainability, it assists industrial customers in the identification and implementation of CO2 reduction projects (on processes and / or products), from design to credit certification. It then supports clients in all the phases necessary to obtain the credits generated by the projects, certified according to internationally recognised standards.

Through a proprietary platform, ValoreCO2 finally allows customers to put certified carbon credits on the blockchain by creating non-fungible tokens (called VACO2), to exchange them on the market or, if necessary, to offset them in order to reduce the environmental impact.



European Waste-to-Advanced Biofuels Association (EWABA)

EWABA is a Brussels-based association representing the interests of the European waste-based and advanced biofuels industry before EU institutions, national governments, industry, civil society and the media.

EWABA gathers 40+ members active in the majority of EU Member States and in important non-EU markets such as the United Kingdom and Switzerland. The members are producers of biodiesel from used cooking oil, animal fats and other advanced waste feedstocks, waste collectors and technology providers (membership list accessible at <https://www.ewaba.eu/our-members>). EWABA is the communications and dissemination lead of the LIFE Bio-Lubricant project and is therefore responsible to build the project's brand and communications kit, raise awareness of the project activities and establish a wide network that this facilitate the diffusion of project objectives and results.



A&A Fratelli Parodi S.p.a.

Since 1955 A&A Fratelli Parodi S.p.a. is a leader company in the production of vegetable oils, esters, waxes and butters, vegetable-based products that find application in the cosmetic and industrial fields (lubricants, metal-working fluids, plasticizers, natural solvents).

Under its Green Chemistry initiative to introduce new methods and products, A.&A. Fratelli Parodi aims at replacing mineral based products, currently employed in several industrial sectors, with vegetable-based alternatives. The Parodi family founded APG Group in 2015 with the aim of exploiting synergies within the acquired businesses and divided the group in three main divisions: i) chemical, ii) advanced biofuel, and iii) life sciences. A.&A. Fratelli Parodi is the project coordinator of the LIFE Bio-Lubricant project and is responsible for the project management, the Life Cycle Analysis (LCA) study as well as the regeneration of recycled biolubricant bases.



lifebiolubricant.eu

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