ATIEL Position on proposed EU Ecodesign for Sustainable Products Regulation (ESPR)
10th May 2023

ATIEL is the Technical Association of the European Lubricants Industry.

ATIEL welcomes the opportunity to comment on the proposed EU Ecodesign for Sustainable Products Regulation (ESPR).

We would like to take this opportunity to describe to the Commission the unique aspects of lubricants that need to be taken into consideration in any legislative approach. This position paper supports our responses and comments in the questionnaire.

Key Policy considerations

- We support the Commission's ambition to make products on the EU market more sustainable, however we believe that lubricants should be considered low priority for inclusion under the proposed regulations due to their inherent capability to increase energy efficiency of equipment and machinery. Lubricants also have a relatively small volume (4.3 million tonnes in 2017) and market share (30 billion EUR in 2021) in Europe. Moreover, this is split between various segments having very different requirements from engine oils and driveline fluids to hydraulic oils and greases to chain saw oils.
- Further to the consideration that lubricants should be a low priority under ESPR it should also not be included in the ESPR first working plan. This is because lubricants are designed and used to improve energy performance in equipment and machinery.
- Although ATIEL believes that lubricants should not be prioritized, we take the opportunity to contribute to the discussion considering the important role lubricants play in society through recommending some points that could be improved in the JRC report.
- ATIEL would like the Commission to consider lubricants and their use and applications under the ESPR scope, where other stakeholders are involved. If we consider only the production of the lubricant itself, it may be too simplistic and have an adverse effect on the footprint of the whole life cycle. Potential savings from lubricant footprint (manufacturing) are magnitudes lower than the handprint (use phase). Therefore, optimisation of the footprint may affect the handprint in an unpredictable way with potential negative impacts on sustainability.

We believe there are two options for how Ecodesign requirements could be laid out with specific criteria:-tailored to each application type.

- **Across all lubricants**
  - Have a selection of Ecodesign criteria from which manufacturers choose the most appropriate to address the key environmental impacts of each lubricant type.

Or

- **At the level of individual articles (e.g. requirements specifically for "industrial lubricants")**
  - Focus measures on lubricants and their use and applications based on those with the highest potential environmental impact or highest environmental improvement potential.

Lubricants are Key Products that Contribute to Sustainability

Lubricants are used to enhance the energy efficiency and increase the lifetime of products. This is mainly due to their inherent capacity to reduce friction, adhesion, heat, wear, or corrosion and clean machinery when applied to a surface or between two surfaces in relative motion.

Lubricants are almost invisible but yet they are everywhere, playing a key role in increasing the energy efficiency and lifetime of the machinery / equipment they are applied to. Wherever there is a mechanical system, there is a lubricant, or a lubricant has been used to manufacture it.

Priority Under ESPR

We consider that lubricants should be a low priority under ESPR and therefore not included in the ESPR first working plan. This is because lubricants are designed and used to improve energy performance in equipment and machinery. It is estimated that approximately 30% of energy in the world is lost due to friction (https://link.springer.com/article/10.1007/s40544-022-0639-0), making lubricants an intrinsic solution for improving energy efficiency. Lubricants improve performance and durability of a wide range of applications and today's economy is inconceivable without them. When assessing benefits from engine lubricant technologies on potential CO2 emissions, according to GHG Protocol Scope 3 Category 11, fuel economy, energy efficiency and oil drain interval are considered. Further explanation is provided within ATIEL's report on Lubricants' contribution to fuel economy (atiel.eu).

The production of lubricants and metal processing fluids is essential for the transportation and industrial sectors.

- Lubricants help **transport** run efficiently and reduce costs for the consumer and the environment in the form of lower emissions.
- Lubricants are also present in **all manufacturing sectors** – from food processing to metalworking, precision engineering to textiles and clothing – where they contribute to lowering the amount of energy required to carry out industrial processes.
- Lubricants play, now and in the future an essential role in shaping **sustainability** , allowing new types of green energies to emerge and supporting cleaner and more sophisticated applications (for mobility, IT, technology etc.).

Although ATIEL believes that Lubricants should not be prioritised, we take the opportunity to contribute to the discussion considering the important role lubricants play in the society and to address some points that could be improved in the JRC report.

Scope description – Lubricants

Lubricants cover a wide variety of products used in multiple applications these include;

- Construction; hydraulics fluids, compressor fluids, engine oils
- Forestry/Agriculture; chain saw oils, hydraulic fluids, engine oils, gear oils
- Marine; Hydraulic fluids, engine oils, speciality subsea fluids
- Automotive; engine oils, greases, gear oils
- Greases; cover many applications often high or low temp or severe wear applications
- Industrial; Metal working fluids, compressor fluids, hydraulic fluids, turbine oils, immersion fluids

The potential environmental impacts vary between the different products and applications. For example, a key environmental impact for an automotive engine oil could be on climate but a chain saw lubricant could impact soil.

We therefore suggest the following scope description for lubricants:-

Product capable of reducing friction, adhesion, heat, wear or corrosion when applied to a surface or introduced between two surfaces in relative motion or is capable of transmitting mechanical power. Lubricants also assist with cleaning machinery from wear metals and deposits, prolonging their life. Lubricants are typically composed of variable concentrations of base fluids and additives. Base fluids can be fossil based (mineral oils, synthetic oils, re-refined mineral oils) or vegetable oil based and also mixtures of them, mostly mineral-synthetic and vegetable-synthetic, but also a small proportion may be water based.

Environmental Sustainability Aspects of Lubricants

When regulating the sector, the European Commission must consider that lubricants have systemic impacts and that even a small decrease in the efficiency of a lubricant can have a significant influence on both the energy efficiency and the lifetime of the lubricated systems.

Having horizontal sustainability criteria cross all lubricant types is not appropriate due to the diverse range of lubricant types and applications and potential associated environmental impacts.

There are several pieces of legislation / initiatives that are relevant to the lubricants industry:

- Revision of the Industrial Emissions Directive
- Waste Framework Directive (review of the treatment and reuse of waste oils)
- Proposed Regulation to Tackle EU-driven Deforestation and Forest Degradation
- EU Ecolabel for Lubricants
- Safe & Sustainable by Design

ATIEL also recognises the importance of voluntary schemes such as the EU Ecolabel for lubricants that is used in environmentally sensitive areas but cautions against introducing technical criteria which are too narrow and restrictive for lubricants not intended for use in environmentally sensitive areas, or where total loss is not part of the intended use. ATIEL does not wish to see situations arise where EU decisions on ESPR criteria have unintended consequences such as, for example, overly strict limitations on lubricant and fuel ingredients which would make it impossible to formulate high performing lubricants or alternative fuels, as this will prevent the transition outlined in the European Green Deal.

We believe that lubricants are adequately covered by existing requirements and therefore should not be included as a priority for inclusion under ESPR.

ATIEL's comments on the proposed JRC requirements specific to lubricants

ATIEL would like to understand the life cycle impact assessment method used by JRC to evaluate the categories of biodiversity effects and water effects. Furthermore, an exact method for the parameter biodegradability needs to be selected.

Lubricants cover a wide variety of products used in multiple applications. Therefore, different lubricants have the potential to achieve environmental improvements in different product aspects depending on their product type and application. There is no "one size fits all" for lubricants.

Table of JRC proposed requirements for lubricants

LUBRICANTS					
PERFORMANCE REQUIREMENTS	Maximum level of GHG emissions by kg or liter of product	CLIMATE CHANGE	ENERGY USE		
	Minimum percentage of recycled oil in lubricant production	CLIMATE CHANGE	ENERGY USE	MATERIAL EFFICIENCY	LIFETIME EXTENSION
	Design to determine a maximum coefficient on friction in order to increase efficiency			MATERIAL EFFICIENCY	LIFETIME EXTENSION
	Design to ease reuse of lubricants	CLIMATE CHANGE	ENERGY USE	MATERIAL EFFICIENCY	LIFETIME EXTENSION
	Minimum durability of lubricants (under normal conditions of use)	CLIMATE CHANGE	ENERGY USE	MATERIAL EFFICIENCY	LIFETIME EXTENSION
	Minimum percentage of energy use from low carbon sources	CLIMATE CHANGE	ENERGY USE		
INFORMATION REQUIREMENTS	Level of GHG emissions by kg or liter of product	CLIMATE CHANGE	ENERGY USE		
	Percentage of recycled oil in lubricant production	CLIMATE CHANGE	ENERGY USE	MATERIAL EFFICIENCY	LIFETIME EXTENSION
	How to use lubricants efficiently	CLIMATE CHANGE	ENERGY USE	MATERIAL EFFICIENCY	LIFETIME EXTENSION
	Expected lifetime of the product				LIFETIME EXTENSION
	How to correctly dose and use the product	CLIMATE CHANGE	ENERGY USE		LIFETIME EXTENSION
	How often to substitute/replace the product	CLIMATE CHANGE	ENERGY USE		LIFETIME EXTENSION
	How to use the product to avoid its premature substitution/replacement (or of its components)	CLIMATE CHANGE	ENERGY USE		LIFETIME EXTENSION
	Minimum percentage of energy use from low carbon sources	CLIMATE CHANGE	ENERGY USE		

a) **Maximum level of GHG emission by kg or liter of product**

ATIEL would like to understand the methodology behind JRC arriving at the following conclusions:

- The main potential for improvement of lubricants for climate change lies in modern re-refining technologies, thaiscan reduce CO2 emissions by more than 50% as compared to the conventional production of base oil (2).
- In general, vegetable oil has lower energy consumption during potential than mineral and synthetic oils ([2]). For example, it was found that the energy needs

for the raw material extraction/production, processing and use for bio-based oils in aluminium rolling is 9 times smaller than for mineral oil ([19]).

ATIEL believes that having a maximum level of GHG emissions by kg or litre of product, as proposed, is not appropriate for lubricants. Although lubricants are end-use products, they are unique because they allow for improved and more efficient operation of equipment. As an example, when compared to a toy or a chair, that are end-use articles with a defined function, a lubricant is principally used as a means to reduce friction, and as such, its purpose extends to the application in which it is used. Lubricants are not purchased for the sake of owning them, but because they are required for the optimal functioning and longevity of another piece of equipment.
Therefore, for an environmental footprint of a lubricant to be meaningful, it must extend to the application in which it's being used, in addition to the lubricant itself. In practice there could be lubricants with a low environmental footprint, but in use, due to their lower technical performance, would generate higher emissions and higher energy consumption. Setting a performance requirement of maximum level of GHG emissions by kg or litre of product is not an efficient approach for lubricants.

The lubricants industry is currently defining guidelines for sustainability such as how to calculate lubricants' product carbon footprint (PCF) in order to create transparency alongside the value chain and benefit end-users. The industry has formed a "PCF-methodology-task force" consisting of members representing our upstream value chain, such as UEIL, ATIEL, TfS - together for Sustainability and ELGI to name a few. It is our commitment to develop a PCF-methodology harmonized to existing frameworks and necessities in adjacent sectors relevant for the supply chain of lubricants. The Commission should promote and support the self-regulation efforts of the industry, rather than add another layer of rules that may hinder such actions.

Environmental footprint methodology is based on calculated, not measured, "potential impacts" through the whole product life cycle and relative to a delivered function. It does not relate to a quantity e.g. kg or ton. Modelling is applied to input/output flows through the supply chain resulting in an evaluation of the environmental footprint and potential hotspots. The environmental footprint is calculated for a delivered function and not per kg or ton. The boundaries of the environmental footprint have also to be defined to be meaningful. The process assesses the environmental performance of the product placed on the market. A comparison based on emissions per weight or volume is not appropriate.

Lubricants are complex mixtures and thousands of substances can be found in different lubricant formulations, depending on final application. Lubricants formulators are situated downstream in the supply chain. A significant amount of data must be collected to enable the life cycle inventory assessment and is a lengthy process.

b) Minimum percentage of recycled oil in lubricant production

ATIEL supports the requirement for products to containing recycled materials. Currently for lubricants, recovery applies only to base fluids. To enable recycled base fluids to be used in

lubricants they need to have equivalent performance, chemistry and HSE properties to virgin base fluids. There is also concern about the future availability of sufficient recycled base fluids. ATIEL would support regulators creating improved systems for waste oil collection and recycling and promoting the production of re-refined base fluids.

ATIEL suggests taking into consideration the following literature source (ATIEL Analysis of lubricant and industrial EPR systems and waste oil collection scheme in EU MS to support measures to increase collection rates (see enclosed document) to understand the effect of:

1. Lubricants lost in-use e.g. by combustion, significantly limit the amount of collectable oil available for re-refining.
2. It is important to ensure that the effects of uncollected oil are included in any analysis for policy measures otherwise it is easy to overlook the importance of ensuring a high level of collection and the benefits that come from increasing collection rates.
   The companies united in UEIL's Groupement Européen de l'Industrie de la Régénération (GEIR) are already collecting and re-refining waste oil at significant scale. The Commission should focus on promoting and enhancing such efforts. This would also back the EU's objective to become more independent and resilient; supporting oil recycling and re-refining would benefit not only the environment but also would make the EU more resilient by reducing our dependency on oil imports.

c) Design to determine a maximum coefficient of friction in order to increase efficiency

Due to the wide variability and complexity of lubricant applications, each with specific operating conditions, it is unlikely that suitable parameters can be defined for this requirement that will cover all lubricants and application types.

New mobility solutions are a key focus for the future, with alternative methods of transport alongside low carbon energies being explored. To enable this, high performing lubricants will be required. For example, electric cars have different challenges to those with conventional internal combustion engines. They require a lubricant with novel characteristics and improved endurance. In this example, friction coefficient alone will not adequately characterize and compare the lubricants' performance. The application for which it's used must be considered for this purpose.

ATIEL would like clarification about the exact context and scope of this potential measure under ESPR.

d) Design to ease reuse of lubricants

The re-use of lubricants in the absence of a recycling process can be challenging due to their "contamination" during use. Lubricants must comply with strict technical specifications to ensure their performance. However, developments in re-using lubricants via 'reconditioning' are being progressed. Re-use of used oils' e.g. blending, filtration, washing, re-conditioning, co-processing should be considered as a priority for regeneration, over combustion for energy recovery.

The use of high-performance lubricants reduces the need to repair and maintain equipment and also extend its lifespan. By reducing wear and tear and as well cleaning machine parts during use, lubricants can prevent the need for expensive repairs and replacements. This is critical for a sustainable circular economy.

e) Minimum durability of lubricants (under normal conditions of use)

In the case of lubricants, we consider that improving the durability and reliability of the application (equipment where lubricant is needed) is more important than that of the lubricant itself. In this scenario, it may be more energy efficient and beneficial overall to change the lubricant more frequently, to improve and extend the performance of the machine. As explained previously, lubricants should be assessed based on their technical performance and their aging pattern across their complete life cycle, including the final application, to produce an appropriate balance of environmental footprint and energy efficiency. The environmental impacts of lubricant production are negligible compared to impacts during the use phase due to its function (friction reduction leading to consumption reduction).

Setting criteria to "extend the durability of lubricants" may have unintended consequences, for example, using a lubricant beyond its intended drain interval to satisfy a minimum durability criterion, may result in less equipment protection and potentially shorter equipment life span and higher energy consumption.

Process safety has been driving and governing these improvement opportunities for decades. In addition, ATIEL would like to caveat that numerous requirements for lubricant durability already are in place e.g. OEM requirements or on-board monitoring techniques.

f) Minimum percentage of energy use from low carbon sources

This data is available for lubricant manufacturing but not yet available for raw materials.

Conclusion

ATIEL believes that our comments and recommendations contribute to the improvement of the ESPR proposal and trust that the Commission will consider our position and take the necessary actions to address our concerns. We are hopeful that our comments provided perspective on the challenges faced by the lubricants industry in Europe and our respective customers. We also highlight the benefits delivered by lubricants in reducing emissions through increasing energy efficiency and improving equipment durability and reliability. As ATIEL, we are willing and supportive of a collaborative approach with the Commission to progress the changes to the ESPR proposal as recommended above.

3701 - Analysis of lubricant and industrial oil EPR systems and waste oil collection schemes in EU MS to support measures to increase collection rates

Stakeholder survey - Final

Study for the European Commission Date: 07/04/2021

Presentation of the study

Following a Request for Service, the European Commission's Directorate-General for the Environment has commissioned a study to support the assessment of policy options for a revision of the Waste Framework Directive, in particularly as regards measures to increase collection rates of lubricant and industrial oils. The study has been entrusted to a consortium formed by BIO Innovation Service SAS, RDC Environment and VVA.

The study will support the Commission in developing the impact assessment to accompany the proposal for the revision of the Waste Framework Directive in aspects relative to measures to increase waste oil collection and to the operation of EPR systems for industrial and lubricating oils and associated collection schemes. The study includes a consultation of stakeholders and experts at EU and national levels. It will serve to collect additional evidence on existing performance; seek opinions and insights about the problem, the feasibility and possible impacts (economic, social and environmental) of alternative actions (including what are possible actions); gather examples of best practices and views on the subsidiarity of possible actions. The study began in February 2022 and will run for fourteen months.

Policy options related to treatment are not part of the scope of this study (assessed separately by JRC). On treatment, this study therefore focuses on understanding the interactions between collection and treatment i.e.:

- context factors related to treatment that influence collection performance;
- organisational aspects of collection that influence the orientation of waste oils towards recycling or energy recovery (e.g. fuel use, co-incineration, incineration).

Objectives of the survey

This survey intends to:

- **collect information about the organisation of existing management schemes in Europe**
- **understand drivers of the following problems:**
  - Problem 1: Part of generated waste oil is not collected
  - Problem 2: Part of collected waste oil is not treated in line with the waste hierarchy
- **draft policy options and collect preliminary evidence for the impact assessment**

This will be further discussed during a workshop to which you will be invited (invitations coming up soon).

Depending on the results of this survey, we may conduct complementary interviews to clarify or complement some of the input you will have brought. Do you agree to be recontacted as part of this study?

Answers to this survey are expected by April 28th and should be sent to mathilde.lebihan@rdcenvironment.be and tom.huppertz@rdcenvironment.be

State-of-the-art

- **Can you comment on the following draft presentation of the current situation?**

Collection

The Waste Framework Directive (article 21) clearly states that waste oils must be separately collected and not mixed with waste oils of different characteristics. As waste oils are hazardous waste, MS must ensure that their generation, collection, transport and treatment is monitored and subject to specific operating conditions and reporting requirements (articles 17, 18, 19, 25, 34, 35 of the Waste Framework Directive).
Despite these rules, the report "Study to support the Commission in gathering structured information and defining of reporting obligations on waste oils and other hazardous waste" produced by Oeko Institute for the European Commission in 2020 estimates that avoidable losses of waste oils amounts to appr. 18% of collectable waste oils in the EU in 2017 (0.36 million tonnes out of 2 million tonnes of collectable waste oils). Waste oils that are illegally collected is partly disposed of in the environment, with potential significant consequences for water quality and biodiversity at the point of disposal, and partly burned with small burners. These burners are not sized to burn waste lubricants adequately and are not equipped with offgas cleaning, which can result in potential significant consequences on air quality and human health.

Of course this is also a missed opportunity for grasping the environmental benefits that treatment modes higher in the waste hierarchy (notably regeneration) can deliver.
However, in some countries, incentives for waste producers to dispose of their waste appropriately are insufficient (cost, level of service), and current inspections foreseen to sanction illegal practices apparently do not suffice to enforce the Waste Framework Directive.
New policies should contribute to reduce drastically the quantity of waste oils illegally collected in order to redirect these quantities towards legal treatment and regeneration if possible.

Potential drivers of illegal / lack of collection are:

- Lack of collection service offered to waste holders located in remote areas
- Lack of incentive: Expansive collection service for waste holders vs energy savings when waste oils are burned illegally
- Lack of supervision by public authorities
- Lack of awareness about the negative impacts of illegal burning
- Lack of awareness about the potential positive impacts of using recycled (re-refined) base oil in lubricant formulations by replacing virgin base oil, as long as the required quality is met. These can contain potential greenhouse gas emission reductions, quantification of which depend on life cycle assessment methodology.

Treatment

In general, the Waste Framework Directive (WFD) establishes a waste hierarchy that is of general application and sets a preference for waste prevention over preparing for re-use and recycling followed by recovery and disposal. In particular for waste oils, article 21 indicates a priority for regeneration (used here as a synonym of 'recycling') over combustion for energy recovery. MS that have specific requirements of regeneration, are allowed to ban exports for incineration or co-incineration, providing they comply with Regulation on shipments of waste n°1013/2006.

Despite these measures, on average only 61% of waste oils collected separately via legal management routes is regenerated while the rest are converted into fuels, co-incinerated in cement kilns and other installations or incinerated in a hazardous waste incinerator (HWI) – options that are lower in the hierarchy.

On average price paid by re-refiners to waste collectors is higher than price paid by other treatment modes (PFO[1], cement…). Regeneration capacities in the EU overall (1.5 million tonnes) is not the issue, since they significantly exceed what is actually treated by regeneration (1.1 million tonnes) and new re-refineries projects have been identified (e.g. in Portugal). Therefore, re-refining is in general the preferred option.

However, regeneration capacities are unevenly spread over the continent, some countries (e.g. France, Greece) having large overcapacities, while other have no facilities at all. Trade of waste oil inside the EU partly compensates for this situation, for instance although Belgium has no regeneration capacity, 95% of waste oils collected in Belgium are regenerated.

The type of waste oils used by the cement industry encompasses oil sludges, emulsion (oil waste mix with water content), tank bottoms etc. This type of waste oil is generally not suitable for anything else like re-refining. The waste oil that is incinerated in HWI is generally contaminated with PCB or has a high chlorine content and is therefore neither suitable for regeneration nor for cement kilns.

In practice, waste oil is not sent to re-refining due to the following reasons:

- Technical: Waste oil is contaminated by PCB or water content
- Technical: Waste oil is contaminated by chlorides and close-by re-refining plants are not equipped with suitable hydrotreatment
- Market and Regulation: Re-refining plants are too far away from waste holders compared with alternative treatment (cement, PFO, illegal…) and there is insufficient financial support to transport / collection and no regeneration targets ➔ re-refining is not competitive when taking transport cost into account compared with cement kilns, PFO or hazardous waste incineration
- Market and Regulation: Prices for oil are down therefore illegal treatment is competitive and enforcement is too low (in less advanced EU countries only)

Collection

- **Problem 1: Part of waste oil is not (legally) collected**
  - What are the causes / drivers of this problem?
    - In general, the above-mentioned drivers are valid, with the addition of the awareness of positive impact quantification. Also, the awareness of the impact of the quality and properties of the collected waste oil batch on re-refine processing and end use for end products.
    -
  - What policy options related to the organisation of collection would you suggest to improve it?
    - The waste collection system in general needs improving to make it easier and more cost effective to segregate, collect and sell to re-refiners over other routes.
    - For re-refiner the product quality depends a lot on the waste oil quality it feeds in the process. Segregation of different used lubricants would be key for most feasible re-refining.

[1] Processing to fuel oil, also called waste-derived fuel oil

- On the other hand, waste is waste and if it is made more difficult to collect and transport waste oil, there is a danger that less will be treated according to waste hierarchy.
- In Belgium there is a high rate of collection of used oil (~95%, what is the source of this data?). What is the reason and how can this be applied also in other countries ?

Treatment

- **Problem 2: Part of collected waste oil is not treated in line with the waste hierarchy**
  - What are the causes / drivers of this problem?
    - One needs to understand lubricant market dynamics in order to enhance market pull for re-refined base stocks (RRBS). The demand of RRBS is not that high for technical reason and the main reason is variable quality and the need for technical approvals which is expensive for new base stocks. Segregation of used lubricant would be one way to enhance the availability of suitable qualities. Thermal stability, filterability and cleanliness are the key quality requirements that need to be met by re-refined basestocks.
    - Historically there has been also consumer perception that recycled oil is lower quality and this is sometimes carried over to re-refined base oil. Nowadays OEM's (car manufacturers) approve RRBS if the formulation meet their specifications and requirements.
  - What policy options related to the organisation of collection would you suggest to improve it?
    - Awareness of the potential of RRBS could be enhanced. To improve the RBBS use in the market, low impact on environment must be stressed Maybe a dedicated "eco-label" could be developed.
    -
- **Problems drivers**

  Please find below our draft list of problem drivers explaining that only 61% of waste oil is sent to regeneration.
  - What is in your opinion the magnitude of these problem drivers? (Large, medium, small, unsignificant)

Problem driver	Magnitude	Comments / Evidence / Supporting statements
Lack of competitiveness of regeneration vs other treatments due to transport cost of waste oils to regeneration plants in some areas	medium	We think that even bigger problem is that the legislation of waste oil transportation and management is very difficult and complicated.
Lack of competitiveness of regeneration in low oil price contexts	medium	At low oil price the virgin base oil price gets lower but the RRBS does not follow the same mechanism.
Insufficient quality of collected waste oils	large	The feed quality has a big impact on RRBS quality and its usability in formulations
Contracts or capitalistic links between collection operators and energy recovery plants		
Lack of implementation of the waste hierarchy		
Other: please specify		

- **Policy measures**

The following table expresses draft ideas of policy measures that could improve waste oil quality in view of regeneration. Feel free to add measures. Support to regeneration is out of scope of present survey.

  - Could you describe qualitatively the expected impacts of such measures? Please justify qualitatively

	Impact on quantities sent to regeneration	Other impacts	Comments / Position – free field
EU minimum quality criteria on collected waste oils to be sent to regeneration	If collection is made more difficult, the collected volumes may drop		Minimum mandatory standard is a dangerous route. Education is important. Show the collectors how the value of what they collect can be increased - awareness and training should prevail over mandating
EU promotion of cooperation between collectors and regeneration			

in view of setting minimum quality criteria		
Introduce specific criteria to license collectors for waste oil collection	Quantities will be proportionately linked to the number of licenses	Could potentially enhance the correct segregation and collection.
Mandatory collection practices by waste collectors		
Mandatory quality control by waste collectors		
Awareness-raising activities / Training for waste oil collectors		Education is key but need to take care that burden does not become too big and costly for stake holders.
Awareness-raising activities / Training for waste holders		

- **Open remarks / suggestions**

Complementary information

1) Relevant data sources

   www.valorlub.be , www.cyclevia.com

2) Relevant literature

3) Relevant contact details

Thank you for your time and input!

Best regards,

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