



**Waste Lubricant Container
Product Stewardship Scheme**

SUMMARY Report 1 | August 2019

1. Introduction

Single use plastic packaging has created a significant environmental issue globally and highlights the need to properly manage the use of our limited resources by transitioning to a circular economy.

This Report 1 outlines the framework for a voluntary industry-led product stewardship programme that will allow consumers to responsibly dispose of their unwanted lubricant containers instead of sending them to landfill.

It covers the Waste Lubricant Container Working Group's findings on best practice internationally and what is currently happening in New Zealand as well as what the scope of opportunities are for processing on-shore

The proposed programme aims to “close the loop on over 4,500,000 lubricant containers (60 litre and under) which are discarded every year” and contribute to the development of a circular economy in New Zealand by supporting investment in on-shore processing and adding value to the collected material.

2. Background

While designed to meet the purpose of the contents, single use of lubricant containers is inefficient and environmentally damaging. Most lubricant containers are highly recyclable after pre-treatment to remove contaminants.

The lack of sizable end use markets for recycled materials is also a significant barrier.

The industry is therefore focused on creating an environment for market pull through of the collected material and supporting the economy through improved resource use, infrastructure investment and employment opportunities.

The sale and consumption of lubricants in New Zealand is wide spread and covers both rural and urban markets. A large portion of the lubricants sold to market are used in heavy industry including the forestry sector, energy generation and roading and infrastructure.

Packaging in Scope

- All lubricant packaging 60 litre and under
 - high density polyethylene (HDPE)
 - metal
 - grease cartridges (HDPE & non-resinous fibre)
- 200L drums and intermediate bulk containers (IBC's)
 - high density polyethylene (HDPE)
 - metal

Legislation or regulatory controls

- Hazardous Substances and New Organisms Act 1996 (HSNO)
- Resource Management Act 1991 (RMA)
- Health and Safety at Work Act 2015
- Waste Minimisation Act 2008 (WMA)
- Land Transport Rule: Dangerous Goods 2005
- Code of Practice for Management and Handling of Used Oil

NOTE: The code of practice does not specify “controls for transportation of used oil in packages”. This is taken to mean that oil transported in its original or similar container (e.g. 5L, 10L, 20L, 60L plastic container or drums) is not subject to the same code. More investigation is needed to clarify this situation, as it may have an impact on selected collection methodology.

3. Methodology

The Waste Lubricant Container Working Group (WLCWG) was established in mid-2018 and remains open to all industry brands. It currently represents around 60% of lubricants supplied to the New Zealand market.

The group is outcome focused and will be actively involved in the project to ensure the container recycling programme operates under industry best practice with a culture of continuous improvement ensuring efficient and effective product stewardship of lubricant containers.

Stakeholders funding the scheme design include:

- Allied Lubricants Ltd (Mobil)
- Castrol NZ Ltd
- Farmlands Co-Operative Society Ltd (Gulf Oil)
- Oil Intel Ltd (Total Lubricants)
- TransDiesel Ltd (ENI Lubricants)
- Z Energy

Some additional brand owners contributed to the initial discovery phase, these include:

- Aegis Oil Co
- FUCHS Lubricants
- Penrite Oil NZ Ltd
- Valvoline NZ Ltd

The WLCWG set goals they wished to achieve which are:

- Continuous improvement of industry best practice to ensure efficient and cost-effective recycling of lubricant containers.
- Promote necessary and appropriate action and a fair and consistent approach to management of end-of-life lubricant containers
- Engage with key and relevant stakeholders to ensure the end-of-life management of lubricant packaging is organised and funded correctly

All participation is within the boundaries set by the Commerce Act 1986. Strict adherence to the Commerce Act 1986 is of critical importance to the success of WLCWG.

External reports and papers on the waste lubricant packaging situation considered to be of relevance to our market conditions were reviewed to gather background and historical information.

The specific reports considered were:

1. Development of Reprocessing Options and End Markets for Used Oil Containers, Final Report, February 2000. David Shipley on behalf of The Plastics and Chemicals Industry Association Inc. and The Australian Institute of Petroleum
2. Australian Institute of Petroleum Australian Packaging Covenant Action Plan for lubricant oil bottles – July 2010 – June 2013
3. Life Cycle Assessment of Lubricant Oil Plastic Containers in Brazil Maria Clara Oliveira and Alessandra Magrini. Published 10 April 2017
4. Rural Waste Surveys Data Analysis Waikato & Bay of Plenty Waikato Regional Council and Bay of Plenty Regional Council. Published July 2014

The audience and required information are separated into two segments:

1. Industry
2. Consumers and general public

A desktop review supported by written enquiry to various countries who are running schemes that can or do manage lubricant packaging.

4. Findings – New Zealand

Distributor business-2-business relationships

Lubricant distributors play an important role in delivering the product directly to the end user at site. In doing so, they create an opportunity for direct feedback from the customer as to the type and quality of the lubricant supplied, as well as the opportunity to engage on the effective removal of the packaging at its end-of-life.

Collectors and Processors

Currently there are operators who collect used oil and oil packaging from the urban sector from retail outlets and council facilities: Some examples of these are **Rural** – Agrecovery; **Urban** – R.O.S.E (Recovering Oil Saves the Environment).

Demand for processed packaging

Over two days in January and March 2019, out of 22 interested parties, 11 collectors, processors and end market entities presented to the WLCWG, ranging from established businesses through to those with new processes in pilot phase.

COMPANY	PREP	COLLECTOR	PROCESSOR	TECHNOLOGY	END USE OUTPUT
A	Drained	Y	Y	Granulation	To Astron
B	Clean Chip	Y		Resin Production	Plastic Products
C	No	Y		Wash-Granulation	Clean Granulate
D	No	Y		Pyrolysis	Fuel/Oil
E	No	Y		Pyrolysis	Wax/Oil
F	Drained	Y		Wash Plant	Cleaned Material
G	Unclear	Y	Y	Granulation Resin Production	Plastic Products
H	No	Y		Depolymerisation	Fuel/Oil
I	No	Y		Pyrolysis	Wax/Oils/Products
J	No	Y	Y	Wash & Shred	Clean Shred/ Fuel Oil
K	No	Y		Hydrothermal	WTI Crude
L	No	Y		Pyrolysis	Fuel/Oil

Materials Flow Mass Balance

Accounting for material entering and leaving a system (materials flow mass balance) enables accurate forecasting for both financial modelling and capacity requirements for collection and processing per region.

The data on lubricant containers currently discarded (to landfill, illegal dumping, stockpiling or takeback) is weak; this is typical at this point in the design phase of a scheme.

Research undertaken to date (excluding all 200 litre drums and IBCs) indicates that the problem equates to approximately 922 tonnes of plastic and 850,000 grease cartridge units requiring a solution each year. Other considerations:

- Local government landfill responsibilities – s43 and s44 Waste Minimisation Act 2008
- Legacy Lubricant Containers (those already distributed in the market prior to stewardship)
- Orphan Lubricant Containers (those in the market with no brand owner operating)

5. Findings - International

There are several international stewardship programmes focused on this packaging stream. Legislation within these regions influence the effectiveness of schemes by placing responsibility on different aspects or parties. This ranges from ‘polluter pays’ legislation in the European Union through to legal obligations for producers to recycle packaging and submit material flow mass balance reports, and in the case of Korea, spreading responsibility between producers, central and local government.

Current schemes and programmes differ greatly in their scope and effectiveness. Aside from varying government regulations, schemes have some commonalities including the aim to have broad coverage across a country and the challenge of managing free-riders - defined as parties that enjoy the benefits without active participation or contribution.

The variance in the scope and models of the schemes globally, is matched by variance in the management of the schemes. Refer to the full report for further detail of international schemes.

6. Functional requirements – GAP analysis

A World Business Council for Sustainable Development’s framework for effective management systems for product stewardship was adapted to analyse the gaps between New Zealand’s current situation and what would be necessary for a successful product stewardship approach to lubricant packaging. Gap analysis was conducted in the following areas:

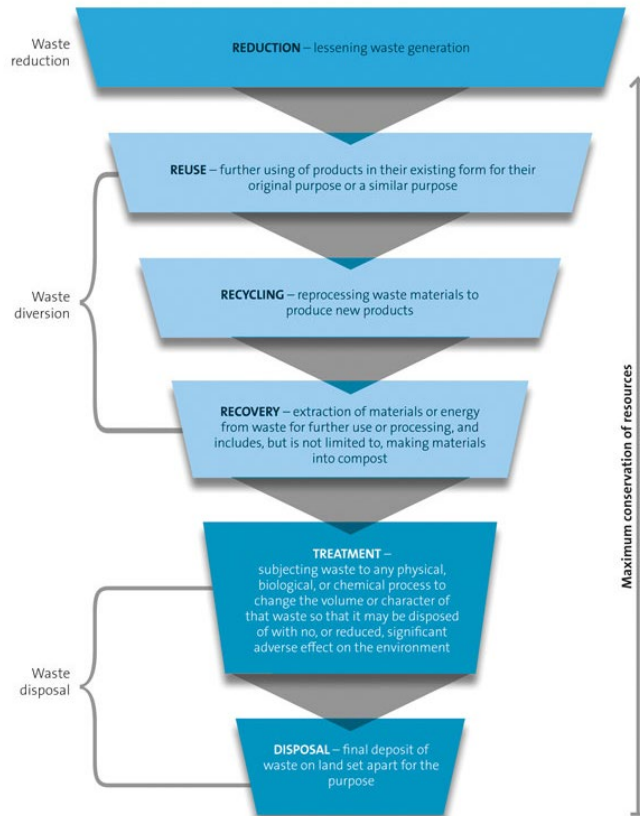
- Managing packaging disposal
- Collect, sort, transport to processor
- Processing
- Recycling
- Research & Development
- Accountability
- Legislation

Gaps or only partial coverage were found across all areas.

7. Material flow and adding value

The Waste Hierarchy is a set of priorities for the efficient use of resources. For this report we have used the Waste hierarchy that is also used by the Ministry for the Environment¹.

This proposed lubricant packaging stewardship scheme will focus on the top four principles of the waste hierarchy: reduction, reuse, recycling and recovery. It will also go beyond the waste hierarchy to include the evolution of a circular economy, allowing waste lubricant containers to be a resource, not waste.



¹ <https://www.mfe.govt.nz/publications/exclusive-economic-zone/guide-product-stewardship-non-priority-products-waste-0>

The **primary aims** for development of the Voluntary Waste Lubricant Container Stewardship programme are to:

- Provide an industry-led solution for the recovery, reuse and recycling of waste lubricant containers through the introduction of a product stewardship scheme
- Minimise environmental harm stemming from improper disposal that creates public nuisance and environmental harm
- Maximise the recovery, recycling and reuse of lubricant containers in New Zealand, reducing the need for virgin materials to be extracted, manufactured and in some cases imported
- Maximise the number of lubricant containers diverted from landfill by providing a simple and easy to access solution for consumers
- Transition the lubricant industry toward a circular economy model
- Minimise the risk of free-riders by being inclusive
- Provide leadership in the circular economy through the provision of grants

Avoidance and reduction - Effective stewardship will also include the supply chain dis-incentivising customers to avoid unnecessary purchases thereby minimising wastage.

Reuse - While some brands do capture some containers/drums to reuse back into a lubricant container it can essentially be discounted as New Zealand does not re-blend or bulk dispatch lubricants. Reusing containers for another product stream may be possible.

Recycling - The options for lubricant container recycling and the financial value of this are largely determined by the level of contamination in the materials supplied.

Material recovery using catalysts - A potential pathway for 'drained' as opposed to 'clean' containers is for the HDPE plastic to be used as a feedstock for **waste to energy technologies**. These are low on the waste hierarchy but attractive for a waste stream which is contaminated and difficult to clean.

Transport - A key aspect of managing the containers at end-of-life is transportation. To create efficiency in transportation the use of a debulking agent such as a shredder, granulator or baler greatly increases the payload and aids in the reduction of overall cost.

8. Product stewardship

Product stewardship (or producer responsibility) is when a producer, brand owner, importer, retailer and consumer accept responsibility for reducing a product's environmental impact. The cost of managing the product through stewardship is paid for by the producer and the consumer of the product.

The Ministry for the Environment encourages voluntary product stewardship schemes under the Waste Minimisation Act 2008 (WMA). Voluntary product stewardship schemes can be put forward for accreditation subject to them meeting the requirements listed in the WMA. For a scheme to be accredited, it must demonstrate that it can minimise waste and achieve reductions in environmental harm.

Accreditation is a form of recognition and a well-marketed scheme may generate brand loyalty, particularly considering increased consumer awareness of environmental issues. While the voluntary approach allows for the implementation of flexible industry schemes, the lack of a regulatory approach can have a negative impact on a scheme by the presence of free-riders.

Under the WMA, the option exists for the Minister to declare a 'priority product', which requires a regulated product stewardship scheme to be put on place. This must be accredited by the government (WMA section 22(1)(a)).

Before a Minister can declare a 'priority product', he/she needs to evaluate the waste stream against a set of criteria which includes, but is not limited to:

- Risk of harm to the environment
- Resource efficiency opportunities
- Whether voluntary measures have been insufficient
- Industry readiness
- Current producers - the waste stream is from a class of products which are currently entering the market (not just orphan or legacy products).

9. Scheme structure

Product stewardship schemes are typically "held in trust" by the Product Stewardship Organisation (PSO). Typically, a Trust Deed for a not-for-profit trust is established, describing the purpose of the trust, how it holds and manages funds on behalf of the fee payers, and how the Trust itself will be governed and oversee responsibilities of its scheme operations.

Scheme management will be undertaken independent of any one of the industry participants and is a function contracted directly with the Product Stewardship Organisation (PSO). Likewise, collection, processing and end use functions will be undertaken independent of any one of the industry participants.

10. Stewardship scheme funding models

Any fee for participation will be set by the PSO not the individual members. It is therefore entirely discretionary and will be the right of the scheme participants to make individual decisions about how they place the fee, where they place the fee, what quantum (if any) of the fee they on-charge and how they recoup any additional costs of participation.

The first step in establishing the funding model was determining where the responsibility for stewardship sits.

Brand Owner First Importer (BOFI) funding

The first option is commonly called the BOFI model, which is where the brand owner or first importer (and in the case of lubricants bulk importer re-packers) who has committed to the scheme pays an advanced disposal fee (ADF) to the PSO for every product in scope that is sold or supplied into the market. The ADF is attached to the packaging not the content and is based on the kg of packaging per product.

Retail / Point of Sale funding

The second option is commonly called the Point of Sale (POS) model, which is where the retailer places the fee on the item at POS, directly charging the consumer. This requires declarations of sale from the retailer and for that reason can be administratively heavy.

Turnover participation charge

The third option is where the PSO charges a fee to participants based on their company turnover. The amount charged covers the cost of administering the scheme, including all its activities.

11. What's next

The next and final report due at the end of 2019 will be based on the decisions made by the WLCWG, as result of discussing Report 1, and will include:

- Operational Interactions (collection points and extent of brand owner B2B involvement on collection)
- Key Programme Information for Participants (how would the scheme impact me?)
- Implementation Next Steps (what needs to be completed prior to collection commencing)
- Draft Not-for-Profit Trust Deed and set up of the PSO
- Draft Tender for Services required to deliver scheme (which could include management, collection, transport, cleaning, processing, end use)

Join Us

If you're a lubricant supplier or distributor in the New Zealand market and not already involved, you haven't missed out on this critical stage. Let us know how you'd like to participate in creating an industry-led solution for the recovery of lubricant containers.

Contact Us

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