

**Contract to Conduct a Feasibility Study and Develop a National
Used Oil Management Plan for Samoa, Solomon Islands, Tonga
and Vanuatu**

Inception Report (Vanuatu)



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John O'Grady and Mary O'Reilly
Araspring Consulting Ltd and WasteWise Consulting



Executive Summary

The overall work covered in this project is funded by the Agence française de Développement (AFD), referred to hereafter as “Committing to Sustainable Waste Actions in the Pacific (SWAP)”, and it aims to improve sanitation, environmental, social, and economic conditions in Pacific Island countries and territories through proper waste management. To achieve this, the overall work focuses on three streams of wastes: used oil, marine debris, disaster wastes and an overarching issue on sustainable financing mechanisms. Eight countries and territories will benefit from this overall project which include Fiji, French Polynesia, New Caledonia, Samoa, Solomon Islands, Tonga, Vanuatu, and Wallis and Futuna.

This particular project focuses exclusively on used oil and four countries have been chosen to benefit, namely Samoa, Solomon Islands, Tonga and Vanuatu. The main outcome of the project is a National Used Oil Management Plan for each country.

Each project will be done in five stages:

- Inception – introductory meetings and desktop study of available information
- Analysis – gathering current data and discussions with stakeholders
- Feasibility Study – preparation of a feasibility study report for consultation
- Draft Used Oil Management Plan – the plan will be based on the feasibility study and consultation
- Final Used Oil Management Plan – finalization of the plan after further consultation and feedback.

This report is the Inception Report for the Vanuatu component of the work. It examines relevant used oil issues such as sources of used oil, inappropriate uses, and methods of collection, storage, and disposal. It then looks at relevant policy and legislation, and examines carefully the previous used oil reports.

The report then looks at relevant public and private organisations, current known management systems and current known opportunities.

Next the inception meeting is discussed. This meeting was held in conjunction with a parallel overlapping process to reform and update the management of chemicals and hazardous wastes in Vanuatu. Used oil is a major hazardous waste stream.

The report concludes with a list of organisations to contact, known government and stakeholder priorities, suggested government tasks and responsibilities, and a detailed work plan.

The following conclusions have been made:

- a) Based on previous reports, there is a large amount of used oil generated in Vanuatu. Based on the earlier figures, the quantity of used oil could be about 300,000 litres or more per year.
- b) Apart from the amount taken back by Pacific Energy and currently sent overseas, there is a significant quantity that is mismanaged. There are even reports of large amounts being disposed of to landfills. Based again on figures in this report, there could be about 150,000 - 200,000 litres of used oil per year that are being mismanaged, including in uses such as timber preservation and weed control that are inappropriate uses for used oil.
- c) The mismanagement is largely due to the fact that options for management are very limited and it is impractical to stop the generation of used oil from a large number of sources.
- d) The AFD/SPREP project to devise a practical and carefully-developed used oil management plan is therefore badly needed.
- e) The strength of the process for developing this plan is that it relies on steady and logical steps that are tested at several stages.
- f) This report focuses on the inception stage where available data is assessed, available resources are evaluated, sources of used oil are clarified, and a way forward is planned.
- g) It is clear that there is already quite a large amount of information available. This information has to be tested and updated, and more data gathered for analysis. Then the feasibility study can be prepared and the used oil management plan developed and finalised after broad consultation.
- h) In Vanuatu there is already a broader process underway with the development of overall chemical and hazardous waste management policies and implementation plans. There is also the prospect, arising from this work, of a new Chemical Safety Act, and amendments to the Waste Management Act 2014 to incorporate effective hazardous waste management. The focused used oil management project will fit well within this overall process. Used oil is clearly a major hazardous waste stream.
- i) The next stage of the used oil work is to gather more information, and carry out additional analysis and discussions with stakeholders. The further information gathering and analysis needs to be based on information pulled together at this inception stage. That will ensure the project moves forward effectively from this point.

Abbreviations

AFD	Agence Française de Développement
BP	British Petroleum
BPS	Bluescope Pacific Steel
CA	Customs Act 2013
COP	Code of Practice
COPSL	Coconut Oil Production Santo Ltd
CSA	Chemical Safety Act
CSI	Chemical Safety Information
DARD	Department of Agriculture and Rural Development
DCIR	Department of Customs and Inland Revenue
DEPC	Department of Environmental Protection and Conservation
DOE	Department of Energy
DWMO	Designated Waste Management Operator
FSA	Farm Support Association
GDP	Gross Domestic Product
GEFPAS	Global Environment Facility - Pacific Alliance for Sustainability
GHS7	Globally Harmonised System Rev 7
HSWA	Health and Safety at Work Act 1986
LMC	Luganville Municipal Council
MALFFB	Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity
MFAT	New Zealand Ministry of Foreign Affairs and Trade
MIPU	Ministry of Infrastructure and Public Utilities
MOH	Ministry of Health
NCPIP	National Chemical Policy and Costed Implementation Plan
NDPL	Neptune Direct Pacific Line
NHWPIP	National Hazardous Waste Policy and Costed Implementation Plan
NIP	National Implementation Plan
NWMS	National Waste Management Strategy
OES	Ocean Environmental Solutions.
PCA	Pollution Control Act 2013
PE	Pacific Energy
PHA	Public Health Act
PIC	Pacific Island Country
PPE	Personal Protective Equipment
POPs	Persistent Organic Pollutants
PVMC	Port Vila Municipal Council
PWD	Public Works Department
PWO	Private Waste Operator
SCL	Salters Cartage Ltd
SLO	State Law Office
SPC	South Pacific Commission

SPREP	Secretariat for the Pacific Regional Environment Programme
SWAP	Committing to Sustainable Waste Actions in the Pacific
TT	Tanktainer
UNEP	United Nations Environment Programme
ULABS	Used Lead Acid Batteries
uPOPs	Unintentional Persistent Organic Pollutants
USP	University of the South Pacific
VBS	Vanuatu Bureau of Standards
VUI	Vanuatu Utilities and Energy
WMA	Waste Management Act

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1.0 AFD Programme to Develop a Used Oil Management Plan

1.1 Project Background

Pacific Island Countries and Territories (PICTs) offer some of the richest areas of biodiversity on the planet. These areas, and their island communities, are under increasing pressure from development and growing human population, and the social and economic pressures associated with this growth.

Increased populations and urbanisation have led to increased product imports, production, and waste generation. Much of the waste generated through these imported products cannot economically be managed due to issues of small and isolated populations; economic volatility; geographical isolation from large economies; limited institutional, financial and human capacity; and inadequacy of infrastructure to capture and process waste materials.

Poor waste management poses risks to the economies of PICTs, as most rely heavily on clean environments for agricultural activities and a vibrant tourism industry, therefore polluted and degraded environments pose a significant threat to PICTs.

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This particular project focuses exclusively on used oil and four countries have been chosen to benefit, namely Samoa, Solomon Islands, Tonga and Vanuatu. The main outcome of the project is a National Used Oil Management Plan for each country. This report focuses on the Vanuatu component of the work.

1.2 National Background

The Republic of Vanuatu comprises of approximately 82 islands lying along the Pacific Ring of Fire. The islands’ topography varies from low coastal plains to rough, mountainous, and heavily forested interiors, with the highest peak rising to

over 1,800 meters on the island of Espiritu Santo. The largest cities are the capital, Port Vila (Island of Efate), and Luganville (Espiritu Santo, the largest island). Coastal areas of most of the islands in Vanuatu are utilized for extensive developments, although smaller islands also have developments.

The two largest islands, Espiritu Santo (or Santo) and Malekula, account for nearly one-half of the total land area. They are volcanic, with sharp mountain peaks, plateaus, and lowlands. The larger islands of the remaining half also are volcanic but are overlaid with limestone formations. Earthquakes frequently occur in Vanuatu, and they often originate at considerable depth and are therefore usually not too destructive.

Vanuatu has a subtropical climate with two distinct seasons - a warm wet season from November to April and a cooler dry season from May to October and Vanuatu's climate varies considerably from year to year. Tropical cyclones are a common occurrence in Vanuatu between November and April.

Vanuatu is listed by the United Nations (UN) as a Least Developed Country and is ranked first on the 2019 World Risk Index.¹ The Vanuatu nation islands are particularly at risk from disasters, being affected by sea-level rise, cyclones and earthquakes, and the nation has limited ability to cope or adapt to these risks.

Prior to 2020 Vanuatu was listed as a Least Developing Country (LDC) due to it being a 'low-income country confronting severe structural impediments to sustainable development. Highly vulnerable to economic and environmental shocks and have low levels of human assets" Vanuatu was recommended for graduation from the LDC category by the UN Committee for Development Policy in 2012, having met the graduation thresholds for the Human Assets Index and income in 2006, 2009 and 2012. The recommendation was approved by the Economic and Social Council in 2012 and by the General Assembly in 2013. The country was granted an extension in 2015, following the severe devastation caused by Cyclone Pam, and the graduation was held on 4 December 2020. Graduation is a positive sign that the country is increasingly able to build resilience and meet its citizens' needs.

The current population (2020) of Vanuatu is estimated at 300,019², approximately 75% of which live in rural villages.³ Though small, the islands hold exceptional cultural and linguistic diversity. There are three official languages: English, French, and Bislama. Bislama is the only language that is understood and spoken by most of Vanuatu's population as a second language. In addition, 113 indigenous languages are still actively

¹ Bündnis Entwicklung Hilft and the United Nations University; Institute for the Environment and Human Security, World Risk Report 2015

² <https://vnso.gov.vu/index.php/en/census-and-surveys/census/2020populationhousingcensus>

³ Vanuatu National Statistics Office, 2014 Statistical Pocket Book

spoken in Vanuatu.⁴ The density of languages per capita is the highest of any nation in the world, with an average of 2,000 speakers per language.

The politics of Vanuatu⁵ take place within the framework of a constitutional democracy. The constitution provides for a representative parliamentary system. The head of the Republic is an elected President. The President, who has primarily ceremonial powers, is elected by a two-thirds majority in an electoral college consisting of members of Parliament and the presidents of Regional Councils. The President serves a 5-year term.

The Prime Minister of Vanuatu is the head of government. The Prime Minister is elected by an absolute majority of the Parliament. Vanuatu has a unicameral 52-member parliament, elected to a four-year term by universal adult suffrage.⁶ The Prime Minister in turn appoints the Council of Ministers, whose number may not exceed a quarter of the number of parliamentary representatives. The Prime Minister and the Council of Ministers constitute the executive government.

Executive power is exercised by the government. Legislative power is vested in both the government and parliament. The Judiciary is independent of the executive and the legislature. These institutions, which date from the country's independence in 1980, exist alongside traditional systems of leadership and justice upheld by community chiefs. The national Council of Chiefs, called the *Malvatu Mauri* and elected by district councils of chiefs, advises the government on all matters concerning ni-Vanuatu culture and language.

Vanuatu's economy is founded largely on agriculture and services. In addition, the Vanuatu government has maintained the country's pre-independence status as a tax haven and international financial centre. Vanuatu also sells citizenship which accounts for a significant part of the country's revenue.⁷

Based on GDP estimates at 2012 prices, agriculture, fishing, and forestry account for around 22.5% of output and 65% of the labour force, with crop production dominating. Industry accounts for only around 9.5% of output and 5% of employment with the major contributors being construction, manufacturing, and electricity and water supply. The service sector accounts for nearly 68% of output and 30% of employment with the major contributors being public administration, retail trade, finance and insurance, transport, real estate, and accommodation and food services.

⁴ <http://www.vanuatutourism.com/export/sites/en/VTO/en/culture.culture.html>

⁵ http://en.wikipedia.org/wiki/Politics_of_Vanuatu

⁶ https://www.dfat.gov.au/geo/vanuatu/vanuatu_country_brief

⁷ https://www.theguardian.com/world/2020/aug/21/surge_in_passport_sales_delivers_vanuatu_a_record_budget_surplus

The service sector relates primarily to tourism. Most residents live in rural areas and rely on agricultural production for their subsistence and for generating cash incomes. Vanuatu’s population is young and youth unemployment is a growing problem. Vanuatu’s geographic and demographic structure poses obstacles to efficient development.

The Vanuatu population is scattered over about 80 widely distributed islands, of which 64 have residents.⁸ This makes travel difficult and costly. The distance from the southernmost to northernmost islands is over 800 km. About 77% of the population lives in rural areas, and 55% live on islands with no significant urban centres. Just under a quarter of the population lives in the two urban areas of Port Vila and Luganville, and these are the only two areas with any significant formal urban services. The proportion of people living in urban areas increased between census dates: from 21.5% in 1999 to 24.4% in 2009.⁹

1.3 Project Deliverables

The overall project deliverables are set out in Table 1 below:

Table 1: Project Deliverables

Deliverables	Task	Due Date
1. Inception Meeting	1.1 Participate in an initial meeting with the SWAP PMU organised by SPREP	Within two weeks of the project commencement on 10 January 2022
2. Inception Report	2.1 Host an Inception Workshop with National stakeholders 2.2 Undertake a detailed desktop review of existing legislation, policy, strategy and plans that address waste management, institutional frameworks, and other enabling frameworks relevant to waste management	Within 1 month following Inception meeting
3. Analysis Report	3.1 Undertake an analysis of used oil production and existing used oil collection, storage, treatment, disposal and export services 3.2 Analyse findings against government and stakeholder priorities	Within 2 months following approval of the Inception Report

⁸ Government of Vanuatu (2009). *National Census 2009*

⁹ Government of Vanuatu (2015) *Vanuatu Infrastructure Strategic Investment Plan 2015-2024* PRIF

Deliverables	Task	Due Date
4. Feasibility Study Report	4.1 Development of a feasibility study based on all the information gathered and data obtained through the consultations, interviews, and investigations 4.2 Feasibility Study Presentation	Within 2 months following approval of the Analysis Report
5. Draft National Used Oil Management Plans	5.1 Compile all the gathered information to develop a Draft National Used Oil Management Plan 5.2 National Stakeholder Presentation	Within 2 months following approval of the Feasibility Study Report
6. National Used Oil Management Plans	6.1 Final national used Oil Management Plans	Within 1 month following approval of the Draft National Used Oil Management Plans

The first activity of the project was the overall Inception Meeting, which was held on 21 January 2022. Subsequent to this meeting, and in terms of the contract, it was necessary to:

- Hold an initial meeting with key government stakeholders
- Hold an inception workshop with national stakeholders
- Carry out a detailed desktop review

At the inception meeting it was agreed that the initial meeting with the key government stakeholders and the inception workshop could be combined, although some further meetings with key government stakeholders may still be needed, perhaps on an individual basis. In Vanuatu, this approach was taken.

The detailed desktop review is required to cover:

- Review of existing legislation relevant to used oil management. This will mainly include a review of waste management and pollution legislation, but there may be other relevant legislation, including legislation defining the roles and responsibilities of local government.
- Review of policy, strategy and planning documents relevant to used oil management. This will include such documents that cover waste management and pollution.
- A description of government departments and ministries, and other organisations, involved directly or indirectly, in used oil management.

- Current known systems and uses in place for managing used oil, including any exports that have taken place recently. These systems may be environmentally unacceptable but they still should be described here.
- Any known opportunities for used oil management.
- Known government and stakeholder priorities for national used oil management. These may be able to be deduced from policy, strategy and planning documents.
- Suggested tasks and responsibilities of the government (central and local) necessary to ensure project success.
- Detailed work-plan of the activities of the consultants (including a timeline) to meet consultancy objectives.

The desktop study was not required to involve any external data gathering but simply involved collecting together all the available information, and including that information in the Inception Report. Gaps in the information will be filled as much as possible by the next stage of work – the Analysis Stage coming up next.

In the report below, Section 2 below deals with relevant used oil issues that need to be considered in the development of the Used Oil Management Plan. This section also describes the difficulties that may be experienced in relation to these issues and possible ways to deal with these difficulties.

Sections 3-13 below deal with the issues raised by the detailed desktop review bullet points above.

Section 14 covers conclusions arising from this report.

Some photographic examples of the problems that can arise from poor used oil mismanagement are presented in Appendix 1.

Appendix 2 contains Model Used Oil Regulations, and Appendix 3 contains a proposed list of questions.

2.0 Relevant Used Oil Issues

2.1 Important Factors to Consider

The following important factors will be taken into consideration:

- There are a number of issues that impact on environmentally sustainable management of used oil in Pacific Island countries. A fundamental for every country is to have an effective collection and storage system that is accessible and simple to use by the population.
- Educating and guiding is crucial to eliminate bad handling and disposal practices such as dumping oil in the ground or waterways.
- Facilities for the safe storage of used oil should also provide for other wastes which may arrive with the oil, such as oil filters and car batteries. These are potentially valuable for recycling and should be collected as part of the overall recycling programme.
- If overseas export of waste is being considered or undertaken, it should be noted that shipping services and shipping routes vary from country to country. There are currently three companies providing services to the Pacific Island countries, Matson, NPD L and Swires. However different companies service different countries and there is no one company that can provide a common service to all PIC's. New Zealand is a common destination and for this reason many PICs have traditionally sent their used oil to New Zealand for recycling. Swires operates the Moana Taka Programme which offers countries free shipping for wastes, but this only assists countries that are on the Swires routes.
- As a Waigani or Basel transboundary permit is required for shipments, the objective is to find the most direct route to the disposal location, as then less transit permits are required.
- A barrier to in-country reprocessing is that it is only viable if there is an end user who can take the refined product. Most diesel and other internal combustion engine manufacturers will not warrant their engines unless the correct fuels are used, and this means that refined used oil is generally used for heating, such as in furnaces and steam boilers. Therefore although offshore disposal/recycling may not be regarded by some as best practice, the reality is that shipping to a facility that can recycle and re-use the end product may be the most cost effective and sustainable option.
- The biggest issue for most of the smaller countries is often funding. In-country reprocessing is generally not feasible due to economies of scale, but the cost of shipping to an overseas facility is a major barrier. This causes delays and consequent pressure on in-country storage, which often leads to bad

environmental outcomes. In the medium term the priorities may be to foster effective in country oil management and consolidation systems, promote education to eliminate bad practices, and support countries to ship the used oil to suitable recycling facilities.

All the above factors will be considered when the work is being carried out.

2.2 Used Oil Sources

Used oil can originate from many sources and all sources will be explored. These sources include:

- Engine oil – typically includes crankcase oils from gasoline, diesel and LPG/CNG engines (often the main sources)
- Brake fluids
- Gear oils
- Transmission fluids
- Hydraulic oils and fluids
- Compressor oils
- Refrigeration oils
- Industrial process oils
- Electrical insulating oil (Care must be taken to exclude oil likely to contain PCBs)
- Metalworking fluids and oils
- Heat transfer oils
- Machining oils
- Ship's slops, bilge water, tank cleanings produced by vessels during normal shipboard operations
- Bottom clean-out waste from virgin fuel storage tanks, virgin fuel oil spill clean-ups, or other oil

2.3 Sources of Used Oil Contamination

It is important to note that some potential components of used oil should be excluded, mainly for safety reasons – flammability and toxicity. Checks are needed to ensure there is no risk of these items being added. These potential components include:

- Petroleum distillates used as solvents, such as turpentine, kerosene, parts-washing solvents
- Petrol and/or diesel (including biofuels) – including mixtures from refueling errors

- Antifreeze, radiator flushing, or other inhibitor packages
- Oils derived from animal or vegetable fats and oils – including those used as a lubricant
- Paint and paint brush washings
- Chlorinated oil or solvents
- Any virgin or used oil which may contain PCBs (> 5 mg/kg)
- Soluble cutting fluids

The occurrence of such items will, however, be noted as other hazardous waste disposal solutions will be needed.

It will sometimes be difficult to determine the sources and composition of used oil generated and used oil stockpiled. Sources and composition will need to be double-checked through questioning all parties involved, and care will be needed to observe contamination from undesirable sources.

2.4 Inappropriate Uses of Used Oil

There are several methods for disposing of used oil that are inappropriate and examples of these need to be noted:

- disposal on the ground, or into watercourses, sewers or drainage systems
- burial
- using used oil for dust control, weed abatement, vegetation control, timber preservation by painting, staining or dipping,
- pest control or as a carrier fluid for agrichemicals (pesticides or herbicides)
- use as a marker, e.g. on playing fields
- placing used oil in rubbish bins to be collected as part of household waste
- open-air burning
- combustion in, for example, kerosene burners
- any other practices, in which the used oil may cause contamination of the ground and groundwater, migrate to watercourses, contaminate air or have negative impacts on humans, plants, animals or other organisms.

2.5 Methods of Collection and Storage

Methods of collection and storage need to be examined and a determination will be made as to the suitability of such storage. For example:

- Where IBCs (intermediate bulk containers) are used for the collection, storage and transportation of used oil, these must be sound and of good quality. They should not be left in the sun as UV light will break them down.
- Steel drums will corrode and leak, especially where the used oil is mixed with water.
- Plastic drums will deteriorate, especially if left in the sun.
- Bulk storage facilities must be maintained in good condition, regularly inspected and have good secondary containment. They need proper spill control equipment, fire extinguishers and emergency response procedures in place.
- Long term storage may result in the accumulation of sludges that are difficult to remove by pumping.

It should be noted, however, that inspection of storage facilities may be difficult, due to possible burials and access problems, including access into tanks to assess sludge levels and characteristics.

It may also be hard to assess the suitability of secondary containment, if it has been provided. It is sometimes difficult to assess whether the secondary containment is likely to leak, although a careful inspection will be useful.

2.6 Disposal Facilities

Any local disposal facilities will need to be audited and assessed. There is at least one in Vanuatu, namely the one that has just been established by Ocean Environmental Solutions. This facility is described in Section 8.2 below.

Disposal facilities, even if overseas, need to be assessed if possible, to ensure they are being operated properly. Auditing of these facilities, to the extent practicable, should be carried out. For example an earlier SPREP project included an audit of the steel plant in Suva that was receiving used oil for disposal.

Basel / Waigani documentation needs to be checked and Basel / Waigani Government agencies in receiving countries may need to be contacted, as well as the processing plants receiving the used oil. Some are well known, such as BlueScope Pacific Steel in Fiji and Salters Cartage in New Zealand.

3.0 Relevant Policy and Legislation

3.1 Waste Management Act 2014

The Waste Management Act commenced in June 2014 and provides for the protection of the environment by encouraging effective waste services and operations. It establishes specific responsibilities for identifying waste, collecting waste, disposing of waste, planning and reporting on waste management and managing hazardous waste. These responsibilities are shared between DEPC, municipal and provincial councils, the Ministry of Health and Biosecurity Vanuatu. Waste management responsibilities are assigned as follows in the Act:

- The Department is responsible for implementing International Conventions and Treaties that relate to the management of hazardous waste;
- A waste management operator designated under section 19 is responsible for providing waste collection services to residential and commercial premises;
- A waste dump or a waste disposal site is to be managed by each relevant Municipal Council or Provincial Government Councillor the Ministry of Health or the Department of Biosecurity;
- The collection and disposal of waste that cannot be managed by the normal waste collection services to residential and commercial premises, is to be undertaken in accordance with any requirements imposed from by the Director;
- The Ministry of Health has the responsibility to collect and dispose of all medical waste and on the request of the Director, is to prepare and submit a report relating to any aspect of waste management under its responsibility; and
- The Department of Biosecurity has the function to collect and dispose of waste that is designated under any written law to be biosecurity waste and on the request of the Director, and to prepare and submit a report relating to any aspect of waste management under its responsibility.

3.2 Environmental Protection and Conservation Act (2002)

The Environmental Protection and Conservation Act is the overarching environmental law of Vanuatu. It provides for the conservation, sustainable development and management of the environment and covers three main areas:

- **Administration** – Formally establishing the Department of Environmental Protection and Conservation and outlining its roles and responsibilities.
- **Environmental Impact Assessment** – Providing a process for identifying and managing the impacts of a proposed project on the environment.
- **Biodiversity** – Recognising Community Conservation Areas and giving direction to communities considering registering their conservation areas at the national level; and providing for bioprospecting (research).

The Act originally started as the Environmental Management and Conservation Act in 2002 but its name was changed in 2011. The law today is made up of the:

- Environmental Management and Conservation Act No. 12 of 2002
- Environmental Management and Conservation (Amendment) in the Statute Law (Miscellaneous) Provisions Act No. 2 of 2010
- Environmental Management and Conservation (Amendment) Act No. 28 of 2010

The Director of the Environment Department (DEPC) is responsible for implementation of the provisions of the Act. Sections of the Environmental Conservation and Management Act provide the Minister with the power to regulate (amongst other things) the environmental effects of importation and transportation of hazardous substances; pests and weeds; waste management; air and water pollution. These powers provide opportunities to strengthen the Environment Department's capacity to monitor the environment for industrial waste, pollution, and other chemicals or biological agents in relation to management of pests and weeds.

3.3 Pollution Control Act (2013)

The Pollution (Control) Act No. 10 of 2013 commenced in June 2014 and aims to control the discharge and emission of pollution in Vanuatu. Importantly, the Act creates a framework for DEPC to develop and introduce pollution standards and permit systems and allows the Department to take compliance action when pollution is occurring.

3.4 Public Health Act (1994)

This Act makes general provisions for public health, including through regulating waste management, sanitation, and prohibiting water pollution. Part 8 of the 2006 consolidation, in particular, dealt with sanitation and waste disposal, with specific provisions on littering and inappropriate waste disposal (ss 65, 66 and 72). Part 8 was substantially amended by the 2018 amending legislation and the provisions on littering repealed.

Many provisions now relate to sewage sanitation systems. More relevant are ss 73H, 73I and 73J on the provision of rubbish bins and interference with rubbish bins and tips. Healthcare waste is not specifically identified in the legislation. Other provisions relating to inappropriate waste disposal and litter management now fall under the Waste Management Act 2014.

3.5 Luganville Municipal Council Used Oil By-Law

Luganville Municipal Council has drafted a 'Used Oil Management By-Law, No XX 2019 regulating the storage treatment and disposal of used oil, which is still waiting to be gazetted by the State Law Office.

4.0 Policy, Strategy and Planning Documents

4.1 National Waste Management and Pollution Control Strategy 2016 – 2020

The Strategy addresses used oil as a waste stream and through the support of SPREP, studies have been completed looking at generation rates and current and potential recyclability. These statistics however are from 2013/2014. The strategy also sets a goal of 2018 for a used oil stewardship system to be established and enforced. Unfortunately, this is yet to be completed.

The goal of the strategy is an environmentally sustainable Vanuatu, in which all types of wastes generated are reduced, collected, reused, recycled and treated by environmentally sound technologies suited to local conditions and waste going to landfill is minimized to the lowest possible amount.

The strategy covers all sources of solid wastes (residential, commercial, institutional, industrial, disaster waste, medical waste, e-waste and scrap metal, and quarantine wastes), hazardous wastes (such as used oil) and liquid wastes (mainly pollutants discharge to water sources – treated wastewater discharges) and gaseous wastes (mainly emissions from vehicles and other air pollution sources of emission).

The following wastes are not covered in this strategy:

- Liquid wastes (such as raw sewage and septic sludge).
- Gaseous wastes
- Hazardous wastes (such as Persistent Organic Pollutants, POPs)

4.2 National Environmental Policy and Implementation Plan (2016-2030)

The Vanuatu National Environment Policy and Implementation Plan 2016–2030 (NEPIP) is an overarching policy for the sustainable conservation, development and management of the environment of Vanuatu. Policy objectives include reduced waste and pollution through effective waste management and pollution control including the identification and development of chemical storage and disposal facilities.

4.3 Waste Management Plans

The Municipal and Provincial Waste Management Plans acknowledge used oil under the broader topic of Hazardous Waste but aside from Luganville Municipality's specific Used Oil By-law mentioned above there are no specific actions targeting this waste stream within the Plans.

4.4 Vanuatu National Implementation Plan for Persistent Organic Pollutants

This 2021 Plan sets out two goals for used oil, the first in the Contaminated Sites Action Plan to ‘Maintain and monitor used oil recycling activities and ensure regular shipment offshore of collected used oil for recycling’ and in the Public Awareness Information and Training Action Plan to ‘Conduct regular awareness campaigns on used oil recycling’.

4.5 National Hazardous Substances Policy and Costed Implementation Plan (NHWPIP)

4.5.1 Background

This report was prepared for the DEPC as a parallel report to the National Chemicals Policy and Implementation Plan” (NCPIP). These reports, together, form the first part of a UNEP-funded Special Programme project for the Vanuatu “institutional strengthening of chemical management and their wastes”.

The second part of the project has involved a review of existing legislation and the preparation of drafting instructions for new legislation. This work is almost complete and the draft instructions now need to be turned into legislation, followed by the implementation of the NCPIP and the NHWPIP.

The reforms proposed by the NCPIP are planned to be incorporated into a new Chemical Safety Act (CSA). The reforms posed by the NHWPIP are planned to be incorporated into amendments to the Waste Management Act 2014 (WMA).

Used Oil was seen by the NHWPIP as one hazardous waste stream among several, that all need to be managed in a unified way.

4.5.2 Common Hazardous Wastes in Vanuatu

Common hazardous wastes identified by the NHWPIP in Vanuatu that can be directly related to their chemical and chemical product origins are used oil, expired laboratory chemicals, Persistent Organic Pollutant (POPs) chemical wastes, solvent and paint waste, and a variety of industrial wastes, including acid and alkali waste, mercury wastes and chemicals that are no longer required, including expired and unwanted pesticides.

Examples of common hazardous wastes in Vanuatu that are indirectly related to their chemical and chemical product origins are used batteries, including lead-acid batteries, Ni-Cd batteries and lithium batteries, many varieties of e-waste, and plastic waste.

There is also medical waste and asbestos waste.

4.5.3 General Principles for Managing Hazardous Wastes

The NHWPIP concluded that the following general principles should govern the new system for managing hazardous wastes in Vanuatu:

- a. Simplicity – A complicated system will not be used and all the effort will be wasted.
- b. Usefulness – The system should be perceived as useful so that hazardous waste generators turn to it because it helps them.
- c. Inclusiveness - All hazardous wastes should be managed by the system, except for radioactive wastes. Radioactive wastes are a special class of hazardous waste that require management under separate legislation.
- d. Adherence to the waste hierarchy and promotion of cleaner production.
- e. Environmental protection – hazardous wastes should be contained and not escape into the environment.

4.5.4 Overlaps with the NCPIP

There is considerable overlap with the arrangements proposed for managing hazardous wastes in the NHWPIP and with managing chemicals in the NCPIP and the proposed Chemical Safety Act. The following are important direct overlaps.

- a. Hazardous wastes that are not contaminated and retain their identity as individual chemicals or products should be subject directly to the provisions of the Chemical Safety Act.
- b. Hazardous wastes that are mixtures of chemicals or products, also need to be characterized and assigned Globally Harmonised System Rev 7 (GHS7) classifications and management requirements.
- c. There should be a reliance on existing resource documents (such as Codes of Practice and Standards) available internationally.
- d. A new Chemical Safety Information (CSI) website is proposed for hazardous substances and this website can also cover hazardous wastes.

4.5.5 Policy Features for Managing Hazardous Waste, including Used Oil

The following are new policy features that are proposed by the NHWPIP for managing hazardous wastes:

- a. Ownership and responsibility concepts for waste need to be clarified including hazardous and non-hazardous waste. Ownership of waste is to be retained by the generator unless transferred under contract. Responsibility is borne by whoever has control at any particular time, and can be shared at any one time.
- b. Assignment of waste as either low hazard, medium hazard or high hazard will be required. These terms are described in the NCPIP and are quite specific in terms of distinguishing the different levels of hazard.
- c. Designated Waste Management Operators (DWMOs) (as defined in the WMA) are to characterize chemical wastes. Where wastes are a mixture of chemicals or products

they are to be characterized, including assigning GHS7 classifications and management requirements. A guidance document will be prepared to assist DWMOs.

- d. Contracting of Private Waste Operators to store and transport waste once it has been characterized by a DWMO in accordance with the waste characterization and the assigned GHS classification. This will include special secure storage areas for CSA medium hazard or CSA high hazard waste.
- e. All exports of hazardous wastes are to be carried out in full accordance with the requirements of either the Basel Convention or Waigani Convention as appropriate.
- f. There needs to be a duty imposed on waste generators and waste service providers to protect human health and the environment.
- g. Special provisions are required for certain special classes of wastes, including e-wastes, used oil, asbestos wastes, old batteries and end-of-life vehicles. These requirements can be managed by Codes of Practice.
- h. Product stewardship schemes are required for some waste streams e.g. used oil, e-waste, batteries and end-of-life vehicles.

4.5.6 Infrastructure Improvements

The NHWPIP proposed that some improvements in infrastructure will be required, including:

- a. All hazardous wastes are to be managed (stored and transported) in accordance with the requirements pertaining to their GHS7 classifications.
- b. Solid hazardous wastes with minor hazards (CSA low hazard) can be landfilled.
- c. Liquid hazardous wastes with minor hazards (CSA low hazard) can be collected and discharged to suitable treatment systems, none of which currently exist. The facilities for the reception of liquid waste at the Bouffa landfill needs to be upgraded considerably.
- d. Treatment of wastes is required for CSA medium hazard and CSA high hazard waste to bring them down to CSA low hazard or alternatively they will be exported for treatment and disposal. Therefore treatment, facilities will need to be established where that is a practical option.
- e. Special secure storage areas are required for hazardous wastes awaiting export.

4.5.7 Additional Elements of the New System

The following further elements should be part of the overall approach:

- a. The system should not place too much of a load on government officials as then inefficiencies and delays will occur, due to overwork.
- b. The system should not impose too much cost on users as it will then be by-passed and evaded. It is logical to have user-pay charges but they should not be onerous.
- c. There needs to be penalties and enforcement but emphasis should be placed on education and cooperation.

- d. The legislation can be largely general and simple rather than prescriptive. Detailed and prescriptive information can be placed in support documents. This is an extension of the “simplicity” principle.
- e. The new elements of the system will need to be phased in, probably over a two year period so everyone has time to learn, understand and assimilate the new ideas and requirements
- f. Extensive training will be required.

4.5.8 Backup Support Matters

In addition to all the above, the following back-up matters will need to be attended to:

- a. Special provisions are to be prepared by end of 2024 for the following waste streams, by way of Codes of Practice:
 - Used oil
 - Used batteries, including used lead-acid batteries (ULABs), Ni-Cd batteries and lithium batteries
 - E-Waste
 - Plastic waste
 - Asbestos waste
 - Medical waste
 - Expired laboratory chemicals
 - End of life vehicles
 - POPs chemical wastes
 - Mercury wastes
 - Other chemical waste besides POPs wastes
 - Solvent and paint waste
 - Industrial wastes, including acid and alkali waste, expired chemicals or chemicals that are no longer required.
 - Expired pesticides
- b. A Code of Practice is also needed to explain the new management arrangements for generators, transporters and receivers of wastes.
- c. Product stewardship schemes are to be developed for used oil, e-waste, batteries and end-of-life vehicles, by the end of 2024.
- d. Legislative provisions will also be made to incorporate the Basel and Waigani Conventions into Vanuatu legislation.

4.5.9 Additional Comments Relating to Used Oil

Pacific Energy run an effective used oil take-back scheme throughout the Pacific, including Vanuatu. This is based on the need to do this under French Law, and they have extended it throughout the Pacific in the numerous locations where they operate. Prior to the Covid 19 Pandemic, Pacific Energy sent all the used oil they collected to the Copra Plant (COPSL) in Espiritu Santo.

They are currently exporting used oil to Saudi Arabia in flexi-tanks inside 20ft shipping containers, as COPSL has dramatically reduced production and no longer accepts used oil. Pacific Energy Vanuatu recycles between 60,000 - 80,000 litres of used oil per year. (They sell about 200,000 litres per year).

No other company importing lubricating and other oils into Vanuatu has a take-back policy for used oil.

5.0 Previous Used Oil Reports

5.1 Used Oil Audit 2013¹⁰

5.1.1 Background

This report was commissioned by AFD and SPREP and carried out by Bruce Graham and John O’Grady under Contract Environmental Ltd. This work was done in 2013. Bruce Graham visited Vanuatu and collected data from a wide range of sources. All practicable efforts were made to verify those sources.

5.1.2 Oil Imports

Import data was obtained from the Vanuatu Customs Department and is summarised below. Table 1 lists the annual imports by calendar year for lubricating oils, hydraulic fluids (including brake and transmission fluids) and diesel, while Table 2 provides a breakdown of the lubricating oil import data by importer.

Table 1: Oil and Diesel Imports for Vanuatu, 2009-2011

	Annual Imports for 2009, Kg	Annual Imports for 2010, Kg	Annual Imports for 2011, Kg	Total Imports over 3 years, Kg	3 year avge, Kg/year
Lubricating oils	737,664	572,382	625,058	1935104	645,034
Hydraulic fluids	16,979	10,262	4,511	31,752	10,584
Diesel	28,332,730	30,492,3976	30,686.150	89,511,276	29,837,092

As shown in Table 1, the annual average imports of lubricating oils and hydraulic fluids combined were just over 650,000 kg per year, or about 787,000 litres, assuming a density of 0.825, while the average annual diesel imports were almost 30,000 tonnes.

The distribution of the lubricating oil imports between different importers, as shown in Table 2, is based on the total imports over three years. Altogether, the eleven importers listed in the table accounted for 88.3% of the total, while the remaining 11.7% of imports were distributed across about 75 other companies.

As indicated in Table 2, Pacific Petroleum was the dominant importer of lubricating oil over the three-year period. However their imports may have declined in 2012, because of the increasing market penetration by Trade Tools Direct. The 5.5% market share

¹⁰ Consultancy for In-Country Used Oil Audit May 2013, Prepared for AFD/SPREP by Contract Environmental Ltd

shown in the Table 2 was only based on their imports in 2011, which was when they started importing. Their estimate for 2013 was that they were then importing similar quantities to Pacific Petroleum.

It should be noted that Pacific Petroleum (Pacific Petroleum and Services) is part of the Pacific Energy Group and acquired the Shell assets of French Polynesia, New Caledonia and Vanuatu in 2006. They then acquired Mobil Vanuatu in 2007 when the first Pacific Brand service station was opened in Vanuatu. Pacific Petroleum now trades in Vanuatu as Pacific Energy.¹¹

British Petroleum (BP) was the other significant importer over the three year period. However Pacific Energy acquired the Vanuatu assets of BP in May 2010.

Table 2: Lubricating Oil Imports by Individual Importers, 2009-2011 Combined

Importer	Total Imports, Kg	% Share of Total
Pacific Petroleum	1,290,638	66.7%
Trade Tools Direct	107,213	5.5%
British Petroleum (BP)	85,708	4.4%
Millennium Challenge	38,383	2.0%
Carpenter Motors	37,015	1.9%
Vanuatu Government	34,865	1.8%
Auto Right Spare Parts	32,238	1.7%
Santo Hardware	30,134	1.6%
King Motors	22,910	1.2%
Phillip Foster	20,499	1.1%
Flame Tree	8,800	0.5%

The total number of oil and fuel filters imported over the three year period (2009 – 2011) was 62,002 units, or an average of 22,067 per year. It was not possible to distinguish between oil and fuel filters because they were covered under the same Customs code. However, oil filters most likely accounted for the bulk of these imports

¹¹ <https://p.energy/profil-de-lentreprise/thumbnaill/who-are-we/?lang=en>

because they would have normally been changed much more frequently than fuel filters.

The following was noted:

“It is interesting to compare the 2009-2011 Customs’ data with the individual import figures provided by the two key players. Pacific Petroleum indicated that their lube oil sales over the previous 12 month period (i.e. October 2011 to September 2012) had been approximately 280,000 litres for Efate and 100,000 litres for Espiritu Santo. This is down by about 25% on their annual average imports over the 2009 to 2011 calendar years.”

By comparison Trade Tools Direct stated that over the last year or so they had recorded sales volumes of 25,000 to 30,000 litres per month, or about 300,000 to 350,000 litres per year. This represents more than double their import volume in the 2011 calendar year (125,000 litres per year), and is consistent with their apparent current position as the main supplier to small volume users.”

5.1.3 Used Oil Recovery

Pacific Petroleum in 2013 had a virtual monopoly on the supply of petroleum-based fuels in Vanuatu and they also appeared to have the majority share of major users of lubricating oil. Their largest customer was UNELCO, which operated power stations on the main islands of Efate and Santo. Other large users included the two main vehicle distributors (ASCO Motors, Carpenter Motors), and other vehicle and boat servicing companies. There were no large industrial users.

Pacific Petroleum operated a used oil take-back scheme for their customers (but only for their customers), and they were then recovering up to around 125,000 litres per year, or about 30% of their past imports. The report noted that this was quite a respectable recovery rate because it was generally recognised that only about 50% of the oil sold will end up as waste. (This figure was also consistent with the information provided by UNELCO who indicated that about half of the lube oil used in their engines was actually consumed in the engines).

Pacific Petroleum had a 20,000 litre storage tank at their terminal in Port Vila and when this was full they arranged for the used oil to be shipped offshore. Prior to 2005 the oil was being sent to New Caledonia for use in a nickel smelter. However this practice was banned by the New Caledonia government. In 2007, Pacific Petroleum started back-shipping the oil to Singapore using its own tanker, with the oil being passed on to unidentified users. (The first shipment was a two year stockpile of around 200,000 litres). Then in 2011 they were contacted by a representative of an Indian company who offered to buy the used oil. Pacific Petroleum then commenced shipping the used oil in 200 L drums, in shipping containers, directly to India, where it was processed and on-

sold as an industrial fuel. They indicated that the costs of the operation were recovered through an increase in the price that they charged for oil.

The report noted that the shipments of used oil to India appeared to be in contravention of the Basel Convention, because Vanuatu was not then a party to that Convention. (It is a party to the Basel Convention now.) Neither Pacific Petroleum nor the Department of Environment were then aware that these shipments would fall under the Basel Convention controls. The same issue did not apply to the Waigani Convention because that deals primarily with trans-boundary waste movements within the Pacific Islands region.

The other major supplier, Trade Tools, sells oil to the retail trade and their customers are almost entirely individual users. They appear to have a very strong position in this part of the market because their oil was significantly cheaper than that offered by Pacific Petroleum. They had stores in Port Vila and Santo. They did not operate any sort of take-back scheme, but indicated in-principle support for a collection program, while also being sceptical about the chances of it actually working.

No other oil recovery programs were identified.

Based on the recovery rate of 30% achieved by Pacific Petroleum, the potentially recoverable oil in Vanuatu was estimated by the report to be at least 250,000 litres per year. In other words there was an estimated additional amount of at least 125,000 L of used oil which was currently not being recovered. However the confidence level for this estimate was reported as low.

5.1.4 Other Matters

There were no known stockpiles. Pacific Petroleum exported their used oil as soon as the tank was full.

UNELCO, the dominant electricity generator, indicated that they were unable to use used oil as a supplementary fuel in their power stations.

There were no large industrial fuel users in Vanuatu, so in-country co-firing of used oil was not a significant option. However, there were several copra plants around the country, which may have had the potential for using small amounts of used oil. The report concluded that this option may be worth investigating further, especially on some of the minor islands.

The commercial/industrial sector in Vanuatu accounted for only 5% of total petroleum energy consumption, and the consumption by other sectors is transport, 52%, electricity, 33% and domestic, 9%.¹²

DEPC advised that they then had draft legislation before Parliament which should provide them with the necessary instruments to implement or enforce a used oil management program, most likely through requiring all oil import approvals to be linked to having an acceptable waste management programme in place. It was hoped that this legislation would have been passed during the last parliamentary session, but in 2013 it was still on the 'pending' list.

The report stated that there had been several instances in the previous few years of large volumes (i.e. tens of thousands of litres) of used oil being disposed at the Port Vila landfill. The DEPC lacked the regulatory powers to control these disposal operations and therefore found itself in the situation of having to simply act as an advisor on the possible remediation steps to be taken (e.g. use of oil dispersants) after the disposal operations were made public. Landfill disposal is not an appropriate method for dealing with large quantities of used oil but apparently at the time of these incidents it was the only option available.

5.1.5 Discussion and Recommendations

The report estimated that in 2013 there were at least 250,000 litres per year of potentially recoverable oil in Vanuatu. Approximately half of this volume was currently being collected in a well-managed system operated by Pacific Petroleum. The collected oil was shipped to India for processing and use as an industrial fuel, and the costs of collection and shipping were incorporated into the sale price of new oil.

The primary barrier to including all other used oil into the Pacific Petroleum system was reported as cost – other importers would have needed to increase their prices and pass the additional revenue on to Pacific Petroleum, assuming that Pacific Petroleum continued to take the lead in this area. Alternatively, the programme could have been funded through a universal levy on all oil imports, which was then collected and administered by an independent agency.

The report concluded that one possible advantage of having the programme managed by an independent agency would be that the levy could be set at a rate that allowed funding of other support activities such as public awareness programmes and the development of a network of used oil collection depots.

¹² Overview of Potential CDM Project Opportunities in Vanuatu, Department of Meteorology and Climate Change, Ministry of Infrastructure and Public Utilities, Port Vila, Vanuatu, May 2012

The report also conclude that another aspect needing assessment was the provision of appropriate storage and processing facilities for the used oil, prior to shipping. The 20,000 litre storage tank currently being used by Pacific Petroleum would likely be inadequate if the total quantities of oil being collected were doubled.

5.2 Vanuatu Used Oil Management Plan 2014¹³

5.2.1 Background and Summary

This report was also prepared by Hydea for AFD/ SPREP, a year after the 2013 report described in 5.1 above. This report made no reference to the 2013 report and differs to some extent in the figures it quotes. It would have benefited by a study of the 2013 report.

The 2014 report stated that it was introducing and implementing a *Used Oil Stewardship System in Vanuatu*. It outlined the roles and responsibilities of a proposed *Managing Agency* to be established, based on *Model Regulations* it presented. These regulations covered the enforcement and monitoring of the collection and storage of used oil for its reuse, recycle or export.

This *Used Oil Management Plan* identified:

- a National Regulatory Framework on which a Stewardship System was based,
- the structure and functioning of a Proposed Managing Agency
- the necessary Implementation Stages for collection, storage, disposal and re-use of used oil and
- Monitoring and Evaluation Measures.

A *Cost Benefit Analysis* study was also undertaken that looked at the options available to Vanuatu to manage used oil. The study concluded that the privately operated collection system needed to be extended or duplicated until legislation was in place to cover the costs of collection, storage, and shipment of used oil for recycling.

The report proposed that in the longer term the costs of collection, storage, and shipment or reuse would be recovered from the oil purchaser through a levy placed on the oil when it was imported into the country. Also in the longer term reuse of used oil in country should be researched as a supplementary fuel source or diesel fuel extender which the report claimed was the most cost-effective and environmentally sustainable solution.

The report stated:

¹³ Used Oil Management Plan for SPREP, March 2014, Hydea

- Development of a collection system for used oil on Efate and the outer islands needed to be examined in detail in consultation with the stakeholders, including temporary storage sites with plastic drums and/or IBC's.
- Containers should be stored under cover and placed in a bunded area to contain any spillages.
- Collection locations would be sited at service stations, hauliers/bus companies, construction companies, port authorities, and power generators.
- Bulk storage for collected oil would be established at Pacific Petroleum. (It was not noted that Pacific Petroleum had agreed to this measure.)

The report further noted that the establishment of a Product Stewardship System was needed that would be supported by National public awareness campaigns to:

- provide accurate information concerning the relative risks posed by used oil to Vanuatu's natural environments and public health;
- provide accurate information on best practices that individuals and businesses can adopt to better manage used oil at a local scale; and
- provide training on the safe handling and storage of used oil.

5.2.2 Current Uses of Used Oil

The report stated that disposal of used oil was still a significant issue for Vanuatu. If used oil is not managed correctly, it can cause major impacts to both the local environment, drinking water and food resources.

The report also said that current methods of disposal or re-use are environmentally unacceptable and include:

- Inclusion in general rubbish;
- Poured directly into storm water drains etc;
- As a weed killer;
- Burnt with other waste;
- Ground marking of sports field;
- Preservative use in timber;
- Dust suppression; and
- Rust prevention.

5.2.3 Benefits of sustainable used oil management

The report stated that financially sustainable used oil management in Vanuatu requires the establishment and operation of an appropriate framework that improves national management of used oil, and promotes shared used oil management responsibility by all stakeholders.

The following benefits of sustainable used oil management were listed:

- Minimising the unnecessary, untimely, and uncontrolled generation of used oil in Vanuatu;
- Minimising the adverse effects of used oil on the environment and people of Vanuatu;
- Ensuring that management of used oil in Vanuatu conforms and complies with all relevant national and international conventions and legal requirements;
- Ensuring that the costs associated with used oil treatment/final disposal in Vanuatu are met by those responsible for generating the used oil; and
- Increasing the capacity of stakeholders to promote effective used oil management in Vanuatu

5.2.4 Quantities of Used Oil

It is estimated that approximately 750,000 litres of lubricating oils are imported into Vanuatu on an annual basis. The source of this figure was not referenced but it accords quiet well with the Customs-based figure in Table 1 above of 645,034 kg, based on an average of the three years 2009-2011. The Table 1 figure equates to a volume of about 780,000 litres at an average lubricating oil density of 0.825 kg/litre,

The contribution of hydraulic fluids is not taken into account in the 2014 report figure.

The major uses of this oil are in power generation (UNELCO), shipping, land transport by bus and haulage operators, construction industry, and private and company vehicle fleet servicing. Other minor users include the local commercial fishing fleet, the manufacturing industry, and taxi operators.

It was concluded that of the 750,000 litres of lubricating oils imported in Vanuatu annually, approximately 40% resulted in used oil (i.e. 300,000 litres per annum) that needs to be appropriately managed to avoid environmental and human health impacts¹⁴. It was further concluded that between 50% and 60% of all lubricating oil imported into Vanuatu could eventually be recycled annually (i.e. up to 450,000 litres).

5.2.5 Options for Managing Used Oil

A Cost Benefit Analysis was prepared which looked into the various options of used oil reuse/recycling or disposal. This developed two possible options to manage used oil:

- Used oil added as a diesel fuel augmenter; and
- Used oil shipped off-shore for disposal or reuse.

¹⁴ An unpublished report to SPREP by Envirocare Engineering Consult Ltd in 2012 *Used Oil Audit Survey for Vanuatu*

(N.B. It should be noted here that used oil cannot be added as a diesel augmenter into UNELCO diesel as per Section 5.1.4 above, and is generally not possible to add used oil to diesel because of guarantee issues for the diesel engines.)

The report described the process needed to establish a Stewardship System:

- **Baseline Analysis:** Completion of an audit to assess the oil and lubricant situation in Vanuatu, including oil imports, principal users, current management practices, volumes of stored used oil, and permitting systems;
- **Coordination:** Establishment of a Steering Group that includes the regulators from both the environmental and fiscal sectors, as well as industry such as fuel and/or lubricant companies, retailers, haulers, and construction companies, to guide the establishment of the Stewardship System;
- **Cost Benefit Analysis:** Completion of a detailed *Cost Benefit Analysis* of likely used oil disposal options;
- **Legislation:** Preparation of Model Used Oil Regulations for Vanuatu;
- **Sustainable Financing:** Identification of a levy system to ensure sustainability such that the Stewardship System is self-financing and the costs of collection, storage, shipment and reuse are built into the cost of the original product; and
- **Option for Re-use/Disposal:** Identification of the preferred option to re-use the used oil in country as a fuel extender.

It was further added that the next necessary activities needed to include:

- **Political support:** Obtaining Government support to introduce and implement a *Used Oil Stewardship System*;
- **Management:** Establishment of a *Managing Agency* to oversee the daily operation of the Stewardship System. The Managing Agency should be a non-profit government entity with input from the Steering Group;
- **Awareness and Outreach:** Development of an awareness program of various awareness-raising methods. These may include industry body meetings, community meetings, and newspaper advertisements, poster campaigns including billboards, education activities in schools, use of local TV and radio, and recognised used oil logos. It is however essential that the disposal/storage facilities are made accessible for the public, in tandem with these awareness-raising activities; and
- **Collection System Infrastructure:** The development of collection system for used oil on Efate and the outer islands must be examined in detail in consultation with the stakeholders.

5.2.6 Model Used Oil Regulation

The report presented detailed and useful Model Used Oil Regulations that had been developed through consultation between the DEPC and SPREP. These model regulations are attached in Appendix 2. The objectives of the Regulations are to:

- identify a product stewardship arrangement for used oil that promotes the sharing of responsibility by importers, retailers, consumers and users of oil;
- provide an arrangement for managing used oil that is financially sustainable;
- ensure that management of used oil complies with relevant international conventions and national legal requirements;
- ensure that users of oil contribute to the costs associated with exporting or otherwise managing used oil in an environmentally sustainable manner; and
- ensure management of the export of used oil in an environmentally sound manner.

5.2.7 Structure and Responsibility of the Managing Agency

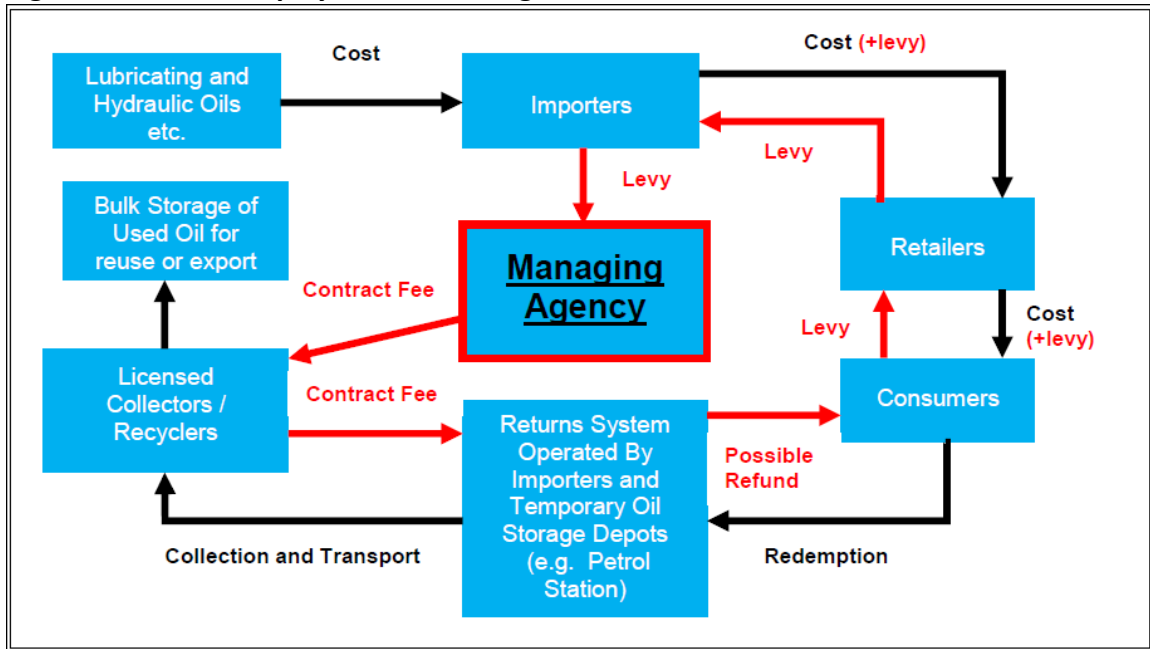
The 2014 Report stated that the first step in developing a Product Stewardship System in Vanuatu was to establish a Managing Agency responsible for administering the Model Regulation, once enacted, to promote the sharing of responsibility of used oil management among importers, retailers, consumers and final users.

The proposed Product Stewardship System, as presented in the report, to ensure the financial sustainability of the collection, storage and re-use/disposal of used oil, is shown in Figure 1 and consists of the following steps¹⁵:

- Importers bring oil products into the country and are charged a small levy which is passed on to a Used Oil Managing Agency. The used oil levy can be used to encourage consumers to return used oil through a possible refund mechanism;
- Oil is sold to retailers and then, in turn, to consumers who eventually produce used oil. Used oil is returned by the consumer to a licensed site for a possible partial refund of the original purchase levy;
- Licensed used oil collectors provide returns to the Managing Agency and receive a contracted payment for each litre collected;
- Recovered used oil is stored for reuse within country or exported; and
- Unclaimed funds and the balance of the import levy are used to support used oil collection, storage costs, and the administration of the Managing Agency and support awareness campaigns.

¹⁵ HYDEA SpA (2012). *Background Paper on a Waste Oil Stewardship System*. Unpublished report to SPREP. 31pp

Figure 1: Stewardship System Flow Diagram



5.2.8 The Role of the Managing Agency

The report explained that the role of their proposed Managing Agency is to administer the Used Oil Regulations. In summary the Managing Agency should:

- be a non-profit entity;
- manage its funds in accordance with the requirements of the Department of Finance [or other government body] ensuring sufficient funds are allocated to pay the collectors and recyclers;
- ensure accurate accounting;
- with respect to importers ensure that the levy is paid;
- review and approve applications from collectors and /or recyclers;
- enter contract agreements with approved collectors and /or recyclers;
- conduct audits of collectors and recyclers to ensure compliance with permits;
- provide audit documentation;
- carry out inspections;
- design and implement awareness campaigns; and
- ensure that funds deposited into the Managing Agency Fund are used to:
 - Contract licensed collectors and recyclers;
 - Administration of the Agency;
 - Awareness campaigns for used oil and other recycling activities; and
 - Ensure that used oil is recycled or reused or exported.

5.2.9 Implementation of the Proposed Reforms

The report proposed that there were two principal stages of the proposed management model that can be developed independently. These two stages are described below.

Stage 1 Collection and Storage

Collection shall be carried out by competent licensed carriers with the appropriate equipment. The licensed carriers may collect used oil by road tanker or smaller suitable containers such as steel or plastic drums.

Intermediate temporary storage prior to re-use, recycling or shipment shall include bulk storage via vertical or horizontal tanks with appropriate bunding and drainage.

Temporary storage via drums should be in a concrete, sheltered and bunded area. The collection and storage shall be supported by legislation of either used oil or Stewardship Regulations so that there is a legal requirement for used oil to be collected and stored in an environmentally acceptable manner. All collected used oil shall be transported and stored in compliance with the provisions concerning the transport of dangerous goods and hazardous wastes including relevant regional and international conventions such as Waigani and Basel Convention.

Stage 2 Off-shore Disposal or In-country Re-use

Disposal is considered to be the shipment/export of used oil to neighbouring countries where the used oil could both be re-refined and sold as new lubricating oil, or in some locations simply burnt as a supplementary furnace fuel oil. In most circumstances there will be a cost for the shipment of used oil, however some companies from Asia (such as Jhoola from India) might be interested in purchasing it.

Re-use in-country includes the use of the used oil as a fuel extender either for the generation of electrical power or as a supplementary furnace fuel as is the situation in Fiji.

An Action Plan for immediate actions was developed and is shown in Table 3 below.

Table 3: Recommended Actions Required Under a National Used Oil Action Plan

Objectives	Action	Lead Agency	Intended Outcome	Time-frame
Improved governance of Used Oil	<ol style="list-style-type: none"> Investigate and provide recommendations on practical and environmentally and economically sustainable mechanisms to dispose of Vanuatu's used oil. Determine a national definition of used oil using Basel and Waigani convention guidelines. Develop or adopt national standards to specify quality guidelines (e.g. acceptable water and impurity content) for used oil end-uses. Develop and implement a financial and regulatory instrument to manage used oil based on the polluter pays principle. 	<p>DEPC/SPREP</p> <p>DEPC</p> <p>DEPC</p> <p>DEPC/SPREP</p>	Robust management of used oil to ensure environmental and human health protection supported by adequate and enforceable regulations under the Bill for the Pollution (Control) Act 2013 (passed in Parliament 26 th August 2013) and the soon to be enacted Waste Management Act. The costs associated with used oil treatment/final disposal are met by those responsible for generating the used oil (<i>polluter pays principal</i>).	2014
Improved knowledge and information	<ol style="list-style-type: none"> Complete an audit of the quantity, generation rates and status of used oil in Vanuatu. Develop national used oil management monitoring regimes using key performance indicators. Collation and regular reporting of data and information relating to used oil management activities. 	<p>SPREP</p> <p>DEPC</p> <p>DEPC</p>	A comprehensive understanding of the status of used oil management in Vanuatu. Improved management of used oil based on information and data.	<p>Jan - June 2014</p> <p>Jan - Dec 2014</p>
Reduced risks from exposure to hazardous substances	<ol style="list-style-type: none"> Establish and apply appropriate standards, guidelines, and safeguards for the handling, collection, transportation, storage, and treatment/final disposal of used oil. Implement and enforce minimum OH&S standards for best practices for handling and disposal of used oil (including personal protective equipment) for all workers involved in handling used oil. Implement a national used oil collection and storage system. 	<p>DEPC</p> <p>DEPC/Dept of Labour/ILO</p> <p>Industry/DEPC</p>	<p>Minimisation of public health risk from substandard used oil management activities.</p> <p>Minimisation of environmental risk from substandard used oil management activities.</p> <p>Risk from exposure to used oil is minimised to petroleum handling workers.</p>	Jan - Dec 2014
Improved capacity building and technical cooperation	<ol style="list-style-type: none"> Training for customs officers and environment staff on detecting used oil and Waigani/Basel Convention procedures. Undertake national used oil awareness campaigns. Implement regular training for workers involved in handling and processing used oil. 	<p>DEPC/SPREP</p> <p>SPREP/DEPC</p> <p>Industry/DEPC</p>	Improved regulation and control of international movements of used oil. Communities are informed and aware of the relative risks posed by used oil. Communities are informed of best practices in used oil management.	<p>Ongoing</p> <p>Mar - Dec 2014</p>

Annual Budget Collection Costs have been estimated as shown in Table 4 below (Data from the 2014 report with some errors corrected).

Table 4: Annual Budget Collection Costs

Item	Cost (USD)/Year
Collection by hire truck	\$53,000
Cost of Drums	\$11,600
Under cover storage rental	\$12,000
Office Rental and Admin	<u>\$9,600</u>

Item	Cost (USD)/Year
Total	\$91,700
Plus 5% Cont, 10% Margin	<u>\$13,755</u>
Overall Total	\$105,455

The report explained that there are two principal options for the re-use/disposal of used oil for Vanuatu which are re-use in country or shipment from Vanuatu. The preferred option of the Vanuatu Used Oil Steering Group (the report did not explain this steering group) is to continue with the existing private collection system and export the used oil as this system works well for them, although the option of re-use in-country was of interest and the steering group would examine possible re-use options. There are three practical options to reuse oil in Vanuatu:

- Power generators use the used oil as a fuel extender by simply filtering the used oil and injecting into the engine diesel fuel lines at a mix of about 1% (*not acceptable to UNELCO, based on the 2013 Report*);
- Use the used oil as a boiler fuel; and
- Continue with and expand existing collection, storage and export system.

It was noted that each system was sustainable including the export of used oil, although with the move to renewable energy the power generator option might only be short to medium term solutions. Therefore the use as a boiler fuel needs to be examined as a priority.

In the short to medium term, the continued shipping of used oil from Vanuatu was noted as inevitable; this is the most expensive option as reflected in Table 5, which is from the 2014 report.

Table 4: Shipping Costs of Used Oil from Vanuatu

	India	Australia	NZ	Comments
	Lt's	Lt's	Lt's	
Volume of Oil per Container	19,600	19,600	19,600	98 x 200lt drums/20ft container
Standardised volume of 6 Containers	117,600	117,600	117,600	
	US\$	US\$	US\$	
Documentation per Shipment	1,970	1,970	1,970	
Insurance	Nil	Nil	Nil	
Cartage by Importer	0	1,970	1,970	
Freight Cost	0	3,010	2,840	
Handling Exporter	2,400	2,400	2,400	
Value or Disposal Fee	-3,000	9,285	9,285	
Total Cost US\$	1,370	18,634	18,464	Per shipment
Total Cost per lt US\$	0.116	0.158	0.157	
Total Cost per lt Vatu	10.67	14.57	14.71	

The following should be noted, regarding this table:

- There is an error in the unit cost per litre for the India option. It should read 0.0116.
- There is now an extra cost of \$A12,500 for the Basel or Waigani Consent for export to Australia
- In 2014 it appears the Indian importer would pay the freight costs. This is unlikely now with much higher freight costs.
- Freight costs have probably tripled since 2014.
- It is not possible to get 98 drums in a 20 ft container. The maximum is 80 drums.
- The disposal fee may now have increased substantially.
- All these costs now need to be reviewed.

5.2.10 Monitoring and Evaluation

The 2014 report also explained that the monitoring and evaluation of the Product Stewardship System would be carried out by the Managing Agency in accordance with the Model Regulations.

The Managing Agency would use inspectors appointed under Clause 5.7 of the regulations to monitor and carry out regular inspections of collectors and recyclers to ensure compliance with the Used Oil Regulations. The monitoring will ensure that there are no breaches of the Regulations.

The Managing Agency will also carry out inspections by an inspector appointed under Clause 5.7 of the regulations to ensure that collectors and recyclers are complying with their licence issued under the Act. In particular:

(1) Used oil must be stored in a safe and an environmentally approved manner.

(2) Used oil must be stored in a container that:

- a. is in good condition and labelled to show it contains used oil;
- b. has spill prevention and collection equipment that includes appropriate and adequate sized bunding; and
- c. has adjacent and accessible fire prevention and suppression equipment.

For the collection of used oil, a licensed collector would need to:

- a. meet all health, safety and environmental requirements for the handling, collection, transport and storage of used oil;
- b. wear appropriate personal protective equipment;
- c. provide suitable storage tanks, if none are available, that have appropriate spill prevention equipment that includes appropriate and adequate sized bunding;
- d. have adjacent and accessible fire prevention and suppression equipment; and
- e. keep a record of each amount of used oil received.

For the recycling or export of used oil, a licensed recycler would need to:

- a. meet all health, safety and environmental requirements for the handling, transport and storage of used oil;
- b. wear appropriate personal protective equipment;
- c. provide suitable storage tanks, if none are available, that have appropriate spill prevention equipment that includes appropriate and adequate sized bunding and fire extinguishers;
- d. have adjacent and accessible fire prevention equipment;
- e. keep a record of each amount of used oil received;
- f. recycle used oil by re-refining the used oil in-country; selling the recycled oil for reuse in-country; or subject to sub-regulation (4), export the used oil.

It was further noted that if the licensed recycler sells locally or exports the recycled oil, he or she must be reasonably satisfied that the buyer of the oil will deal with the oil in an environmentally safe manner. The recycler may only export used oil with the approval of the Minister.

There are provisions for occupational health and safety as follows:

- a. All persons involved in collecting, storing, transporting or recycling used oil must wear appropriate personal protective equipment.
- b. An employee of a licensed collector or recycler must wear an identity card showing his or her employment.

There are also provisions governing the licensing of collectors and recyclers as follows:

- a. A person who collects used oil for the purpose of recycling or export, or recycles or exports used oil, must be licensed under the Act.
- b. A person may apply in writing to the Minister to be licensed as a used oil collector or a used oil recycler, or both.
- c. The applicant must have a viable business model to operate an oil collection business;
- d. The applicant must have the relevant expertise and equipment to collect, handle and transport used oil in compliance with environmental and safety standards and guidelines;
- e. All vehicles and drivers used by the applicant in the collection of used oil will comply with transport regulations and any licensing requirements for transporting hazardous materials; and
- f. All transportation vehicles must be appropriately labelled.
- g. The applicant must have suitable bulk storage tanks that are installed on an impervious base; and
- h. Any spillage will be caught by an appropriate and adequately sized bund;
- i. The applicant has the relevant experience and equipment to recycle used oil in compliance with safety and environmental standards and guidelines;
- j. If used oil is to be exported, the applicant is able to establish that the oil will be sold to a recognized overseas buyer of used oil in accordance with the Basel Convention and the Waigani Convention; and
- k. The applicant has not been convicted of any environmental offences in [country];
- l. The applicant's employees are trained in the handling of used oil and will be issued with appropriate personal protective equipment;
- m. The applicant is aware of his or her obligations under relevant legislation in relation to the handling of used oil.

Under the regulations the Managing Agency will prepare an annual evaluation report which will include the following:

- a. The annual amount of levy paid into the Fund;
- b. The annual quantity of oil on which levy is paid;
- c. The annual number of litres of used oil collected and the recovery rate;
- d. Details of awareness campaigns;
- e. How money in the Fund has been spent;
- f. The balance on money in the Fund; and
- g. The annual quantity of used oil re-used, recycled or exported.

Under the regulations, licensed collectors and recyclers need to provide quarterly and annual returns to the Managing Agency setting out the amount of used oil collected; and delivered to a licensed recycler.

In turn, licensed recyclers must provide quarterly and annual returns to the Managing Agency setting out the amount of used oil:

- a. received;
- b. held awaiting decision whether it should be recycled, sold or exported;
- c. identified for recycling;
- d. undergoing recycling, identified for sale in Vanuatu as used oil
- e. sold in Vanuatu as used oil;
- f. identified for export;
- g. ready for shipping; and
- h. shipped.

The report must have with it:

- a. copies of relevant documents relating to the recycling, sale or export;
- b. a health and safety incident report; and
- c. a report concerning whether the recycler has complied with relevant standards and codes of practice relating to the environmentally sound management of used oil.

5.2.11 Awareness and Communication

The 2014 report states that the establishment of a Product Stewardship System will need to be supported by national public awareness campaigns to:

- a. provide accurate information concerning the relative risks posed by used oil to Vanuatu's natural environments and public health;
- b. provide accurate information on best practices that individuals and businesses can adopt to better manage used oil at a local scale; and
- c. provide training on the safe handling and storage of used oil

It is proposed that a "Strategic Communication Plan for the Used Oil Stewardship Program" will be an essential feature of the implementation program. The Awareness phase will be on a staged release of information which focuses on raising awareness about the issues involved with used oil and communicating the government's development of a used oil stewardship program. Key messages of this plan will be"

- a. Used engine oil is hazardous to the environment (earth and water) and human health. There are both short and long term effects.
- b. Used engine oil is still valuable and can be used again, help us help the environment.

Implementation of the communications strategy will largely be determined by the availability of infrastructure such as collection points and re use markets. Thus it will start once the Stewardship Program is ready to be operational. It is proposed that the communication strategy would be conducted in two phases.

Phase 1: General Awareness

This phase will focus on general awareness raising of the used oil issue among key stakeholders such as importers, consumers, garage owners, service stations and local villages. The phase will promote the government's effort to improve used oil stewardship program and inform people what they can do to assist with used oil recovery. The mobilization of this phase will commence two months prior to implementation of the stewardship programme.

Phase 2: Implementation Messages

Communication activities will focus on a community advertising / information campaign and a media "push" to inform people about oil collection points and other facilities and to encourage behavioural change. This stage will be mobilised 1 month prior to implementation of stewardship program and throughout the program.

It is also proposed that evaluation and monitoring would be part of the campaign from the start. Evaluations will be conducted during the initial airing phases and on monthly basis to identify any further information gap that needs to be addressed.

Communication delivery would include:

- a. Development of logo and branding
- b. Print materials, including fact sheets, newspaper and magazine advertising, and flyers.
- c. Media airtime would include radio and television commercials. Banners, promotional items and text messages.

5.3 Used Oil Report on Fiji, Niue, Kiribati, Vanuatu, and SCL¹⁶

5.3.1 Background

This report was prepared in April 2018. This report covers the visit to Fiji, as part of the consultancy engaged by SPREP under the Global Environment Facility's Pacific Assistance Strategy: Integrated Management of Solid and Hazardous Wastes and Persistent Organic Pollutants (GEFPAS uPOPS) project. Fiji has long been seen as a potential receiving country for used oil in the Pacific. The company that was identified as being able to receive this used oil was Bluescope Pacific Steel (Fiji) Pty Ltd (BPS) in Suva.

The main purpose of the visit was:

- a) To assess the capability and willingness of BPS to receive used oil from various Pacific countries as appropriate.

¹⁶ Used Oil Report – Fiji, Niue, Kiribati, Vanuatu, SCL, April 2018, Araspring Ltd

- b) If BPS is capable and willing to receive used oil from Pacific countries, then to update the audit of BPS that was carried out in 2012, to ensure that BPS is environmentally suitable to receive used oil from the Pacific.

John O’Grady of Aaspring Ltd was the compiler of this report and he was at the time also undertaking audit work for MFAT throughout the Pacific. He was therefore able to carry out some additional used oil investigations in Kiribati, Niue and Vanuatu, which were countries he visited during the time the investigations were being carried out for this consultancy. It should be noted that the investigations carried out in these countries were not initially structured as part of the overall consultancy investigations and should be viewed as supporting information that can be drawn on as appropriate.

When it became clear part way through the investigations that Salters Cartage Ltd (SCL) was currently being used to receive used oil from the Pacific and was a likely receiver of Pacific used oil on a regular basis, information was also sought from them regarding their suitability as a potential recipient of used oil from the Pacific.

5.3.2 2018 Report Conclusions

This report drew the following conclusions, relevant to this Inception Report. The conclusions are also relevant as of 2018.

5.3.2.1 Bluescope Pacific Steel, Fiji

- a) Bluescope Pacific Steel (BPS) collect and burn used oil in their steel processing plant in Suva.
- b) They are very proactive in the local market in collecting used oil for this purpose and operate a professional collection and storage system.
- c) They have quite a large storage capacity but not sufficient to take very large amounts of used oil. They have a limited capacity to manage sludge and they do not have a tank cleaning capacity.
- d) The local market keeps them well supplied to meet their used oil needs and their core business is steel making and not used oil.
- e) They are therefore not interested in importing used oil directly into Fiji from overseas countries.
- f) They do receive used oil from other countries indirectly if they have the capacity – for example from Pacific Energy shipments from other countries.
- g) The BPS operation is sound and meets audit criteria for health, safety and environmental impact, with the possible exception of the air emissions, which BPS is working to address now.
- h) BPS may be willing to take part in plans to import used oil from other countries in the future but only as an indirect partner, and only if they have the capacity and resources to manage the used oil.

5.3.2.2 Vanuatu Pacific Energy Used Oil Situation as at 2018

- a) Pacific Energy (PE) run an effective used oil take-back scheme throughout the Pacific, including Vanuatu. This is based on the need to do this under French Law and they have extended it throughout the Pacific in the numerous locations where they are operating.
- b) In Vanuatu, they currently send all the used oil they collect to the Copra Plant in Espiritu Santo. This is a somewhat insecure outlet for their used oil, however, and they would appreciate an alternative.
- c) No other company importing lubricating and other oils into Vanuatu has a take-back policy although it should be noted that they are all much smaller than PE Vanuatu.
- d) PE Vanuatu would be very interested in participating in any scheme that offered them the ability to export used oil at a reasonable cost to a suitable receiving country.
- e) If such an opportunity arose then they would also be interested in setting up a collection system for all Vanuatu used oil at their Service Stations throughout Vanuatu.

5.3.2.3 Salters Cartage Ltd (SCL)

- a) SCL is a company based in Auckland New Zealand that receives and processes used oil. Their main outlet for the used oil is the two main Oji plants in New Zealand.
- b) SCL has been receiving used oil from various Pacific countries for many years and are keen to continue and expand this source of used oil.
- c) They receive not only used oil, but also used oil filters, oily rags, oily sludge, and hydrocarbon-contaminated soils.
- d) They take used oil in a variety of containers, drums, IBCs, pallets and TTs.
- e) They are well set up to receive used oil from Pacific countries and they offer a good option as a recipient for any Pacific used oil exporting scheme.

5.3.3 2018 Meeting with Pacific Energy regarding Used Oil

A meeting was held by John O'Grady with Nicolas Leflon, General Manager, Pacific Energy (PE), Vanuatu, on 6 April 2018. The following is a summary of this meeting.

PE Vanuatu take back used oil and send it to the Copra Facility in Espiritu Santo to be burnt locally. The copra facility only takes drums so it is a nuisance having to decant from the Tanktainer (TT) where the oil is collected, into drums.

PE has a policy throughout the Pacific of taking back used oil from everyone that receives their virgin oil. PE Vanuatu realizes that the Copra Plant outlet for the collected used oil is an insecure one and they would value finding an alternative as a back-up.

PE Vanuatu obtains their fuel from Singapore and South Korea and they recognize the logic of sending used oil to these destinations by back-loading the TTs that come loaded with the fuel. There is no suitable outlet in these countries, however. They were sending their used oil to a reprocessing plant in Singapore but the reprocessing company was badly hit by the drop in oil prices a few years ago.

PE Vanuatu receives back about 60,000 – 80,000 litres per year and they sell about 200,000 litres per year. They were reluctant to give the exact figure. Other parties in Vanuatu also sell lubricating oil, including Trade Tools, but PE is the only company that takes back used oil.

It is easy to collect the used oil from the larger generators such as the Utilities company UNELCO and car dealers, etc. It is more difficult with smaller customers who often just throw their used oil away. It was PE's view that small players and their customers just do not care about collecting used oil. They stressed that there is a clear need to consider the whole system including suppliers.

There are some minor uses of used oil in Vanuatu such as putting on roads to keep dust down. Such practices are, however, environmentally unacceptable as well as using only very limited amounts of used oil.

PE Vanuatu would be keen to take part in a SPREP-organized collection scheme and to send their used oil to New Zealand if that was the outcome of such a scheme. PE may also be interested in tendering for used oil management in places they operate from.

PE Vanuatu also confirmed that if they had a good outlet for used oil such as New Zealand, PE would consider setting up collecting facilities at PE Service Stations to receive used oil from the public, including used oil generated from customers of their competitors. They would do this as a public service.

PE would also be interested in combining used oil collection with the collection of used batteries and they would also do this as a public service.

PE operate in French Polynesia and in ten other countries – New Caledonia, Vanuatu, Fiji, Papua New Guinea, Cook Islands, Tonga, American Samoa, Solomon Islands, Kiribati and Tuvalu. Their Head Office is in Tahiti and they also

have major offices in New Caledonia and Fiji. They are strong in most but not all of these countries. Under French Law, they must collect used oil from all their customers and they have extended that practice to everywhere they operate.

PE owns a shipping company "Petrocean". They own two medium range tankers, and others are available as needed.

It is interesting to note that the main Pacific countries they do not operate in, namely Palau, FSM and RMI are the ones that have mainly accumulated large stockpiles of used oil. They also do not operate in Niue, which also has some serious used oil problems.

John O'Grady met with Roslyn Bue of the Department of Environmental Protection and Conservation, Vanuatu and briefed her on the meeting with Nicolas Leflon. Roslyn Bue was keen to learn about used oil initiatives and was complimentary about what SPREP had been doing in this area. She wanted a copy of the 2013 Used Oil Report prepared by Contract Environmental and John O'Grady supplied her with one. She agreed to follow up on the smaller generators of used oil that were independent of PE, to see if she could stimulate some interest in collecting and returning this used oil.

The problem would be that such an initiative would lack a focal point independent of PE and funding would be needed to organize such collections and reuse. It was thought that it may be useful to fund PE to collect all the used oil and ensure that an option was available for receiving the used oil.

6.0 Organisations

The following organisations are directly or indirectly involved in used oil management.

6.1 Ministry of Infrastructure and Public Utilities

The Ministry of Infrastructure and Public Utilities (MIPU) includes the Department of Public Works, Department of Ports and Marine, and the Civil Aviation Authority and therefore covers land, sea and air transport, and major vehicle and equipment repair facilities. It is therefore directly or indirectly involved in a large amount of fuel and oil consumption and used oil generation.

The stated main aims of the Ministry are to:

- Maintain and upgrade transport networks to serve all rural and urban communities through inclusive and effective partnerships
- Implement safety and security systems in compliance with Vanuatu laws and international conventions
- Provide leadership, governance and the necessary legal framework to ensure effective infrastructure development
- Utilize resources and assets efficiently while adhering to principles of accountability and transparency

6.2 Ministry of Agriculture, Livestock, Forestry, Fisheries, and Biosecurity

The Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity (MALFFB) aims to see the nation's agricultural, forestry and aquatic resources are sustainable and managed efficiently, and that these resources make a significant contribution to the country's economic growth and wellbeing of the people of Vanuatu.

MALFFB therefore covers, directly or indirectly areas of farming, fishing and forestry, which would all be sectors using significant quantities of oil and producing used oil.

The government through this Ministry recognizes the role of women and youth and vulnerable groups in agriculture. Net growth of the private sector and its subsequent leadership in driving their respective industries is one of the key aims of the Ministry.

The MALFFB is comprised of 5 departments:

- Agriculture and Rural Development
- Livestock (Vanuatu has a significant cattle industry)
- Forestry
- Fisheries
- Biosecurity

6.3 Ministry of Health

The Ministry of Health (MOH) is in the process of establishing a new Health Sector Strategy (HSS) 2017 – 2020, to provide a context that will guide Departmental efforts, linked to the National Sustainable Development Plan (NSDP) of the Government. The four main health policy objectives as set out in the NSDP under Society Pillar 3.1 are as follows:

- Ensuring that the population has equitable access to affordable, quality health care through a fair distribution of health facilities that are suitably resourced and equipped.
- Reducing the incidence (and impact) of NCD and communicable diseases.
- Improving population health and well-being by promoting healthy life style choices and health seeking behaviour.
- Building health sector management capacity and systems to deliver efficient and effective delivery of quality health services aligned with national directives.

Hospitals with boilers and other equipment would be users of oil and producers of used oil. The Ministry of Health may also be interested indirectly in the topic of used oil as unsatisfactory management of used oil does lead to ill health outcomes.

6.4 Department of Environmental Protection and Conservation (DEPC)

The DEPC is part of the Ministry of Climate Change Adaptation, Meteorology & Geohazard, Environment, Energy and Disaster Management

The DEPC is tasked to coordinate all activities relating to the environmental management, including ensuring that Vanuatu meets its obligations under the various regional and international treaties. The DEPC's role extends to maintaining contacts with national authorities to ensure national environment strategies are carried out properly and expeditiously. The Department disseminates information to the public through public awareness, and other media outlets.

The DEPC is therefore the Focal Point for used oil management initiatives.

6.5 Department of Customs and Inland Revenue (DCIR)

The DCIR is part of the Ministry of Finance and Economic Management and has task of protecting the community from potential risks arising from international trade and travel, while facilitating the legitimate movement of people and goods across the border and maximizing the collection of the government's revenue through taxes and licensing.

Customs works closely with other agencies, in particular the Vanuatu Quarantine and Inspection Service, the Department of immigration and the Vanuatu Police Service.

The interest of DCIR in used oil is minor although it is an important source of import data.

6.6 Public Works Department (PWD)

As stated in Section 6.1 above, the PWD is part of the Ministry of Infrastructure and Public Utilities.

The PWD is dedicated to contributing to the achievement of the national development goals by providing safe, reliable, and affordable infrastructure. The primary task of the department is to manage, maintain and develop the major national transport infrastructure assets – roads, ports, and airports.

The PWD currently manages the entire national road network which consists of nearly 3,000 km of roads in rural and urban areas, and it also develops and maintains a number of ports, airports and public buildings.

PWD therefore has machinery and equipment that produces used oil. It is also indirectly linked to the transport sector.

6.7 Department of Energy

The Department of Energy (DoE) is within the Ministry of Climate Change Adaptation, Meteorology, Geo-hazards, Energy, Environment and National Disaster Management Office.

The DoE is responsible for the development of energy policies, legislation and regulations to guide the development of energy services in Vanuatu and improve service delivery.

The Department is also responsible for the identification, implementation, management and evaluation of energy projects, monitoring and facilitating energy activities as well as providing awareness and training activities.

The DoE mission is to create a sustainable energy future for Vanuatu by increasing electricity access, reducing dependence on petroleum through the use of renewable energy and promoting energy efficiency and conservation.

The DOE therefore has direct and indirect involvement in power generation using diesel generators that consume oil and produce large amounts of used oil.

It is also worth noting the strong move in Vanuatu towards renewable energy, which will have the effect of reducing used oil production considerably.

6.8 Luganville Municipal Council

Luganville is the main urban centre within Sanma Province. This urban centre is governed by the Luganville Municipal Council (LMC).

LMC has equipment and machinery for carrying out its duties and will therefore produce used oil. These responsibilities include refuse collection for 17,000 people and landfill management.

The landfill is owned and operated by LMC and is approximately seven kilometres away from Luganville town. It is located in an old quarry and is not lined. The site has capacity at the current rate to last 5-10 more years. It needs to have effective procedures in place for the exclusion of used oil.

6.9 Port Vila Municipal Council (PVMC)

Port-Vila, located on the south coast of the island of Efate, is the economic and cultural centre of Vanuatu and the gateway to tourists visiting from abroad. Port Vila is the main urban centre within Shefa province, covering 12 km². Its population includes a peri urban area surrounding Port Vila called "Greater Port Vila" which belongs to Shefa province. The 2020 Census states Port Vila has a population of 49,528, and 10,990 households.

This urban area is governed by Port Vila Municipal Council, which carries out numerous activities that generate used oil. This includes waste collection and disposal. There are 12 waste collection vehicles (only 6 operational) and also 4 excavators/bulldozers at the landfill.

The landfill – Bouffa - is owned and operated by Port Vila City Council and is located 10km from the city centre. It is a sanitary landfill, 48 hectares in size (currently using 5 ha) and has a life span of 20-30 years. Again the landfill needs to have effective procedures in place for the exclusion of used oil.

6.10 UNELCO

UNELCO stands for the Union Electrique Du Vanuatu Ltd. It is a private limited company and has been operating in Vanuatu since 1939 and is the major electricity generator in the south, with concessions for Port Vila, Tanna and Malekula

It also supplies drinking water and under contract to the Government of Vanuatu, UNELCO is:

- Producer and distributor of electrical energy on the island of Efate.

- Producer and distributor of drinking water in the urban centre of Port-Vila (Efate).

UNELCO is also a pioneer of renewable energy in Vanuatu.

UNELCO produces around 20,000 litres of used oil per year from electricity generation, and it recycles used oil through Pacific Energy.

UNELCO have advised that all of their transformers that potentially contained PCB contaminated oils have been disposed of, and no out of commission transformers are in use or held in storage. It is unlikely, therefore, that any of their used oils contain PCBs.

6.11 Vanuatu Utilities and Energy (VUI)

VUI is a wholly owned subsidiary of Pernix Group Inc. They commenced operating Vanuatu in January 2011 when a Memorandum of Understanding (MOU) was signed with the Government of Vanuatu for the Luganville Electricity Concession on the island of Espiritu Santo, Vanuatu. The concession involved a complete takeover of the utility from the former concession holder UNELCO. They also hold concessions for Maewo, Vanua Lava and Ambae, also in the north of the country.

VUI produces approximately 3,500-4,500 litres of used oil per annum and also recycles used oil through Pacific Energy.

VUI have approximately 54 old transformers in storage or still in use that potentially contain PCB contaminated oil. These transformers may contain up to a total of 12,500 litres of contaminated oil. Care should therefore be taken when collecting used oil from VUI, to make sure it does not contain PCBs.

6.12 Pacific Energy

Pacific Energy is the main fuel supplier in Vanuatu. From 2006-2010 it took over the assets of Shell, Mobil and BP when they all withdrew from the Vanuatu market. Originally they traded as Pacific Petroleum and now trade as the parent company Pacific Energy.

Pacific Energy run an effective used oil take-back scheme throughout the Pacific, including Vanuatu. This is based on the need to do this under French Law, and they have extended it throughout the Pacific in the numerous locations where they operate. The scheme is only available to customers of Pacific Energy.

Prior to the COVID-19 Pandemic, Pacific Energy sent all the used oil they collected to the Copra Plant (COPSL) in Espiritu Santo. However due to financial issues the Copra Plant temporarily closed down and no longer accepted used oil, Pacific Energy then began to

export their used oil to Saudi Arabia in flexi-tanks inside 20ft shipping containers. Probably the used oil in Saudi Arabia is simply blended with crude oil.

Pacific Energy Vanuatu recycles between 60,000 - 80,000 litres of used oil per year (and they sell about 200,000 litres per year). No other company importing lubricating and other oils into Vanuatu has a take-back policy for used oil.

7.0 Current Known Management Systems

Aside from the Pacific Energy collection and export initiative mentioned in Section 6.12 above, there are no other formal management systems in place in Vanuatu, apart from small scale methods described in Section 5.2.2 above, namely:

- Inclusion in general rubbish;
- Poured directly into storm water drains etc;
- As a weed killer;
- Burnt with other waste;
- Ground marking of sports field;
- Preservative use in timber;
- Dust suppression; and
- Rust prevention.

The most common forms of management of used oil from mechanics and other small to medium sized enterprises who have used oil, is to store it in 200 litre drums until full and then take it to landfill for disposal or store it on-site in the hope that a disposal option will be found.

However, during the drum filling process which could take up to a year for some businesses, the used oil will often be siphoned into smaller containers and staff will use it for a variety of uses, including painting fence posts and spreading on the ground (such as at sand quarries) to reduce dust. If the used oil is not stored in drums it is often, unfortunately, poured down grease traps and or into stormwater drains at the places of business.

8.0 Current Known Opportunities

8.1 General

In general, the known opportunities for dealing with used oil are described in various sections above, including the Pacific Energy take-back initiative and subsequent export.

As also discussed in several places above, there are numerous minor uses for used oil that are generally regarded as environmentally unsatisfactory – including timber preservative, weed-killer and for marking sports fields.

One use that has been discussed is for supplementing diesel fuel for generators and other diesel burners. A supplementary fuel in diesel burners in certain industrial applications could be an option but no such suitable systems are currently known in Vanuatu.

Adding used oil even in small amounts to diesel fuel for generators is not acceptable because of potential fuel injector damage and rendering any guarantees void.

The services now being offered by Ocean Environmental Services do, however, have potential for assisting Vanuatu with solutions to used oil problems.

8.2 Ocean Environmental Solutions

Ocean Logistics Limited based in Port Vila since 2010 provides various marine services including freight handling and transportation, marine construction, emergency response, marine salvage, project support, and equipment hire as well as tugs, landing craft, and barges. In 2014 they developed a second business called Ocean Environmental Solutions (OES), an oil recovery and processing facility. The aim is to establish long term, viable solutions for the mitigation and recovery of maritime and land based used oils in Vanuatu. OES has specialised oil recovery equipment and in partnership with Ocean Logistics Limited will provide national maritime oil spill disaster/protection support services.

OES has a secured one-hectare property located near the airport which houses a used oil processing and storage facility. The facility features a state of the art, environmentally friendly, liquid and solid waste incinerator.

OES also has plans to set up a Petroleum Recovery and Processing (PRP) Program to recover and recycle used oils to help lessen the environmental impacts on Vanuatu. However, the current Waste Management Act legislation states that any business that collects and transports waste must apply for a permit with the DEPC to become a Licensed Waste Operator.

OES have tried to apply for a permit however the DEPC has interpreted that the legislation is only in reference to the collection and transportation of solid waste (household and commercial rubbish). As such OES are only collecting and transporting the used oil from their own maritime vessels until an appropriate licence from the DEPC can be developed for them. This matter needs to be discussed with DEPC so that a solution to this dilemma can be found.

9.0 The Inception Meeting

The UNEP / DEPC project for the management of chemical and hazardous wastes has been a long-running project in Vanuatu and the next stage is coming to a close with the preparation of the legislative review and the preparation of drafting instructions.

The date of 1 February 2022 had been set to present to stakeholders two sets of legislative review documents and also to present the NHWPIP, which contained measures to manage hazardous wastes in Vanuatu, including used oil. It therefore made sense to combine this meeting with the inception meeting for the used oil management plan project. Most of the key parties in the government and private sector who were invited would also be involved in the used oil project.

If the meetings were combined, it would also acknowledge the fact that there was an overlap between the two projects, and that they needed to be considered together. Reforms to the system to manage hazardous wastes will reinforce the more detailed focus on used oil management in Vanuatu.

The combination of meetings also enabled the two used oil inception meetings to be combined, involving the government officials and the broader stakeholder group. There were a few people present who did not have a direct interest in the used oil project but they all stayed for the combined used oil inception meeting.

The Used Oil Management Plan proposal was well accepted and encouraged by those in the room, all of whom are willing to participate in the next stage which requires the consultant team to initiate information gathering from each sector and industry involved with used oil. The DEPC will also fully participate in this process and the relevant staff member will accompany the consultant to each interview.

The meeting was well attended by 34 people from a wide cross-section of organisations and the list of attendees and their organisations is shown in Table 6 below. (The names are in the order of signature.)

The following also attended virtually:

- Peter Allen, Vanuatu Utilities and Energy (VUI)
- Julie Pillet, AFD/SPREP, Samoa
- Joshua Sam, SPREP, Samoa
- Lance Richman, SPREP, Samoa
- David Haynes, Going Troppo, Tasmania
- Sarah Waddell (NCPIP and NHWPIP Legislative Review Presenter)
- John O'Grady (NCPIP and NHWPIP Plans Presenter)

Table 6: Used Oil Inception Meeting Attendees

Name	Organisation
Serge Taleo	Origin Energy
Krishna Kotra	University of the South Pacific (USP)
Merianne Tablus	University of the South Pacific (USP)
Mina Popou	State Law Office (SLO)
David Thomas	State Law Office (SLO)
William Bae Worwor	Dept of Meteorology
Terry Mael	Dept of Energy
Jason Andrew	Port Vila Municipal Council (PVMC)
Trinison Tari	DEPC
Frazer Alo	DEPC
Nellie Ham	Dept of Health (Environmental Health)
Reuben Markward	University of the South Pacific (USP)
Maurice Masuino	South Pacific Electrics
Malcolm Dalesa	Department of Strategic Policy, Planning & Aid Coordination (DESPAC)
Byron Wells	Ocean Environmental Solutions
Erie Sami	Department of Water
Richard Coleman	Vanuatu Maritime College
Aaron Prendegast	Vanuatu Agricultural Supplies
Bob Radovanovich	Trade Tools
Armstrong Sam	Department of Biosecurity
Robinson Dickson	Department of Urban Affairs and Planning
Cecile Depuille	South Pacific Commission (SPC)
Sunny Seuseu	SPREP
Michael Tari	SPREP
Roselyn Bue	DEPC
Mary O'Reilly	WasteWise
Frederic Petit	UNELCO
Rachel Melterel	Origin Energy
Tetiana Grebenuck	Pacific Suppliers
Beverly Marango	Vanuatu Bureau of Standards (VBS)
Mutetu Savely	Port Vila Municipal Council (PVMC) (Waste Management)
Wesley Donald	Ministry of Health
Oliver Iafo	Farm Support Association (FSA)
Julien Lenelet	Top Signs Refuelling Services

10.0 Organisations to Contact

10.1 Used Oil Generators

It is proposed to contact the following potential used oil generators. This list may be broadened with further research.

Hardware

Trade Tools
Discount Hardware
Leon Hardware
Port Vila Hardware
Rent a Tool
Santo Hardware
Wilco
Vanuatu Hardware
Thai Vet Hardware
South Pacific Hardware
Vila Distribution Hardware
MOK Stores

Other

Esqal/Origin Energy
Vanuatu Agricultural Supplies
Recycle Corp
Paradise Petroleum
SSP Pacific Energy
Various Hospitals

Electrical / Utilities

South Pacific Electrics
Rapid Electrical
UNELCO
VUI

Manufacturing

Vate Industries
Vanuatu Glass and Aluminium
Tiva Timber
Veneer Logging
Vanuatu Brewing Ltd

Earthworks/Heavy Machinery

Dinh Enterprises/Van Dinh Earthworks
Santo Earthworks

Motor Vehicle

Asco Motors
Carpenter Motors
Bodiam Engineering
Thrifty Auto Centre
Hertz
Prestige Motors
Wong Garage
Lau Chung garage
Santo Engineers
Garage Express

Marine

Nicon Shipyard
Port Vila Boat Yard
Ocean Logistics
Vila Marine
MASSV
Ports and Harbour
Maritime College

10.2 Government Departments and Organisations

These organisations were described in Section 6.0 above. It should be noted that some of these organisations may also be oil generators;

- Department of Environmental Protection and Conservation (DEPC)
- Ministry of Infrastructure and Public Utilities (MIPU), including Department of Public Works, Department of Ports and Marine, and the Civil Aviation Authority (all potential used oil generators).
- The Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity (MALFFB) covering, directly or indirectly areas of farming, fishing and forestry, which would all be sectors using significant quantities of oil and producing used oil.
- Department of Energy (DOE), indirectly connected to major used oil generators from power generation.
- Ministry of Health (MOH)
- Department of Customs and Inland Revenue (DCIR)

- Luganville Municipal Council (LMC) (potential used oil generators and landfill managers)
- Port Municipal Council (PVMC) (potential used oil generators and landfill managers)

10.3 Others

In addition, other contacts will be made as follows:

- Ocean Environmental Solutions will be contacted, based on their potential to offer useful solutions.
- Any relevant NGO's that have an environmental interest will be contacted.
- Private companies involved in waste management will be contacted.

11.0 Known Government and Stakeholder Priorities

As mentioned in Section 4.0 above the National Waste Management and Pollution Control Strategy 2016-2022 does identify Used Oil as a concern. This Strategy sees a Product Stewardship Scheme as the best solution, although no action has been taken to implement this.

The Vanuatu National Environment Policy and Implementation Plan 2016–2030 (NEPIP) has policy objectives for effective waste management and pollution control, including the identification and development of chemical storage and disposal facilities. Used oil is not specifically mentioned but would be covered by these policy objectives.

The Municipal and Provincial Waste Management Plans acknowledge used oil under the broader topic of Hazardous Waste but aside from Luganville Municipality's specific Used Oil By-law mentioned in Section 3.2 above, there are no specific actions targeting this waste stream within these plans.

The 2021 Vanuatu National Implementation Plan for Persistent Organic Pollutants (NIP) Update sets out two goals for used oil:

- In the Contaminated Sites Action Plan to 'Maintain and monitor used oil recycling activities and ensure regular shipment offshore of collected used oil for recycling'
- In the Public Awareness Information and Training Action Plan to 'Conduct regular awareness campaigns on used oil recycling'.

The 2021 National Hazardous Waste and Costed Implementation Plan (NHWPIP) clearly identifies used oil as one of the main hazardous waste streams in Vanuatu and presents a detailed set of policy and strategy recommendations to deal with all hazardous wastes, including used oil. Drafting instructions to implement these recommendations has also been prepared.

12.0 Government Tasks and Responsibilities

The DEPC has been very proactive in initiating action on hazardous wastes and successfully managed to get the UNEP NCPIP work extended to include the NHWPIP. Momentum and funding is now needed to ensure that these initiatives are turned into effective legislation and that all the full range of recommendations are adopted.

Used oil is an important focus of the NHWPIP and the AFD/SPREP Used Oil Management Plan project will enable the used oil focus to be maintained and broadened. The DEPC has indicated their strong support for the Used Oil project and it is expected that this work will lead to an effective and practical detailed plan that will fit within and complement the NHWPIP work. It is also expected that a detailed Code of Practice will be developed for used oil management.

The DEPC will look to other agencies as follows to support their used oil management work:

- Ministry of Infrastructure and Public Utilities (MIPU), including Department of Public Works, Department of Ports and Marine, and the Civil Aviation Authority. These are all potential used oil generators and it is hoped they can take an active part in developing the used oil management plan and assisting with its implementation.
- The Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity (MALFFB). Farming, fishing and forestry, would all be sectors using significant quantities of oil and producing used oil, and again it is hoped that MALFFB can take an active part in developing the used oil management plan and assisting with its implementation.
- The Department of Energy (DOE) will be encouraged to assist all power generators, large and small, to take part in developing the used oil management plan and assisting with its implementation.
- Ministry of Health (MOH) will be asked to assist with the development and promotion of the used oil management plan as a public health measure. They will also be asked to assist with the management of any used oil arising from hospitals.
- Department of Customs and Inland Revenue (DCIR) will be asked to assist with the gathering of data relating to products that may result in the generation of used oil.
- Luganville Municipal Council (LMC) are potential used oil generators and landfill managers, and LMC also have a draft used oil management bylaw. They will be asked to assist with the development and implementation of the used oil management plan and also with tighter controls that will prevent used oil being disposed in their landfill.

- Port Municipal Council (PVMC) are potential used oil generators and landfill managers. They will also be asked to assist with the development and implementation of the used oil management plan and also with tighter controls that will prevent used oil being disposed in their landfill.

13.0 Detailed Work Plan

A logical step-by-step methodology needs to be developed that will focus on assessing used oil from the point it is generated until it is finally disposed of. Satisfactory disposal of used oil is expected to be mainly to off-shore destinations although some local end uses may be deemed acceptable. Off-shore disposal is generally the preferred option throughout the Pacific although there are other local end use options in some countries such as BlueScope Pacific Steel in Fiji. Ocean Environmental Solutions may also provide a local solution in Vanuatu.

The step-by-step methodology needs to focus on the following used oil life cycle stages:

- Generation
- Storage for collection
- Collection
- Unsatisfactory disposal practices
- Transport to end use / disposal, including overseas shipment
- Final disposal

A detailed and thorough series of questions is needed that will gather detailed information about the above life cycle stages to inform project reporting and examine ways to:

- Increase collection
- Improve transport methods
- Seek satisfactory disposal methods
- Assess means for improvements
- Assess costs for improvements
- Assess training and capacity-building needed
- Target needs to each country's requirements.
- determine potential pathways to develop Advanced Disposal Fees for lubricating oils
- review existing waste legislation and relevance to used oils

Appendix 3 contains a list of questions that may need some refining, once they are put to use.

The questions will be prepared electronically and information can be recorded electronically or transferred as soon as possible from notes. Photos will be used extensively to supplement the data gathering and will be numbered and identified with care so they can be traced to sources.

It should be noted that the data gathered may be inaccurate and information sources may be doubtful. Information will therefore be confirmed as much as possible from

several sources and care will be taken not to make unjustified assumptions. Data will be backed up with referenced sources.

A detailed mass balance inventory will also be calculated that examines sources of used oil, quantities of used oil generated, stockpiles of used oil and estimated losses. This will enable an assessment of the level of used oil mismanagement in each country.

It should be noted that there may be difficulty assessing imports accurately and relating these figures to used oil produced. Import figures from Customs records can, however, be checked with terminal and retail store stocktaking methods, and accepted methodologies will be used for predicting used oil production.

The next stages in the project are:

Analysis Report

Undertake an analysis of used oil production and existing used oil collection, storage, treatment, disposal and export services, and analyse findings against government and stakeholder priorities. This report is due two months after the approval of the Inception Report, which means that it could be completed by the end of May 2022. It should be noted, however, that Vanuatu is currently experiencing lockdowns due to an outbreak of Covid 19 and this may delay the Analysis Report.

Feasibility Study Report

Development of a feasibility study based on all the information gathered and data obtained through the consultations, interviews, and investigations, and presentation of the Feasibility Study. This due two months after the Approval of the Analysis Report. At this stage, the target date could be August 2022.

Draft Used Oil Management Plan

Compile all the gathered information to develop a Draft National Used Oil Management Plan, and present this plan to national stakeholders. This due two months after the Approval of the Feasibility Study Report. At this stage, the target date could be October 2022.

Final Used Oil Management Plan

One month after the approval of the Draft National Used Oil Management Plan the Final Plan is due, once all the amendments and comments have been incorporated. Some further research may also be needed, as a result of the feedback. At this stage, the target date could be November – December 2022.

14.0 Conclusions

- a. Based on previous reports, there is a large amount of used oil generated in Vanuatu. Based on the earlier figures, the quantity of used oil could be about 300,000 litres or more per year.
- b. Apart from the amount taken back by Pacific Energy and currently sent overseas, there is a significant quantity that is mismanaged. There are even reports of large amounts being disposed of to landfills. Based again on figures in this report, there could be about 150,000 - 200,000 litres of used oil per year that are being mismanaged, including in uses such as timber preservation and weed control that are inappropriate uses for used oil.
- c. The mismanagement is largely due to the fact that options for management are very limited and it is impractical to stop the generation of used oil from a large number of sources.
- d. The AFD/SPREP project to devise a practical and carefully-developed used oil management plan is therefore badly needed.
- e. The strength of the process for developing this plan is that it relies on steady and logical steps that are tested at several stages.
- f. This report focuses on the inception stage where available data is assessed, available resources are evaluated, sources of used oil are clarified, and a way forward is planned.
- g. It is clear that there is already quite a large amount of information available. This information has to be tested and updated, and more data gathered for analysis. Then the feasibility study can be prepared and the used oil management plan developed and finalised after broad consultation.
- h. In Vanuatu there is already a broader process underway with the development of overall chemical and hazardous waste management policies and implementation plans. There is also the prospect, arising from this work, of a new Chemical Safety Act, and amendments to the Waste Management Act 2014 to incorporate effective hazardous waste management. The focused used oil management project will fit well within this overall process. Used oil is clearly a major hazardous waste stream.
- i. The next stage of the used oil work is to gather more information, and carry out additional analysis and discussions with stakeholders. The further information gathering and analysis needs to be based on information pulled together at this inception stage. That will ensure the project moves forward effectively from this point.

Appendix 1 – Photos Showing Problems with Used Oil Management in the Pacific

NB It should be noted that these photos are visual indications of the problem in the Pacific and are not the only examples. The photos are also historical and the problems that are shown may now be resolved.



Leaking Used Oil IBCs in Niue



Used Oil Drums Stored on Chuuk



Used Oil Drums Stored on Yap



Landfill Stockpile in Pohnpei 2014 (Now Cleared)



Drums sinking into landfill / Unstable pile of drums (Pohnpei)



Used oil and used filters on Kosrae



Used oil and old filters dumped in a hole in the ground (Fiji)



Used oil dumped into stormwater (Fiji)



Poor Used Oil Housekeeping (Fiji)



Open burning of used oil, oil filters and other waste (Fiji)

Appendix 2 – Model Used Oil Regulations

MODEL USED OIL REGULATIONS

PART 1 – PRELIMINARY

1. Short title and commencement

- (1) These Regulations may be cited as the Used Oil Regulations 2014.
- (2) These Regulations commence on [insert commencement date].

2. Interpretation

- (1) In these Regulations, unless the context otherwise requires:

“Act” means the [name of Act under which Regulations made].

“base oil” means an oil that is free from contaminants or additives and to which other substances may be added for a particular application.

“Basel Convention” means the Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Basel, 1989.

“Fund” means the Waste Recycling Fund established by regulation 2.4.

“licensed collector” means a person who is licensed as a waste management operator under the Act to collect used oil.

“licensed recycler” means a person who is licensed as a waste management operator under the Act to recycle or sell used oil.

“Managing Agency” means the body responsible for administering these Regulations.

“oil” means:

- (a) petroleum based oil (including lubricant base oil; prepared lubricant additives containing carrier oils; lubricants for engines, gear sets, pumps and bearings; greases, hydraulic fluids; transmission oils; and transformer and heat transfer oils);
- (b) synthetic equivalents of goods covered by paragraph (a); and
- (c) any other goods determined by the Minister for the purposes of this definition.

“oil recycling benefit” means an amount payable under Part 4.

“recognised overseas buyer” means a person in a country other than [country] who is recognised in that country as a person who recycles oil in an environmentally sound manner by complying with the Basel and Waigani Conventions.

“recycled oil” means:

- (a) goods produced from used oil; or
- (b) used oil that has been re-refined.

“recycling levy” means the levy impose by regulation 2.1.

“recycling of oil” means:

- (a) producing goods from used oil; or
- (b) re-refining used oil.

“re-refined” has the meaning given by sub-regulation (2).

“used oil” means any oil that has been used and that, as a result of that use, is contaminated by physical or chemical impurities.

“Waigani Convention” means the Convention to ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region, Waigani, 1995.

- (2) For the purpose of these Regulations, used oil has been re-refined if it has been restored to the condition of a base oil:
- (a) by thin film evaporation, followed by solvent extraction or hydrofinishing; or
 - (b) by vacuum distillation, followed by solvent extraction or hydrofinishing; or
 - (c) by another process approved for the purpose of this sub-regulation by the Minister as being:
 - (i) consistent with the objects of the Act and these Regulations; and
 - (i) similar in purpose and effect to the processes mentioned in paragraphs (a) and (b).

3. Objectives of these Regulations

The objectives of these Regulations are to:

- (a) develop a product stewardship arrangement for used oil that promotes the sharing of responsibility by importers, retailers, consumers and users of oil;
- (b) provide an arrangement for managing used oil that is financially sustainable;
- (c) ensure that management of used oil complies with relevant international conventions and national legal requirements;
- (d) ensure that users of oil contribute to the costs associated with exporting or otherwise managing used oil in an environmentally sustainable manner;
- (e) manage the export of used oil in an environmentally sound manner.

PART 2 – LEVY

4. Recycling levy on oil

For the purposes of section XX of the Act, a levy is imposed on the importation of oil into [country].

5. Amount of levy

- (1) The amount of levy is to be determined by the Minister.
- (2) In determining the amount of levy, the Minister must have regard to:
- (a) the costs of storing used oil, including the costs of providing temporary storage containers;
 - (b) the costs of collecting and transporting used oil;
 - (c) the costs of recycling used oil;
 - (d) if the used oil is not recycled, the costs of exporting the used oil for recycling, or selling the oil for further use;
 - (e) the estimated amount of the oil recycling benefit; and
 - (d) the estimated costs of ongoing initiatives to raise people’s awareness of the need to protect the environment by collecting and recycling used oil.

- (3) Before determining the amount of levy, the Minister must consult:
 - (a) [any relevant government bodies, such as the Department of Finance];
 - (b) importers of oil;
 - (c) a representative of major users of oil;
 - (d) the power utility;
 - (e) any existing oil recyclers;
 - (f) business representatives; and
 - (g) community representatives.
- (4) The Minister must ensure notice of the amount of recycling levy is published at least one month before the levy commences.

2.3 Payment of levy - The recycling levy is payable by the importer of the oil.

2.4 Waste Recycling Fund

- (1) A Fund called the Waste Recycling Fund is established.
- (2) The recycling levy is to be paid into the Fund.
- (3) The Fund is to be managed by the Managing Agency, in accordance with the requirements of the [Department of Finance or other government body].
- (4) Moneys paid into the Fund are to be used:
 - (a) for payment of oil recycling benefit, in accordance with Part 4;
 - (b) to provide short term oil storage containers; and
 - (c) for ongoing initiatives to raise people's awareness of the need to protect the environment by collecting and recycling used oil; and

PART 3 – DEALING WITH USED OIL

3.1 Short term storage of used oil

- (1) Used oil must be stored in a safe and an environmentally approved manner.
- (2) In particular, used oil must be stored in a container that:
 - (a) is in good condition and labelled to show it contains used oil;
 - (b) has spill prevention and collection equipment that includes appropriate and adequate sized bunding; and
 - (c) has adjacent and accessible fire prevention and suppression equipment.

3.2 Collection of used oil

- (1) A licensed collector must:
 - (a) meet all health, safety and environmental requirements for the handling, collection, transport and storage of used oil;
 - (b) wear appropriate personal protective equipment;
 - (c) provide suitable storage tanks, if none are available, that have appropriate spill prevention equipment that includes appropriate and adequate sized bunding;
 - (c) have adjacent and accessible fire prevention and suppression equipment; and
 - (d) keep a record of each amount of used oil received.

3.3 Recycling or export of used oil

- (1) A licensed recycler must:
 - (a) meet all health, safety and environmental requirements for the handling, transport and storage of used oil;
 - (b) wear appropriate personal protective equipment;

- (c) provide suitable storage tanks, if none are available, that have appropriate spill prevention equipment that includes appropriate and adequate sized bunding and fire extinguishers;
 - (d) have adjacent and accessible fire prevention equipment;
 - (e) keep a record of each amount of used oil received;
 - (f) recycle used oil by:
 - (i) re-refining the used oil in [country]; and
 - (ii) selling the recycled oil for reuse in [country]; or
 - (g) subject to sub-regulation (4), export the used oil.
- (2) If the licensed recycler sells the recycled oil, he or she must be reasonably satisfied that the buyer of the oil will deal with the oil in an environmentally safe manner.
 - (3) If the licensed recycler exports the used oil, he or she must be reasonably satisfied that the person to whom the oil is exported will deal with the oil in an environmentally safe manner.
 - (4) The recycler may only export used oil with the approval of the Minister.

3.4 Occupational health and safety

- (1) All persons involved in collecting, storing, transporting or recycling used oil must wear appropriate personal protective equipment.
- (2) An employee of a licensed collector or recycler must wear an identity card showing his or her employment.

3.5 Licensing of collectors and recyclers

- (1) A person who collects used oil for the purpose of recycling or export, or recycles or exports used oil, must be licensed under the Act.
- (2) A person may apply in writing to the Minister to be licensed as a used oil collector or a used oil recycler, or both.
- (3) The Minister may grant the licence if he or she is satisfied:
 - (a) for an application for a used oil collector's licence – that:
 - (i) the applicant has a viable business model to operate an oil collection business;
 - (ii) the applicant has the relevant expertise and equipment to collect, handle and transport used oil in compliance with environmental and safety standards and guidelines;
 - (iii) all vehicles and drivers used by the applicant in the collection of used oil will comply with transport regulations and any licensing requirements for transporting hazardous materials; and
 - (iv) all transportation vehicles are appropriately labelled.
 - (b) for an application for a used oil recycler's licence – that:
 - (i) the applicant has a viable business model to operate an oil recycling and export business;
 - (ii) the applicant has suitable bulk storage tanks that are installed on an impervious base; and
 - (iii) any spillage will be caught by an appropriate and adequately sized bund;
 - (iv) the applicant has the relevant experience and equipment to recycle used oil in compliance with safety and environmental standards and guidelines;
 - (v) if used oil is to be exported, the applicant is able to establish that the oil will be sold to a recognized overseas buyer of used oil in accordance with the Basel Convention and the Waigani Convention; and
 - (vi) the applicant has not been convicted of any environmental offences in [country]; and
 - (c) in both of those cases – that:

- (i) the applicant's employees are trained in the handling of used oil and will be issued with appropriate personal protective equipment;
- (ii) the applicant is aware of his or her obligations under the Act and these Regulations, and under relevant environmental legislation, in relation to the handling of used oil.

3.6 Licence The licence must be in the form approved by the Minister.

PART 4 –OIL RECYCLING BENEFIT

4.1 Entitlement to benefit

- (1) A licensed recycler is entitled to be paid oil recycling benefit for used oil that is, within a benefit period:
 - (a) recycled in accordance with these Regulations; or
 - (b) exported in accordance with regulation 3.3.
- (2) However, a licensed recycler is only entitled to be paid benefit for used oil that is recycled or exported after [specific date OR the date of commencement of these Regulations].

4.2 Application for benefit

- (1) A licensed recycler may apply to the Managing Agency for payment of oil recycling benefit for a benefit period.
- (2) The application must:
 - (a) be made using the form approved by the Managing Agency;
 - (b) set out, for the benefit period, the quantity of used oil:
 - (i) recycled;
 - (ii) sold or available for sale; and
 - (ii) exported; and
 - (c) be signed by the license recycler.
- (3) The application must have with it:
 - (a) documentation that establishes the quantity of used oil that has been recycled and is available for sale; and
 - (b) for oil that is being exported - shipping documentation (including the bill of lading) to show the quantity of used oil that is ready to be shipped.
- (4) The Managing Agency must assess the application for benefit and issue a notice of assessment to the licensed recycler showing the amount of benefit and how it was calculated.
- (5) In assessing the application for the benefit, the Managing Agency may:
 - (a) ask the applicant for further information about:
 - (i) the dates and quantities of used oil received by the applicant; and
 - (ii) the name of the licensed collector that provided the used oil; and
 - (b) inspect the oil loaded for shipping.

4.3 Amount of benefit

- (1) The amount of benefit is to be based on the quantity of used oil recycled, ready to be exported or exported during the benefit period.
- (2) In determining the amount of benefit, the Managing Agency must have regard to:
 - (a) the volume of used oil that has been recycled; and
 - (b) the volume of used oil that has been exported or is ready for export.

4.4 Payment of benefit Benefit is payable out of the Fund.

PART 5 – MISCELLANEOUS

5.1 Contract

- (1) The Managing Agency may enter into agreements with a licensed collector and a licensed recycler concerning the collection and recycling of used oil and the sale and export of recycled oil.
- (2) An agreement may require the collector or recycler to pay a bond.

5.2 Offences

- (1) A person must not dispose of used oil otherwise than in accordance with the Act and these Regulations.
- (2) In particular, a person must not:
 - (a) pour used oil onto the ground;
 - (b) pour used oil into a drain or into still or flowing water;
 - (c) allow used oil to escape onto the ground or into a drain or still or flowing water;
 - (d) store used oil in a way that allows the oil to escape onto the ground or into a drain or still or flowing water; or
 - (e) burn used oil in the open air.
- (3) A person who contravenes subsection (1) or (2) commits an offence and is liable on conviction to a fine not exceeding XX penalty units or imprisonment for a term not exceeding [PERIOD], or both.

5.3 Offences by licensed collector or recycler

- (1) A licensed collector and a licensed recycler:
 - (a) must transport used oil in such a way that no oil escapes from the container in which it is transported;
 - (b) must not allow collected used oil to escape onto the ground or into still or flowing water; and
 - (c) must comply with the requirements of these Regulations in dealing with used oil.
- (2) A licensed recycler must carry out the recycling process in such a way that no used oil escapes onto the ground or into still or flowing water.
- (3) A person who contravenes subsection (1) or (2) commits an offence and is liable on conviction to a fine not exceeding XX penalty units or imprisonment for a term not exceeding [PERIOD], or both.

5.4 Obligation to clean up spills

If a licensed collector or licensed recycler accidentally discharges used oil during storage, collection, transportation or recycling, he or she must, immediately after becoming aware of the discharge, take all necessary action to

- (a) contain the spill;
- (b) clean up the spill; and
- (c) notify the Managing Agency.

5.5 Report by Managing Agency

- (1) The Managing Agency must give an annual report to the Minister by [DATE] each year, setting out:
 - (a) the amount of levy paid into the Fund;
 - (b) how money in the Fund has been spent;
 - (c) the total quantity of oil on which levy is paid;
 - (d) the total quantity of used oil collected; and

- (e) the total quantity of used oil recycled or exported.
- (2) The Minister must present the report to Parliament within one month of receiving it.
- (3) The Managing Agency must make the report available to the public after it has been presented to Parliament.

5.6 Reports by licensed collectors and recyclers

- (1) A licensed collector must give a written report to the Managing Agency and the Minister every 12 months setting out the amount of used oil:
 - (a) collected; and
 - (b) delivered to a licensed recycler.
- (2) A licensed recycler must give a written report to the Managing Agency and the Minister every 12 months setting out the amount of used oil:
 - (a) received;
 - (b) held awaiting decision whether it should be recycled, sold or exported;
 - (c) identified for recycling;
 - (d) undergoing recycling;
 - (e) identified for sale in [country] as used oil;
 - (f) sold in [country] as used oil;
 - (g) identified for export;
 - (h) ready for shipping; and
 - (i) shipped.
- (3) The report must have with it:
 - (a) copies of relevant documents relating to the recycling, sale or export;
 - (b) a health and safety incident report; and
 - (c) a report concerning whether the recycler has complied with relevant standards and codes of practice relating to the environmentally sound management of used oil.

5.7 Inspection

- (1) The Managing Agency may appoint an inspector for the purposes of these Regulations.
- (2) An inspector may, during business hours:
 - (a) enter premises used by a licensed collector or a licensed recycler for the storage or recycling of used oil;
 - (b) inspect the storage and recycling operations carried out on those premises; and
 - (c) inspect books and records relating to the collection and recycling of used oil.
- (3) Before carrying out an inspection, an inspector must produce evidence of his or her appointment.

5.8 Review

- (1) The rate of levy and benefit payable under these Regulations must be reviewed annually.
 - (2) Three years after the commencement of these Regulations, the Minister must appoint a person to review:
 - (a) the operation of the Fund; and
 - (b) generally, the operation of the system of managing used oil under these Regulations.
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SCHEDULES
SCHEDULE 1 – RE-REFINED BASE OIL CRITERIA

- 1 Mutagenicity**
The oil must be non-carcinogenic, demonstrated by having a mutagenicity index of less than 1 using the Modified Ames Test.
 - 2 Poly-aromatic hydrocarbons**
 - (1) The oil must contain less than the following for each kilogram of oil:
 - (a) 10 mg of benzo(a)pyrene;
 - (b) 10 mg of dibenz(ah)anthracene;
 - (c) 100 mg of benz(a)anthracene;
 - (d) 100 mg of benzo(b)fluoranthene;
 - (e) 100 mg of benzo(k)fluoranthene;
 - (f) 100 mg of chrysene; and
 - (g) 100 mg of indeno(123-cd)pyrene.
 - (2) The total amount of poly-aromatic hydrocarbons mentioned in subclause (1) that the oil contains must be less than 400 mg for each kilogram of oil.
 - (3) The total amount of all poly-aromatic hydrocarbons that the oil contains (including poly-aromatic hydrocarbons mentioned in subclause (1)) must be less than 1 000 mg for each kilogram of oil.
 - 3 Polychlorinated biphenyls**
The oil must contain less than 2.0 mg of polychlorinated biphenyls for each kilogram of oil.
 - 4 Polychlorinated dibenzo-p-dioxins**
The total amount of dioxins and furans that the oil contains must be less than 10 picograms Toxic Equivalent for each gram of oil.
 - 5 Total acid number**
The oil must have a total acid number of less than 0.07 mg of potassium hydroxide for each gram of oil.
 - 6 Heavy metals**
The oil must contain less than the following for each kilogram of oil:
 - (a) 5 mg of arsenic;
 - (b) 2 mg of cadmium;
 - (c) 10 mg of chromium; and
 - (d) 100 mg of lead.
 - 7 Appearance**
The oil must have a clear and bright appearance.
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SCHEDULE 2
PETROLEUM PRODUCT CRITERIA

- 1 **Density**
The petroleum product must have a density:
 - (a) equal to or exceeding 0.900 at 15° Celsius as determined by ASTM 1298;
or
 - (b) less than 0.900 at 15° Celsius as determined by ASTM 1298 and:
 - (i) a maximum cetane index of 35 as determined by ASTM D976; or
 - (ii) in respect of the heaviest 10% of a particular volume of fuel tested, a value of 0.35% mass of carbon residue on 10% distillation residue as determined by ASTM D189 or D524; or
 - (iii) a minimum pour point of 15° Celsius as determined by ASTM D97; or
 - (iv) a minimum sulphur content of 1.5% mass as determined by ASTM D129; or
 - (v) a minimum kinematic viscosity of 10 centistokes (millimetres squared per second) at 40° Celsius as determined by ASTM D445.

- 2 **Duty**
Duty on the petroleum product must have been paid at a rate that is applicable to diesel fuel.

- 3 **Use**
The petroleum product must be capable of being used as a fuel otherwise than in an internal combustion engine.

- 4 **References to ASTM tests**
In this Schedule, *ASTM*, followed by a number, is a reference to the test so numbered as prescribed by the American Society for Testing and Materials and set out in Section 5 of the *Annual Book of ASTM Standards* (1986 revision) published by the American Society for Testing and Materials at Philadelphia, Pennsylvania in the United States of America.

Appendix 3: List of Questions

1. National Government

- What are the government priorities for national used oil management?
- Is there a Government Policy on used oil management?
- What are the regulatory considerations for used oil management?
- What is the current government capacity to manage used oil and what assistance is needed?
- What are the government responsibilities for used oil management?
- Who are the National used oil management stakeholders?
- How would used oil carriers be licenced?
- How would used oil storage facilities be licenced?
- Who would train used oil handlers/carriers?
- How would the government set up and manage an advanced recycling fee for used oil management?
- What sort of monitoring and evaluation programme would be required?
- How would International Convention requirements be managed and what, if any, additional assistance would be required by Government to ensure requirements were met?
- Is improved community education needed? (What is done now)?
- Is improved data collection needed? (What is done now)?

2. Customs

- What volume of different oil (lubricant) types (litres/kg) is imported annually into Vanuatu (2018-2021)?
- What categories of lubrication oils are separated out in Customs records?
- Are they reported in kg or lts?
- Is this data available for 2018-2021 inclusive?
- Could the data be supplied in an electronic spreadsheet?

3. Oil Importers

- If not commercial in confidence, what volume of different oil types (litres) is imported annually into Vanuatu (2018-2021)?
 - Engine oil
 - Brake fluids
 - Gear oils
 - Transmission fluids
 - Hydraulic oils and fluids
 - Compressor oils
 - Refrigeration oils
 - Industrial process oils
 - Electrical insulating oil (Care must be taken to exclude oil likely to contain PCBs)
 - Metalworking fluids and oils
 - Heat transfer oils
 - Machining oils
- Who are the lubricants sold to and in what annual quantities (ie who are the end users)?
- Where are the different lubricating oils sourced from (ie Singapore, USA, Aust, NZ etc)?

4. Oil Retailers

- What volume of each oil type is sold annually?
- What are the major user groups and volumes purchased?
 - Power generation (EPC)
 - Shipping
 - Construction companies
 - Bus and haulage operators
 - Car fleets (including service stations and taxis)
- How are the different oil types retailed (in what volume and in what type of container)?
- Do you have a take back scheme for used oil and/or oil containers?
- What % of oil (what annual volume) is sold to customers for home DIY oil changes?

5. Used oil generators

- What volume of each used oil type is generated annually at your business?
- How is the used oil collected and stored (ie drums, IBCs, bulk storage etc)?
- Please specify the short term storage type and capacity, long term storage type and capacity, how long is the used oil is usually stored for before disposal?
- How are other chemicals (petrol, paint, antifreeze) stopped from contaminating the used oil?
- How much used oil is currently stored on site (and how long approximately has it been stored for)?
- How are used oil filters managed?
- How have you disposed of used oil in the past?
- What is the cost to dispose of the used oil?
- How is the used oil disposed of now?
- Are there any other (unsatisfactory) oil disposal practices still carried out and what might be required to prevent this in the future?
- Is there any treatment of the used oil on site (eg water separation....)?
- How are oil spills managed?
- Is there any training in oil spill management?
- Are storage areas bunded?
- Is there any practical use for used oil in Vanuatu?
- Are there any options for a local recycling oil processing plant for Vanuatu?
- What government regulations are in place for used for used oil management?
- What is the stakeholders priority actions for a national used oil management scheme?
- What can the used oil generator commit to doing under a national used oil management scheme?
- What assistance is required (training, funding, equipment) to enable this to occur?

6. Car Registration

- How many registered cars in Vanuatu (private and commercial users)?
- How many registered trucks (private and commercial users)?
- How many registered buses (private and commercial users)?

7. Used oil Transporters

- Annual used oil volumes transported per year?
- Major sources of used oil transported by the carrier?
- Transport container and truck description?
- Details of spill response equipment and training?
- Details of national licence/certification for used oil transport?
- Logistical issues connected with used oil transportation?
- What is the stakeholders priority action for a national used oil management scheme?
- What can the used oil transporter commit to doing in the scheme?
- What assistance is required to enable this to occur?

8. Marine

- How is used oil from boats managed?
- How much used oil from boats is disposed of on shore per year
- How is collection, transport and disposal managed?
- What are the costs incurred/charged

9. Used oil storers

- Landfill has storage capacity?
- Is there storage capacity elsewhere?
- What are the quantities of each existing stockpile of used oil?
- How is the used oil received and stored?
- What is the annual acceptance rate of used oil at the site?
- How is this financed?
- How is the collected used oil disposed of?
- What are some safety measures put in place for the above storage facilities? Are there any OHS tools applied?
- It there spill equipment, training etc at the site?

10. Used oil exporters (SWIRE, Matson, NPDL, Pacific Forum Line)

- What are the export destination options for used oil recycling (eg Fiji BlueScope Steel, New Zealand, Australia, India, Saudi Arabia, South Korea etc)?
- What volume of used oil is exported annually?
- How frequently is the oil shipped?
- Where is the used oil sourced from?
- What containers/systems are used to ship the oil?
- How much does it cost to export the used oil?
- How much is the used oil sold for?
- What International Conventions are used to ship the used oil?
- Is training in international conventions procedures needed?
- Any specific logistical issues?
- OHS issues and training required or currently carried out?
- Site bunding and spill response planning details?

11. Export destination

- Which destination?
- What is known about how the used oil will be managed in the receiving country?

- How much has been exported to the destination over the last 3 years?
- What were the financial details of the export?
- International Convention requirements and training required?
- Cost recovery system details?
- Which Shipping Lines are currently involved in shipping used oil from Vanuatu