ANZPAC PLASTICS PACT

USED OIL CONTAINER PRODUCT STEWARDSHIP

Data Summary

SUPPORTED BY APCO

VERSION 1: MARCH 2023

PURPOSE OF THIS DOCUMENT

This document supplements work completed as part of the oil containers project, used to set out the main findings of research led by APCO, which determined a preferred model and the scheme design for delivering a product stewardship scheme for end-of-life lubricant containers in Australia. It contains background information and selected industry data used to inform the work, including:

- Market segmentation by containerised lubricant product category – different categories of lubricant product sold in containers, expressed in absolute terms and as a percentage of total market size (i.e. as volumes of lubricant sold; and as sales revenue in 2021).

- Market segmentation according to lubricant container size from less than one litre to more than twenty litres in volume capacity
  - By containerised lubricant product category (six categories)
  - Across all containerised lubricant product categories sold in the Australian market.

- Market segmentation by brand, i.e. volumes sold per brand, in each containerised lubricant product category.

- Percentage volume of containerised lubricant product sales according to sales channel used in Australia:
  - By containerised lubricant product category (six categories)
  - Across all containerised lubricant product categories sold in the Australian market.

- Percentage volume of sales according to point of container manufacture (i.e. in Australia versus outside of Australia):
  - By containerised lubricant product category (six categories)
  - Across all containerised lubricant product categories sold in the Australian market.

- Percentage volume of sales according to packaging material (i.e. rigid plastic, rigid metal, flexible packaging, other):
  - By containerised lubricant product category (six categories)
  - Across all containerised lubricant product categories sold in the Australian market.

- Comparative use of oil containers in metropolitan and non-metropolitan locations, at the national, state and territory levels.

- The impact of the shift to electric vehicles on containerised lubricant volumes and the mass of materials used in lubricant containers.

Following data collection, subsequent project activities and stakeholder engagement, all lubricant products are considered in scope for a new product stewardship scheme for used containers except brake fluid and greases. The following data has been provided as a reference for the industry to understand the complete lubricant market.

Containerised lubricant product categories sold in Australia

Based on research undertaken, the following categories comprise the major lubricant products sold in Australia in containers up to and including 20L:

- **Engine oil**
- **Transmission oil**
- **Gear oil**
- **Greases**
- **Hydraulic fluids**
- **Brake fluids.**

The market share of each product category (as volume of lubricant sold, and as sales revenue) is shown (In Figure 1, sales are expressed in million litres sold. In Figure 2, revenue is expressed in million $AUD, derived from original data using euro.)

SALES VOLUMES OF CONTAINERISED OIL LUBRICANTS BY MARKET SEGMENT (2021)
(MILLION LITRES SOLD)

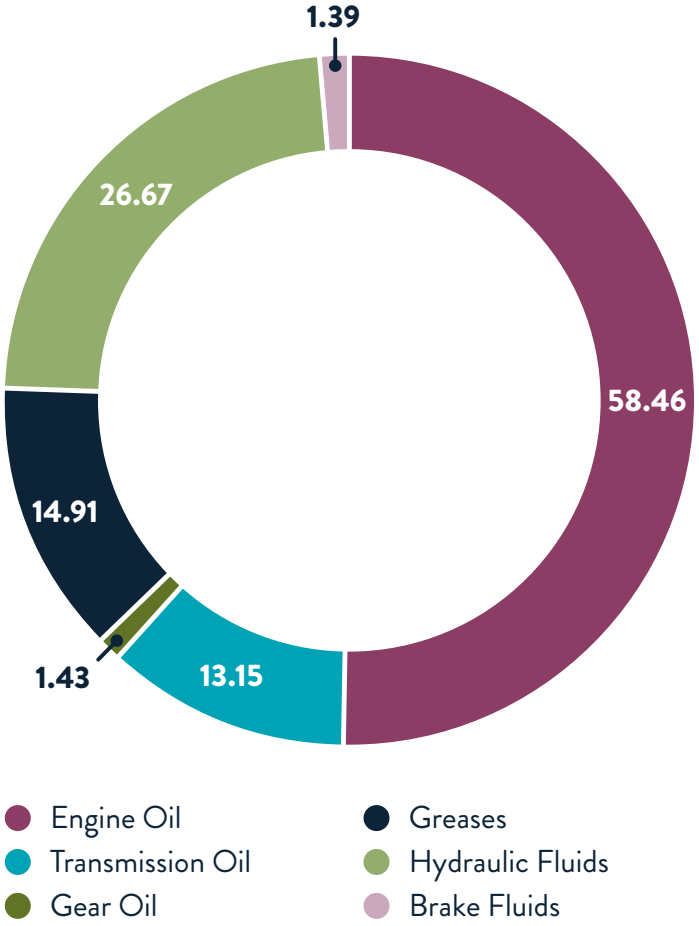

Figure 1: Sales volume (million litres) of containerised oil lubricants, 2021.

SALES VOLUMES OF CONTAINERISED OIL LUBRICANTS BY MARKET SEGMENT (2021)
($MILLION IN SALES)

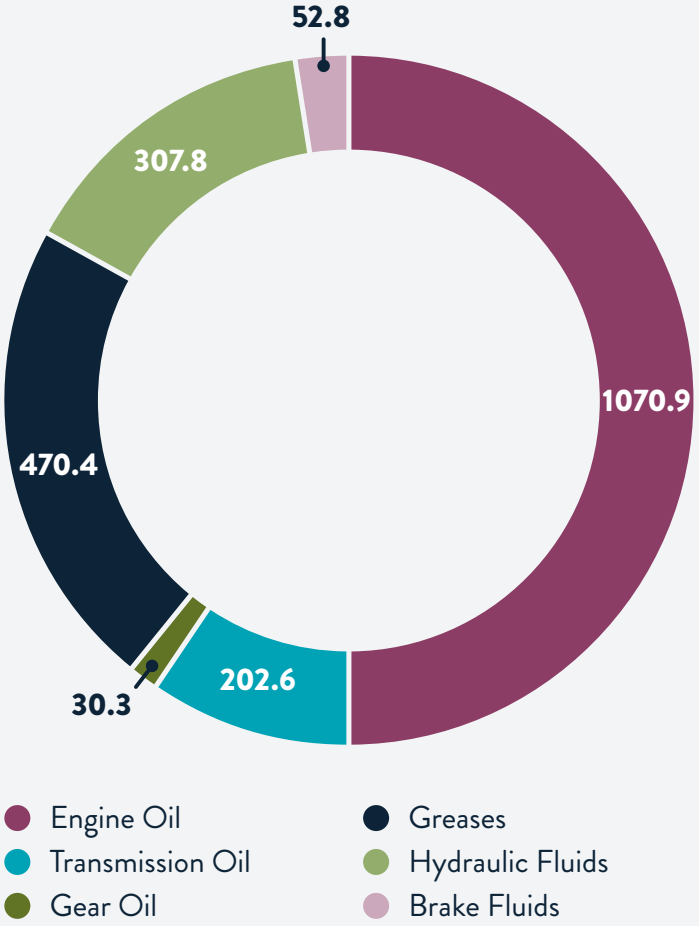

Figure 2: Sales volume (million $AUD) of containerised oil lubricants, 2021.

Market segmentation based on container size

Containerised lubricant products are sold in the Australian market according to a range of volume capacities, from less than one litre to twenty litres or more in capacity (in 2021). Figure 3 and 4 set out the relative market share (i.e. percentage of total volume sold) of different container sizes for each of the six product categories identified as being sold in the Australian market.

Figure 3 displays the market share for when all six product categories are aggregated to a single weight-based estimate, with the market share held by different container sizes for individual product categories set out overleaf in Figure 4.

ALL LUBRICANT CATEGORIES
MARKET SHARE (% VOLUME SOLD) BY CONTAINER SIZE (2021)

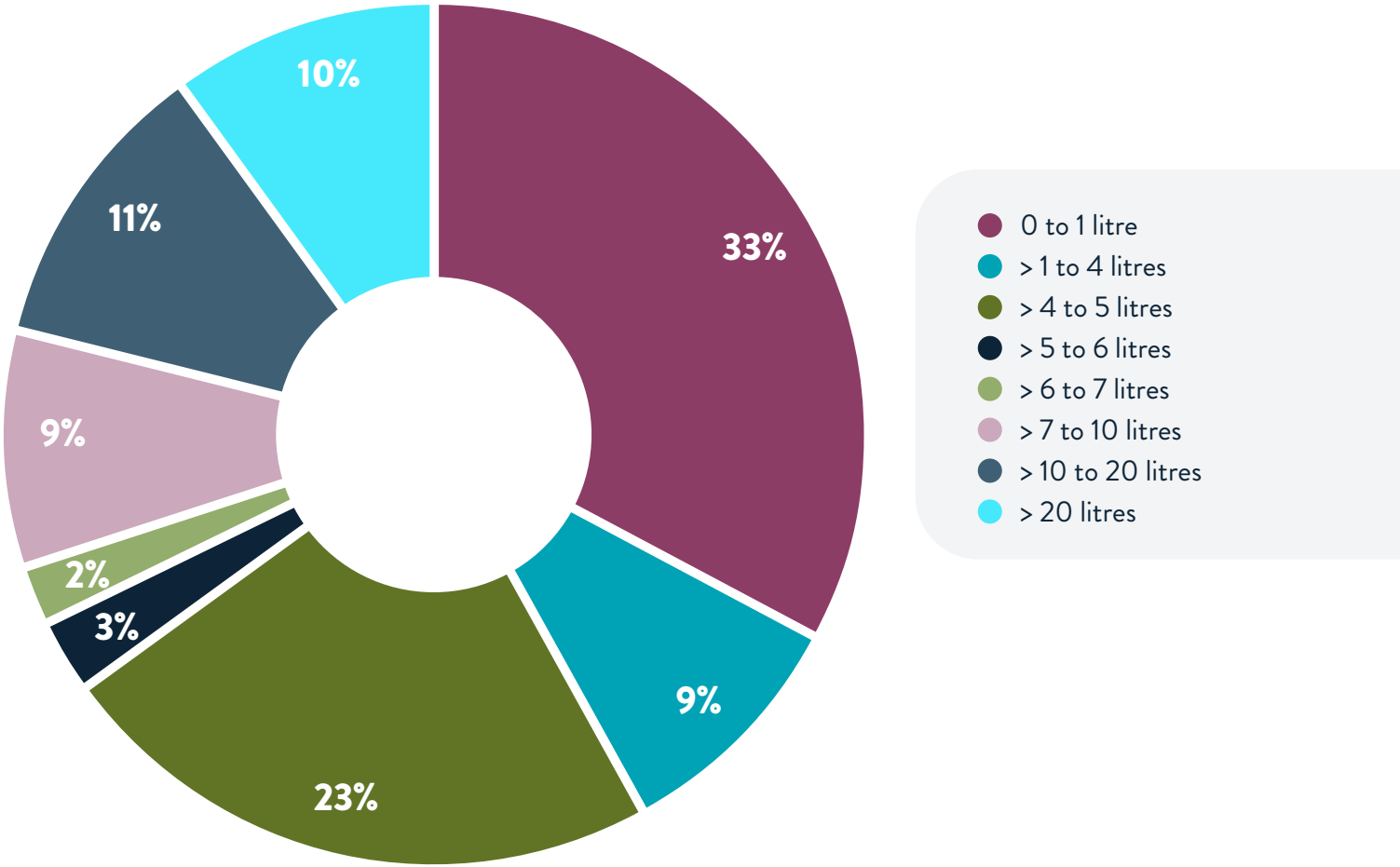

Figure 3: Market share for all containerised lubricant product categories combined (2021), according to container volume capacity.

MARKET SHARE (% VOLUME SOLD) BY CONTAINER SIZE (2021)

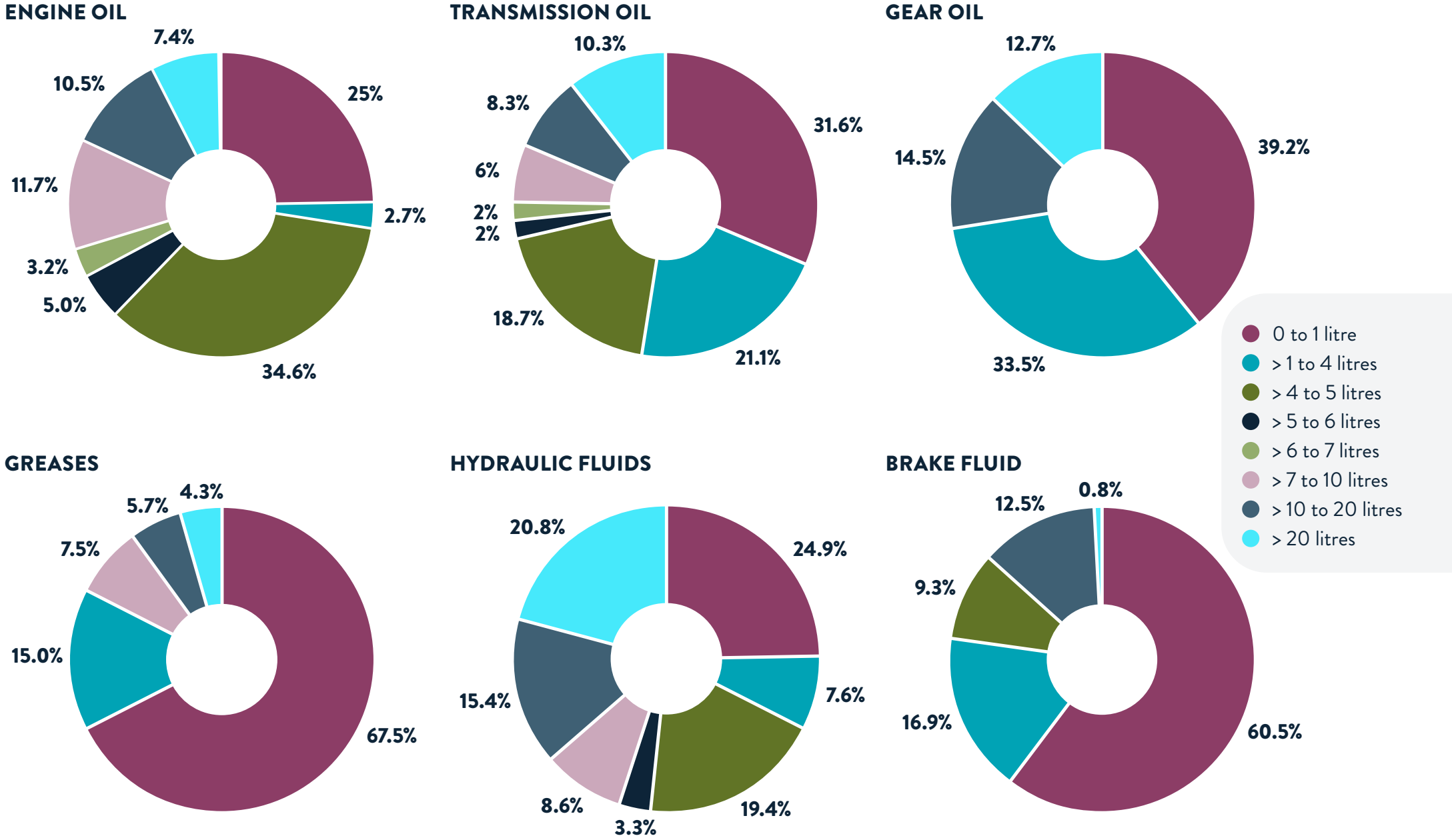

Figure 4: Market share for containerised lubricant product categories sold in Australia (2021), according to container volume capacity.

Market segmentation

MARKET SHARE SEPARATED INTO TOP 5 BRANDS AND REMAINING BRANDS IN AUSTRALIA (BY UNIT SOLD), 2021

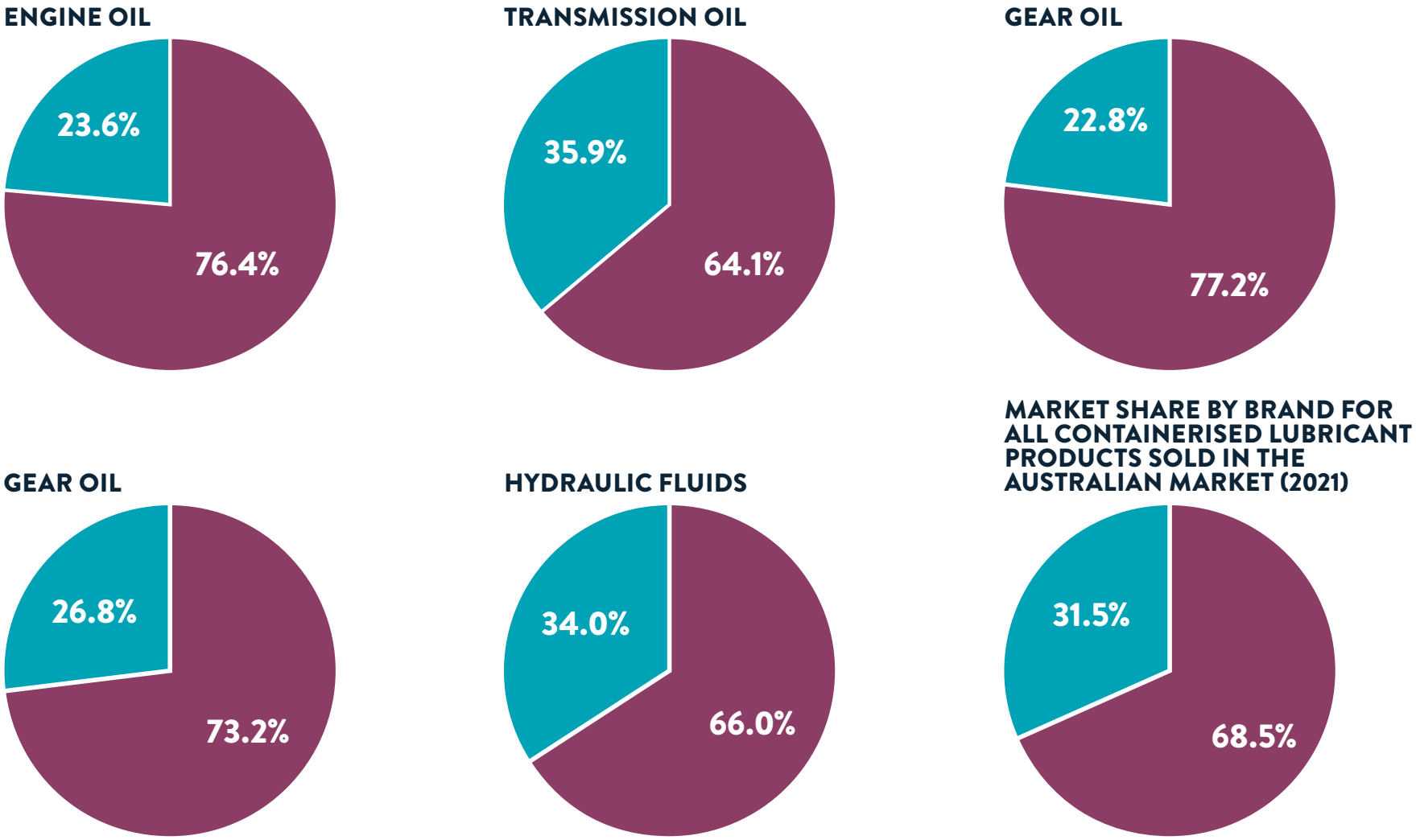

Figure 6: Market share by brand for containerised lubricant products sold in the Australian market (2021), separated into the top five brands by volume sold and remaining brands (i.e. outside the largest five by market share).

Channels used to achieve sales by lubricant product category

Figure 7 and 8 depict the range of sales channels used in each product category for containerised lubricants sold in the Australian market, 2021. There is significant consistency in terms of the predominant sales channels for each product category, with key channels being:

- Auto centres
- Independent garages
- Car manufacturer networks.

The two largest channels by volume sold are auto centres and independent garages (24 % of the market by volume, apiece), followed by vehicle manufacturer networks (21 %). Data for individual product categories are set out overleaf (Figure 7).

ALL LUBRICANT CATEGORIES
MAJOR SALES CHANNELS BY % VOLUME (2021)

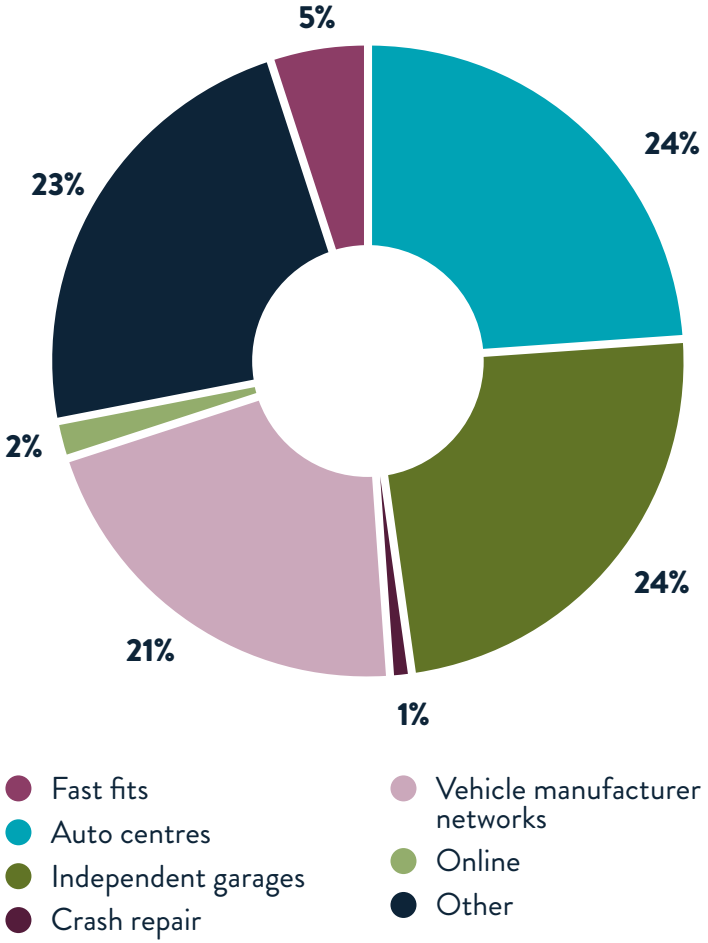

Figure 7: Sales channels used for the sale of containerised lubricants in Australia, with market share aggregated across all product categories (2021).

Sales channel	Description
Fast fits	Retailers that primarily focus on repair and replacement of parts while you wait, operating independently of vehicle manufacturers.
Auto centres	Retail outlets that focus on servicing and repairs (including tyre replacements) and less on parts and accessories sales.
Independent garages	Garages (chain and independent) that gain less than 60 % of their income from tyres and do not specialise in crash repair components.
Crash repair	Repair outlets that specialise in collision repair, e.g. car body panels, glass and vehicle paint. Both chains and independents are included.
Vehicle manufacturer networks	This channel includes vehicle dealerships, vehicle dealer based fast fits, and secondary dealers and agents.
Online	Retailers whose primary focus is on selling automated products through an Internet based medium. Channels that have an online presence but sell directly to the public through a retail store or garage are excluded.

MAJOR SALES CHANNELS BY % VOLUME, 2021

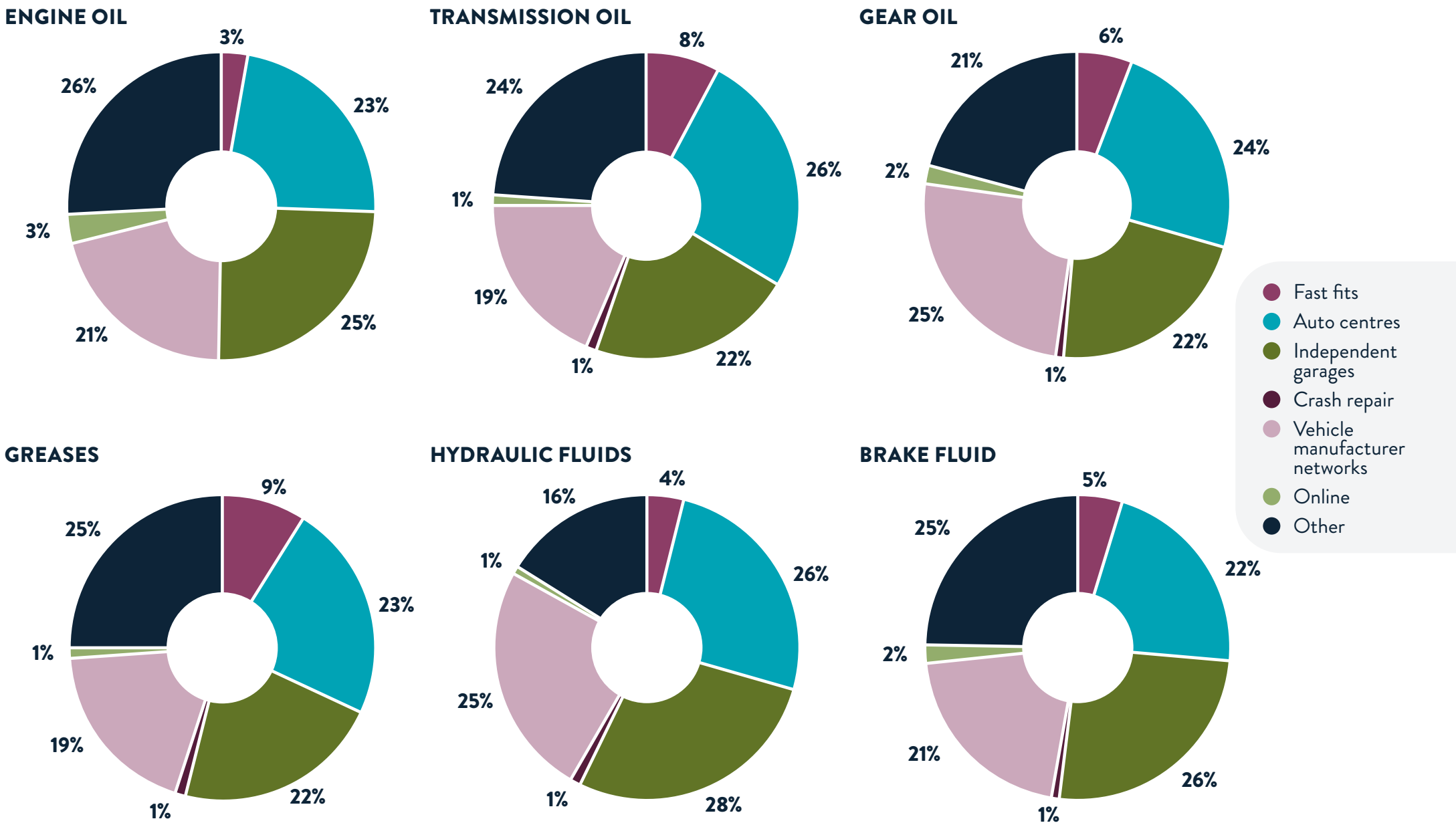

Figure 8: Sales channels used for the sale of containerised lubricants in Australia, with market share according to individual product categories shown (2021).

Lubricant container market share according to production location

During the research into product stewardship scheme options for lubricant containers, the location in which the oil containers was produced was investigated. It was determined that across all product categories for containerised lubricants, at least half of production and up to 78 % of production took place in Australia. Across all product categories, 61 % of container production took place in Australia with the remainder produced in other parts of the world (with further details as to location unspecified).

ALL LUBRICANT CATEGORIES
CONTAINER PRODUCTION LOCATION (2021)

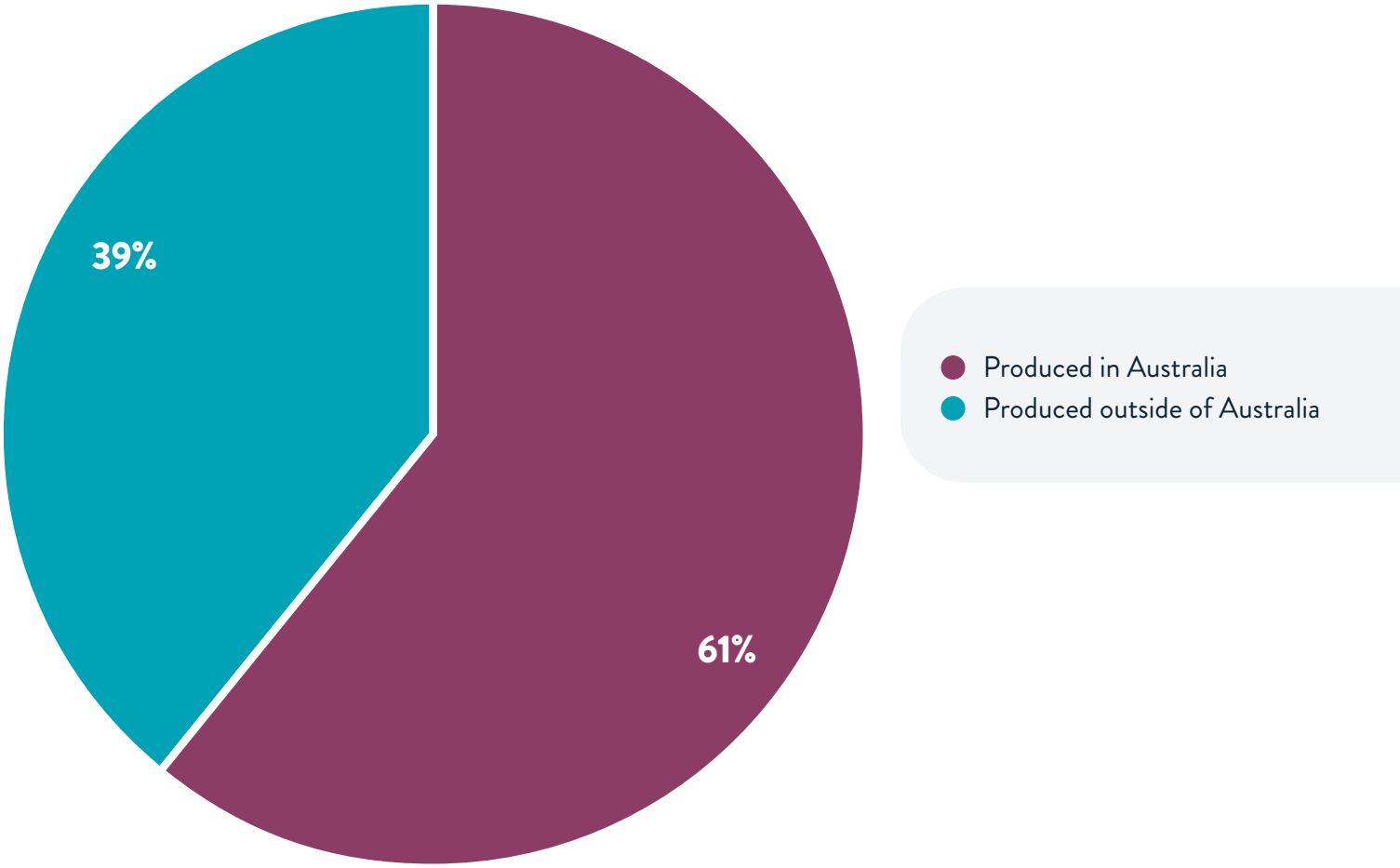

Figure 9: Proportion of lubricant containers in the Australian market produced in different locations, based on volumes sold across all product categories combined (2021).

Market segmentation

CONTAINER PRODUCTION LOCATION, 2021

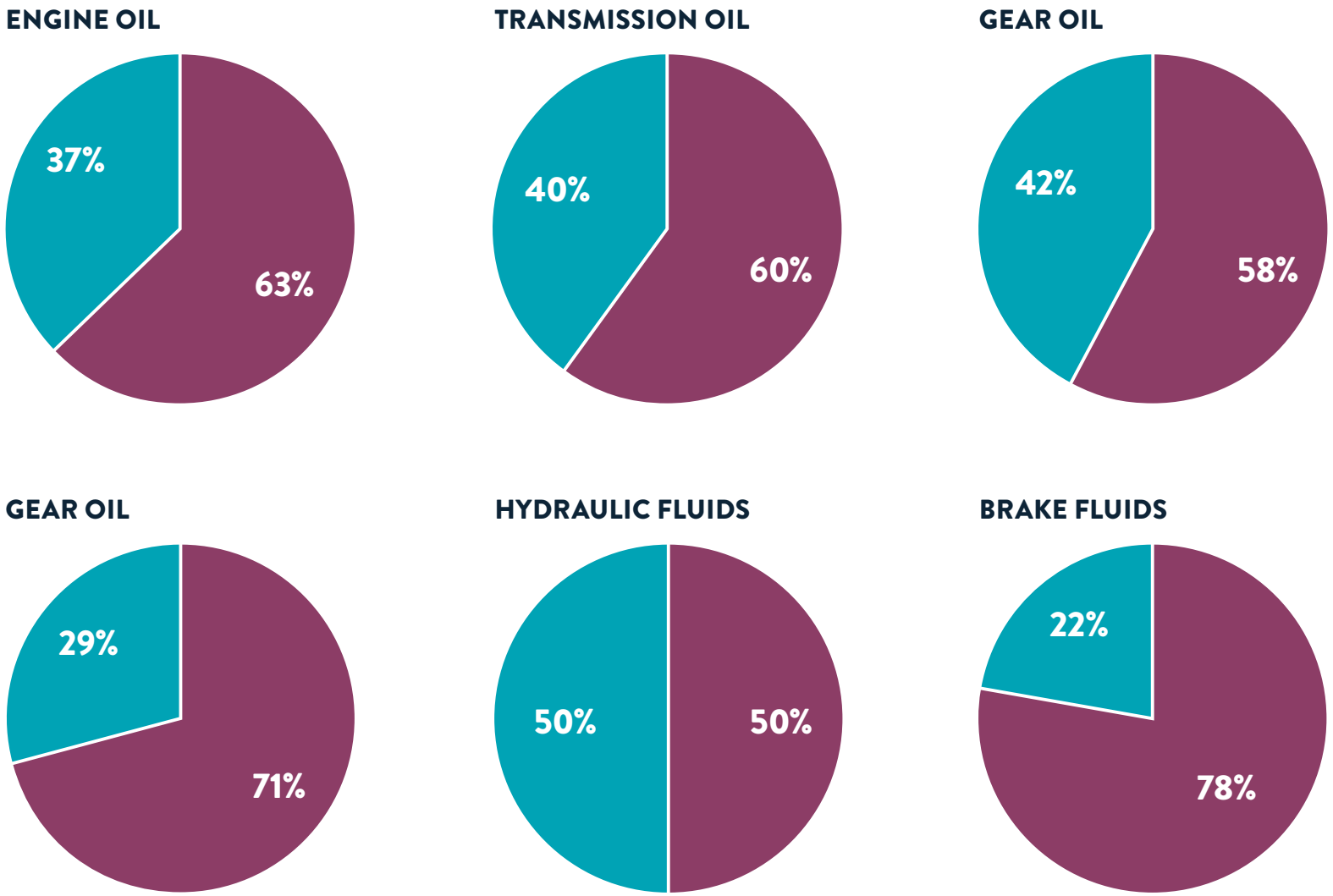

Figure 10: Proportion of lubricant containers in the Australian market produced in different locations and separated by product category, based on volumes sold in each product category (2021).

Lubricant container market share according to container material

A core concern in setting up a product stewardship scheme for lubricant containers relates to the type of material used to make the containers, as this is a determining factor for the processing methods required and available, and the downstream uses of the recovered container material.

The research confirmed that a dominant majority of at least 80 % of containers (by volume sold) in a given product category were made from rigid plastics, with as much as 93 % in the case of brake fluid. Rigid metal was the next most common material, making up between 3 % and 13 % of containers, depending on the product category. Flexible packaging and other materials took up a lesser fraction than rigid plastics and rigid metals in all cases. In the aggregate across all containerised lubricant product categories, 88 % of lubricant containers were made of rigid plastic and 8 % were made of rigid metals.

ALL LUBRICANT CATEGORIES
CONTAINER MATERIAL BY % VOLUME SOLD (2021)

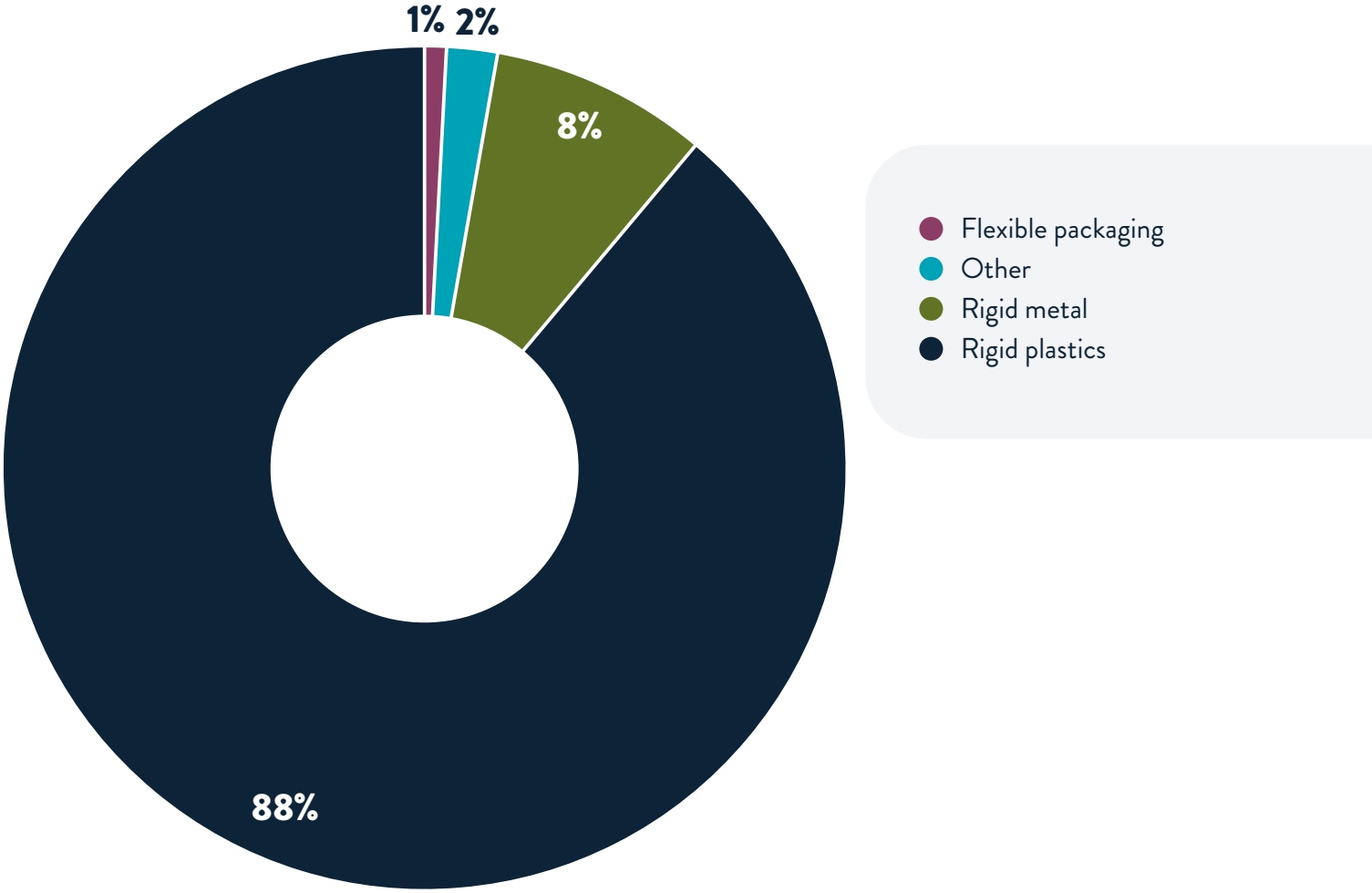

Figure 11: Relative proportion of lubricant container by packaging material type sold in the Australian market (2021), across all containerised lubricant product categories.

CONTAINER MATERIAL BY % VOLUME SOLD, 2021

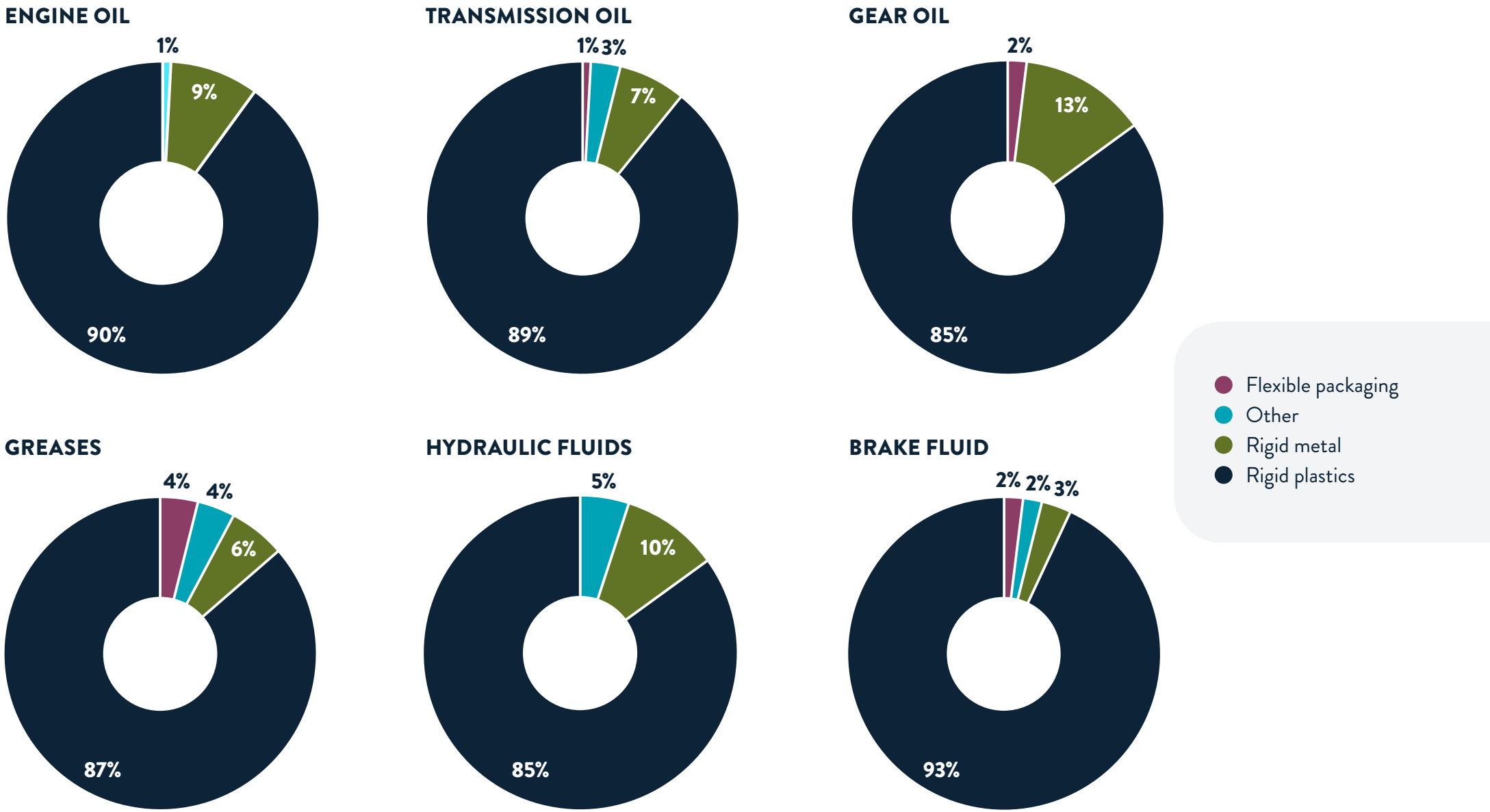

Figure 12: Relative proportion of lubricant container by packaging material type sold in the Australian market (2021), for each containerised lubricant product category.
Note: The segment percentages for each graph have been rounded up.

Regional breakdown

During this project it was determined that about two-thirds of lubricant products sold in containers are consumed in metropolitan locations, compared with one-third for non-metropolitan locations (i.e. 4,828 tonnes versus 2,329 tonnes in 2021). These estimates, along with the state and territory percentage estimates over page, include all product categories except for brake fluids and greases which make a minor fraction of the overall volume of containerised oil products sold in Australia.

Across the country, some states and territories markedly depart from the metro versus non-metro profile observed at the national scale. As may be expected, the Australian Capital Territory heavily skews towards metropolitan consumption of lubricants in containers, while Northern Territory, Queensland and Tasmania display consumption trends where the metropolitan consumption ratio falls below the two-thirds observed at the national level. Western Australia, South Australia and Victorian consumption patterns involve metro consumption representing 76 to 78 % of all oil containers (by weight). New South Wales' consumption basically accords with the national regional breakdown, i.e. with two-thirds of consumption by weight occurring in metropolitan locations.

METRO VS NON-METRO BREAKDOWN OF IN SCOPE OIL CONTAINER USAGE (TONNES, 2021)
NATIONAL FIGURES

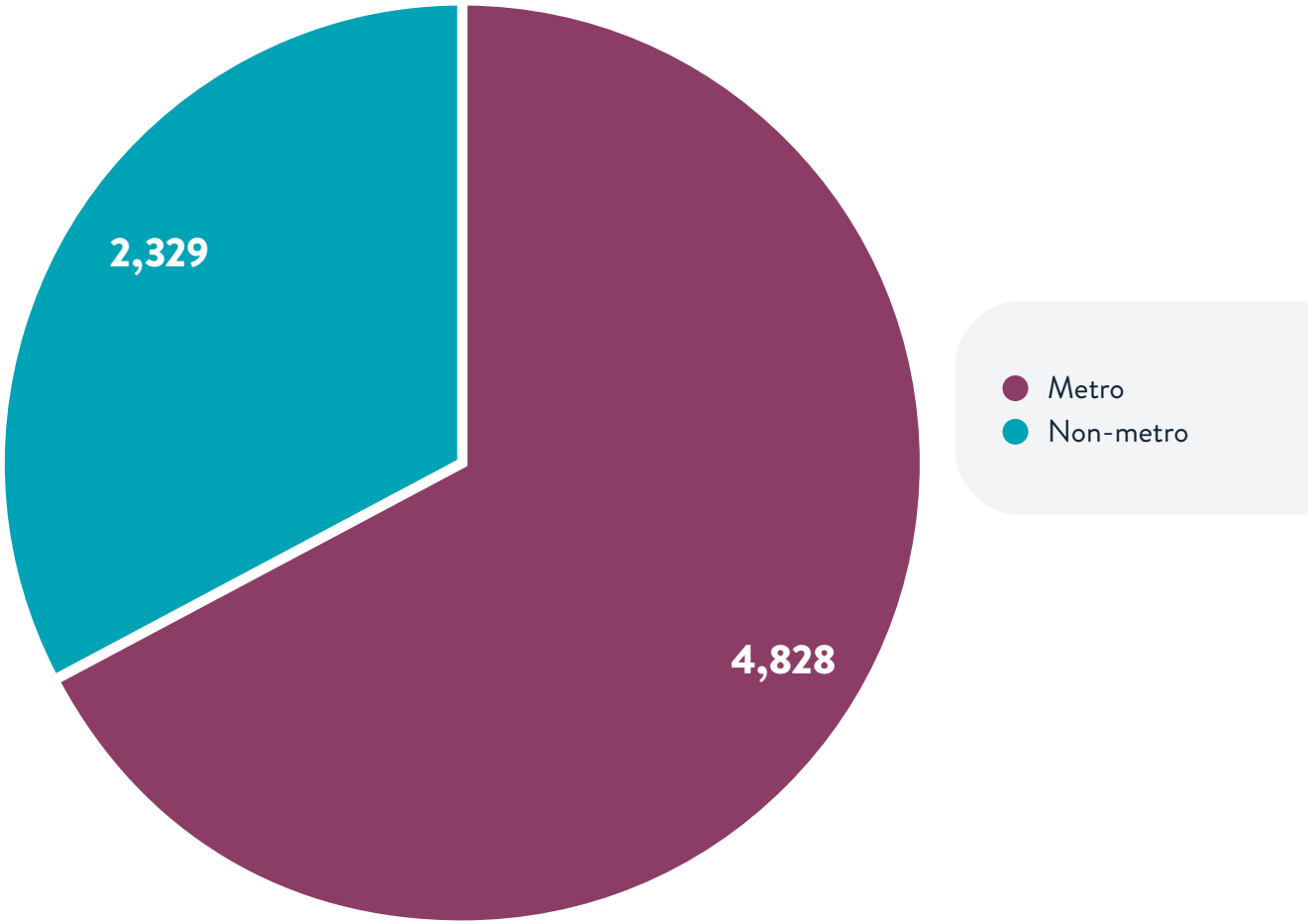

Figure 13: Breakdown of metropolitan versus non-metropolitan consumption of oil containers, by weight (tonnes, 2021).

METRO VS NON-METRO BREAKDOWN OF IN SCOPE OIL CONTAINER USAGE IN TONNES, 2021

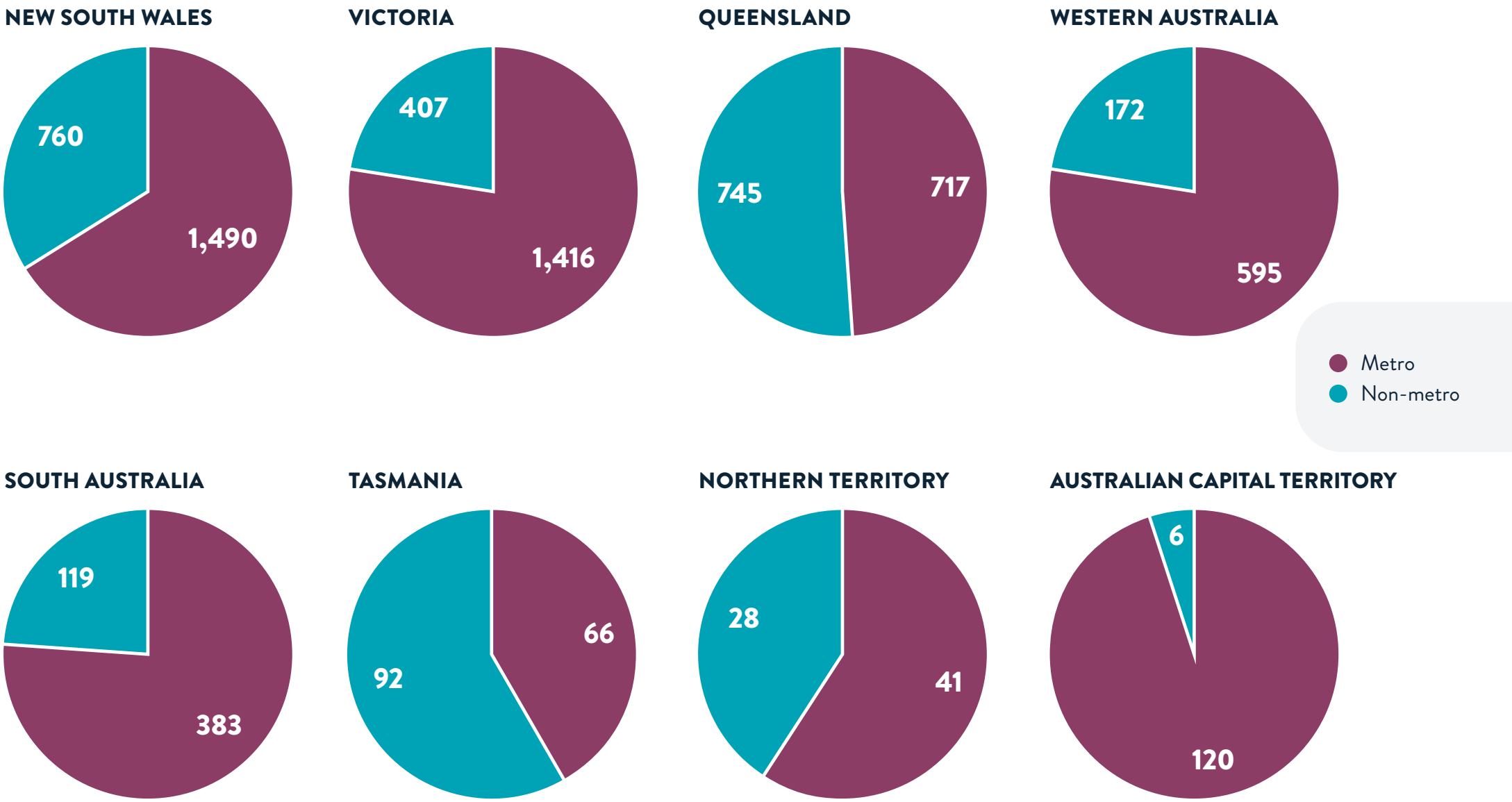

Figure 14: Breakdown of metropolitan versus non-metropolitan consumption of oil containers in each state and territory, by weight (tonnes, 2021).

Oil container volume projections

Over the longer term, it is anticipated that the volume of lubricants sold in containers will begin to diminish, largely as a consequence of the progressive shift from internal combustion engine vehicles to full electric vehicles in the Australian market. Electric vehicles that do not carry an internal combustion engine (i.e. excluding hybrid vehicles) do not require engine oil in their use. Engine oil is the dominant product category for lubricants sold in containers up to 20L (see Figure 1), making up around half of the volume of lubricant sold each year.

Because electric vehicles presently contribute a small (yet growing) percentage of vehicles on the road, there will be a time lag before this effect on engine oil volumes supersedes the natural growth in lubricant sales led by the overall increase in vehicle usage linked to population growth and economic activity (Figure 16). As such, the volume of used lubricant containers is expected to peak at 45 million units in 2030, before tapering down to about 34 million containers in 2042 and 25 million containers in 2050. Assuming no changes to the types of materials used to produce lubricant containers, the combined effect on the volumes of each container material used in Australia over time is shown in Figure 17.

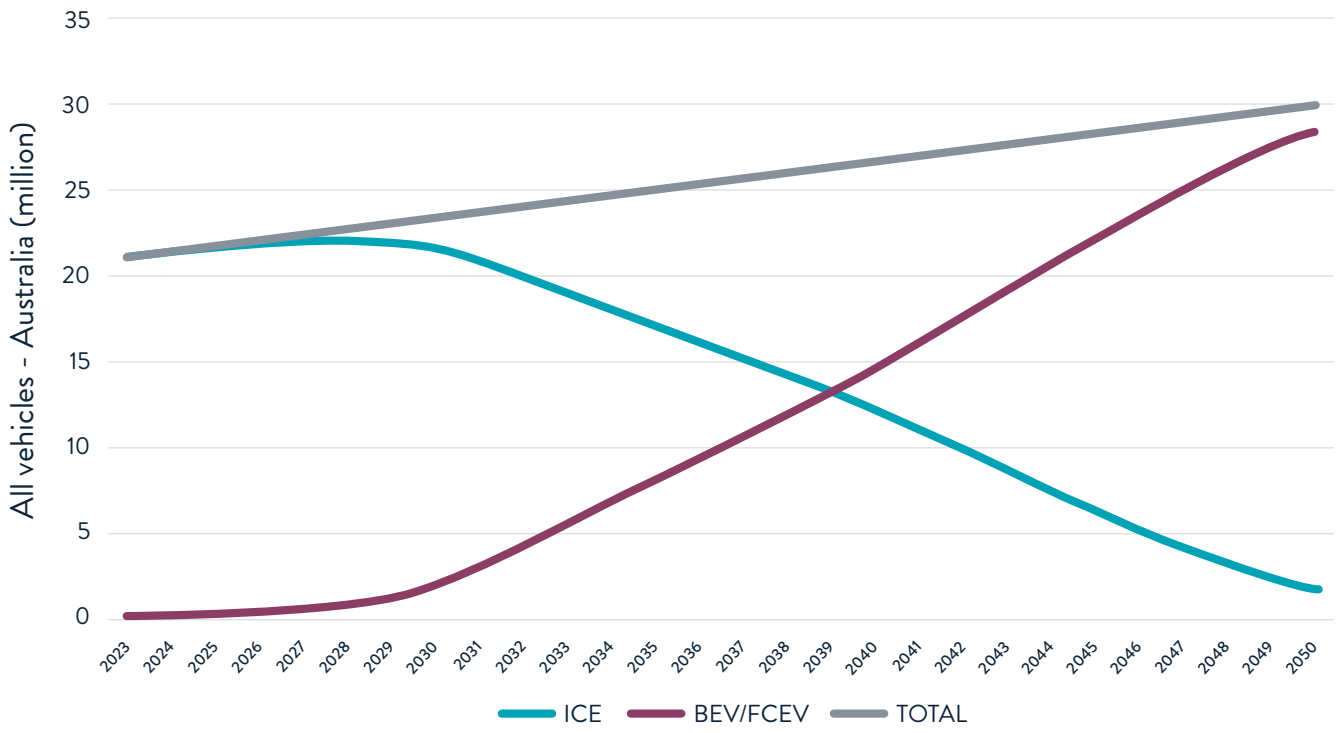

Figure 15: Projected motor vehicles numbers in Australia, internal combustion (ICE) and EVs[1], 2023-2050.

1 Include battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV).

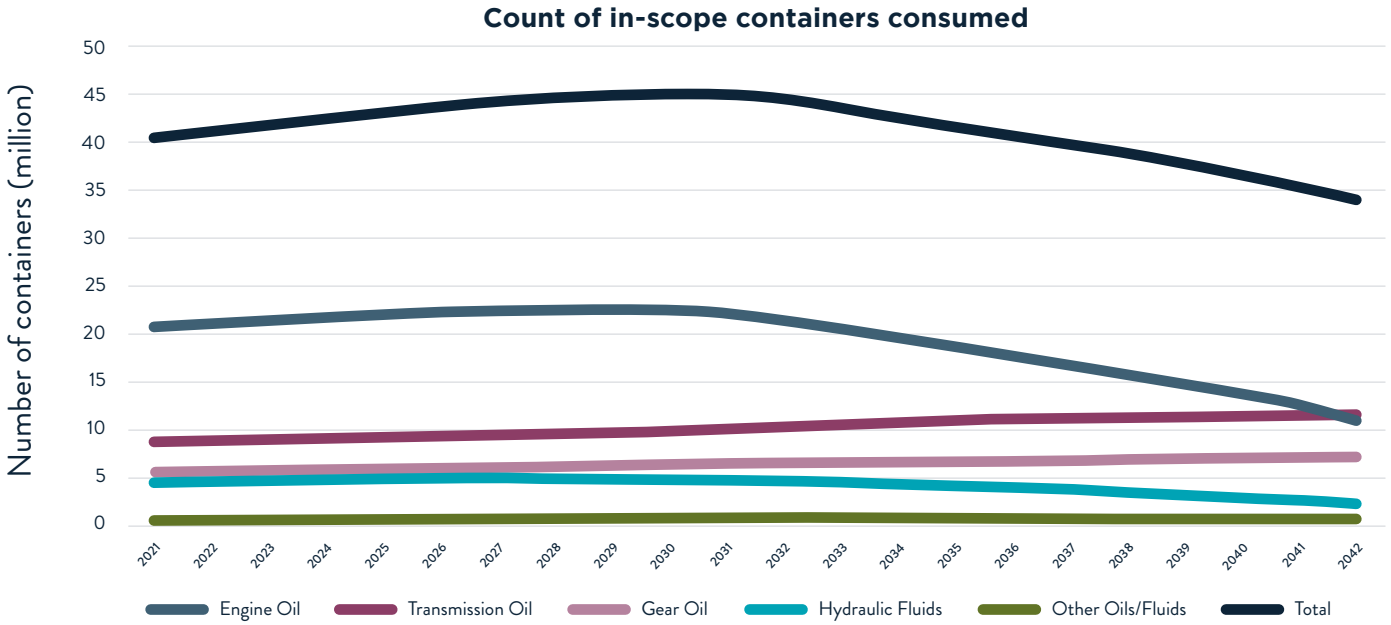

Figure 16: Projected number of packaged oil containers, 2021-2042.

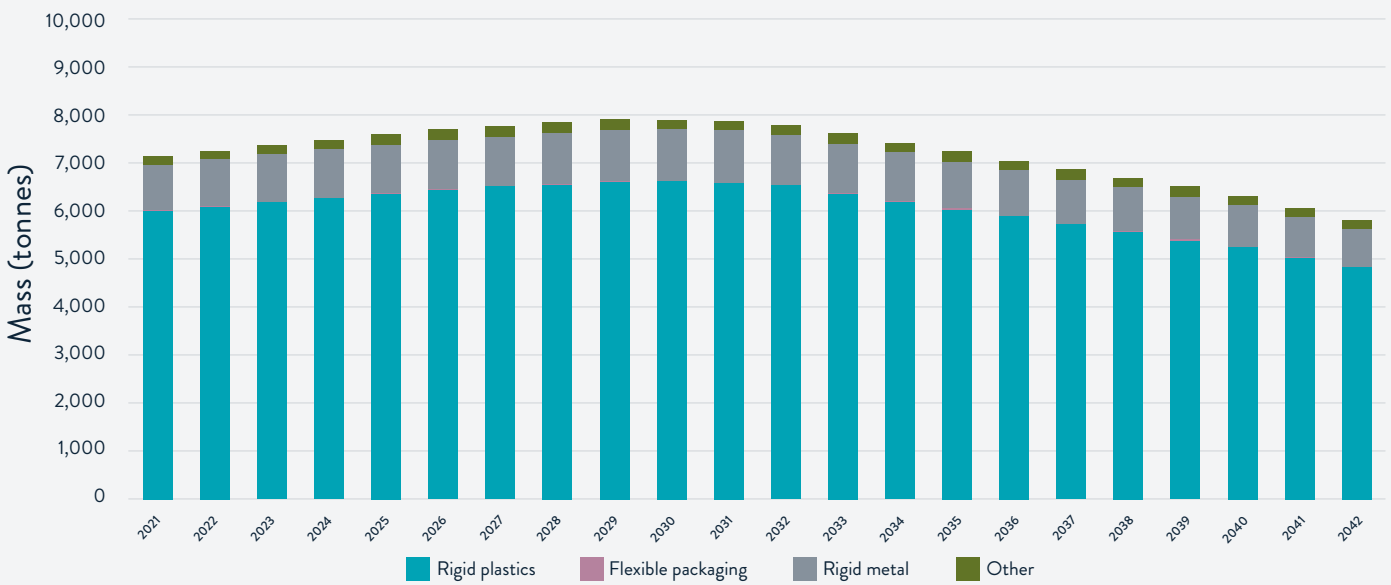

Figure 17: Projected mass of packaged oil containers by packaging material, 2021-2042 (tonnes).

Prepared for the Australian Packaging Covenant Organisation (APCO).
Supporting delivery of the ANZPAC Plastics Pact's Oil Containers Product Stewardship Program.

Urban Elements & Practice (Urban EP)
Nathan Toovey & Nathan Malin (Urban EP) using information supplied by APCO.

W: urbanep.com.au

E: info@urbanep.com.au

Marsden Jacob Associates Pty Ltd
Peter Kinrade & Stuart MacLachlan

E: economists@marsdenjacob.com.au

P: 03 8808 7400

Australian Packaging Covenant Organisation (APCO)

A: Suite 1102, Level 11, 55 Clarence Street, Sydney, NSW, 2000
E: anzpac@apco.org.au

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