

Intermediate collectors guide

Aim: To assist intermediate collectors in building a sustainable recyclable collections business – with a focus on PET bottles and jars and Liquid Board Packaging (LBP), also known as liquid board cartons or Tetra Pak®.

The term “intermediate collector” typically defines a collection service provider who is operating in a structured, formalised manner, owning his/her own temporary storage premises and utilising a motorised vehicle (and trailer) to collect recyclables.

Introduction

Recycling means different things to different people.

1. To consumers and households, recycling means recovering and sorting recyclable materials (usually together with other recyclable materials) and putting them all out for separate kerbside collection, leaving them in a clear bag for collectors on municipal bin collection day or alternatively taking them to a drop-off site or buy-back centre.
2. To a producer of goods or a manufacturer of raw materials – this means including recycled content in the process of making a new product.
3. To National and Provincial Governments and South African Municipalities, it means establishing regulations that encourage, incentivise, and govern the recovery, collection, sorting and recycling of recyclable materials to reduce the volume of waste that needs to be disposed of at landfill sites.
4. For collectors, it means retrieving recyclable materials from landfill sites, temporary waste storage, sorting sites (e.g. on business premises) and waste bins and selling them to recycling depots.
5. To medium-sized collection service¹ providers, recycling means providing cost-efficient collection, sorting and transporting services, and deriving maximum revenue from the sale of recycled materials to ensure sustainable business practices.

There are 3 options when considering setting up a collection business

1. Set up your own **drop-off site** (people bring you the recyclable materials for free and you sell on to the recycler).
2. Set up your own **buy-back centre** (people bring recyclable materials, and you pay them a fair fee and then you sell the recyclable materials).
3. Set up an **onsite separation at source operation** at a shopping centre, residential complex or a business that regularly produces feasible amounts of recyclable materials.

What to ask recycling companies (as prospective buyers of your recyclable materials)

Contact recycling companies for advice and ask them the following:

What recyclables do you buy? Tip: Collecting all material types of recyclables (plastics and other materials) will be more feasible but it is unlikely that one recycler is interested to buy all recycling fractions from you. Typically, you will have to deal with a few at any time to find markets for ALL your collected and sorted recyclables.

- Do I need to sort the recyclable materials in any specific way?
- Do I need to compact (e.g. bale) recyclable materials?
- Where can I deliver to if I have no transport?
- How do I need to store the material in order for you to collect?
- Where can I drop off recyclables if I have my own transport?
- How much do you pay per kg or tonne (both when you collect and when I bring to you)?
- What sorting equipment do you supply (bulk bags, racks, sorting table, compactors etc.)?

In light of the above, another very important aspect to keep in mind is to make sure (before you collect) that what you plan to collect actually gets **bought** by someone and that there is **stable buyers' market** for the items you collect:

- The buyer should offer you a price for your recyclables that is fair and market-related.
- The best prices as a collector of recyclables are normally obtained when delivering the materials to the gate of the respective end-use recycler.
- If your collection area is remote from a recycler you might have to work through a "middle-man" who facilitates temporary bulk storage and final delivery. Make sure that the price they are prepared to pay you still warrants financially your own collection efforts.
- The buyer of your recyclable materials should be committed to a long-term buying relationship (not just a once-off interest).
- It is strongly advised that you invest in an industrial-type scale to be able to weigh recyclables delivered to you and removed from your storage/handling site. This is important so you can completely keep track of the volumes you are delivering later either to a middle-man or the actual end-use recycler and you should compare your data and their data to avoid getting deliberately or accidentally underpaid.
- The buyer you choose needs to run a licensed and registered operation otherwise they operate ILLEGALLY, and the buyer must not break the law in any way (e.g., by burning cables or dumping toxic waste components). If you as a collector client know about such practices but you choose NOT to tell authorities, you could be also implicated in an arrest if found out.
- If you are in doubt about what you should be able to financially expect (given the intrinsic value of the materials you collect) and typically given for materials readily sorted, prepared (baled) and delivered to the end-use recycler please contact the relevant recycling industry organisation for guidance (see table below).

Getting started

What you need:



- Unused, enclosed and secure (lockable) space (guideline: at least the size of a double garage).
- Space that is accessible to the public and collectors and for pickup from recyclers.
- Sorting tables (if collecting more than one recycling material), scales and storage bags/containers.
- Waste bins for the non-recyclables that need disposal.
- Access to a telephone.
- Security.
- Education and advertising for collectors.
- Signage.
- Ensure that health and safety practices are in place.
- Check for possible environmental risks e.g. fire.
- Decide who keeps the site clean, neat and tidy, monitor containers, phone for collections, keep records of payments received, etc.

Do your homework

As with any business, success depends on good research and planning. It is important to do your homework and ask the right questions. Most importantly: is there a demand for your proposed services in the targeted collection areas? Can you secure the support of some bulk recycling material generators that are willing to regularly supply you with their materials?

After you get the answers to all of your questions, decide what you need. Then you will be ready to prepare your business plan. There are many templates for business plans online. Please see this guide [here](#).

Identifying a site

Identify a possible site in your area that is suitable for sorting and temporary storage of any recyclable materials you will collect. You may want to contact your local municipality or an estate agent operating in a close-by industrial or commercial area about a suitable site. Ask recyclers for advice on the preferred layout of your site (to ensure optimal material quality and specifications (e.g. delivered in bales)) and prepare a rough floor plan.

1. Consider:

- A central convenient position
- Availability of recyclables in that area
- Accessible to public and collectors
- Existing building or vacant site
- Building site needing alterations
- Buy or lease a site
- Access to water and power
- Safe and secure area

2. Estimate your space requirements based on:

- Volumes and type of recyclables to be stored
- Period of time to be stored



- Offloading, sorting, and storage areas
- Containers (type, size and quantity)
- Office area
- Ablution facilities
- Turning space and headroom for vehicles

3. Source of recyclable materials

- Community brings in waste
- Collection from households and open spaces
- Collection from high consumption areas e.g. taverns, restaurants, hotels, stadiums, sports fields, outdoor events, shopping centres, schools, picnic spots, offices and factories.

Best practices for collection and sorting

Aside from running a sustainable business, it is important to ensure that your business operates within the realm of the law and that you manage your environmental and social impacts effectively.

There are six basic principles that should be maintained to ensure best practice in the collection of recyclable materials for recycling:

1. **Only recyclable materials should be collected for recycling.**
PET bottles and jars, liquid board cartons, and its accompanying labels and closures (caps) should be collected for recycling. These recyclable materials should be kept separate from “wet waste” or “food waste”.
2. **Make sure that the recyclable materials you are collecting can be recycled in South Africa.**

PET: PET bottles and jars can be identified by looking for the “**number #1**” resin identification triangle-shaped code found on the bottom of PET bottles and jars.

- Only PET bottles and jars that are clear, clear blue tinted, clear brown tinted, and clear green tinted in colour should be collected for recycling. Clear and clear blue will fetch the highest value. Dark and neon-coloured PET bottles and jars should also be avoided.
- Make sure that you remove shrink sleeves completely
- Do not mix biodegradable or compostable bottles “number #7” in with recyclable PET
- Remove all metal closures (caps).
- The above will cause technical or economic problems in the recycling process and limit the recycling of acceptable PET bottles and jars into new products.

Liquid board cartons: please separate Mageu, Inkomazi, beer and large (>1l) wine cartons, from your Tetra Pak - these can be recycled with k4, but shouldn't be mixed in with LBP bales.

3. **All recyclable materials should be dry and completely free of contents and rinsed (with used dishwashing water).**
This reduces the logistical difficulties such as odour and attraction of insects and rodents at



recycling facilities, which are due to the presence of food residues in bottles, jars and cartons.

4. Collectors should flatten recyclable materials

The simple act of flattening jars decreases collection costs by increasing the number of materials collected or placed into containers at collection points. As an example, it has been estimated that by simply flattening PET bottles and custom containers, truck collection volumes can be increased by as much as 50%.

5. Keep recyclables separate from each other

Mixing various recyclable materials results in contamination of the recycling process or introduces materials that could cause injury to personnel or damage to equipment at recycling processing facilities.

Best practice in intermediate processing

Bale specifications:

The lack of standardisation and the resulting variability of the quality and content of baled post-consumer packaging adds economic costs to the recycling process. It also limits the efficiency of the recycling process.

The proposed best practice for post-consumer packaging bale specifications in this guide are the ones that have been agreed upon with the Petco contracted recyclers. They have been analysed to represent a standard that will be acceptable to most buyers who purchase recyclables and to ensure a quality standard that can reduce the cost involved in collections and transportation.

It is however important to note that each recycler has his/her own requirements when it comes to bale specifications. It is therefore the responsibility of the collector/SME to ensure that those requirements are met from the outset and before any collection delivery takes place.

Bale specifications include two very important factors:

- **PHYSICAL CHARACTERISTICS**
- **QUALITY CHARACTERISTICS**

These refer to bale size, density, levels and types of contamination etc.

- The physical properties are those that influence operating mode, handling, and safety factors such as ease and efficiency of truck loading and unloading, and ease of in-plant storage.
- Physical bale characteristics can also impact the efficiency and throughput of some Material Recovery Facilities (MRFs), Reclaimers and end-users who process baled recyclable materials, like PET and liquid board packaging.

QUALITY CHARACTERISTICS

- The quality of the bale impacts the technical and economic ability to reclaim raw materials from the post-consumer waste stream and remanufacture it into new products.



A good quality bale's physical and quality characteristics will be:

- **Weight:** between 100-250 kilograms (kg) for PET and >100 kilograms for liquid board packaging, however Petco's recycling partner Gayatri prefers bigger bales >250kg.
- **Quality:** sorted by material type and colour (where applicable), and is cleanly baled

There are three types of bales:

1. Sorted bale

This is the ideal bale which contains only one type of recyclable material, and if necessary sorted are by the same colour e.g. when it comes to PET.

2. Mixed bale

This contains PET bottles and jars of different colours or containing polyAl and Non-polyAl liquid board cartons.

3. Dirty bale

This contains contaminants like stones, car batteries and recyclable materials filled with sand.

It is important to note that there are varying prices for the different bales. The sorted bale pays the best; mixed bales pay an "acceptable amount", and the dirty ones will not be bought at all. Please ensure that all recyclables are clean of all contents e.g. sand and water.

You are busy building your business and you must ensure that you keep your reputation intact. If the Recyclers / Buyers know that you provide bad quality to them, they will stop buying from you.

Maximising truck loading and transportation of recyclable materials

One of the major costs in collection for recyclables is the transport to collect materials at the source and then delivering them after sorting and baling to the downstream recycler. Properly loaded trucks of PET and LBP bales and bulk bags of loose recyclables can help maximise truck space and hence ensure lower transportation costs. Based on the actual bale density and the particular truck's legally permitted gross shipping weight, the truck can be loaded to its capacity.

Bales are inspected thoroughly by trained personnel when they get to the recycling plant. This is done to pick up any contamination and dirty bales. The recycler can turn a loaded truck away if the quality of the bales is poor. This can mean a waste of money used to transport the load to and from the recycler's plant, not getting paid **AND** the cost of having to dispose of otherwise.

Contamination Issues for PET

Recycling processors receive recyclable materials (primarily in baled form, but in some cases loose) that have been separated from other recyclable materials at landfills, MRFs, buy-back centres or drop-off sites, and then process them to sell the recycle retrieved from the recycling process to the respective end-users.

Contamination limits the ultimate marketability of the full range of recyclable materials collected. It also reduces the value of the recyclable materials; it hinders processing and causes unproductive downtime and clean-up expenses for the recycling processors. In addition it results in unnecessary manufacturing waste from the recycling process.

The following are major contaminants in the recycling process:



Contamination issues for PET recycling:

Polyvinyl Chloride (PVC)

The primary contaminant in the PET recycling process is any source of polyvinyl chloride (PVC) plastic material labelled with “#3” in a triangle. The presence of PVC when reprocessing and remanufacturing post-consumer PET resin may cause one of several problems, even at low concentrations.

PVC can form acids when mixed with PET during processing. These acids break down the physical and chemical structure of PET, causing it to turn yellow and brittle. This will render the PET material unacceptable for many high-value end-use applications. In addition, the presence of PVC may result in the out-gassing of chlorine vapours during certain stages of PET reprocessing. This can increase the cost of control systems or regulatory compliance for the facility operator.



There are three primary sources of PVC contaminants that can enter the PET recycling process. The first is PVC “look-alikes”, that is, PVC bottles that resemble PET bottles and jars. While it is possible to distinguish transparent PVC bottles from transparent PET bottles by the presence of white “crease” marks, or by the moulding mark on the bottom of the bottle, looking for these distinguishing characteristics can be time-consuming and limit processing throughput in manual sorting systems.



The second is PVC safety seals that are used on certain product containers, such as mouthwash. Every effort should be made to remove safety seals, if they are present, prior to baling PET bottles and jars. Safety seals should absolutely be removed prior to granulating.



The third source is PVC labels that are affixed to some PET containers. These are usually in the forms of shrink sleeves. Please remove the labels otherwise you will be paid less for your bottles.



Be aware – do not collect

		
Dark (non-transparent, purple, navy blue, black) or neon-coloured bottles	Bottles with print directly on the plastic	Multi-layered bottles ie number 7's, or PET wine bottles
		
PVC (#3)/ PET shrink-wrap labelled bottles unless those labels are easily removable (you must take them off!)	PET trays and punnets (they are <u>currently</u> not being recycled yet in South Africa on a large-scale).	PET bottles with metal caps/lids and closures. These must be removed!

Collected PET pricing

The prices paid for collections depend on the quality of recyclable materials collected, the proximity to the local recycler and other global economic trends including the price of oil and resulting demand for recycled materials. As previously highlighted – to obtain the best price at any time, recyclable materials must be sorted, cleanly baled and delivered to the recycler. The different recyclable materials have different prices.

To maximise the payout of your materials, the following have to be adhered to:

- Sort materials by material type. Sort PET bottles by colour,
- Make sure that bales are neat and the appropriate weight,
- Deliver to recycler when and where possible.



Be aware – SEPARATE your Tetra Pak cartons from the below cartons and cups

	
Keep paper cups out of your liquid board carton collections	Keep Beer, Inkomazi and Mageu cartons separate from Tetra Pak cartons in your collections. These cartons have the potential to contaminate tetra Pak collections.

Collected LBP pricing

The prices paid for collections depend on the quality of recyclable materials collected, the proximity to the local recycler and other global economic trends including the price of oil and resulting demand for recycled materials. As previously highlighted – to obtain the best price at any time, recyclable materials must be sorted, cleanly baled and delivered to the recycler.

To maximise the payout of your materials, the following have to be adhered to:

- Ideally bales should only have cartons with the aluminium layer. Cartons without the aluminium layer should not be included in the bales.
- Make sure that bales are neat and the appropriate weight (>100 kilograms, however Petco's recycling partner Gayatri prefers bigger bales >250kg)
- Deliver to recycler when and where possible.

Selling LBP

If you are a buy-back centre and have the capacity to bale contact Gayatri (Tel: 011 821 8600).

If you don't have the capacity to bale contact PETCO to connect you with your nearest liquid board packaging Hub i.e. a buy-back centre that can bale or connect you with a buy-back centre where you can take your cartons - T: 011 615 8875 E: info@petco.co.za

Tetra Pak: Tel: 072 049 3907 (<http://www.tetrapak.com/za>)

A note on triggering environmental authorisations

Be aware of the legal requirements, Norms and standards for waste storage and/or legal thresholds that apply to Waste Management Licences (WMLs).



Temporary (once-off) storage of recyclables - you are allowed to store up to 100m³ of recyclable materials (or non-hazardous waste) on suitable secured premises. This is equivalent to no more than 3 shipping containers. Anything more than this is permitted for no more than 90 days.



Sorting and Preparation for Transportation of Recyclable Materials – if your facility/building is bigger than 500m² in size (the footprint of a small warehouse) AND/OR has the capacity to process more than 10 tonnes of waste and recyclable materials DAILY (equivalent to of about 10 bakkie loads) you WILL require a Waste Management Licence to operate legally and you will have to have a licence BEFORE you START any operation.

For more on the South African Storage Norms and Standards, please go to:
<http://sawic.environment.gov.za/documents/2530.pdf>

Who is Petco?

Petco Producer Responsibility Organisation NPC is a Producer Responsibility Organisation (PRO), incorporated in 2004, that administers Extended Producer Responsibility (EPR) schemes on behalf of its members for various identified products in the packaging sector. Petco serves as a national organisation responsible for driving recycling activities, unlocking the collection and recycling value chain, guiding product design, stimulating end-use markets for recycled material, carrying out education and awareness initiatives and building the required local recycling infrastructure and capacity.

Petco is a collective organisation, set up and owned by our producer members to fulfil their extended producer responsibility obligations, by taking accountability for their products throughout its entire life cycle, as mandated by Section 18 of the National Environmental Management: Waste Act. Petco is committed to driving change towards a circular economy in South Africa's packaging industry.

How can Petco help you?

Petco assesses projects on an annual basis with a view to provide assistance. Our ability to assist depends on the merits and viability of a project, its sustainability, the need in the area that the project operates from, as well as how it fits into Petco's strategic objectives and the budget available at the time. All potential projects are assessed internally and then tabled with the board for approval.

Type of assistance provided for Entry level collectors:

Equipment

- Bulk bags
- Bins (various sizes)
- Trolleys
- Protective equipment, gloves, boots, and overalls

Operational support

- Put you in contact with buy-back centres and intermediate collectors in your area
- Put you in touch with recyclers in your area
- Provide assistance with setting up a cooperative



Education and Awareness

- Workshops and training

Useful contacts

Visit www.petco.co.za for a list of collection points, drop-off sites and buy-back centres (general or for liquid board packaging specifically).

You could also contact some other industry bodies for general assistance or information about other material streams. Here are some of them, but you could also visit Petco's website to download a fact sheet with useful contacts:

Institute of Waste Management	www.iwmsa.co.za
National Recycling Forum	www.recycling.co.za
Packaging SA	www.packagingsa.co.za
Plastics SA	www.plasticsinfo.co.za
Recycle Paper ZA	www.recyclepaper.co.za/
POLYCO	www.polyco.co.za
ROSE Foundation	www.rosefoundation.org.za
SAVA	www.savinyls.co.za
Tetra Pak	www.tetrapak.com/za
The Glass Recycling Company	www.glassrecyclingcompany.co.za
Collect-a-Can	www.collectacan.co.za

Contact Petco

Call toll free:	011 615 8875 (JHB)/ 021 794 6300 (CPT)
Email:	info@petco.co.za
Website:	www.petco.co.za
Facebook:	Petco.Official
X:	Petco.Official
Instagram:	petco.official
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