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Processing of Coffee Pods at the PTM Waste Management Facility

The black garbage bags and LDPE smaller bags are manually opened and set aside for eventual recycling via a licensed waste broker. The aluminium used pods contain 60% water upon arrival at the facility.

The pods are first dried naturally to rid them of their water content. This is important prior to further processing and serves two purposes:

- it separates the water from the coffee pods, and
- it facilitates the separation of the dried coffee from the aluminium pods.

In alignment with the environmental ethos of the company, the drying process is completely natural and utilises solar energy rather than a mechanical process that requires the consumption of electricity. The pods are placed in low, perforated, stackable trays and/or fibre tanks, which are left outside to dry naturally. This process typically takes approximately 10 days for the pods to be completely dried. Once dried, the pods are ready for the next phase.

The subsequent phase involves the mechanical crushing of the pods using a vertical hammer mill. This machine comprises a vertical shaft with chains that rotate at very high speeds. When the pods enter the chamber and are struck by a high-speed chain, they are opened using blunt force, resulting in the separation of the aluminium from the coffee. This method avoids shredding the pod, thereby simplifying the separation of materials in the next phase of the process.

It is noteworthy that such hammer mills and separation machines of this size are not available on the market; thus, the design and manufacture of this machine were undertaken in-house. This bespoke machine is then utilized for the separation of dried coffee from the aluminium. Currently, aluminium is recycled through local scrap metal brokers, while coffee is passed on to WasteServ for treatment at the Anaerobic Digestion (AD) Plant.

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The process from delivery to material separation is described step-by-step below:

1. Pods are delivered to the PTM Waste Management Facility. These pods are sourced through importers who introduce them to the market with a take-back initiative aimed at collecting the pods for recycling.
2. Pods are collected from the delivery container and placed inside fibre tanks to air-dry for 10 days.
3. Dried pods are collected and stored inside dry water tanks.
4. Dried pods within the tanks are transferred to the machine using a pallet truck.
5. Dried pods are processed through the machine (as previously described) and collected once processed.
6. The opened pods and coffee mixture is loaded onto a vibrating sieve for the separation of both materials.
7. The aluminium is collected in big bags and transported to local scrap metal brokers.
8. Coffee grounds are collected as organic material into big bags and transported to WasteServ for treatment at the Anaerobic Digestion (AD) Plant.

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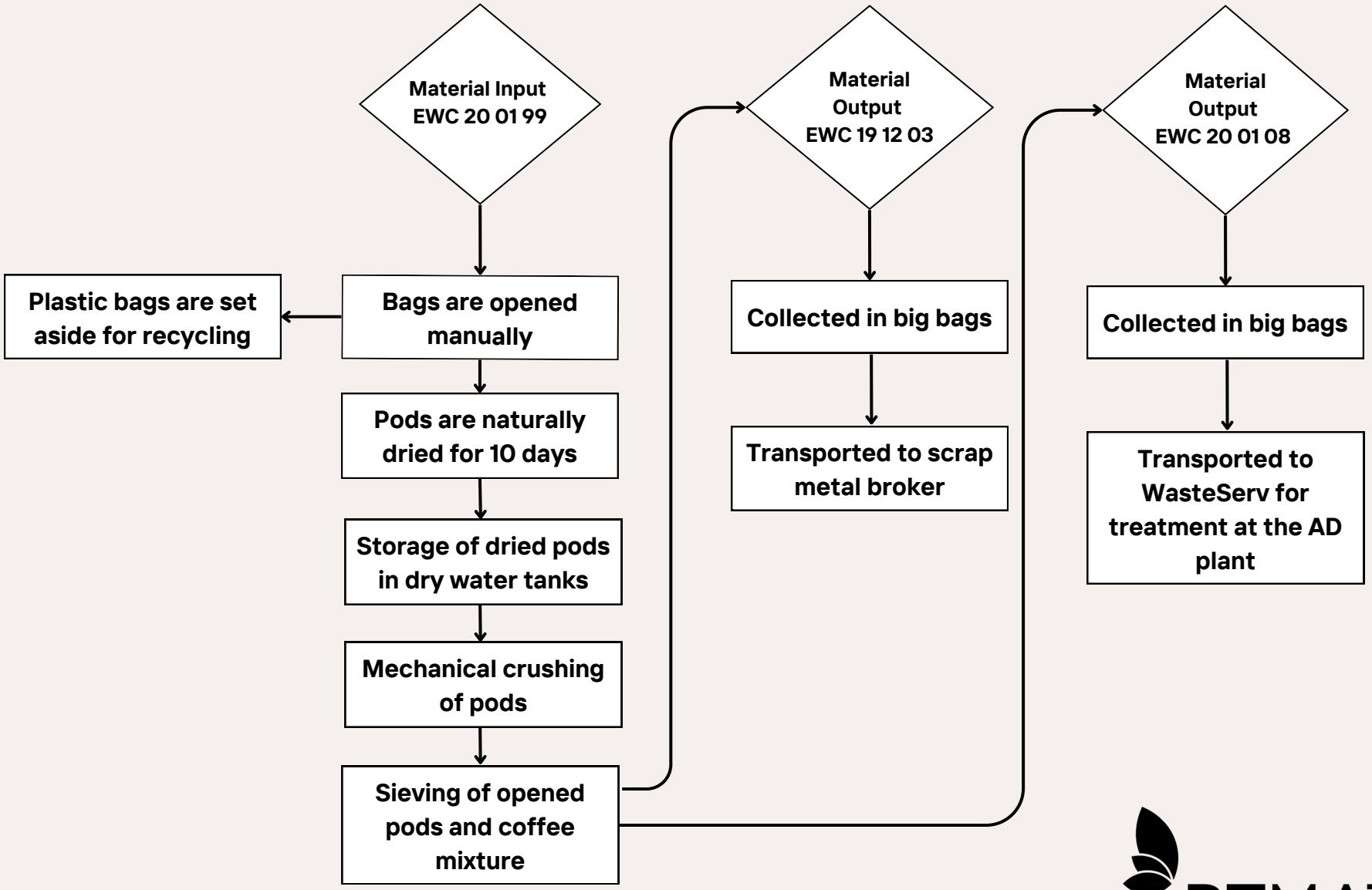
COFFEE PODS PROCESSING AT PTM WASTE MANAGEMENT FACILITY



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Photographic Representation of the proposed coffee pods material segregation undertaken at PTM Waste Management Facility in Mqabba.

1. *Coffee pods are received at the PTM Waste Management Facility in Mqabba.*

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2. *Pods are collected and stored in dry water tanks to air-dry for 10 days.*

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3. Dried pods are processed through the machine.

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4. Opened pods and coffee mixture is loaded onto a vibrating sieve for the separation of both materials.

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5. Coffee is being collected, leaving the aluminium pods on the surface to be collected separately.

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6. Aluminium is collected from the machine to be transferred to big bags.

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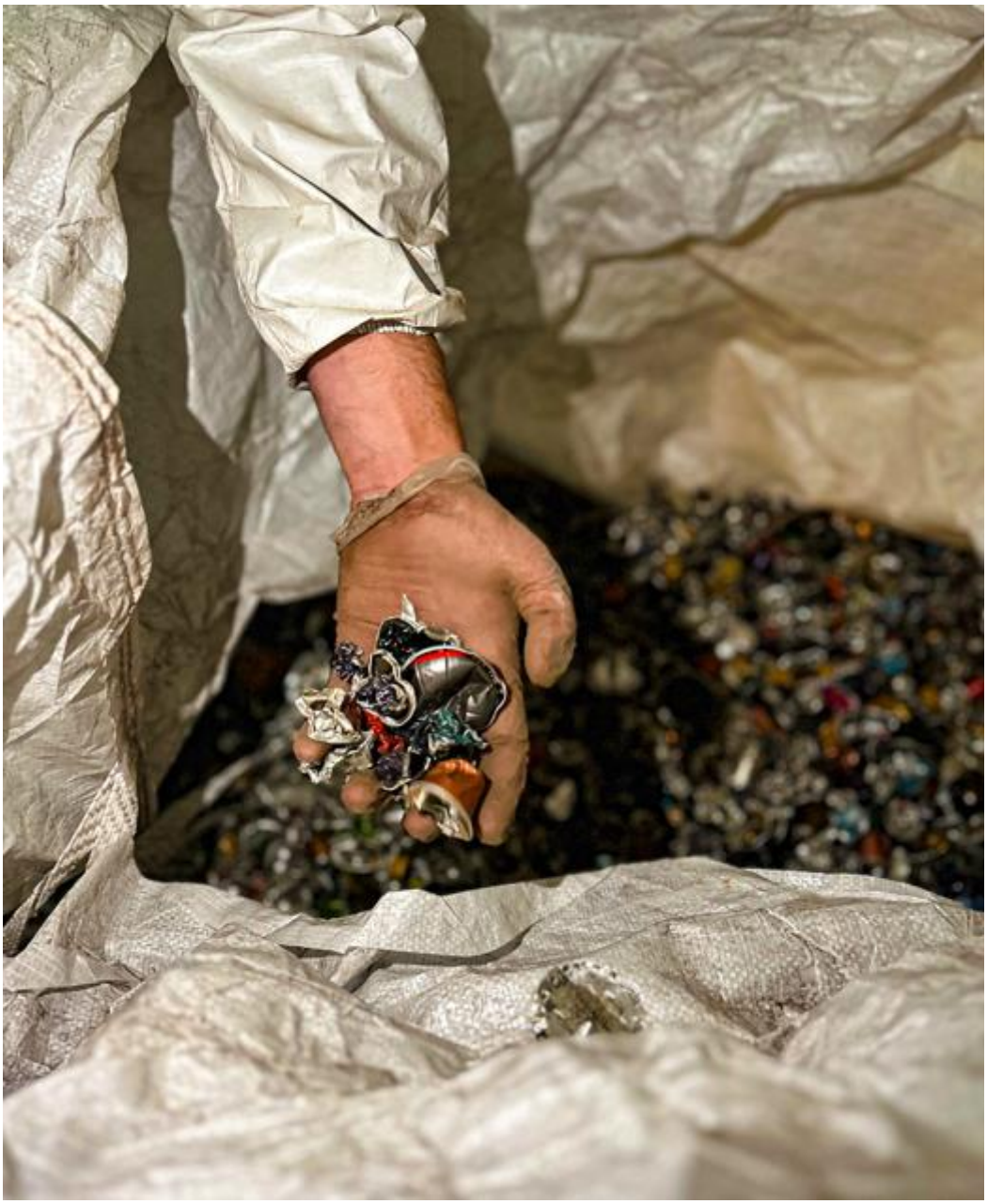

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8. Coffee is collected as organic material in big bags.

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