

HDPE PLASTICS circular economy roadmap for Ghana (2025-2028)

High-Density Polyethylene (HDPE) is used in everyday items such as jerrycans, detergent bottles, crates, buckets, and shampoo containers. This roadmap sets out how Ghana can recover and recycle more HDPE, improve the quality of recycled HDPE, and reduce leakage into drains, dumps, and open burning.

STARTING POINT IN THE MAPPED SYSTEM

Ghana produces over 1.1 million tonnes of plastic waste each year, and more than 70% is not formally collected or processed.

HDPE is about 18-20% of plastic packaging consumed, but less than 1 in 4 HDPE items is recovered.

Key loss points include low source separation in markets, sachet film that is hard to recycle due to low density and contamination, and inconsistent recycled HDPE flake quality that limits demand.

Drainage blockage events linked to HDPE are frequent during the wet season.

Key metrics at a glance

Metric	Baseline	Target
HDPE collection rate	~50% (2024)	≥75% (2027)
HDPE recycling rate	~10% (2024)	≥25% (2027)
Drainage blockage events due to HDPE	Frequent in wet season	≥50% reduction (2027)
rHDPE flake contamination (visual)	>30% (2024)	≤10% (2027)
rHDPE product replacement ratio	<2% of total HDPE usage (2024)	≥15% in selected FMCG packaging (2027)

Practical pilots (evidence for scale)

Metric	Baseline	Target
Decentralised PET buy-back and sorting hubs (Techiman and Ashaiman)	Create safe recovery points, register collectors, and stabilise payments and offtake.	30+ tonnes recovered; 120 collectors registered; 25% litter drop.
Eco-design demonstration and PET product standardisation (Accra Metro)	Work with brands to improve bottle design for recyclability and raise flake yield.	3 prototypes tested; 1 adopted; 20% increase in flake yield.
rPET integration in local manufacturing (Kumasi and Tema)	Test bottle-to-bottle or flake-to-pre-form reuse using Ghana-sourced rPET.	1 rPET batch certified; up to 25% recycled content in products.
Recycled PET content in bottles	<3% (2024)	≥25% (2028)
Informal collector average daily income	~GHS 22 (2024)	≥GHS 40 (2028)
Cooperative membership among collectors	~8% (2024)	≥50% (2028)

WHAT CHANGES BY 2028

More HDPE is captured through decentralised drop-off and buy-back points in high leakage areas.

Sachet film is densified so it can be transported and recycled reliably.

A quality certification system makes recycled HDPE flakes consistent and trusted by manufacturers.

Innovation and training expand end uses for recycled HDPE, while informal collectors gain recognition and safer working conditions through stronger organisation.

FINANCING AND SCALING

Estimated pilot portfolio: **\$1.2 million** (2024-2027) covering drop-off infrastructure, mobile units, flake certification, buy-back kiosks, and TVET innovation and incubation. Scale-up for national replication of drop-off and buy-back networks is expected to require an additional **\$1.5-2 million over 3-5 years**.

TIMELINE, STEP BY STEP

(Foundation and prototyping) 20 drop-off points, 3 mobile units deployed, flake certification protocol developed, kiosks prototyped, awareness demos at pilot sites.

2025-2026

(Demonstration and consolidation) Drop-off network expands to 50 markets, digital marketplace operational, mobile coverage scales to 6 cities, innovation challenge rolled out across TVET colleges, monitoring embedded in MMDA dashboards.

2026-2027

2027-2028

(Scaling and integration) Flake certification formalised as a national standard, targets integrated into MMDA plans, permanent buy-back networks established, successful pilots replicated in Northern and Western regions.