Towards a Cleaner Qatar

Addressing Plastic Pollution Through Integrated Solutions

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Qatar's Plastic Pollution Crisis

Waste Per Capita[1]

1.8 kg/day

High waste generation rate

Landfill Dependency[2]

50%+

Plastic waste sent to landfills

Recycling Rate[3]

3-6%

Low recycling rate

The Problem:

- Widespread Use: It's quite remarkable, but it seems that our society has grown tremendously reliant on disposable plastic products. This habit happens to contribute to a surging volume of waste.

Why is it a problem?

- Landfill Overload: Complicating matters further is the durability of plastic - it resists degradation, resulting in an inordinate amount of these non-biodegradable substances in our rapidly filling landfills.

Possible Solution:

Deposit Return Scheme

Captures recyclable plastics

Rewards users for returning their single use plastics such as bottles

Source Separation

Achieved by separating plastics right after the trash is collected and the other by rewarding those who separate their trash

Waste-to-Energy

Processes non-recyclable plastic waste

Converts waste into usable energy

Solution Comparison and Recommendation

Decision Matrix Analysis

Comparative assessment of solutions across key criteria such as feasibility, environmental impact and cost efficiency

Solution	Feasibility	Environment and Human Impact	Cost Efficiency	Total
Deposit Return Scheme	9	8	9	26
Source Separation	5	8	7	20
Waste To Energy	8	6	7	21

Most Challenging — Least Challenging

Recommended Solution

Integrated DRS & WTE

The integrated approach is the best as it:

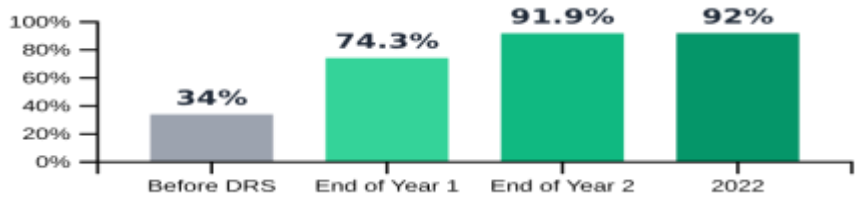
- Captures plastic recyclables with DRS
- Converts non-recyclable waste to energy
- Reduces landfill dependency

Deposit Return Scheme (DRS)

Lithuania's Success Story

Lithuania implemented a DRS system that increased plastic bottle return rates from 34% to 92% within two years.[4]

Plastic Bottle Return Rates:



Qatar Retailer Trials

Local retailers in Qatar are already trialing DRS systems:

Al Meera
Local supermarket chain

LuLu Hypermarket
Major retail establishment

Key Benefits of DRS

- Increases collection and recycling rates
- Prevents plastic bottles from landfills

DRS Collection Point Example

Waste-to-Energy (WTE)

DSWMC Facility

- First WTE facility in the GCC, completed in 2011
- Comprehensive waste management center in Mesaieed
- Includes waste sorting, recycling, landfill, and composting

Annual Processing

640,000 tonnes [5]

Waste incineration capacity

Annual Energy

245,000 MW·h [6]

Clean electricity generation

Key Benefits

- Reduces landfill reliance
- Energy independence
- Minimizes waste volume

Qatar's Waste-to-Energy Plant

Waste Diversion from Landfills

Diverted (95%)

Landfilled (5%)

Conclusion:

- Integrating Deposit Return Schemes with Waste-to-Energy transforms waste management at every stage.
- Boosts recycling rates, reduces landfill use, and creates clean energy from waste.
- Supports Qatar’s National Vision 2030 for a sustainable, circular economy.
- Reduces plastic pollution and turns waste into a valuable resource for the future.

References