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# 厦门市开展一次性塑料饮料包装物回收体系试点建设研究项目汇报

## Pilot Study on Establishment of Waste Collection System Favouring Single-use Plastic Drinking Bottles in Xiamen

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## 1. 项目基本情况和目标 Basic Information & tasks

- ◆ 总体方向：防治塑料污染、促进资源节约与循环利用 General target: Prevention of plastic pollution、realize resource saving and waste collection and recycling
- ◆ 主要任务：
  1. 对厦门市开展一次性饮料包装物的基线调研（包括废弃物种类、产生量、流向、回收处理量等）
  2. 分析厦门实施一次性饮料包装物押金制回收的可行性
  3. 提出厦门市试点开展一次性饮料包装物回收体系建设的实施方案与政策建议
  4. 对公众的宣传教育

Objective: Taking Xiamen as the research pilot, through a baseline study of plastic, glass, metal and paper-based single-use drinking bottles and other beverage packages (types of waste, waste generation and flow, recycling and treatment volume, etc.), analyzed the feasibility of implementing the DRS on single-use drinking bottles, compiled an implementation plan on establishing DRS collection system, and proposed policy recommendations for the construction of the waste collection system of the pilot. Raising public awareness on preventing plastic pollution.



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## 2. 项目活动1—厦门试点现状调查

### Activity 1—Baseline Study in Xiamen

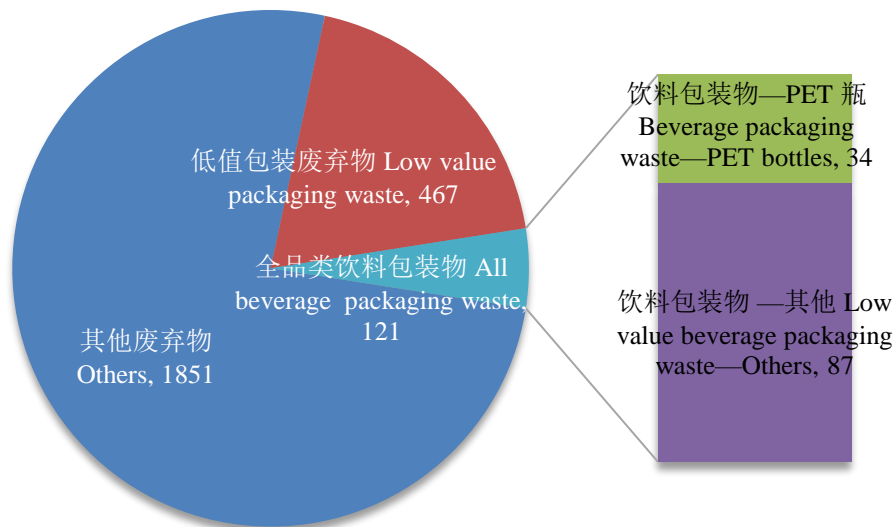
- ◆ 调研区域：厦门岛（湖里区和思明区） Southern Coastal city of Fujian province  
the residential, cultural, and educational heart of **Xiamen**, along with being a center for tourism and commercial enterprises.
- ◆ Investigating Area Selection: Xiamen Island (Huli District and Siming District), tourism and commercial center with large population
- ◆ 调研对象：**全品类饮料包装物**：一次性塑料包装（PET瓶等）、玻璃包装（啤酒瓶等）、金属包装（铁质和铝质易拉罐等）和纸基包装（饮料纸盒等）；**低值包装废弃物**：外卖餐盒、奶茶杯、塑料袋等。
- ◆ Investigated Waste Selection: focusing on all categories of beverage packagings from all materials( including plastic, paper, metal), and **other low-value packaging waste like** takeout food containers, plastic tea-cups, etc.



## 调研结果 Results

- ◆ 2020年，生活源废弃物总产量为2439吨/天
- ◆ 其中饮料包装废弃物总计121吨/天(含纸基、塑料、金属及玻璃)，平均回收率为83%
- ◆ 饮料包装废弃物中塑料瓶产生量约为34吨/天，平均回收率为89%。
- ◆ 低值包装废弃物产生量为467吨/天，回收率为11%。
- ◆ 全品类-回收率高/市场化程度高  
低值类-回收率低/无法市场化循环利用、需要政策扶持
- ◆ In 2020, the generation of household waste is over 2000 tons/day. Among them, the proportion of low-value packing wastes was relatively higher than that of the beverage packaging waste. Comparing with low-value packaging wastes from plastic and other materials, all categories of beverage packaging wastes with inclusive of single-use PET drinking bottles had high collection rate. And The recycling of low-value packaging has more potentials for increasing.

厦门市生活源废弃物产生量  
Xiamen Household Waste Generation Amount





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## 2. 项目活动2—厦门试点实施方案

# Activity 2—Implementation Plan in Xiamen



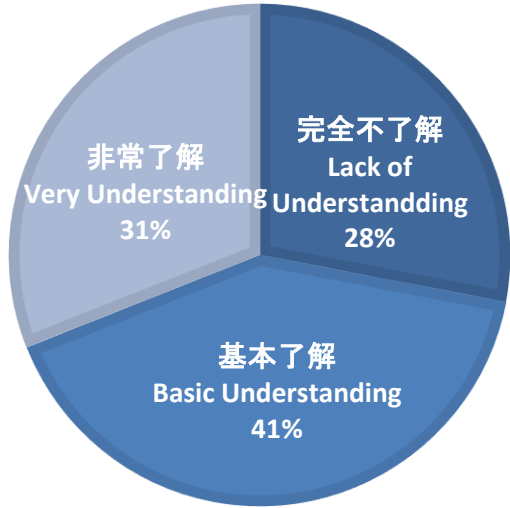
# 全品类包装废弃物押金制回收设计 All beverage packaging waste recycling system design

## Public awareness toward DRS 饮料包装押金返还制的公众意愿调查

Online survey to investigate the public feedback for DRS. And most of public in Xiamen showed their willingness to pay deposit money for collection.

线上调研回收问卷243份，99%均认为循环利用是更环保的方式，调研也显示大部分消费者愿意通过押金制度支持回收行为，但是对于押金制的了解仍有限，需要更多信息；同时也认为押金最好不超过1元，且78%希望通过微信/支付宝线上的方式返还押金。

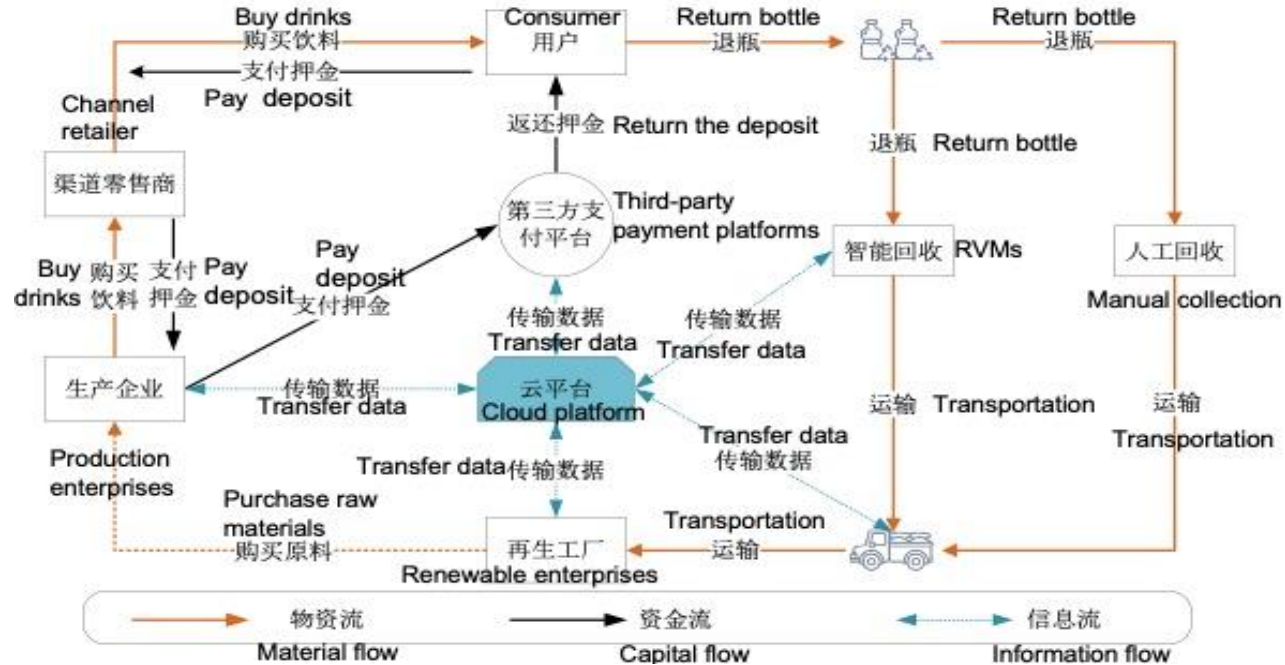
## 公众对于押金制了解程度 PUBLIC UNDERSTANDING OF DRS





# 全品类包装废弃物押金制回收设计 All beverage packaging waste collection system design

Therefore, in order to further promote household waste classification, control well the waste flow of collection and recycling and eliminating secondary pollution risk, we separate the whole collection system into two different group. One group is for all beverage packaging waste collection with DRS system.



# 全品类包装废弃物押金制回收设计 All beverage packaging waste recycling system design

押金系统数据测算：

According to cost estimation for the DRS system, comparing with only collecting PET drinking bottles with deposit money, all packaging waste to be included into one collection system will save more money.

	仅收集塑料瓶 Plastic bottle only	全品类（纸基、塑料、金属及玻璃） All packaging（paper-based ,plastic , metal and glass ）
目标回收率 Target collection rate	90%	90%
每日回收量（吨） Collection quantity per day（ton）	34.3	120.9
单瓶押金 Deposit per bottle	0.3	0.3
收集网点数量 Number of collection sites	154（人工和机具各77个） 154（manual collection sites 77，RVMs 77）	154（人工和机具各77个） 154（manual collection sites 77，RVMs 77）
建设成本（万元） Construction cost（ten thousand yuan）	1672	2156
运营成本（万元/年） Operation cost per year（ten thousand yuan）	2637	7345
吨均成本（元） Cost per ton（yuan）	2340	1849
单瓶成本（元） Cost per bottle（yuan）	0.06	0.05





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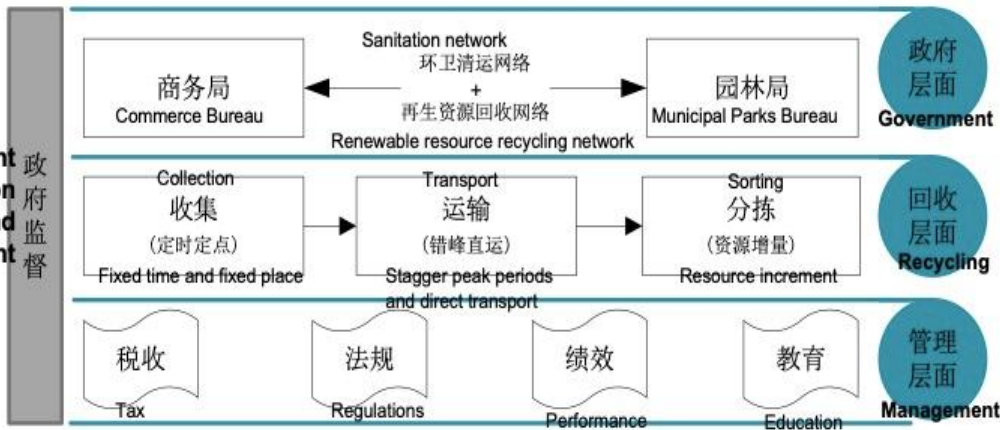
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## 低值包装废弃物回收体系设计 Low-value packaging waste recycling system design

The other group will be the system targeting on collecting the low-value packaging waste. The system will combine the sanitation network with renewable resource recycling network with the guidance of local government, which will contribute to realizing cost-saving, promoting the new sorting technology advancing and increasing the volume of the renewable resources collection.

Government Supervision and Management  
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## 厦门市包装废弃物回收体系建设推进建议 we put forward the Next step Recommendations for Xiamen packaging waste collection system

### 1、完善全品类饮料包装物回收体系 One is focusing on the existing beverage packaging waste collection system

厦门市饮料包装废弃物回收已取得一定成效，建议借助“互联网+”或押金制的回收模式，继续优化回收体系并建立便捷高效的全产业链信息化管理平台，进一步提升回收利用率。Xiamen has achieved remarkable results in recycling beverage packaging waste. Considering to have a real DRS pilot system, will helpful to optimize the existing collection and recycling system and establish a convenient and efficient information management platform for the whole industrial chain, so as to realize high quality recycling of the plastics.to further improve the recycling rate with the help of "Internet+" or DRS.

**2、推动建设低值包装废弃物融合回收体系 The other is focusing on low-value packaging waste, to promote the construction of low-value packaging waste inclusive collection system. And furthermore, conducting continued tracing and evaluation will help to improve the existing system and realize the profitable recycling.** 厦门市低值包装废弃物回收具有较大提升空间，建议继续开展低值包装废弃物回收体系试点建设的绩效跟踪评价，建立大型低值回收物分拣中心，推动低值可回收物的回收利用。





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