

# **Creating a Deposit-Refund System Database to Achieve a More Circular Plastic Economy**

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Plastic is a ubiquitous part of everyday life and affords humans great ease; yet, low rates of recycling worldwide force companies to constantly produce plastic, resulting in enormous amounts of carbon emissions and greenhouse gases being released each year. Since the 1970s, numerous government entities have implemented Deposit Return Systems (DRS) on beverage packaging to curb plastic waste. DRSs shifts the cost of recycling from taxpayers to producers, by allowing consumers to drop off used plastic bottles at commercial stores in exchange for money. Beverage companies collect these bottles for recycling. Although individual case studies have gathered significant amounts of data on DRSs, an encompassing model addressing which DRS policy components are most effective currently does not exist. This study collected data on existing DRSs worldwide, identified the most effective DRS policies, and created an online bottle deposit database constructed with data from over thirty countries for researchers to consult and contribute to. This database provides valuable information concerning the international successes and failures of plastic DRS programs. In addition, it will help avoid the creation of ill-informed policies that unnecessarily waste time and capital.

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