Proposals towards the design of a Greek Deposit Refund System

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10TH International Conference on Sustainable Solid Waste Management
Eunomia Overview

- 150+ consulting staff in the UK, EU, USA and NZ
- Independent and multi-disciplinary:  
  - Environment, Engineering, Economics
- Holistic approach to corporate sustainability  
  - Policy, Analytics and Feasibility  
  - Business Case Development  
  - Internal and External Communication
- Collaborative and bespoke - futureproofing
What is a Deposit Return System?

Applies a small deposit to incentivise consumers to return beverage containers

- Increase recycling
- Improve quality
- Reduce littering
How does a DRS work?
Where else has a DRS?
Status of DRS in Europe

Denmark: Centralised system, established in 2002, covers plastic bottles, aluminium cans, and glass bottles.

France: Prospect of a DRS through the Anti-Waste Law. Less developed thinking than other target countries.

Portugal: Implementing DRS, legislation not yet published, preparations have begun, and an industry organisation has been formed.

Germany: Not centralised system: operational since 2003, covers plastic, metal and glass, refillables.

Poland: Publication of a draft law in 2022, outlines early plans to introduce a DRS. Less developed thinking than other target countries.

Romania: Implementing DRS, legislation is published, expected to be operational by 2023.
Background - DRS

Principles of high-performing systems:

- Obtain high-return rate
- A single, centralised system operator
- Convenient return network
- Appropriate deposit value

DRS funding model (centralised system):

- Unredeemed deposits
- Material revenues
- Producer fees,
Why Deposits?
## EU Perspective: EU-level Drivers

### EU Framework Directive on Waste
- New targets for MSW
  - up from 50% (pre-amendment in 2018) using any of four methods, to:
    - 55% by 2025;
    - 60% (2030);
    - 65% by 2035
- New measurement method proposed for measuring recycling targets (now set out in Implementing Regulations for MSW)
- Requirement for fee modulation under EPR and full cost recovery for packaging

### EU Directive on the reduction of the impact of certain plastic products on the environment (Article 6 and Article 9)
- Tethering of caps for plastic beverage containers
- Recycled content:
  - 25% recycled content for all single-use PET beverage bottles by 2025
  - 30% recycled content for all single-use beverage bottles by 2030
- Member states responsible
- Separate collection of single-use plastic beverage containers:
  - 77% by 2025;
  - 90% by 2029
- EPR costs extended (for packaging items and cigarette butts) to public waste collection and clean-up of litter
  - (a) establish deposit-refund schemes;

### EU Directive on Packaging and Packaging Waste
- New targets for plastic (and other) packaging
- Plastics: up from 22.5% (pre-amendment in 2018) to 50% (2025); 55% (2030)
- New measurement method as per WFD
- Requirement for fee modulation as per WFD

### Taxes on virgin plastic
- EU: €800/tonne of unrecycled plastic packaging - under consideration as a budgetary support measure
- Note:
  - Italy: €450/tonne – from July 2020? (compostables exempt)
  - UK: £200/tonne on all plastic packaging with recycled content <30% – already announced
  - Spain: tax on plastic food packaging out to consultation

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8 Proposals towards the design of a Greek Deposit Refund System
EU–level Drivers and Capacity

EU Directive on Packaging and Packaging Waste

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- If we assume we’ll reach 55% recycling for plastics there is insufficient capacity in reprocessing in Europe.
- Increased quantity of material collected can also feed high-quality recycling output into more mature markets

Source: https://www.plasticsrecyclers.eu/plastics-recyclers-publications
Single Use Plastics Directive

- 90% collection rate
- Supply recycled content
- Reduce litter clean-up costs
- Awareness of Marine Plastics
Beach Litter

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Terrestrial litter

- Clean-up costs
- Neighbourhood disamenity

Contain dead mammals

5% 8%
DRS plastic return rates

Proposals towards the design of a Greek Deposit Refund System
Key Design Principles
Effective & efficient systems

- Centralised
- Industry-led & not-for-profit
- Appropriate deposit value
- Convenient returns
- Fraud prevention measures
Funding

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Cost & Benefit Studies
Ireland – Options for 90% collection

- Review current waste collections
- Alternatives to achieve 90% for PET
- DRS design & costs for bottles & cans
- Stakeholder consultation
- Improvements to kerbside not enough due to away-from-home consumption
## DRS Design for Ireland

<table>
<thead>
<tr>
<th>Component</th>
<th>Option Chosen for Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance</td>
<td>Centralised; privately owned and operated; targets set by government (and/or Beverage Container Tax)</td>
</tr>
<tr>
<td>Scope - Containers</td>
<td>PET &amp; aluminium (specified in study requirements)</td>
</tr>
<tr>
<td>Scope - Beverage</td>
<td>Water; soft drinks; juices; beer; cider; pre-mixed spirits</td>
</tr>
<tr>
<td>Deposit Level</td>
<td>€0.20</td>
</tr>
<tr>
<td>Labelling</td>
<td>Deposit logo and reduced producer fee for national barcode</td>
</tr>
<tr>
<td>Return Infrastructure</td>
<td>Return to retail – any container can be returned to any participating retailer</td>
</tr>
<tr>
<td></td>
<td>Compacting RVMs for large retailers</td>
</tr>
<tr>
<td></td>
<td>Manual service for small retailers</td>
</tr>
<tr>
<td>Handling fees</td>
<td>Variable handling fee based on retailers’ costs and Central System Operator’s (CSO) savings.</td>
</tr>
<tr>
<td>Funding</td>
<td>Material Revenues</td>
</tr>
<tr>
<td></td>
<td>Unredeemed deposits</td>
</tr>
<tr>
<td>Target</td>
<td>90%</td>
</tr>
<tr>
<td>Description</td>
<td>Cost</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Annual environmental benefit</td>
<td>€2.3 million</td>
</tr>
<tr>
<td>Reduced annual litter disamenity</td>
<td>€95.8 million</td>
</tr>
<tr>
<td>Per container for retailers</td>
<td>€0.026 - €0.032</td>
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<tr>
<td>Initial set-up Costs</td>
<td>€82 million</td>
</tr>
<tr>
<td>Net Annual Cost</td>
<td>€20 million</td>
</tr>
<tr>
<td>Producer Fee</td>
<td>€0.0114</td>
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</tbody>
</table>
Czech Republic – DRS design

Designing & modelling a DRS to meet 90% target

Comparison of PET-only with PET & metal

Bring site collection and disposal savings

Lost revenue for separation facilities

Monetised environmental benefits
Czech DRS costs & revenues

€14.3 million – Annual net cost - PET only

€0.01 PET Producer Fee

€0.02 - €0.03 for retailers

€9.5 million – Annual net cost with cans

€0.0078 PET Producer Fee ‘0’ for cans
Turkey

- Designing & modelling DRS
- Annualised set-up costs
- Costs of collecting, transporting & counting containers
- Modelling impact on bring site collections
- Savings for existing waste management system
<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Waste Management Savings</td>
<td>€5 million</td>
</tr>
<tr>
<td>Annual carbon &amp; air quality benefit</td>
<td>€16.3 million</td>
</tr>
<tr>
<td>Per container for retailers</td>
<td>€0.005 - €0.02</td>
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<tr>
<td>Net Annual Cost</td>
<td>€77 million</td>
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<tr>
<td>Producer Fee</td>
<td>€0.006</td>
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</tbody>
</table>
New York – Job creation

Current system

Modernised system

- 5,700 FTE jobs
- 7,700 FTE jobs
Towards Implementation - Greece
Legislative Review

- Key provisions and requirements
- Roles and responsibilities outlined for each key stakeholder (i.e. DRS operator, retailer, municipalities etc.)
- Exemptions and other key elements
Key Provisions

Type of materials collected

i. aluminum up to 1 liter;

ii. glass up to 1.3 liters;

iii. plastic up to 3 liters;

Product type:

i. beer,

ii. wine,

iii. water,

iv. soft drinks,

v. juices and nectars,

vi. instant drinks, and

vii. milk
Key considerations

• Duplication of effort / cost
• Municipalities / EPR schemes / waste companies fear loss of revenue / trade
• Effect on sales
• Retailer opposition (handling fees?)
• Skewing of the market?
A good design...

• Not overly ‘regulated for’...
• ... other than scope (and performance)
• Run by drinks cos / importers
• Unclaimed deposits support the system
• High enough deposit to drive high captures...
• ... suitable fraud prevention systems implemented
A good design...

- Material revenues held by the system
- Smart handling fees / logistics
- Producer fees?
- Suitable links to EPR
- Accompanying measures to address competing products
Thank you!

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