

### **SUBMISSION**

то

### **DEPT. OF ENVIRONMENT, CLIMATE & COMMUNICATIONS**

ON

### THE POTENTIAL DEVELOPMENT OF

A DEPOSIT RETURN SCHEME IN IRELAND

12<sup>TH</sup> NOVEMBER 2020



#### **EXECUTIVE SUMMARY**

The IWMA is the representative body of the waste management industry in Ireland.

In this submission, we advise against the proposal that Ireland should introduce a conventional DRS for PET bottles and aluminium cans, as proposed by Eunomia in their recently published report, commissioned by the Department of Communications, Climate Action and Environment.

Instead, we favour the introduction of a Smart DRS (or digital DRS) that uses smartphone App technology combined with the existing collection network for recyclable materials, enhanced by some new delivery points for deposit materials.

We suggest that the Smart DRS should be extended to a wider range of materials, whether from the commencement of the system or as it develops over time.

In short, a Smart DRS works as follows:

- Recycling bins are given a unique code, such as a QR Code or an RFID Chip.
- Materials with deposits paid have a unique code, such as QR Code or similar.
- Consumer pays a deposit at the point of purchase.
- Consumer downloads the free App on to any smartphone or tablet.
- After consumption, the consumer scans the recycling bin with their smartphone followed by the packaging item within 30 seconds and redeems the deposit electronically via the App. The consumer is allowed 30 seconds between each item, but many items can be scanned one after another with the smartphone in a short time period.
- Deposits can be reclaimed using smartphones at home, at work, on the street (particularly using Smart Recycling Bins) and at a wide variety of strategic locations.
- Alternative options are provided for people that do not have smartphones or do not wish to use the App, including some Reverse Vending Machines at strategic locations such as civic amenity sites, shopping centres, train stations, airports, sports arenas, etc.



#### Examples of Smartphone Apps used for Smart DRS Systems

We provide further details of the Smart DRS in this submission. We find many faults with Eunomia's report, which incidentally did not even consider a Smart DRS. We argue that it would be a lost opportunity for Ireland to invest

so heavily in a system of the past (conventional DRS), when a system of the future is in our grasp (Smart or Digital DRS).

The world has moved on from manual and semi-automated ways to manage finances. Digital systems are the only way forward and are heavily backed by the EU and Ireland. It is EU and Irish Government Policy to promote digital business and consumer engagement, as this is more efficient and less resource intensive compared with traditional methods of conducting business and public engagement.

The European Commission is planning and promoting "*A Europe fit for the digital age*" and is looking for Member States to set standards in this regard, not to follow the outdated standards set by others. Ireland can be a world leader in this regard, as we were with the plastic bag levy and we are with the technology that we currently use in waste collection (RFID chips, weighing systems, customer engagement via electronic means, etc.).

The following Table summarises the key differences between the development of a conventional DRS and a Smart DRS in Ireland, as we see them.

Issue	Conventional DRS	Smart DRS
Cost	€70m to €100m per annum	€20m to €25m per annum
Surplus Revenue	None - €30m unredeemed deposits plus €10 to €15m material value leaves a shortfall of €25m to €60m.	€15m to €25m surplus if only PET Bottles and Aluminium Cans. Could be €50m to €100m if extended to other materials such as HDPE bottles, tetra-pak, glass, steel cans, etc.
Flexibility	None – reverse vending machines only accept round items. Also, space limitations in shops make it difficult to add more materials. It is also more difficult to change the deposit level.	Very flexible. Any item can be added quite simply by amending the label and using the technology. Variable deposits and revision of deposit levels are easily managed in this digital system.
Impact on Litter	Limited - reverse vending machines do not accept crush cans or bottles.	Excellent – any deposit item can be returned to a wide range of convenient locations and the deposit reclaimed regardless of whether or not it is crushed or squashed.
Impact on Existing Recycling System	Expected to cause a €7m per annum impact on the existing recycling system, which is a threat to its viability.	Expected to have a positive impact as people place more recyclable items in their recycling bins and the surplus revenue supports the introduction of more collection points for recyclables.
Integration with Northern Ireland	Difficult due to currency difference and the use of non-unique identifier on the labelling.	Easier, as the electronic system can easily manage the currency difference and the unique identifier will reveal the source of the item.
Consumer Engagement	Very difficult for consumers as they must store deposit items uncrushed in	Easy for consumers as they can reclaim the deposit in their home, at work, on the street, in

# Table 1 Comparison of Conventional DRS Versus Smart DRS for Ireland

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lssue	Conventional DRS	Smart DRS
	their homes and deliver them to shops periodically, where they queue to manually deliver the items to gain store credit.	shopping centres, at sports events, in train stations, at airports, at civic amenity sites, at bring banks, etc. Also, consumers get cash to their account, not credit. Also, the App will provide useful information to consumers. Less convenient for people that do not have smartphones, but adequate provision will be included.
Impact on Retailers	Difficult to manage returns and storage of materials.	Involved only on a voluntary basis with a scanner that make returns easier.
Quality of Materials	Higher quality.	Relies on a higher level of sorting to reach high quality, but food grade raw materials can be produced.
Security	Good at ensuring the items are returned before deposit is returned, but more open to fraud as items are not uniquely identified and there is a history of fraud with conventional DRS systems around the world.	Relies upon a degree of trust in the sense that people are expected to place the item in the recycling bin that they scan with their smartphone. However, less susceptible to fraud as the items are uniquely identified and a deposit cannot be returned twice on the same item.
Positive Environmental Impacts	Increase in recycling rates for PET bottles and aluminium cans combined with disincentive to purchase these items.	Increase in recycling rates for PET bottles, aluminium cans, cartons, tetra-pak, glass bottles, etc. combined with disincentive to purchase these items. Also offers potential to support re-use, e.g. higher returns for re-using glass bottles.
Negative Environmental Impacts	Significant carbon emissions associated with additional traffic and transport needed to deliver and collect the deposit items to and from shops and also with the development and operation of 5 new counting/sorting centres.	No negative environmental impacts envisaged as existing collection and processing system is used and enhanced with more convenient drop-off points.
Potential Health Impacts	Returned containers are likely to contain traces of product including sugary drinks and alcohol in open bottles and cans. This could attract flies and rodents to the storage area of shops, where the materials are securely stored alongside food products. There is a health risk associated with this arrangement.	Containers are mostly returned to non-retail locations, avoiding this risk altogether. When/if returned to retail, the items are scanned and can be placed in standard recycling bins without the need for secure storage, as the deposit cannot be reclaimed twice. The bins will be managed as waste in an appropriate manner, not as stock in the storage rooms.

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lssue	Conventional DRS	Smart DRS
Development Timeframe	4 to 5 years. The need for 5 new counting/sorting centres will involve site selection, site procurement, EIA, planning permission, EPA licensing, design, construction and equipment installation. This will take at least 3 years.	<ul> <li>2 years.</li> <li>Main items required to get started are: <ul> <li>Trials</li> <li>Labelling of deposit items</li> <li>Labelling of recycling bins</li> <li>Provision of more recycling bins</li> <li>Procurement of App technology</li> </ul> </li> <li>The trials could be completed in the next 6 <ul> <li>months and none of the other tasks should take</li> <li>more than 12 months to complete.</li> </ul> </li> </ul>
Risks	The system is proven elsewhere which is a positive. However, countries that have introduced a successful DRS have a much higher proportion of apartment- dwellers and they have a tradition of delivering recyclables to drop-off points. Ireland has a different way of recycling with greater emphasis on kerbside MDR bins. There is a high risk that the public will not engage fully with a conventional DRS and will resent the inconvenience involved, with knock effects on overall recycling. There is also a risk that removing the high value materials from the existing recycling system could lead to a collapse of that system. There is also a planning risk associated with the development of 5 new counting/sorting centres. The risk of fraud is higher.	<ul> <li>This is a novel system with the risks associated with any new development.</li> <li>However, there are lower risks in a number of ways, as follows: <ul> <li>The investment level is much lower.</li> <li>Public involvement is much more convenient, so there is a lower risk of public rejection of the scheme.</li> <li>There is no risk of negative impacts on the current recycling system.</li> <li>The flexibility of the system allows it to start small and progress over time to more materials.</li> <li>The risk of fraud is lower.</li> </ul> </li> </ul>

The above Table shows that a Smart or Digital DRS is clearly the best way forward for Ireland. We must not fear digital technology as it is now so well established across the world and there really is no going back to the old ways.

Using the excuse that a conventional DRS is a 'proven system' is not good enough. The risks are higher, not lower and Ireland is a very progressive country and a world leader in the digital technology space. We must be progressive in that regard a Smart DRS is the best environmental and economic option for us and for those that come after us.

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#### 1.0 OVERVIEW OF THE IWMA

The IWMA is comprised of 41 members that operate 50 waste companies, as shown below.



Our website, <u>www.iwma.ie</u>, provides details of our members. Note that some members have acquired other companies in recent years and therefore trade under several brand names.

Our members handle household, commercial, C&D, liquid and hazardous wastes and are involved in the following waste management activities:

- Waste Collection
- Waste Transfer
- Recycling Operations
- Composting
- Anaerobic Digestion
- Hazardous Waste Management
- Specialist Treatments (such as Sterilisation)
- Soil Treatment and Recovery
- Waste to Energy
- SRF Production
- Landfill Operations
- Export of Waste for Treatment Abroad

It is clear that the IWMA represents a broad spectrum of waste management activities, so we have no inherent bias towards or against any particular waste management options. Our main goals are to raise standards in the industry, to promote compliance with all legislation and to assist Ireland in meeting the targets set by the EU in a variety of Directives. All our submissions are available publicly on our website.

#### 2.0 CURRENT RECYCLING OF PET BOTTLES AND ALUMINIUM CANS

#### 2.1 Introduction

In this section, we show the infrastructure involved in the collection and recycling of PET Bottles and Aluminium Cans in Ireland. The IWMA has a strong view that this collection system and associated infrastructure should be used for any DRS introduced to Ireland. To by-pass that infrastructure would entail very high environmental and economic costs that we believe are unnecessary and wasteful. We also suggest that any such decision would have to be based on an independent, fair and detailed cost-benefit analysis alongside an appropriate environmental assessment. We do not accept that the Eunomia report contains either of these requirements.

#### 2.2 Current Recycling Rates for PET Bottles and Aluminium Cans

REPAK, as the sole PRI Scheme for packaging waste in Ireland, is tasked with gathering and recording data on packaging waste generation and management in this Jurisdiction. REPAK provided the following data to the IWMA<sup>1</sup> in November 2019, based on their 2018 estimations:

	Placed on Market (t)	Quantity Recycled (t)	Current Recycling Rate
PET Bottles	25,490	15,472	60.7%
Aluminium cans	11,456	8,363	73.0%

## Table 2-1 REPAK 2018 Data on PET Bottles and Aluminium Cans

#### 2.3 Household Bins

The private sector waste industry in Ireland has delivered the following bins to households in Ireland, based on the most recent reliable data recorded by the NWCPO:

- > 1,259,870 houses serviced with a residual waste bin
- > 1,232,765 houses serviced with a mixed dry recycling bin (98%)
- 812,358 houses serviced with a brown (organic) bin (64%)
- 24,286 houses serviced with a bag service
- > 138,357 apartments serviced with waste collection service

PET Bottles and Aluminium cans are collected in the Mixed Dry Recycling (MDR) Bins. From there, they are generally delivered to waste transfer stations for bulking up prior to onward transfer to Materials Recovery Facilities (MRFs).

Based on the EPA Waste Characterisation study on Household waste conducted by the RPS<sup>2</sup>, we find the following data:

- Quantity of Household Waste relevant to the characterisation study = 1,046,819 tonnes
- Quantity of PET Packaging in Recycling Bins = 12,589 tonnes (this includes PET bottles, trays and other PET packaging)
- Quantity of Aluminium Cans in Recycling Bins = 3,264 tonnes

<sup>&</sup>lt;sup>1</sup> Email correspondence from David Sharpe (REPAK) to Conor Walsh (SLR/IWMA) on 27<sup>th</sup> November 2019.

<sup>&</sup>lt;sup>2</sup> Household Waste Characterisation Campaign, RPS for the EPA, November 2018.

SLR has gathered data from each of the Materials Recovery Facilities (MRFs) that are sorting household MDR generated in the Republic of Ireland. This includes data from two MRFs located in Northern Ireland that take some MDR from south of the border. Accounting for reported contamination levels and discounting 16% for PET Trays, we estimate that the Household MRFs recycle 11,879 t/a PET Bottles currently (2020).

SLR's data from a 2019 survey of these MRFs estimated that they are currently recycling approximately 4,444 tonnes of aluminium cans per annum.

The SLR data is relatively consistent with the waste characterisation study, allowing for 3 or 4 years growth and considering that household waste is high in 2020 due to the number of people working from home this year.

#### 2.4 Commercial Waste Bins

Commercial premises have variable waste collection services as the range of materials varies across different businesses. We do not have data on the numbers of bins or the volume of aluminium cans and PET bottles, but based on the EPA Waste Characterisation study on Non-Household waste conducted by the Clean Technology Centre<sup>3</sup>, we find the following data:

- Quantity of Commercial Waste relevant to the characterisation study = 715,227 tonnes
- Quantity of PET Packaging in Recycling Bins = 6,833 tonnes (this includes PET bottles, trays and other PET packaging)
- Quantity of Aluminium Cans in Recycling Bins = 928 tonnes

We have no data on the proportion of PET bottles in the PET packaging figure other than the REPAK estimate of 15,472 tonnes of total PET bottles recycled in 2018. This suggests about 3,000 to 4,000 tonnes of non-household PET bottles were recycled in 2018.

#### 2.5 Civic Amenity Sites and Bottle Banks

The National Waste Report for 2012 estimated that 1,304 tonnes of aluminium cans were dropped off at bring banks that year. REPAK data for 2019 puts that figure at 1,534 tonnes.

PET bottles are generally not included at bring banks or CA sites, so we assume a negligible figure for that material at those drop-off points.

#### 2.6 Estimated Quantities of PET Bottles and Aluminium Cans Currently Recycled

Our estimates detailed above suggest that the following quantities of the target materials are currently recycled:

- Aluminium Cans = c.3,200t/a household MDR + c.1,500t/a bring banks + c.900t/a commercial MDR + c.3,400t/a recovered from residual waste = c.9,000t/a
- PET Bottles = 15,000 to 16,000 tonnes per annum

REPAK's latest estimates suggest that the recycling rate for aluminium cans was at 89% in 2019<sup>4</sup>. The SLR estimates detailed above are consistent with that view, given that REPAK now estimates that the total market comprises c.10,000t/a aluminium cans.

This suggests that a DRS is not necessary for aluminium cans and further suggests that they would only be included in a DRS to help finance the scheme. We strongly question the merits of taking that valuable material out of kerbside recycling to help finance a parallel collection and treatment route, when it is already successfully recycled.

The data on PET bottles is less clear. REPAK previously calculated a recycling rate of 60.7% for this material. REPAK's latest estimation suggests that there are 29,900 tonnes placed on the market, which is higher than previously

<sup>&</sup>lt;sup>3</sup> Non-Household Waste Characterisation Campaign, Clean Technology Centre for the EPA, 2018.

<sup>&</sup>lt;sup>4</sup> Presentation by REPAK to IWMA on 19<sup>th</sup> October 2020

estimated. On that basis, the recycling rate is likely to be between 50% and 55%. We accept that strong measures will be required to increase that recycling rate to 77% by 2025 and 90% by 2029.

#### 2.7 Waste Transfer Stations

The main MSW Waste Transfer Stations in Ireland are detailed in Table 2-2 below and shown on Map 1/1A in Appendix 02 at the end of this submission. There are approximately 80 such facilities of significance, with some other very small facilities or facilities focussed on Construction and Demolition Waste that handle small quantities of MSW.

Just over half of the identified facilities are comprised of large facilities regulated by EPA Licence, with the remainder comprising smaller facilities regulated by way of waste facility permits issued by the local authorities.

Code	Name	Location	County	Province	Authorisation
P1014	Pac-on (Thorntons)	Balbriggan	Dublin	Leinster	EPA Licence
P1015	Glanway	Port of Waterford	Kilkenny	Leinster	EPA Licence
W003	Ballymount Baling Stn	Ballymount Road	Dublin 12	Leinster	EPA Licence
W032	Waterford CC Dungarvan	Ballynamuck Middle	Waterford	Munster	EPA Licence
W039	Panda	Ballymount Cross	Dublin 24	Leinster	EPA Licence
W044	Thorntons	Killeen Road	Dublin 10	Leinster	EPA Licence
W045	Keywaste	Greenhills Road	Dublin	Leinster	EPA Licence
W053	Greenstar	Fassaroe	Wicklow	Leinster	EPA Licence
W058	Greenstar	Deepwater Quay	Sligo	Connaught	EPA Licence
W082	Panda/Greenstar	Dock Road	Limerick	Munster	EPA Licence
W104	AES	Tullamore	Offaly	Leinster	EPA Licence
W106	Barna Waste	Carrowbrowne	Galway	Connaught	EPA Licence
W116	Greenstar	Six Cross Roads	Waterford	Munster	EPA Licence
W131	Midland (AES)	Clonmagaddan	Meath	Leinster	EPA Licence
W136	Greenstar	Sarsfieldcourt	Cork	Munster	EPA Licence
W140	Panda	Rathdrinagh	Meath	Leinster	EPA Licence
W144	Oxigen	Coes Road	Louth	Leinster	EPA Licence
W147	Ashgrove Recycling	Churchfield Ind Est	Cork	Munster	EPA Licence
W148	City Bin Co Ltd	Carrowmoneash	Galway	Connaught	EPA Licence
W152	Oxigen	Robinhood Ind Est	Dublin 22	Leinster	EPA Licence
W158	Ray Whelan	Waste Services	Laois	Leinster	EPA Licence
W163	Bergin (Barna)	Ballaghaderreen	Roscommon	Connaught	EPA Licence
W169	Mulleady	Cloonagh	Longford	Leinster	EPA Licence
W177	Greenstar	Carrignard	Waterford	Munster	EPA Licence
W183	Greenstar	Millennium Park	Dublin 11	Leinster	EPA Licence
W188	Greenstar	Greenogue	Dublin	Leinster	EPA Licence
W194	AES	Kyletalesha	Laois	Leinster	EPA Licence
W197	Mulleady	Mullingar Bus Pk	Westmeath	Leinster	EPA Licence
W205	Greyhound	Crag Avenue	Dublin 22	Leinster	EPA Licence

# Table 2-2 Main MSW Waste Transfer Stations in Ireland

Code	Name	Location	County	Province	Authorisation
W206	Thorntons	Dunboyne Ind Est	Co Meath	Leinster	EPA Licence
W207	Cavan Waste (Oxigen)	Killygarry Ind Park	Cavan	Ulster	EPA Licence
W208	Oxigen	Merrywell Ind Est	Dublin 22	Leinster	EPA Licence
W214	Ted O'Donoghue	Knockpogue	Cork	Munster	EPA Licence
W216	Barna Waste	Ardcolum	Leitrim	Connaught	EPA Licence
W217	Killarney WD	Aughacurreen	Kerry	Munster	EPA Licence
W220	Greenstar	Ramstown	Wexford	Leinster	EPA Licence
W222	AES	Blakes Cross, Lusk	Dublin	Leinster	EPA Licence
W227	Access Skip Hire (Thorntons)	JFK Ind Est	Dublin 12	Leinster	EPA Licence
W229	Goff Recycling (AES)	Ballygillane Big	Wexford	Leinster	EPA Licence
W238	Dublin City MRF (Panda)	Merrywell Ind Est	Dublin 12	Leinster	EPA Licence
W240	AES	Nenagh	Tipperary	Munster	EPA Licence
W253	Clean Ireland	Ballynagun West	Clare	Munster	EPA Licence
W257	Country Clean	Churchfield Ind Est	Cork	Munster	EPA Licence
W258	Murray Waste	Ferns	Wexford	Leinster	EPA Licence
W261	Panda	Cappagh Road	Dublin 11	Leinster	EPA Licence
NL01	Wilton	Ballyjamesduff	Cavan	Ulster	LA Permit
NL02	Sidney McDaid	Letterkenny	Donegal	Ulster	LA Permit
NL03	D&M Environmental Services	Letterkenny	Donegal	Ulster	LA Permit
NL04	Shaun Molloy & Sons (Donegal Waste)	Glenties	Donegal	Ulster	LA Permit
NL05	Patrick Logan & Sons	Newtowncunningham	Donegal	Ulster	LA Permit
NL06	Sharkey Waste Recycling	Letterkenny	Donegal	Ulster	LA Permit
NL07	Wers Waste	Tuam	Galway	Connaught	LA Permit
NL08	Walsh Waste	Loughrea	Galway	Connaught	LA Permit
NL10	McGrath Industrial Waste	Castlebar (Moneenbradagh)	Mayo	Connaught	LA Permit
NL11	Bourke Waste Removals	Westport	Мауо	Connaught	LA Permit
NL12	Ballinrobe Waste	Ballinrobe	Mayo	Connaught	LA Permit
NL13	G&N Loftus Recycling	Ballina	Mayo	Connaught	LA Permit
NL16	Green Energy (SkipfullTwo Ltd)	Ballycoolin	Dublin	Leinster	LA Permit
NL18	Allied Recycling	Naas	Kildare	Leinster	LA Permit
NL19	Exomex (McElvaneys)	Dundalk	Louth	Leinster	LA Permit
NL20	Ecological Waste	Dundalk	Louth	Leinster	LA Permit
NL21	Allied Recycling	Oldcastle	Westmeath	Leinster	LA Permit
NL22	Clean Ireland	Shannon	Clare	Munster	LA Permit
NL23	Clare Waste	Tuamgraney	Clare	Munster	LA Permit
NL24	Midleton Skip Hire	Midleton	Cork	Munster	LA Permit
NL25	Higgins	Tralee	Kerry	Munster	LA Permit
NL26	Dillon	Tralee	Kerry	Munster	LA Permit
NL27	Martin Doheny	Castle Inch	Kilkenny	Leinster	LA Permit
NL28	Greenstar	Hebron Ind Est	Kilkenny	Leinster	LA Permit

Code	Name	Location	County	Province	Authorisation
NL29	Derry White Skiphire	Charleville	Limerick	Munster	LA Permit
NL30	Sheahan Waste Recycling	Galvone Ind Est	Limerick	Munster	LA Permit
NL31	Quality Recycling (Wiser)	Carrick on Suir	Tipperary	Munster	LA Permit
NL32	Ryan Brothers	Thurles	Tipperary	Munster	LA Permit
NL33	Clonmel Waste	Clonmel	Tipperary	Munster	LA Permit
NL34	Davey Transport Ltd	Moville	Donegal	Ulster	LA Permit
NL35	CND Recycling	Tramore Road	Cork	Munster	LA Permit
NL36	Bantry Skip Hire	Bantry	Cork	Munster	LA Permit
NL37	Cork Recycling Company	Togher	Cork	Munster	LA Permit
NL38	Munster Waste Management	Mallow	Cork	Munster	LA Permit
NL39	Barna Waste	Athlone	Westmeath	Leinster	LA Permit
NL40	Blue Dolphin Environmental	Smithborough	Monaghan	Ulster	LA Permit

#### 2.8 Materials Recovery Facilities

Mixed Dry Recyclables (MDR) collected at kerbside are delivered to Materials Recovery Facilities (MRFs) for processing, usually after bulking at Waste Transfer Stations. There are nine such facilities serving the household MDR market in Ireland as detailed in Table 2-3 below and shown on Map 2 at the end of this submission. Note that one of these facilities, ReGen, is located in Northern Ireland, but serves the Republic of Ireland as well as Northern Ireland. ReGen is an IWMA Member company.

## Table 2-3 Main Household MDR Materials Recovery Facilities in Ireland

Code	Name	Location	County	Province	Authorisation
NL26	Dillon	Tralee	Kerry	Munster	LA Permit
NL31	Quality Recycling (Wiser)	Carrick on Suir	Tipperary	Munster	LA Permit
NL41	Thorntons	Parkwest	Dublin 10	Leinster	LA Permit
NL43	ReGen	Newry	Down	Ulster	NI Licence
W104	AES	Tullamore	Offaly	Leinster	EPA Licence
W106	Barna Waste	Carrowbrowne	Galway	Connaught	EPA Licence
W169	Mulleady	Cloonagh	Longford	Leinster	EPA Licence
W238	Dublin City MRF (Panda)	Merrywell Ind Est	Dublin 12	Leinster	EPA Licence
W291	Forge Hill Recycling	Forge Hill	Cork	Munster	EPA Licence

#### 3.0 CONVENTIONAL /TRADITIONAL DRS

#### 3.1 SLR Report

The IWMA commissioned SLR Consulting to prepare a report on the likely impact of a conventional DRS on waste management in Ireland. We attach that report to this submission for your consideration. The following extracts from the Executive Summary of that report summarise SLR's findings in this regard.

#### "Potential Impact on Kerbside Recycling

SLR consulted with each of the MRF Operators in Ireland to see what impact the removal of plastic bottles and aluminium cans would have on the Material Recovery Facilities in Ireland. The MRF Operators estimated that this would have a  $\leq 20$  to  $\leq 40$  per tonne impact on gate fees at their facilities. Some of the MRF Operators also commented that there would be other impacts to be considered, such as:

- Without good quality materials, such as plastic bottles and aluminium cans, it is difficult to move lower quality materials such as plastic pots/tubs/trays and plastic films. Reduced recycling of these materials would impact negatively on Ireland's recycling performance.
- The processing lines at the MRFs would have to be re-configured to manage the changes to the input materials.
- A DRS is likely to impact on all REPAK subsidies, as the producers of aluminium cans and plastic bottles would not provide subsidy for MRF operations, so the existing subsidy could be reduced for all materials.

Based on the tonnages and values of these materials as reported by the MRF Operators, SLR independently analysed the potential impact on the MRFs from a successful DRS. The results are shown in Tables 2 and 3 below.

Material	Volume Handled (t/a)	Average Value of Material including REPAK subsidy (€)	Loss of Revenue (€)
Aluminium Cans	4,444	915	€4,066,260
PET Bottles	11,227	247	€2,773,069
Estimated Cost due to Loss of Beverage Containers		€6,839,329	
HDPE Bottles         7,283         415         € 3,022,445			
Estimated Cost due to Loss of Beverage Containers and HDPE Bottles		€9,861,774	

#### Table 3-1 Expected Revenue Losses at MRFs if DRS Materials Removed

## Table 3-2 Expected Increase in MRF Gate Fees for Household MDR if DRS Materials Removed

Material	Revenue Loss (€)	Household MDR Handled in 2016 (t/a)	Household MDR Handled after DRS materials removed (t/a)	Loss of Revenue per Unit / Potential Gate Fee increase (€)
Loss of Beverage Containers	€6,839,329	253,328	237,657	€28.78
Loss of Beverage Containers and HDPE Bottles	€9,861,774	253,328	230,374	€ 42.81

The increase in gate fees at the MRFs could have very serious consequences on kerbside recycling in Ireland as the incentive to collect recyclables at kerbside would be reduced to a point where it would favour rogue operators that collect household waste with no source segregation.

#### Likely Increases in Recycling Rates

It is widely accepted that a DRS would have a positive impact on litter and that has been the focus of many DRS systems across the world. In particular, a DRS with a high value deposit of c.25 cent is expected to attract litter pickers.

However, the impact on recycling rates is not so clear. In countries that do not have a kerbside collection system for recyclables and have a low recycling rate, the impact of a DRS on recycling rates will be greater than in countries with well advanced systems for collecting recyclables.

SLR examined the quantities of beverage containers already recycled in Ireland and assessed the impact on MSW recycling and packaging waste recycling of an increase to 90% recycling of those materials. The results were as follows:

#### PET Bottles:

- Total on the market = 25,490 t/a.
- Uplift from 60.7% to 90% = 29.3% = 7,469 t/a extra recycled.
- 7,469 t/a out of a total MSW generation of 2.8 million t/a = 0.27%

#### <u>Aluminium Cans:</u>

- Total on the market =  $c.11,456 t/a.^{5}$
- Uplift from 73% to 90% = 17% = 1,948 t/a extra recycled.
- 1,948 t/a out of a total MSW generation of 2.8 million t/a = 0.07%

#### Total Uplift in MSW Recycling rate = 0.34%

The data suggests that a successful DRS would only increase overall MSW recycling rates by 0.34% which would do little to assist with the WFD requirement to increase MSW Recycling rates from the current 41% rate to 65% by 2035, with intermediate targets for 2025 and 2030.

The extra tonnage of PET bottles would increase the plastic packaging recycling rate from 34% to 36.5%, still well short of the 50% target by 2025 and the 55% target by 2030.

It appears that Ireland has already exceeded the 2025 and 2030 targets for aluminium packaging recycling, so the uplift in that category would be welcome, but is not of greatest concern at this time.

The effect of a successful DRS on the overall packaging recycling targets would be about 0.7% increase in the recycling rate from 65.6% to 66.3%.

A DRS would undoubtedly increase recycling rates for PET bottles and aluminium cans and would assist Ireland in meeting the SUP Directive targets for 2025 and 2029 but would clearly have very little impact on the other recycling targets that are currently not on track.

#### Costs of a DRS in Ireland

We also estimated the likely costs associated with developing and operating a comprehensive and successful DRS in Ireland. These are rough estimates that are detailed in the main body of the report and are comparable with other estimates that we reviewed in DRS related reports. Rather than consider capital and operational

<sup>&</sup>lt;sup>5</sup> REPAK's annual report states that 8,363 tonnes of aluminium cans were recycled in Ireland in 2018. Later data from REPAK given to the IWMA and to Eunomia states that 73% of aluminium cans are recycled, so we calculate that 11,456 t/a are placed on the market. REPAK has also stated that 9,427 t/a of aluminium cans are placed on the market by REPAK members in Rol, so the additional tonnage is likely to be imported (e.g. Northern Ireland shopping) or placed on the market by non-members of REPAK.

costs, we spread the capital costs over 10 years to view all the costs as 'annual costs'. We summarise these costs as follows.

Item	Description	Estimated Cost per annum millions
1	Installation of RVMs & Storage Room (spread over 10 years)	€25.0
2	Development of 3 Regional Depots (spread over 10 years)	€3.8
3	Set-Up costs (spread over 10 years)	€2.1
4	Ongoing labour and space costs at stores	€6.3
5	Logistics Costs	€22.4
6	Counting Centre Costs	€3.2
7	Central Administration Costs	€2.7
8	Labelling & Security Markings	€7.7
	Total Estimated Annual Costs (Gross)	€ 73.2
	Added Value of Additional Beverage Containers Captured	€2.6
	Total Estimated Annual Costs (Net)	€ 70.6

# Table 3-3 Overview of Potential Annual Costs of DRS in Ireland

In light of these estimated costs and considering the additional tonnages of beverage containers likely to be captured and recycled by a DRS, we estimate that the cost of recycling the additional tonnage works out at  $\epsilon$ 7,497 per tonne. To put this figure in perspective, we calculated the cost of kerbside recycling at just under  $\epsilon$ 500 per tonne and the cost of CA Site recycling at about  $\epsilon$ 240 per tonne.

In order to meet future targets, Ireland needs to recycle a large amount of additional materials and we expect that 'recycling at any cost' is not a financially sustainable policy for Ireland. Using a modest 2% growth rate, we have calculated that Ireland needs to recycle an additional 1 million tonnes per annum by 2030 and 1.75 million additional tonnes per annum by 2040. It is clear from the data that recycling costs of  $\notin$ 7,497 for every additional tonne is not viable for the Irish State as it would cost more than  $\notin$ 168 billion over the next 20 years to meet the targets."

#### 4.0 IWMA POSITION ON DRS

#### 4.1 IWMA View of Traditional DRS

The IWMA is strongly opposed to the traditional or conventional DRS proposed by Eunomia in their report as it does not use the existing waste collection and treatment infrastructure and would be a threat to kerbside recycling. In our opinion, such a system would be inconvenient for the public, difficult for retailers, very costly, inflexible and ineffective or only partially effective in achieving the stated goals.

We provide some comments on the Eunomia report later in this submission. We believe that it was wrong to appoint Eunomia for this task as they lobbied for DRS in Ireland in 2017 and their report, in our opinion, is unsurprisingly biased towards the position that they took at that time.

We therefore do not accept Eunomia's report as an independent analysis on this subject and we reserve the right to challenge it in the event that it is used to justify a decision to introduce a conventional/traditional DRS into Ireland.

#### 4.2 IWMA Support of Smart DRS (or Digital DRS)

#### 4.2.1 Introduction

The IWMA is interested in exploring hybrid DRS options that use the existing infrastructure and we believe that such options would be better environmentally and economically for Ireland, as well as advancing digital business in line with Government and EU policy. There is also the potential to progress a number of policies favoured in the recently published Waste Action Plan, as detailed later in this submission.

We therefore support the delivery of a Smart DRS, along the following lines:

- Bins are given a unique code, such as a QR Code or an RFID Chip.
- Materials with deposits paid have a unique code, such as QR Code or similar.
- Consumer pays a deposit at the point of purchase.
- Consumer downloads the free App on to any smartphone or tablet.
- After consumption the consumer scans the recycling bin with their smartphone followed by the packaging item within 30 seconds and redeems the deposit electronically via the App. The consumer is allowed 30 seconds between each item, but many items can be scanned one after another with the smartphone in a short time period.

This would allow existing household and commercial recycling bins and collection systems to be used in the DRS and would be supplemented by existing and new drop-off points, such as CA sites, bottle/can banks, street recycling bins, shopping centre bins, train station bins, airport bins, etc.

#### 4.2.2 A Better Option for the Public

Whilst the idea of a DRS may be a popular concept with the public, we fear that a conventional DRS will prove too cumbersome for many people in Ireland and participation rates may start high, but will undoubtedly decline over time. Other countries that have successfully introduced conventional DRS schemes are populated by people that have a tradition of bringing recyclables to central points, as they all have a high level of apartment-dwellers

compared to Ireland. The following Table shows that difference in living arrangements in successful DRS countries<sup>6</sup> versus Ireland.

Country	Percentage
Estonia	62.0
Lithuania	58.2
Germany	57.1
Iceland	48.5
Sweden	45.1
European Union (EU28)	41.8
Finland	34.2
Norway	19.7
Netherlands	18.8
Ireland	7.3

## Table 4-1 Percentage of Population Living in Flats/Apartments (Eurostat 2016 data)

Irish people predominantly live in houses and place the bulk of their recyclables in the mixed dry recycling bins in their gardens. For some people, even this simple task is a challenge. It would be naïve to expect that the population of Ireland will embrace a more difficult system that would involve the separate storage of uncrushed aluminium cans and PET bottles in their home, followed by delivery of those items to reverse vending machines at retailers to gain store credit. There would undoubtedly be a novelty factor at first for many people, but when this wears off, it is hard to see that the public will persist with this difficult task over time.

Alternatively, a Smart DRS would allow the public to reclaim their deposit immediately after consuming the product if they are at home, in work, on the street, in a shopping centre, airport, train station, at a football match, etc.

After the deposit has been reclaimed in a Smart DRS, there is no need for secure storage of the materials to prevent fraud. The deposit cannot be claimed a second time, due to the protection offered by the unique identifier and the electronic tracking. A conventional DRS offers the possibility of deposits being claimed multiple times fraudulently, so the materials must be stored in a secure setting and accounted for manually or semi-automatically. This rules out many locations.

#### 4.2.3 Catering for those without Smartphones

A limited number of Reverse Vending Machines could be provided to facilitate people that do not have a smartphone or do not wish to register on the App. However, that could be a few hundred RVMs rather than the thousands needed in a conventional DRS.

We also suggest that retailers should be given the option to take-back materials on a voluntary basis to cater for customers that are not comfortable with technology, particularly older customers. This would be a simple process whereby the shop would be provided with an electronic scanner, financed by the scheme rather than the retailer. Returned items would be scanned and cash or credit offered to the customer.

At that point the materials would be deposited in a recycling bin or even a compacting bin. The materials would have intrinsic value, but the deposit value is removed as soon as the material is scanned, so the materials can be compacted or put out with the regular recyclable collections, perhaps more frequently, without necessarily

<sup>&</sup>lt;sup>6</sup> Included in Eunomia Report on Figure 4.2.

arranging special collections. This would be a very cost effective way to facilitate manual returns, where required or desired.

We expect that the requirement for manual take-back would decrease over time and may ultimately be phased out as the population becomes more and more focussed on digital transactions.

#### 4.2.4 Smart DRS Trials

A trial of a Smart DRS, called Reward4Waste, is currently ongoing in Whitehead near Carrickfergus in County Antrim, Northern Ireland. The company behind the technology used in the trial is Cryptocycle, who has developed an App for a Smart DRS, as shown in the image below.

#### Photo 1 - Cryptocycle App used for Rewrd4Waste Trial in Whitehead



Mid & East Antrim Borough Council and Bryson Recycling are partners in the trial, which is also supported by Britvic, SPAR, PepsiCo and Encirc. Details of the trial can be found here: <u>https://reward4waste.com/</u>.

The Whitehead trial is based on rewards rather than deposits that are returned, so it may not be as effective as a deposit return system in terms of public response. Cryptocycle has proposed a DRS trial to the Welsh Government and it recommends charging and refunding deposits in that trial as that is expected to be more effective than the rewards system in Whitehead.

Cryptocycle is not the only technology provider in this field. The IWMA has also engaged with EconPro, a technology company that also provides a Smart DRS solution called PolyTag.

The Polytag smart DRS uses the same QR code combined with block-chain technology for tracing of packages as Cryptocycle, but is also developing a printing process to 'tag', at the point of manufacturing specific packages. The sole purpose of tagging the package is to allow recovery of the specific package, from a specific manufacturer, at a later date in a materials recovery facility. This system would work in conjunction with the QR code / phone app at

the consumer facing end of a smart DRS, but would allow the MRF operator to identify a particular package and recover it when the requirement or financial incentive is available to do so.

The tracing function will be facilitated through the use of a Polytag mobile phone app which enables consumers to scan the Polytag QR codes themselves. We provide an image of the App below.



#### Photo 2 – PolyTag App used for tracing packaging items

EconPro is planning to carry out a Smart DRS Pilot Project in Conwy in Wales in partnership with the Welsh Government and WRAP. The trial will cover 550 houses and involves supplying houses with water bottles labelled with unique codes and tracking the return of those bottles.

There are undoubtedly other companies that can bid for the operation of a Smart DRS in Ireland.

#### 4.2.5 Proposed Pilot Projects for Smart DRS in the Republic of Ireland

The IWMA is interested in supporting one or more pilot projects in the Republic of Ireland, both financially and logistically. Ideally, we suggest that such a pilot project should be realistic enough to roll-out nationally, if found to be successful. It should involve the charging of deposits and return of those deposits once the material is scanned by the correct bin.

We suggest something along the following lines:

- Select a village that has one or two convenience stores that are willing to participate.
- The project can commit to compensating any lost business during the course of the trial, if the convenience store or its parent company does not wish to financially sponsor the trial.
- All beverage containers sold in the village could have deposits attached regardless of the packaging material (plastic bottle, metal can, glass bottle, carton, tetra-pak, etc.) or a simpler trial might just include PET Bottles and aluminium cans at this stage with expansion considered in later trials.

- A unique code should be applied to each beverage container sold in the village. This will have to be done manually with stickers or sticker-guns (but would be printed on the label by the producer if rolled out nationally). The project will finance that element of the pilot.
- All customers of the shops should be encouraged to download the App, but a take-back option offered to those that do not use smartphones or refuse to engage with the App.
- The shops should be supplied with a scanner to manage take-back and can place the take-back items in recycling bins supplied by their waste contractor.
- The local bottle bank in the village could be fitted with unique QR Codes that can be scanned as people return empty bottles, if glass is included in the trial.
- All household and commercial recycling bins in the village should be fitted with unique QR codes by way of appropriate stickers. These can be applied by the customer or the waste collector preferably by the customer.
- Any street recycling bins in the village should also be fitted with a unique QR codes.
- The trial should be run for 3 months, but the returned materials counted for a longer period to allow for slow returns.
- Repeat the trial in 2 or 3 villages in different parts of the country with different waste contractors and different technology companies.

We expect that these pilot projects will iron out any teething issues and highlight any strengths and weaknesses with the Smart DRS system.

#### 4.2.6 Advantages of Smart DRS

The advantages of a Smart DRS include the following:

- Can use the existing 1.2 million kerbside recycling bins as well as commercial backdoor recycling bins and develop some new 'on the go' recycling bins.
- Can use existing MRFs without need for additional counting centres. It also protects the MRFs and associated kerbside recycling system.
- Can use existing logistical and transport infrastructure without the need to replicate this.
- The range of materials can be extended to any or all packaging. For example, returning glass bottles and jars to bottle banks. Perhaps not in the initial trial, but as the scheme expand over time, if desired.
- ▶ Flexibility to vary deposits depending on environmental performance. This means the deposit can be ramped up over time to eliminate composite packaging, or those that are especially difficult to recycle.
- Simple to increase or decrease deposits at any time. This will prevent producers switching to non-deposit packaging materials such as tetra-pak.
- Potential to integrate with Northern Ireland.
- A number of Reverse Vending Machines could be provided for people that do not use smartphones or do not wish to register on the App.
- The unique identifier will prevent fraud as deposits can only be claimed once and the system will automatically recognise any attempt to claim a deposit on any item more than once. A user can be locked out of the system if they attempt to claim a deposit twice.

- It supports the EU and Irish Government Policy to promote digital business and consumer engagement, as this is more efficient and less resource intensive compared with traditional methods of conducting business and public engagement.
- Returned containers are likely to contain traces of product including sugary drinks and alcohol in open bottles and cans. In a conventional DRS, this could attract flies and rodents to the storage area of shops, where the materials are securely stored alongside food products. There is a health risk associated with this arrangement. This is not the case in a Smart DRS as the materials would be placed in recycling bins after they are scanned and would be managed appropriately as recycled waste, not as valuable stock.

#### 4.2.7 Digital Nature of Smart DRS

On the final bullet point above, the European Commission is planning and promoting "*A Europe fit for the digital age*" and includes the following introductory paragraphs on its website<sup>7</sup>:

"Digital technology is changing people's lives. The EU's digital strategy aims to make this transformation work for people and businesses, while helping to achieve its target of a climate-neutral Europe by 2050.

The Commission is determined to make this Europe's "Digital Decade". Europe must now strengthen its digital sovereignty and set standards, rather than following those of others – with a clear focus on data, technology, and infrastructure."

It is clear to us, that a Smart DRS presents a great opportunity for Ireland to **set standards** by way of a fully digital DRS **rather than following those of others** that have developed manual or semi-manual DRS systems.

Ireland is probably the only country in the world where every household bin has been fitted with an RFID chip and the weight of every bin-lift recorded and reported to the customer. We are already ahead of the rest of the world in using technology in waste management and we therefore welcome the opportunity to set even higher standards for the rest of the world to follow. The implementation of a conventional DRS would be a backward step in that context.

#### 4.2.8 Flexibility of a Smart DRS

A Smart DRS can be used on all packaging materials, even if the materials are non-recyclable and returned to residual waste bins. Waste companies can issue identifier codes on stickers to all customers to be placed on all 3 bins. The stickers should be consistent with national messaging and even a national colour coding scheme, as foreseen in the recently published Waste Action Plan.

A deposit of 10 to 20 cent could be placed on all recyclable packaging materials and this can be reclaimed via the App as people place these materials in recycling bins. This could easily extend to materials such as steel cans, cardboard packaging (e.g. cereal boxes), cartons, milk bottles, glass jars/bottles, plastic pots/tubs/trays, etc. We do not envisage such a comprehensive roll-out of deposits from the start, but items can be introduced over time, as desired.

A sticker gun could be used to attach the unique codes in situations where labels are not country specific to Ireland, for example wine bottles. In this way, retailers would encourage country-specific labels on imported products, which would greatly assist recycling efforts in Ireland. The requirement to bring glass to bottle banks to reclaim deposits would greatly reduce contamination of the recycling bins and greatly reduce the weight of residual waste. The unredeemed deposits can be partly used to extend the network of bottle banks and civic amenity sites, as a Smart DRS would cost a fraction of a conventional DRS.

<sup>&</sup>lt;sup>7</sup> https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age\_en

A higher deposit can be put on non-recyclable packaging items, say 25c to 35c per item, if desired. This would encourage producers to use recyclable materials when packaging their goods. The deposit on the non-recyclable items would be reclaimed when consumers scan the general/residual waste bin and place the items in the correct bin. Scanning the wrong bin would generate a message directing the consumer to the correct bin.

#### 4.2.9 Progression from Manual to Digital Transactions

The following images, provided by Cryptocycle, show the progression in banking from 'over the counter' to 'semiautomated' with the introduction of cash machines, followed by 'digital banking' where Apps and other electronic means are used in normal everyday banking.

A similar progression is inevitable with DRS schemes, so it would be a lost opportunity for Ireland to invest so heavily in a system of the past (conventional DRS), when a system of the future is in our grasp (Smart DRS).



#### 4.2.10 Education and Awareness from a Smart DRS

A smart system such as this, would really help to educate the consumer and would have a very positive impact on recycling rates, contamination levels and litter prevention. Deposits can be increased and decreased to assist with the implementation of Government environmental policy. The waste characterisation work carried out by RPS and

the Clean Technology Centre on behalf of the EPA shows that there are significant gains to be made if consumers make a better effort to sort their waste.

Based on the EPA data sourced from those waste characterisation studies, we estimate that kerbside household recycling could increase from 28% to 56% and commercial backdoor recycling could increase from 22% to 80% if consumers placed materials in the correct bins, as depicted in the images below.<sup>8</sup>



Figure 4-2 EPA Analysis of Actual Use versus Correct Use for Household Bins



Figure 4-3 FPA Analysis of Actual Use versus Correct Use for Non-Household Bin

<sup>&</sup>lt;sup>8</sup> Presentation by Helen Searson, EPA, to the Irish Waste Conference in November 2018.

The DRS could act as a learning tool for every consumer in Ireland. They will clearly learn directly from the App if they use it to reclaim their deposits.

Clearly such a system can contribute to solving a number of waste management issues and is much more comprehensive than a conventional semi-automated/manual DRS. It may be prudent to introduce measures progressively, rather than immediately in a 'big bang' move. The system could be developed to address a limited range of materials initially, such as beverage containers (all materials) and then be expanded as the public gets comfortable with it and the usage levels of the App are high enough to justify expansion.

#### 4.2.11 Costs of a Smart DRS

SLR Consulting's Report on the 'Likely Impact of a Deposit & Return Scheme on Waste Management in Ireland' published in January 2020 and attached to this submission, estimated that a Conventional DRS in Ireland would cost about €73million per annum to operate. The capital costs were annualised in that calculation, to give a cost per annum for development and operation of the scheme. Eunomia's report uses different figures but comes to a similar conclusion for the annual costs of the scheme.

In the Table below, we compare the costs of a Smart DRS with a conventional DRS, using the same methodology that was used by SLR Consulting.

Item	Description	Conventional DRS Est. Cost per annum millions	Smart DRS Est. Cost per annum millions
1	Installation of RVMs & Storage Room (spread over 10 years)	€25.0	€5.0
2	Development of 3 Regional Depots (spread over 10 years)	€3.8	€0
3	Set-Up costs (spread over 10 years)	€2.1	€2.1
4	Ongoing labour and space costs at stores	€6.3	€1.3
5	Logistics Costs	€22.4	€4.5
6	Counting Centre Costs	€3.2	€0
7	Central Administration Costs	€2.7	€2.7
8	Labelling & Security Markings	€7.7	€10
	Total Estimated Annual Costs	€73.2	€25.6

 Table 4-2

 Likely Annual Costs of Conventional versus Smart DRS in Ireland

We take the view that a fully comprehensive Smart DRS would require less than 20% of the new centralised dropoff points compared with a conventional DRS, so the costs associated with the installation, space, labour and logistics are all set at 20% of the previously calculated costs.

There would be no need for counting centres and centralised depots with a Smart DRS as the system counts every item as it is claimed and the centralised collection points can be serviced by the existing waste collection service, particularly if a range of recyclable materials are accepted.

We allow similar costs for set-up, administration and a higher cost for labelling as household, commercial and street bins would require labelling with unique codes. This exercise shows a saving of close to €50 million per annum for a Smart DRS.

A Smart DRS can also generate much more revenue as it can be applied to a much wider range of packaging materials. Eunomia estimated that a DRS on PET Bottles and Aluminium cans would generate €31.74million per annum in unredeemed deposits, based on 10% unredeemed PET bottles and aluminium cans.

If the scheme was extended to milk bottles, glass jars/bottles, cartons, shampoo bottles, bleach bottles, cereal boxes, yoghurt tubs, steel can, food trays, non-recyclable packaging such as crisp packets, etc, it is clear that 10% unredeemed deposits would comprise hundreds of millions of euro per annum. Even if it was just extended to all beverage containers, regardless of materials, it would generate significantly higher revenues. That money should be ring-fenced to pay for the operation of the DRS as well as supporting the following areas:

- development of reception points for recyclable materials including bottle banks, civic amenity sites and street recycling.
- Litter clean-ups.
- Education and awareness initiatives for waste prevention and waste management.
- Recovery operator subsidies to support recycling efforts.
- Financial support/grants for indigenous reprocessing of recyclables.
- Research into materials being exported overseas.
- Research and identification/development of opportunities for reuse/recyclable alternative (packaging) materials.
- Reuse initiatives, including grant-aid and subsidies for repair and restoration services as well as promotion of reuse hubs.
- Etc.

#### 4.2.12 Contribution to Waste Action Plan and EU Targets

A conventional DRS in Ireland would do little to assist Ireland with meeting national and EU targets and objectives apart from the targets set in the Single Use Plastics Directive. This is detailed in the attached SLR report.

On the other hand, a Smart DRS has much greater potential to assist in achieving the following:

- Packaging waste recycling targets a Smart DRS can extend to a wider range of recyclable packaging materials and will result in higher recycling rates for all these materials, not just PET and aluminium.
- Municipal waste recycling targets similarly, a Smart DRS will result in higher recycling rates for MSW, not just for PET and aluminium.
- Education and awareness would be advanced by a Smart DRS as the App would continuously inform people of the right and wrong bins at home, at work and 'on the go'.
- The Waste Action Plan states:
  - "We will incorporate municipal waste recycling targets as conditions of waste collection permits (i.e. collectors will be required to achieve a 55% recycling rate of municipal waste by 2025, 60% by 2030 and 65% by 2035). The effect of this will be to incentivise the waste industry, in the context of the current market structure, to drive enhanced segregation including for apartment complexes."

A Smart DRS will help to achieve these higher recycling rates, particularly if it impacts positively on the materials placed on the market in Ireland. The removal of glass bottles and jars from the residual waste bins would be particularly helpful in this regard due to their weight. The data provided by a Smart DRS

would also be helpful in identifying good and bad results in terms of recycling rates achieved in different areas and different materials.

- The Waste Action Plan states:
  - "We will work to improve waste segregation in the commercial sector, including an awareness campaign and enforcement actions requiring segregated waste bins and incentivised charging to ensure waste minimisation and proper segregation."

A Smart DRS would also help with this policy as people will recycle a wide range of materials in their workplace to reclaim deposits and will be more conscious of the contents of each bin.

- The Waste Action Plan states:
  - "We will standardise the colour coding of bins across the State on a phased basis (general waste bin to be designated as a 'recovery' bin: colour black; mixed dry recycling bin: colour green; organic waste bin to be designated as 'organic waste recycling bin': colour brown)."

Whilst the IWMA is opposed to this policy, a Smart DRS could offer a compromise solution whereby every household and commercial bin in the country is fitted with a sticker that has a unique QR code as well as the desired terminology and colour. This would also extend to street recycling bins and those at shopping centres, stations, airports, etc.

- The Waste Action Plan states:
  - "We will work to deliver sustained and visible public behavioural change campaigns under uniform branding, targeting individuals, business and the public sector to encourage waste prevention and recycling."

A Smart DRS will act as an educational tool and will also generate much more surplus revenue as it costs less and generates more revenues from a wider range of deposit materials. A portion of that revenue can be spent in the areas identified in this policy.

- The Waste Action Plan states:
  - "We will revisit the existing national standardised list of items acceptable in the mixed dry recycling bin with a view to expanding the list to capture more recyclable materials."

With a unique identifier on a wide range of packaging materials, the consumer can use the Smart DRS App to verify the correct bin for each item, thereby facilitating a good response to any changes to the recycling list. The additional revenues from a Smart DRS can also facilitate the subsidisation of more indigenous recycling in Ireland, particularly of plastics that are currently not economically recyclable. The REPAK subsidies can be higher if a portion of the revenues from a Smart DRS are used in this way. By contrast, a conventional DRS would not generate surplus revenues that could be used in that way.

- The Waste Action Plan states:
  - "We will examine means to ensure segregated waste receptacles are provided by commercial premises for customers."

Mixed dry recycling (MDR) bins at commercial premises should be available for use in returning deposit items from a Smart DRS. This is much simpler than take-back in a conventional DRS as customers just need to scan the bin with their smartphone and place the item in the MDR bin. There is no need for the commercial outlet to refund the deposit. The commercial premises could also use smart bins that only open when a suitable item is scanned using the unique QR code system. This would protect against contamination of the commercial MDR bins with non-recyclable materials.

- The Waste Action Plan states:
  - "We will introduce further measures to incentivise the prevention and segregation of waste, including for example, reviewing the incentivised charging regime and introducing penalties for those who fail to segregate waste."

A comprehensive Smart DRS that extends to many packaging materials will be self-policing in this regard. Those that fail to segregate their waste properly will lose their deposits and that can apply to both recyclable and non-recyclable packaging.

- The Waste Action Plan states:
  - "We will work with relevant stakeholders to improve waste segregation in apartment complexes."

It is currently difficult to increase recycling rates at apartments as the use of communal bins often results in a low level of personal responsibility and poor practice by some apartment dwellers can lead to poor practice by most or all residents in the apartment block. However, a comprehensive Smart DRS that extends to many packaging materials will be self-policing in this regard. Those that fail to segregate their waste properly will lose their deposits and that can apply to both recyclable and non-recyclable packaging. This should lead to good practice which should be contagious in this setting.

- The Waste Action Plan states:
  - "We will work with stakeholders to ensure the waste sector is responsive to emerging trends and best practice in waste collection and treatment options."

The development of a Smart DRS is an emerging trend and will undoubtedly become best practice in waste collection. This is a great opportunity to fulfil this policy immediately. A conventional DRS would surely have to transition to a Smart DRS in the future and we respectfully suggest that such a transition would be difficult for all involved, so it makes a lot more sense to embrace a Smart DRS now and build on it in the future.

- The Waste Action Plan states:
  - "We will work to encourage the rollout and mainstream adoption of mywaste package labelling."

The use of unique codes in a Smart DRS would be equivalent to mywaste packaging labelling as it would inform the consumer of the recyclability of the material when they use the smartphone App to check it. In this context, the more materials covered by the scheme, the better.

- The Waste Action Plan states:
  - "In order to continue our progression and attain the EU packaging, recovery and recycling targets, we will introduce national targets for packaging compliance schemes within their approvals. These will include stretch targets to advance timeframes and position Ireland as a frontrunner within the EU."

A Smart DRS that incorporates a wide range of packaging materials would be expected to increase recycling rates for those materials to 90% or more. Ireland would be a world leader in that context. Also, the surplus revenues from a Smart DRS could subsidise indigenous recycling of a wider range of packaging materials including soft plastics.

- The Waste Action Plan states:
  - "We will set specific packaging format/product targets e.g. beverage and food cartons."

Specific packaging format/product targets can be backed by deposit and return in a Smart DRS, which has the flexibility to do this easily.

- The Waste Action Plan states:
  - "In line with the Programme for Government commitment, we will end self-compliance as an option under EPR. This will facilitate the mandatory introduction of EPR for all packaging producers before the 2024 EU deadline and will mean all producers will be liable for the ecomodulation of fees, (i.e. recyclable packaging will have lower fees and non-recyclable, composite packaging and over-packaging will be heavily penalised)."

The setting of variable deposit levels in a Smart DRS can achieve the stated goal of encouraging recyclable packaging materials and discouraging composite packaging that cannot be recycled.

- The Waste Action Plan states:
  - "We will ensure that Ireland achieves the packaging objectives within the Circular Economy Action Plan and the Plastic Strategy by ensuring that all packaging on the Irish market is reusable or recyclable in an economically viable way by 2030."

This can also be achieved by the setting of variable deposit levels in a Smart DRS that phases out non-recyclable materials over the desired time period.

- The Waste Action Plan states:
  - "We will work to reduce contamination levels in recycling bins."

A Smart DRS would be very helpful in this regard, in terms of education and awareness, as discussed earlier in this submission.

- The Waste Action Plan states:
  - "As part of the education and awareness programme outlined later in this document when we look at Citizen Engagement we will:
    - promote plastic and packaging as an urgent public issue (how to prevent it e.g. by choosing packaging free products) and how to handle the packaging waste that arises; and
    - raise consumer awareness on the benefits of use of reusable containers and work with retailers to encourage the provision of refill options."

The placing of deposits on a wide range of materials in a Smart DRS would make reuse options appear more financially attractive. In addition, surplus revenues from a DRS could be used to support reuse in a number of ways. For example, the consumer could be offered a higher return on their deposit if they bring their glass bottles to reuse facilities. Also, surplus revenues from a Smart DRS could subsidise or grant-aid reuse initiatives and promote jobs in the areas of repair and restoration.

- The Waste Action Plan states:
  - "We will utilise communication messaging to demonstrate how Local Authority areas are performing in respect of national targets."

The data produced by a Smart DRS would be very helpful in this regard, as it would pinpoint the return rate of deposit items by local area, town, county, etc, which would help to target poor performing areas with enhanced communications campaigns.

- The Waste Action Plan states:
  - "We will examine how segregated waste and recycling bins using uniform labelling could be provided on street, and at public events and festivals."

A Smart DRS would fund the provision of street recycling bins and bins at public events and festivals that can accept deposit materials. However, where possible, public events and festivals that supply beverages should use reusable beverage containers with a large deposit (e.g.  $\leq 1$ ) that is redeemable at the event. These containers should ideally be washed and reused during the event.

We note that many local authorities are embracing "smart" street bins such as Big Belly and Mr. Fill compaction bins. These bins are fitted with SIM cards and can relay information back to a central base. They are very compatible with a Smart DRS and using the surplus funds from a Smart DRS to roll-out more smart street bins would be a very appropriate use of that revenue.



#### Photo 3 – Example of Smart Solar Compaction Bins

- The Waste Action Plan states:
  - "We will continue to work with the Regional Waste Management Planning Offices (RWMPO) in the continued promotion of the mywaste.ie recycling labels to develop a unified approach to labels and standards for citizens to easily understand what packaging goes where."

The use of unique codes in a Smart DRS would be equivalent to mywaste packaging labelling as it would inform the consumer of the recyclability of the material when they use the smartphone App to check it. Matching the bin with the relevant materials would be a lot easier for the public when they use the App on their smartphones. In this context, the more materials covered by the scheme, the better.

- The Waste Action Plan states:
  - *"We will utilise national and EU funding streams for research into plastic and packaging including:* 
    - research into materials being exported overseas; and
    - research and identification/development of opportunities for reuse/recyclable alternative (packaging) materials."

A portion of the surplus revenues from a Smart DRS could be used to fund this research.

- The Waste Action Plan states:
  - "We will introduce a deposit and return scheme for plastic bottles and aluminium cans. In delivering this, we will work closely with the food and drink industries, retailers, waste collectors and treatment facilities, and our colleagues in Northern Ireland."

The IWMA is opposed to a conventional DRS and supports a Smart DRS, so we intend to be very progressive in working with Government to implement a Smart DRS. A conventional DRS would exclude the existing waste collection and treatment system, so we fail to see how waste collectors could work with Government using a model that compromises the existing recycling system. We would find ourselves in conflict with the implementation of such a system.

It is our understanding that most retailers are opposed to operating the conventional take-back arrangements associated with a traditional DRS, so we expect that they should also favour a Smart DRS.

We are unaware of the position of the food and drink industries on this matter, but we can see many advantages to a Smart DRS from their point of view, including greater potential to recycle more of the material that they place on the market, which is ultimately their responsibility. A Smart DRS is a cost-effective way for them to achieve that goal.

Integration with Northern Ireland would be quite simple using a Smart DRS, compared with a traditional / conventional DRS. The source of the materials would be identified by the unique codes and the deposit value and currency difference easily assigned to the account of the consumer reclaiming the deposit on either side of the border. Cross border issues that can be a serious challenge to a traditional DRS would not be an issue with a Smart DRS.

- The Waste Action Plan states:
  - *"This will be delivered via the following steps:* 
    - 1. Public consultation on design options (Q3 2020)
    - 2. Public consultation on preferred model and draft regulations (Q1 2021)
    - 3. Commencement of underpinning legislation (Q3 2021)
    - 4. Introduction of scheme (Q3 2022)."

The proposed timeframe is certainly ambitious regardless of which scheme is chosen. We expect that a Smart DRS could be implemented faster than a conventional DRS as all the key infrastructure is already in place. A conventional DRS, as proposed by Eunomia, involves:

- o The installation of 2,591 reverse vending machines with associated storage arrangements,
- The installation of take-back and storage facilities at 13,809 other premises,
- The development of five counting and sorting centres that would have to undergo site selection, land acquisition, design, planning permission, waste licensing, construction, installation of equipment and commissioning.
- The set-up of a logistics operation to collect the deposit materials.
- Education and awareness of all staff working in the take-back premises.
- Education and awareness for the consumer.
- o Etc.

In reality, the counting/sorting centres alone will take more than 2 years to develop, so the proposed timeline cannot possibly be met with a conventional DRS.

On the other hand, a Smart DRS can be developed without need for any major new infrastructure. It will take time to conduct pilot projects before full roll-out, but we feel that this will be time well spent and should avoid major mistakes that could occur during full roll-out, if not tested at pilot scale. It will also take time to design the printing of labels and to communicate with the public, but that can be done in parallel and would be required also in a conventional DRS. The roll-out of unique labels to all existing bins can be carried out efficiently in a matter of months rather than years.

- The Waste Action Plan states:
  - "A working mix of incentivisation and enforcement may be required to increase good behaviour, and the benefits of changed behaviour must be emphasised. All messaging must be evidence based to be effective."

A Smart DRS will be very costly to those that do not manage their waste correctly and will be rewarding for those that exhibit good behaviour. It offers a very good example of the polluter pays principle if it is extended to a wide range of materials.

- The Waste Action Plan states:
  - "Current standards of labelling, in providing information to consumers, need to be improved and products should carry a message on how they should be dealt with at end of life. The input of product manufacturers nationally and at EU level will be required if this is to be effective."

The IWMA strongly agrees with the sentiment expressed here. A Smart DRS will provide this information in an electronic manner via the unique QR Code, so the wider the range of deposit materials, the better in this context.

It is clear from the above analysis that a Smart DRS has the potential to further many of the policies identified in the Waste Action Plan. Policies that would otherwise be difficult or costly to implement.

#### 5.0 EUNOMIA REPORT

#### 5.1 Need for Independent Cost-Benefit Analysis

The IWMA has concerns over the appointment of Eunomia to conduct a cost-benefit analysis of a DRS in Ireland. We respectfully suggest that an independent consultant should have been appointed to complete that task. Eunomia lobbied the Oireachtas Joint Committee on Communications, Climate Action and Environment in favour of a DRS in the debates on the Waste Reduction Bill 2017. The Report<sup>9</sup> that was issued by that Committee provided details of those that lobbied for and against a DRS, as follows:

Proposal B: Deposit Return Scheme (DRS)		
Arguments		
Supportive	AGAINST	
	Convenience Stores and Newsagents Association (CSNA)	
	Department of Communications, Climate Action and	
	Environment	
Eunomia	Food Drink Ireland	
VOICE	IBEC	
	PMCA Consulting	
	Repak	
	Retail Ireland	

Eunomia clearly lacks independence on this subject and it is therefore not surprising that the report issued by Eunomia favours a conventional / traditional DRS and gives very little consideration to the impact of such a scheme on the existing kerbside recycling system in Ireland.

Whilst the conclusions of the Eunomia report were unsurprising, we are greatly concerned about the inaccuracies and the bias exhibited in the report. We provide some examples in the following sections. There are other errors in the report that we have noted, but this is not a full critique, we just focus on the substantial issues of concern.

#### 5.2 Current Recycling Rates

REPAK, as the sole PRI Scheme for packaging waste in Ireland, is tasked with gathering and recording data on packaging waste generation and management in this Jurisdiction. REPAK provided the following data to the IWMA<sup>10</sup> in 2019, based on their 2018 estimations:

	Placed on Market (t)	Quantity Recycled (t)	Current Recycling Rate
PET Bottles	25,490	15,472	60.7%
Aluminium cans	11,456	8,363	73.0%

# Table 5-1 REPAK 2018 Data on PET Bottles and Aluminium Cans

The Eunomia Report contradicts this data and presents the following estimations for PET bottle and aluminium can recycling:

<sup>&</sup>lt;sup>9</sup> Houses of the Oireachtas, Joint Committee on Communications, Climate Action and Environment - Report of the Joint Committee on the Detailed Scrutiny of the Waste Reduction Bill 2017 [PMB] - 32CCAE006 – 28<sup>th</sup> May 2018. Table 6: Summary and categorisation of main stakeholder arguments

<sup>&</sup>lt;sup>10</sup> Email correspondence from David Sharpe (REPAK) to Conor Walsh (SLR/IWMA) on 27<sup>th</sup> November 2019.

· · · · · · · · · · · · · · · · · · ·		
	PET Beverage Bottles	Aluminium Beverage Cans
Units Placed on the Market	959,000,000	790,000,000
Placed on the Market (tonnes)	28,751	12,774
Recycling Rate (%) sent to re- processors	54.9%	55.0%
Recycling Rate (%) adjusted for losses at re-processors	43.9%	69.4%

#### Table 2-2: Current Final Destinations of Beverage Containers Placed on the Market Annually

In reaching the figure of 43.9% for PET Bottles, Eunomia<sup>11</sup> stated the following:

"Recycling rates for PET were based on tonnages provided by Repak showing the proportions funded by Repak, recycled and recovered. The total tonnage funded as recycling was 16,569 tonnes out of a total 28,751 tonnes funded by Repak, which results in a rate of 55%. A loss rate in re-processing of 20%, as per data provided by other stakeholders, was then applied to result in a final recycling rate of 44%."

We believe that the 20% reduction in PET bottle recycling was not merited and no evidence is provided by Eunomia to support such a significant change to the REPAK/EPA figures. We believe that the actual figure for PET bottle recycling is between 50% and 55% as detailed earlier in this report, so 43.9% is a significant under-estimate in our view and has serious implications on some of the conclusions of the Eunomia Report.

Also mentioned earlier in this report is the latest REPAK estimate of aluminium can recycling, which is 89%, which is much higher than the 69.4% used by Eunomia and that also has serious implications on some of the conclusions of the Eunomia Report.

#### 5.3 Analysis of Recycling Rates in Other Countries

We note that the Eunomia Report downgrades the recycling rates in Ireland and Belgium, but does not downgrade recycling rates in countries that operate a DRS. Eunomia has previously reported<sup>12</sup> that many EU countries have exaggerated their municipal waste recycling rates. The following table shows the data reported to Eurostat for 2017 versus Eunomia's estimate of the actual MSW recycling rates in those countries.

Country	Eurostat 2017 MSW Recycling Rate	Adjusted Rate Based on New Calculation Methods according to Eunomia
Germany	67.6%	54%
Belgium	53.7%	50%
Switzerland	52.5%	50%
Austria	57.7%	48%
Slovenia	57.8%	48%
Netherlands	54.2%	47%

## Table 5-2 Adjustments Required to Recycling Rates According to Eunomia

<sup>&</sup>lt;sup>11</sup> Appendix A.4.3.1 of the report

<sup>&</sup>lt;sup>12</sup> <u>https://www.eunomia.co.uk/reports-tools/recycling-who-really-leads-the-world/</u>

According to Eunomia's previous work, the greatest exaggeration is in Germany and the IWMA agrees with that view, as we have reviewed a report commissioned by the German Waste Management Association<sup>13</sup> that provides details of the erroneous calculation of MSW recycling rates in that country. In fact, that report suggests an even lower recycling rate for Germany in the range of 47% to 52%.

However, Eunomia puts a lot of faith in the very high recycling rate reported for deposit materials in Germany (98.4% in Section 4.4) and does not question that data in any way. This is in stark contrast to Eunomia's treatment of data reported by Belgium to Eurostat. The Eunomia Report confirms that Belgium, without a DRS, ranks highest in Europe for packaging waste recycling (Figure 3-1), second highest for metal packaging recycling (Figure 3-3) and third highest for beverage can recycling rates (Figure 3-4).

The Eunomia report goes on to further analyse and place doubt over the Belgian figures, but does not question the data produced by countries that operate a DRS. We believe that this shows bias against countries without DRS schemes in favour of those that operate such schemes.

#### 5.4 Impact on Kerbside Recycling

We consider that Eunomia's analysis of the impact on kerbside recycling is flawed and the IWMA is prepared to challenge it, if necessary. Eunomia uses baseline information from a Peter Bacon report that was published in 2008 in response to a recycling crisis at the time when Chinese markets collapsed. This was not a good baseline and was not accurate on the costs that Eunomia gleaned from it.

SLR's in-depth analysis in the attached report shows that collection costs for dry recyclables are approximately  $\leq$  500 per tonne, not the  $\leq$ 130 per tonne that Bacon estimated. The  $\leq$ 8 figure for impact on collections in Table 5-6 therefore increases to a  $\leq$ 30 impact. By the same token, the material revenue impact later in that same table should be  $\leq$ 28, not  $\leq$ 13.

Later in the same Table, the figure of €21 per tonne should be corrected to €63/tonne = €12.50 per house i.e. 4.5% increase.

The Eunomia analysis is convoluted and we do not endorse the methodology that was used, but we have identified some very significant errors in the figures used, so it does not stand up to scrutiny and should not be considered a fair analysis of the impact on kerbside collections.

Eunomia claims that the returned deposit materials will be worth €15.35million in intrinsic value (Table 5-3), based on a 90% return rate. The report goes on to state:

"The DRS modelling has used the same material prices as the modelling for the impact on kerbside collections, so has conservatively assumed that there is no premium for the higher quality material. If a system operator secured higher prices for the PET and aluminium, the net cost to producers would be lower."

However, the analysis of the impact on kerbside recycling in Section 5.3.2 estimates that the loss due to removal of deposit materials from the existing system would only be  $\leq 2.9$  million. This analysis is highly inconsistent and does not stand up to scrutiny, so we consider it to be highly flawed.

The SLR report attached to this submission shows in detail how the loss to kerbside recycling would be €6.8 million per annum (see section 3-1 of this submission).

The impact on kerbside recycling from a conventional DRS is very simple to calculate. There would be no discernible impact on collections as waste collectors would still be required to visit every house on the route and the removal of PET bottles and cans would only represent a 6% reduction in weight based on SLR's data presented earlier in this

<sup>&</sup>lt;sup>13</sup> Report by Thomas Obermeier and Sylvia Lehmann of TOMM+C for the German Waste Management Association <u>https://www.tomm-c.de/fileadmin/pdf/2017/170828 Obermeier Calculation methods for recycling rates.pdf</u>

submission. That would not lead to a 6% saving as a lot of time is spent travelling to and from transfer stations. The real difference is the loss of value of the materials so Eunomia's figure of  $\leq 2.9$  million is a significant underestimate.

We also take issue with Eunomia's ridiculous suggestion in Section 5.1.5.2, where it states:

"Finally, it is expected that a proportion of deposit-bearing containers will still be collected in MDR bins. In this case (and providing the containers are still intact), household waste collectors or MRF operators could redeem the deposits on these containers through the DRS system, even if they are not the operator directly involved in collecting the deposit-bearing containers through the official DRS collection points. This would mean that some or much of the lost material revenue and subsidy can be mitigated, as the deposit value per container is greater than the material value and Repak subsidy per tonne combined."

So Eunomia expects that the aluminium cans and PET bottles placed in the MDR bins will not be crushed by the compactors in the collection trucks and a site operative can collect these uncrushed cans and bottles from the sorting lines and can bring them to a retail store to reclaim the 20 cent deposits. Eunomia suggests that this will mitigate the MRFs' losses, which we estimate at  $\in 6.8$  million per annum. This is clearly not a credible suggestion.

We were surprised and disappointed that Eunomia did not suggest that bales of aluminium cans and plastic bottles could be rewarded with payments for the unredeemed deposits, as is the case in New South Wales in Australia. That would have been a much better suggestion.

We also find that Eunomia's comparison with other countries is not particularly relevant to the situation in Ireland. The kerbside collection system in Ireland is different from collection systems in the quoted countries in many ways. Germany collects mixed plastics in a yellow bag. Denmark's kerbside collection only extends to half the population. The quoted countries have lower rural populations and higher apartment dwelling compared to Ireland. All of these countries rely more heavily on communal drop off points, rather than individual kerbside household recycling collections. We therefore do not accept that the impact on kerbside recycling in those countries would be equivalent to the impact in Ireland.

We also note that Eunomia has not analysed the impact on kerbside recycling associated with the loss of the REPAK subsidy on PET Bottles and aluminium cans.

#### 5.5 Contamination Levels

The Eunomia Report states in Section 4.3.3:

"Evidence from recyclers also suggests that beverage containers collected via a DRS will be less contaminated than those collected through the kerbside. Indeed, a representative of the Irish recycling industry commented that their "biggest problem is cross contamination which is very difficult to sort out."

There can be no reliance on hearsay from un-named sources described by Eunomia as *"Recycling Industry Representatives"*. The IWMA is the main representative body for recyclers in Ireland and we do not concur with these sentiments.

The MDR bins collected by our members have variable levels of contamination and that is certainly an issue for the MRFs to deal with. However, they do deal with it and they produce high quality bales of aluminium cans and various grades of PET Bottles.

The grade of PET Bottles produced depends on the market price and demand. The machinery can be adjusted to produce a very high grade if that is what the market forces demand. Some MRFs already produce bales that are close to 100% PET Bottles, whereas others produce an 80:20 mix of PET Bottles (80%) and PET Trays (20%). In the

next stage of the recycling process PET Trays are flaked, washed, extruded and pelletised alongside PET Bottles to produce rPET (recycled PET), so this is not considered to be contamination.

We are reliably informed by the relevant expert in a major manufacturer of PET Trays<sup>14</sup> in Ireland that the rPET produced from PET bottles and trays collected in MDR bins can be used to make PET Food Trays. The sorting is more intensive for PET and aluminium cans collected in the MDR bins, but the final recycled raw material is of comparable quality and can be used as 'food grade' raw material.

We can also confirm that SLR consulting has prepared market reports for two companies that are considering the development of a PET reprocessing facility in Ireland and neither company has expressed an issue with the quality of rPET that can be achieved using PET collected in MDR bins.

So, Eunomia's comment in Section 4.4.6:

"The containers are consequently an important source of revenue and producers may be particularly interested in the PET, as the DRS can provide food-grade rPET that can be used to manufacture new bottles."

must be viewed in the context that equivalent quality rPET can be produced from PET bottles and PET trays sourced from co-mingled collections of dry recyclables. We believe that our sources are reliable in this regard, but we cannot comment on Eunomia's sources, as they are unnamed.

#### 5.6 Litter

We find that Eunomia's analysis of litter in Ireland is quite flawed. Firstly, the report states in Section 5.1.1 that:

"A littering rate of 1.62% was applied, based on the EPA's data for "unmanaged" waste."

Litter is a subset of unmanaged waste, which also includes backyard burning, burning waste wood/paper in fireplaces, flushing waste down toilets, in-sink macerators, etc, so the figure used by Eunomia is clearly an over-estimate.

In Section 5.1.5, Eunomia states:

"It is, however, worth noting that local authorities in Ireland spent over  $\leq 105$  million on litter-related services in 2018. As an indication, however, a study by Eunomia for Keep Britain Tidy in the UK found that a DRS could lead to savings for litter and street cleaning services in the order of £0.22 ( $\leq 0.24$ ) to £0.45 ( $\leq 0.50$ ) per household per annum (smaller for more rural authorities)."

The first part of this paragraph refers to litter and street sweepings, which includes the management of litter bins and is not a reflection of littered materials.

The second half of the paragraph suggests that a DRS would save about €500,000 per annum in litter and street cleaning services in Ireland. This shows that the €105 million figure is clearly not relevant.

This also puts another quoted figure in context. In Section 5.3.3 Eunomia states:

"the DRS could be associated with an annual reduction in litter disamenity of €95.8 million."

This statement is clearly an outrageous exaggeration.

<sup>&</sup>lt;sup>14</sup> Personal communication between Panda and Quinn Manufacturing.

In Appendix 01 of this submission, we provide a letter from Tobin Consulting Engineers detailing the number of plastic bottles and aluminium cans that were encountered in all the litter surveys in Ireland in 2019. Tobin Consulting Engineers compiled that data for the local authorities.

There were 1552 surveys covering the worst litter blackspots in Ireland that year. A 50m stretch of road was covered in each case. On average, each survey found one plastic bottle and one aluminium can. We recognise that litter is bad and plastic bottles and aluminium cans contribute to litter, but we cannot accept Eunomia's analysis that suggests removing one can and one plastic bottle from each litter blackspot is somehow worth €95million to society. This is clearly a ludicrous claim that we strongly challenge.

#### 5.7 Space Requirements at Retailers

In Table 6-18 of the Eunomia Report, the estimated storage cost to retailers is based on an assumption that they only need 1m<sup>2</sup> for storage of returned cans and bottles (more for RVMs). This is surely an underestimate as the cans and bottles will be uncompacted and will take a lot more room than that to store. We note that some premises would have weekly collections and some monthly. Extra storage space would drive costs much higher as it applies to nearly 14,000 premises. If 4m<sup>2</sup> was required for all premises, the annual cost of storage space would be nearly €20 million more than the cost estimated by Eunomia.

#### 5.8 Transport Costs

The assumptions on transport costs in Section A.6.4 are questionable. For example, it is assumed that

"Retailers are located an average drive time of 30 minutes from the vehicle depot and it takes 15 minutes to travel between pick up points;"

The vehicle depot would have to be located at the sorting centre as this is where the material must be delivered. If the depots are located elsewhere, the transport costs would be even higher. Eunomia proposes 5 sorting centres in Ireland. We fail to see how an average drivetime of 30 minutes from 5 points in Ireland would reach the 16,000 take-back locations. This is a very loose assumption and the actual transport costs could multiples of the predicted €11.7 million per annum.

#### 5.9 Environmental Impacts

The Eunomia report speaks positively about the environmental benefits of recycling 90% of PET Bottles and Aluminium cans, but also recognises the environmental impacts associated with the development of a new collection and processing system that would operate in parallel with the existing collection and processing system for mixed dry recyclables.

Earlier in this submission, we promote the development of a Smart DRS that uses the existing collection and processing infrastructure with only a marginal increase in transport and energy demands. That system would have all the environmental benefits detailed in the Eunomia report, without the negative environmental impacts.

### **APPENDIX 01**

### Letter from Tobin Consulting Engineers addressing the 2019 Litter Surveys in Ireland

IWMA Submission to DECC on DRS

#### 12<sup>th</sup> November 2020

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14<sup>th</sup> October 2020

Mr. Conor Walsh IWMA Secretary SLR Consulting Ireland 7 Dundrum Business Park, Windy Arbour, Dublin, D14N2Y7

Dear Mr Walsh,

TOBIN Consulting Engineers have reviewed the 2019 National Litter Pollution Monitoring System (NLPMS) data which is collected by all 31 local authorities. Under the NLPMS, the type of litter pollution is measured by counting litter items while they remain on the ground. These surveys are called Litter Quantification Surveys (LQS).

In 2019, 1552 LQS were completed nationally. Each LQS is completed over a 50m survey stretch. LQS are completed in the most heavily polluted areas (i.e. the clusters or 'black spots') and as long after cleansing as possible to further increase the chances of a large sample size. These surveys allow the local authorities to determine the composition of litter in their areas.

With regards to your request concerning the number of plastic bottles and aluminium cans, we can confirm that in 2019 the number of items recorded by the NLPMS are as follows;

- Number of plastic bottles = 1628
- Number of beverage cans = 1415

Yours sincerely,

Allison Murphy

Allison Murphy

Project Manager/ Senior Scientist

For and on behalf of TOBIN Consulting Engineers

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**APPENDIX 02** 

### **MAPS SHOWING**

### MAIN WASTE TRANSFER STATIONS

### **AND MRFS IN IRELAND**



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