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Re: Deposit & Refund Scheme Questionnaire

Dear Orla,

Thank you for including the IWMA as a consultee in your review of the possibility of introducing a Deposit and Return Scheme (DRS) and how this might operate in an Irish context. We are glad to assist and we hope that our answers to your questionnaire will be helpful in that regard. Some questions have not been answered due to commercial sensitivity or not having access to the data requested. Where possible, we have directed you to potential sources of such data.

1.0 IRISH DRS STUDY – QUESTIONS FOR IWMA

1.1 Your Organisation's Views

- 1) Do you think the current kerbside collection system and waste collection infrastructure could achieve a 90% separate collection rate for PET bottles and aluminium cans? If so, what changes would be needed?

Yes, with a lot of effort in the area of education and awareness or introduction of other means to engage the public in source segregation at home, at work and in other places.

PET bottles and aluminium cans are sought after by Materials Recovery Facilities as they have good value. MRF operators are therefore incentivised to capture all plastic bottles and aluminium cans that are delivered within the mixed dry recyclable (MDR) waste stream.

Waste collectors are also encouraged to maximise the quantity of PET bottles and aluminium cans placed in MDR bins and to discourage loss of these high value materials to residual waste bins.

Now that flat rate charging for kerbside household waste has been banned in Ireland and incentivised charging is compulsory, householders are financially incentivised to minimise residual waste and maximise the use of the MDR bin. This has been backed by awareness campaigns to inform and encourage the public to place the correct materials in the MDR

bins. Practically all households in Ireland that have a kerbside waste collection service, have been given an MDR bin, so all households have an easy option for recycling PET bottles and aluminium cans.

We suggest that these measures will encourage more recycling of PET bottles and aluminium cans. However, we suggest that more can be done, as follows:

- Increase the budget for recycling awareness campaigns from the current level of c.€1.3 million to at least €5 million per annum to hammer home the important messages about recycling.
- Provide recycling bins on the city streets and public spaces to increase capture rates and to increase awareness of recycling.
- Greater awareness and enforcement measures by waste collectors to encourage customers to place PET bottles and aluminium cans in MDR bins. Waste collectors can introduce manual or automated techniques to check bins to assess the recycling performance of customers and can offer rewards for good performers.
- The operators of waste transfer stations to consider extracting PET bottles and aluminium cans from residual waste, where economically viable. REPAK could be encouraged to provide higher subsidies for such extracted material to enhance the economic viability of such measures.
- Introduce deposit and refund schemes at major events (concerts, matches, festivals, etc) using reusable beverage containers rather than single use plastics. This can be imposed through the licensing system for such events.
- Sponsor litter clean-ups by local groups and charities where plastic bottles and aluminium cans are collected separately. Local authorities and waste management companies can both be encouraged to sponsor such activities. We understand that PET bottles and aluminium cans only account for a very small proportion of litter (less than 5%), so measures to combat litter should be wider than just reducing aluminium cans and Pet bottle litter.

The EPA recently commissioned waste characterisation studies for household and non-household (commercial) waste in Ireland. The data gives some indication of the destination of these target materials.

The household waste data suggests that 1.29% of the MDR bins is comprised of aluminium cans and 0.73% of the Residual waste bins is comprised of aluminium cans. This suggests that the residual waste bins contain about 50% more aluminium cans when compared with the MDR bins, which is a very surprising finding. The relevant figures are shown in Table 1.

Table 1: Aluminium Cans in Kerbside Household Waste

	Aluminium Can Percentage of Bin	Total National Tonnage	Aluminium Can Tonnage
Aluminium cans MRW	0.73%	681,027	4,937
Aluminium cans MDR	1.29%	253,328	3,260

The finding is even more surprising in Non-Household Waste, where there appears to be 3 times as many aluminium cans in the residual bins compared to the MDR bins, as shown in Table 2.

Table 2: Aluminium Cans in Non-Household Waste

	Aluminium Can Percentage of Bin	Total National Tonnage	Aluminium Can Tonnage
Aluminium cans MRW	0.55%	497,671	2,737
Aluminium cans MDR	0.63%	147,265	928

This data highlights a failure to convince the Irish public to engage positively in recycling. Aluminium cans are clearly recyclable and should be an obvious choice for placement in MDR bins.

Please note that interpretation of the EPA waste characterisation suggests higher volumes of aluminium cans than suggested by REPAK, so this may be a blunt measurement, but is nonetheless revealing with regard to the public behaviour.

It can be argued that a financial incentive is needed in the form of a DRS, but the counter argument is that bringing aluminium cans to a central collection point or a grocery store is more onerous than placing cans in an MDR bin rather than an adjacent residual waste bin. With incentivised charging now in place for household waste, there is potential to financially reward good recycling behaviour as well as making it as easy as possible for the consumer to recycle.

It is our view that a major education and awareness campaign, as a minimum, is needed to engage the public in recycling. The public needs to be aware that we are failing to recycle these materials due to a lack of effort to source segregate by many people.

- 2) Deposit return systems (DRS) in other European countries have achieved recycling rates over 90%. Would you support the introduction of a DRS in Ireland as a means of achieving a 90% collection rate for PET bottles and aluminium cans? Please provide reasons for your answer.

No. We do not believe that a DRS would be very successful in Ireland. The Irish public do not have a culture of returning empties to grocery stores. There is a high risk that DRS will be unsuccessful in Ireland due to the inconvenience involved for the public in such a system. If the public cannot make the effort to choose the correct bin in front of them, there is little chance that the majority of people will store segregated PET bottles and aluminium cans for a period of time and then deliver it to a central collection point. We do not believe that the financial incentive will overcome the inconvenience for most people.

We believe that the financial incentive of a DRS will attract some people, but it may also lead to the theft of these materials from MDR bins left out on collection day. This could have two consequences, firstly the waste collector will be deprived of the most valuable materials in the MDR bin and secondly, the people rooting through the MDR bins are likely to litter the streets in the process.

We are informed that in other countries that have DRS and kerbside recycling, householders sometimes leave the bottles and cans outside the recycling bins, so that scavengers can take them without causing undue litter. However, it is unsightly for these materials to be left on the street outside the bins and if the beverage containers are not washed, they can attract vermin.

There is also a high risk that a successful DRS in Ireland would have very significant unintended consequences on the existing system of collecting and processing recyclables. This could lead to an increase in gate fees at MRFs for delivery of collected MDR and that in turn could make the whole source segregation system non-viable, which would undermine all our recycling targets.

We are also concerned that a DRS on PET bottles and aluminium cans would result in producers moving away from these packaging materials and moving to tetra-pak or other complex packaging options that are more difficult to recycle. This would lead to a negative environmental result in our view.

We are also concerned that putting a 20c or more deposit on aluminium cans and PET bottles would lead to additional cross-border shopping as many items would appear to be a lot cheaper in Northern Ireland.

We expect that a DRS would be very expensive and would only have a marginal benefit. There is little data available on the quantity of aluminium cans and PET bottles placed on the Irish Market. We estimate that there are roughly 13,000 t of aluminium cans and 40,000 tonnes of PET bottles per annum on the Irish market (RoI), based on EPA data on the quantities of these materials in the recycling and residual waste streams. This is not an accurate measure, but a best case at this stage. REPAK should have more accurate data.

Using data presented by Eunomia in a report to Zero Waste Scotland¹, the average weight of an aluminium can is 17g and the average weight of a plastic bottle is 37g. Using the tonnages estimated above, the following quantities of the target materials are assumed to be placed on the Irish market each year:

- Aluminium cans – 765 million
- PET bottles – 1, 081 million

In the Eunomia report for Zero Waste Scotland, it was recommended that the deposit should be between 10p and 20p sterling per item. If we assume a deposit of 20c in Ireland, then the consumer will be expected to pay deposits of €369 million per annum. Whilst this can be reclaimed, it is a massive amount of money to demand up front from the Irish consumer. The consumer would pay this money up front and in return would have to make many trips to centralised collection points rather than simply placing the cans and PET bottles in the MDR bin at their houses and places of work. That is clearly a very bad deal for the Irish public and could attract a backlash against the Government.

In Eunomia's report to Zero Waste Scotland, it was estimated that the DRS in Scotland would cost £36.8 million sterling to set-up and would have annual running costs of £61.3

¹ A Scottish Deposit Refund System, Eunomia, 7th May 2015.

million. In the report, this was assumed to be balanced by revenue from unclaimed deposits, material sales and producer fees.

However, this is a balance calculation for the scheme, not for the people that must pay for the scheme (the public, the packaging industry and the waste industry). In the Scottish scenario, the public loses £35.9 million per annum in unclaimed deposits, the packaging industry loses £5.7 million in producer fees and the waste industry loses £19.7 million in material sales².

These losses will ultimately be passed to the consumer in a competitive environment, so the public will end up paying for the system through increased prices for these goods and through increased waste charges due to loss of value in the MDR bin. The public will then be asked to physically support the system by storing and delivering these materials to the grocery store or central collection point.

- 3) Do you think there are other models – alternative to a DRS – that would be more likely to achieve a 90% separate collection rate, or be more cost-effective? Please describe: how these would work; why it would be preferable to a DRS; and what the associated costs could be.

There may well be other models, but this needs research that is beyond the scope of this questionnaire. The IWMA is currently considering an alternative model and will publicise this if and when it is agreed by members.

The key issue is to engage the public in recycling effort. These are the options that should be put to the public with respect to environmental management of these products if a DRS was in place. We use the example of a 12 pack of soft drink cans in our example below. We assume a purchase price of €6 in a supermarket for the 12 cans.

- **Option 1** – Pay a 25c deposit on each can, which increases the purchase price by 50% from €6 to €9. Store the cans at home and then deliver them to a recycling point to redeem the €3 deposit. Pay extra for kerbside waste collection service as the value of the MDR bin decreases and the value of the REPAK subsidy decreases due to lower revenues collected by REPAK.
- **Option 2** – Pay a 25c deposit on each can, which increases the purchase price by 50% from €6 to €9. Put the cans in the MDR bin outside the house and lose the €3 deposit. Pay extra for kerbside waste collection service as the value of the MDR bin decreases and the value of the REPAK subsidy decreases due to lower revenues collected by REPAK.
- **Option 3** – Pay €6 for the cans. Put the cans in the MDR bin outside the house. No increase in the price of the kerbside household waste collection service.

It seems clear to us that Option 3 is the best option for the consumer, but the consumer has to use the MDR bin to the maximum effect in order to ensure that this option delivers 90% recycling of these materials by 2029. That message needs to be delivered in the strongest

² including potential material sales if 90% recycling can be achieved by other methods – so roughly half this figure is existing revenue and the other half is potential revenue in the Irish scenario

possible way and a budget of €5 million per annum on education and awareness could go a long way towards meeting that goal.

We also take the view that Ireland must tackle all MSW recycling targets equally and that means an approach that addresses public behaviour in respect of all waste, not just these two target materials.

One waste company in Ireland (Panda) has introduced an automated camera system to view the materials placed in the MDR bins and to give warnings to householders that contaminate those bins. Technology can be used to reward or to penalise customer behaviour. Manual inspection of bins is also possible, but a more expensive option.

Waste collectors could consider running competitions where bins are inspected and best performing customers win prizes on a regular basis (such as a free collection service for 1 year). This could be a weekly or fortnightly competition by many different companies where different areas are selected for inspection to keep the public engaged on an ongoing basis. If 200 customers per annum won a prize of a free waste collection service, the total cost would be about €50K per annum spread across a lot of companies. This appears to be a good low cost option if it gets results.

In summary, we need to engage the public to take much more interest in all their waste, not just aluminium cans and plastic bottles and we need to use resources wisely to achieve that. Spending hundreds of millions of euro on a DRS is not, in our view, a good use of resources. A wider consultation is needed to look at the best use of resources for recycling the maximum quantity of municipal wastes.

1.2 Data Requests

- 4) How many waste collectors are there in Ireland and what is their share of the household collection market?

There are approximately 67 companies collecting household waste in Ireland from a total of 1.2 million houses. There are approximately 200K to 300K houses that do not avail of a collection service, but the majority of these appear to manage their waste responsibly by one of the following methods:

- Bin sharing with a neighbour or family member
- Using civic amenity sites and bring banks
- Bringing waste to their workplace
- Using a service where they are not registered, by way of bags or tags.

However, we understand that some of the houses without a service engage in illegal practices such as:

- Fly-tipping
- Backyard burning
- Using street litter bins for their domestic waste
- Covertly depositing their waste in other people's bins when they are put out for collection.

- Using unauthorised waste collectors that undoubtedly engage in larger scale illegal dumping.

New national waste presentation bye-laws have been introduced by all local authorities in an attempt to identify the households that are managing their waste illegally and the IWMA is very supportive of that local government initiative.

- 5) What percentage of 1) collection costs and 2) processing costs are paid by a) householders and b) Repak?

There are 1.2 million houses on a kerbside waste collection service in Ireland, with an average price of about €275 per annum. This equates to €330 million per annum.

The total REPAK subsidy paid to waste management companies and local authorities is approximately €18 million per annum. This covers commercial waste as well as household waste.

We are informed that €10 million of the REPAK subsidy relates to kerbside household waste collection so if we assume that the costs would go up by €10 million in the absence of the subsidy, then it appears to account for about 3% of the costs. We recognise that these costs include profits and taxes.

If we assume that companies make about 10% profit, which is probably higher than realised for most waste management companies and if we remove VAT which is charged at 13.5% for waste collection in Ireland, then we can recalculate the figures as follows:

- Total charges to householders = €330m per annum
- Total charges without VAT and without profit margin = €252m
- Add REPAK subsidy of €10m per annum = €262m
- REPAK subsidy = 3.8% of total costs of collection and treatment of household waste.

- 6) Do you have any of the following data?

	€
Office space – rent per m² per month	Don't know
Industrial/ warehouse – rent per m² per month	€5 /m ² per month (€6 /sqft per year is an up to date valuation we used recently for pricing a site)

Electricity cost per kWh	6c day, 5c night (ex VAT) 10.1c average kWh cost when all other charges included (ex VAT)
Manual operator gross annual salary	€25K (inc. emp PRSI but Excl. overtime)
Collection vehicle driver gross annual salary	€32K (inc. emp PRSI but Excl. overtime)
Collection vehicle loader gross annual salary	€25K (inc. emp PRSI but Excl. overtime)
IT / Database staff gross annual salary	€55K (inc. emp PRSI)
Customer services staff gross annual salary	€28K (inc. emp PRSI but Excl. overtime)
Cost of haulage vehicle	€175K inc. ejector trailer
Cost of haulage - large truck (per KM)	€5 (based on 20tn loads)
Purchase Price of door-to-door collection vehicle (Euro)	€220,000
Annual insurance and maintenance costs of collection vehicle (Euro)	€20,000 avg/yr (based on 10yr life of truck)
Cost of diesel fuel (per litre)	€1.10/L (Ex VAT)

	All Areas
Average revenue from PET per tonne	Range of €50 to €300
Average revenue from aluminium per tonne	Range €700 to €1,150
Annual tonnes collected, PET	18,448 (REPAK 2015 data)
Annual tonnes collected, aluminium	Check with REPAK
Recycling rate, PET (%)	c.45% (estimated based on quantity recycled and EPA characterisation of residual MSW bins)

Recycling rate, aluminium (%)	c.42% (estimated based on EPA characterisation of MDR bins and residual MSW bins plus 2012 EPA data for aluminium cans collected at bring banks)
Incineration rate, PET (%)	Don't know
Waste generation, PET (tonnes)	c.40,000 (estimated based on quantity recycled and EPA characterisation of residual MSW bins)
Waste generation, aluminium (tonnes)	c.12,000 (estimated based on EPA characterisation of MDR bins and residual MSW bins)
Percentage of waste collected at the kerbside that is beverage containers	Don't know
Littering rate (% of beverage containers that are littered)	Don't know
Litter composition (% of litter that is beverage containers)	Don't know

	All Areas
What size of containers are typically used for residual door-to-door services?	240 litre
What size of containers are typically used for recycling door-to-door services?	240 litre
Average frequency of door-to-door residual collections (number per week)	0.5
Average frequency of door-to-door recycling collections (number per week)	0.5
Average density of public litter bins	Don't know
Average density of bring-banks	Don't know
Annual litter collection costs (€)	Don't know
Landfill charges (Euro per tonne)	120
Incineration costs (Euro)	110
EPR Fees - aluminium (Euro per tonne)	Check with REPAK
EPR Fees - PET (Euro per tonne)	Check with REPAK

Percentage of producers registered with Repak (vs. self-compliers)	Check with REPAK
Percentage of households paying for waste collections by weight	Don't know
Percentage of households paying for waste collections by lift	Don't know
Average waste collection charge per lift (€)	Depends on the service charge, the waste type and/or the excess weight charge
Average waste collection charge by weight (€)	Depends on the service charge, the waste type and/or the lift charge (if any)

Yours Sincerely,



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