

## Written Evidence Submitted by Dr Dominic Hogg

1. This submission is made in a personal capacity. By way of background, I founded the company Eunomia Research & Consulting, where I worked for just short of 20 years, before leaving in 2020 to focus on specific environmental issues of personal interest (of which, this is one).
2. Whilst at Eunomia, I led a team which researched and designed deposit refund schemes (DRSs) across the world, including in Scotland (for Zero Waste Scotland), the UK, the rest of Europe (e.g., Malta, Spain, Poland, Kosovo), various states and provinces in USA and Canada, and more recently, Indonesia.
3. I also led teams which were responsible for supporting the European Commission in revising the key waste Directives in the EU; in developing the EU plastics strategy; and supporting the development of the EU's Single-use Plastics Directive. I have also involved in providing advice to Defra regarding fee modulation under producer responsibility for packaging waste.
4. My submission seeks to address, directly, the matters on which the Committee has sought to address. I will make frequent reference to the Deposit and Return Scheme for Scotland Regulations 2020, referring to them as 'the Scottish Regulations'.

### EXECUTIVE SUMMARY

5. More than 10 years ago, I made a presentation in the House of Commons (HoC) regarding the costs and benefits of a DRS.<sup>1</sup> A question was asked of David Cameron in House that day and he expressed support: as did many newspapers who reported on the study. Between then and now, a growing number of major brands have come to recognise that as a means of reducing the extent to which their branded products will end up washed up on pristine beaches, a well-designed DRS offers something which looks like 'a solution'.
6. Despite all we have learned about the value people place on a litter-free environment, and despite all we have learned about the harm that plastics do when littered, and even though, in any region of the world, including Europe, plastic bottles are among the top 5 plastic items most frequently found littered on beaches, and even though the UK has repeatedly affirmed its commitment to addressing this issue, we still have no DRS in place. The pace of change is 'sub-glacial'.
7. The Committee asks a range of design questions: given that the Scottish Regulations are already in place, and recognising also that there is much to be gained from having the scheme for England, Wales and Northern Ireland harmonised with that for Scotland, for pragmatic reasons, there is much to be said for following the Scottish approach. Unless there are very good reasons for departing from that (and notwithstanding the inevitable lobbying that may follow, I suspect there are not, though the way the Scottish Regulations are phrased to exclude milk could be improved), then the same scope, deposit level, obligations on retailers, seem reasonable to apply in the England, Wales and Northern Ireland scheme.
8. Local authority concerns – regarding loss of revenue – have downplayed the potential upside of a DRS, both in the static and dynamic case. There are savings that can compensate for loss in material revenue, even under the system as it now stands. These concerns, though, would be most effectively dealt with if Government would get its skates on, and implement (the rest of) extended producer responsibility, confirming to local authorities that they will be paid the full costs (net of revenues, as applicable) of end-of-life management of packaging.

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<sup>1</sup> D. Hogg, D. Fletcher, T. Elliott and M. von Eye (2010) *Have We Got the Bottle? Implementing a Deposit Refund System in the UK*, Report for CPRE, September 2010.

This – and the linked discussion to which these concerns have given birth, around an ‘on-the-go’ scheme that was, and still remains, a complete non-starter – has been a distraction which could have been resolved by swift and decisive action from Defra. The delays that have occurred in this respect will give rise to larger transition costs than would otherwise have been the case.

9. Attention should be given, since it appears not to be addressed in the Scottish Regulations, to the appropriate form of labelling to be used for ‘in scheme’ containers, preferably on a UK wide basis assuming that deposit levels are the same.
10. For those forms of packaging that ‘compete’ in the beverage packaging market, but which are not included in the scope of a DRS (in the Scottish regulations, this includes cardboard containers, non-PET plastic, multi-material pouches), consideration should be given to applying a form of instrument that drives similar performance so as not to give such materials undue advantage in the market for packaging of beverages. This could take the form of a tax linked to the recycling rate achieved (as applied in Norway), or to a specified application of modulated fees under EPR. Given that such packages are not widely recycled at a high rate,<sup>2</sup> care should be taken to ensure that their omission from a DRS does not give them a competitive advantage vis a vis those packages within scope of a DRS.

## MAIN EVIDENCE

11. The Committee asks a range of questions regarding the design of the scheme for England (and, I presume, Wales and Northern Ireland). Most of the design questions have to be set against the objectives for a deposit refund scheme. In my view, and in the view of most organisations who have properly understood the value of such schemes, amongst the key objectives are the following:

To achieve a very high rate of return, and of recycling / re-use, of the containers within the scheme

12. This objective is the one which will support the reduction in littering of beverage containers, and increase circularity of beverage packaging. In doing so, it will contribute to decarbonisation of packaging of such beverages, and a reduction in littering of all container types included, and as a result, a reduction in the quantity of plastic beverage containers flowing into rivers and seas. For the beverage industry itself, this point is now widely understood: whilst other single-use packaging items struggle to articulate anything like a sensible solution to the problem of littering (other than that they are no longer used), the beverage industry knows that a well-designed DRS is ‘a solution’ that can address a large proportion (even if not all) of the problems associated with container use. It also offers the best means through which to acquire materials of the requisite quality for recycling of plastics (and other materials) back into food-contact applications.
13. A scheme which is not designed with the achievement of very high rates of return clearly in mind, and of ensuring maximal likelihood of their being recycled, is, in my opinion, probably not worth implementing. Recognising what is now known to be possible, a high rate of

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<sup>2</sup> See, for example, Eunomia (2020) *Recycling of Multilayer Composite Packaging: the Beverage Carton*, December 2020, downloadable from <https://zerowasteurope.eu/library/recycling-of-multilayer-composite-packaging-the-beverage-carton/>

return should be considered to be no less than 90%, albeit not necessarily in the first years of operation.

14. A key point that follows from this is that the system has to be designed so that the combined effect of the incentive to make the return (the value of the deposit to be refunded), and the convenience by which the returns can be made (the density of return points, and the ease with which they can be used), should be capable of achieving the high rates of return being targeted. Indeed, a stylised view (there are exceptions) of schemes across the world points to a differentiation between:
- systems with low deposit levels having relatively few return points (typically, redemption centres) with residents often returning large numbers of containers at any one drop-off;
  - systems with high deposit levels having greater numbers of return points (typically, retailers) with residents returning large and small quantities at any one drop-off, but large numbers being returned less frequently.
15. In the former systems, unredeemed deposits may more than pay for the scheme. In the latter, the unredeemed deposits are insufficient to fund the whole system, and those placing containers on the market are essentially required to pay 'producer fees' to fund the gap between costs of scheme operation, and the revenue from unredeemed deposits, and the value of the materials collected by the scheme.

As far as possible, include all containers from all products which 'compete' in the market for beverages

16. Wherever beverages are sold, there is an active competition in the material markets as to what package, and of what material, they should be sold in. There is also competition across beverage types. Including some packages and some beverages, but not others, has the effect of influencing competition in 'the beverage market' in ways that might be considered unfair, unless parallel measures are put in place. This is especially relevant in cases where a decision to exclude some materials / beverages is likely to lead to the persistence of low levels of recycling or reuse of those materials.
17. The main questions tend to relate to:
- Size:                   What should be the smallest / largest container volume in the scheme?
- Dairy?                 Should milk be included or not?
- Container type: Should beverage cartons (and pouches) be included in the scheme?

To ensure that fraudulent claims for deposits are minimised

18. The value of deposits that will achieve high return rates far exceeds the value of the materials which are being returned. The scheme should be designed to minimise levels of fraud in the system. At high rates of return, the level of fraudulent claims translates directly into increases in bottom line costs to producers: producers have an incentive, therefore, to keep fraud to a minimum. The ways in which this is typically achieved are through a combination of labelling, and technology which 'counts in' containers at some point in the return cycle (either at the point of return, where there is a reverse vending machine, or at a counting centre). The point is to ensure that only 'in scope' containers, on which a deposit has been paid, trigger the return of a deposit. There is considerable interest in using

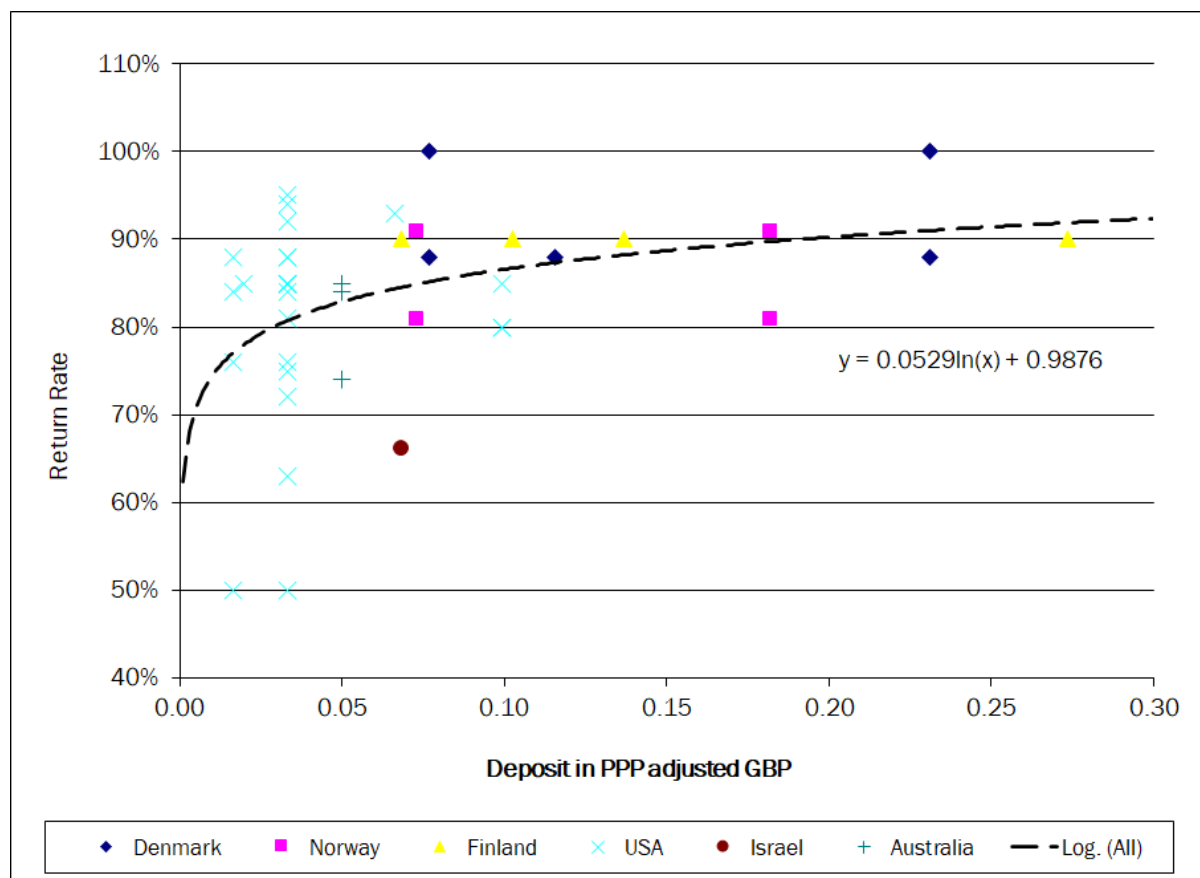
uniquely coded containers as a basis for enabling returns to be made via fintech style solutions, and these are being trialled.

19. The system should be designed to allow for innovation and efficiency enhancement: In our experience of deposit systems across the world, some schemes, notably the Californian one, have been so rigidly established in law that the scope for adaptation, or improvement, of efficiency enhancement, has been all but squashed. The regulations should allow some flexibility for those operating the system to innovate and enhance efficiency, and performance, in the delivery of the scheme.
20. Other issues are relevant, but I have concentrated on the above issues as they inform this response to the matters the Committee raises.

**Deposit Level and Scale / Obligations on Retailers**

21. It follows from the above that the right blend of deposit level and convenient return infrastructure is required to deliver high return rates. In my experience, the foundations of this can be laid well through a return-to-retailer system, allied with a deposit in excess of 15p. Evidence – somewhat dated now – for this, can be found in the Figure below.

Figure 1: Relationship Between Level of Deposit (adjusted for purchasing power parity) and Return Rate



Source: D. Hogg, D. Fletcher, T. Elliott and M. von Eye (2010) *Have We Got the Bottle? Implementing a Deposit Refund System in the UK*, Report for CPRE, September 2010

22. The Scottish Regulations have largely followed this logic with the deposit at 20p. To the extent that interoperability of Scottish and English schemes is desirable, and so as to minimise the potential for fraudulent claims one or other side of the border, I would suggest the UK sets the deposit at the same level. There could be arguments to require an automatic

adjustment to the deposit level if, for example, a given return rate target is not met for a number of consecutive years: this would lend further focus to the scheme operator to achieve those targets.

23. There is some discussion regarding whether deposits should be differentiated by, for example, size of container. Some brands sell considerable quantities of beverages in multi-packs (for example, multiple cans) and wish to see lower deposits for smaller volume containers / multi-packs. No doubt, a case can be made for such an approach: it seems, however, a weak one. In respect of resource efficiency, if a flat rate system encourages people to purchase the same amount of beverage in fewer containers, that could be preferable. Also, the argument is motivated by concern as to what happens in respect of demand for multipacks. Clear evidence of such an effect is not straightforward to come by, and even if there were marginal reductions in demand for containers (and there might not be because a deposit does not act as 'a price increase' unless the consumer has no intention to return it), that might not be the most terrible thing given the nature of what may be being consumed.

#### **Material / Beverage Types to be Included**

24. The Scottish Regulations define (Regulation 3) 'scheme articles' and 'scheme packaging'. Essentially, all beverages are included, and the relevant packages are those from 50ml to 3 litres which are made 'wholly or mainly' from PET plastic, glass, steel or aluminium. It is somewhat unusual to specify a particular plastic polymer as being in scope (in this case, PET). This appears to have been done so as to exclude milk, which is typically packaged in HDPE where it is contained in plastic, or refillable glass when in glass bottles.<sup>3</sup> Also excluded are beverage cartons and flexible plastic / multimaterial packages. Only single-use packages are included in the Scottish Regulations.
25. In principle, I believe this provides a good starting point for the English scheme also, though it might be preferable to exclude milk in a more explicit way if that is intended. The exclusion of cartons and of flexible pouches most likely reflects, in part, concerns regarding the ability of the returns infrastructure to deal with these (the Scottish Government has indicated its openness to adding further materials in future). These types of beverage packaging should be subject to policies designed to have an equivalent effect, or incentive.

#### **Effect on Scheme Design of Recent Changes in Patterns of Retail Activity**

26. I assume this is intended to refer to the shift to more on-line purchasing. The Scottish Regulations require online sellers to provide a takeback service that is, essentially, free of charge. I believe the English scheme should make similar provision, and in any case, be designed so that its function is not compromised by shifts in retail activity.

#### **Scheme design: ('all-in', 'on-the-go' or other models)**

27. I have been at a loss to understand why this has ever been considered as a sensible basis on which to establish a DRS. No one has done this. No one can know, other than the consumer at the point of purchase (and sometimes, not even then), whether a particular beverage in a particular container will be (fully) consumed in or out of the home. It follows that applying a deposit in such a way is similarly not possible. The 'on-the-go' model, such as it can be said to exist, is impractical: it has been (and, apparently, still is) a distraction. It was an attempt to respond to the concerns of local authorities (by their contractors) to address the concerns

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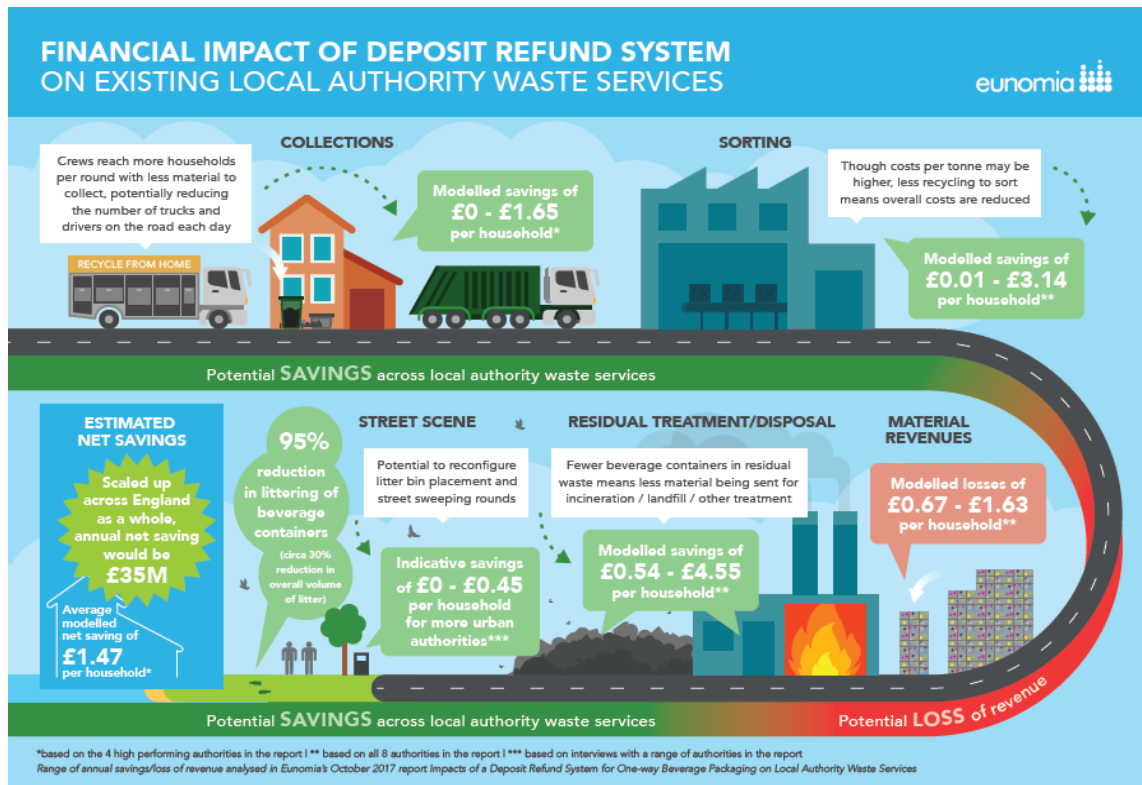
<sup>3</sup> See <https://depositreturnscheme.zerowastescotland.org.uk/faqs#What's>

raised by some in local government that a DRS would imply revenue loss to local authority recycling services.

**The impact of any scheme on local authority kerbside collections and on local authority revenue streams dependent on the value chain of recyclables**

28. This is a matter which I have researched at some length. I first researched this, with former colleagues, in terms of where there would be costs, and where there would be savings, as a result of a DRS. I subsequently revisited this taking into account specific circumstances of a small number of local authorities so as to understand how existing contractual situations (and single-tier / two-tier authority situations) affected specific local authorities.
29. There are a range of impacts, including:
1. A reduction in the weight and volume of materials in:
    - a. Recycling collections;
    - b. Residual waste collections;
    - c. Sorting systems for dry recyclables;
    - d. Litter bins;
    - e. Street cleaning services;
    - f. Beach cleaning activities;
    - g. Facilities for managing residual waste from door-to-door collection and from litter bins and from street cleaning; and
  2. A loss in the revenue generated from the sale of materials that would otherwise have been collected and sorted from the dry recyclables stream.
30. The first thing to notice is that all the activities under point 1 can lead to reductions in associated costs. Whether they do or do not depends on specific situations, although 1d, 1e, 1f and 1g are more likely to lead directly to savings. These do not always lead to savings for local authorities, since this depends on the nature of the authority (District, Unitary, County, etc.) and the contractual arrangements in place.
31. Although, therefore, the louder local authority voices have been concerned to emphasise losses in material revenues, the potential savings have not been adequately recognised. On balance, previous work finds that the net effect is likely to be marginally positive in English local authorities, albeit some will fare better than others.
32. This represents a 'static' analysis: the dynamic situation (the future) also deserves to be considered. First, if English local authorities seek to recycle a wider range of materials than currently, as seems to be the intention (and household waste recycling rates have been more or less static in England for the last decade – see Figure 3 below – the only significant change has been a major increase in incineration), then if a DRS frees up additional volume on recycling vehicles for collection of other materials, then this may be taken up by the collection of, for example, a greater quantity of a wider range of plastics. Second, and I address this in the next matter, a well-designed extended producer responsibility (EPR) scheme *should*, effectively, fund local authorities to the tune of the full costs, net of material revenues, of the management of packaging waste.

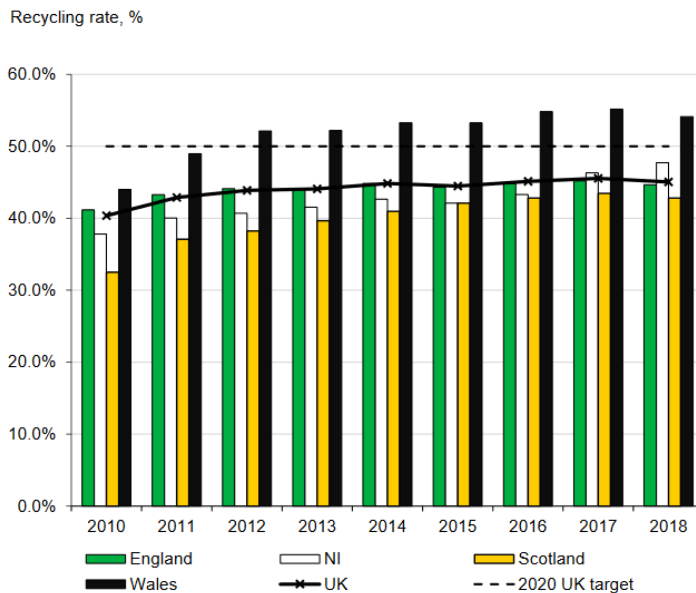
Figure 2: Impact of DRS on Local Authority Waste Services



Source

: D. Hogg, T. Elliott, A. Gibbs, A. Grant and C. Sherrington (2017) Impacts of a Deposit Refund System for One-way Beverage Packaging on Local Authority Waste Services, report for Keep Britain Tidy, October 2017, downloadable from <https://www.eunomia.co.uk/reports-tools/impacts-of-a-deposit-refund-system-for-one-way-beverage-packaging-on-local-authority-waste-services/>

Figure 3: Defeat Snatched from the Jaws of Victory – UK Progress to Household Waste Recycling Targets since 2010



Source : WasteDataFlow, Defra Statistics  
From 2015, these figures include IBA metal (this typically adds up to 0.7 percentage points to the overall UK recycling rate).  
For Northern Ireland, figures including IBA metal are the same as those excluding IBA metals as no local authority collected municipal waste went directly to incinerators.

**Potential relationship between deposit return schemes and other packaging waste initiatives promoted under the Resource and Waste Strategy, such as the packaging producer responsibility system and consistency in kerbside collections of dry recyclables**

33. Following from the previous point, the links across to EPR for packaging are clear: indeed, it would be correct to consider a DRS as *part of* EPR, and as packaging types are included within a DRS, so they should naturally ‘fall out of’ other EPR (cost recovery) frameworks. Such a shift can be made automatic where the two are legislated for as part of one whole. Furthermore, to the extent that targets exist for plastic packaging recycling, then there may be arguments to be made for recognising the ‘well above average’ performance contributed by a DRS towards an overall packaging recycling target (consider that the higher the performance achieved by the DRS in recycling plastic bottles, the lower will be the required performance from ‘the rest of’ plastic packaging to meet a given target). To my knowledge, no country anywhere in the world has adopted this approach thus far.
34. An extremely important point that deserves to be made is that it would have been preferable to have announced the introduction of both EPR and DRS, together, some years ago. The pace of movement has been truly glacial (\*though since these are now melting, we may need to revise our metaphors). If UK government remains sincere in its wish to have EPR in force by 2023, then the adjustment period which local authorities would have to adapt their activities and renegotiate contracts has more or less disappeared (taking into account the time to place such policies on the statute book). Had government acted more swiftly, it could have announced the details of both a DRS and EPR scheme, and there would have been five years or so to play with. There is, apparently, no urgency behind this: in the meantime, more beverage containers are littered, creating significant disamenity, and plastic containers will continue to wash into oceans.
35. The consistency agenda (in kerbside collections) links more strongly to EPR schemes: producers have a right to expect that schemes which they will fund are operated in such a way that they deliver high performance and maximise the likelihood that the quality of materials will be high.

**DRS impact on UK’s progress towards meeting the targets set in the Resource and Waste Strategy**

36. A well-designed DRS contributes positively to the development of a circular economy. It captures a high proportion of the targeted materials in a way that enables them to be used in high quality applications: this is as true for, for example, aluminium, where a DRS can maintain the specific constituent alloys in closed loops, as it is for PET bottles, where closed loop recycling requires producers to have confidence that they are using so-called food-grade rPET which has minimal levels of contamination from non-food items or other contraries.
37. It also contributes to both the 65% recycling rate target (2035) and targets for packaging waste recycling. In this latter respect, it should be noted that the UK continues to measure ‘recycling’ of packaging waste, and in particular, plastic packaging waste, in ways that are not consistent with the revised EU Directives, with which it said it would align. Were the UK to properly measure its recycling rate for plastic packaging, the significance of the contribution made by a DRS would be more apparent than is the case currently.
38. Other objectives to which a DRS contributes are:
- As a form of EPR, it invokes the polluter pays principle;
  - It will enable producers to respond positively to the Treasury’s proposed plastic tax.
  - It encourages appropriate management of packaging at end of life;



- It makes it more likely that plastics collected for recycling will not be exported, and where they are, those originating from a DRS are unlikely to be inappropriately managed.
39. Finally, the high rates of recycling achievable through a DRS contribute to climate change mitigation by reducing the carbon (and energy) intensity of packaging use. Exactly how this contributes to UK 'production emissions' (as reported to the UNFCCC) depends on the locus of packaging production and of recycling of packaging.

**Scope for interoperability between any schemes in England, Wales and Northern Ireland to be established under Schedule 8 to the Environment Bill and the scheme to be established in Scotland under the Deposit and Return Scheme for Scotland Regulations 2020**

40. Interoperability of different DRS in neighbouring countries is a matter I addressed, with former colleagues, in work for the European Commission. Key issues relate to labelling, deposit levels, and the ability of the returns infrastructure to recognise labels that denote deposit bearing packages from another jurisdiction. The problems will, of course, be minimised, and interoperability maximised, where labels used, and deposit levels applied, are the same across all jurisdictions. In such cases, however, there may still be issues arising in respect of the quantity of returns made in each jurisdiction: without distinct nation-specific labelling, then if there is significant 'net migration' of containers across borders, the basis for any 'clearing' mechanism (to enable the refunds paid out in Country A for containers purchased with a deposit in Country B) would have to be based on estimation / statistical studies / mutual agreement etc. Cross border movements, on the other hand, might not be so large (and broadly in balance) where deposit levels are the same.
41. In principle, it would be possible for different countries to apply different deposit levels: should they wish to do so, then in order to minimise the potential for fraud (claims for the higher deposit in Country A on containers purchased in Country B with lower deposits), the labelling of the containers would ideally be country specific. This would allow for different deposits to be refunded in each jurisdiction: it would also facilitate a clearing house system to ensure that if one Country makes a net payment of refunds on containers from another Country, the latter Country can compensate the scheme operator for the payments made.
42. Evidently, requiring different labelling in different countries requires producers to label their stock keeping units differently according to where they will be sold. There would be some costs associated with this. Furthermore, the returns infrastructure would need to include, in the relevant database that allows labels to be linked to return rates, the relevant data for each country where different deposits are applied.
43. The decisions regarding labelling are, therefore, important. If there is a determination to go for different deposit levels – and in my experience, it might be difficult to come up with a solid evidence-based rationale for deviating from the Scottish regulations – then having different country labelling will be much more important. Even if the deposit levels are set at the same rate, then if the schemes in each country remain distinct, there might still be an argument for country specific labels, though because deposit levels would be the same, and since, as a result, the deposit rates would not themselves drive any movement of containers from country of consumption to country of discard, then there may be alternative ways of agreeing means of clearing to deal with any potential cross-border movements. Ideally, the systems would merge into one UK wide scheme: indeed, given that the Republic of Ireland has also announced its intention to implement a DRS, given the situation Northern Ireland now finds itself in, it would be worth considering how best to ensure interoperability with

the Republic of Ireland scheme, though recognising that the different currencies make complete equivalence of deposits impossible, given exchange rate fluctuations.

### **Factors which have contributed to the successful implementation of deposit return schemes in other jurisdictions**

44. Key issues, some of which have already been mentioned, include:
- Convenience of returns infrastructure;
  - Including either targets or incentives to drive performance;
  - Allowing industry partners to oversee a scheme in such a way that they are free to innovate and enhance efficiency in returns infrastructure / logistics, consistent with achieving targets;
  - Using variations in producer fees to encourage use of 'country specific labelling' (not to be legislated for);
  - Mechanisms to minimise fraud (and penalties in law for those making fraudulent claims);
  - Design parameters are established for containers to be accepted in the scheme: this ensures that containers in the scheme can be easily recycled (or re-used). Successful schemes also differentiate producer fees according to the ease with which containers can be recycled (for example, between clear, blue and opaque PET containers). Again, this is a feature that may emerge naturally under an efficiently operated scheme;
  - Varying handling fees to those hosting returns infrastructure (retailers etc.) in line with the contribution they make to improving efficiency / minimising fraud (so, those using compacting reverse vending machines may be paid more per container than those who use non-compacting machines / manual take back, since containers in the latter form will incur higher logistics costs) (not to be legislated for).
45. I also see great potential in engaging with consumers to highlight some environmental issues through, for example, linking their returns to environmental metrics, thereby educating consumers on resource / waste related issues.

### **Recommendations for Action**

46. In line with the above, some recommendations are as follows:
- a) Move beyond the apparent stasis in Defra and implement a DRS swiftly, and alongside the cost-recovery element of EPR. This should ideally be done in one fell swoop. I remain concerned that Defra has little hope now of meeting its 2023 target for a full roll-out of EPR (in line with EU Directives) without there being a period of adjustment required;
  - b) As a key accompanying measure alongside a DRS, Government should make it absolutely clear that, as per its consultation, the EPR scheme does cover full net costs of operating packaging recycling schemes (and other aspects of managing end-of-life plastics). This should allay the concerns of local authorities regarding 'loss of material revenue' occasioned by a DRS;
  - c) Whitehall government should be pragmatic in the circumstances after such a lengthy delay – if there is not much to dislike about the Scottish scheme, then an English scheme should be developed along the same, or similar lines. This would aid interoperability and would allow producers to operate on a harmonised basis across the UK;
  - d) Attention should be given, since it appears not to be addressed in the Scottish Regulations, the appropriate form of labelling to be used, preferably on a UK wide basis assuming that deposit levels are the same;

- e) For those forms of packaging that 'compete' in the beverage packaging market, but which are not currently included under the Scottish regulations (cardboard containers, non-PET plastic / multi-material pouches), consideration should be given to applying a form of instrument that drives similar performance so as not to give such materials undue advantage in the market for packaging of beverages. This could take the form of a tax linked to the recycling rate achieved (as applied in Norway), or to a specified application of modulated fees under EPR. Given that such packages are not widely recycled at a high rate,<sup>4</sup> care should be taken to ensure that their omission from a DRS does not give them a competitive advantage vis a vis those packages within scope of a DRS;
- f) Future evolutions of a DRS should consider the resort to greater use of refillable beverage packaging. A DRS, where operated via a centralised operator, should make introducing refillables far more viable than in situations where no such scheme exists.

Finally, I would like to think we would hear no more mention of a scheme that can be applied to 'on-the-go' items only. It always was, and still is, a road to nowhere, and we will waste our breath speaking about it.

*March 2021*

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<sup>4</sup> See, for example, Eunomia (2020) *Recycling of Multilayer Composite Packaging: the Beverage Carton*, December 2020, downloadable from <https://zerowasteurope.eu/library/recycling-of-multilayer-composite-packaging-the-beverage-carton/>